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Pure Valve Amplification & Loudspeakers

## ***Which Valve Amplifier is Right for you?***

**So you have a good solid state amplifier but are dissatisfied with the overall sound and are thinking of getting a valve amplifier but which one should you choose?** You don't have to be an engineer to own a valve amplifier, but it helps to know the basic differences and what might suit you and your system best.

**Choosing the right valve amplifier** for your system is the key to getting the best results. The most important matching is to your speakers and like any major purchase a knowledge helps you to get the best for your purpose.

Most solid state (or Transistor) amplifiers are just a black box on a shelf, the inner workings of which remain a mystery to most people with no adjustments for the consumer. Whilst there are many design options nearly all work in a very similar way.

**Class A, Class AB etc.** Although you might expect Class A to be better than Class B in reality all hi fi amplifiers have some Class A at lower power where it counts. Pure Class A is a bit of a misnomer as it requires the valves and power supply to conduct at maximum power even at zero volume, consuming a lot of power. In practice there is virtually no difference in sound between a good Class A and Class AB Push-Pull amplifier as most of what you hear will be Class A. In contrast solid state amplifiers have very little Class A otherwise they would run very hot.

**For example:** The ST30se, LA4, phono stage pre-amplifiers and HP8 headphone amplifier are all SE Triode Class A designs. The Stereo 20/40/60/MB90 are Class AB, Push Pull output in either Ultralinear or Triode mode.

### **Push Pull and Single Ended (SE).**

Most valve amplifiers are "push pull" having two identical output valves sharing the output load rather like a two cylinder engine. Transistor amplifiers normally work this way. Virtually all distortion and noise within the amplifier is cancelled out. Unlike transistors the valves never "switch off" but go into a low state when its partner takes over, this avoids the "switching effect" that can be a problem with transistor designs. Also, the two identical output valves ensure perfect symmetry, this is difficult with transistor amplifiers as they use two different types of transistors (PNP and NPN).

**Single Ended** or SE amplifiers pre-date push-pull and are very basic using only one output valve running at maximum current all the time (Class A). The advantage is a very simple amplifier which has a purity and warmth which is difficult to find in other designs. However overall power and low frequency power delivery are not as good as push pull designs limiting ideal speaker matching. Our ST30se with the new KT150 (28W) overcomes most of these problems.

### **Fixed Bias v Auto Bias (or Cathode Bias/Self Bias).**

The "Bias" of a valve (or transistor) sets the ideal point which the valve can instantly increase or decrease the current as instructed by the audio signal from the "driving" valve. This is usually done in two ways; Cathode bias using just a resistor was a cheap and easy way to do this in vintage British designs and works well for low powered amplifiers of up to about 20 watts. In bigger amplifiers it has the problem of reducing the output power available and wastes a lot of energy as heat (e.g. old Leaks and QUADs). It also has the problem that an electrolytic capacitor (which have very poor audio qualities and a limited life) is also needed which will affect the quality of sound. Unfortunately the harder the valve is working the more it starts to turn itself off, thereby compressing the sound. "Fixed Bias" is done by a separate voltage which holds the valve at a constant value regardless of how hard the valve is working giving a better representation of the original dynamics. The valve is directly connected to the "ground" circuit so able to pass its full output without constriction or colouration by resistors/capacitors. No energy is wasted so the amplifier runs cooler, valve life is longer, and the

output is higher. Another plus is that "Fixed Bias" may be adjusted so that similar valves in the same family may be used e.g. our ST40 can use EL34/KT66/77/88, 6550 etc. Also as the valves age adjustment may be made to maintain the ideal performance, another "plus" here is that the valve condition is indicated. Most Icon Audio amplifiers have a built-in meter to indicate the bias setting.

"Split Bias" like our ST25 is a combination where small changes in valve performance are automatic but the overall bias may be easily adjusted to change to a different valve type.

Some brands even use a more complex circuit to monitor and change bias automatically. We think that this is sonically inferior to the conventional designs and adds an unnecessary level of complexity to the amplifier circuit.

**Power!** Probably the most misunderstood part of hi fi! For example, in a "normal" room (4x4m) with average efficiency (92dB) speakers, 20 Watts (per ch.) will enable a loud volume for a big orchestra or heavy rock music. To go to "extremely loud" is an exponential curve requiring 3 to 6 times more power. If the room is large or the loudspeakers are less efficient this will also require more power. Generally, valve amplifiers sound louder than solid state amplifiers so a 30/40 W amp will be fine in most situations. In our experience it is very common for people to over-estimate how much power is required. In our Leicester listening room (4x5m) an average of 4W is loud with our MFV3 speakers. 20W is almost unbearable!

**Triode, Pentode and Ultralinear (UL).** The Triode valve is very simple having three elements but is not very efficient, it was found that by adding two extra elements (becoming a Pentode valve 6L6/KT66) that much greater power may be obtained but at some loss of listening quality so Americans Hafler and Keroes in 1951 designed an output transformer which gives the power of a Pentode with the listening quality of Triodes commonly called "Ultralinear" which the majority of valve amplifiers use today (KT66/88/150 EL34 etc). BUT pre-war Triode valves like the 300B/845 are still highly regarded as being capable of excellent whether used in "Push-Pull" or SE. Pentode valves may also be used in Triode configuration, most Icon Audio amplifiers have this facility.

Customer feedback tells us that most customers prefer the Pure Triode sound, which is why you have the choice.

**LDT Transformers (Low Distortion Tertiary):** Most output transformers have a "Primary" winding (or coil) and a "Secondary" winding. Power is fed into the primary winding and is "transformed" into a different voltage and current in the secondary. The addition of a third or "Tertiary" winding makes it possible to cancel out a proportion of the distortion generated within the transformer. Icon Audio output transformers are made this way.

**R.M.S. Watts.** Do not literally exist! More correctly refers to the continuous (Root Mean Square) AC output voltage of an amplifier which is then converted into Watts by  $V^2/\Omega$ . But to differentiate between the meaningless "peak" and "music power", RMS watts is often used to indicate the continuous power that is available from Icon Audio and other amplifiers. We measure power at the maximum continuous output as this tells you the true power that is available to drive your speakers to the highest level before the onset of distortion. The peak instantaneous power will be higher. Valve amplifier distortion is of a benign nature, so does not have the "listening fatigue" problem that besets transistor designs. Icon Audio valve amplifiers are designed to run at high power continuously without fear of damage to the amplifier unlike many transistor amplifiers which are only designed for intermittent full power.

The information above meant for general guidance. More detailed information is available on line or from reference books. You are welcome to contact us for more detail about a particular product.



## Welcome to *icon Audio* a good starting point for Valve Amplifiers!

- Over 20 years of manufacturing valve amplifiers
- We offer a unique service as designer, manufacturer, dealer and distributor!
- Being small helps keep our prices lower so we offer excellent value
- Being the manufacturer enables us to control quality and give excellent service
- Being the designer means we have an intimate knowledge of our products
- Excellent after sales service means most repairs are completed within 7 days
- All models available for audition in quiet custom listening room

### Small and friendly!

We understand the importance getting the sound that *you* like from your hi fi system. For those able to visit our Leicester premises we have the full range of our amplifiers which may be auditioned with a range of loudspeakers using vinyl, CD etc or your own source unit. And you are welcome to bring your own equipment for comparison. Knowledgeable staff including David Shaw are on hand to advise you.





# New Stereo 40 6L6

*Our New Affordable Integrated!*

- **Affordable High End Performance**
- **Plenty Of Power For Most Situations**
- **Uses 6L6 Or Equivalent Output Valves**
- **Economical Running Costs**
- **Low Price Valve Replacement**
- **Future Upgrade Options**

We realise that not everyone has an unlimited budget for their hi fi, so the introduction of our new Stereo 40 6L6 offers High End performance at low price with low power consumption and low price valve replacement!

The Stereo 40 6L6 uses the same circuit as the ST40 MK IV its more expensive counterpart, with less features and slightly lower power output. The compatible valve types means that both running costs and valve replacement need not be expensive.

Tested in a wide variety of situations the ST40 6L6 is very easy to listen to yet at the same time able to handle high transients when called for



ST40 6L6 28W + 28W Amplifier



110W + 110W using 845 Directly Heated Triodes



ST30se 28W+28W Single Ended Amplifier



PS3 Phono Pre-amplifier with MC & MM inputs



TAD Replica 15" Horn Loudspeaker



MB81pp 250W + 250W Commercial Power Amplifiers





New for 2022!



designed by David Shaw

Shown with CV181 and Tung Sol 6L6 upgrades

Low Distortion Tertiary wound transformers

## Our New Affordable Integrated! Stereo 40 6L6

Same Circuit as  
ST40 MK IV  
6L6 or KT66 Valves  
"Easy Bias" Meter  
30+30 Watts UL  
Remote Option

### Exceptional performance at a modest price!

**Not just another "budget" amplifier!** We took a long hard look at our award winning Stereo 40 MKIV to see where cost savings could be made without sacrificing any quality.

Firstly, we removed all non-essential features like "standby" and "headphone" etc which have no impact on audio quality.

Secondly the excellent 6L6/KT66 group of valves are more than 50% cheaper than the KT88/EL34 types with only a relatively small loss in power (30+30W UL).

Thirdly the lower power requirements of the 6L6/KT66 means a saving in the amount of transformer copper and iron used and power consumption.

In summary the ST40 6L6 has all the performance and quality of the ST40 MKIV using exactly the same circuit and chassis at a considerable cost saving.

At the time of writing the ST40 6L6 may be re-valved for only £120.

In line with our other amplifiers there are many valve and capacitor upgrade options like the Genalex KT66 and Tung Sol 6L6.

#### Circuit Design.

In common with the ST40, ST60 and ST300 the David Shaw designed Cascode circuit uses the 6SN7 driver valve, probably the best sounding valve ever made! This means that there are only two types of valves used with the obvious benefits for the owner.

#### Output Transformers

Key to astonishing performance of the ST40 6L6 are the handmade output transformers which have helped win us so many awards.

The ST40 6L6 transformers stay faithful to the original formula with the low distortion tertiary winding almost unique in modern amplifiers.

Designed and manufactured in house Tertiary Wound means they have an extra (third) winding which reduces distortion, allowing the use of using less global feedback.

#### Choke Regulated Power Supply

Working in conjunction with the smoothing capacitors the large choke gives super-smooth power regulation for a silent background.

**Low Feedback design.** Too much feedback can spoil the sound of an amplifier. We only use a moderate amount in the Stereo 40 6L6.

#### GEC KT66 and U.S. 6L6 valves

The lower cost forerunners of the KT88 and still considered by many to be amongst the finest Beam Pentode valves ever created, efficient, easy to drive with low distortion the Stereo 40 6L6 is designed to get the best out of this valve in big dynamics and micro detail.

#### 30+30 Watts per channel.

In tests 30 watts is more than ample for a medium to large sized room with average efficiency loudspeakers. And now with several speaker manufacturers such as Klipsch making 100dB "Heritage" designs

requiring only very modest power, very high sound levels and deep bass are possible

#### Ultralinear or Triode?

On request at no extra charge we can convert to pure triode operation.

#### Remote Control

Remote control of volume with mute facility is available as an option.

#### Stereo 40 MK IV 6L6 Specification and features:

- All hand wired point to point, no printed circuit board
- Class A, all Triode front end
- Ultralinear or Triode option
- 4x 6L6 KT66 compatible valves
- 4x 6SN7/CV181 first stage valve and phase splitter
- 2x 30w continuous Ultralinear output
- 2x 15 Watts in Triode mode (option)
- Remote control with high quality ALPS motorised pot (option)
- Signal to noise level -90db
- Freq response better than 20hz-20kHz +0 - 1db
- Power bandwidth 30Hz-30kHz -3 dB
- Total harmonic distortion 0.2% at full output
- Suitable for 4, 8, and 16ohm loudspeakers
- Supplied with valve cover.
- Choke regulated power supply
- SCR audio caps, or Mundorf silver/gold in oil upgrade option
- Audiophile quality internal audio cable
- Custom hand wound Tertiary output transformers
- Audiophile Gold plated Input & speaker terminals
- Three line inputs: CD, Tuner, Aux
- Input sensitivity 250mv
- Comprehensive manual supplied
- Power requirement 230-240volts (117v adjustable)
- Power consumption 100 W Min, 195 W max.
- 39cmW, 41D, 23H, 22kg (allow for ventilation)

(\*Provisional Specifications subject to change)



Shown with standard optional 6L6 and 6SN7 valves



New for 2019



designed by David Shaw

Low Distortion Tertiary wound transformers

**Our Best Value Amplifier  
Just got even better!**

## Stereo 40 MK IV

**KT88 or 6550 valves  
Headphone Socket  
"Easy Bias" Meter  
50+50 Watts rms\*  
30+30 Watts Triode  
Remote Control  
Record Loop**

### Exceptional performance at a modest price!

The Stereo 40 MK I was our first model in 2001 and has always been a special product to us. Since that time we have substantially improved it over the years. In its latest guise, the MK IV has several upgrades making it exceptional value.

#### Headphone Socket.

Exceptional quality is provided by using separate HQ windings of the output transformer. Not attenuation is used to give a very open sound. Suitable for 8 to 500 Ohms. Giving greater flexibility of use.

#### Improved Power Supply.

In conjunction with our re-designed output transformers, the Ultralinear Power is now over 50 Watts. This gives greater instantaneous power available for heavy transients, and a more solid bass.

#### More Triode Power.

We know that majority of customers use the Triode Facility most of the time. The Triode power is now 30 Watts enabling use of all but the most inefficient speakers.

#### Re designed driver circuit.

Using a "cascode" configuration for the first stage enables us to use the venerable 6SN7 valve for all the driver circuit functions. This gives better definition whilst improving the frequency response at lower volumes. This also simplifies valve replacement as the amplifier only uses two valve types.

#### The Stereo 40 MK IV is packed with high end features:

##### Choke Regulated Power Supply

Working in conjunction with the smoothing capacitors the large choke gives super-smooth power regulation for a silent background.

**Tertiary Transformers** have an extra (third) winding which reduces distortion, using less global feedback. We believe our large handmade output transformers to be amongst the finest available. They are more expensive and difficult to make, but worth the effort.

**Low Feedback** Too much feedback can spoil the sound of an amplifier. We only use a small amount in the Stereo 40 MK IV.

