



# LOW PRICE, HIGH FIDELITY STEREO AMPLIFIER KIT

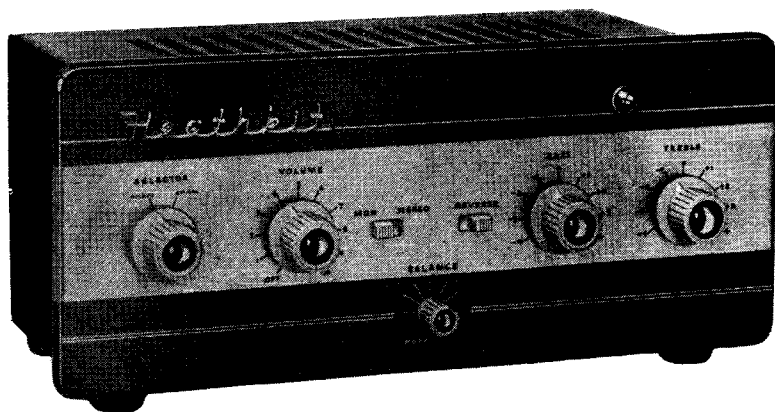
MODEL  
S-33

**MAKES HI-FI STEREO AVAILABLE NOW TO MILLIONS, AT A PRICE THEY CAN AFFORD TO PAY,  
AND IT'S SO EASY AND FASCINATING TO BUILD!**

Millions of music lovers without practical experience of the thrill of hearing the latest Hi-Fi Stereo sound at home, are naturally hesitant about spending a large sum on a relatively expensive stereo outfit to begin with—wondering whether it will be worth the expense. Moreover the vast majority of people at present believe themselves to have more modest requirements and would like to be able to enjoy in their own homes the vivid realism of high-quality stereophonic sound, reproduced at adequate volume for an ordinary living room. An output power of not more than 2 or 3 times that given by the average radio set they regard as more than sufficient.

A high proportion of these would-be Stereo 'fans' cannot afford the cost of the more elaborate high-power equipment, and want something less ambitious but still giving genuine Hi-Fi Stereo reproduction at moderate power output and at a price which they feel they can afford to pay.

The Heathkit Model S-33 Stereo Amplifier is unquestionably the ideal solution to this widespread demand for a really popularly-priced, high-quality instrument to serve as an introduction to Stereo for the average home.



**MODEL S-33**  
**6 WATT HI-FI STEREO AMPLIFIER**  
complete with valves.  
Available as kit or assembled.

The Heathkit Model S-33 is an extremely attractive self-contained Stereo amplifier, designed to give really good quality from all types of adequate Stereo or Monaural inputs.

It will be found ideal for average home conditions and when used for stereophonic sound in conjunction with suitable speakers—such as the Heathkit SSU-1 Hi-Fi Speaker System—the realism, depth and general excellence of reproduction will amaze and delight all who hear it. You will then agree that the complete kit of parts for this versatile Hi-Fi amplifier represents astonishing value.

The S-33 Stereo-Monaural amplifying system comprises two high-quality amplifiers and two ganged control units, compactly arranged on one chassis so as to be housed in an attractively styled single case. It will fulfill the performance requirements of most music lovers at the lowest possible cost. It can easily be fitted in a cabinet, or placed on a bookshelf or room-divider and the handsome two-tone grey control panel, golden relief and matching knobs will harmonise with any type of wood and be found suitable for use with almost any contemporary or traditional furnishing scheme.

The amplifiers are adequate for most requirements. They will operate direct from a suitable radio tuner, crystal or ceramic pick-up, high-output magnetic pick-up, or tape recorder. Two entirely separate identical amplifiers and control units are used. Each complete channel gives 3 watts Hi-Fi output of Stereophonic sound, or, at the touch of a switch the two channels are combined to give the full 6 Watts output for Monaural recordings, or radio. The control units feature ganged controls for ease of operation.

The use of high-quality output transformers having sectionalised windings permits the incorporation of a considerable amount of negative feedback without sacrificing stability.

The power output is maintained to well below 50 c/s and a built-in 'rumble' filter minimises the effect of certain gramophone motor noises.

