

# ROTEL

## RB-993 Power Amplifier



**S**elf-evidently, Rotel's RB-993 has been specifically designed with home theatre applications in mind. More specifically, adding an RB-993 to your existing two-channel amplifier will give you the best of both worlds—two-channel hi-fi with a dedicated two-channel hi-fi amplifier, and five-channel home theatre without the expense (and waste) of springing for a dedicated five-channel home theatre amplifier.

### **The Equipment**

The RB-993 is the three-channel version of Rotel's highly regarded RB-991, which was itself a replacement for the RB-990BX, considered to be one of Rotel's best-ever amplifiers, due to its ability to deliver useful power into

almost any loudspeaker load, with vanishingly low levels of noise and distortion.

It's always difficult to be definitive about these things, but looking at Rotel's RB-991 two-channel power amplifier, it's difficult not to draw the conclusion that the RB-993 is just an RB-991 with an extra channel. There are minor differences, of course, but these pale into insignificance when weighed against the overwhelming similarities. Not that this is bad. Quite the opposite in fact. The RB-991 has proved itself to be such a good two-channel amplifier that it would just be commonsense to stick with a good design. It's also good economics, because it means the RB-993 benefits from the economies of scale already chalked-up by the RB-991.

The heatsinking on the left and right of the front panel gives the RB-993 the appearance of being a state-of-the-art two-channel power amplifier. This looks great, as you can see, but in fact the amplifier's main heatsinks (the ones that do almost all the work) are tucked away inside the amplifier, out of sight. So when you install the RB-993 in your equipment rack, make sure there's plenty of ventilation all around the case. Rotel suggests a minimum clearance of 8–10 centimetres, a figure with which I would agree, but I'd also recommend that you do not obstruct the holes underneath the amplifier or the smaller vents at the top and sides of the amplifier.

The central section of the front panel carries the obligatory power switch (a

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fairly noisy press-button in this case), a red power-on LED and three red fault indicators that illuminate if the internal protection circuitry of any one or more of the three amplifier channels is activated for any reason. Rotel says that unlike most protection circuits inside amplifiers, the one inside the RB-993 is "independent of the audio signal and has no impact on sonic performance. Instead, the protection circuit monitors the temperature of the output devices and shuts down the amplifier if temperatures exceed safe limits."

On the rear panel of the RB-993 you'll find not only standard unbalanced input terminals (gold-plated RCAs), but also a trio of balanced inputs. Balanced inputs are most often found on high-end audio components and professional power amplifiers intended for use in recording studios. Using balanced lines is a great idea, because cables can be much longer than with unbalanced lines, with much less chance of hum and/or noise creeping into the system. However, to take advantage of these balanced inputs, you will need to connect the RB-993 to an A/V controller or pre-amp that has balanced outputs. As with all balanced connectors, the connector is the familiar three-pin 'XLR' type.

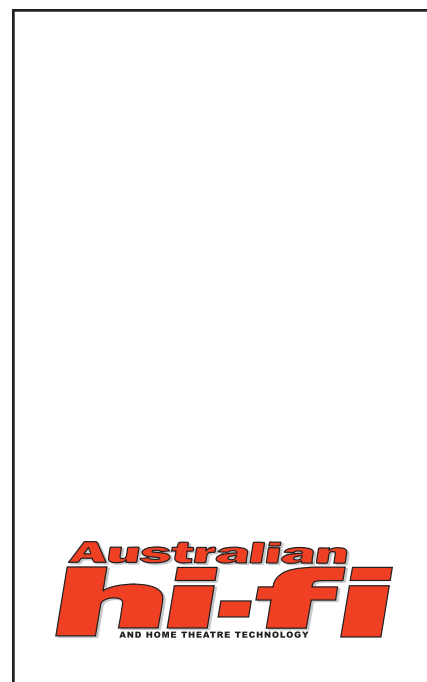
The speaker terminal posts appear to be standard five-way multi-connect types, but the posts don't have 'through' holes, making it difficult to connect stranded wire. The power cable is a two-core type, finished in a two-pin moulded plug and permanently fixed to the amplifier. Our review sample was manufactured in China.

One very unusual feature of the RB-993 is the provision of a neat resettable circuit-breaker in place of the more usual line fuse. This is a great idea. Now that circuit-breakers have become so small as to make this concept practical, it would seem a good idea for all other manufacturers to follow Rotel's lead. After all, if a line fuse blows on a Saturday night, your chances of obtaining another one are relatively slim, whereas if a circuit-breaker trips, it's simply a matter of pushing the reset button to be back in business.

### Specifications

Power output of the RB-993 is rated at 200-watts continuous into 8-ohms and 300-watts continuous into 4-ohms. The signal-to-noise ratio is spec'd at 120-dB and total harmonic distortion (THD) and intermodulation distortion (IMD) both come in at less than 0.03%, according to Rotel. The RB-993's frequency response extends from 10-Hz-100-kHz  $\pm 1$ -dB and damping factor is rated at  $\geq 500$ . Our sample measured 434 x 140 x 400-mm (W x H x D).

