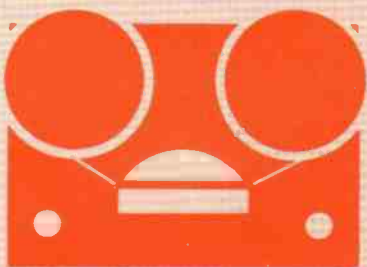




Heathkit

THE WORLD-FAMOUS ELECTRONIC KITS ANYONE CAN BUILD

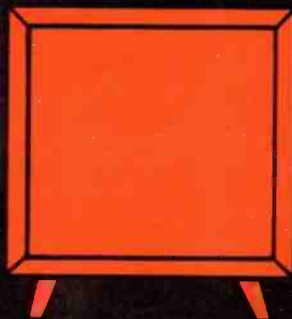


Heathkit models by

DAYSTROM LTD
GLOUCESTER ENGLAND

A subsidiary of the Weston Instruments Group, Manufacturers of the

FINEST AND LARGEST-SELLING ELECTRONIC KITS IN THE WORLD



A Personal Message from DAYSTROM LTD., GLOUCESTER

To our many Friends,

We are particularly proud of the educative value of our kit-sets, and the part that they can play in giving useful experience and knowledge, in a pleasant and profitable manner, to young and old alike who wish to know more about some of the wonders of the modern world. One customer, for example, who was well over 70 years old, told us that he had built 16 of our kit-sets, which were all in operation. At the other end of the scale, we recently received a letter which gave us similar pride and, for your interest, we have received permission to reprint it in full as follows:

*St. John's College,
Kintbury,
Newbury, Berks.
July 2nd, 1964*

*The Managing Director,
Daystrom Ltd.,
Gloucester.*

Dear Sir,

Recently we acquired one of your Valve Voltmeter kits, and I now wish to convey to you our appreciation of the excellence of this instrument and of the instructional booklet that accompanies this equipment.

As an out-of-class Project I requested one of our sixth form pupils to assemble the Voltmeter. Even though he had never before seriously used a soldering iron he completed the construction and calibration very successfully. I can truthfully say that I consider the booklet of instructions a masterpiece of clarity and precision. Not only is the instrument extremely accurate but its external appearance is most attractive.

I consider the type of service you provide not only unique but really deserves much more publicity in Grammar Schools, for not only has this particular student really enjoyed the work involved but his practical education has benefited immensely.

*Yours sincerely,
B. Bernard, Physics Dept.*

Whether you wish to have the satisfaction of building your own model, or just want to make the most of the money you have available for the equipment you wish to own, we feel sure that you will find within this catalogue a model to suit you.

Remember, full specification sheets for any model are available on request and our Customer Service and Consultation Departments are always ready to be of assistance to you before and/or after purchase.

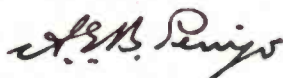
We would also thank you for the splendid response to our Heathkit equipment Photographic Competition. In a very close finish, the following were adjudged the winners:—

First Prize £50 C. GILBEY, Esq.,
39 Foxes Way,
Warwick.

Second Prize £20 W. R. PALMER, Esq.,
16 The Crest,
Widley,
Portsmouth.

These gentlemen have been informed accordingly, and we offer them our congratulations.

Yours cordially,



A. E. B. PERRIGO (Managing Director).

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Money-Back Guarantee

Daystrom Limited unconditionally guarantees that each Heathkit product assembled in accordance with our easy-to-understand instruction manual must meet our published specifications for performance or the purchase price will be cheerfully refunded.

There is a kit in this catalogue to suit you which you can build without previous experience, help or special equipment.

Millions of **HEATHKIT** models are in use throughout the world because:-

★ They are so easy to build . . . even for an absolute beginner.

★ The manual of instructions is fool-proof . . . due to its many pages of well illustrated, simple, 'step-by-step' procedure.

★ Everyone admires the finished job . . . and you will be proud of the professional appearance and performance of your **HEATHKIT** model.

★ They save you money!

**Many more
American Heathkit models**

See page 20 for selection

NEW MODELS

TELEVISION ALIGNMENT GENERATOR KIT Model HFW-I

3.5 to 220 Mc/s on fundamentals.
Unique non-mechanical sweep oscillator system. Built in fixed and variable marker generators. (5 Mc/s crystal supplied.)

KIT £30 . 15 . 0 Assembled £44 . 10 . 0

See page 13 for further details.



R.P.M. INDICATOR

This Electronic Rev. Counter is a must for the motoring enthusiast. Easy to instal. Suitable for 4 or 6 cylinders, pos. or neg. earth. 12 volts. Price complete with connecting leads and mounting bracket.



£8 . 19 . 0 (available assembled only)
further details on request.

G3HSC Rhythm method of Morse Tuition (incl. L.P. record) is now available through us. Beginners course **£2 . 10 . 0** incl. postage U.K. Advanced course also available, please send for details

To be released shortly . . .

220 Mc/s. SIGNAL GENERATOR, Model HFG-I

Suitable for most laboratory service applications. Range 100 kc/s. to 220 Mc/s. on fundamentals in 8 ranges. Modern styling.

Delivery date to be announced.

ASSEMBLED AND TESTED HEATHKIT MODELS

For your convenience, we list below the prices of Heathkit models assembled and tested at our Gloucester plant. Items bearing a relatively high rate of purchase tax are not included since we feel that, in your interest, we should not carry out the assembly but, on your behalf, arrange for it to be executed by a third party and invoiced separately. Quotations will gladly be obtained and sent on request.

Model	Price		Model	Price		Model	Price							
	Kit	Assembled		Kit	Assembled		Kit	Assembled						
AG-9U	£22	10 0	£30	10 0	MA-12	£11	18 0	£15	18 0	S-33H	£15	17 6	£21	7 6
AO-1U	£14	15 0	£21	5 0	MA-50	£19	18 0	£27	18 0	S-99	£27	19 6	£37	19 6
AV-3U	£16	10 0	£22	18 0	MGP-I	£5	2 6	£6	12 6	SB-10U	£39	5 0	£54	18 0
AW-1U	£17	5 0	£23	18 0	MM-1U	£12	18 0	£18	11 6	TA-IM	£19	18 0	£28	18 0
B-1U	£4	15 6	£5	8 6	MSP-IM	£36	12 6	£43	12 6	TA-IS	£25	10 0	£35	18 0
C-3U	£10	10 0	£16	0 0	MSP-IW	£29	17 6	£36	17 6	TTA-I	£7	9 6	£11	15 0
CL-1	£4	12 0	£6	2 0	OS-1	£21	18 0	£29	8 0	UMC-I	£8	12 6	£13	12 6
CM-1U	£15	15 0	£21	14 0	PA-1	£54	15 0	£74	0 0	USC-I	£19	10 0	£26	10 0
DC-1	£7	5 0	£10	8 0	QPM-1	£8	10 0	£12	14 0	USP-I	£7	7 6	£10	9 6
DR-1U	£10	8 0	£14	8 0	RA-1	£39	6 6	£52	10 0	V-7A	£13	18 6	£19	18 6
DX-40U	£33	19 0	£45	8 0	RF-1U	£13	8 0	£19	18 0	VF-1U	£10	17 6	£15	19 6
DX-100U	£79	10 0	£104	15 0	RG-1	£39	16 0	£53	0 0	XI-1U	£10	19 6	£16	19 6
GC-1U	£37	17 6	£45	17 6	S-3U	£12	18 0	£18	10 0	XIR-1U	£4	7 6	£5	16 0
GD-1U	£10	19 6	£13	19 6	S-33	£13	7 6	£18	18 0	309-CU	£1	13 6	£2	2 0
HFG-1	£30	6 6	£34	17 6			The 'Chepstow'	Kit	£11	12 6	<i>assembled in the white. (Quotations for wood finishes on request).</i>		£16	17 6
HFW-1	£30	15 0	£44	10 0			The 'Cotswold' & MFS.	..	£23	4 0			£30	15 0
IM-13U	£18	18 0	£26	18 0			The 'Gloucester' Mk. I	..	£17	3 6			£22	8 6
IO-12U	£32	12 6	£41	10 0			The 'Gloucester' Mk. II	..	£18	10 0			£23	15 0
MA-5	£10	19 6	£15	10 0			The 'Malvern'	..	£18	1 0			£23	6 0

The Heathkit Concept

. . . Brings you high grade radios, transistor portables, record-players, electronic instruments, hi-fi equipment, etc., at very economical prices.

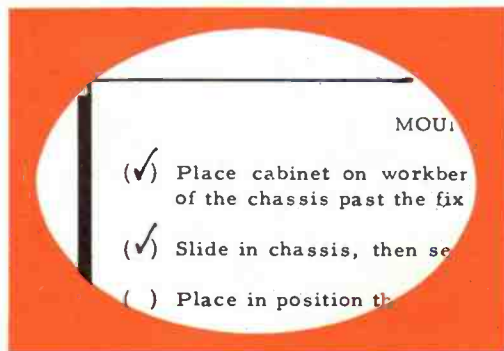
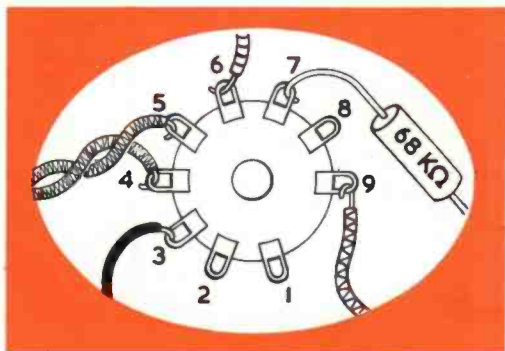
You make the models yourself from complete kits of parts; everything you need is there. You are sure of success and the result will be a professional job.

You are guided step by step by the World's leading experts in the design of such kits. Building Heathkit Models is a rewarding and satisfying experience known to millions throughout the World. To many it has become a fascinating hobby; to others it has shown the way to a rewarding career.

To those responsible for Service or Test of electrical equipment the Heathkit concept means test instruments of highest performance unobtainable elsewhere at comparable prices. Heathkit models are widely used in laboratories, where they perform many essential functions releasing expensive equipment for specialised work.

Most Heathkit models are sent by return of post. (If preferred any model will be supplied assembled, aligned and tested still at a price well below that of similar factory-made equipment.) You may commence your first Heathkit model with every confidence. You need no particular knowledge or skill; every step is carefully explained and illustrated. If in any doubt or difficulty our Technical Assistance Department is always at your service.

Heathkit models have the benefit of the vast experience of the International Daystrom Engineering Group. Every model is guaranteed.



You will get plenty of these clear and simple pictorial diagrams in your Heathkit construction manual to show where each wire and part is to be placed. Everything you do is spelt out in pictures so you can't go wrong. That's what makes it so much fun!

Read the step . . . perform the operation . . . and check it off—it is just that simple. These plainly-worded, easy-to-follow steps are combined with pictorial diagrams to take you through every phase of assembly. Let our experience be your teacher!

HIGH FIDELITY REPRODUCTION

More and more people are coming to appreciate the endless joy and satisfaction that is available to them through the medium of high fidelity reproduction in the home; Music, whether it be light, classical or popular, assumes a new realism, and, with stereophonic reproduction, a new dimension.

The two available forms of reproduction are today referred to as **mono** and **stereo**. In the former, the sound is gathered together and conveyed as a **whole** to the listener. (Radio and TV sound is mono; disc and tape recordings may be either mono or stereo). With stereo, the sound is gathered from **two distinct sources**, usually one each side of the orchestra or artiste and the two channels are kept apart right through to two reproducing loudspeakers, which are located each side of the listener. The effect is analogous to that of three-D vision—the sound assuming a dimension of depth. **Stereo recordings are available on records and tape.**

With Heathkit hi-fi models, designed by leading British hi-fi specialists, you can have top professional equipment at prices you can afford.

Your home hi-fi may commence with a simple system giving striking realism from high quality BBC "Frequency Modulated" (FM) broadcasts receivable with a special "FM-Tuner". You may add a record player, tape recorder, etc. later and if you plan according to the simple instructions on p. 11, you may progress towards a comprehensive stereo system without heavy initial outlay.

The Hi-fi Section of this catalogue contains details of the comprehensive range of Heathkit hi-fi equipment and helps you to plan your purchases.

— Value — Appearance — Versatility

RADIO:- A Heathkit model for every purpose

FOR HOME OR OUT-OF-DOORS

We recommend the following transistor portable models:- UXR-1 and UXR-2 cover the long and medium wavebands and are ideal for use in the home or in a car.

FOR SHORT-WAVE LISTENING

Model RSW-1 covers the medium wave and three short wavebands including the 'Trawler' band. Model RG-1 is a communications type receiver for world wide reception on six bands. Model GC-1U is ideal for mobile use. Model RA-1 is a high sensitivity, amateur bands only, receiver.

GENERAL COVERAGE RECEIVER KIT, Model RG-1

This is an inexpensive communications type receiver specially designed for the discriminating short wave listener and has many refinements found only in receivers costing very much more. Frequency coverage 32 Mc/s to 1.7 Mc/s in 5 ranges, plus the MW Band of 1,500 kc/s to 600 kc/s.

Modern design techniques and special frame grid valves secure a high standard of performance. The image rejection and signal-to-noise ratio are exceptionally good. Each of the six bands is separately calibrated on a large easy-to-read slide rule dial. A two-speed drive allows a small section to be tuned at a very slow rate. The coil pack and IFT's are pre-assembled and aligned ready for use.

SPECIAL FEATURES

- * Half-lattice crystal filter.
- * Variable noise limiter.
- * Voltage stabilised oscillators.
- * Assembled and pre-aligned 'tuning heart'

OPTIONAL EXTRAS

Crystal Calibrator, Model CL-1M £4. 12. 0
Matching Loudspeaker Cabinet, Model SG-4 £1. 9. 6
7" x 4" Loudspeaker Pt. No. 401-501 £1. 4. 5 incl. P.T.

