It's not everyday you find an affordable low feedback full Class A valve amplifier like Puresound's A30. Noel Keywood listens in...

Strange Brew

Running KT88 output valves in push-pull, as Puresound do in their A30 amplifier reviewed here, is known for giving great sound quality - if done properly, that is. Puresound embellish the idea by increasing bias to Class A status and also by adding a valve rectified power supply for improved smoothness. Priced at a reasonable £1,399, can the A30 capture the great sound of a KT88 valve amplifier, making the most of it by the use of Class A and a thermionic power supply?

Having become used to the ever improving styling and finish of today's valve amps. I wasn't overwhelmed by the A30's prosaic appearance, nor the eccentricity of its volume control knob. However, the chassis is strong and its satin black powder coat finish clings to some smooth curves courtesy of a welded and buffed chassis and, Puresound say, cast transformer cases - a very ambitious way of doing things. The A30 looks smart enough in conventional fashion and is easy to use.

Between the output valves lie switches for selecting Triode working, the idea of which is to improve sound quality, at the expense of output power. I have never been a great fan of pentodes or tetrodes strapped as triodes; the sound changes a little - and rarely for the better. And proper triodes like the 300B and 811 are very different beasts to KT88s contrived to mimic them. I am a fan of KT88s though, and have a pair of Quad II-eightys in my lounge at this very moment, that use the valve in output pairs. And my own amplifier uses 300Bs in push-pull to give 28 Watts per channel, so the A30 isn't unfamiliar territory. Puresound say triode working is there for those that like its sound and who have loudspeakers sensitive enough to exploit it.

GEC's renowned KT88 was one of the last high power audio power valves, introduced relatively late in 1956. Having the benefit of over thirty years of accumulated design knowledge behind it, this is a modern valve and a great place to start if you want to hear a decent valve amplifier. It offers a fast, clean sound balanced very much like a modern solid-state amplifier, but without the opaqueness, restrained dynamics and flat soundstaging. It is robust, has a long life and perhaps best of all is relatively cheap, being in current manufacture around the world. A matched pair of Genalex KT88s will set you back around £90 at present and since the life expectancy of a typical output valve is around 3,000 hours of use, the amortised cost isn't great, just 6p per hour with two pairs as used by the A30. So the Puresound will not be expensive to run and, using auto-bias, requires no adjustment. This is a relatively user friendly arrangement.

In front of the KT88s, acting as preamplifier valves are octal based 6SN7 (variant) triodes, now becoming

popular for their easy, open and smooth nature. I've never used them myself in a design but agree that they give better sound quality than later miniatures like the B7G based ECC83, and what have you.

Class A avoids the low level crossover distortion of Class B but doesn't help power output and places both valves and transformers under more strain of increased standing current. Whilst Class A working has the right connotations with good sound quality and, with valves, adds little to heat output, I still can't say that it improves sound quality greatly in my experience. Measurement suggested the raised current of Class A working did the A30 no favours, distortion levels being high and the distortion pattern indicative of transformer core saturation, especially at low frequencies, where the A30 was a poor performer by modern standards. If you want to run a valve amp in Class A it needs to be designed to cope and there was little sign of this with the A30.

Valve power supplies are a different matter. They add to cost and bulk, especially if paired with chokes, but do add to the general smoothness and sophistication of a valve amplifier's sound. It's usually said this is due to the elimination of sharp switching transitions exhibited by solid-state diodes. With their highish internal resistance, in combination with a choke, valve rectifiers help ensure little noise exists on the amplifier's power lines, a situation quite different to the noisy solid-state regulators so beloved by transistor amplifier designers, whose noise is irradicable. By way of contrast, the A30's power supply, which uses one 5Z3P (5U4G) full wave diode per channel, is of a type that is noise free, if of poorer regulation than a solid-state amplifier.

SOUND QUALITY

The talents of the A30 are pretty obvious from the off and it is a striking amplifier to listen to in many ways, irrespective of what you might expect from our measured performance. Its deep soundstaging, creamy smooth and fluid sense of time domain progression, strong dynamic contrasts and delightful lack of hash or noise that make for a beautifully silent backdrop. 'Ghost Train' from the Stranglers 'Dreamtime' album sounded very smooth, with a creamy yet full bodied rendition of Hugh Cornwell's voice hanging in a clear space, centre stage in front of me, his guitar ringing out a lilting theme from a deep, dark background. All I could say about this performance was lovely!