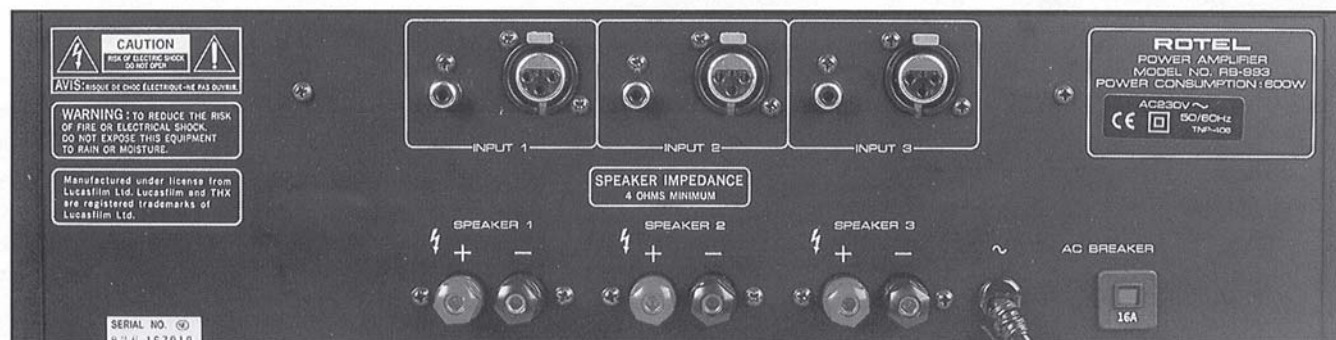
As you can probably see from the photograph accompanying this review the Rotel RB-993 has gained full THX certification from LucasFilm, meaning that it is approved for use in any home THX installation. Unfortunately, due to a change by LucasFilm in THX licensing arrangements that took place while we were conducting this review, the logo on the front panel of our sample was as a result outdated. All new RB-993s will carry the logo 'THX Ultra', but internally the amplifiers will be the same as the



model reviewed here. (THX has created an additional THX category to cater for 'midpriced' components, so now manufacturers will be able to apply for either THX Ultra certification or THX Select certification. The company says products carrying THX Ultra certification are able to be used in rooms with volumes of 84 cubic metres or more, whereas products carrying THX Select certification are for rooms with volumes of 56 cubic metres or less.)

### Listening Sessions

The only dilemma you might face when adding a three-channel amplifier to an existing two-channel amplifier is what amplifier channels to use for which channels of your home theatre





