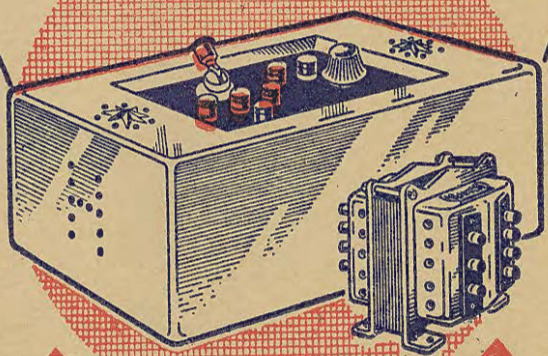
MAINS POWER FOR YOUR RADIO



HEAYBERD

MONARCH OF THE MAINS

The PIVOT of MAINS WORKING

LESLIE SMITH & CO., PRINTERS,
15-19, GODLIMAN STREET, E.C.4.

HEAYBERD

1933 Catalogue of

RADIO MAINS EQUIPMENT

MANUFACTURERS OF MAINS UNITS, MAINS UNIT KITS, MAINS TRANSFORMERS, CHOKES, CONDENSERS, BATTERY CHARGERS AND INTER-VALVE TRANSFORMERS.

HEAYBERD
MONARCH OF THE MAINS.

F. C. HEAYBERD & CO.

Head Offices and Showrooms :

10, FINSBURY STREET, LONDON, E.C.2

(One Minute from Moorgate Station)

Telephones :
Metropolitan
7516, 7517.
& 7518.

Telegrams :
HEAYBERD,
Finsquare,
LONDON.

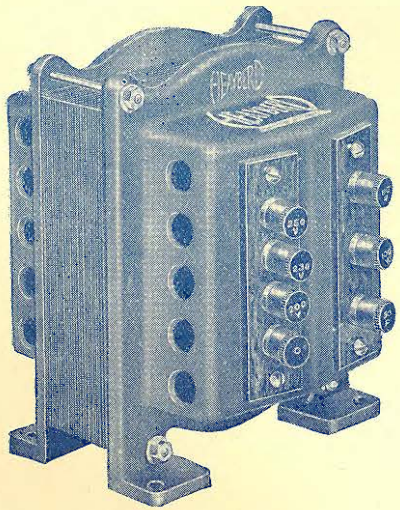
WORKS : GREENWICH

JUST A MOMENT PLEASE!

YOU will find in this Catalogue many hints and diagrams which we know will be of service. There are pages to suit the listener who desires simply to switch on to trouble-free Radio. For the man who wants to know all about his Mains Unit, how to construct and to partake in its production, we suggest the assembled Mains Unit Kits. Amateur constructors will prefer, no doubt, the unassembled sets of components, of which there is a very comprehensive range. Mains Transformers, Chokes, Inter-Valve Transformers, Battery Chargers, Condensers and Resistances are available for every purpose.

Heayberd have been Radio manufacturers since 1922 when wireless was in the first steps of popularity. Intensive specialization in Mains apparatus has resulted in Heayberd being acknowledged the leaders in this line of the industry. Heayberd products are in use in practically every country where there is Mains Radio.

The models described in this Catalogue are the outcome of months of patient research work by skilled engineers to improve on last season's products—a hard task. The material used in the manufacture of Heayberd apparatus is of the highest quality. Every job is tested thoroughly at definite stages of production and when finished, it receives a final inspection of the severest nature. No effort is spared to ensure complete efficiency in every article.



Standard Heayberd Mains Transformer.

IF YOU ARE INTERESTED IN :

HEAYBERD

COMPLETE MAINS UNITS

Eliminating the Trouble, Expense and Inconvenience of H.T. Batteries

Wireless set owners well know the trouble, expense and inconvenience occasioned by using H.T. Batteries to supply the High Tension for their receivers. Batteries have to be replaced several times a year, and then the set only gives its best results when the batteries are comparitively new. When running down, batteries produce crackling, distortion, weak signals and L.F. Oscillation. Owing to the recurring cost of replacements, battery users pay dearly for their H.T. current.