HI-FI RADIO TUNERS

For noise free reception of BBC VHF stations. FM TUNER Model FM-4U covers BBC FM stations only. AM/FM TUNER Model AFM-1 covers BBC FM and the long, medium and short wavebands.

BEGINNERS' COURSE IN MORSE CODE

Extend your listening interest by learning the Morse code in the shortest possible time by using the well known G3HSC Rhythm Beginners' course with tutor record.

Rhythm beginners' course incl. record £2. 10. 0
Further information available on request.



MODEL RG-1
£39. 16. 0
Assembled £53. 0. 0

'OXFORD' DE-LUXE TRANSISTOR PORTABLE RECEIVER KIT

Model UXR-2

Build this superb transistor radio yourself! At amazingly low cost, you can have a luxury long- and medium-waveband receiver. Success is assured. You assemble this model under the guidance of the world's foremost kit designers. This is the ideal portable, domestic or personal portable receiver, which can also be used inside the car.

Latest printed circuit techniques have been used in the design and this portable has many star features including:—

- * Medium and Long-Wave coverage.
- * Beautiful solid leather case and handle.
- * Station selection by easy-to-read scale.
- * Special extra large loudspeaker.
- * Superb electronic design backed by extensive British and American research.
- * Comprehensive, easy-to-follow, fully-illustrated Instruction Manual.
- * Internal 9-volt battery (not supplied) lasts for months.
- * Push-buttons Long/Medium-Wave and tone.
- * 10 semi-conductors (seven transistors plus 3 diodes).
- * Sockets for personal earphone, tape recorder, car aerial.

ACCESSORIES.

Plug Tape/Record/Earpiece 2s. 0d. Crystal Earpiece with plug 10s. 6d. Plug (Car aerial) 2s. 3d



MODEL UXR-2
£14. 18. 0
incl. P.T.

THE 'MOHICAN' GENERAL COVERAGE RECEIVER KIT, Model GC-1U

This fully transistorised receiver, which includes 4 piezo-electric transfilters, is in the forefront of receiver design. It is an excellent portable or general purpose receiver for both the Amateur and the short-wave listener. To overcome the problems of alignment, etc., the R.F. 'front-end' is supplied as a pre-assembled and pre-aligned unit.

Designed for outstanding performance, its many features include a 10 transistor circuit, printed circuit board, telescopic whip antenna, tuning meter, and a large slide-rule dial giving a total of approximately 70 inches.

Housed in a strong steel cabinet in stove-enamelled green and powered by two 6 volt dry batteries (not supplied) mounted internally, it gives frequency coverage from 580 Kc/s to 30 Mc/s in five bands, thus enabling excellent coverage. Electrical bandspread on five additional bands covers the amateur frequencies from 80 to 10 metres—each band having approx. 8 in. scale length. B.F.O. tuning and Zener diode stabiliser. Size 6½" x 12" x 10". (Please ask for Specification leaflet)

BATTERY ELIMINATOR/POWER SUPPLY UNIT KIT. Model UBE-1

Of the same size as a standard PP9 battery, this convenient eliminator facilitates use of mains supply to transistorised receivers when used in the house. Gives 9v or 12v output, and is thus suitable for intercoms. and models GC-1U, OXFORD, RSW-1, UXR-1 etc.



MODEL GC-1U
£37. 17. 6

... you get all in Heathkit models

DUAL-WAVE TRANSISTORISED PERSONAL PORTABLE RECEIVER KIT, Model UXR-1

The UXR-1 is superbly styled in a leather case with large, easy-to-tune dial with golden relief and acknowledged to be one of the very finest portable radios ever produced. Covers both Long and Medium wave.

Its striking appearance and excellent performance are universally admired and a source of pride to the owner—more especially if he or she has built it.

Simplest possible construction, thanks partly to the printed circuit board. You cannot go wrong because of the copiously illustrated Heathkit step-by-step manual. Written by the world's most experienced designers of kit-sets.

The UXR-1 gets lots of stations and performs very well in a car. It is completely self contained measuring $9\frac{1}{2}'' \times 7\frac{1}{4}'' \times 3\frac{3}{8}''$ and its internal battery lasts 6 months with average use. Specifications include, 6 transistors, ferrite aerial, socket for car aerial, and extra-size elliptical speaker.

HEATHKIT
MODEL UXR-1
£12. 11. 0
incl. P.T.



FOUR-WAVE, SHORT AND MEDIUM, TRANSISTORISED RECEIVER KIT, Model RSW-1

The RSW-1 is a highly sensitive transistor receiver specially designed for short and medium wave reception. It is housed in an elegant leather case and has retractable whip aerial. An internal ferrite aerial is provided for medium wave and the car aerial socket makes it suitable for use in a car.

Like the UXR-1 it combines all the economy, long life and consistent performance of transistor sets and has the additional advantage of receiving international broadcasts from all over the world.

This up-to-the-minute set uses 7 transistors of the very latest type and three diodes.

Wave band range : 200-550 metres (Medium)
90-200 metres (Trawler)
20-40 metres (Short wave)
11-16 metres (Short wave)

HEATHKIT
MODEL RSW-1
£19. 17. 6
incl. P.T.



F.M. TUNER KIT, Models FMT-4U and FMA-4U combined in FMA-4U Cabinet

The latest F.M. broadcast programmes are the most inexpensive form of High Fidelity entertainment yet available. This well-designed model will enable you to join the thousands of music lovers enjoying magnificent F.M. transmissions with their wonderfully silent background.

NOTABLE FEATURES. Flywheel tuning. Attractive plastic front panel in two-tone grey with golden relief. Thermometer-type Visual Tuning Indicator. Three I.F. stages with pre-aligned transformers. Negative Feedback for stability.

The complete R.F. Unit is despatched wired, pre-aligned and tested. Provision is made for stereophonic F.M. radio transmissions. Printed circuit for I.F. amplifiers and Ratio Detector. Built-in power supply. 7 valves. Wide-band ratio detector. Range 88-108 Mc/s.

I.F. Rejection, greater than 50 dB. Image Rejection greater than 32 dB. A.M. Suppression, 30 dB minimum. Local Oscillator, Drift less than ± 25 Kc/s. Backlash (mechanical) does not exceed variation of 25 Kc/s. Quieting Sensitivity 2.5 microvolts for 20 dB quieting; 25 microvolts for 45 dB quieting. Harmonic Distortion, less than 1%. Frequency Response ± 2 dB, 20-20,000 c/s. Voltage input 100/130v., 200/250 v.(5 tappings), 40-60 c/s. Cabinet dimensions: $11\frac{1}{4}''$ wide x $5\frac{1}{2}''$ high x $7''$ deep.

The F.M. Tuner consists of two units which, for your convenience are sold separately.

Tuning Unit (10.7 Mc/s I.F.) Model FMT-4U £2. 15. 0 incl. P.T. I.F. Amplifier Unit Model FMA-4U £13. 3. 0 (complete with attractively styled metal cabinet, power supply and valves). N.B.—An F.M. Tuner requires an Audio Amplifier.

HEATHKIT
FM-TUNER
£15. 18. 0
Total Price



A.M./F.M. TUNER KIT, Models AFM-TI and AFM/AI combined in AFM-1 cabinet

This luxury self-powered A.M./F.M. Tuner covers long, medium and short waves in addition to the VHF F.M. band with its advantages of noise-free high quality reception. The basic circuit of the F.M. section is very similar to that of the FM-4U (see F.M. Tuner, page 6) plus the convenience of a low impedance cathode follower output stage. Other features include a two-position selectivity switch for the best possible A.M. reception, flywheel tuning, a pre-set output control and printed circuit boards for easy construction. The attractive front panel is finished in two-tone grey with golden surround.

Range .. 88-108 Mc/s (FM)
16-50 metres
200-550 metres
900-2,000 metres

Voltage input .. 100/130v., 200-250v.
(5 tappings) 40-60 c/s

Cabinet dimensions .. $13\frac{1}{4}'' \times 4\frac{1}{4}'' \times 12''$ deep.

(N.B.—A Tuner requires an Audio Amplifier)

The complete tuner is provided in the form of two units which, for your convenience are sold separately. They are as follows: 'Tuning Heart' Model AFM-TI £4. 13. 6 incl. P.T., I.F. Amplifier and power unit, complete with attractively styled metal cabinet, power unit and valves £21. 16. 6d.

HEATHKIT
AM/FM - Tuner
Total Price **£26. 10. 0**



and Hi-Fi SYSTEMS

... by building these elegant models

THE 'COTSWOLD' SPEAKER SYSTEM KITS

Models: STANDARD and MFS

The 'COTSWOLD' is an acoustically designed enclosure measuring 26" x 23" x 14½" housing a special free-suspension 12" bass speaker (with a 2" speech coil), a wide-angle mid-range speaker and a high-flux pressure unit to cover the full frequency range of 30-20,000 c/s. Capable of doing justice to the finest possible programme sources, its polar distribution of 120° makes it ideal for Hi-Fi stereo.

Delivered complete with speakers, cross-over unit, level control, grille cloth, etc. All parts are pre-cut and drilled for ease of assembly and left 'in the white' for finishing to personal taste. Weight 61 lb.

Ralph West, (Hi-Fi News) says 'The reviewer was very impressed and places this design among the top few and unhesitatingly recommends it to the most critical music lover'.

The minimum floor space, 'COTSWOLD' MFS system, specially designed for use in the smaller room. Measures 36" high x 16½" wide x 14" deep. Almost identical in performance with the Standard model.

Clement Brown (Records and Recording) says of the MFS: 'The results were first-rate, and I must say at once that solid value for money is offered. After all, £23 or so is the price of some 'bookshelf' speakers that cannot stand comparison with the Heathkit model'.



THE
'COTSWOLD' MFS
Kit £23 . 4 . 0

Assembled £30 . 15 . 0



'THE COTSWOLD'
Kit £23 . 4 . 0

Assembled £30 . 15 . 0

The Sound cannot be Better than the Speaker!



Vertical Use



Horizontal Use

SSU-1 (Horizontal or vertical) £10 . 17 . 6
without matching legs. incl. PT.

SSU-1 (Horizontal or vertical) £11 . 12 . 0
with matching legs. incl. PT.

HI-FI SPEAKER SYSTEM KIT, Model SSU-1

The Model SSU-1 Hi-Fi Speaker System is a practical solution to the problem of a moderately-priced speaker suitable for use with Stereo (or Mono) amplifiers where the complete equipment has to be compact and work satisfactorily in an average living room.

It has a ducted-port bass reflex cabinet which can be used with or without legs. The wood is all cut to length, machined, drilled and sanded. It is supplied 'in the white' for finish to choice. Frequency response is 40-16,000 c/s. Matched speaker units comprise an 8" high-flux (12,000 lines) with hyperbolic cone and a 4" wide-angle dispersion type for the higher frequencies. Legs are available as an optional extra.

A balance control unit is included to enable the system to be adjusted to suit room acoustics.

Size, 23" x 11½" x 11¼" deep.

(When ordering, please state whether for horizontal or vertical use.)

HI-FI STEREO AMPLIFIER KIT, Model S-99

9 watts per Channel

The model S-99 will give you the full enjoyment of modern stereo reproduction with its remarkable depth and realism at the most economical cost. Its superb performance does justice to the finest programme source.

The printed circuit boards contribute greatly to simplification of assembly whilst push-button selection makes it easy to use. Other features include a variable filter for elimination of distortion without loss of musical value.

It has inputs for stereo or mono Gram., Radio or Tape recording. The sensitivity meets the requirements of even the lowest output high-fidelity pick-ups (e.g. Decca ffs).

Completely self-contained in an attractively styled two-tone-grey metal case with golden surround, perspex panel and matching knobs, the finished amplifier is equally suitable and presentable for mounting in a cabinet or free standing on a bookshelf, furniture or a room divider. Size 13¼" x 4¼" x 12¼" deep.



HEATHKIT
MODEL S-99

Kit £27 . 19 . 6

Assembled £37 . 19 . 6

FOR MONEY SAVING PACKAGED DEALS ON AUDIO EQUIPMENT . . . See page 11

Equipment for the Discriminating

All orders delivered free U.K.
Deferred terms available U.K. over £10

Everyone will admire the finished job



HI-FI STEREO/MONO AMPLIFIER KIT, Model S-33

The S-33 gives 6 watts output (3 watts per channel) with 0.3% distortion at 2.5 watts per channel. Printed circuit board makes it easy to build. This low priced Stereo Amplifier is ideal for use in a small room.

HEATHKIT MODEL S-33 £13. 7. 6
HEATHKIT MODEL MA-5 £10. 19. 6

MONO AMPLIFIER KIT, Model MA-5

The MA-5 gives 5 watts output with 0.5% distortion. This general purpose amplifier is similar in appearance to the S-33 and is recommended when single channel only is required. Size of both amplifiers 11" x 6 1/2" x 4 1/2" high.



HI-FI STEREO AMPLIFIER KIT, Model S-33H

This inexpensive 3 + 3 watt stereo amplifier is based on the very popular model S-33 but has a number of useful refinements. An extra stage gives increased sensitivity needed for high quality Ceramic Pick-ups such as the Decca Deram. 3 inputs, Gram, Radio and Aux are provided. Close matched, twin ganged potentiometers are used for the volume and tone controls. Attractive perspex front panel with elegant gold bevelled edge, designed to harmonise with other Heathkit models. Size 11 1/2" x 5 1/2" x 10" deep.

HEATHKIT MODEL S-33H £15. 17. 6

STEREO HI-FI PRE-AMPLIFIER KIT, Model USP-1

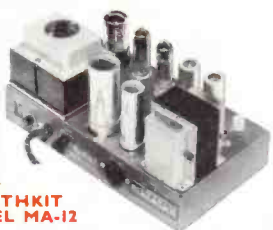
The model USP-1 is a simple high quality Stereo/Monaural pre-amplifier, with a good signal to noise ratio. Ideal for TAPEHEADS or low output PICK-UPS and for laboratory use. The input and output impedance is 150 K ohms. Distortion below 50 mv input is virtually not measurable. Power requirements: 180-250v; 3.5 mA dc; 6.3 v, 0.5 amps ac. Size 7 1/4" x 4 1/2" x 4" deep.