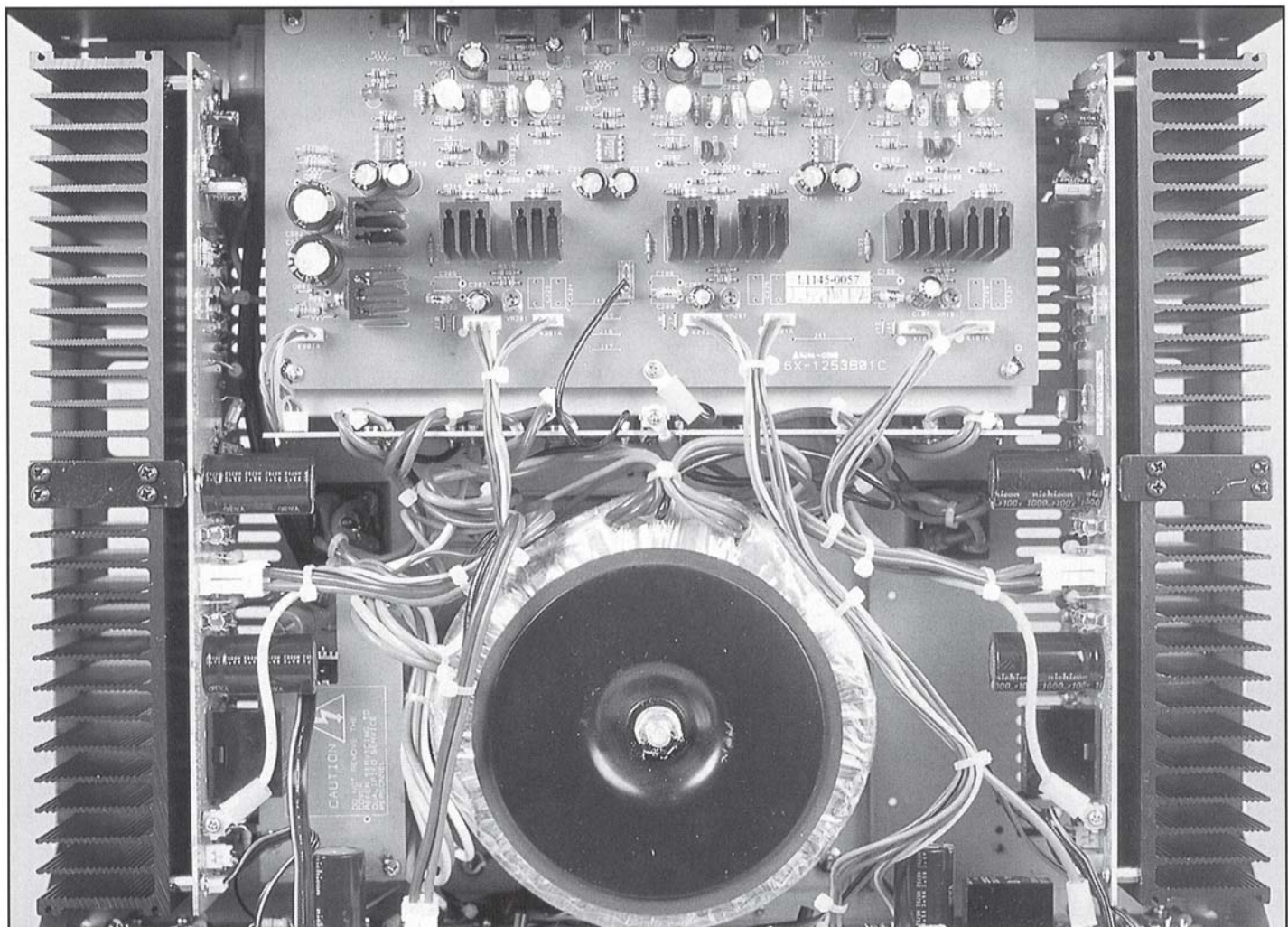
## equipment review

system. If the RB-993 is the bigger and better of the two amplifiers, the choice is obvious—use the three channels of the RB-993 for the three front channels, and the two channels of the other amplifier for the surround channels. However, if your other amplifier is of a similar pedigree, such as an RB-991, Rotel actually suggests you use the RB-993 to drive the centre and surround channels and the RB-991 (or similar) to drive the front left and right channels. The rationale for this seemingly inexplicable advice is, according to Rotel, “in configuring a home theatre system, keep in mind that three or more channels may simultaneously demand transient peak currents which can tax your amplifiers’ power supplies. This is particularly true if a single amplifier is used to drive all

*three front speakers...we recommend using the RB-993 to drive the centre and surround speakers, which tend not to present maximum demands simultaneously.”* Although I can see the sense in this logic, it’s equally true that not only should the centre channel speaker be identical to the front left and right speakers, but the amplifier driving the centre channel should also be identical. Most audiophiles would not dream of using one brand of mono amplifier for the left channel of a hi-fi system and another brand of mono amplifier for the right channel, so why should home theatre be any different? However, my installation advice is a little more complicated than that offered by Rotel. I would be happy to follow Rotel’s suggestions so long as my centre channel

speaker was not identical to my left and right front channel speakers. However, for an identical centre channel, I would recommend using RB-993 to drive all three front channels of your home theatre system no matter what the output power or pedigree of the other two-channel amplifier. Just relegate the two-channel amplifier to the surround channels. For my tests—not having an RB-991—I partnered it with a slightly lower-powered stereo power amplifier to drive the rear channels in the system.

The Rotel RB-993 sounded brilliant. Bass was deep, rich and powerful, even when the RB-993 was processing all the signals off the disc, by driving full-range speakers across all three front channels, without the low-frequencies





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being stripped off and sent to a powered subwoofer. More specifically, the bass was fast and well-paced, and the amplifier easily handled even the most wicked transients in its stride. As for the low-frequency audio action on movies such as *Alien*, the RB-993 was able to reproduce the almost-subaudible deep background rumblings without any intermodulation effects between the background and the vocals/other FX on the soundtrack at all. It was almost as if different amplifiers were being used to handle different portions of the audio spectrum.

Switching to Eric Clapton's *Unplugged* DVD, the guitar sound was crisp and resonant, with fretboard sounds clearly evident and well-detailed. Vocal nuances were easy to interpret, showing good articulation and excellent presence.

At about this stage of the review process it became apparent that the RB-993 is going to be able to process far more information than a Dolby Digital soundtrack is ever going to be able to provide. And, since this was so obviously the case, we switched to a straight hi-fi PCM soundtrack from DVD, to give the RB-993 an even tougher workout. Again, this three-channel amplifier proved to be more than equal to the task, delivering a pure, clean midrange, without the slightest trace of harshness, or any sense of imbalance.

Roger Woodward's *Rustle of Spring* provided the Rotel with some tonal difficulties in the shape of a properly voiced—and beautifully played—grand piano, but again, it was impossible to fault the Rotel's performance. The sound was perfectly balanced right across the range and, when listening 'between' the

notes, the decay into silence was wonderfully natural. On digital 'black' (from a test CD) the Rotel proved deathly quiet, without hum or high-frequency hiss intruding on the silence.

Channel separation was far in excess of what you will ever require for either a stereo soundtrack or a 5.1 discrete (or DTS!) soundtrack, with not the vaguest bit of leakage from one channel into any other.

### Conclusion

Rotel's RB-993 is a beautifully crafted amplifier that brings performance that was once the province of state-of-the-art two-channel power amplifiers to the three-channel home theatre amplifier arena. In all, a very strong, very powerful and very desirable amplifier. **AHF**

*greg borrowman*