A Mains Unit eliminates batteries and suffers from none of their disadvantages. With a Heayberd Mains Unit a steady supply of power is available, getting maximum results from the Receiver at all times. Operation of a Mains Unit is extremely simple. It is connected to the mains in the same manner as an electric reading lamp. Connections between Mains Unit and receiver are similar to ordinary battery connections. Once installed in the receiver a Heayberd Mains Unit can be forgotten, it gives no trouble and requires no attention. The initial cost is soon more than regained by the saving of expenditure on batteries. The cost of running a Mains Unit is negligible . . . only a few shillings a year.

Heayberd Complete Mains Units this season are an evolution in Mains Unit design. Cased in sturdy metal covers they are of original and modern finish. Incorporating proved and tested Heayberd components and Westinghouse Metal Rectifiers. All Units are guaranteed to give the highest efficiency and uninterrupted service. The outputs have been carefully chosen to suit practically any receiver on the market. All units employ full wave rectification. The smoothing circuit is more than ample, and its qualities are without parallel in the Mains Unit field. Safety fuses are inserted in models D.150, M.W.1, D.250 and Power Pack.

The choice of a Heayberd Mains Unit for any particular receiver depends almost entirely upon the high tension current consumption of the Receiver. This is ascertained by adding up the consumption in milliamps. of each valve. All Heayberd models have the current output clearly stated but this figure should never be exceeded. It is advisable, therefore, to obtain a unit having a current output slightly in excess of that actually required. Most of the Units have an alternative output switch which greatly enlarges their adaptability. All Units are covered by the Comprehensive HEAYBERD GUARANTEE.

SPECIFICATIONS OF COMPLETE A.C. MAINS UNITS

MODEL D.120.

OUTPUT :

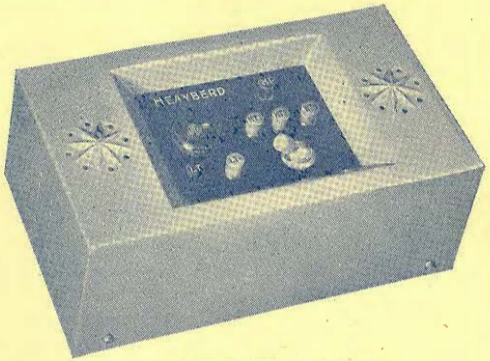
18 ma. at 120 v.
2v. .25 amp. Charger.

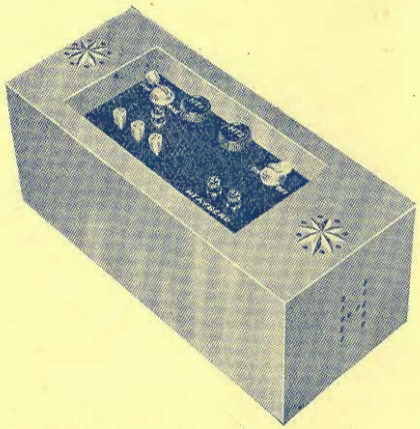
TAPPINGS :

H.T. 1 Variable S.G. ... 40/110 v.
H.T. 2 Fixed ... ... 100 v.
H.T. 3 Fixed ... ... 120 v.

This is a special Unit for Portable Receivers and is also extremely suitable for small power sets.
Size 8 in. x 5 in. x 5 in.

Price 85/-





MODEL D.150.

OUTPUT :

25 ma. at 150 v. Max.
25 ma. at 120 v. Min.

TAPPINGS :

	Max.
H.T. 1 Variable S.G. ...	40/110 v.
H.T. 2 Variable ...	60/130 v.
H.T. 3 Fixed	150 v.

The ideal Unit for replacing H.T. batteries in existing Battery-operated Receivers taking up to 25 ma. Size 12¼ in. x 5½ in. x 5 in.

Price 86/-

L.T. 4 v. 4 amps. for A.C. Valves, 8/- extra, or L.T. 2 v. .5 amp. Trickle Charger, 27/6 extra.