HEATHKIT MODEL USP-1 £7. 7. 6

HI-FI MONO AMPLIFIER KIT, Model MA-12

This model MA-12 is a compact high fidelity power amplifier (inc. aux power supply) with a wide frequency range with very low distortion. The full power output is maintained down to 30 cycles.

A variable sensitivity control is fitted thus enabling the amplifier to be used with an existing amplifier in a stereophonic system. Power requirements: 100-125/200-250 v, 40/60 c/s. Output: 10 watts (12 watts max.) between 30 c/s and 10 Kc/s. Distortion: less than 0.1% at 10 watts. Valve complement EF86, ECC83, EL84 (2) GZ34. Polychromatic silver grey stove enamel finish. Size 11 1/4" x 6 1/2" x 5 1/2" overall.



HEATHKIT MODEL MA-12 £11. 18. 0



DE LUXE STEREO CONTROL UNIT KIT, Model USC-1

The USC-1 accepts inputs direct from most tape heads and any stereo or mono pick-up available. Selection is by push-buttons. Unused inputs are automatically 'earthed' to prevent 'break-through'. Controls are ganged and accurately matched to within ± 1 dB. The rumble filter, in a negative feed-back circuit, provides the sharp cut-off

filter, in a negative feed-back circuit, provides the sharp cut-off necessary. Stereo pick-ups, being vertically sensitive, are particularly susceptible to rumble—even from a high grade transcription motor. The variable low-pass filter gently attenuates the higher frequencies to remove distortion present in poor recordings or radio transmissions. Printed circuit boards ease assembly. The USC-1 can be used successfully with any high fidelity amplifier(s) requiring an input not exceeding 1.3 volts (r.m.s.). Ideal for association with MA-12's or similar monaural amplifiers. Grey metal case with two-colour perspex panel and brass surround. Size 13 1/2" x 4 1/2" x 12" deep. Total power requirements 250 volts 10 mA dc, 6.3 volts 1.5 A ac.

Sensitivity: (each channel)
 Gram 1 3-4 mV, 100 K impedance, RIAA
 Gram 2 150 mV, 50 K impedance, RIAA
 Tape 1 2.5 mV, 80 K impedance CCIR equalised
 Tape 2 150 mV, 100 K impedance, unequalised
 Radio 150 mV, 100 K impedance, Lin
 Mic. 3 mV, 1 MΩ impedance, Lin
 Aux 4 mV-1mV, 150 meg impedance, Lin
 Output: Up to 1.3 volt r.m.s. for rated input
 Distortion: Below 0.1% at full output

HEATHKIT MODEL USC-1 £19. 10. 0

Hi-Fi MONO CONTROL UNIT KIT. Model UMC-1

This is a mono pre-amplifier, ideal for use with the MA-12 or any similar amplifier requiring 0.25V or less for full output. Suitable for cabinet mounting or free standing. 5 inputs are provided, two Gram inputs of 10 mV (RIAA) and 60 mV (linear variable) sensitivity, together with Radio (120 mv variable), Mic (5 mV) and Aux (180 mV). All inputs are automatically 'earthed' when not in use, thus preventing annoying breakthrough. Bass and treble controls of Baxandall type are used, together with a switched 6 kc/s low-pass filter. Printed board construction facilitates any assembly and provides consistent performance. Power requirements 180-300 v, 3 mA dc; 6.3 v 0.6 A ac. Size approx. 10" x 7" x 4" Two-tone grey perspex front panel with matching grey knobs and golden trim.



HEATHKIT MODEL UMC-1 £8. 12. 6

. . . . and you will be proud of the results!

Record your Children's Voices for All Time



TA-IS

(TA-IM identical in presentation)

TA-IM £19. 18. 0
 TA-IS £25. 10. 0
 TA-IC £6. 15. 0

TAPE AMPLIFIER KITS, Models TA-IM and TA-IS

This combined Tape Record/Replay amplifier is available in both mono and stereo models. The mono version—model TA-IM—can be modified to stereo model TA-IS by means of modification kit TA-IC.

Special features include provision of a bias level control; thermometer-type recording level indicator; attractively finished in polychromatic silver grey with a two-tone perspex front panel and golden matching surround. Size 4½" x 13½" x 12" deep. Suitable for use with any hi-fi amplifier. See Model MGP-1, page 14, for suitable inexpensive power supply.

Combined Price with Tape Decks, TA-IM with Collaro Studio £31. 5. 6

TA-IM with Truvox D93/2 £52. 18. 0

TA-IS with Truvox D93/2 or D 93/4 £58. 10. 0

N.B.: When using Tape Deck other than the above please give full details when ordering Amplifier, so that we can provide you with the correct impedance coils.

MICROPHONES

(ALSO MATCHING TRANSFORMERS)



LUSTRAPHONE
VR-53

A wide range of microphones is available at prices from £1. 10. 0 to over £30. 0. 0. Please let us know your requirements and we will send you full details.

COLLARO 'STUDIO' TAPE DECK



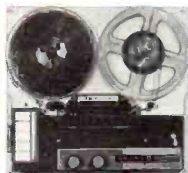
This brilliantly styled mono tape deck is by far the finest 'buy' in its price range.

SPECIFICATIONS. Number of Tracks: Two. Operating Speeds: 1½", 3½" and 7½" per second. Number of Heads: Two. Attainable Freq. Response: 50c/s—15 Kc/s at 7½" per second ± 3dB, with Record/

Playback equalisation. Playing Time: 120, 60 and 30 minutes per standard 1,200 ft. reel. Wow and Flutter: Not greater than 0.15% at 7½" p.s. Long Term Speed Stability: Better than 0.5%. Fitted with pause control and 3 digit numerical counter.

With TA-IM £31. 5. 6 £17. 10. 0

TRUVOX TAPE DECKS



These stereo decks are well designed, beautifully styled and precision engineered for outstanding dependability.

Three motors are used. Reels up to 7" may be accommodated and a speed regulator on/off switch selects 7½, 3½ or 1½ i.p.s. as required.

A pause control and numerical counter are also featured.

Model D93/4 is a ¼ track stereo

machine and is ideal if economy of tape is of importance.

Model D93/2 is recommended if the highest quality of reproduction is required, either stereo or mono.

Frequency range 40-20,000 c/s at 7½ i.p.s. 40-12,000 c/s at 3½ i.p.s. ± 3 dB.

Truvox D93/4 £36. 15. 0

D 93/4 with TA-IS £58. 10. 0

Truvox D93/2 £36. 15. 0

D 93/2 with TA-IM £52. 18. 0

GARRARD AUTO/RECORD PLAYER Model AT6

A four speed stereo and mono unit with automatic record selection.

Adjustable counter-balanced arm suitable for most cartridges. Facilities for manual operation. Fitted with Ronette 105 mono/stereo crystal head. With Decca Deram miniature Ceramic pick up



£13. 12. 1 incl. P.T.

£14. 6. 1 incl. P.T.

Wooden plinth supplied FREE, if required.

GOLDRING-LENCO TRANSCRIPTION RECORD PLAYER Model G.L.58

This four-speed stereo and mono unit is offered for those who want a low price unit of transcription quality.

This unit is fitted with the G.60 pick-up arm and R.105 cartridge. It has infinitely variable speed adjustment between 33½ and 80 r.p.m. as well as four fixed speeds. Its balanced turntable (3½ lb.) reduces rumble as well as wow and flutter to very low proportions.



MODEL G.L.58 (MONO/STEREO) £20. 1. 3 incl. P.T.

Wooden plinth supplied FREE, if required.

SUGDEN MOTOR UNIT, 'CONNOISSEUR CRAFTSMAN'

The 'Connoisseur Craftsman' is an improved version of the world-famous 'Connoisseur', particularly with regard to 'wow' and 'flutter' levels, and it is now restyled in matt black with a satin silver trim.

This heavy duty motor operates at 33½ r.p.m. and 45 r.p.m. The full 12" turntable is lathe turned and manufactured from non-ferrous material.



£17. 2. 11 incl. P.T.

GARRARD MODEL 301

(Not illustrated). As used in broadcast stations throughout the world.

£20. 12. 2 incl. P.T.

or with stroboscope £22. 0. 11 incl. P.T.

Pick-ups We unhesitatingly recommend Decca pick-ups for extremely low tracing distortion and record wear.

Decca ffs (Magnetic) £18. 18. 0 incl. P.T.

Decca Deram (min. ceramic) £9. 19. 6 incl. P.T.

THE 'MALVERN' EQUIPMENT CABINET KIT

This elegant modern-styled cabinet has been designed to meet the needs of the Hi-Fi enthusiast who wishes to accommodate all his audio and tape equipment (except speakers) in one cabinet.

Versatile and comprehensive, it will accommodate a transcription record player, tape deck, radio tuner, audio amplifier (or control unit and separate power amplifiers) and tape record/replay amplifier.

Two sliding doors are provided at the front of the cabinet and a mounting panel situated behind these doors may be used for mounting an audio amplifier, radio tuner and Tape record/replay amplifier.

The top of the cabinet is formed by a hinged lid which provides access to two "wells" which will house a transcription unit and tape deck. Alternatively one "well" may be used for mounting a radio tuner and control unit while a transcription unit or tape deck may be mounted in the other.

All parts of the cabinet woodwork are accurately pre-cut to finished dimensions. Veneered blockboard is used and left 'in the white' for finishing to personal taste, all exposed edges being finished with black Panoplex plastic strip.

Complete with Instruction Manual and screws, hinges, pad-saw, etc.

Size: 39½" x 21½" x 32".

THE 'MALVERN' £18 . 1 . 0 incl. P.T.

THE 'GLOUCESTER' EQUIPMENT CABINET KITS

The handsome 'GLOUCESTER' cabinets have been specially designed to meet the varying needs of different homes.

They will house a Record Player or Tape Deck, together with a Stereo Amplifier and Radio Tuner. The Mark II model has a 'drop-down' door to facilitate maximum use of the front mounting panel.

Both models have storage space provided for records or tapes and, to meet the needs of those for whom space is at a premium, it is possible to install a speaker system (Model GXSS-1, £5.1.2) in one end of the Gloucester cabinets.

Neutral hardwoods are used in both models and they have been carefully selected so that the finished product can be stained and polished to personal taste.

Including everything you require to assemble the model—even a pad-saw and a step-by-step Instruction Manual:-

Size: 46½" x 30" x 21".

THE 'GLOUCESTER' Mark I £17 . 3 . 6 incl. P.T.

THE 'GLOUCESTER' Mark II £18 . 10 . 0 incl. P.T.

THE 'CHEPSTOW' EQUIPMENT CABINET KIT

The 'CHEPSTOW' has been specially designed to meet the needs of those with small or medium rooms who require a cabinet to accommodate all their radio and hi-fi equipment, but with whom space is at a premium.

The dimensions of the 'CHEPSTOW' cabinet are such as to permit accommodation of Record Players or Changers, Amplifiers and Tuners of a wide variety of makes as well as Heathkit models. Furniture grade plywood is used, veneered to accept any finish to your personal taste. The only tool besides a screwdriver which is needed for construction of the cabinet is a pad-saw (which is provided with the kit) and assembly can easily be effected in one evening. Size: 34" x 32½" x 18".

THE 'CHEPSTOW' £11 . 12 . 6 incl. P.T.

THE RECORD HOUSING RANGE OF ASSEMBLED HI-FI EQUIPMENT CABINETS

By agreement with RECORD HOUSING, we can now also make available to you their well-known large range of fully finished Equipment Cabinets.

Full illustrated details gladly sent on request.



THE 'MALVERN' CABINET



The Versatile 'GLOUCESTER' (cabinet open)



THE 'CHEPSTOW' CABINET

. . . house YOUR Equipment in a Handsome Cabinet

From: (BLOCK CAPITALS PLEASE)

PURCHASE ORDER

NAME:

Please supply the following Heathkit model(s), for which I enclose cheque / money order / postal order to cover cash sale / deposit:—

ADDRESS:

HEATHKIT MODEL	QUANTITY	AMOUNT ENCLOSED
TOTAL		

IMPORTANT: Orders should be sent in a sealed envelope

3. FOLD BACK HERE AND TUCK THIS PORTION IN

MAILING LIST

Please place my name on your Mailing List.

✓ here

Without obligation, please send Catalogue to interested friends of mine (names and addresses overleaf).

✓ here

Note: We would esteem it a favour if you would be good enough to help us by answering the following:—

Interest was inspired by

- (a) personal recommendation
- (b) home/public demonstration
- (c) your advertisement in

1. FOLD ALONG THIS LINE FIRST

84/3

PRINTED PAPER RATE

2½d.
STAMP
(IN U.K.)

DAYSTROM LIMITED

GLOUCESTER

ENGLAND

2. FOLD BACK HERE

FORMOREDETAILS

Without obligation, please send me full details of the following Heathkit model(s):

I am interested in other kits not yet covered in your range. (See my list overleaf).

FOR PRICES OF MANUALS SUPPLIED SEPARATELY.
See overleaf.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

This space is for any additional comments you may wish to make. (Kindly note that, if above 5 words, a 3d. stamp is needed).

HEATHKIT MANUALS

So that you may see for yourself how easy it is to follow the step-by-step instructions in a Heathkit Manual, you are invited to send for any one of the manuals listed below, enclosing the appropriate cost (deductable from the price of the kit if you buy this later).