##### GEC KT88 and U.S. 6550 valves

Considered by many to be the finest Beam Pentode valve ever created, efficient, easy to drive with low distortion the Stereo 40 MK IV is designed to get the best out of this valve in big dynamics and micro detail. The American 6550 is a similar alternative.

#### Ultralinear or Triode?

For sixty years hi fi fans have argued which sound is better. With the Stereo 40 IV you have the choice of both at the flick of a switch. It is like having two amplifiers in one! Most hi fi fans prefer the sound of triode operation.

#### 6SN7 (CV181)

This vintage 1941 forerunner of the miniature ECC series has a more "vivid" sound and balances well with the modern KT88. Our CV181 version comes as standard.

#### Remote Control

Useful to get exactly the right volume in your listening chair position. Allows fine adjustment of the right sound level.

#### Plenty of Power

50 watts of power is enough to fill a medium to large room with a high volume of musical excellence.

We can offer a range of upgrades including Shuguang "Treasure" valves and Russian types. As well as the superb Mundorf "silver/gold in oil" capacitors. Ask us for a quote.

### Specifications and Features

- All hand wired point to point, no printed circuit board
- Class A, all Triode front end
- Output circuit Ultralinear or Triode switchable
- 4x KT88 matched for best performance (EL 34 compatible)
- 4x 6SN7/CV181 first stage valve and phase splitter
- Standby switch to save valve life and power
- 2x 50w per channel Ultralinear output continuous
- 2x 30 Watts in Triode mode continuous
- Remote control with high quality ALPS motorised pot
- Signal to noise level -90db
- Freq response better than 20hz-20kHz +0 - 1db
- Power bandwidth 30Hz-30kHz -3 dB
- Total harmonic distortion 0.2% at full output
- Suitable for 4, 8, and 16ohm loudspeakers
- Supplied with valve cover.
- Choke regulated power supply
- SCR audio caps, or Mundorf silver/gold in oil upgrade option
- Silver plated copper PTFE audio cable
- Custom hand wound Tertiary output transformers
- Audiophile Gold plated Input & speaker terminals
- Four line inputs: CD, Tuner, Aux plus Tape
- Tape monitor circuit with 'Record Out'
- Input sensitivity 250mv.(high). 800mv (low).
- Comprehensive manual supplied
- Power requirement 230-240volts (117v adjustable)
- 76 Watts standby, 140 W Min, 240 W max.
- 39cmW, 41D, 23H, 23kg (allow for ventilation)

(Specifications subject to change) \*(Root Mean Square = continuous output)



*Low Distortion Tertiary  
wound transformers*



Standard version with KT88 output valves

***A "Simple Design" version of our award winning Stereo 40 at nearly half the price!***

**Ideal first valve amplifier with plenty of valve power to drive most loudspeakers.!**

**In essence a simplified ST40 MKIII, yet no reduction in quality, this is our best value integrated amplifier. Features include the excellent 6SN7 and 6SL7 valves for improved sound, and a headphone socket with excellent performance.**

Our simple bias circuit means that valve replacement of the same type requires no bias adjustment\*. Yet retains the ability to use "tube roll" different valves, so the ST25 MK II is designed to use: 6L6, EL34, 6CA7, KT66, KT88, 6550.

If you are new to valves the Stereo 25 MK II is an excellent starting point. With ample power, its affordable price and excellent power make it an ideal "starter" amplifier to find out what valves can do for your system.

The inclusion of a dedicated headphone winding on the output transformers guarantees the best possible performance. Giving a closer intimacy than is possible that with solid state headphone amplifiers.

**Summary:**

**Very "affordable" straightforward integrated amplifier based on the ST40 III with a first class headphone socket!**

**Low maintenance and easy to use.**



## **Stereo 25 MK II Integrated Amplifier**

**Headphone Socket  
30+30 watts rms\***

**Push-Pull Ultralinear  
Bluetooth Option  
All Triode Driver  
EL34 or KT88**

**"No Bias Adjustment"\*  
"Leak" front-end\***

*designed by David Shaw*

### **Specification & Features**

(Typical conditions EL34 valves@ 240v 50Hz. 8 Ω)

- 6L6/EL34/6CA7/KT66/KT88/6550 output valves
- 6SN7/6SL7 double triode driver valves
- Class A, all Triode front end
- Bluetooth option
- Ultralinear output circuit
- Triode version by request 19+19w (no extra charge)
- Hand wired point to point. No printed circuit board
- 30w RMS per channel Ultralinear (EL34)
- 4 and 8ohm loudspeaker output
- Tertiary Wound Transformers
- Frequency response 20-20kHz +0 - 0.5db
- THD typically less 0.5% 1kHz
- Hand wound transformers
- Attractive valve cover included in the price
- Hi Fi quality Solen capacitors
- Silver PTFE audio cable
- Gold plated Input & speaker sockets
- 3 line Inputs for CD, Tuner, Phono etc
- 250 mv input for full output
- 220/240volts, 100w (180w max)
- 34cmW, 34D, 22H (overall) 17kg
- CE, ROHS & WEEE compliant
- Comprehensive manual supplied

\*No bias adjustment if the valves are changed for the same type. However bias adjustment and test points are included to get the optimum performance from a wide range of output valves.

The driver circuit is inspired by the Leak Stereo 20/50/60

(\*while stocks last. specifications subject to change E&EO)

**HI FI WORLD TEST  
VERDICT**



# Stereo 60 MKIII

Upgraded Circuit  
 New KT150 Design  
 With 6SN7s & 6SL7s  
 80+80 watts RMS\*  
 50+50w Triode Mode  
 Choke Power Supply  
 Remote Control  
 Tape Monitor

*New Features:*  
 Tertiary Transformers  
 Valve Regulator  
 Improved Finish  
 Plexiglas Valve Cover  
 Standby Circuit

*designed by David Shaw*

*Low Distortion Tertiary  
 wound transformers*

Now in matt finish. Shown with optional David Shaw CV181s and FM TJ 6SL7s

## ***The Worlds First KT150 Integrated UL/Triode Hi Fi Amplifier***

### **An OUTSTANDING Integrated Amp!**

This is our most powerful integrated amplifier. It is ideal for someone wanting a very dynamic fast sound. It has a big power supply, big output transformers, and designed for the excellent new Tung-sol KT150/120. And it comes with many features!

An integrated version of our MB90 MKIIs. The original design got the best out of the KT88, now re-designed for the KT150 which we believe has even better sonics.

The MK III design comes with our new "LDT" low distortion transformers, a valve regulated first stage, and a copper alloy top plate.

### **Integrated & Power Amplifier in One!**

A special feature is the ability to change the sensitivity of Stereo 60 MKIII at the flick of a switch. Choose between use as either an integrated remote control amplifier, or as a power amplifier fed from a separate pre-amplifier.

### **Triode and Ultralinear Amplifier in One**

The triode sound is preferred by many hi fi fans, but the power is always lower. With our UL/Triode switch you can change from 80 watts to 50 watts of pure triode sound by changing the switch.

### **Specifications and Features**

- May be used as a power amplifier
- Comprehensive manual supplied
- Built in bias & valve test meter
- Hand wired point to point
- Japanese Blue ALPS volume pot.
- Class A, Triode front end
- Output circuit Ultralinear or Triode switchable
- 4x KT150 or KT120
- KT88/6550 compatible\*
- 2x 6SL7 first stage valves
- 2x 6SN7 output driver valves
- 2x 80 Watts Ultralinear
- 2x 50 Watts Triode mode
- Signal to noise level -90db
- Frequency response 20hz-20kHz +0 – 0.5db full power
- THD less than 0.05% 1khz
- 4 and 8 ohm loudspeaker outputs
- LDT Tertiary Custom hand wound output transformers
- Attractive cover included in the price
- Solen Hi Fi quality audio capacitors
- Mundorf capacitor upgrade on request
- Silver PTFE audio cable
- Gold plated Input & speaker terminals
- Four line inputs
- Tape monitor circuit
- 350mv input sensitivity.(high) 1.2v (low)
- 220/240volts 200watts typ, 500w max
- C E. ROHS.
- 43cmW, 38D, 23H, 35kg

\*Can be de-rated for KT88/6550  
 (Specifications subject to change)





# NEW Stereo 60 MK IV

New Upgraded Circuit  
Designed for KT150/170  
Uses Superb 6SN7  
85+85 Watts UL  
50+50 Watts Triode  
Choke Power Supply  
Remote Control  
Record Loop



*designed by David Shaw*

*Low Distortion Tertiary  
wound transformers*

Shown with David Shaw 6SN7/CV181

## An Updated MK IV version of our powerful KT150 Integrated Hi Fi Amplifier

### An OUTSTANDING Amplifier!

This is our most powerful integrated amplifier. It is ideal for someone wanting a very dynamic fast sound. It has a big power supply, big output transformers, and a big sound. Designed to get the best from the excellent new Tung-sol KT150/120. And it comes with many features!

Based on our MB90 monoblock power amplifiers the Stereo 60 offers the convenience of one unit not requiring a separate pre-amplifier.

The original design got the best out of the KT88, now re-designed for the KT150 which we believe has even better sonics.

The MK IV design comes with our new "LDT" low distortion transformers, and a redesigned front end.

The ST60 MK IV is similar to the MK III version but with a re-designed front end using four 6SN7s which means that only two types of valves are used. This enhances the performance with lower distortion and better macro dynamics.

### Integrated & Power Amplifier in One!

A special feature is the ability to change the sensitivity of Stereo 60 MKIV at the flick of a switch. Choose between use as either an integrated remote control amplifier, or as a power amplifier fed from a separate pre-amplifier.

### Triode and Ultralinear Amplifier in One

The triode sound is preferred by many hi fi fans, but the power is always lower. With our UL/Triode switch you can change from 85 watts to 50 watts of pure triode sound by changing the switch.

### Specifications and Features

- May be used as a power amplifier
- Comprehensive manual supplied
- Built in bias & valve test meter
- Hand wired point to point
- Japanese Blue ALPS volume pot.
- Class A, Triode front end
- Output circuit Ultralinear or Triode switchable
- 4x KT150/170 or KT120
- KT88/6550 compatible\*
- 4x 6SN7 output driver valves (CV181)
- 2x 85 Watts Ultralinear
- 2x 50 Watts Triode mode
- Signal to noise level -90db
- Frequency response 20hz-20kHz +0 – 0.5db full power
- THD less than 0.05% 1khz
- 4 and 8 ohm loudspeaker outputs
- LDT Tertiary Custom hand wound output transformers
- Attractive cover included in the price
- Solen Hi Fi quality audio capacitors
- Capacitor upgrade option
- Silver plated PTFE audio cable
- Gold plated Input & speaker terminals
- Four line inputs
- Tape monitor circuit
- 350mv input sensitivity.(high) 1.2v (low)
- 220/240volts 200watts typ, 500w max
- C E. ROHS.
- 43cmW, 38D, 23H, 35kg

\*Can be de-rated for KT88/6550

(Provisional specifications subject to change)

### Summary:

**A powerful Push-Pull integrated or power amplifier with exceptional performance driving demanding speakers. Also offering 50W of Pure Triode Power at an affordable price!**

New for 2019



Low Distortion Tertiary  
wound transformers

designed by David Shaw

# New ST 300 300B DHT\* Amplifier

Beautifully Simple  
Highest Definition  
30+30 Watts Triode\*  
Remote Control  
Choke power supply

**Awarded 5 Globes in Hi-Fi World**

Some things are hard to improve on and that is especially true of the 1930s 300B valve. \*Directly Heated Triodes are considered by many to be the pinnacle of audio quality. At Icon Audio we have used all our skills in order to build an amplifier that gets the best out of this venerable tube. Warm, transparent, satisfying. With 30 + 30 Watts of power available from 20 Hz to 20kHz this amplifier is sure to please the most demanding listener.

Western Electric designed the 300B to give a high quality, good output in cinema sound. In doing so they created a valve which in audio quality has never been bettered. Although a simple design by today's standards it has very low distortion and has very linear, properties which make ideal for the finest amplifiers. Because of this more care is needed in designing the associated circuitry in order to remain sympathetic to its genre (don't expect to see 300Bs in a budget or guitar amp).

The all-important high definition drive circuit for the 300B output valve is achieved by using the superb 6SN7 valves in "Cascode" mode. 6SN7s date from 1940 so fit in well the overall sonics. We feel the 6SN7 (CV181) has a more relaxed presentation than their miniature cousins, these larger driver valves are the best in their class for their musical sound and longer life. Try our new David Shaw types or choose from TJ/Full Music, SG Treasure, Psvane, Vintage USA/Russian types.

Good sensitivity from the built in "passive" pre-amp ensures good results from virtually any type of input.

The "easy bias" meter enables simple checking that the 300Bs are at optimum performance, the meter also gives an indication of the output power. Very useful when you may need to know if you are likely approach the maximum available power.

Input sensitivity is varied by changing the feedback this enables use of the amplifier without any feedback or using low sensitivity ideal for use with a separate pre-amplifier

Partnering loudspeakers and source equipment needs to be done carefully. If there is a down side to 300B amplifiers it is that they are more revealing and will not "mask" deficiencies as much as other amplifiers.

The standard valves give excellent performance. But for those who may wish to use "premium" or the new Western Electric 300Bs and want to maximise the life of these valves, on request we can supply the amplifier with a lower HT which will gives 23w per channel output.

## Specifications and Features

- Comprehensive manual supplied
- Remote control: HQ ALPS motorised volume pot
- All hand wired point to point
- Pure Class A CV181/6SN7 driver stage
- Output power 30W 8Ω (23W de-rated)
- Large Choke regulated power supply
- 4x 300B output valve (AC heated)
- 4x 6SN7 (CV181) double triode
- Signal to noise level -85db
- Freq resp 20 - 20kHz -0.2 to -0.5dB (8w 6.25dB FB)
- THD typically less than 0.05% 1kHz (1w)
- THD typically less than 0.2% 1kHz (8w)
- 4 & 8 ohm loudspeaker taps
- Low feedback design (0, 6.25, 15.2dB)
- Switchable gain control giving 140, 300, 790mV input sensitivity
- SCR audiophile caps. Mundorf silver/gold in oil option
- Silver plated copper PTFE audio cable
- Tertiary winding output transformers
- Gold plated Input & speaker terminals
- Channel balance typically within 0.2dB
- 117/235 Volts 150W - 235W
- C E, ROHS WEEE, FCC
- Size 380mm wide 330mm deep 230mm high
- Unpacked weight 26 kg

Typical values @ 240v AC (Specifications subject to change)

## Summary:

**Ideal for: Situations where the very highest fidelity is required from a medium powered amplifier. Well suited to larger more efficient speakers. Very detailed sound stage with a mid range to die for. Delightful listening quality.**

**HI FI WORLD TEST  
VERDICT** 



# ST 30se Single Ended KT150 Integrated Amp

Beautifully Simple  
100% "Pure class A"  
28+28 Watts UL  
18+18 Watts Triode  
Remote Control  
Choke power supply  
Tung Sol KT150

**Awarded 5 Globes in Hi-Fi World**



*Low Distortion Tertiary  
wound transformers*

*designed by David Shaw*

## A Versatile Affordable SE Solution!

The ST30SE is a medium powered integrated amplifier offering warmth and colour in an ultra-smooth way to delight almost anyone who is sensitive to the many harsh and clinical presentations offered by others. The ST30se offers absolute listening quality through simplicity of design and pure "Class A" operation. This is achieved by using a very simple design, high quality construction and our unique transformers designed and manufactured "in house".

