icon Audio

Instruction Manual for:

MB 845 MK IIm Power Amplifiers

designed by David Shaw

Signature Version With Jensen Copper Capacitors & Upgraded Valves

Shown with upgraded driver valves

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 ***MB 845 MK II***. These pure valve mono block amplifiers are the result of years of careful design and listening tests with a wide range of speakers. The amplifiers are hand built using carefully selected audiophile components. The transformers are hand wound using low oxygen copper and special Japanese long grain iron. Finally each amplifier is valved, carefully commissioned and tweaked for best performance in Leicester UK.
In order to get the best out of your amplifier, please read the “SET UP” notes. These contain important information about the correct operation and safety. Should you be uncertain about anything please contact your dealer or one of our team.
Valve amplifiers do need a little more attention than their solid-state counterparts, but the sonic results are well worth it. In this manual we have tried to include everything that you need to know. Please let us know if you find any errors or feel that we have missed anything out.

The ***MB 845*** are push-pull all triode power amplifiers using the fabulous 845 high power triode valves. These have very special characteristics which many people consider give the finest reproduction of any valves. Similar to the 300B but with more power and punch. These are in fixed-bias mode which gives maximum power, cool running and low distortion. You MUST occasionally check the bias (at least twice a year). The driver and phase splitting are also triode for best sound quality and low noise. The MB 845s are sensitive enough to be used with any pre-amplifier or passive in most situations. Their 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.

Notes for new MB845 II M version

The new version of the MB845 II M released 03.2012 is essentially the same the previous version detailed in this manual apart from the following differences:

1. The incorporation of a built in bias meter for easier checking of the bias current of the 845 output valves.
2. Higher quality PTFE valve bases for the 845 and 6SL7/6SN7 valves
3. Remote switching of mains power, this keeps mains noise away from sensitive circuits.
4. The indication of power by the meter.

Otherwise the specification and operation remains the same.

The differences on operation compared to this manual are:

1. The most important and significant change. The checking of bias and adjustment is much simplified on the new model. Occasionally (once a month or even every time the amplifier is used) a brief check of the bias is achieved by switching the BIAS switch from OFF to V1 and then V2. This is done with zero volume.
   Ideally the pointer should be in or close to the black section on the dial. Small differences between V1 (left) and V2 (right) may be ignored. If the current is slightly high or low on both this can be ignored (10%), and may be due to mains voltage variations and is normal. Slight movement may also be observed this is also normal.
   Should you find that the readings are continuously high, adjustment is necessary. Over time imbalance more than about 10% should be corrected. Continuously low readings are less important.
   This can be achieved by slowly rotating the V1 & V2 screws on the top of the chassis (make sure that you have the meter reading the correct valve. e.g. adjust V1 whilst reading V1). If there is NO reading at all or the reading is too high and cannot be adjusted, there is a fault, contact your dealer or Icon Audio for guidance. Care should be taken not to overload the delicate meter mechanism.
   Typical 845 faults are NOT LIGHTING UP (heater failed) or GLOWING DULL RED or BLOWING FUSES. If the amplifier is working, these faults can often be identified by changing V1 for V2 (with the power off.
2. IMPORTANT! Unlike the previous model the 845s plug “in and out” vertically, like the small valves. (previously they were bayonet fitting like the old light bulbs). These new bases for the 845s and 6SL7/6SN7 have improved construction and looks improving long term performance, using technology borrowed from satellite technology.
3. This small but important change means the noise floor is even lower than before.
4. When the yellow bias meter switch is in the OFF position it indicates the instantaneous audio power of the amplifier. You may be surprised that it hardly moves most of the time. As full power is approximately 100 watts you can see therefore an indication of:

10=1.0w
20= 4.5w
40=18w
50=26w
60=36w
70=47w
80=60w
90=75w
100=100w

Assuming constant 8 Ohm load. Or 4 Ohms on the 4 Ohms terminals

When making adjustments or changing valves it important to make sure that the power is removed and that you take precautions not to burn yourself. Lethal high voltages are present inside the amplifier and valves. The valves also get very hot.

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.