Models DX-100U	£1 1s.	Models IO-12U	17/6d.	Models B-IU	7/6d.
„ AFM-1	17/6d.	„ DX-40U	15/0d.	„ DR-IU	7/6d.
„ EW-1	17/6d.	„ IM-13U	15/0d.	„ MGP-1	7/6d.
„ GC-IU	17/6d.	„ PA-1	15/0d.	„ PCA-1	7/6d.
„ S-99	17/6d.	„ RA-1	15/0d.	„ TTA-1	7/6d.
„ SB-10U	17/6d.	„ RG-1	15/0d.	„ Chepstow	7/6d.
„ TA-IM	17/6d.	„ UXR-2	15/0d.	„ DC-IU	5/0d.
„ S-33H	17/6d.	„ XI-IU	12/6d.	„ HT-1	2/6d.

All other British Heathkit manuals 10/6d. each. These prices include postage.

Agreement No. (for office use only).....

To enable Daystrom Limited to give consideration to this proposal, the following particulars are required:—

Full name of Buyer (Mr./Mrs./Miss).....
(IN BLOCK CAPITALS)

Age..... (NOTE:—Persons under 21 must have application made by parent or guardian.)

NOTE:—If buyer is a married woman, the following particulars relate to husband

Occupation..... How long in present employment.....

Name of Employer(s).....

Address

CONFIDENTIAL.
No enquiries will
be made of
Employer

NOTE:—The deposit must accompany this Form. In the event of the proposal not being acceptable to Daystrom Limited, the deposit will be refunded with the minimum of delay.

DAYSTROM LIMITED · GLOUCESTER

SHORT TERM CREDIT SALE AGREEMENT

I AGREE to purchase from you.....

at a total purchase price (i.e. credit sale price) of £.....

I enclose a deposit of £....., and agree to pay you the balance of £.....

by nine equal instalments of £..... each, the first such instalment payable

on..... and subsequent instalments monthly on the same day of the month.

If any instalment is not paid within seven days of the same becoming due the whole balance of the above-stated purchase price shall forthwith become due and payable by me. Any indulgence shown to me by you shall not in any way prejudice your strict rights under this Agreement.

I acknowledge that before I entered into this Agreement the **cash price** of the apparatus (i.e., £.....) was duly stated to me in accordance with the provisions of the Hire Purchase Act.

Signature of Buyer.....

Please
sign
over
6d.
Stamp

(Please note that, if the purchaser has a strong desire to retain complete privacy, the signature of a witness is not insisted upon, although it increases the probability of our acceptance of the Agreement).

Date.....

Witness

Address

Address

.....

.....

.....

.....

.....

.....

Accepted for and on behalf of DAYSTROM LIMITED.....

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

DEFERRED PAYMENT PLAN

Kindly note that the basis of this deferred payment scheme is as follows, the deposit, nominally 20 per cent, being adjusted to give only full shillings in the instalments. Deferred Payment Charges 5 per cent on outstanding balance, plus 9/- (i.e. 1/- per month) towards stationary, clerical and postal charges. Will you therefore please note that, in those cases where you order two or more kit-sets at the same time, the monthly payments will be reduced by 1/- per month for all after the first kit-set in this transaction (e.g. if a person ordered a V-7A and an S-99, he would pay a deposit of £2 17s. 0d. + £5 15s. 0d., i.e. £8 12s. 0d. and his 9 monthly payments would be £1 7s. 0d. + £2 13s. 0d less 1/-, i.e. £3 19s. 0d. instead of £4). Note: All prices include free delivery in U.K.

Model	Cash Price	Deposit	Instalment	Total	Model	Cash Price	Deposit	Instalment	Total
AFM-1	£26.10s.0d.	£ 5.10s.	£2.10s.	£28. 0s.	XI-IU	£10.19s.6d.	£ 2. 0s.	£1. 2s.	£11.18s.
AG-9U	£22.10s.0d.	£ 4.10s.	£2. 3s.	£23.17s.	XI-IU & 1 XIR-IU	£15. 7s.0d.	£ 2.19s.	£1.10s.	£16. 9s.
AO-IU	£14.15s.0d.	£ 2.19s.	£1. 9s.	£16. 0s.	XI-IU & 2 XIR-IU's	£19.14s.6d.	£ 4. 7s.	£1.17s.	£21. 0s.
AT-6 & Decca Deram	£14. 6s.1d.	£ 2.16s.	£1. 8s.	£15. 8s.	XI-IU & 3 XIR-IU's	£24. 2s.0d.	£ 4.17s.	£2. 6s.	£25.11s.
AT-6 & Ronette 105	£13.12s.1d.	£ 2.14s.	£1. 7s.	£14.17s.	XI-IU & 4 XIR-IU's	£28. 9s.6d.	£ 5.16s.	£2.14s.	£30. 2s.
AT-6 & GC8	£11.17s.7d.	£ 2. 9s.	£1. 3s.	£12.16s.	XI-IU & 5 XIR-IU's	£32.17s.0d.	£ 6. 6s.	£3. 3s.	£34.13s.
AV-3U	£16.10s.0d.	£ 3. 6s.	£1.12s.	£17.14s.	ASSEMBLED HEATHKIT MODELS				
AW-IU	£17. 5s.0d.	£ 3. 9s.	£1.13s.	£18. 6s.	Model	Cash Price	Deposit	Instalment	Total
Chepstow	£11.12s.6d.	£ 2. 5s.	£1. 3s.	£12.12s.	AG-9U	£30.10s.0d.	£ 6. 2s.	£2.18s.	£32. 4s.
Connoisseur Craftsman	£17.2s.11d.	£ 3. 8s.	£1.13s.	£18. 5s.	AO-IU	£21. 5s.0d.	£ 4. 5s.	£2. 1s.	£22.14s.
Coswold Std & MFS	£23. 4s.0d.	£ 4. 7s.	£2. 5s.	£24.12s.	AV-3U	£22.18s.0d.	£ 4.12s.	£2. 4s.	£24. 8s.
CM-IU	£15.15s.0d.	£ 3. 7s.	£1.10s.	£16.17s.	AW-IU	£23.18s.0d.	£ 4.16s.	£2. 6s.	£25.10s.
C-3U	£10.10s.0d.	£ 2. 2s.	£1. 1s.	£11.11s.	BENCH GDA-232-I	£14.10s.0d.	£ 2.18s.	£1. 8s.	£15.10s.
Decca Deram	£ 9.19s.6d.	£ 1.17s.	£1. 0s.	£10.17s.	Chepstow	£16.17s.6d.	£ 3. 4s.	£1.13s.	£18. 1s.
Decca fess	£18.18s.0d.	£ 3.19s.	£1.16s.	£20. 3s.	C-3U	£16. 0s.0d.	£ 3. 4s.	£1.11s.	£17. 3s.
DR-IU	£10. 8s.0d.	£ 2. 0s.	£1. 1s.	£11. 9s.	Coswold Std & MFS	£30.15s.0d.	£ 6. 7s.	£2.18s.	£32. 9s.
DX-40U	£33.19s.0d.	£ 7. 0s.	£3. 4s.	£35.16s.	CM-IU	£21.14s.0d.	£ 4.12s.	£2. 1s.	£23. 1s.
DX-100U	£79.10s.0d.	£15.18s.	£7. 9s.	£82.19s.	DC-IU	£12. 8s.0d.	£ 2. 0s.	£1. 1s.	£11. 9s.
FM-4U	£15.18s.0d.	£ 3. 4s.	£1.11s.	£17. 3s.	DR-IU	£14. 8s.0d.	£ 2.18s.	£1. 8s.	£15.10s.
GC-IU	£37.17s.6d.	£ 7.10s.	£3.12s.	£39.18s.	DX-40U	£45. 8s.0d.	£ 8.19s.	£4. 6s.	£47.13s.
GD-IU	£10.19s.6d.	£ 2. 0s.	£1. 2s.	£11.18s.	DX-100U	£104.15s.0d.	£20.19s.	£9.17s.	£109.12s.
Gloucester Mark I	£17. 3s.6d.	£ 3.10s.	£1.13s.	£18. 7s.	GC-IU	£45.17s.6d.	£ 9. 2s.	£4. 7s.	£48. 5s.
Gloucester Mark II	£18.10s.0d.	£ 3.10s.	£1.16s.	£19.14s.	GD-IU	£13.19s.6d.	£ 2.18s.	£1. 7s.	£15. 1s.
GL58 & Ronette 105	£20. 1s.3d.	£ 4. 1s.	£1.18s.	£21. 3s.	Gloucester Mark I	£22. 8s.6d.	£ 4. 9s.	£2. 3s.	£23.16s.
HFG-1	£30. 6s.6d.	£ 6. 0s.	£2.18s.	£32. 2s.	Gloucester Mark II	£23.15s.0d.	£ 4.18s.	£2. 5s.	£25. 3s.
HFV-1	£30.15s.0d.	£ 6. 6s.	£2.18s.	£32. 8s.	HFG-1	£34.17s.6d.	£ 7. 0s.	£3. 6s.	£36.14s.
HT-1	£29.15s.0d.	£ 6. 0s.	£2.16s.	£31. 4s.	HFV-1	£44.10s.0d.	£ 9. 0s.	£4. 4s.	£46.16s.
HT-IG	£35.15s.0d.	£ 8. 0s.	£3. 6s.	£37.14s.	IM-13U	£26.18s.0d.	£ 5. 7s.	£2.12s.	£28.15s.
IM-13U	£18.18s.0d.	£ 3.19s.	£1.16s.	£20. 3s.	IO-12U	£41.10s.0d.	£ 8. 6s.	£3.19s.	£43.17s.
IO-12U	£32.12s.6d.	£ 6.10s.	£3. 2s.	£34. 8s.	MA-5	£15.10s.0d.	£ 3. 2s.	£1.10s.	£16.12s.
MA-5	£10.19s.6d.	£ 2. 4s.	£1. 2s.	£12. 2s.	MA-12	£15.18s.0d.	£ 3. 4s.	£1.11s.	£17. 3s.
MA-12	£11.18s.0d.	£ 2. 8s.	£1. 3s.	£12.15s.	MA-50	£27.18s.0d.	£ 5.14s.	£2.13s.	£29.11s.
MA-50	£19.18s.0d.	£ 4. 2s.	£1.18s.	£21. 4s.	Malvern	£23. 6s.0d.	£ 4. 9s.	£2. 5s.	£24.14s.
Malvern	£18. 1s.0d.	£ 3.10s.	£1.15s.	£19. 5s.	MM-IU	£18.11s.6d.	£ 3.12s.	£1.16s.	£19.16s.
MM-IU	£12.18s.0d.	£ 2.12s.	£1. 5s.	£13.17s.	MSP-1M	£43.12s.6d.	£ 8.19s.	£4. 2s.	£45.17s.
MSP-1M	£36.12s.6d.	£ 7.11s.	£3. 9s.	£38.12s.	MSP-IW	£36.17s.6d.	£ 7. 7s.	£3.10s.	£38.17s.
MSP-IW	£29.17s.6d.	£ 5.18s.	£2.19s.	£31.11s.	OS-1	£29. 8s.0d.	£ 5.18s.	£2.16s.	£31. 2s.
OS-1	£21.18s.0d.	£ 4. 8s.	£2. 2s.	£23. 6s.	PA-1	£74. 0s.0d.	£14.18s.	£6.19s.	£77. 9s.
ORGAN GD-232AE	£187.10s.0d.	£37.10s.	£17.11s.	£195. 9s.	QPM-1 & 16	£12.14s.0d.	£ 2.11s.	£1. 5s.	£13.16s.
GD-232AE+BENCH	£202. 0s.0d.	£40. 8s.	£19. 0s.	£211. 8s.	RA-1	£52.10s.0d.	£10.11s.	£4.19s.	£55. 2s.
PA-1	£54.15s.0d.	£10.17s.	£5. 4s.	£57.13s.	RF-IU	£19.18s.0d.	£ 4. 0s.	£1.18s.	£21. 2s.
RA-1	£39. 6s.6d.	£ 7.12s.	£3.15s.	£41. 7s.	S-33	£13. 7s.6d.	£ 2.15s.	£1. 6s.	£14. 9s.
RF-IU	£13. 8s.0d.	£ 2.14s.	£1. 6s.	£14. 8s.	S-33H	£15.17s.6d.	£ 3. 1s.	£1.11s.	£17. 0s.
RG-1	£39.16s.0d.	£ 7.14s.	£3.16s.	£41.18s.	S-3U	£12.18s.0d.	£ 2.12s.	£1. 5s.	£13.17s.
RSW-1	£19.17s.6d.	£ 4. 0s.	£1.18s.	£21. 2s.	S-99	£27.19s.6d.	£ 5.15s.	£2.13s.	£29.12s.
S-33	£13. 7s.6d.	£ 2.15s.	£1. 6s.	£14. 9s.	SB-10U	£39. 5s.0d.	£ 7.17s.	£3.14s.	£41. 3s.
S-33H	£15.17s.6d.	£ 3. 1s.	£1.11s.	£17. 0s.	Studio	£17.10s.0d.	£ 3. 7s.	£1.14s.	£18.13s.
S-3U	£12.18s.0d.	£ 2.12s.	£1. 5s.	£13.17s.	SSU-1 (without legs)	£10.17s.6d.	£ 1.18s.	£1. 2s.	£11.16s.
S-99	£27.19s.6d.	£ 5.15s.	£2.13s.	£29.12s.	SSU-1 (with legs)	£11.12s.0d.	£ 2. 5s.	£1. 3s.	£12.12s.
SB-10U	£39. 5s.0d.	£ 7.17s.	£3.14s.	£41. 3s.	TA-IM	£19.18s.0d.	£ 4. 0s.	£1.18s.	£21. 2s.
Studio	£17.10s.0d.	£ 3. 7s.	£1.14s.	£18.13s.	TA-IM & Studio	£31. 5s.6d.	£ 6. 5s.	£2.19s.	£32.16s.
SSU-1 (without legs)	£10.17s.6d.	£ 1.18s.	£1. 2s.	£11.16s.	TA-IM & Truvox D93/2	£52.18s.0d.	£10.10s.	£5. 0s.	£55.10s.
SSU-1 (with legs)	£11.12s.0d.	£ 2. 5s.	£1. 3s.	£12.12s.	TA-IS	£25.10s.0d.	£ 5. 2s.	£2. 9s.	£27. 3s.
TA-IM	£19.18s.0d.	£ 4. 0s.	£1.18s.	£21. 2s.	TA-IS & Truvox D93/2	£58.10s.0d.	£11.14s.	£5.10s.	£61. 4s.
TA-IM & Studio	£31. 5s.6d.	£ 6. 5s.	£2.19s.	£32.16s.	TA-IS & Truvox D93/4	£58.10s.0d.	£11.14s.	£5.10s.	£61. 4s.
TA-IM & Truvox D93/2	£52.18s.0d.	£10.10s.	£5. 0s.	£55.10s.	Truvox D93/2 or D93/4	£36.15s.0d.	£ 7. 7s.	£3.10s.	£38.17s.
TA-IS	£25.10s.0d.	£ 5. 2s.	£2. 9s.	£27. 3s.	USC-1	£19.10s.0d.	£ 4. 2s.	£1.17s.	£20.15s.
TA-IS & Truvox D93/2	£58.10s.0d.	£11.14s.	£5.10s.	£61. 4s.	UXR-1	£12.11s.0d.	£ 2. 7s.	£1. 5s.	£13.12s.
TA-IS & Truvox D93/4	£58.10s.0d.	£11.14s.	£5.10s.	£61. 4s.	UXR-2	£14.18s.0d.	£ 2.19s.	£1. 9s.	£16. 0s.
Truvox D93/2 or D93/4	£36.15s.0d.	£ 7. 7s.	£3.10s.	£38.17s.	V-7A	£13.18s.6d.	£ 2.17s.	£1. 7s.	£15. 0s.
USC-1	£19.10s.0d.	£ 4. 2s.	£1.17s.	£20.15s.	VF-IU	£10.17s.6d.	£ 2. 6s.	£1. 1s.	£11.15s.
UXR-1	£12.11s.0d.	£ 2. 7s.	£1. 5s.	£13.12s.	VR/53	£11.14s.6d.	£ 1.18s.	£1. 4s.	£12.14s.
UXR-2	£14.18s.0d.	£ 2.19s.	£1. 9s.	£16. 0s.	VR/65	£15.15s.0d.	£ 3. 7s.	£1.10s.	£16.17s.
V-7A	£13.18s.6d.	£ 2.17s.	£1. 7s.	£15. 0s.					
VF-IU	£10.17s.6d.	£ 2. 6s.	£1. 1s.	£11.15s.					
VR/53	£11.14s.6d.	£ 1.18s.	£1. 4s.	£12.14s.					
VR/65	£15.15s.0d.	£ 3. 7s.	£1.10s.	£16.17s.					
					XI-IU	£10.19s.6d.	£ 2. 0s.	£1. 2s.	£11.18s.
					XI-IU & 1 XIR-IU	£15. 7s.0d.	£ 2.19s.	£1.10s.	£16. 9s.
					XI-IU & 2 XIR-IU's	£19.14s.6d.	£ 4. 7s.	£1.17s.	£21. 0s.
					XI-IU & 3 XIR-IU's	£24. 2s.0d.	£ 4.17s.	£2. 6s.	£25.11s.
					XI-IU & 4 XIR-IU's	£28. 9s.6d.	£ 5.16s.	£2.14s.	£30. 2s.
					XI-IU & 5 XIR-IU's	£32.17s.0d.	£ 6. 6s.	£3. 3s.	£34.13s.
					AG-9U	£30.10s.0d.	£ 6. 2s.	£2.18s.	£32. 4s.
					AO-IU	£21. 5s.0d.	£ 4. 5s.	£2. 1s.	£22.14s.
					AV-3U	£22.18s.0d.	£ 4.12s.	£2. 4s.	£24. 8s.
					AW-IU	£23.18s.0d.	£ 4.16s.	£2. 6s.	£25.10s.
					BENCH GDA-232-I	£14.10s.0d.	£ 2.18s.	£1. 8s.	£15.10s.
					Chepstow	£16.17s.6d.	£ 3. 4s.	£1.13s.	£18. 1s.
					C-3U	£16. 0s.0d.	£ 3. 4s.	£1.11s.	£17. 3s.
					Coswold Std & MFS	£30.15s.0d.	£ 6. 7s.	£2.18s.	£32. 9s.
					CM-IU	£21.14s.0d.	£ 4.12s.	£2. 1s.	£23. 1s.
					DC-IU	£12. 8s.0d.	£ 2. 0s.	£1. 1s.	£11. 9s.
					DR-IU	£14. 8s.0d.	£ 2.18s.	£1. 8s.	£15.10s.
					DX-40U	£45. 8s.0d.	£ 8.19s.	£4. 6s.	£47.13s.
					DX-100U	£104.15s.0d.	£20.19s.	£9.17s.	£109.12s.
					GC-IU	£45.17s.6d.	£ 9. 2s.	£4. 7s.	£48. 5s.
					GD-IU	£13.19s.6d.	£ 2.18s.	£1. 7s.	£15. 1s.
					Gloucester Mark I	£22. 8s.6d.	£ 4. 9s.	£2. 3s.	£23.16s.
					Gloucester Mark II	£23.15s.0d.	£ 4.18s.	£2. 5s.	£25. 3s.
					HFG-1	£34.17s.6d.	£ 7. 0s.	£3. 6s.	£36.14s.
					HFV-1	£44.10s.0d.	£ 9. 0s.	£4. 4s.	£46.16s.
					IM-13U	£26.18s.0d.	£ 5. 7s.	£2.12s.	£28.15s.
					IO-12U	£41.10s.0d.	£ 8. 6s.	£3.19s.	£43.17s.
					MA-5	£15.10s.0d.	£ 3. 2s.	£1.10s.	£16.12s.
					MA-12	£15.18s.0d.	£ 3. 4s.	£1.11s.	£17. 3