Previously, affordable Single Ended designs have been low powered at around 9-13w. The excellent new KT150 valve enables more than double this power for the same cost.

## Specifications and Features

- 100% Pure Class A output power
- Class A, all Triode driver stage
- Output power Triode (18W). Ultralinear (28W)
- Choke regulated power supply
- 2x KT150 output valve
- 3x 6SN7 (CV181) double triode
- All hand wired point to point
- Signal to noise level -98db
- Freq resp 20 - 20kHz +0 -0.8db 45kHz -3db(8w)
- THD typically less than 0.5% 1kHz (8w)
- 4 & 8 ohm loudspeaker taps
- Low feedback design
- Switchable gain control.
- SCR audiophile caps, Mundorf upgrade option
- Silver plated copper PTFE audio cable
- Tertiary winding output transformers
- Big custom wound PSU Choke
- Gold plated Input & speaker terminals
- 200mv (high) & 500mv (low) input sensitivity.
- 220/240volts 160w approx
- C E, ROHS WEEE, FCC
- Size 380mm wide 300mm deep 240mm high
- Packed weight 28 kg

Typical values @ 235v AC (Specifications subject to change)

The all-important high definition drive circuit for the KT150 output valve is achieved by using the superb 6SN7 valves in "Cascode" mode to get the best qualities of SE\* without the drawbacks of flabby bass, hum and low power that many designs suffer.

The ST30se is optimised for Triode as well as UL operation. 18 Watts being ample for most situations. Especially with our new "Full Range M" or MFV3 speakers and other designs such as the classic Tannoys, the ST30SE will work well with any speaker of about 90dB or more.

Good sensitivity from the built in "passive" pre amp ensures good results from virtually any type of input. The "easy bias" meter enables simple checking that the KT150 is at optimum performance, the meter also gives an indication of the output power. Very useful when you may need to know if you are likely approach the maximum available power.

## Summary:

**Ideal for: most situations where higher Single Ended power is required by someone wanting a very relaxed sound. Well suited to larger more efficient speakers. Delightful listening quality. Easy to maintain, Economical valve replacement cost. Low maintenance design.**

## Hi Fi World Said:

ICON AUDIO  
ST30SE £1999.95



OUTSTANDING - amongst the best.

## VERDICT

Combines all the benefits of single-ended valve operation with a healthy dose of power for a superb listening experience.

## FOR

- power
- clean, open sound
- detail
- easy operation

## AGAINST

- nothing at the price

Read full review in HEW Nov 2016

# Stereo 20pp Integrated Amplifier



*Low Distortion Tertiary  
wound transformers*

*designed by David Shaw*

***Small But Perfectly Formed!***

Headphone Socket  
Classic Design  
13+13 watts  
Push-Pull Ultralinear\*  
All Triode Driver  
Simple Circuit  
"Leak" front-end\*

In a rapidly changing world it is nice to have some traditional values. In 1955 The British company H. J. Leak designed the Stereo 20 using the new Mullard EL84, and ECC83 valves. It was an instant worldwide success for quality performance and value. These vintage amplifiers can now fetch over £1,500!

Our new Stereo 20pp is inspired by this design. Ideal for the smaller room, or loudspeakers that do not require a large amount of power. Our circuit uses less feedback and designed to be compatible with the higher output that CD players have as well as any almost any other source including DACs and Streaming.

This amplifier has a very transparent quality, being particularly suited to acoustic and orchestral music, but used with appropriate speakers is capable of performance way beyond your expectations!

The inclusion of a dedicated headphone winding on the output transformers guarantees the best possible performance. Giving a closer intimacy than is possible that with solid state headphone amplifiers.

The diminutive EL84 output tube is very efficient much loved power tube, enabling the use of a smaller power supply and output transformers giving economy of size and materials which is reflected in the final price.

The EL84 has a very high pedigree having many variants in radio, TV and radar and apparently was even used in the firing mechanism of nuclear missiles!

## Summary:

**Headphone socket. Very affordable, punches way above its weight/price, low maintenance. Delightful airy quality. Small size.**

HI FI WORLD said 4 out of 5 Globes "Excellent Value"

**VERDICT**  

## Specification & Features

- EL84 output valves
- ECC83/ECC82 double triodes valves
- Class A, all Triode front end
- Ultralinear output circuit
- Supplied in triode form upon request (FOC)
- Hand wired point to point components
- 13 Watts per channel Ultralinear
- Suitable for 4 to 8ohm loudspeakers
- Freq response 20-20Khz
- Attractive valve cover included in the price
- Solen hi fi quality audio capacitors
- Silver PTFE audio cable
- Gold plated Input & speaker terminals
- 3 line Inputs for CD, Tuner, MP3 etc
- 250 mv sensitivity for full output
- 220/240volts, 100w
- 27cmW, 30D, 16H cm 10kg
- Comprehensive manual supplied  
(Specifications subject to change)





# Stereo 845 PP The Ultimate Integrated Amplifier!



*designed by David Shaw*

Shown with optional David Shaw CV181 and FM TJ 6SL7

**Hi Fi WORLD "Amplifier Of The Year 2014"**

**Our new flagship integrated amplifier. Designed to get the best out of the fabulous 845 valve. Ideal for someone wanting the ultimate in luxurious warm sound.**

The legendary 845 luxurious sound quality is presented here in nearly all class A, as the valves are only running at 35% of their rated output. The attention to detail and quality will reveal the finest detail of your recordings in a warm musical form. Everything possible has been done to allow this superb valve to work its magic. Forty watts is ample power to obtain a high volume in most situations. This means that all of the components and valves are generously rated to give the ST845 its enviable sonic signature. And still comfortably get everything in one chassis.

**The importance of Push Pull.** Many exotic SE designs are criticised for their distortion and bass performance. A glance at the ST845 figures shows real bass power at low distortion is possible!

The sound quality: tested on a wide range of loudspeakers the ST845 offers a very unbiased interpretation of music that only valves can do. The design is deceptively simple, using very little feedback, lots of pure copper and heat!

You can expect a three dimensional sound stage, and very precise imaging is more precise. The "texture" of each instrument is more apparent.

**Why did we design this?** Following our very successful MB845 110w mono blocks, we realised that there are many people who just love the sublime quality of the 845 valves but do not need high power or have the space needed for two large mono blocks and a pre-amp. Surprisingly 100w to 40w is only 3.9db lower in sound output, so the ST845 is an excellent relatively small one box.

**Summary: The finest pure triode presentation for those not needing high power. Created with absolute listening quality in mind. The "ultimate" triode PP integrated amplifier. Read the reviews and come and listen!**

**Feature Packed:**  
**845s in Push Pull**  
**40+40 Watts RMS\***  
**6SN7 and 6SL7**  
**Valve Rectifier**  
**LDT Transformers\***  
**Remote Control**  
**"Easy Bias" Meter**  
**Twin Choke Double**  
**Power Supply**  
**Record Loop**

## Specifications and Features

- Pure Class A, Triode front end
  - Pure Triode 845 push pull output Stage
  - All hand wired point to point
  - Remote control volume
  - May also be used as a power amplifier
  - Comprehensive manual supplied
  - Built in "Easy Bias" Meter
  - ALPS Japanese volume pot.
  - 4x 845 precisely matched
  - 2x 6SL7 first stage valves
  - 2x 6SN7 output driver valves
  - 1x GZ34 driver stage rectifier
  - Max output one channel 41w 8Ω 1% THD\*
  - 40+40w 8Ω both ch driven 0.5% THD\*
  - THD 8w 0.15%. 1w 0.09%
  - Max output into 4Ω 32w (11.3v)
  - Max output into 16Ω 39w (25v)
  - Signal to noise level -105db
  - Channel balance better than 0.1dB
  - Damping factor of 14
  - Freq response 10hz-20kHz -0dB (41kHz -0.1db) 8w
  - Freq response 20Hz-20kHz 0.25dB (40kHz -1dB) 38w
  - Suitable loudspeakers 4Ω to 16Ω
  - \*Low Distortion Tertiary wound output transformers
  - Transformers potted to reduce noise
  - Solen/SCR Hi Fi quality audio capacitors
  - Mundorf capacitor upgrade on request
  - Silver plated pure copper PTFE audio cable
  - Gold plated Input & speaker terminals
  - Attractive Plexiglas cover supplied
  - Four line inputs
  - Record loop
  - 300mv sensitivity.(high) for full output
  - 950mv sensitivity (low) for full output
  - Input impedance 100 kΩ
  - 220/240/115 volts 220watts typical, 500w max
  - C E. FCC ROHS
  - 44cmW, 46D, 24H (28H with cover), 35kg
- Typical Figures @ 235v Provisional specifications subject to change





*designed by David Shaw*

*Low Distortion Tertiary  
wound transformers*

***The 845 Pure Triode Tube. 1931 Vintage. A powerful alternative to the 300B.***

## **MB 845 MK II Triode Mono Blocks**

**110+110 watts rms  
Pure Triode Mode  
Low & High Sensitivity  
Choke Loaded Driver  
Only 3 stages**

**Awarded 5 Globes HI-Fi World  
HI-Fi World Amplifier Of The Year**

### **The “Reviewers Amplifier”**

With several pairs sold to leading reviewers, we are told that one of their outstanding qualities is the ability to give consistent results with virtually any type of speaker. Something many “high end” amplifiers cannot do. Like all our amplifiers the design is simple letting the magic of the 845 valves shine through

The RCA 845, probably the ultimate power triode valve dates from about 1931 when the only way to get higher powers was to make valves bigger and run at higher voltages. The later EL34 and KT88 types are far more efficient but many think do not sound as pleasing.

When we first released the MB845 in the UK they were greeted with great acclaim by the hi fi press and customers, for power and value, but above all their unique sound quality. It has become THE reference valve amplifier for Hi Fi World magazine.

Many other 845 amplifiers use 4 stages, often using 300B valves as driver valves, but this more complicated design does not allow the 845 to reach its full potential in terms of transparency and maximum output of 110w, useful if your speakers need a lot of power. But the power is secondary to the large bandwidth and low distortion available.

For some people only a large triode valve like the 845 can give the golden warm tone which is so pleasing, with its feeling of air and space and sense of realism.

The MB845 MK I has truly become a legend in the UK, but hi fi fans were soon asking if there was more we could do to improve the performance. With the MB845 MK II, we have used all our expertise to create our ultimate triode PP amplifier. The MB845 MK II has an improved power supply, an upgraded driver stage, more linear driver chokes, and our new series of bigger LDT series of low distortion transformers. These have caused the MB845s to put on 11kg each to 37Kg each, so be careful lifting!

A feature of the MB845s is the high and low sensitivity. This enables MB845s to work with both “Passive” and conventional pre amplifiers. This is not done by attenuation which reduces quality, but genuinely changes the gain of the input.

*The sound is best described at “an iron fist in a velvet glove”. These amplifiers will suit almost any speaker and situation. They have no particular down side other than size and weight.*

#### **Summary:**

**The “ultimate” triode PP monoblock amplifier.  
Read the reviews and come and listen!**

### **Specifications and Features**

- Improved LDT Tertiary winding output transformer
- Improved dual 6SN7 high current driver circuit
- Choke regulated power supply
- All hand wired point to point
- No printed circuit board to ‘colour’ sound
- Class A, all Triode front end
- 2x 845B precisely matched for best performance
- 1x 6SL7 first stage gain valves
- 2x 6SN7 driver valves, choke loaded plates
- 845 AC heating for max life and max reliability
- 30.5V (typical) output at clipping point 8 Ohms\*
- Giving approx 20 Watts of Pure Class A
- Can be used with passive or active pre-amp
- 450mv (high) & 1000mv (low) input sensitivity.
- Signal to noise level -90db\* (approx)
- Hum and noise 0.5mv (low sensitivity)\*
- 6SL7/6SN7 DC heater circuit for minimum hum
- Freq response -1db points= 6Hz 27khz
- Freq response -3db points= 6Hz-57kHz
- Source impedance 0.7Ω (8Ω taps, low sensitivity)
- Damping factor 13
- Gain 67 (high) 30 (Low)
- THD typically less than 0.1% @ 1w. 0.14% @ 8w (1kHz)
- 4 & 8 ohm loudspeaker taps
- Custom tertiary hand-wound mains/output transformers
- Attractive Plexiglass cover included in the price
- Audiophile quality 2W precision resistors throughout
- Solen audio capacitors (or optional Mundorf capacitors!)
- Silver PTFE audio cable
- Gold plated Input & speaker terminals
- 220/240volts (115 v adjustable)
- Comprehensive manual supplied
- Full instructions for DIY valve change included
- Power consumption: 180w min, (290w max sine wave) each
- Size in cm W24, D57, H28 mm ( inc cover), 37kg each (Allow space for connections and ventilation)
- Carton 2x 66x35x38cm + 1x 57x31x32 Total 84kg

*Noel Keywood. Hi Fi World (UK)...*

**“Amongst the best  
amplifiers I have  
ever heard...”**



**HI FI WORLD TEST**

**VERDICT** 



# MB 90 II KT150 Power Amplifiers

115+115 Watts rms  
60+60 Watts Triode  
Low & High Sensitivity  
Choke power supply  
Warmup/Standby switch  
New Super KT150

*designed by David Shaw*



*Low Distortion Tertiary  
wound transformers*

Shown with upgraded David Shaw CV181s and FM TJ 6SL7s

**HI FI WORLD TEST**

**VERDICT**



## ***The Worlds First KT150 Power Amplifier For The New Tung Sol KT150 Valve***

### **Getting the best out of this super new valve**

One of our best-selling power amplifiers offering excellent all round value in terms of power, quality and specification. Designed around the superb new Tung Sol KT150 or KT120. Our specially designed LDT transformers get the best out of both valves. As a "modern" design it is at the cutting edge of what is possible from high end valve amplifiers. In this case a heavy duty individual power supply. The venerable "Leak" inspired driver circuit updated to match the performance of the KT150 and our in-house designed output transformers with our unique design of Tertiary (balanced) windings. The Hi Fi press has been unanimous with praise for the MB90 and ST60 (integrated) design.