MODEL M.W.1.

OUTPUT :

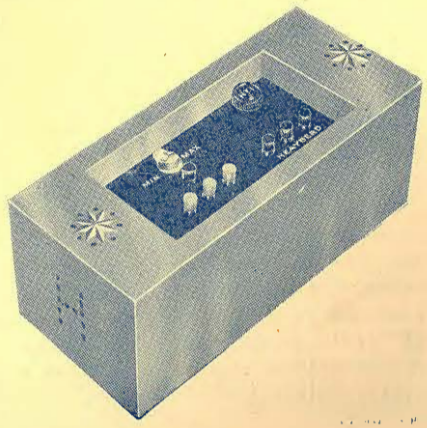
50 ma. at 200 v. Max.
30 ma. at 150 v. Min.
L.T.A.C. 4 v. 5 amps.

TAPPINGS :

	Max.
H.T. 1 Variable S.G. ...	40/120 v.
H.T. 2 Fixed	175 v.
H.T. 3 Fixed	200 v.

Here is an H.T. and L.T. Unit for 3 to 5 A.C. valves. H.T. supply also suitable for multi-valve battery-operated sets.
Size 12¼ in. x 5⅓ in. x 5 in.

Price 127/6



HEAYBERD

SPECIFICATIONS OF COMPLETE A.C. MAINS UNITS

MODEL D.250

OUTPUT :

60 ma. at 250 v. Max.
60 ma. at 200 v. Min.

TAPPINGS :

H.T. 1 Variable S.G. ... 40/110 v.
H.T. 2 Variable ... 80/150 v.
H.T. 3 Variable ... 100/200 v.
H.T. 4 Fixed ... ... 250 v.

A high power de luxe Unit adaptable for any receiver taking up to 60 ma. Size 14½ in. x 9 in. x 6½ in. Complete in Black Crystalline Steel Case.

Price 170/-

L.T. 4 v. 5 amps. and 4 v. 1 amp. supplies. 10/- extra.

POPULAR POWER PACK

OUTPUT :

40 ma. at 200 v.
L.T.A.C. 4 v. 4 amps.

An H.T. and L.T. Power Unit for incorporating in All-Mains Radiograms and All-Mains Receivers.

Size 9¼ in. x 7 in. x 6 in.

Complete in Black Crystalline Steel Case.

Price 87/6

All Heayberd Standard Mains Units and Transformers are designed for Mains, 200-230-250 volts 40-100 cycles, or 100-110 volts 40-100 cycles. Special Mains Units for 25 cycles Mains are 15/- extra to the List Price and Special Transformers for 25 cycle Mains are 25 per cent. extra to the List Price. Be certain to state the voltage and periodicity of your Mains when ordering.

HOME CHARGING
and
WHAT IT MEANS TO YOU

Charging the L.T. accumulator at home has many decided advantages when using such a remarkable little Unit as the Heayberd Model A.O.2 shown herewith. Compact in sturdy metal case, this Charger incorporates Westinghouse Metal Rectifier and is suitable for charging 2, 4 or 6 volt accumulators at ½ amp. It can be used on Mains 200—250 volts and special Models are also obtainable for Mains 100—110 volts. Here are five reasons which should be more than sufficient to convince the most discriminating Radio buyer :—

(1) Regular and constant charging at home with the Model A.O.2 ensures long life to the accumulator.

(2) No risk is ever run of the accumulator being discharged when some important Radio item is being broadcast.

(3) The cost of the Charger is so small that the money saved in Service Stations' charges soon covers the initial outlay.

(4) You know your accumulator is being treated correctly and not over charged or abused in any other way—it is always under your eye.

(5) The trouble and delay in sending the accumulator to a Service Station in all kinds of weather and at inconvenient times at once cease when the Model A.O.2 is installed.

DECIDE TO-DAY TO START AND SAVE

Model A.O.2
A Full
Half Ampere
(not "trickle")
Charging
Plant.