How to Plan your Hi-Fi

We are often asked for advice on Hi-fi equipment to meet various individual needs. We hope that the following will be a helpful guide to you.

The simplest way to have Hi-fi is to use one of the typical combinations of equipment below. It is also possible to start with a high-quality Mono system and extend it by stages to a comprehensive Stereo system.

FIRST DECIDE THE POWER YOU REQUIRE. As a general guide, 3 watts are required for a small room, 5 to 9 watts for a medium-sized room and 12 watts for a large room.

CHOOSE FROM ONE OF THE COMBINATIONS OF HI-FI EQUIPMENT listed in the chart below at a wide range of prices.

REMEMBER TO TAKE ADVANTAGE OF 'PACKAGE DEAL' PRICE REDUCTION. Purchases of associated Hi-fi equipment totalling over £40 at one time qualify for inclusion.

TYPICAL COMBINATIONS OF HI-FI EQUIPMENT

MONO					TOTAL OF LIST PRICES AS KITS	SPECIAL PACKAGE PRICE
POWER	RADIO	GRAM	AMPLIFIER	SPEAKER		
5 WATTS	TUNER FM-4U	GARRARD AT6/GC8	MA-5	SSU-1 *	£ 49 · 12 · 7	£ 47 · 10 · 0
12 WATTS	TUNER FM-4U	GARRARD AT6/Deram	CONTROL UNIT UMC-1 and MA-12	COTSWOLD	£ 73 · 18 · 7	£ 69 · 15 · 0
12 WATTS		GARRARD AT6/Deram	CONTROL UNIT USC-1 and MA-12	COTSWOLD	£ 68 · 18 · 1	£ 65 · 0 · 0
(This system can be extended to stereo with the addition of one extra MA-12 and one extra loudspeaker).						
STEREO					TOTAL OF LIST PRICES AS KITS	SPECIAL PACKAGE PRICE
POWER	RADIO	GRAM	AMPLIFIER/S	SPEAKERS		
3 + 3 WATTS		GARRARD AT6/R105	S-33	two SSU-1s *	£ 48 · 14 · 7	£ 46 · 15 · 0
3 + 3 WATTS	TUNER FM-4U	GARRARD AT6/Deram	S-33H	two SSU-1s *	£ 67 · 16 · 7	£ 64 · 5 · 0
9 + 9 WATTS	TUNER FM-4U	GARRARD AT6/Deram	S-99	two COTSWOLDS	£104 · 11 · 7	£ 98 · 0 · 0
12 + 12 WATTS	TUNER AFM-1	GARRARD AT6/Deram	CONTROL UNIT USC-1 and TWO MA-12s	two COTSWOLDS	£130 · 10 · 1	£121 · 10 · 0
12 + 12 WATTS DE LUXE	TUNER FM-4U	CONNOISSEUR with Decca ffs	CONTROL UNIT USC-1 and TWO MA-12s	two COTSWOLDS	£141 · 12 · 11	£132 · 0 · 0
	TUNER FM-4U	GARRARD 301 with Decca ffs	CONTROL UNIT USC-1 and TWO MA-12s	two COTSWOLDS	£145 · 2 · 2	£135 · 0 · 0
Tape recording as well as playback can be obtained, with the addition of either of the following combinations:-						
TAPE DECK	TAPE AMPLIFIER	POWER SUPPLY		FEED INTO ANY SYSTEM ABOVE depending on your requirements, etc.	TOTAL OF LIST PRICES AS KITS	SPECIAL PACKAGE PRICE
COLLARO † STUDIO (MONO)	TA-IM (MONO)	MGP-1 (NOT REQUIRED if system uses MA-12s)			£ 37 · 8 · 0	£ 31 · 5 · 6
TRUVOX † D93/2 or D93/4 (STEREO)	TA-IS (STEREO)				without MGP-1	without MGP-1
					£ 62 · 5 · 0	£ 58 · 10 · 0
					without MGP-1	without MGP-1

*When ordering the SSU-1 hi-fi speaker system please state whether you require this model for horizontal or vertical mounting. (Prices quoted are less legs. Matching legs are available at 14/6 per set of four).

†Other tape decks may be used. Please write to us for advice before buying. See also pages 6 to 10 for details of Radios (Tuners), Amplifiers, Record Players, Tape Decks, Speaker Systems, suitable cabinets, etc.

Keeping records clean is important, for this purpose we recommend the Cecil Watts 'Dust Bug'. £1 0. 5. incl. P.T.

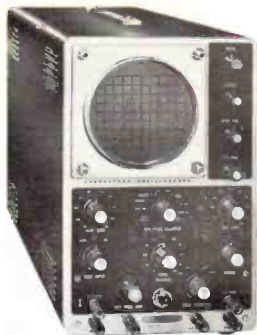
NOTE: In all package deal orders, it is necessary for you to list the items of equipment which you require separately on the order form, when sending this to us.

Where you already have a good Amplifier, Speaker, Record Player, FM Tuner or Tape Deck, you need not discard it as it may be possible to use it in the above mentioned systems.

IN ANY CASE, WE WILL GLADLY ADVISE YOU ON THIS MATTER IF YOU SEND US FULL DETAILS OF YOUR MODELS AND THE SYSTEM YOU REQUIRE. QUOTATIONS FOR ANY OTHER COMBINATIONS OR FURTHER INFORMATION GLADLY SENT ON REQUEST.

Instruments for Laboratories, Test & Service Workshops

5" GENERAL PURPOSE OSCILLOSCOPE KIT, Model 10-12U



Ideal for laboratories, service workshops, production lines or educational purposes. Its professional specification, styling and features fulfil many laboratory or service requirements. The Heathkit wide range patented sweep circuit with two extra switch-selected pre-set sweep frequencies covers most requirements. Two printed circuit boards plus wiring harness facilitate easy assembly and consistent performance. Overall dimensions 8½" wide x 14" high x 17" deep. Net weight 23 lbs.

"Y" bandwidth—3dB 3 c/s—4.5 Mc/s. Frequency compensated input attenuator
Sensitivity 10 mV r.m.s. per cm. at 1 Kc/s. "Z" axis modulation.
Time base 10 c/s to 500 Kc/s in 5 steps. T/B output 10 v. peak to peak.
Built in 1 v. calibrator. Power requirements 200-250 v. a.c. 40-60 cycle, 80 watts fused.

ELECTRONIC SWITCH (TRACE DOUBLER) KIT, Model S-3U

CONVERT YOUR 'SCOPE TO DOUBLE-BEAM

This extremely useful low-priced device will extend the application of your single-beam oscilloscope by enabling it to give simultaneous traces of two separate signals, while retaining its existing advantages.

Switching Rates: approx. 150, 500, 1,500, 5,000 and 15,000 c/s.

Signal Frequency Response: 0-100 kc/s. ± 1 dB.

Separate gain controls and synch. output. Signal Input Range: 0-1 to 1-8 volts r.m.s.



HEATHKIT MODEL 10-12U

Kit £32. 12. 6 Assembled £41. 10. 0

HEATHKIT MODEL S-3U

Kit £12. 18. 0 Assembled £18. 10. 0

2½" PORTABLE SERVICE OSCILLOSCOPE KIT, Model OS-1

This is an ideal light and compact portable 'scope for the serviceman, the overall dimensions being 5" x 8" x 14½" long at a weight of 10½ lbs. Ease of construction and consistency of performance are ensured by provision of a printed circuit board.

Timebase: 15 c/s to 150 kc/s in four ranges and 50 c/s sine wave sweep. Flyback Suppression on all ranges. Internal, external and 50 c/s synchronisation. X amp: Sensitivity, 1 V/cm at 1 kc/s. Calibration: 1 v. 10 v. and 50 v. pk-to-pk available on front panel. Valve Complement: 2-ECF80, 2-EF80, 1-ECC82, 1-EZ80: C. R. Tube 1-3AFPI or equivalent (2½" dia.). Power requirements: 200-250 volts, 40-60 c/s a.c. 40 watts (fused).