Designed for modern less efficient speakers this amplifier gives a fast yet very smooth musical quality to the high power available, making them very versatile in their application.

Pure Triode mode has equal emphasis here. Customer feedback indicates that 80% of customers listen to Triode mode most of the time. The sonic characteristics of the KT150 are a little fluid and warmer when used in this way. The MB90 is a very cost effective way of getting a large 60 watts Triode output without the expense of large Triode valves. This is an ideal replacement for a larger transistor amplifier for someone wanting a more easy listening presentation.

The combination of medium/low feedback, Triode/UL and 4/8 ohms output means that a wide range of pre-amps, speakers and room conditions may be accommodated.

**Summary:** Ideal alternative to powerful solid state amp. These excel in every way with high power low distortion deep bass transparent highs. But retaining the sound of a thoroughbred classic valve amplifier.

### **Specifications and Features**

- Comprehensive manual supplied
- All hand wired point to point
- Class A, all Triode front end
- Output Ultralinear (115W) or Triode (60W)\*
- 4x KT150/KT170 matched valves
- KT88/90 compatible (when de-rated)
- 2x 6SL7 2x 6SN7 driving valves
- Signal to noise level -90db
- Frequency response 20hz-20kHz +0 – 0.5db
- THD typically less than 0.1% 1khz 8w
- 4 & 8 ohm loudspeaker taps
- Valve cover included in the price
- Solen hi fi audio capacitors
- Silver PTFE audio cable
- Tertiary winding output transformers
- Big custom wound PSU Choke
- Gold plated Input & speaker terminals
- 400mv (high) & 1200mv (low) input sensitivity
- Input impedance 100k
- 230/240volts 200watts approx
- Consumption: 38w standby, 88w zero vol, 200w Max
- C E, ROHS
- Size 22cmW, 50D, 21H ( 23cm inc cover), 20kg ea  
(Specifications subject to change)

# HP 205D Headphone Amplifier

W.E. 205D DHT  
Pure Valve Circuit  
16 to 600 Ohms  
Single Ended Design  
Valve rectifier  
Bluetooth Option  
300B Compatible



## Directly Heated Triode, Singled Ended, Pure Valve Headphone Amplifier

### Directly Heated Triodes bring you closer to the music!

Many audiophiles have discovered that a simple well designed valve amplifier can give greater purity and intimacy than more complex solid state designs. This is especially true of headphone amplifiers and the 1920s W.E. 205D is about as simple as a valve gets! Taking inspiration from our award winning HP8 headphone amplifier, and the remarkable WE 205D valve, we have designed a deceptively simple amplifier which has surpassed even our own expectations!

The 205D is a Directly Heated Triode designed by the Western Electric Co in the 1920s and is probably the oldest design in current production! As a small power output valve it has excellent qualities for headphone use, being very linear in operation and low impedance. High end headphones can be very revealing and can sound clinical and overly bright with some amplifiers. Sonic presentation with the 205D and our output transformers has the highest definition and incredible dynamics but in a nice way! More vivid and warmer sounding. Completely free of fatigue.

Headphones have the ability to convey incredible detail and insight into a recording so careful circuit design is called for. Like any valve amplifier the output transformers are crucial to the final quality and our own custom designed and wound transformers play an important part in this. Also an advanced design using Directly Heated Triodes such as this demands the highest quality power supplied by outboard power supply using a time honoured valve rectifier and choke circuit.

Although less than one Watt is needed to power headphones, we have taken the same care and attention to detail that is essential for any "high end" design, every component is chosen carefully to avoid negatively influencing the ultimate sound quality. As in our other designs the HP205D is hard wired throughout (without printed circuit boards) not only for better sound quality by using full size components and easier upgrades but for easy future service.

The 205D is driven by the post war ECC88, highly regarded for its neutral sound and complements the 205D technically and sonically.

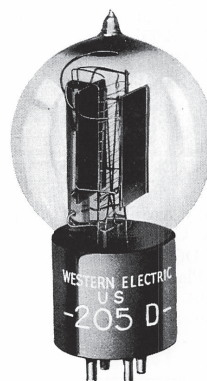
The HP205D may be used as a stand-alone unit or as part of a hi fi system. The optional Bluetooth receiver make the HP 205D very versatile in use.

### Specifications and Features

- Built in Bluetooth option
  - All hand wired point to point
  - No printed circuit boards
  - Japanese Blue ALPS volume pot.
  - Class A, all Triode circuit
  - Headphones impedance matching from 16 to 600Ω
  - 2 x TJ Full Music 205D (standard)
  - 2 x Psvane 205D (upgrade)
  - 300B compatible
  - 2x ECC88/6922/6DJ8 input valve
  - 274B or GZ34/5AR4/5R4 rectifier option.
  - Signal to noise level -90db
  - Freq response better than 20hz-20kHz +0 -0.2db
  - High quality oversize resistors
  - SCR audio capacitors or Mundorf upgrades available
  - Custom hand wound output transformers
  - Ceramic valve holders with gold plated sockets (205D)
  - Silver plated copper PTFE audio cable
  - Gold plated Input/outputs
  - Loop through facility, ideal for pre/power amps.
  - 350mv input sensitivity for full output
  - Comprehensive manual supplied
  - 230/240volts 36 watts.
  - 16cm W, 27 D, 16 H, 7kg
  - Carton 37Wx27Dx30H 7.0 kg
- (Provisional specifications subject to change)*



**Summary:**  
Headphone amplifier designed for the highest quality headphones. Built as a "Single Ended Triode" amplifier.



### REVIEW

**HI-FI WORLD**

ICON AUDIO HP  
205D



OUTSTANDING - amongst the best.

#### VERDICT

Vivid sound from a boutique amplifier, Bluetooth included.

#### FOR

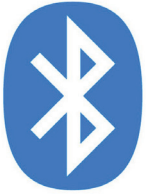
- appearance  
- sound quality  
- Bluetooth

#### AGAINST

- two-box size

Icon Audio  
+ 44 (0)116 244 0593  
www.iconaudio.com





*New Improved Design*



*designed by David Shaw*

# HP 8 MK II Headphone Amplifier

**Pure Valve Circuit  
All Triode for Sonic Purity  
Will Match Headphones  
From 16 to 600 ohms  
Bluetooth Option  
12AX7 and 6SN7  
Single Ended Design**

Showing limited edition David Shaw CV181 valves (upgrade)

## ***No Compromise High End Pure Valve Headphone Amplifier***

### **One of our bestsellers**

Headphones have such an intimate relationship with the listener, a good headphone amplifier needs to have the purest possible sound to avoid long term listening fatigue for the user.

*The usual way to provide a headphone output on an integrated amplifier is to drop the power through a couple of resistors, giving "low fi" disappointing results. Solid State headphone amps often use a couple of \$2 microchips which can sound harsh and have limited power.*

*We use two Class A valves with high quality output transformers that provide ideal matching to almost any headphone type 30-600.*

The power supply has generous mains transformer two custom output transformers. The HP8 MK II is a heavy 7kg, and very solidly made, giving you an idea of how much iron you get for your money!

Like our other models the HP8 MKII has no printed circuit board and is all hand wired with top quality components. We use silver PTFE audio cable, gold plated terminals and the famous "ALPS" volume pot for sonic purity.

The front valve is the excellent ECC83. this has exceptional detail and fluidity. It complements the super 6SN7 (the best hi fi valve ever?). This combination will give you a simply stunning insight into inner detail of your favourite recordings whether analogue or digital.

Like our other amplifiers, close attention has been paid to the finish of the HP8 MKII. It uses the same heavy build quality as our other amplifiers a combination of alloy plate and painted steel.

The HP8 MKII is very versatile. It may connected to your hi fi in several ways:

1, In a normal hi fi system you would connect to the "record

out" of your amplifier. This will then be directly connected to the "source" that you have selected.

2, Now with built in loop enabling easy connection.

3, With "Pre and power" systems a connection may be made between the two units.

4, As a stand alone unit you can directly connect to any CD/iphone/phono pre-amp etc.

### **Specifications and Features**

- Comprehensive manual supplied
- All hand wired point to point
- No printed circuit board to 'colour' sound
- Japanese Blue ALPS volume pot.
- Class A, all Triode circuit
- Output impedance matching from 6 to 600Ω
- 2 x 6SN7/CV181 for output 1x ECC83 input valve
- NOS, Treasure and other types available
- Signal to noise level -90db
- Freq response better than 20hz-20kHz +0 -0.2db
- Total harmonic distortion typically less than 0.2% 1khz
- Japanese steel EI transformers with low oxygen copper
- High quality 2W metal film, & wire-wound resistors
- Solen audio capacitors, Mundorf upgrade available
- Custom hand wound output transformers
- Ceramic valve holders for minimum leakage
- Silver PTFE audio cable
- Gold plated Input/outputs
- One line input
- Loop through facility
- 350mv input sensitivity.
- 220/240volts 36 watts.
- 16cm W, 27 D, 16 H, 7kg
- Carton 37Wx27Dx30H 7.0 kg
- C E, ROHS and WEEE compliant

(Specifications subject to change)

  
**OUTSTANDING - amongst the best**


**VERDICT**  
Effective and welcome improvements in both design and sound quality.

**FOR**

- low noise
- airy midrange
- dynamic extension
- new inputs
- cooler running

**AGAINST:**

- nothing

  
**OUTSTANDING - amongst the best**  
Review in Hi Fi World 07.2016

### **Summary:**

**True High End headphone amplifier. Built as a small SET hi fi amplifier using Icon handmade multi tap output transformers.**

**High definition with superb listening qualities to match the finest headphones.**

# LA4 MK III Line Pre-Amplifier



*designed by David Shaw*

Showing limited edition David Shaw CV181 valves (upgrade)

**Pure Valve  
All Triode  
Valve Rectified  
Remote Control  
Four Inputs  
Bluetooth Option  
Record Loop  
Low Gain  
Twin Choke PSU**



## A line pre-amp of outstanding quality

Building on the success of the earlier marques, the LA4 MKIII has improved cosmetics and an upgraded circuit. Now with lower feedback and lower gain the macro dynamics and sound stage are enhanced.

A deceptively simple high quality single stage design followed by an output buffer. But what makes the LA4 III special is the power supply and our "finely tuned" design. A high end pre amplifier must have the best power supply. The LA4 MK III uses a large choke in Pi configuration for well conditioned power giving superb smoothing for velvety inky black silence. The rectifier valve, which makes a small but valid difference may be either the Mullard designed GZ34 (pictured) or the venerable WE designed 274B.

The three audio valves we use are the 6SN7 double triodes. This 1940 vintage valve has all the best characteristics for the job, and its larger size means long life and good stability. Also the sound is more musical as we feel these have a more fluid sound. You can experiment with both vintage and modern types.

## Built to last

Like all our equipment the LA4 III is very solidly made. It has a heavy alloy and steel chassis. The internal wiring is all "point to point", "hand wired", this is essential for valve amplifiers, and allows for upgrading to larger capacitors, and makes future servicing very simple.

## Summary:

**Very simple high quality line pre-amp. Ideal for virtually any kind of power amplifier.**

## Specifications and Features

- Comprehensive manual supplied
- All hand wired point to point without PCBs
- ALPs motorised volume pot.
- Remote control volume and mute
- All Triode design
- 3x 6SN7 valves (CV181)
- Adaptors available for 12AU7/ECC82
- GZ34 Valve rectifier (also 5AR4/274B)
- Double Choke HT supply
- DC heater supply
- Signal to noise level -90db
- Freq response 20hz-20khz +0 - 0.1db
- Total harmonic distortion typically less than 0.1%
- Gain x4, 12db
- Max input level 5v for 20v output.
- Very low output impedance of 100Ω
- Suitable for power amps 100mv-5v sensitivity
- High quality 2w metal film, & wire-wound resistors
- SCR audio capacitors (Mundorf silver/gold option)
- Silver PTFE audio cable
- Gold plated Input terminals
- Four line inputs plus optional Bluetooth
- Tape monitor circuit and record output
- Optional valve cover available
- 230/117volts 100watts
- C E compliant
- 25cmW, 37D, 23H (with 274B and cover), or 17H with GZ34 (no cover) 12kg packed.

(Specifications subject to change, errors & omissions excepted 27/09/22)

Various valve and capacitor upgrades are available



**HI FI WORLD TEST  
VERDICT** 





*designed by David Shaw*

## LA5tx Pre-Amplifier with very special Output Transformers

**Transformer Based  
No Output Capacitor  
Balanced Output  
Remote Control  
Record Loop  
Double Choke PSU**

*Low Distortion Tertiary  
wound transformers*

***A very special transformer based pre-amplifier***

### Transformers sound best!

Well made audio transformers can provide perfect coupling in a hi fi system. Free from the “mechanical” sound of solid state and the deficiencies of output capacitors, they can make reproduction more vibrant and focussed.

The heart of the LA5tx are two very special line level output transformers, developed “in house” over several years to give what we think is the best sound balance.

#### ***Something for nothing?***

This can be done with a “passive” transformer, but the results will vary depending upon the source impedance of the previous stage. If it is not “strong” enough poor matching will be obtained. In electronics you cannot get something for nothing! The LA5tx single 6SN7 valve “buffers” the input source, this way the LA5tx always presents a constant high impedance load, so the “strength” of the previous stage is irrelevant. The “strong” output of the 6SN7 then drives our transformer to give either a perfect “balanced” output as well as a phono RCA.

The very low 250Ω output impedance of the LA5tx is then strong enough to drive virtually any length or type of interconnect cable without loss or damage to the precious signal.

So we feel that this is a better solution than just using a transformer alone.