A flange at the rear of the chassis permits easy fixing if the S-33 is mounted in a cabinet and the dimensions of the front panel will be found to overlap satisfactorily the cut-out for the insertion of the amplifier case, if fitted from the front of the cabinet.

This fine stereo amplifier will give a new lease of life to your old favourite 78 or LP gramophone records played monaurally. You can do this with one channel using only one speaker but results are even better using both channels and two speakers. The results from good Stereo records, tape or radio are so wonderfully life-like that you will be more than glad that you bought this grand Heathkit and assembled it yourself,—saving many pounds as a result and enjoying yourself at the same time.

**CONVERSION TO STEREO RADIO-GRAM:** Being a completely self-contained Hi-Fi Stereo Audio System in one compact unit, complete with its own power supply and output transformers, the Heathkit S-33 is the obvious choice for a means of converting the conventional (Monaural) radio-gram to a Stereo radio-gram. The conversion is simple and relatively inexpensive and if the radio portion of the set is good enough you will then have a splendid Hi-Fi instrument. It will enable you and your friends to enjoy to the full the immensely improved quality of reproduction now available in recorded form from stereophonic gramophone records and tape recorders, plus the wonders of the stereophonic programmes being regularly broadcast by the B.B.C. in the U.K., and other similar organisations overseas.

Note: A second radio signal source is at present required but will not be necessary if and when a single channel stereo broadcasting system is generally adopted. A simple adapter will then be needed. We do not advise the conversion of conventional AC/DC ("Universal") Radiograms and Record Players to Stereo.

## SPECIFICATIONS

<b>Output</b> ... ..	3 watts per channel (6 watts total).
<b>Distortion</b> ... ..	0.3% at 2.5 w/channel.
<b>Frequency Response</b> ... ..	30—20,000 c/s $\pm$ 2dB.
<b>Sensitivity</b> ... ..	200 mV.
<b>Negative Feedback</b> ... ..	20dB.
<b>Stability Factor</b> ... ..	better than 10dB.
<b>Channel Separation</b> ... ..	better than 45dB.
<b>Hum and Noise</b> ... ..	better than —60dB (ref. 3 watts)
<b>Inputs</b> ... ..	Gram and Radio.
<b>Output Impedance</b> ... ..	3 ohm and 15 ohm.
<b>Controls</b> ... ..	Radio and Gram selector switch. Stereo—Monaural slide switch. Channel Reverse slide switch. Balance Control giving $\pm$ 5dB variation. Bass Control } see graph overleaf. Treble Control } Volume Control and on—off switch. (Note. All controls are accurately ganged).
<b>Valves</b> ... ..	2—ECF80, 2—EL84, 1—EZ81.
<b>Power Supply</b> ... ..	110—125 and 200—250 (tapped) V.A.C., 40—60 c/s, 100 watts. Both mains input leads are fused.
<b>Finish</b> ... ..	Cadmium plated chassis. Case stove- enamelled in 2-tone grey, with motif and matching knobs.
<b>Dimensions</b> ... ..	11" $\times$ 6 $\frac{1}{2}$ " $\times$ 4 $\frac{1}{2}$ " high; panel 11 $\frac{1}{2}$ " $\times$ 5 $\frac{1}{2}$ ".
<b>Shipping Weight</b> ... ..	14 $\frac{1}{2}$ lb.

## FEATURES

**Inputs for Stereo or Monaural,** Gram, Radio—or Tape Recorder. Suitable for crystal, ceramic and high-output magnetic pick-ups. Input impedance 1M $\Omega$ .