SPECIFICATIONS:

Y Amp.	Direct Input X1	Atten. Input X10
Input Resistance	1 Megohm	10 Megohm
Input Capacitance	20 pF	10 pF
Max. Sensitivity	10 mV/cm	100 mV/cm
Freq. response 1 dB	1 Mc/s	1 Mc/s
3 dB	2 Mc/s	2 Mc/s

With special mumetal screen £1. 0. 0 extra.

HEATHKIT MODEL OS-1

Kit £21. 18. 0

Assembled £29. 8. 0



6" VALVE VOLTMETER KIT, Model IM-13U

Modern styling, up-to-date features, and exceptional operating convenience are all combined in this low-priced professional instrument. Accuracy, reliability of performance and ease of operation are ensured with a time-proven circuit using a 6" Ernest Turner 200 µA meter with multi-coloured scales, Vernier action Zero and Ohms adjust controls, printed circuit board and a unique gimbal mounting bracket. The low profile styling of this instrument makes it ideal for under-shelf, bench top or wall mounting, a gimbal bracket being supplied for this purpose. This bracket will also serve as a stand for bench use.

BRIEF SPECIFICATION:

Measures a.c. (r.m.s.) and d.c. volts 0-1.5, 5, 15, 50, 150, 500, 1,500. Separate scales for 1.5 and 5 v a.c. Ohms (with 10 ohms centre) X1, X10, X100, X1,000, X10K, X100K, X 1Meg. 0.1 ohms to 1,000 Megohms with internal battery. Input resistance 11 M ohms. Accuracy d.c. ± 3% f.s.d. a.c. ± 5% f.s.d. Power requirements: 110, 220-250 volts a.c. 40-60 c/s 10 watts



HEATHKIT MODEL IM-13U

Kit £18. 18. 0

Assembled £26. 18. 0

4½" VALVE-VOLTMETER KIT, Model V-7A

This internationally famous Valve Voltmeter is an exceptionally versatile, reliable and simple-to-use instrument. Despite its low cost, its performance and professional appearance are better than many VVM's costing much more.

Measures a.c. and d.c. volts 1.5 to 1,500 and up to 4,000 v pk. to pk. Input resistance 11 MΩ. Measures resistance up to 1,000 MΩ using own internal battery. 4½" 200 µA meter. Complete with test leads. Power requirements: 200-250 volts, 40-60 c/s a.c. 10 watts.

HEATHKIT MODEL V-7A

Kit £13. 18. 6

Assembled £19. 18. 6



R.F. PROBE KIT, Model 309-CU

Will extend the frequency range of models IM-13U and V-7A to 100 Mc/s. Useful voltage indication up to 300 Mc/s.

Kit £1. 13. 6 Assembled £2. 2. 0

HIGH VOLTAGE PROBE KIT, Model HV-336

Will enable voltages of up to 30,000 v d.c. to be measured with negligible circuit loading by models IM-13U or V-7A. Easily assembled in 1 hour.

Kit £2. 19. 6

Your Test Equipment £ goes further with Heathkit models



TELEVISION ALIGNMENT GENERATOR KIT, Model HFW-1

This instrument is designed to offer the maximum in performance, flexibility and utility at the lowest possible cost. To this end several outstanding features have been incorporated which are unusual in instruments in this price range.

**HEATHKIT
MODEL HFW-1**
£30.15.0
Assembled £44.10.0

- ★ Freq. coverage 3.6 Mc/s to 220 Mc/s on fundamentals.
- ★ Unique non-mechanical sweep oscillator system.
- ★ High level output on all ranges.
- ★ Sweep deviations up to 42 Mc/s.
- ★ Built in fixed and variable marker generators. (5 Mc/s crystal supplied)

Power requirements : 110/200-250 volts a.c., 50 watts. Size 13" x 8½" x 7".

R.F. SIGNAL GENERATOR KIT, Model RF-1U

The extremely wide range of frequencies covered by the RF-1U makes it an invaluable addition to your electronic workshop. Provides extended frequency coverage in six bands from 100 kc/s to 100 Mc/s on fundamentals and up to 200 Mc/s on calibrated harmonics; ideal for alignment and trouble-shooting of RF, IF and audio circuits of all kinds. Six large easy-to-read dial scales allow precise frequency settings. Carefully designed circuitry achieves sine wave output on all bands with outstanding accuracy (2%) throughout the entire frequency range. Modulated or unmodulated RF output of at least 100 millivolts is available, controlled by fixed step and continuously variable output attenuators. 400 cycle audio signal with 10 volt output provided for audio tests. Prealigned coil/bandswitch assembly furnished for ease of construction.

**HEATHKIT
MODEL RF-1U**
£13.8.0



AUDIO SIGNAL GENERATOR KIT, Model AG-9U



The Model AG-9U is an invaluable instrument for high-fidelity audio and many ultrasonics and I.F. applications requiring an almost perfect sine-wave signal. The frequency range covers a wide band (10 c/s to 100 kc/s) and the distortion between 20 c/s and 20 kc/s is less than 0.1%. Frequency generation is achieved by means of a 'Bridged-T' network. The desired frequency is decade switch-selected to 2 significant figures times the multiplier. Decades' accuracy is 1% and 2%. The output is constant over the whole frequency range (approx. ± 1 dB) and may be varied at will from 10 volts f.s.d. down to 3 mV f.s.d. The output is monitored by a large 4½" panel-mounted meter which has a 200µA high-grade moving coil meter with large clear scales.

**HEATHKIT
MODEL AG-9U**
£22.10.0

There are 8 different switch selected voltage ranges which cover from 0.0-003 volts f.s.d. to 10 volts f.s.d. The meter scale is also calibrated in decibels; -10 to +2 on meter, -50 to +20 on attenuator in 10 dB steps, giving a total measurement range of -60 dB to +22 dB.

AUDIO SINE-SQUARE WAVE GENERATOR KIT, Model AO-1U

This is an inexpensive generator which covers 20 c/s-150 kc/s with choice of sine or square waves-the latter to 50 kc/s.

Output voltages ranges: Sine-wave 0-100 mV, 0-1 v, 0-10 v. (Distortion less than 1%). Square 0-800 mV, 0-8 v, 0-80 v. Power requirements 110/200-250 volts ac, 30 watts. Size 9½" x 6½" x 5".

An ideal instrument for checking the fidelity and distortion of audio amplifiers and radio receivers.

**HEATHKIT
MODEL AO-1U**
£14.15.0



RESISTANCE-CAPACITANCE BRIDGE KIT, Model C-3U



The Model C-3U is a compact self-contained Resistance/Capacitance Bridge. It is ac powered, highly portable and will be found equally valuable in the laboratory, service workshop, production line or Amateur's 'den'. It measures a wide range of capacitance (0.00001 to 1,000µF) Power Factor, and also indicates Leakage. Polarising voltages of from 5 to 410 volts are available. The Model C-3U also measures Resistance (100 ohms to 5 Megohms).

**HEATHKIT
MODEL C-3U**
£10.10.0

All readings are taken from the large calibrated scales direct; no calculations are required. Bridge-balance (null-indication) and also leakage is indicated by means of a dual-sensitive Magic-Eye electronic beam. The C-3U's on-off switch disconnects BOTH mains leads from the transformer's primary winding when switched off. When capacitors are being tested for leakage, the spring-loaded leakage-switch control automatically discharges the capacitor under test immediately the operator's hand is removed from the switch knob.

MULTIMETER KIT, Model MM-1U

The Heathkit Multimeter provides wide voltage, current, resistance and dB ranges to cover hundreds of possible applications. Sensitivity is 20,000 ohms-per-volt d.c. and 5,000 ohms-per-volt a.c. Function and range switches provide full-scale settings a.c. and d.c. of 0-1.5, 5, 15, 50, 150, 500 and 1,500 volts. Current ranges are 0-150µA, 15 mA, 150 mA, 500 mA and 15 A d.c. only. Resistance ranges are R x 1 (15 ohm centre scale), R x 100 (1,500 ohm centre scale), and R x 10 K (150,000 ohm centre scale). Measures resistance from as low as 0.2 ohms to as high as 20 megohms. dB coverage is -6 dB to +58 dB. Maximum accuracy is assured on all ranges by the use of 1% voltage divider resistors. The large 4½" 50 microampere meter has more than enough sensitivity for even the lowest voltages on the 1.5 volt scale. Actually a single volt on the lowest range will cause a deflection of 1" for accurate low level indications. A polarity reversing switch is provided on the front of the instrument eliminating transferring of test leads when alternately measuring + and - voltages. Requiring no external source of power, the MM-1U uses standard commercial batteries that are easily replaced when necessary.

**HEATHKIT
MODEL MM-1U**
£12.18.0



All models also available Aligned, Tested, and Ready for use

See page 3 for prices. Send for full specification sheet of any model.

Heathkit models free your expensive equipment for more specialised work!



AUDIO VALVE MILLIVOLTMETER KIT, Model AV-3U

The Model AV-3U is a sensitive rectifier type AC voltmeter designed primarily for audio purposes and low level A.C. measurements.

It has a wide frequency response and voltage range and will measure voltages from 1 millivolt to a maximum of 300 volts at high impedance. This millivoltmeter features a cascade amplifier with cathode-follower isolation between the input and the amplifier and between the output stage and the preceding stages. The frequency response is virtually flat up to 100v. f.s.d. within ± 1 dB from 10 c/s to 400 Kc/s. A $4\frac{1}{2}$ " panel-mounted 200 μ A m/c meter with easily-read scales calibrated in volts (10 ranges from 0.01 to 300 volts f.s.d.) and decibels covering -12 to $+2$ dB, including 10 switch-selected dB ranges from -40 to $+50$ dB. Input impedance is $1M\Omega$ (10v to 300v ranges); $10M\Omega$ (01v to 3v ranges). Power rating is 200-250v. A.C., 40-60 c/s, 10 watts.

HEATHKIT
MODEL AV-3U
£16. 10. 0

DIRECT READING CAPACITANCE METER KIT, Model CM-1U

An easy-to-operate, reliable, inexpensive Direct Reading Capacitance Meter.

After a few moments' instruction, it can be used confidently and accurately by completely unskilled operators.

Polarity is unimportant. Operation is stable—long-term accuracy is excellent and unaffected by mains supply voltage variation, hand capacity, magnetic or electrostatic fields. Full scale ranges are: 100 micro-microfarads, 1,000 micro-microfarads, 0.01 microfarads, 0.1 microfarads. The meter has a $4\frac{1}{2}$ " scale calibrated in μ F and pF; 50 micro-amp movement.

EASIER TO USE THAN A D.C. VOLTMETER!

HEATHKIT
MODEL CM-1U
£15. 15. 0



AUDIO WATTMETER KIT, Model AW-1U

Within its dissipation rating (25 watts continuous, 50 watts intermittent) the AW-1U Audio Wattmeter may be used in any application where audio power needs to be measured. External load resistors, impedances or internal load non-inductive resistors are selected by means of a convenient front panel control switch. Uses a $4\frac{1}{2}$ " m.c., 200 μ A meter, calibrated in decibels and watts.

The overall gain is controlled by varying the amount of negative feedback. The power requirements are 200-250v. A.C. 40-60 c/s. 6 watts. Non-inductive load resistors are built-in for 3, 8, 15 and 600 ohms. The 5 power ranges comprise 0.5 mW, 50 mW, 500 mW, 5 W, and 50 W. f.s.d. There are five switch-selected dB ranges which cover -10 dB to $+30$ dB making a total of -15 dB to $+48$ dB (scale on meter is -5 to $+18$ dB).

HEATHKIT
MODEL AW-1U
£17. 5. 0

HEATHKIT STABILISED POWER PACK KIT, Model MSP-1M

This stabilised power supply is ideal for industrial and laboratory use.

Features include, (a) 200-410v. D.C. stabilised output in 3 switched ranges, (b) Two 3" 'easy-to-read' meters for reading voltage and current simultaneously, (c) Unstabilised 6.3v A.C. centre-tapped output at 4.5 amps. available at front-panel terminals. (d) Separate L.T. and H.T. supply transformers, (e) Mains and H.T. circuits fully fused and (f) Paper capacitors used in smoothing circuits.

All output circuits are isolated. Ripple is less than 1 mV, output impedance less than 0.5 ohms up to 1 Mc/s. The 6-3v. A.C. output may be earthed or operated at 500v. potential relative to earth. Stabilisation ratio better than 500:1. INPUT: 200-250v, 40-60 c/s. A.C., fully fused.

MODEL MSP-1W (without Meters) £29. 17. 6
MODEL MSP-1M (with Meters) £36. 12. 6



GENERAL PURPOSE POWER SUPPLY KIT, Model MGP-1

This compact, general purpose, power supply unit, is invaluable for F.M. Tuners,

Tape Recording Amplifiers and General Laboratory use.

Full wave rectifier EZ80.
D.C. Power Output 200, 250, 270v., 120 mA. max.
A.C. output 6-3 volts, 2.5 amps. (variable c.t.)
Power required 100-120, 200-250v., 40-60 c/s.

HEATHKIT
MODEL MGP-1
£5. 2. 6

DÉCADE CAPACITOR BOX KIT, Model DC-1

Ideal for use in laboratories for experimental, design and development work.

This kit provides capacity values from 100 μ F to 0.111 μ F in 100 μ F steps so that exact values are available for determination of capacitor values in compensating networks, filters, bridge impedances, tuned circuits, etc.

Precision 1% silver-mica capacitors are employed throughout for high accuracy. Switches are ceramic wafer types for minimum loss, and feature smooth action and positive detent.

DÉCADE RÉSISTANCE BOX KIT, Model DR-1U

This 5 dial box covers a range of 1-99,999 ohms in 1 ohm steps with $\pm\frac{1}{2}\%$ precision type resistors in all except unit decade.