A high end pre amplifier must have the best power supply. The LA5tx has two chokes in double Pi configuration for well conditioned power giving superb smoothing for velvety inky black silence. The GZ34 rectifier valve has a more fluid sound than silicon diodes making a surprising difference.

The LA5tx is designed for the very best transistor and valve power amplifiers where musical purity is required rather than starkness.

The audio valve we use is the 6SN7 double triode. This 1940 vintage valve has all the best characteristics for the job, and its larger size means long life and good stability. Also the sound is more musical as we feel these have a more fluid sound. You can experiment with both vintage and modern types.

### Specifications and Features

- Icon Audio custom output transformers
- All hand wired point to point
- ALPs Blue motorised volume pot.
- Stepped attenuator option
- All Triode simple design
- 2x 6SN7 valves
- GZ34 Valve rectifier (also 274B/5AR4)
- Double Choke HT supply
- DC heater supply
- Signal to noise level -90db#
- Freq response 20Hz-15kHz +0 -0.5db
- Freq response 13Hz-20kHz +0 -1db
- Freq response 7Hz-28kHz +0 -3db
- THD typically less than 0.18% (0.5v output)
- Gain 3x, 7db
- Max output level 20v for 6.66v input
- Low output impedance of 250Ω
- Suitable for power amps 100mv-2v sensitivity
- High quality 2w metal film, & wire-wound resistors
- Solen/SCR audio capacitors (Mundorf option)
- Silver PTFE audio cable
- Gold plated Input terminals
- Four line inputs
- Record loop
- 220/240volts 75watts
- Comprehensive manual supplied
- C E compliant
- 34.5cmW, 32D, 19.5H (with 274B), or 17H with GZ34 18kg with packing

(Specifications subject to change)

Various valve and capacitor upgrades are available, contact us for more information.

#### **Summary:**

**A simple low gain pre-amplifier that buffers the input and provides the transformer with optimum drive to achieve the full potential from our unique output transformers.**

## Remote Control Option

Extend  
Your Input  
Selection



As featured in  
Hi Fi World

*designed by David Shaw*

## Passive Line Pre-Amp

ALPS Volume Pot  
Remote Control Option  
Silver/copper PTFE Wire  
Gold Terminals  
Four Inputs  
Tape Monitor  
Alloy & Steel Build

### Do you need more inputs, volume control and remote control?

If you need any of these the Icon Passive, or Passive R could help.

Our passive preamplifier is ideal for use with most power amplifiers. Many CD/DVD, and other sources etc already have enough voltage to give a good listening level, therefore there is no need for extra amplification. Basically all you need to do is reduce the volume to suitable level. By eliminating the pre-amplifier stage you will get a more "direct", "truthful" sound, without the noise and colouration of the pre amplifier.

Its beauty is that it has no distortion or noise, therefore does not colour the sound, and the price is very affordable.



Strong construction and all gold plated PTFE RCA terminals

This is a very economical way to control your power amplifier, with nothing added.

The Passive is very versatile and can also be used purely as a selector box with the volume on full. Or by providing a monitoring circuit for your recording equipment as well as additional inputs. It is a very useful addition to any hi fi system.

As a general guide it may be used with any power amp or mono blocks with at least 1v sensitivity or greater. This includes the QUAD 303 and all of the Leak valve power amplifiers.

Exactly the same as the "Passive", the "Passive R" offers exactly the same specification but with the benefit of remote control volume.

This will allow the user to obtain the precise level of sound in his armchair and adjust for differences found in different tracks of your recording.

We have used the same high quality ALPs Blue pot that is in our other remote control amplifiers.

The power comes from a supplied low voltage wall adaptor.

### Specifications and Features

- Remote control option
  - Solid anodised alloy and steel construction.
  - Audiophile PTFE silver plated copper cable used throughout
  - All hand wired point to point
  - No printed circuit board to 'colour' sound
  - ALPS Blue velvet volume pot.
  - All gold plated high quality terminals
  - High quality selector switch
  - 4 inputs plus "Tape In"
  - Tape monitor circuit
  - Record output
  - Signal to noise level - unmeasurable
  - Freq response – perfect (under optimum conditions)
  - Total harmonic distortion – none
  - Black matt paint finish
  - C E compliant
  - W20, D26, H7cm (8cm remote version), 350g (remember to allow space for connections)
- (Specifications subject to change)

### Summary:

**An extraordinary simple low cost solution to many pre-amplifier problems. In many situations can sound better than sophisticated alternatives.**

**Many sold for all kinds of equipment.**

**Experience has shown that most modern sources (CD, Tuner, Streamer, DAC, Phono pre-amp etc) have more than enough output to drive most power amps, in which case our "Passive" will prove an excellent alternative.**

**You are welcome to contact us for advice.**



Recommended by  
Hi Fi World for the  
Beatles re-issue  
LP Recordings

## PS 3 MKII pure valve Phono Pre Amplifier pure valve power supply MM or MC/MM Option

MONO SWITCH  
essential for correct  
reproduction of mono LPs

*"We have no hesitation in saying that the PS3 II can out perform just about any other phono stage on the market" - David Shaw.*



*designed by David Shaw*

No other phono stage looks like the PS3, and no other sounds as good! We firmly believe that the overall performance is one of the finest available.

Hi Fi World say "our favourite high end phono pre amplifier", the PS3 is now Hi Fi World "Reference Standard". Based on our very successful PS1 phono pre which won "5 Globes" in Hi Fi World (03/2008) for its excellent sound quality, we have used our experience to design a phono pre which corrects all the weaknesses of other designs, regardless of price.

### **What's special about the PS3?**

The PS3 needs the best power supply. We use a large power transformer and a EZ80 valve rectifier followed by two large chokes for very smooth power. This is regulated by the excellent EL84 valve controlled by a 12AX7 for the very accurate smooth voltage necessary for true high end performance.

The preamplifier unit uses a unique circuit using 4x ECC88 to get the high gain and low noise for excellent detail and sound stage, and has the vivid colour and warmth. There are inputs for two turntables, with a moving coil option using our own "in house" designed and manufactured moving coil transformers.

The output valve is the excellent 6SN7. Introduced in 1940, a very musical sounding hi fi valve, with many old and new versions to try if you so desire!

The PS3 is a phono preamplifier of the very highest quality that will get the best from your pickup and work well with any kind of amplifier.

The PS3 has an unusually large output (1,260 mv) this with internal ALPs volume control enables direct coupling and control of many power amplifiers. A fixed output alternative is available on request.

The original specification for the LP system was designed in the days of valves long before transistors and micro chips, and we think that transistors are not suited to this job. In our opinion and that of our customers the change from transistor to valve for LP reproduction WILL GIVE YOU THE BIGGEST POSSIBLE IMPROVEMENT in your hi fi that it is possible to get. (To date no PS3s have been returned as "unsuitable" despite the hundreds sold! Indeed many have been further upgraded with Mundorf capacitors and more exotic valves.)

### **Specifications and Features**

- Built in volume control, to directly control power amps
- Max output 40 volts before clipping = massive headroom
- Two turntable inputs 1xMM 1xMC/MM
- Signal to noise ratio 88db MM
- Mono switch for better results from mono records
- Valve rectified power supply
- Valve regulated power supply
- Twin Chokes for excellent smoothing
- Separate Power supply for lower noise
- All hand wired point to point
- No printed circuit board to colour the sound
- Easy to service and upgrade
- Japanese Blue ALPS volume pot.
- All Triode valves
- 4x ECC88 1x 6SN7 (pre-amp)
- 1x EZ80 1x ECC83 1x EL84 1 x 0A2 (power supply)
- Sensitivity: 3mv for 1.26v output (0.3mv MC)
- Gain MM 53db MC 72db
- Load: imp: 47k MM, 100 ohms MC
- Output source impedance 50 ohms
- RIAA Freq response 20hz-20khz +0 – 0.5db
- NO feedback used for RIAA
- Solen/SCR audio capacitors Mundorf upgrade option
- Silver PTFE audio cable
- Gold plated Input/output terminals
- Detailed manual supplied with tube change info
- 220/240volts (also 117v)
- Pre-amp 15.5cmW, 33D, 17H\*, 3.6kg
- Power Supply 15.5cmW, 30D 17H 6.4kg
- Packed: 40cmx40cmx28cm (0.044CM) 11.5KG
- C E, ROHS FCC

(Specifications subject to change) Shown with optional David Shaw CV181

#### **Summary:**

**No compromise phono stage for MM and MC. Ultra refined power supply and sophisticated pure valve circuit stays true to the original design aims of the RIAA LP standard.**

**HI FI WORLD TEST  
VERDICT** 



# NEW PS 1 MKII "All Valve" Phono Stage MM or MM/MC Valve Regulated



*designed by David Shaw*

**Recommended by  
Hi Fi World for the  
Beatles re-issue  
LP Recordings**

**MONO SWITCH  
essential for correct  
reproduction of mono LPs**

## Nothing beats Pure Valve for Vinyl!

Introduced in 2005 the PS1 has proved to be one of our best sellers. This model has had many excellent reviews in the worlds Hi Fi press.

Now with improved power supply and new cosmetics, and the option of our new MC transformers.

It is well know that valves can sound much better than transistors, this is especially so with LP reproduction.

Mainly because:

- The massive overload of valves prevents distortion on highly modulated or worn LPs therefore reducing noise.
- The "warm" sound of valves is well suited to the reproduction of analogue music from LP.
- The huge 40db RIAA difference between 20 Hz and 20 kHz is easier for valves than transistors.
- Our "passive" design uses no "feedback"
- Our simple design uses "hi fi" components.
- We use "hand wired" "point to point" wiring with no printed circuit board.

It is essential that that these precious few microvolts of signal from the pickup cartridge go straight in to the valve without any switches or coupling capacitor in the way to add sonic impurities.

**The PS1 story from David Shaw Icons founder:**

"I designed the PS1 for maximum musical detail, but without exaggerating the imperfections through wear or older records. Valves are much more tolerant to overload and distortion, they recover quicker and distort less than transistors. Therefore valves will deal with the huge transient spikes present in imperfect LPs better than transistors. This gives a much more pleasing sound".

We like the sound of "moving coil" pickups and produced our own special 10x step up transformers. We also designed the PS1 to have a higher than normal output, so it is possible to connect directly to power amplifiers without a pre-amplifier. It is fitted with a volume control. This gives a very pure sound quality.

Our remarkable long published record still stands (06/2019) that no PS1 has been returned to us as "unsuitable" despite the thousands sold.

The PS1 has become a "Reference Standard" for Hi Fi World.

**Summary:**

**Our original acclaimed PS1 design updated and upgraded.  
Faithfull to the analogue traditions of vinyl.**

## Moving Magnet or Moving Coil?

Moving Magnet types are generally cheaper, and have the advantage of a high output.

Moving Coil pickups have a low output, they are generally more expensive.

But most hi fi fans prefer MC pickups. The LP original "Master" is cut with a moving coil stylus.

MC pickups need special transformers to give extra gain. We fit our own custom design and made transformers. They have a very smooth detailed sound. These may be fitted at the time of order or after purchase.

The front panel switch then allows you to easily choose either MM or MC input.

## Specifications and Features

- Built in volume control, suitable for most power amplifiers
- Stereo/mono switch for lower noise from mono LPs
- Choke power supply
- Separate Power supply for lower noise
- Comprehensive manual supplied
- All hand wired point to point
- No printed circuit board to spoil the sound
- Japanese Blue ALPS volume pot.
- All Triode valves 3x ECC83
- Sensitivity: 3mv for 1.26v output (0.3mv MC)
- Gain MM 53db MC 72db
- Load: imp: 47k MM, 100 ohms MC
- Output source impedance 500 ohms
- Signal to noise level -75db (MM)
- RIAA Freq response 20hz-20khz +0 - 1db
- NO global feedback used
- High quality resistors
- Hi Fi quality audio capacitors, Mundorf upgrade option.
- Silver PTFE audio cable
- Gold plated Input/output terminals
- 220/240volts (also 117v), 50watts
- C E. Conforms to ROHS and WEEE
- Pre-amp 17cmW, 27D, 11H , 2.7kg
- PSU 25cmD, 12W 17H 3.9kg
- Shipping size/weight 40cm x 35cm x 28cm 9kg

(Specifications subject to change)

**HI FI WORLD TEST  
VERDICT**



# PS 2 MKII "ALL VALVE" One Box MM Phono Pre-Amp



*designed by David Shaw*

**MONO SWITCH**  
essential for correct  
reproduction of mono LPs

## Only valves can make the LP sound this good!

Our PS2 is a "one box" version of our award winning PS1. Using the same circuit as the PS1 with a simplified power supply. Excellent value, it is built to the same high standard, hand made and hard wired. It will complement the finest quality Moving Magnet cartridges or Moving Coil with our optional transformer.

Regardless of the other components in your system we guarantee you will hear more "warmth and colour" with a PS2.

We realised that not everyone with a modest LP collection can aspire to a "Hi End" phono stage, so we have kept all the important features of the PS1 so preserving the essential sound quality of a pure valve phono stage, at a price which compares with other "entry level" units.

The PS2 is hand built by the same team as the PS1 and PS3 using the same hand built methods that ensure the consistent quality that we are known for.

New for 2014 is an improved black finish, updated power supply and a "stereo/mono" switch to reduce the noise of mono recordings.

## Specifications and Features

- Comprehensive manual supplied
- All hand wired point to point
- No printed circuit board to spoil the sound
- All Triode valves 3x ECC83
- Sensitivity: 5mv for 1v output
- For MC may be used with our MC transformer
- Gain x 200
- Load: imp: 47k MM
- Output impedance 50 ohms
- Signal to noise level -75db
- RIAA Freq response 20hz-20khz +0 - 1db
- NO global feedback used
- High quality resistors
- Hi Fi quality audio capacitors
- Silver PTFE audio cable
- Gold plated Input/output terminals
- 220/240volts (also 115v), 40watts
- C E. ROHS
- Dimensions: 31cmW x 14.5D x 12.5H
- Shipping size/weight 38cm x 28cm x 21cm 4kg  
(Specifications subject to change)

### Summary:

**An affordable alternative to the solid state phono stage, with the same sonic signature as the PS1.**





*designed by David Shaw*

***Designed to complement any Moving Magnet Phono Pre-amplifier***

**The MC TX is perfect for those who want to change from Moving Magnet to Moving Coil without the hassle of changing equipment. Just plug in between your turntable and phono stage nearly any MC will be matched to your amplifier.**

Designed to get the best out of your moving coil cartridge as used in our PS1 and PS3 phono pre-amplifiers, we found that many customers were asking for these transformers in a "stand alone" box that could be used with any phono pre-amplifiers.