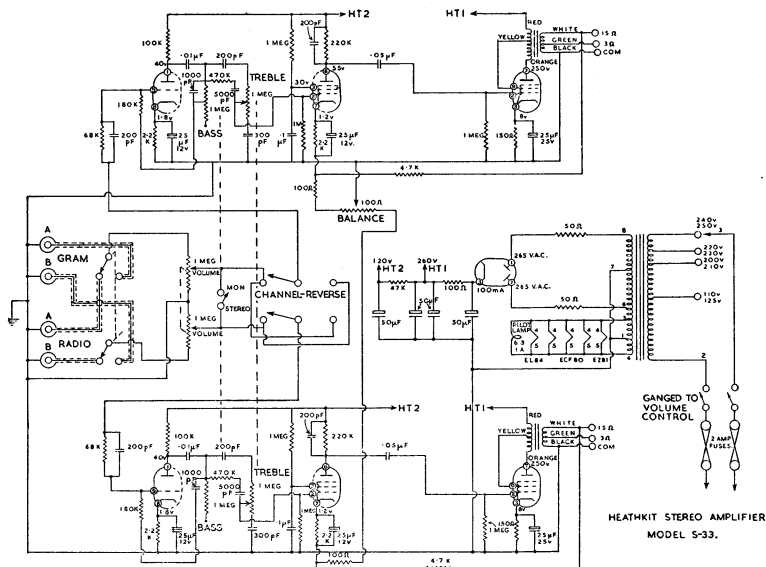
**High-Grade Output Transformers** (sectionalised windings).

**Built-in 'Rumble' filter.**

**Printed-circuit:** A gold-plated printed-circuit board ensures consistent performance and greatly simplifies assembly.

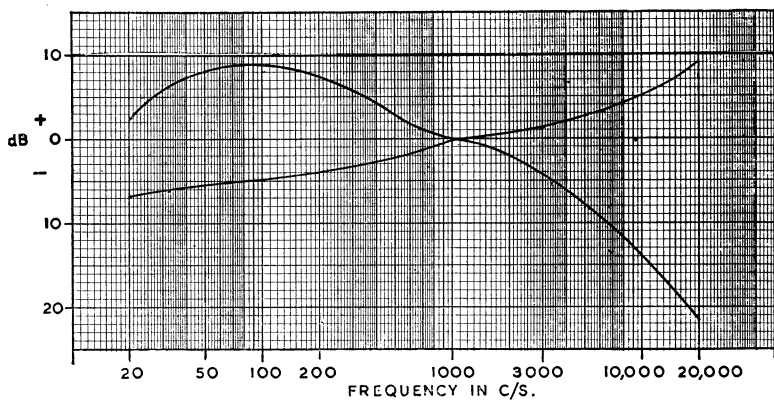
**Circuit details.** The first valve is a triode-pentode (ECF80), with the triode portion forming the tone control stage, using a negative feedback loop. The high-pass or 'rumble' filter is also incorporated in this stage which is followed by the pentode section and then the output stage. This uses an EL84 in an Ultra-linear circuit. Negative feedback is applied from the output transformer to the cathode of the ECF80 with the appropriate phase correction. The balance control is in this part of the circuit and controls the gain of both amplifiers simultaneously. In other words, adjustment of this control increases the gain of one amplifier at the same time as it decreases the gain of the other. The rectifier is a heavy duty type (EZ81). The unusually generous smoothing capacity of no less than 200  $\mu$ F contributes to the very low hum level.