Price 35/-

Model A.O.3
charging
6 or 12 volt
Accumulators
at 1 amp.

Price 42/6

ERRATA.

Please Note. Since printing this edition, Model A.O. 3 Charger has been greatly improved and now charges 2, 6 or 12 volts at 1 amp.

10, FINSBURY STREET, E.C.2.

H.T. Units for D.C. Mains

A high tension Mains Unit for D.C. mains is simpler, and therefore cheaper, than a corresponding unit for A.C. mains.

In addition to this, the efficiency of a D.C. unit results in reduced current consumption. Many people hesitate to buy a D.C. Unit as they fear that, should they move to a district with A.C. mains or should the supply be converted to A.C., their unit would be useless. Such fears are groundless. With a HEAYBERD D.C. Mains Unit the necessary alterations for A.C. working can be carried out in less than an hour ! Additional components required are fewer than with other makes of Mains Units . . . *and the same case can be used when converting to A.C.* Two models are available—a complete unit ready to switch on, or an assembled Kit which simply requires wiring—both have the same outputs. Fitted in sturdy metal cases of modern design. Incorporating Safety Fuses. Special air-gap double-wound Choke and 16 mf. Condensers give perfect smoothing. Both Units covered by the HEAYBERD COMPREHENSIVE GUARANTEE.

MODEL H.D.C. 150.

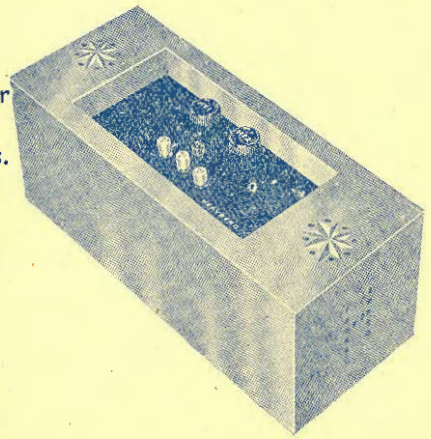
Complete H.T. Mains Unit for D.C. Mains.

Size 12¼ ins. by 5½ ins. by 5 ins.

TRIPLE ADJUSTABLE OUTPUTS :
15, 25 or 50 ma.

TAPPINGS :
40-100 v. Variable S.G.
80-130 v. Variable.
150 v. Fixed.

Price: 55/- Complete.



MODEL D.C. 150.

Assembled Mains Unit Kit. Simply requires wiring-up.

TRIPLE ADJUSTABLE OUTPUTS : 15, 25 or 50 ma.

TAPPINGS :
40-100 v. Variable S.G.
80-130 v. Variable.
150 v. Fixed.

Price : 52/6 Assembled.

(Similar, in size and appearance, to the H.D.C. 150 Mains Unit.)

A D.C. CONVERTABLE TO A.C. UNIT

10, FINSBURY STREET, E.C.2.

TECHNICAL TIPS

1. All Heayberd Complete Mains Units, Assembled Kits of parts and Sets of Components (except valve rectifier sets) operate on the full wave voltage doubler system.

2. The voltage of fixed intermediate tappings varies with the amount of current drawn from the tapping, but the values stated are based on average current requirements.

3. The intermediate tappings can be varied in any of the unassembled sets of parts to meet the special requirements of the customer.

4. The H.T.+1 and H.T.2 intermediate tappings on Mains Units are intended to supply a small current only as required for H.F., Detector and first L.F. valves.

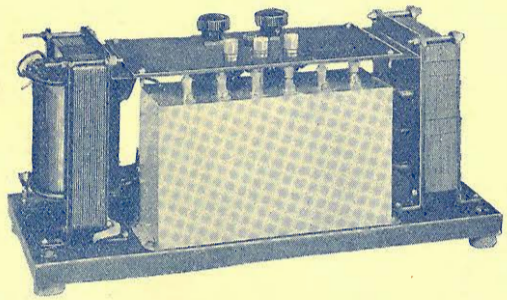
5. On no account should an intermediate tapping (except H.T.3 on D.250, C.250, Set H.T.8 Major and Set H.T.9) on a Mains Unit be used to supply current to the H.T.+ Power tapping on a receiver, i.e., the H.T.+ terminal which connects to the last valve in the set. Failure to observe this will probably damage the Unit and in any case, very poor results will be obtained.