#### The MCTX Story

"Some years ago when I was buyer for a hi fi retailer, I was fortunate enough to be invited on a factory visit to a well know pick up manufacturer in Denmark. The visit included various seminars about the manufacture and how to get the best performance from pickups. I came away having learned two very important lessons":

1, MM cartridges have a serious flaw which is hard to counter, in that at high frequencies they tend to resonate adding to distortion and noise. One of the reasons why Moving Coil sounds better.

2, Moving Coil cartridges sound better through a transformer, rather than a step-up amp (or stage). This is because the impedance and gain characteristics of a transformer are so well suited to the job. Also they are noise free, and have very low distortion and hum.

Some phono pre-amplifiers have a moving coil (MC) x5 pre-amp fitted, but the results of these can be disappointing as they are usually an extra low cost microchip stage which adds noise and make the sound mechanical and uninteresting. Whereas a good quality transformer will add nothing, whilst giving a true interpretation of the original sound.

Solid construction is important for protection against noise and vibration.

We use high quality transformers using the best low oxygen copper, made into extremely thin wire, and

hand wind the coils onto the rare earth metal formers. These are triple screened using Mu metal for minimum hum pickup. These are mounted on a stainless steel and alloy chassis using high quality gold plated terminals.

Your current pre-amp or phono stage may well have the common "one chip" solution to get the extra gain for moving coil cartridges, but this can be disappointing as transformers sound so much better although the cost is higher.

Automatic matching.

It is well known although not widely discussed that the impedance of a transformer varies with load, this means that to large degree most popular MC cartridges no not need any external adjustment to work correctly.

Only a well made transformer can give the organic interaction that takes place between your expensive pickup and your pre-amplifier.

It is a small relatively inexpensive upgrade. We guarantee you will be delighted. Try it risk free\*

### Specifications and Features

- All hand wired point to point
- No printed circuit board to 'colour' sound
- Suitable for pickups requiring 10 – 500 Ohms
- Low output impedance
- Matching pre amp 47k (30-100K)
- "By Pass" switch for MM cartridges
- Gain = x10/20dB (x1 for "by pass")
- Signal to noise level -90db
- Frequency response 10hz to 20khz –1db
- Silver PTFE audio cable
- Gold plated Input & output terminals
- One line input/line output
- Transformers made in England

(Specifications subject to change)  
\*UK only from Icon Audio Ltd)





*designed by David Shaw*



## New BA 3 All Valve Buffer Amplifier

**Makes Any CD Player or  
Solid State Amplifier  
More Musical  
Will Drive Very Long Cables  
All Valve Circuit  
Simple Triode Design  
Very Low Output Impedance**

***Designed for transistor amplifiers where some valve "warmth and colour" is required***

**The BA3 buffer amplifier comes in a "one box" configuration for more convenient positioning.**

Not everyone is willing or able to change to valve amplifiers. But many hi fi fans find their system can sound too harsh and tiring to listen to for long periods of time. Our BA3 is designed to fit between any two units of hi fi and will insert some "warmth and colour" making your hi fi system more pleasant to listen to. Although Valves and Solid State amplifiers both do the same job, *they do it differently*, microchips are excellent for digital circuits, valves are increasingly recognised as having musical qualities that are impossible to "see" in specification or measurement. A "buffer" amplifier does not amplify the signal voltage, but increases its strength (or current). In the process of passing the signal through a vacuum tube, subtle changes are made to its nature, which many people perceive as an improvement.

Hi Fi has now reached a level where enthusiasts can detect the tiny improvements of power conditioning, cables, interconnects etc, and of course the difference between transistors and valves.

So it follows that an all valve, triode, Class A buffer stage can add something that you may be missing!

It may be connected for example between a CD player and amplifier, or between a pre and power amplifier. It is also extremely effective at reducing the loss of long connecting cables. E.G:

All cables have high frequency loss, even exotic interconnects can have a relatively large capacitance per meter, so a 10 m cable will absorb 10 times more high frequency detail than a one-meter length. So if the output impedance (the lower the better) of your preamp is not as good as it could be, you will lose vital high frequency detail. It is not a question of amplification but of "muscle" to make sure that no detail is lost on the way through your interconnects.

We use a deceptively simple yet elegant SRPP circuit which has a delightful open yet warm sound.

No feedback is used so the true so the true individual valve sound quality is not diminished. The standard Russian 6N6 has lovely qualities. But for tube rollers out there other vintage valves are an option see below.

It is a small relatively inexpensive upgrade. We guarantee you will be delighted. Try it risk free\*

### Specifications and Features

- Comprehensive manual supplied
- All hand wired point to point
- No printed circuit board to 'colour' sound
- Class A, all Triode circuit
- Very low output impedance of 150Ω
- Input impedance 100K
- 2x 6N6 (ECC88/6922/6DJ compatible) triodes
- ECC82/12AU7/ECC99 option when ordering
- 0A2 regulated for stability and advanced sonics
- Gain = 0.96
- Maximum output before clipping= 30v
- Ideal for any input from 50mv to 10v
- Signal to noise level better than -90db
- Frequency response 10hz to 100khz -0.1db
- THD typically less than 0.05% 1khz
- Solen hi fi audio capacitors
- Copper foil "Paper In Oil" cap upgrade option
- Silver PTFE audio cable
- Gold plated Input & output terminals
- One line input/line output
- By pass switch (for use when not powered)
- 220/240volts 50 watts.
- C E, ROHS FCC
- Dimensions: 31cmW x 14.5D x 12.5H
- Packed Weight= 2.5kg

(Specifications subject to change) \*(UK only from Icon Audio Ltd)

### Summary:

**An inexpensive way of adding some valve magic into your system whilst keeping you existing equipment.**



# MB 805

## Power Amplifiers

**40+40 watts rms\***

**All Class A**

**Single Ended**

**All Pure Triode**

**Choke Loaded Driver**

*Low Distortion Tertiary  
wound transformers*

*designed by David Shaw*

***A very special all triode all class A amplifier***

### 45 Watts of Class A Beautiful Sound

For some audiophiles only a Single Ended design amplifier (only one output valve) can reproduce that “Holy Grail” of musical performance which in reality is rarely achieved. The 805 valve offers the potential to give a large amount of power to drive conventional speakers with ease, but this unique transmitting valve is difficult to drive. We use a small power amplifier in the form of a 2A3 triode which is itself driven by 4 6SL7s to the right dynamics and sympathetic feel.

Not only does the 805 sound sublime but driven properly is able to deliver power to drive all but the most inefficient speakers.

No expense or effort has been spared on this design which includes a massive power supply and output transformer with our unique tertiary winding. A large choke smooths the power.

The result is the most extraordinary amplifier we have ever made having the speed power and dynamics of an equivalent push pull amplifier, but with the poise and precision that only SE can produce.

For some people only a large triode valve like the 805 can give the golden warm tone which is so pleasing, with its feeling of air and space and sense of realism. But many SE and even 805 amplifiers are of low power. Our MB805 is designed to deliver 40 watts. More than enough to play large orchestral works and modern music.

#### Summary

**For some Single Ended Triode (SET) is the only way to “musical truth” devoid of any “mechanical” qualities or graininess, with rich texture and easy listening, whilst not as dynamic as more modern push-pull types, the MB805se has plenty of power for most needs.**

### Specifications and Features

- Comprehensive manual included
- Improved 4x 6SN7 high current driver circuit
- Class A, all Triode front end
- Choke loaded 2A3
- 1x 805 triode
- Choke regulated power supply
- All hand wired point to point
- No printed circuit board to ‘colour’ sound
- Output 40 Watts of Pure Class A
- Signal to noise level -90db
- Hum and noise 0.5mv (low sensitivity)\*
- Damping factor 10 (low gain)
- Frequency response 20 – 20 kHz -1db
- LDT Low Distortion Tertiary wound transformers
- THD typically less than 0.1% @ 1w. 0.3% @ 8w (1kHz)
- 4 & 8 ohm loudspeaker taps
- Japanese special long grain iron and low oxygen copper
- Attractive valve cover included in the price
- Mundorf coupling capacitors
- Silver PTFE audio cable
- Gold plated Input & speaker terminals
- 220/240volts (117 v adjustable)
- Power consumption 250w
- Size 24cmW, 57D, 28H ( inc cover), 36kg each (Allow space for connections and ventilation)

(Specifications subject to change)

\*Like all Single Ended (single output valve) amplifiers the power/frequency response/distortion does not measure as well as Push Pull amplifiers and technical reviewers often mark them down for this. However given adequate power such as the MB805 the simplicity of the circuit allows for astonishing honesty and intimacy especially with full range, vintage or simple speakers such as Tannoy dual concentric, Living Voice etc.

For those technically minded the driving circuit for the 2A3 uses our own variations of the cascode and SRPP circuits. The 2A3 has a choke loaded cathode which drives the 805. This provides the necessary voltage swing AND current which the 805 needs when its grid is driven positive. Our own unique output transformer easily handles the large DC current without saturating, aided by the tertiary winding to give the extended low frequency output down to 20Hz with ease.





# MB 81pp

**250 Watts of Triode Power!**

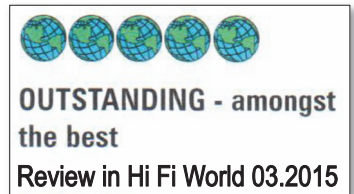
**Hi Fi WORLD" Amplifier Of The Year 2015"**



**Special Order  
Limited Edition**

"They are a breathtaking sight to behold and equally impressive to hear. High Fidelity doesn't get more impressive than this!"  
N. Keywood HI FI WORLD

*designed by David Shaw*



**Our pursuit for making better amplifiers often leads us to places that no one has been before! Here is such an example.**

The magnificent 1950's Russian GU81 transmitting valve has superb audio qualities and is tremendously robust. We were so inspired by our prototype design we decided to have a limited edition production in response to customer requests.

The MB 81 has seemingly unlimited vigour and drive and is capable of reproducing large orchestral works and rock music in a vivid 3D soundstage in vivid warm natural colour.

The result is probably the most amazing amplifier we have ever made in terms of getting 250 watts of "Icon" sound! Reaffirmed by Hi Fi World no less.

Following our work with other big triodes, we wanted to build an amplifier that would deliver plenty of power to drive the largest inefficient speakers with ease in pure triode mode, in very large rooms. For example although large speakers are generally efficient their complex crossovers can have lots of capacitors and inductors which present a difficult load for an amplifier, especially if it is running with less than ideal power. It is a curious thing that speaker companies say very little about the amplifiers that their speakers are designed for, yet the intimate synergy between the two is crucial to "make or break" a good sound system. Have an audition you will not be disappointed!

## Specifications and Features

- 250w (45v) @ 8  $\Omega$  continuous, @1Khz, 2% THD
- THD 0.5% @100w, 0.1% @8w
- Pure Class A, pure Triode front end
- All hand wired point to point
- Built in "Easy Bias" Meter
- 1x 6SL7 first stage valves
- 2x 6SN7 output driver valves
- 2x EL34 output driver valves (in triode mode)
- Signal to noise level -100db
- Damping factor of 3
- Frequency response 12hz-28kHz -1dB @8v
- Suitable loudspeakers 4 $\Omega$  to 16 $\Omega$
- \*Low Distortion Tertiary" wound output transformers
- Solen/SCR Hi Fi quality audio capacitors, upgrades available
- Mundorf silver/gold in oil caps on request
- Silver plated pure copper PTFE audio cable
- Gold plated Input & speaker terminals
- Attractive valve cover supplied
- Sensitivity: 0.65v (0dB FB), 1v (3.7dB FB), 2.7v (12.4dB FB)
- No printed circuit board, easy to service
- Input impedance 47 k $\Omega$
- 220/240/115 volts 450watts typical, 750w max
- W31.5, D66, H38.5cm (40 inc cover), 50kg
- Packed 2 of 49x81x45cm. 1 of 85x43x46mm Total 136 kg  
(Overall dimensions exc cables, allow for good ventilation)  
Typical Figures @ 235v specifications subject to change

### Summary:

**For the true valve enthusiast who wants ultimate in power and quality. Our 250w "Goliath" Triode PP power amplifiers for powerful modern speakers in a very large room. A unique experience. Come for a listen.**

# MB 81se

## 100 Watts from one Valve!

*Designed by David Shaw*



*Limited Edition Special order*

Prototype Model (Not the final design)

The sonic qualities of the magnificent GU81 valve make it the ideal candidate for those seeking a high power Single Ended Triode amplifier. Its 100 watts of power make it ideal for low to medium efficiency speakers in medium to very large rooms and will give outstanding results.

This venerable 1950s GU81 transmitting valve has superb audio qualities and is tremendously robust. Our worldwide acclaim and awards for our MB81PP gave us the impetus to make a Single Ended design.

It may be of interest to note that whilst the GU81 is a superb valve, very versatile in application and massively powerful, only very basic information is available from the manufacturers and virtually nothing from other sources therefore Icon Audio have devoted a considerable amount of resources in gaining expertise in circuit and transformer design to get the best performance from this valve.

An essential quality for any Single Ended amplifier is high dissipation of the output valve, in Pure Class A the efficiency is low and the power not used by the speaker is dissipated by the anode which gets very hot, a limiting factor for all audio valves in Class A. Here the GU81 is dissipating 350 watts glowing cherry

red, yet at only half of its maximum capability. This quality is partly why it has such an easy relaxed sound as well as a stable very long life.

The GU81 is capable of sublime audio performance but only if the quality of power and signal from the driving circuit is also of the highest quality. Our design of the power supply and transformers is totally uncompromised supplying the GU81 with the highest quality smoothed and conditioned power from our in-house designed hand wound transformers. Also the GU81 demands the finest driving circuit, two 6SN7s and a KT150/KT120 which is choke loaded using our own wide bandwidth design. Not only does this need to be technically perfect but have a "balanced synergy" to recreate the desired sound stage and macro detail. This involved 100s of listening hours and several redesigns of the circuit and transformers in order to get that elusive sonic perfection we were seeking.

Like our PP version the MB 81se has seemingly unlimited vigour and drive and is capable of reproducing large orchestral works and rock music in a vivid 3D soundstage but being a simpler SE design has a quality more akin to using ELEVEN 300Bs in parallel. (and uses no more power).