To get the best out of your MB845s and to save time please read this information & keep it to hand for reference

Date	…./…./….
Model	…….
Amp Serial Number	…….
Customer	……

Check amplifier finish	…….	Soft Start Fitted	N/A…..
Internal wiring check	…….	Sales invoice	…….
Bias meter calibration	……ma	Bottom label	…….
Run min 6 hour test	…….	Credit card receipt	…….
Check input	…….	Customer survey form	…….
Output Valve Bias level	……...v	Bias meter	…….
Sound Quality	…….	Transformer Protection	N/A…..
Channel Balance	…….	**Upgrades:**	
Valve Microphony	…….	HT delay fitted?	…Y / N
Valve Seating	…….	Output valves	……..…….
Hum level	L……R……mv	1st Stage valve	…….
RF Test	…….	2nd Stage valve	…….
LED brightness	…….	Capacitor grade (Audio)	…….
Serial No sticker and recorded	…….	Capacitor grade (Power)	…….
Mains voltage	110-120 / 230-240V	Mains lead	…….
IEC Mains Fuse	……A	Interconnects	…….

Signed off by …….

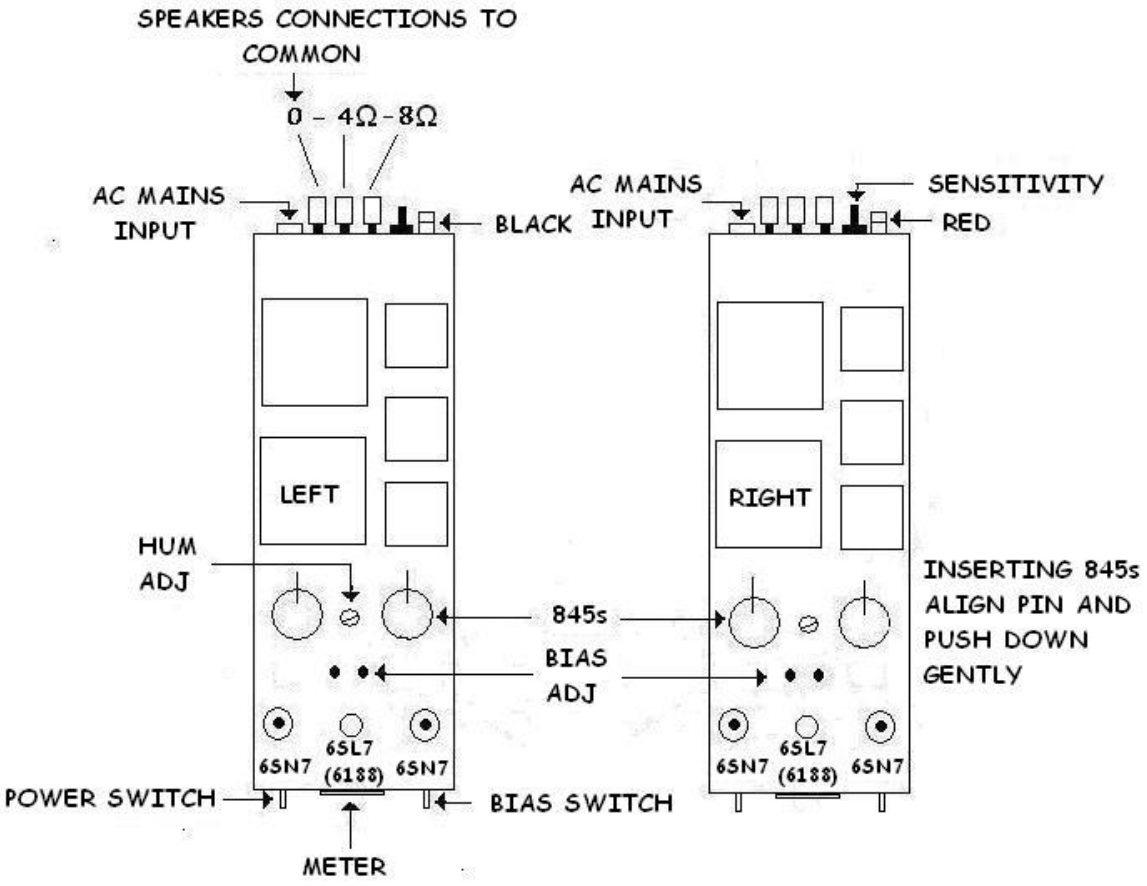
Notes:

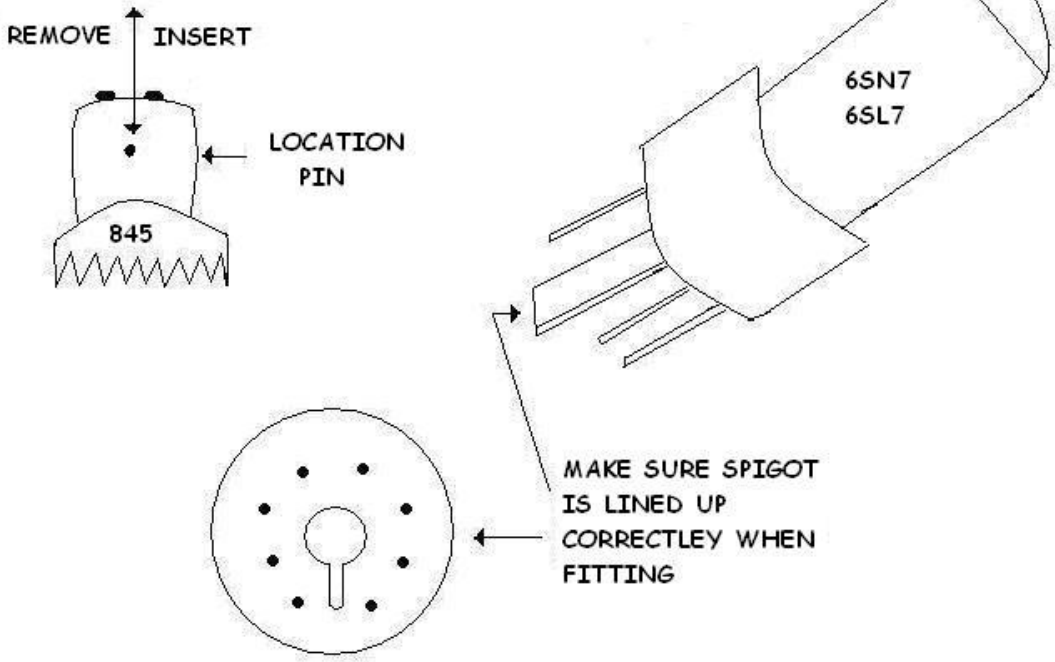
Please note we do not test the standard mains lead or plug fuse.

*See engineers notes at rear

MB845 MK IIm

Layout and Features





*See engineers notes at rear

IMPORTANT READ THESE NOTES THROUGH FIRST!

2 QUICK SET UP GUIDE

Your safety is paramount to us. Big triode amplifiers like the MB845s operate using high voltages. Please take care when setting up and adjusting. DO NOT OPERATE WITHOUT VALVES FITTED. If you are uncertain how to proceed at any point ask your dealer or Icon Audio.

1 Unpack each unit carefully. Make sure that it is in good condition. If not report to Icon Audio or your dealer. It is important that you keep the packaging for warranty/service return/shipping.
NOTE THE "LEFT" and "RIGHT" 845 orientation on each amplifier. Also keep the left and right amplifier valves separate.

2 If Necessary fit the valves, or check that they are firmly in place. SEE PREVIOUS DIAGRAM. Fit the valves according to the numbers written on the base of the valve, and on the socket, normally 1-8. Observe "Left" and "Right". The 845s should be fitted first to the two **REAR** sockets (the two sockets nearest the transformers). Fit by locating the bayonet pin at the side and push gently but firmly down.
The small valves should be gently but firmly pushed into place. The 6SL7 (or 6188/6N9) is fitted to the middle, and the 6SN7 (or CV181/6N8) to both the left and right positions as marked.
Be careful to note the correct orientation of the small valves central "spigot" between the pins otherwise damage could occur.
To avoid damage to the valves, do not twist the glass envelopes excessively as they may become loose/detached. Hold the valves as close to the base as possible. Damage to valves is not covered by the warranty. These valves have already been fitted and tested for quality.