6. If the voltage on the power tapping is too high then the alternative output switch should be placed in the "Min." position. (With Kits and Sets of components, use the low voltage tapping on **secondary** of Transformer). A further reduction in output can be obtained by connecting one Mains lead to the highest voltage tapping (250v.) if this is not already in use, on the **primary** of the Transformer.

7. When writing to the Heayberd Technical Service Dept., concerning the operation of Radio sets from the Mains, full details should always be given. This saves time and ensures that the best possible advice is given. The details required include :—
   - (*a*) Nature of Mains supply, A.C. or D.C.
   - (*b*) Mains voltage.
   - (*c*) The frequency or periodicity of Mains when A.C.
   - (*d*) Age, make and type of receiving set (number of valves, etc.).
   - (*e*) The exact make and type number of every valve in the set, particularly the output valve. (To say a "two-volt super power valve" or "A.C. Pentode valve" is **not** sufficient).
   - (*f*) The number of H.T.+ tappings and if possible, which valves are connected to the particular tappings.
   - (*g*) The approximate H.T. current consumption in milliamps. of each H.T.+ tapping.
   - (*h*) The approximate voltage required at each H.T.+ tapping.

8. When writing to us concerning one of our Units, always give the complete type number, Guarantee number and when and where purchased

BUILD YOUR OWN MAINS UNIT



If you are interested in the constructional side of Radio, you will no doubt prefer to build your own Mains Unit. Thus you will get an intimate knowledge of its working and so obtain the best possible results. Further, you have the satisfaction of knowing that the completed model is a result of your work. In the Heayberd "C" Assembled Kits the components are ready assembled and mounted on the base; all you have to do—is simply wire up. This is an easy task and can be completed by any man in less than an hour. It is just a matter of following the simplified point-to-point diagram presented with every Kit. Handsome Metal Cases are included with all Assembled Kits.

Heayberd Mains Unit Kits were the pioneers in this branch of the Radio Industry. In the latest 1933 Models the components have been mounted in a very compact but easily accessible manner. Full directions are given with every Kit. All models are covered by the Heayberd Comprehensive Guarantee against breakdown.

How to Select Your Kit

It is not a difficult task to choose the most suitable Kit for your particular Receiver. The selection is governed by the type of Power Valve in the Receiver. Ascertain the maximum voltage required by the Power Valve and then from the summary of Models choose the Kit, the output of which is the same as, or nearest to, this maximum voltage. If, for example, the Power Valve in your Receiver needs 150 volts maximum, the particular Kit you want is Model C.150. For Receivers fitted with Super-Power Valves, taking up to 60 m.a., Model C.250 should be selected. There is a Kit for practically every type of Receiver and you should have no difficulty in making the right selection. If you are not quite sure of any point write to the Heayberd Service Department. They will assist and advise you—it is their job.

Specification of Heayberd A.C. Kits

MODEL C.150

Alternative Outputs :—
25 ma. at 150 volts.
25 ma. at 120 volts.

Tappings :		Min.	Max.
H.T.1	Variable S.G.	20/80	40/110 volts.
H.T.2	Variable	50/100	60/130 ,,
H.T.3	Fixed	120	150 ,,