Ceramic switches used throughout. Current rating from 500mA to 5mA according to decades in circuit. Panel finished in Admiralty dark grey. Wooden cabinet supplied complete and polished. Size $14\frac{1}{2}$ " x $3\frac{1}{2}$ " x $3\frac{1}{2}$ " deep. Saves many hours for the experimenter.

HEATHKIT
MODEL DC-1
£7. 5. 0
MODEL DR-1U
£10. 8. 0



Many more American Heathkit Instruments.

See page 20

HEATHKIT AMATEUR GEAR

AMATEUR TRANSMITTER KIT, Model DX-100U

The world's most popular Amateur Transmitter is the Heathkit DX-100U

The following special features will appeal to the experienced Amateur:—Completely self-contained Amateur transmitter. Built-in, highly stable, V.F.O. and all Power Supplies. Careful design has reduced T.V.I. to a minimum by use of effectively screened frequency generating stages and pi-tuned circuits at the input and output of the PA stage, and by 11 chokes and pi-network filters to all outlets from the cabinet. No fewer than 35 disc-ceramic by-pass capacitors help to achieve the exceptional stability and high performance for which this famous transmitter is noted. The KT88 high-level anode and screen modulator stage gives over 80 watts of Audio from less than 1.5 mv. input. Adjustable drive and clamp control ensure the valves are only driven sufficiently to maintain required output. Keying on CW is via the V.F.O. and buffer amplifier cathodes; the other RF valves are biased beyond cut-off. When zero-beating the incoming signals from the transmitter, the exciter stages only may be run without the final amplifier being switched on. Provision has been made for remote control operation. The V.F.O. slow-motion drive is very smooth and backlash free. Panel controls allow V.F.O. or crystal control, phone or CW operation, on all amateur bands up to 30 Mc/s. Single knob band-switching selects 160, 80, 40, 20, 15 or 10 metres. D.C. Power input: 150 watts phone and C.W. Power Amplifier: Two paralleled 6146 valves. For field days, public address purposes, etc., the modulator stage of the DX-100U will deliver 80 watts of speech via a special 500-ohm tapping. Modern styling, functional layout, first-class components, materials and engineering are combined in the DX-100U to make it an exceptionally fine transmitter at a most economical price.



HEATHKIT
MODEL DX-100U
£79 . 10 . 0

SINGLE SIDEBAND ADAPTER KIT, Model SB-10U

The SB-10U is designed for use with the Heathkit Apache and DX-100U Series Transmitters, to provide SSB operation on the 80, 40, 20, 15 and 10 metre amateur bands.

The SB-10U can be plugged directly into the 'Apache' but slight modifications to the DX-100 Series also permit the use of the SB-10U with these transmitters. It may also be used with any transmitter in which provision can be made to take out RF at the fundamental operating frequency, return SSB input to the PA grid circuit, and place the PA stage in a Class A operating condition. The primary feature of the SB-10U is that it allows utilisation of all RF circuitry in the companion transmitter, thus making use of the operator's investment in AM gear and enabling him to retain his high level AM capability. This feature brings the cost of an SSB facility within the budget of all amateurs and will afford them the opportunity to experience the advantages of SSB operation.

★ Modification kit, Model SBM-1A, at £2 . 16 . 6

HEATHKIT
MODEL SB-10U
£39 . 5 . 0

VARIABLE FREQUENCY OSCILLATOR KIT, Model VF-1U

The VF-1U Variable Frequency Oscillator has been specially designed to meet the demand for the maximum possible flexibility from an Amateur Transmitter (such as the Heathkit Model DX-40U) which would otherwise be subject to certain limitations imposed by crystal control. The efficient double screening used for all frequency determining components and high quality parts, materials and processing play an important part in this VFO's effectiveness. The tuning control is very smooth, positive and free from electrical noise.

The VF-1U is calibrated in frequency and covers the whole of the Amateur bands (160, 80, 40, 20, 15 and 10 metres). Fundamental output on 160 and 40 metres.

HEATHKIT
MODEL VF-1U
£10 . 17 . 6
Assembled £15 . 19 . 6



BALUN COIL UNIT KIT, Model B-1U

The Heathkit Balun Coil Kit model B-1U is a convenient transmitter accessory, which has the capability of matching unbalanced coaxial lines used on most modern transmitters, to balance lines of either 75 or 300 ohms impedance. The design of the bifilar wound coils will enable transmitters with unbalanced output to operate into balanced transmission lines such as used with dipoles, folded dipoles, or any balanced antenna system.

The Balun coil set can be used with transmitters and receivers without adjustment over the frequency range of 80 through 10 metres, and will handle power inputs up to 200 watts.

Cabinet dimensions are 9" square by 5" deep and it may be located any distance from the transmitter or from the antenna. Can be mounted inside or outside the shack. The bifilar coils are mounted in a lead coated steel cabinet.

HEATHKIT
MODEL B-1U
£4 . 15 . 6

AMATEUR TRANSMITTER KIT, Model DX-40U

The DX-40U is known as 'the little brother of the Heathkit DX-100U'—the most popular Amateur transmitter in the world. This very efficient rig has been designed for Amateurs by Amateur engineers who know from practical experience just what technical features are desirable and essential.

Certainly no other transmitter in this moderate power category combines such high quality, compactness, light weight, ability to reach out with a clear, clean phone or C.W. signal, and such value for money.

The handsome, closely fitting metal cabinet forms part of the very effective screening and, together with the mains filter network, minimises T.V. interference. Modulator and power supplies are built-in. Single-knob band switching is combined with a pi-network output circuit for complete operating convenience. A high-grade moving-coil meter indicates the final grid or anode current. Provision is made for the use of 3 crystals with access through a trap-door in the back of the cabinet. A 4-position switch selects the appropriate crystal or a jack for external VFO which can be used instead of the crystal(s). Power for the external VFO is available from an octal socket outlet at the rear of the chassis.

HEATHKIT
MODEL DX-40U
£33 . 19 . 0

The DX-40U covers the 80, 40, 20, 15 and 10 metre Amateur bands. Input power rating is 75 watts C.W., 60 watts peak controlled-carrier phone and is capable of delivering over 40 watts into the aerial when properly terminated.

The well-known G3HSC Rhythm method of Morse Tuition (incl. L.P. record) for beginners, is now available through us £2 . 10 . 0 incl. postage U.K.

Further details on request.

Amateur Gear (contd.)

AMATEUR BANDS RECEIVER KIT, Model RA-I

The RA-I receiver is designed as an ideal economically priced fixed station, portable or mobile receiver and covers the amateur bands from 160 metres to 10 metres, each band separately calibrated on a large easy-to-read slide rule dial. The dial is illuminated and provides approx. 5" bandspread on each band. Features: Signal strength 'S' meter; front panel dial calibration control operates in conjunction with the provisions made for a 100 kc/s calibrator; tuned R.F. amplifier stage; a half-lattice filter; adjustable noise limiter; 8 valves including stabiliser, plus many other advantages. Frequency coverage: 160, 80, 40, 20, 15, 10 metre bands. Intermediate frequency: (IF) 1620 kc/s. Power requirements: 110-125, 200-250 v. ac. 40-60 c/s. (Provision is made for the connection of external power supply for mobile use.) Housed in a stove-enamelled green steel cabinet, with low silhouette and green-grey front panel colour presentation. Size 13 $\frac{1}{2}$ " wide x 6 $\frac{1}{2}$ " high x 10 $\frac{1}{8}$ " deep.



HEATHKIT
MODEL RA-I

£39.6.6

OPTIONAL EXTRAS: Crystal Calibrator, Model CL-1 £4.12.0
Matching Loudspeaker Cabinet, Model SG-4 £1.9.6
7" x 4" Loudspeaker, Pt. No. 401-501 £1.4.5 incl. P.T.



HEATHKIT
MODEL GD-IU

£10.19.6

GRID-DIP METER KIT, Model GD-IU

A very handy instrument to have around the service shop or lab, the GD-IU can be used either as an oscillator or absorption wave meter. Use it in the shack to locate parasitics, spurious oscillations, neutralizing and to determine the various circuit resonance frequencies. Align IF stages, traps and filters and use it in coil winding applications. A phone jack is provided for listening to 'zero-beat' against another oscillator to determine its frequency. A complete set of pre-wound plug-in-coils are provided for continuous frequency coverage from 1.8 Mc/s to 250 Mc/s. A 500 μ A panel meter is used for indication and a variable sensitivity control is also provided. The compact size of this kit allows one hand operation, leaving the other hand free for making circuit adjustments. 7" long x 2 $\frac{1}{2}$ " wide x 3 $\frac{1}{8}$ " deep.

ADDITIONAL PLUG-IN COILS (MODEL 341-U)

Three extra plug-in coils are available for the GD-IU to extend the frequency coverage down to 350 kc/s. Dial correlation curves are included. Price 17/6.

Q MULTIPLIER KIT, Model QPM-I

This Q Multiplier, when used with a communication receiver, provides both additional selectivity and signal rejection. Has own built-in power supply. It may also be used with a receiver which already has a filter to obtain two simultaneous functions. For example the receiver's filter could be set to peak the desired signal and the Q Multiplier used to null an adjacent signal. Model QPM-I for 450/470 kc/s IF's; Model QPM-16 for 1.6 Mc/s IF's.

Controls: Null Adjust. Peak Adjust. Off-Sharp-Null-Broad. Tuning. Valve/Rectifier Complement: 1-12AX7 Valve, 1-Selenium Rectifier. Power Requirements: 200-250 volts ac, 50-60 c/s. 4 $\frac{1}{2}$ watts. Cabinet Size: 7 $\frac{3}{8}$ " wide x 4 $\frac{1}{8}$ " high x 4 $\frac{1}{8}$ " deep. Finish: Cabinet green, with attractive silver and green front panel.



HEATHKIT
MODEL QPM-I
AND QPM-16

£8.10.0

Useful Equipment for the Home, Office or Shop

TRANSISTOR INTERCOM KITS, Models XI-IU and XIR-IU



HEATHKIT
MODEL XIR-IU
(Remote)

£4.7.6

A boon to office and shop for saving time . . . also to the housewife for baby-sitting, sick-bed contact and in answering the door, when alone, from the comfort and safety of her fireside.

This intercom system is in the form of a Master unit, Model XI-IU, which can be operated in conjunction with up to five Remote stations, Model XIR-IU.

The Master unit can call any one, any combination, or all five remote stations. Remote stations can turn the system 'on' and call another. Each Remote unit is equipped with a 'privacy' switch. The Master unit can be connected to a transistor radio (or any radio not ac/dc operated) to supply music, etc. to the system.

The kits have been designed for easy construction and high performance and are housed in sapele veneered wooden cabinets.

The Master unit uses a 4 transistor amplifier powered by an internal 9 volt battery. Remote stations use a smaller 9 volt battery for call-in purposes only. Batteries are not included with the kit.

Master and Remote stations are sold separately and up to five Remotes can be ordered for each Master Microphone/Speaker (with 50 ft. wire) for Outside Door use 26/6d.



HEATHKIT
MODEL XI-IU
(Master)

£10.19.6

Complete specification sheet of any model sent on request

The whole family can join in that precious long distance call!

TELEPHONE AMPLIFIER KIT, Model TTA-1

Takes just a few hours to assemble . . . saves countless hours in daily work! Just place the 'phone handset on the Telephone Amplifier cradle and you're ready to carry on a 2-way conversation . . . hands free! Features an all-transistor circuit, inductive pick-up coil, built-in speaker and volume control. A single 9-volt battery lasts up to 100 operating hours. Easy circuit board assembly. Ivory toned cabinet. Size: 6" x 5 $\frac{5}{8}$ " x 9 $\frac{1}{4}$ " deep.

Free your hands during telephone calls.

For suitable extension speaker see page 19

HEATHKIT
MODEL TTA-1

£7 . 9 . 6



PUBLIC ADDRESS AMPLIFIER KIT, Model PA-1



PA-1

This multi-purpose, high fidelity, high output unit is suitable for vocal and instrumental groups, public address, record players, electronic organs, guitars, etc.

Features include:—

50 Watts output r.m.s. two heavy-duty 12" Goodman speakers, 'Magic eye' volume indicator, variable tremolo speed and depth control, elegant cabinet covered with black/gold vynair material requirements—100/250 volts a.c.

and finished with gold trim. Power 40/60 c/s 170 watts. Dimensions 20" high x 31" wide x 13" deep. Net weight 82 lbs.

Legs optional extra 17/6d. per set of four.

PROTECTIVE COVER of waterproof leathercloth (P.V.C.), fully padded with felt inside and linen lined. £6 . 17 . 6 extra

Kit £54 . 15 . 0 Assembled £74 . 0 . 0

Full descriptive leaflet available on request.

POWER AMPLIFIER KIT, Model MA-50

The power amplifier section of the guitar/PA amplifier can be obtained separately. This model MA-50 is ideal for use with electronic organs, sound reinforcing systems, etc.

Kit £19 . 18 . 0 Assembled £27 . 18 . 0

NOTE. The Heathkit model UMC-1 Control Unit is recommended for use with the MA-50 in applications where the cabinet and electronic instrument facilities are not needed.

ELECTRICITY MAINS EXTENSION KIT, Model PUE-1 Completely safe, ideal for garages, 'ham' shacks, greenhouses, workshops and soil heating, etc.

Consists of 30 ft. of power cable, 12 ft. lighting cable, 15 ft. of special suspension system, switch fuse unit, 13 amp. socket outlet, light switch lamp socket, junction box and all bracket fittings. Full instructions provided. Conforms fully to IEE Regulations. £4 . 15 . 6

HEATHKIT AERIAL TOWER KIT, Model HT-1

THE FINEST VALUE IN AERIAL TOWERS OBTAINABLE.

Ideal for low signal reception areas or areas with high interference level. Equally suitable for communal reception (flats, hotels, etc.), 'Amateur' transmission/reception, commercial reception and general private use.