3 Connect to source unit, e.g. Pre amp, Passive pre amp etc via sockets on the rear.
4 Connect speaker terminals use "0" &"8 ohm" terminals unless you have 4 ohm speakers (see P5) Make sure that the polarity is correct. (See speaker connections chapter 3). If 'bi-wiring' both 'common' should go to the black terminal and both 'positive' (or red) should go to the red terminals.

5 Connect to mains supply using supplied IEC mains lead to 230/240v supply (or 120v)*. **If for some reason the welded plug must be removed, please remove plug fuse and dispose of immediately.** (As they can be a danger to children if plugged in). The replacement plug should be wired in the following way Brown to Live terminal, Blue to Neutral terminal and Green/Yellow to Earth terminal.

6 SWITCH ON! The meter should light up and the 845s will glow bright yellow. You will likely hear a "humming noise" for a few seconds, this is normal. After about 20 seconds the amplifier should now be working. The small valves may have a visible orange glow from the cathode heaters. With the pre amp volume control set to minimum there should be no sound coming from the speakers except a barely discernable hum. If there are any unpleasant sounds coming from the speakers, switch off and refer to the 'Trouble Shooting' section or contact Icon Audio.

6a Sensitivity Switch
Located on the rear, this switch is "UP" (H) for (high sensitivity) operation. If use with a pre-amplifier is required, the switch should be "DOWN" in the low sensitivity position.

7 Your unit should now be functioning. If not check wiring again. 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 covers 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, There may be a 'click' when switching off.
H, The occasional "click" or "pop" is normal.
I, The hum level may be higher for about 30 secs after switching on.

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, 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 845 bias pre sets without reference to the manual. Incorrect adjustment could cause the valves to overheat, with resulting in damage to valves and amplifier.

Bias Adjustment:

The bias adjustment is factory set. No initial adjustment is normally needed.
However you should initially check the bias of the 845 valves to make sure it is correct for your mains voltage. Full details will be found in section 6.

*See engineers notes at rear

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
These power amplifiers require some kind of pre amplifier to accomplish volume control and switching of source. This can be achieved by either a "passive" or powered unit. Icon Audio makes ideal pre amps. You may wish to consult your dealer. If you wish to use a turntable you will need a suitable phono pre-amp. Your dealer or Icon Audio can advise you. Either of our highly rated PS1 MM/MC, PS2 MM or PS3 MM/MC all valve phono stages would be an ideal partner.
Note: If you are only using one source that has a volume control fitted, e.g. our PS3 phono stage, no preamplifier is necessary.

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 Icon valve amplifiers are more tolerant of cables; therefore the benefits of some very 'exotic' cables may be less apparent. But this is also personal taste. The losses in speaker cables is less than in interconnects.
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 cause damage.** Alternatively use good quality 'banana' plugs or spade connections, once fitted they are trouble free.

Speaker polarity. When using a pair of MB845s it is essential that you observe the polarity of the terminals; they must be the same for the left/right connections at each 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). Another alternative is to use a test disc. If you are 'bi-wiring' your speakers use only two terminals, you must use only 4 or 8 ohms, not both, as this will not load the amplifier properly.

4 or 8 Ohms?
Many modern loudspeakers have an impedance which can vary from 2-16 ohms. The best power match is (1) the loudest, and (2) the most pleasing tonal balance.
The MB 845 is designed to work with full range, low to medium efficiency speakers having impedance between 4 ohms to 8 ohms. Speakers having efficiency of lower than 80db 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.

4 Getting the best performance from your amplifier

- UNDER NO CIRCUMSTANCES OPERATE WITHOUT VALVES FITTED!
- NEVER REMOVE THE BOTTOM COVER
- Switch on your pre-amp first. This will limit "switch on thump" in your speakers.
- 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 without reading the manual
- 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 or if you have cause to suspect a problem
- Do Make sure the speakers are in phase

What is safe maximum volume?
The MB 845 will run happily all day long at any undistorted power; the valves hardly stressed any more than at zero volume. Running into distortion will however stress the whole amplifier. Generally speaking if the sound is not distorted then the amplifier is not stressed. But beware of heavy musical transients at high volume which could also damage your speakers and blow fuses.

Leaving the amp switched on
We are often asked if the amplifier should be left running 24/7 without switching off. 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.