An audition is highly recommended!

### Summary:

**For the true valve enthusiast who wants ultimate in SET power and quality. Our 100w power amplifiers offer the finest combination of listening qualities and power for larger rooms. An incomparable experience.**

## Specifications and Features

- 100w (28.3v) 8Ω @ clipping point 1 kHz
  - THD 0.2% @8w 0.5% @50w 1% @96w all @8Ω
  - Pure Class A, pure all Triode front end
  - All hand wired point to point
  - No printed circuit board, easy to service
  - Built in "Easy Bias" Meter
  - 2x 6SN7 first stage valves
  - 1x KT150 output driver valve
  - Signal to noise level -90db
  - Damping factor of 5
  - Frequency response 20hz-20kHz -1dB @8v (8w)
  - 8Ω and 4Ω loudspeaker output taps
  - Suitable loudspeakers 3Ω to 16Ω
  - "Low Distortion Tertiary" wound output transformers
  - Solen/SCR Hi Fi quality audio capacitors
  - Mundorf silver/gold in oil caps upgrade option
  - Silver plated pure copper PTFE audio cable
  - Gold plated Input & speaker terminals
  - Valve cover supplied
  - Sensitivity: 400mv (0dB FB) 800mv (-6dB) 1.2v (-9.5dB)
  - Input impedance 47 kΩ
  - 235/117 volts 450watts typical
  - W31.5, D66, H38.5cm (40 inc cover), 50kg
  - Packed 2 of 49x81x45cm. 1 of 85x43x46mm Total 136 kg
- Specifications subject to change. Typical Figures @ 235v  
(Overall dimensions excluding cables, allow for good ventilation)



# "Made For Valves" Loudspeakers

## Why "Made For Valves"?

Icon Audio are virtually unique in making loudspeakers especially for valve amplifiers.

If you have a valve amplifier there are a number of reasons why you should consider our "MFVs".

Putting it simply valve amplifiers have a different "sonic signature" to solid state amplifiers and many modern loudspeakers cannot get the best out of valve amplifiers.

In the 20 years we have been manufacturing it has been obvious that many modern loudspeakers are not well suited to valve amplifiers, probably because they were not designed and tested with valve amplifiers in mind. All Icon Audio Loudspeakers are designed and tested with valve amplifiers so you are sure of the best results with each type of design.

1. As transistor power has got cheaper over the years, loudspeaker manufacturers in the quest for a "flat" frequency response are fitting more complex crossovers to "flatten" every peak in the frequency response. This has the effect of "throwing away" more and more power, with the outcome that a lot of valuable watts are wasted. This will cause lower powered amplifiers to run out of power on transient peaks and louder volumes.

2. Complex crossovers within the speaker present a "difficult load" to amplifiers with low or no feedback which obviously will not get the best sound from a valve amplifier.

3. Smaller loudspeakers usually use a 4 Ohm bass unit on the basis that a transistor amplifiers power doubles from 8 Ohms to 4 Ohms. This does not happen with valve amplifiers.

This inspiration from customers gave us the idea to manufacture our own loudspeakers that solved all the problems outlined above.

Starting from scratch assembling our own drive units "in house", specifying heavy duty MDF cabinets. Simple crossovers and high quality internal cable.

All Icon Audio loudspeaker drive units are assembled "in house" from the best materials and components.

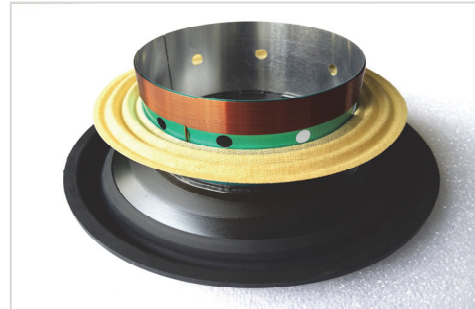
A well designed efficient loudspeaker with a more constant impedance will give vastly improved performance in terms of volume level, special image and more solid controlled bass.

A simple yet effective crossover ensures that the signal transfer from the amplifier has the minimum impact in order that the amplifier can "see" the speaker drive units clearly without excessive distortion.

The ease of driving means that as little as 15 watts will achieve an excellent volume ideal for large orchestral works in a large room.



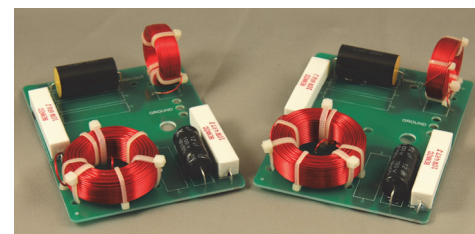
Voice coil assembly



Finished cone assembly



High quality Alloy basket



Simple crossover



Magnet assembly



Thick cabinet Wall. Internal bracing.  
High quality OFC Speaker cable

# MFV 3 MKIII Super Loudspeakers

*Our Best Selling Loudspeaker!*



*New Upgraded Drivers*

MFV 3 MK II Super in real cherry wood veneer

## The MFV3 MK III Super

The MFV 3 MKIII is our most advanced speaker. It incorporates several upgrades from the standard model including advanced bass unit magnets, double magnets for treble unit, heavier cabinet damping. This is a floor standing model capable of filling a large room with beautiful golden sound from 15 watts. It features two of the same high definition, low colouration driver used in the MFV 2, using a very large voice coil with pure copper wire.

Close attention has been paid to the finish, the MFV3 MKIII super comes in either superb walnut or cherry real wood veneers finished in a beautiful semi matt lacquer. Bronze floor spikes are supplied

## Specifications and Features

- Designed for valve amps of 10w to 150w
- Efficiency 92db MFV3 Super. 90db MFV2 88db MFV6
- Nominal impedance 6Ω
- Designed in Leicester UK
- Rare earth NdFeB magnets
- Oversized magnets for extra efficiency
- Low Oxygen copper wire voice coils
- Very low F0 tweeters with copper ring
- Smooth impedance curve
- High overall sensitivity
- Easy to drive load
- Hand made crossovers with audiophile caps
- Audiophile inductors
- Long grain loudspeaker quality MDF
- Real wood veneers
- Choice of Cherry or Walnut veneers
- Shielded magnets for minimum magnetic field
- Supplied with attractive front cover
- Dimensions each:-  
MFV3 MKIII 109H X 21W X 35D (cm) 27KG  
Specification and price subject to change

## NEW MKIII Updates include:

- **Upgraded simplified crossover**
- **Improved efficiency**
- **Heavy duty composite rubber dampening (8KG per speaker)**
- **Cast alloy basket**
- **Heavier density MDF**
- **Improved HF unit design**



Cast alloy basket Heavily braced cabinet Silk dome tweeters



Cone and voicecoil on lightweight alloy former. Rubber damping compound





# MFV3 MkIII

## Our Best Value Floorstander

*Our Best Selling Loudspeaker!*



MFV 3 MKIII in Vinyl finish

The MFV 3 std is based upon the MFV 3 super and offers very similar performance at a sharper price point.

Our formula is deceptively simple!

Take a well designed solid cabinet, add the best possible drive units and “tune” the system as a whole until you arrive at the sonic signature required. Not forgetting to use valve amplifiers for the design and listening tests.

A well designed efficient loudspeaker with a more constant impedance will give vastly improved performance in terms of volume level, special image and more solid controlled bass.

A simple yet effective crossover ensures that the signal transfer from the amplifier has the minimum impact in order that the amplifier can “see” the speaker drive units clearly without excessive distortion.

Icon Audio valve amplifiers have a reputation for excellent performance and build quality, but we are aware that they are not always matched to ideal loudspeakers thereby not optimising the sound.

The ease of driving means that as little as 15 watts will achieve an excellent volume ideal for large orchestral works in a large room.

The MFV 3 MKIII is also an ideal partner to lower powered SE valve, transistor or hybrid amplifiers. 300B 9w SE amplifiers for example have a breathtaking immediacy and dynamics.

### MFV 3 III Specifications and Features

- Slim front profile only 23cm wide (8.25in)
- Small footprint for their size
- Designed for valve amps of around 9w to 90w
- Designed in Leicester UK
- Ported for extended bass performance
- High 92 db sensitivity
- Easy to drive load
- Simple crossover for and easy driving
- Audiophile inductors and poly prop caps
- D’Appolito based design
- Long grain loudspeaker quality MDF for minimum cabinet colouration
- Dark Rosewood vinyl finish
- Supplied complete with spikes
- Shielded magnets for minimum magnetic field
- Supplied with attractive front cover
- 20kg. each W 23cm. H 107cm. D 29cm

Specification subject to change.

#### NEW MKIII Updates include:

- **Upgraded simplified crossover**
- **Improved efficiency**
- **Heavy duty composite rubber dampening (4KG per speaker)**
- **Cast alloy basket**
- **Heavier density MDF**

## LS3/5A Replica

Originally designed for monitoring radio broadcasts in a mobile studio, this very neutral design works equally well in an office or small space as bookshelf speakers. They have a very neutral presentation.

Finished in dark rosewood  
90Wx120Hx65D cm



## MFV 15h



The magnificent TAD 2402 loudspeaker using a 5" horn pressure driver has been out of production for some years. Our faithful replica will fill the largest room with a huge soundstage even with a modestly powered amplifier. The all-important horn assembly is crafted out of plywood as the original to maintain the superb vintage sound. It is complemented with a high quality American pressure unit and 15" bass driver. The HF filter is potted in resin to minimise vibration problems.

65Wx80Hx60H cm inc horn.  
Supplied stand 32cm high  
Shown without supplied fronts



# MFV Stand-mount and Bookshelf

*New Upgraded Drivers*

## The MFV 2 and MFV 6



MFV2 in Walnut

Both these designs will perform well if there are constraints on size or budget. Due to their simple crossovers carefully matched drive units, good efficiency and ease of driving is maintained for low powered amplifiers.

The MFV 2 features a similar bass/mid driver to the MFV3 super, using a large voice coil with pure copper wire. By nature of its smaller design and stand mounting will have very tight bass and very low colouration. Designed for stand mounting with 15 to 150 Watts (depending upon room size and required sound level), it is capable of filling a large room with stunningly transparent music without being fatiguing.

The MFV6 is very similar but having smaller dimensions is ideal for a smaller room. Despite its modest size the characteristics are excellent offering great purity. Designed for shelf or stand mount.



MFV 6 in Cherry

## Specifications and Features

- Designed for valve amps of 9w to 150w
  - Efficiency 92db MFV3 Super. 90db MFV2 88db MFV6
  - Nominal impedance 6Ω
  - Designed in Leicester UK
  - Rare earth NdFeB magnets
  - Oversized magnets for extra efficiency
  - Low Oxygen copper wire voice coils
  - Very low F0 tweeters with copper ring
  - Smooth impedance curve
  - High overall sensitivity
  - Easy to drive load
  - Hand made crossovers with audiophile caps
  - Audiophile inductors
  - Long grain loudspeaker quality MDF
  - Choice of Cherry or Walnut finish
  - Optional stands available complete with spikes
  - Shielded magnets for minimum magnetic field
  - Supplied with attractive front cover
  - Dimensions:-
    - MFV6 31.5H x 18W x 24D (cm)
    - MFV2 40H x 21.5W x 32D (cm)
- Specification and price subject to change  
Stands also available

# Full Range (modified) Speakers

## *Full Range or Multi Way is their a Middle Way?*

**We think so!**

**This is how we do it:**

We think so. In the same way a very simple valve amplifier can be very “musical”, a good full range speaker can also sound inherently “musical” in character. We have designed a wide range efficient drive unit that has excellent sonic properties using both new and old technologies to achieve the sonic footprint we wanted.

Our special 8” drive unit was then matched up to 3 cabinets that get the best overall acoustic sound. This is then further “tweaked” to get the desired response by using a special attenuator, rather than a “crossover”. This way no power is wasted or dumped as heat as resistors, maintaining the high efficiency.

The FRm 3 uses two closely matched units that work in parallel to give effortless bass reproduction that is well suited to a larger room, for large orchestral works, big band jazz rock music etc.

**The result:**

- Very musical sound with seamless transition between bass, mid-range and treble.
- No need for a tweeter
- Sound stage and spaciousness like no other speaker
- No harshness or metallic quality to cause listening fatigue
- Deeper bass than any other design for the size.
- Is efficient enough to work with any low powered Single Ended or Push Pull design amplifier from about 6 watts (depending upon required sound level and room size)
- Very easy load for an amplifier to drive
- Small footprint for the sound/bass output
- 3 designs to choose from depending upon room size and budget.
- Sound can be easily tailored to suit you installation

**Are there any shortcomings?**

All types of loudspeakers have shortcomings, they have the highest distortion of any part of the hi fi chain. Each type of design having its own set of problems. Like other electrostatic and co-axial speakers the FRm range are a little more directional and have a more tightly defined listening area.

**Specifications and Features**

- Icon unique 8” Full range drive unit
- Rare earth high frequency dome
- Custom paper cone for optimum bandwidth
- Long throw coil and roll surround for extended bass
- 96db approx output, 1 watt @1 meter sensitivity
- Designed and tested with low power valve amplifiers
- Suitable for amplifiers 6 to 90 watts, @ 8 ohms
- Audio grade MDF cabinet
- Real wood veneer finish
- Braced cabinet (3 in the floorstanders)
- Standard finishes cherry or walnut
- Internal wire: high purity, low impedance copper
- Plinth and adjustable spikes included (FRm 2/3)
- FRm 3 Size in cm W29, D28, H104, 29kg ea
- FRm 2 Size in cm W29, D28, H104, 21kg ea
- FRm 1 Size in cm W30, D33, H51, 12kg ea

(Specifications subject to change)



*designed by David Shaw*

## What are Full Range “Modified” Speakers?

**Background:**

Since 2002 Icon Audio have been making complete loudspeakers, cabinets and drive units. From the experience gained during this time in conjunction with our successful valve amplifiers has taught us many things including:

1. The best spatial image and sound stage comes from full range or a simple design of speaker, without a complex crossover. Generally efficient design.
2. Most speakers waste a large proportion of the amplifier power in order to “flatten” the frequency response. Especially with smaller speakers where the midrange and treble power is “dumped” (as heat in resistors) to make the bass louder as a proportion.
3. Full range often have hugely powerful magnets in the drive units, this severely restricts the cone movement to as low as +/- 1mm, necessitating the use of a large horn for bass.