Joan Armatrading's 'Love and Affection' sounded equally captivating. Background rim shots were easily discernible, decaying into a dark, expansive background. There were short, sharp interjections from a gruff male vocalist and suddenly a saxophone pierced out from the mix, centre stage, jumping out into the room. Looking at a digital voltmeter monitoring sound level it read 1.7V maximum, meaning I was using around 0.5 Watts, yet it sounded so much greater. Although the power being used seems miniscule I wasn't listening at an unrepresentative whisper, volume being a healthy 90+dB SPL from our Spendor S8es floorstanders. Use at low power like this goes a long way to explain why I got good results from the A30, in apparent contradiction to our measurements. At low levels, valve amplifiers are both linear and quiet, and this is where they usually sound best. Had I used the A30 with insensitive loudspeakers and really wound volume up then I expect the sound would have become muddled. So the way I used it, I could easily discern its considerable strengths; more demanding usage will likely reveal its weaknesses...

Run at conservative levels however, the A30 is an amplifier of enormous sophistication: it sets up a wonderfully rich picture of a performance that is full of lively fine detail, free from any form of edginess, yet fluid in its progression and both easy and natural to the ear. I found bass surprisingly firm and strong, and well timed too, something of a surprise from our Spendor S8es that tend to sound a bit loose at low frequencies.

All the strengths of the A30 with Rock were equally apparent with Classical. I was aware at times of a degree of warmth, for example around Renee Fleming singing 'Madame Butterfly', but equally this could have been an absence of solid-state glare. Let's say the A30 is an amplifier with a supremely glare-less demeanour; whether this means it is warm, or just natural is arguable, although the Quad II-eightys and my own World Audio Design 300B aren't quite so cuddly, so I suspect

the A30 is a little warm. I caught the same effect listening to Duffy singing 'Warwick Avenue', but bearing in mind our Spendor S8es are not forward compared to modern metal cone loudspeakers I suspect the A30's warmth might be a perfect foil to brighter loudspeakers.

Triode mode sounded slightly softer and more diffuse in leading edge outline and temporal progression; it may suit some but it wasn't to my liking, even though I use 300B triodes. The measured hum was audible at the loudspeaker, but not at the listening position.

The A30 is quite an eye opener in many ways. Its deep smoothness, cavernous sound stage and sense of creamy purity are beguiling, its stage width studded by firm images was amazing, its lively dynamics a testament to what valves do so well. It isn't a head banging power house, but it is dynamically very lively and has a sophisticated presentation that for some - perhaps many - will seem quite extraordinary in its own way.

VERDICT ●●●●£

Prosaic looks disguise great ability. Used with sensitive loudspeakers, this integrated amplifier's sophisticated sound shines through.

PURESOUND A30 £1,399.95
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FOR
- cavernous sound stage
- smooth and dynamic
- cheap to run

AGAINST
- prosaic appearance
- poor at high power
- warm sound

MEASURED PERFORMANCE

The Puresound moves into overload slowly, a sign of low feedback, and gave an unusual set of results. Not being especially linear, the 1% distortion overload threshold (at 1kHz) was reached at a low 6 Watts, but by another once-used criterion, 3% distortion, the amplifier delivered 28 Watts. KT88s in push-pull can manage more than this - around 35W - and at less distortion, so the Puresound wasn't especially powerful. At low frequencies (40Hz) bass distortion reached 3% at 1 Watt and this fact, coupled with a damping factor of just 2 (no feedback?) suggests bass will sound soft and not especially pure. The output transformers slewed early, suggesting core saturation.

Bandwidth was good, stretching from 13Hz up to 30kHz, although at spectrum extremes distortion was very high. At 10kHz, 1 Watt, it measured 0.6% and if this had been second harmonic only it might passed comment. However, slewing introduced third and higher harmonics which will muddle treble by a perceptible degree and again disadvantaged the Puresound.

An input sensitivity of 540mV was on the low side, but good enough for CD and all silver discs, plus a high gain phono stage.

Hum was high, measuring at 2mV at 50Hz and 2mV at 100Hz, making 2.8mV the rms sum. We considered more than 1mV unacceptable in World Audio Design amps., using screening and d.c. heaters on preamp valves to help achieve it.

The Puresound is undistinguished as KT88 valve amplifiers go, in most measured areas of performance. With valve rectifiers and low feedback it will be easy on the ear, however. NK

Power	28 Watts
CD/tuner/aux.	
Frequency response	13Hz-30kHz
Separation	76dB
Noise	-91dB
Distortion	0.6%
Sensitivity	540mV

DISTORTION