'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!
Quality valves should sound better and have a better service. The valves supplied with selected models are the result of careful comparison with other makes. But beware of paying a premium for "New Old Stock" valves where you may be paying for rarity value and not performance. Icon Audio normally keep a range of upgrade valves in stock.

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. Never use anything wet on the amplifier, and always clean with the power disconnected.

5 Trouble Shooting

1. Amplifier Dead
Check the 5 (or 10amp for 115 V) amp mains fuse in the IEC socket 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 blade 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 you should disconnect from the mains and seek qualified help or Icon Audio. Replacements should be 5 Amp 'anti-surge'.
The fuse in the wall plug should be a 3 or 5 amp fuse, although unlikely to fail, this should be checked if the amplifier fuse is OK.
There is also a HT fuse inside the amplifier. This would not normally blow unless there is a valve fault or an overload condition. This should be checked by your dealer, or only if you feel competent. Disconnect amplifier from the mains power and wait 20 minutes before removing bottom plate. If the HT fuse has blown, there are replacements inside. Replace bottom cover afterwards and check bias immediately after switching on.

2. No sound
Have you selected the right input? Is the "Tape Monitor" switch up? Are all the connections OK? Is everything switched on? Are the speakers connected?
Distorted sound.
Could be your source, the speakers or the amplifier, check all wiring, and try swapping things around to eliminate or prove which component if the problem.
Left or right amplifier? If both probably the source unit. Try another source. If one amplifier is distorted check the bias. No bias reading means either a fuse blown or a faulty valve. Distorted sound at higher volumes may be because one of the output 845 valves is not working. This could be due a faulty 845 or one of the 845 internal fuses blowing. A symptom of this would be no 220mv bias voltage at the test point. Also the valve would not be as hot as the others. Refer to an engineer or to Icon Audio. Spare internal fuses are secured inside the chassis. Replacements are available free of charge from Icon Audio.

3. Hum Problems
If you experience hum, try disconnecting the input, if it clears it is external to the MB845 and further advice should be sought from your dealer or see below. By elimination find out which unit is causing this. Interconnects should be well screened.
If hum persists with no input this is probably the hum adjustment.

4. How to adjust the hum adjustment:
Ideally use a AC millivolt meter connected to the 8 Ohm speaker terminals (together with loudspeaker) with a shorted input, or no input connected. Adjust hum adjustment for minimum hum (about 1mv AC).
OR Adjust by ear:
This is easier with one person listening another adjusting, rotate adjustment backwards and forwards for minimum hum (like tuning in a radio)
This will normally be necessary after changing 845 valves. Or after the amplifier has been in use for some time. Check and adjust (if necessary) bias first.

5. External hum causes;
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.
Never disconnect a mains earth. They are for your protection!

6. Strange noises coming from speakers
Turn volume to minimum on unused input, if the noise disappears, the fault is with the source or the connection. If noise persists, the problem is 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.

7. Service: Should you suspect a problem, you could return the unit to your dealer or Icon Audio for a periodic service or return the valves for testing free of charge. You should carefully remove the valves (the 845s 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 be re-configured for 110/120v ac by a qualified engineer. See engineers notes or contact Icon Audio for more information.

This manual is provided for guidance only, and is not intended as a comprehensive service manual. In case of problems you should refer to your dealer or directly to Icon Audio.

*See engineers notes at rear

6 Bias Adjustment

Please read these notes all the way through first.
If you are unsure about any aspect contact your retailer, Icon Audio or a competent service engineer.

When checking the bias ensure that any "Active" pre-amp or source is "off" with zero volume to prevent false readings. Passive pre-amps should have "zero" volume. On a test bench "short circuit" the input.

The MB 845s use the "fixed bias' mode of valve operation. This has the advantage of higher power, and cooler running. However regular checking (say once a month), is advisable to check the bias reading using the built in meter to ensure best performance from the amplifier.

It is recommended that the bias is checked regularly. But even if the reading is slightly over or under no action may be necessary if both readings are the same as this may be your local 230/115v power variations. If you find variations at different times of the day it is better to play safe and be "under" rather than "over". The performance of the amplifier will be unaffected. Ideally they should read the same.

1, Tools you will need:
For checking none. For adjusting a small flat blade screwdriver.