FRM3 cabinet. 1” audio quality MDF. 3 internal braces. Audiophile foam damping. Audio Quest heavy duty pure copper wire.





# FRm 2 Super Full Range Speakers

## A New design cabinet for our 8" FRm unit



**Also available in Piano Black**

Our new FRM 2 Super uses a more sophisticated cabinet design which further enhances the bass output and reduces internal resonances. Slightly bigger than the STD model Available in Piano Black or Signal Red with piano black plinth and supplied complete high quality spikes.

This new addition is capable of astonishing realism. Unlike other full range designs it is not excessively forward or "honky" like some horn designs but capable of very high definition sound even at high sound levels. This is due the simplicity of design and lack of crossover not "blurring" or colouring the sound as the speaker drive units have a more direct path to the amplifier.

**Real world measurements in our 5x7m listening room gives an incredible 100db 1w @ 1m. "A" weighted (2.83v 8Ω).**

**Or 102 dB 8w @ 1m "A" (8v 8Ω).**

**Without filter that is 100db for 0.25w 1w**

By comparison our ATC SCM19 gives:83 db for 1w input. (In our listening room using the finale of Vivaldi "Four Seasons, rather than "white noise").

Our Magnificent 8" driver with cast alloy basket, large efficient rare earth magnet and audiophile connectors.



These excellent units are available on their own in matched pairs, from Icon Audio for installation in your own conventional sealed or ported cabinets. Ask for more details.

# FRm 2 and FRm 1 Full Range Speakers



*designed by David Shaw*

FRm 2

The same unique full range speaker is used in all three designs. Each design of cabinet has its own ideal loading for the best bass loading and performance for its size.

The FRm 2 single unit floor standing speaker has similar performance to the FRm 3 double unit speaker. The bass roll off and resonance frequency is only a few Hertz higher which may be no consequence with a low powered amplifier.

The FRm 3 is able to reproduce deep bass and its higher handling power may be suited to larger rooms or where high sound levels are required.



FRm 1 in Walnut finish

The FRm 1 design may be bookshelf or stand mounted. All designs are front ported in order that they may be placed close to a wall if desired. Although like conventional ported enclosures, placement away from the wall is recommended with the floor standing cabinets.

All three models are supplied with "No Loss" attenuators which are pre set to give optimum performance in the average room. These are in a small external box.

However many rooms are far from average, and each amplifier and source (e.g. CD player) will have its own sound. If after the run in period you feel that the sound may benefit from "tailoring" to your own circumstances this is a simple matter to change a couple of components at low cost.

Indeed all three designs may be run without any attenuation. The FRm 3 in particular has many possibilities to "contour" the sound to a personal preference.

Our Magnificent 8" driver with cast alloy basket, large efficient rare earth magnet and audiophile connectors.





## **Some of our thoughts about Valve Amplifiers!**

Icon Audio UK Ltd is a small Leicester company dedicated to the manufacture of valve (AKA tube) amplifiers in the old-fashioned way which we believe has an important place in the amazing world of high fidelity audio.

Audio is a huge topic with pundits all having different points of view on which is the best way to achieve audio nirvana on various topics whether valve is better than solid state? Which type of valve should your amplifier use? And is push pull better than single ended? And so on.

As a valve specialist we take a more relaxed view than most as we make a variety of different designs, believing there is room for most opinions, everybody is different and what suits one person may not suit another. For anyone thinking of changing to a valve amplifier we appreciate that it may be confusing to judge which may be right for you.

Over the years many different designs of valve amplifier have been tried with differing advantages and disadvantages and we try to mirror this in the models that we make. Some designs like our Stereo 40 use tried and tested circuits which will suit most situations. The larger Stereo 60 and MB90 power amplifiers take advantage of new design output valves such as the KT150 to achieve the higher power demanded by some of the modern power-hungry speakers.

But certain 1930s vintage valves are still popular such as the Western Electric 300B and RCA 845, having superb sonics and inner detail. These are in our Stereo 300 and MB845s. You may be surprised to learn that 1930s valves sound just as good as any modern design, the post war developments were more about efficiency and size in order that televisions and radios could be more compact with less heat. The improvements in recording quality, modern components and circuit design are able to release the full potential of vintage valves.

Most valve amplifiers (and solid state) use the "push-pull" method of using two output valves working in opposition to give good power and efficiency. But there is still a case for using one output valve in "single ended" mode, some believing that despite its low power the simplicity of design puts it in a class of its own. The introduction of the new KT150 valve has meant that we can raise the power of single ended designs like the Stereo 30 to near 30 Watts where previously this would have needed a bigger more expensive design such as our MB805.

Pre-amplification is another subject where controversy continues, not only about valves but the way that it is implemented. For example, all our integrated amplifiers do not contain a preamplifier as such merely a volume control and input selection switching. Eliminating Bass, Treble, balance and filters removes another level of colouration simplifying and improving the purity of the audio chain.

Most modern music sources such as CD phono preamps, tuners, DACs etc have an output level similar to a preamp so you could argue the preamp is doing very little therefore a "Passive" preamplifier is a good low cost alternative, as it does not need a built in amplifier or power supply. But others would argue *they prefer* the sound when a preamp is used, so again it is down to personal preference. We make both. Our LA4 preamp gets a glowing review in the Oct 21 edition of Absolute Sound.

Phono preamplifiers is another area where a pure valve circuit gives a warmer more musical rendering of vinyl recordings. We believe that the 1950s RIAA replay standard is better suited to the characteristics of valves. Possibly because of the inherent musical quality of valves combined with relatively simple circuits allow our PS1/PS2/PS3 to really "sing" when connected to a moderately good turntable.

### **Basic reasons that make valves good for audio.**

Valves work in quite a different way to transistors; they have higher gain and are much more tolerant of overloads and as fewer valves are needed the circuit is much simpler.

It follows therefore that a simple device is more predictable than a complicated one, so the performance is more stable.

Solid state amplifiers need a lot of feedback to reduce unpleasant distortion. High feedback reduces stability, so protection circuits are required in case the amplifier becomes unstable, especially at "switch on". Protection circuits can limit "Transients"

Icon Audio designs use very little feedback as valves circuits are very stable and valves have a "soft start" as they warm up, so no protection circuit is needed. Valve distortion although a little higher is of a more benign nature and much less noticeable.

Valves are voltage amplifiers requiring only small value audio capacitors which are easy to make of a high quality. Solid state amplifiers use lots of large value electrolytic capacitors which have a poor reputation for sound quality.

Icon Audio use hand built "point to point" wiring with high quality components. This gives the audio signal an ideal very short path. Solid state designs use more complex multi layered printed circuit boards often using tiny cheaper components, these are hard to service and impossible to upgrade. Our amplifiers are very easy to service.

The output transformer in valve amplifiers forms a multi-purpose buffer between the output stage and loudspeakers, providing good impedance matching and good stability driving "difficult loads" especially electrostatic and other "hard to drive" situations. Solid state "direct coupled" designs will not always work well in these situations as the reactive load coupled with high feedback can cause instability in the output transistors.

The GEC Co published an article which throws further light on this subject.

## GEC Ltd AUDIO VALVES IN COMPETITION WITH SEMICONDUCTORS (1979)

From the late 1960's, valves were largely, though not entirely, superseded by semiconductors in new audio frequency amplifier designs. This was an inevitable consequence of a continuing quest for new techniques. Semiconductors (transistors and integrated circuits) have certain obvious advantages their small size, absence of heaters, low voltage operation and consequent opportunity to dispense with output transformers may appear to make valves obsolete. However, from about 1975 onward, there has been a resurgence of interest in valves; and it seems worthwhile to consider why.

It is said by some "hi-fi" enthusiasts that valve amplifiers sound better, that their distortion is either lower or less noticeable. Carefully conducted listening tests seem to bear this out, although their results are difficult to interpret. If there really are subjective differences to a listener between valve and semi-conductor amplifiers, can they be explained technically?

One thing should be clearly understood: it is possible to design either a valve or a semiconductor amplifier so that over a certain range of output power its distortion will be so small as to be imperceptible to the ear.

Therefore, if two similarly rated well-designed high fidelity amplifiers, one using valves and the other semiconductors, are compared in the same listening conditions, correctly operated, their performances should be indistinguishable and subjectively perfect.

Now, on the basis of measured performance, many modern high fidelity semiconductor amplifiers are actually superior to the older valve amplifiers, which were already good enough for their distortion to be imperceptible; so how can there be subjective differences? It seems that there cannot be any, while the amplifiers are *correctly operated*; and this may be the key to the mystery, for there are two major problems: one is that it is extremely difficult to avoid occasional overdriving of an amplifier, because of the very large dynamic range of the audio signal; and the other is that the loading is not always resistive. It is under these (usually unintentional) wrong conditions that differences may show up.

Let us consider the overdriving first. Owing to continual improvements in recording and playback technique, the possible dynamic range of music signals-from either disc or tape-is greater now than it used to be. As a tentative estimate, it appears that the loudest passages of a modern disc recording may be 40 dB above the average sound

level. Now it may be said that the amplifiers in a high fidelity system ought theoretically to be able to reproduce the loudest of loud bursts without distortion. However, to allow for 40 dB above 50 mw-not a very high listening level-a power capability of 500 W would be required; and further developments may make the figure even greater. One seems to hear a cry of "Where is it all going to end?" Anyway, when setting up an amplifier system one adjusts the gain to give the preferred average sound level. One has no way of knowing in advance whether there is an exceptionally loud passage coming that will overdrive the amplifier. Bursts in excess of 30 dB above average are quite rare.

If we accept, then, that occasional overdriving is virtually inevitable, how will the amplifier behave? We now come to the first possible reasons why valves and semiconductors may "sound different".

Presented with an over-large signal, valves merely clip the peaks, delivering a flat-topped waveform while the overdriving is taking place. The limiting may occur at the grid, as the circuit resistances are commonly such as to prevent it from being driven more than slightly positive, or it may be the result of the coalescence of characteristic curves at low voltages. The ear is surprisingly tolerant of such clipping when it occurs only on these occasional loud bursts.

The semiconductors used in audio amplifiers are virtually always bipolar transistors, either discrete or integrated. They require base current to be applied in order to make collector current flow. Now transistor amplifiers normally incorporate a large amount of negative feedback, and, when such an amplifier limits, some of its stages are driven very hard, so that extra large base currents are drawn. If any capacitors are affected by such current pulses, the result may well be that a brief overdriving is followed by a comparatively long recovery signal, which would be much more noticeable than mere clipping of peaks. Even with dc coupling, there may still be capacitors that can cause such extra signals.

There is a further effect that takes place in the transistor itself, because of the phenomenon of charge storage. A transistor that has been conducting does not switch off immediately when the forward base bias is removed, but continues to take collector current until all the relevant charge carriers that are still in transit have been swept out. The effect is most pronounced in a transistor that has been turned on hard: in fact the larger the base current the



longer will be the turn-off time. In audio transistors that have been overdriven this time may be of the order of hundreds of microseconds, so this effect also can give rise to spurious signals.

When it is realised that even the most critical listener cannot detect peak clipping of occasional short loud bursts by as much as 6 dB, we can understand why it is sometimes said that a 50 W valve amplifier can sound equal to some 200 W transistor amplifiers. A valve amplifier can be quite grossly overdriven with little or no subjective effect on sound quality, whereas most transistor amplifiers probably cannot.

The other kind of unintentional wrong operation we have to consider is incorrect loading. The impedance of a loudspeaker system is by no means constant: a so-called 8Ω system may well present anything from 4 to 16Ω over the audio frequency range, and be highly reactive at some frequencies. It is under reactive load conditions with large signals that another major difference appears between valves and transistors. The combination of simultaneous high voltage drop and high current occurring for brief periods at certain parts of the elliptical load line does not normally affect valves, but in transistors may cause the catastrophic second breakdown effect, in which a permanent short circuit develops—not to be confused with ordinary avalanche breakdown, which is a reversible phenomenon.

The risk of second breakdown may be avoided by using transistors with sufficiently high ratings to be well clear of the effect, if available; but the alternative commonly employed is to incorporate protective circuitry that cuts the signal whenever the output transistors are subjected to a dangerous combination of voltage and current, and this obviously has a very unpleasant effect on the sound.

The purpose of these remarks is not to denigrate transistor amplifiers. But to present a case for valves, and to show that there may be technical reasons for the supposedly subjective effects that have been attributed to transistors. Ways may be found of eliminating or obviating these effects in a transistor amplifier design; but there is a simplicity about valve circuitry which may appeal to many audio engineers, both professional and amateur.

A further point can be made in favour of valves, concerning cooling. Output transistors have to be conduction cooled, preferably by some method that does not heat up the other semiconductors in the circuit. This requires some rather bulky metalwork thermally isolated from the rest of the

chassis. Glass envelope valves, on the other hand, lose most of their heat by a mixture of convection and radiation. With grilles suitably placed to facilitate both of these processes, it is easy to convey the heat away from equipment.

A brief reference may be in order here about what is usually considered to be the main disadvantage of a valve amplifier, the output transformer. It is indeed a heavy and costly item, to be set against the relative simplicity of circuit and various other advantages that have here been attributed to the valve equipment. However, it can enable the amplifier to work into more than one load impedance, whilst a transformerless semiconductor amplifier designed to drive an 8 Ω load would usually deliver only half its normal power into 16 Ω, and might be damaged if operated with 4 Ω. Also, with an output transformer, provided it is correctly loaded, the amplifier input sensitivity without feedback is the same whatever the value of load impedance; and by taking the negative feedback connection from a fixed point on the secondary winding the sensitivity with feedback can be made similarly independent of load impedance: in other words, the number of decibels of feedback and therefore the reduction of distortion, damping factor and so on, are the same whatever the load. So there is something to be said for having an output transformer.

Perhaps enough has now been said to suggest at least that the advantages are not entirely on the side of the semiconductors, and that points can be made in favour of valves, concerning both performance and convenience in use. Semiconductors may produce unwelcome effects on overdriving, so difficult to avoid in practice; and not only the output stage, but also low level stages are involved in these. Valves have a distinct advantage in operating with reactive loads and are easier to cool. Even the need for an output transformer is not quite such an unmitigated drawback as it may sometimes seem. These may be the reasons why a substantial part of the audio market has stayed with valves during the "transistor era", and why there has recently been such a remarkable "valve renaissance".

March 1979. The MOV Valve Company Limited. London  
(Reproduced with thanks)