Easily erected by two persons. The tower is climbed as assembly proceeds and each section provides a platform from which to continue assembly of mast. No special skill necessary. Full step-by-step erection instructions and details of an easily laid concrete base supplied with kit.

Strong, rigid, safe (BSS 499/1959 Specification).

Height 32 ft, 3 ft. x 3 ft. at base. Weight 240 lbs.

Accessories available for mounting fixed or rotatable tube up to 15 ft. above tower. Electrically controlled aerial rotators, with angle-of-rotation indication from ground also available.



HT-1G Kit (Galvanised finish) £35 . 15 . 0

HT-1 Kit (Red Oxide finish) £29 . 15 . 0

A complete range of U.H.F. (625 line and colour TV), V.H.F., F.M., Radio and TV aerials is available.

Please state your requirements or send for full details.

PRINTED CIRCUIT AMPLIFIER KIT, Model PCA-1 This 0.5 watt 4-transistor amplifier is ideal for incorporation in existing equipment cabinets and is less chassis for this purpose. Separate volume control and switch included. Particularly suitable for gramophone conversion, baby alarm, intercom and similar uses. 3 ohm output and operates from 9 volt battery. Size 2 $\frac{3}{4}$ " x 6" x 1 $\frac{1}{4}$ "

£3 . 9 . 0

Send for Illustrated American Heathkit catalogue 1/- see page 20.

Parents! Choose your youngsters' presents to give enriching enjoyment and valuable experience of the modern world in which they live.

JUNIOR TRANSISTORISED PERSONAL RADIO KIT, Model UJR-1
an ideal introduction for young and old

The Model UJR-1 has been specially designed as a practical introduction to radio and electronics. It is particularly suitable for youngsters and absolute beginners in radio because, in addition to the well-known Heathkit 'step-by-step' procedure which gives easy-to-understand complete instructions for building the set, the Manual also explains in simple language and in pictures what radio is and how it—and every part of the UJR-1 (including the transistor)—works. It also shows clearly how to solder good electrical joints . . . and what NOT to do. Using a low priced (4.5v.) torch battery, running costs are low and it is housed in a black high impact polystyrene case.

The Model UJR-1 is a dual-wave radio receiver for use with external aerial and earth and headphones having an impedance of 2,000–4,000 ohms. (*Not included in the kit but available at 19/6.)

A supplementary audio amplifier stage known as the UJR-1S is available if more output is required. This stage when built into the UJR-1 will, under favourable local conditions and with an aerial, work a full-size loud speaker, but a matching transformer will be required (5,000/3 ohms). It should, however, be realised that the volume will not compare with that of a domestic receiver.



**HEATHKIT
 MODEL UJR-1**

£2.7.6

incl. P.T.
 (UJR-1S Additional
 Amplifier Stage 16/6
 extra)

HEATHKIT ELECTRONIC WORKSHOP KIT, Model EW-1

This Educational Kit will lead to an enjoyable understanding of electronics, so important in the Space Age.

20 exciting experiments can be made with this one splendid kit . . . including Transistor Radios, Intercom Sets, Burglar Alarm, Electric Eye, T.V. or Radio Silencer, etc.

SPECIAL CLIPS ELIMINATE SOLDERING!

This kit contains a 72-page, well illustrated, and simply written Manual giving step-by-step experimental guidance and interesting instruction in electronics.



**HEATHKIT
 MODEL EW-1**

£7.13.6

Total Price

Parts sold separately

Non-radio parts

£5.17.10

Radio parts £1.15.8
 including P.T.



YOUNGSTERS!

Possession of one of these fascinating kits also entitles you to wear the smart Heathkit two-colour Junior Experimenters' Club badge given free with every Electronic Workshop Kit.

THE OPTIKIT No. 1.—The first and only optical construction kit of its kind.

It is a real construction kit with which any boy or girl can make practical working instruments such as microscopes, projectors and telescopes.

All lenses, mirrors and mechanical parts are precision made by the Helio Mirror Co. for real instrument construction. Each kit contains a 116-page Manual giving step-by-step instructions, well illustrated by experts in the optical instruments world.

You can make many instruments and experiments with this kit, including:

- | | | |
|------------------------|-----------------------|-------------------------|
| Astronomical Telescope | Kaleidoscope | Postage Stamp Magnifier |
| Back Viewing Periscope | Terrestrial Telescope | Projection Microscope |
| Camera Obscura | 35mm Film Viewer | Rangefinder |
| Film Strip Projector | Microscopes | Sextant, etc. |

OPTIKIT No. 1

£7.10.0

Model No. O £3 19 0. This makes over 20 instruments and experiments.

Model No. OA £4 7 0. This converts Model No. O to Model No. 1.



Ancillary 'DO-IT-YOURSELF' Equipment

— SPEAKERS —



8" GENERAL PURPOSE type G8 (Goodman's). Ideal for use as an extension speaker, with a radio set or a tape recorder, for instance. 3 Ω impedance; 8,500 gauss; 75c/s resonance; 50-14,000c/s response. **£1.8.6 incl. P.T.**

12" GENERAL PURPOSE (Goodman's type C.81A). Suitable for bass-reflex systems. Twin cone: 15 Ω impedance 11,000 gauss; 55c/s cone resonance; 30-16,000c/s response; 1½" speech coil. **£5.10.6**

12" HEAVY DUTY 122/12 (Fane) bass speaker specially made for HEATHKIT. Ideal for total enclosures of 3-6 cu. ft. Foam surround with single 'roll' on a very heavy cone, as used in our very popular 'COTSWOLD' Speaker System. 15 Ω impedance; 12,000 gauss; 30c/s cone resonance; 2" speech coil; cross-over at 500-1,000c/s. **£7.7.0**

2" PRESSURE UNIT (Fane type 301) as used in our 'COTSWOLD' Speaker System. It can be mounted in an enclosure with a bass speaker, without interaction. 10-15 Ω impedance; 17,500 gauss; 2,000-20,000c/s response; optimum cross-over at 2,000-5,000c/s; 120° dispersion. **£3.1.6**

ITEM SCM-1. TWO SPEAKERS AND CROSS-OVER SYSTEM As used in the Heathkit model SSU-1, including instruction manual for enclosure together with 1-8" Type H8 High Flux bass unit (Plessey) 15 Ω, 65c/s resonance, and 1-4" Treble Speaker (Elac Type IW4). Complete with cross-over unit and balance control. These can be mounted in a bass reflex enclosure of 2-4 cu. ft. 45-16,000c/s response. **£4.12.0**

25 ohm EXTENSION SPEAKER, Model SG-1 This extension speaker has been designed for use with the Telephone Amplifier model TTA-1, and allows this amplifier to be operated at a higher volume level. Only requires connection to the speaker jack; supplied completely assembled, wired and finished. Cabinet: Polished mahogany. Dimensions 4½" deep at base, sloping back to 3½" at the top. Overall height 5½" x 8½" wide. 7" x 4" elliptical speaker. Speaker grille: Attractively patterned grey plastic. **£3.2.6**

— TOOL KITS —

TOOL KIT, Model TK-1

This is the ideal minimum set for your requirements. Comprising:- Henley 'Solon' Soldering Iron one pair of diagonal cutters, one pair of needle-nosed pliers and three screwdrivers. All tools high quality Sheffield made.



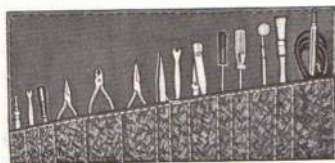
MODEL TK-1 44/6

Henley 'Solon' Soldering Iron sold separately at £1.6.0

TOOL KIT, Model TK-2

A comprehensive set for the home constructor or service engineer. Presented in a carrying case made from a high-grade cotton backed, pigskin-grained plastic.

It comprises the famous Henley 'Solon' Soldering Iron, one 4" and one 5" needle-nosed pliers, one 4" diagonal cutters, three screwdrivers, one watchmaker's screwdriver with three blades, two open-ended spanners covering 0, 2, 4 and 6 B.A. one 'Bib' wire stripper and cutter, one inspection mirror, one ½" Nylon cleaning brush and one watchmaker's precision tweezers. All tools high quality Sheffield made.



'Antex' instrument iron in place of the Henley 'Solon' S/-extra.

MODEL TK-2 £4.6.6

— Extension Speaker Cabinet. Model SG-2 —

Fully finished, ½" thick cabinet, light mahogany veneer finish, with ½" pegboard back panel. Supplied with ½" thick plyboard uncut baffle (for fitting own loudspeaker unit), grille cloth, terminal mounting plate sockets and banana plugs. All necessary screws, nuts, etc. Very handsome appearance. Size: 12½" x 12½" x 6½". **£2.15.0**

The World-famous WELLER Soldering Gun

Just touch the trigger—Heat and Spotlight come on immediately. The gun design gives natural comfort in the hand and is perfectly balanced for quick, accurate soldering.

- Wellertip—copper tip, iron-plated to provide maximum heat transfer and long tip life.
- Instant Heat—no wasted time or current. 100 watts.
- Cutting and Smoothing Tips—available for many special jobs.
- Prefocused Spotlight—lights up the work.

MODEL 8100D £3.17.6

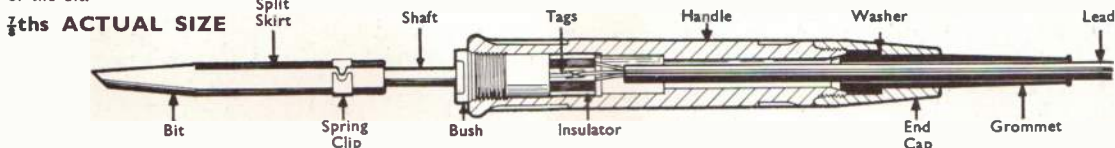


— ANTEX PRECISION SOLDERING IRON Model E —

A safe, light soldering iron of 20 watts, 240v. a.c. Solders multiwire terminals quickly. Cool comfortable handle. Long life iron-coated bit. **35/-d.**

— ANTEX PRECISION MINIATURE SOLDERING IRON —

This safe, robust, yet small and light soldering iron is ideal for printed circuit work. Short shaft and correct balance give accurate control of the bit.



Fully insulated elements—heat resistant handle—safety tested 240v. a.c. **32/6**

International Mail Order Scheme covering American Heathkit Models.

CHOOSE
from a range
of over

250

AMERICAN HEATHKIT MODELS! Most can be delivered direct from the U.S. Plant to your U.K. address. You post to us the U.S. price in £.s.d. plus postage and insurance and you are advised by Local Postal authorities of the Customs and Excise charges payable.

Please note: **Order from DAYSTROM LTD., Gloucester, England.**

Fully illustrated American catalogue, with full details, prices in £. s. d., and approx. Customs and Excise charges, sent for ONLY 1/- Post Paid (which may be deducted from first order).

Selection of American Heathkit Models

Prices include carriage from U.S. plant to you. Duty (approx. 25%) and purchase tax, where applicable, payable to G.P.O. or Customs on arrival.

	Model	Kit Price £ s. d.		Model	Kit Price £ s. d.
'Fotoval' Photographic Exposure Computer	PM-14E	36 0 0	R/C/L/Q Bridge	IB-2AE	29 17 0
Electronic Ignition System (for all cars)	GDP-763P	38 0 0	Audio Analyser	IM-22E	23 6 0
Battery operated Depth Sounder (for small craft)	MI-11	28 5 0	FM Alignment Generator	FMO-1E	14 11 0
Rudder position indicator	MI-14	16 0 0	3" DC Oscilloscope	IO-10E	33 8 0
Fuel Vapour Detector	MI-41	16 2 0	Valve Checker	IT-21	18 3 0
10 + 10W Stereo Transistor Amplifier	AA-22E	40 16 0	Valve Tester	TT-1A	66 0 0
12v Power Supply	IP-12E	19 9 0	Transistor Tester	IT-10	2 16 0
Variable Power Supply	IP-32E	23 18 0	Laboratory 'Q' Meter	QM-1E	22 14 0
Servo Chart Recorder (Assembled only)	EUW-20AE	83 4 0	Harmonic Distortion Meter	IM-12E	22 10 0
Analogue Computer (Price incl. duty)	EC-1E	117 0 0	Colour Bar and Dot Generator	IG-62E	26 15 0
			Transistor Reg. Power Supply	IP-20E	30 1 0
			De-luxe SSB Receiver	SB-300E	106 17 0
			SSB Transceivers (80, 40 or 20 metres)	HW-12/22/32	48 0 0
			SSB Mobile Transmitter	HX-20	88 0 0
			Reflected Power Meter	HM-11	6 9 0
			SSB Monitor Oscilloscope	HO-10E	24 13 0
			Tunnel Dipper	HM-10A	14 2 0

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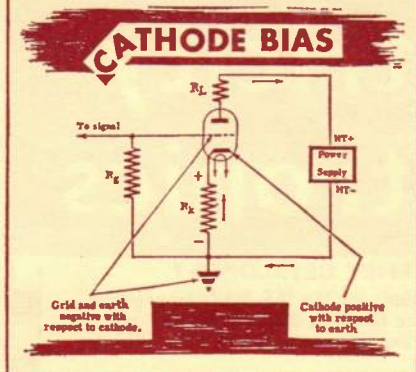
Of all bias systems, cathode bias is the one most widely used.

Cathode bias is obtained by connecting a resistor in series with the valve in the cathode lead. In order to understand how this biases the valve, it will be necessary for you to recall three points:

1. If current flows through a resistor, an IR drop will be produced.
2. The end of the resistor towards which the current is flowing is always the most positive (+).
3. The purpose of bias is to keep the grid negative with respect to the cathode.

Look at the illustration below. Notice that a resistor (R_k) has been placed in the cathode circuit of the valve. Between cathode and earth. All current flowing through the valve must flow from H.T. (-) through the cathode resistor. This produces an IR drop across the cathode resistor, making the cathode positive with respect to earth.

Since the grid is connected to earth through R_g and earth is negative with respect to the cathode, the grid must also be negative with respect to the cathode.



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