2, Adjustment is done at zero volume with speakers connected. Run the amplifier for about 10 mins (if possible) first.
First select V1 with the "Bias" switch the pointer should be in or close to the black section.
Then select V2 again the pointer should be in or close to the black section.
If V1 or V2 is more than +10% over. Adjust until the pointer is in the middle of the black section.
If V1 or V2 is more than -10% under. Adjust until the pointer is in the middle of the black section.

3, How to adjust:
The adjustment is very sensitive so adjust very carefully. If the reading appears a little unstable this is normally due to mains fluctuations. Make sure you have the BIAS switch set to the correct 845 valve then slowly turn the screw until the pointer is in the middle of the black section.
4, If one or more valves are showing erratic readings or you cannot set bias because the reading is too high:
Switch off and refer to Icon Audio.
If one or more valves cannot have the bias set because the reading is too low:
The valve may be defective, consider replacement.
If there is no reading at all:
The internal fuse may have blown or the valve is "dead". If it is still glowing the internal fuse may have blown. Contact you dealer or Icon Audio.

5. Valve Testing:
If you suspect any of the valves are not working correctly Icon Audio will test the valves at no charge. Return them to us well packed in a rigid box with a note detailing the problem, which valves you suspect and your contact details. We will then contact you with the test results.

Possible valve faults
Not all valve faults are visible but 845s and driver valves should not be used if:

1. The "silver" getter material has turned white or is disappearing (air leak).
2. The valve rattles excessively (a slight rattle is normal).
3. Cracks in the glass.
4. Loose base.
5. Any pins are damaged or loose.
6. Heater not lighting up (this is harder to see with the 6SL7/6SN7). If one valve stays "cold" the heater has probably failed.

NOTE!
If there is no reading at all the internal fuse individual to each 845 should be checked by a qualified engineer. Spares should be attached to the bottom inside.

After significant bias adjustment or valve change the hum adjustment MAY be necessary if you notice increased background hum. See section 5.4.

7 Valve Replacement

Important! Do not attempt to change the 845 output valves without reading these notes. Failure to do so could be both dangerous to you and damaging to the amplifier. Keep these notes handy.

6SN7/6SL7 Take care that you orient the valve correctly before inserting. Line up the centre "Spigot" first. They are easy to break, do not bend excessively to the side.

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!

How do I know when to replace valves?

Valve life will depend upon such things as hours of use and number of on/off cycles. It is not good practice to remove the valves unnecessarily as this can strain the pins and cause tiny air leaks.
In our experience the 845 tube is very reliable and can last for several years of regular use. Similarly with the 6SL7. If the sound deteriorates after approximately 2000hrs (2 years @ 3hr per day) but the amplifier appears to be working OK suspect the 6SN7.
Generally speaking valve failure may be one of these:
1, The valve continues to work but the emission gets low. In the case of 845 output valves this will result in not being able to set the bias properly.
2, The valve gets noisy/microphonic. Usually happens to the small valves, can be confirmed by tapping gently with a plastic pen.
3, Heater fails. No glow in centre of valve. Valve is cold.
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 at all.
4, Dramatic Failure. Occasionally the demise of a power valve may be obvious with internal sparks and noise through the speakers. In that case, switch off and do not use until a replacement is available. Before re-commencing use see chapter 6 "Bias Adjustment". If there was any associated burning smell etc, we would recommend a qualified person examines the inside of the amplifier first.

If the amplifier sounds OK the valves are probably fine. If the emission drops you will have difficulty setting the bias for the output valves.

5, Changing valves:
Before changing the 845 valves ensure that it safe to do so by switching off and removing the mains plug at least 20 minutes before hand. This will enable dangerous voltages to dissipate, and the valves to cool down.
If possible check the bias setting before you attempt to change the valve(s), in order to familiarise yourself with the procedure.
If changing both the 845s be ready to adjust the bias in order not to overload the power supply. Don't worry how low the reading goes this will not cause damage. 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. Note that only 845 valves are compatible with the amplifier, 805, 211 and similar looking tubes cannot be biased and may damage the amplifier, and could be dangerous.