**THERE'S NO BETTER BUY,—  
THAN HEATHKIT HI-FI!**

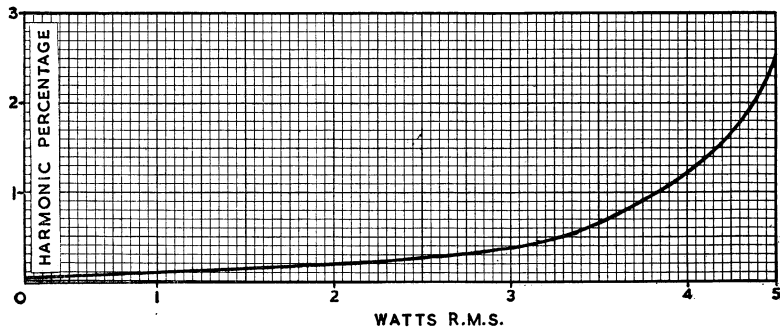


**HEATHKIT MODEL S-33 CIRCUIT DIAGRAM**

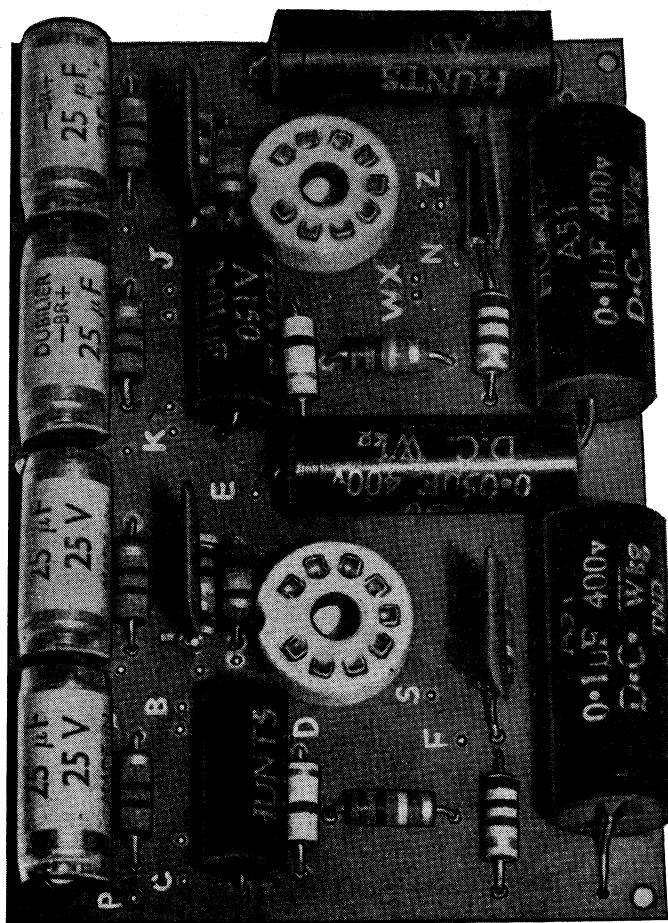
(In accordance with our policy of keeping abreast with technical development, we reserve the right to modify this circuit wherever desirable.)



**HEATHKIT MODEL S-33 TONE CONTROL CURVE**

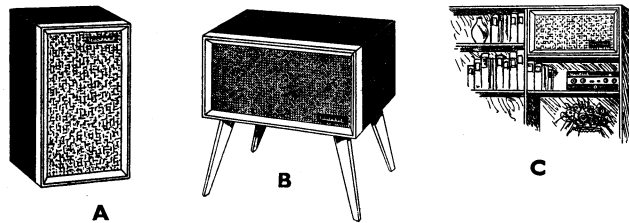


**HEATHKIT MODEL S-33 DISTORTION CURVE**



**S-33 PRINTED-CIRCUIT BOARD WITH COMPONENTS MOUNTED.**

Millions of Heathkit instruments are in regular use all over the world. A high proportion of these have been successfully built by absolute novices. This is convincing proof of our claim that Heathkit equipment is the cheapest to buy, exceptionally good value for money, the easiest to assemble and a lasting pleasure to use. No special equipment or knowledge is necessary. The 32 page Heathkit Instruction Manual tells you in simple language exactly where every part goes and when and how to fix it. Numerous illustrations and large pictorials show each important stage of the assembly and the components so that you virtually can't go wrong.



**THE HEATHKIT MODEL SSU-1 HI-FI SPEAKER SYSTEM RECOMMENDED FOR USE WITH THE S-33**

- A :** As a corner speaker (space required, 11½" × 11½").
- C :** As a bookcase speaker (23" long × 11½" deep × 11½" high).
- B :** As a pedestal speaker (The legs are 15" long).

Frequency range 40 to 16,000 c/s. Ductive Reflex Cabinet, drilled, machined and sanded. Left "in the white" for final finish to choice. Balance control. Acoustic curtain. 8" high-flux bass speaker and 4" wide-diffusion treble speaker. Both units have hyperbolic cones and will handle 25 Watts programme material. Catalogue of the full Heathkit range free from -

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**THE LARGEST-SELLING ELECTRONIC KITS IN THE WORLD**