This is a medium power Model suitable for the majority of Receivers in general use. The secondary of the Transformer is tapped to give choice of alternative maximum outputs, i.e., 150 volts or 120 volts at terminal H.T.3. Westinghouse full-wave rectification on the voltage doubling system is employed. The smoothing system comprises a new type of Heayberd Double Choke with separate iron circuits and 650 volt D.C. test Condenser with a capacity of 16 mfds. Freedom from hum is thus ensured on all current loads up to the maximum of 25 ma. The Variable Resistances controlling the outputs of the two intermediate tappings are the latest wire wound type ensuring reliable voltage settings over a wide range. The metal case is of attractive modern design and the insulated Bakelite panel carrying the controls and tappings is neatly recessed in the top of the Unit. Special sockets for changing the Mains voltage and the safety fuse are fitted in convenient positions underneath the model and can be easily adjusted without removing the case. The Kit can be handled with absolute safety as the metal case is earthed. Rubber feet are fixed to the base allowing the Unit to be placed anywhere with safety. Dimensions : 12½ ins. by 5½ ins. by 5 ins.

Price ... 76/-

L.T. 4 volts 4 amps. supply for A.C. Valves, if required ... 8/- extra

---

MODEL G.200

Alternative Outputs :—
50 ma. at 200 volts.
30 ma. at 150 volts.

Tappings :		Min.	Max.
H.T.1	Variable S.G.	20/80	40/120 volts.
H.T.2	Fixed	130	175 ,,
H.T.3	Fixed	150	200 ,,

L.T. 4 volts 5 amps. for A.C. Valves.

The choice of outputs from this Model give a very wide range of usage. Similar in general design to the C.150, but with 800 volt tested Condensers this Model is the response to an insistent demand from many hundreds of amateur constructors. The Kit is fitted with an L.T. 4 volts 5 amps. supply, thus making it admirably suitable for powerful All Mains Receivers. Dimensions : 12¼ ins. by 5½ ins. by 5 ins.

Price ... 107/6

MODEL C.250

Alternative Outputs :—
60 ma. at 250 volts.
60 ma. at 200 volts.

Tappings :		
H.T.1	Variable S.G.	40/110 volts.
H.T.2	Variable	80/150 ,,
H.T.3	Variable	100/200 ,,
H.T.4	Fixed	250 ,,

A specially designed Unit, the output power of which can be varied to suit practically any type of Receiver, from a one-Valve Set to a seven-Valve super-hetrodyne. Three variable tappings are fitted, including one for Screen-Grid. H.T.4 tapping is fixed, but H.T.3 tapping, in addition to being Variable, is rated to carry the full output of the Unit. The smoothing is more than adequate, a special Double Choke, and Condensers having a capacity of 23 mfds., being used. Extensive tests under a wide variation of current loads have proved this Unit to be absolutely silent. It is a Model that can be recommended where high-class reception is required. Dimensions : 14¼ ins. by 8¾ ins. by 6½ ins.

Price ... 150/-

L.T. 4 volts 5 amps. and 4 volts 1 amp. supply for A.C. Valves, if required, 10/- extra.

WHAT USERS THINK OF HEAYBERD

C.B. CLECKHEATON.
"I am highly satisfied with the eliminator C.150, both as regards materials and performance. It is the most silent I have ever used, and in proof of this, I work on ultra short waves with it—down to 15 metres, which I think you will agree is some test for Mains Apparatus smoothing."
15th July, 1932.

J.S. DEVON.
"This C.200 Unit is satisfactory and free from hum, working 100v., 100c. mains which are rather dirty. I shall have great pleasure in recommending your products to anyone who requires 1st class results."
25th April, 1932.

H.V.S. PORTSMOUTH.
"Pleased to say I installed one of your eliminators with great success after being dissatisfied with another well-known make."
May, 1932.

J.M. ASHINGTON.
"I am in receipt of the C.150 Kit and found everything in good order, which is more than I could say of several well-known makes . . . Two years ago I bought your Transformer and small rectifier for charging accumulators, and these are still giving excellent service and have never let me down—hence my faith in 'HEAYBERD.'"
26th July, 1932.

E.T. PENGAN, MON.
"The working of your eliminator C.250 is excellent—no man could wish for better. I tried it on the short waves and got Cincinnati—the reception was good, the smoothing excellent."
1931.