6, If you cannot set the pointer in the black section, then the valve is probably faulty or is unsuitable. (If both valves read zero the HT fuse may have blown).
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 845, 6SL7, 6SN7 or equivalent. 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 and 6SN7. Neither of these requires any set up procedure. It's just 'plug and play'. (These valves are similar with the same pin connection; accidentally interchanging these two valves would not cause damage, buy will reduce the amplifier performance).
6SN7 should only be replaced with modern types. Vintage types and the Russian 6H30 type have lower ratings and are unlikely to work well.

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

8 Specification & Features

(Typical conditions @ 240v 50Hz)

- 845 output valves
- 6SL7 double triodes for first stage
- 6SN7 double triodes for 2nd stage
- Hand wired point to point components
- No printed circuit board or
- PTFE valve bases for low noise/leakage
- 100w RMS at clipping (28.3v @8 Ohms)
- 100w RMS at clipping (20v @4 Ohms)
- Signal to noise level -95db
- Freq response 20Hz-20kHz +or- 0.5db
- Power bandwidth -3db=20Hz-30kHz 90w
- 0.01% THD typical 8w (0.015% 1w) 1khz
- Custom hand wound transformers using Japanese long grain steel
- Supplied with attractive safety guard
- Minimal feedback used 6db (high) 12db (low)
- High quality oversized metal film resistors
- Audiophile High quality polypropylene or Jensen audio capacitors (optional upgrade)
- Internal wiring using silver audio cable
- Valves carefully matched for best performance
- Gold plated Input & speaker terminals
- 400 mv sensitivity for full output (High)
- 1v sensitivity for full output (Low)
- 230/240volts, 200watts (zero signal)
- 5 amp (10 amp 115V)T mains rear fuse (with spare)
- 250 ma T 845 anode fuses (with spares)
- W: 20cm. D: 50cm. H: 22cm. Weight:35kg
- IEC mains lead, (5amp fused UK only)
- CE certified. ROHS & WEEE compliant

Specification subject to change without notice.

9 Guarantee

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

This amplifier is guaranteed by the dealer you purchased from 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. Please keep your receipt as proof of purchase, this will be needed.

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 or change of ownership 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 24 hours 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.

10 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.

- 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.
- **Send the valve covers and valves in the separate supplied box. See above for valve removal.**
- 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.
- Do not store in damp conditions as the transformer windings will corrode.
- If the amplifiers are shipped insurance is desirable due to the high unit value.

icon Audio UK LTD

351 Aylestone Road Leicester LE2 8TA
www.iconaudio.co.uk
Phone +44 (0) 116 244 0593 Cell +44 (0) 778 715 8791
Fax 0116 244 0593

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Engineers Notes

These notes are only intended for use by an engineer qualified to work with high voltage triodes like the 845/805. Owners should refer any problems to a dealer or service agent.

The amplifier may be inverted by supporting the transformers on non abrasive surface (e.g. dense foam, books etc) which allows space between the 845s and the work surface.

Safety

Before removing base disconnect the power cord. Always allow 20 minutes for the HT to discharge, or measure before proceeding. Use a bleed resistor of around 5-10KΩ will speed this up, and check that the HT voltage has discharged.

Amplifier dead.

Check the 20mm mains fuse in the IEC socket at rear of the amplifier, if dead there is a spare included. Or the fuse in the plug (if applicable). If not either check in-line power switch fuse adjacent to IEC socket.

Amplifier lit but not working.

There is a 250ma HT fuse located on the chassis, with spares attached to the base. If the fuse blows again a VARIAC or variable transformer will be useful to operate the amplifier on reduced power in order the trace the fault or overload.
Make sure the bias for the 845s is correct. If the AC fuse is blowing with the HT fuse disconnected suspect the bridge rectifier or power supply.
Also check that the 6SL7/6SN7 6.3v supply is working.

230v to 115v Conversion.

Take the precautions as above. It is necessary to change the primary power windings from series to parallel. Remove either AC lead from the bridge rectifier and join it to the other terminal. The “centre” tap are the two leads that will be found joined together. Replace with these two and solder to the first terminal. A larger value AC fuse will be needed in the IEC socket.

115v to 230v Conversion.

This is changing the two primary windings to series. Remove either pair of AC leads from an AC input to the bridge rectifier. Join together and insulate. The other pair of AC leads should be separated and soldered to each AC input of the bridge rectifier. A lower value AC fuse will be needed in the IEC socket.