A.H. WALSALL.
"Was not at all satisfied with the output of my set, so purchased your Mains Unit. I *must* write to congratulate you on so splendid a job. My own opinion is that you are far too modest in your claims. Please accept my very best thanks and wishing HEAYBERD every success."
3rd Feb., 1932.

W.J.B. HAMMERSMITH.
"I wish to record my intense appreciation of the Mains Unit. have had two previous eliminators of other makes, and the various troubles, hum, motor-boating, etc., accompanied them. Yours is Dead Silent even with Resistance I removed . . . .I have strongly recommended it to all I have come into contact with, as it is in my opinion, without a rival in the Radio World."
4th May, 1932.

C.B. DAGENHAM.
"I would like to mention that the C.150 has reached my expectations and is functioning perfectly."
1931.

F.E.H. GT. YARMOUTH.
"Fourteen months ago I purchased a C.150 Eliminator which has given faultless satisfaction."
1931.

B.J.T. BARNES, S.W.13.
"I am recommending you to my friends on three points. Your products, your service and your Guarantee."
Dec. 1931.

E.T.N. ESSEX.
"I take this opportunity of thanking you for the PERFECT ELIMINATOR." Nov. 30th, 1931.

G.Y. OLDHAM.
"I bought your C.250 Mains Unit and am pleased to say I am delighted far beyond expectations with the results—it is absolutely perfect."
Dec. 10th, 1931.

P.Mc.M. LANCS.
"Congratulate you on the wonderful silence of your Unit. It is really difficult to tell when it is switched on—there not being the slightest trace of hum."
Dec. 16th, 1931.

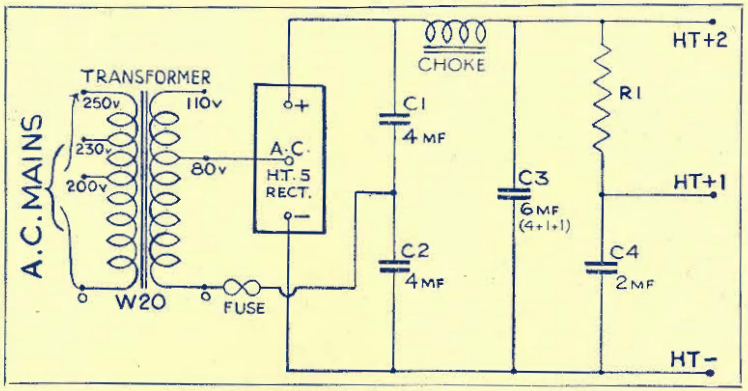
J.D. DUBLIN.
"Mains Unit has gone through a good test and I am happy to say it stands up to its work quite free from Mains Hum and as cool as the proverbial cucumber. Congratulations."
Jan. 18th, 1932.

R.C.J. FULHAM, S.W.6.
"C.150 is a good sound job and very satisfactory—I am more than satisfied." Jan. 1932.

"POPULAR WIRELESS." July 16th, 1932.
"Our tests of the D.250 have been of a wide and eminently practical nature, and we have no hesitation in saying that we consider it to be a very fine unit indeed. Its output is wonderfully clean, and even with sensitive supers it maintains its silence, and you can't say that of more than an extremely few makes. Heayberd have provided ample justification of their slogan 'MONARCH OF THE MAINS.'"

"AMATEUR WIRELESS." April 9th, 1932.
"A most impressive A.C. Mains eliminator which we have tested recently is the Heayberd, Model D.250. This is an absolutely de luxe unit and is suitable for receivers employing up to six valves and requiring a maximum H.T. supply of 60 ma. at 250 volts. This eliminator is a well-made job, and we have found it to give excellent results in use, and it can be confidently recommended to anyone requiring a high-power unit."

Mains Unit for Portables



H.T.5 B.

(Unassembled Kit of Parts)

OUTPUT

120 v. at 20 ma.

TAPPINGS

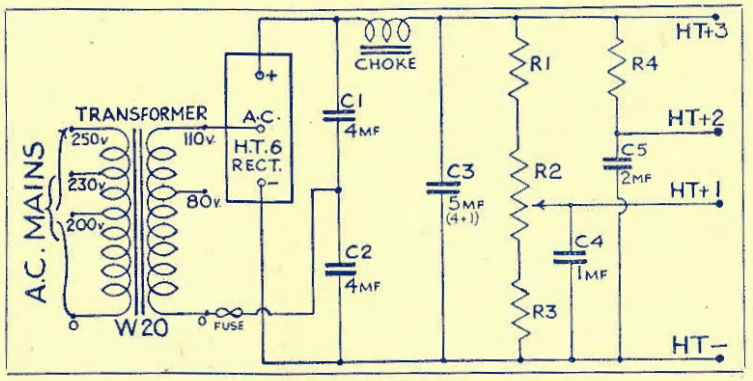
H.T.+1 60 v., Fixed
H.T.+2 120 v., Fixed
} At 20 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, W.20	14/-
Heayberd Choke, 751	12/6
Westinghouse Rectifier, H.T.5	12/6
Fuse and Holder	1/3
Resistance, fixed, 30,000 ohms, R.1...	1/-
Condenser Block, Type R	15/6
Total	56/9
Postage	1/3

NOTES. (1) This Unit is very suitable for portable sets.
(2) The 80 v. terminal on secondary of W.20 transformer only may be used, the 110 v terminal being left unconnected.
(3) The condenser C.3 consists of one 4 mf., and two 1 mf. sections of the block condenser connected in parallel.
(4) The H.T.1 tap can be made variable 80-120 v. by using variable resistance 25,000 ohms (5/6) instead of fixed resistance R.1.
(5) *L.T. Supply for A.C. Valves.* If the receiver is to be fitted with A.C. Valves the L.T. 4-volt supply should be obtained either by substituting the W.24 transformer (22/6) for the W.20 transformer, or by the use of a separate L.T. transformer 723, etc.

For 3 to 6 Valve Receivers



SET H.T.6

(Unassembled Kit of Parts)

OUTPUT

175 v. at 25 ma., or
120 v. at 25 ma.

TAPPINGS

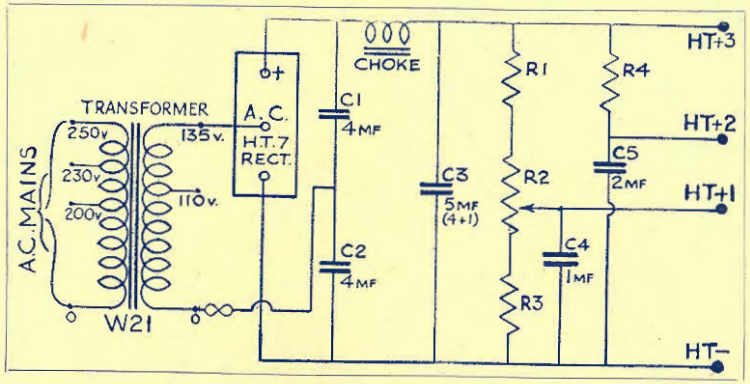
H.T.+1 50-110 v., Variable
H.T.+2 120 v., Fixed
H.T.+3 175 v., Fixed
} at 25 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, W.20	14/-
Heayberd Choke, 751	12/6
Westinghouse Rectifier, H.T.6	15/-
Fuse and Holder	1/3
Resistance, fixed, 12,500 ohms, R.1...	1/-
Resistance, fixed, 12,500 ohms, R.3...	1/-
Resistance, fixed, 12,500 ohms, R.4...	1/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type R	15/6
Total	66/9
Postage	1/3

NOTES. (1) This Unit is very suitable for battery-operated receivers from 3 to 6 valves.
(2) The alternative output of 120 v. at 25 ma. is obtained by using the 80-volt tap on secondary of transformer instead of 110-volt tap.
(3) The condenser C.3 consists of one 4 mf. and one 1 mf. section of the block condenser connected in parallel.
(4) If the W.28 (or W.29) transformer is used instead of the W.20, the maximum output is 150 v. at 25 ma.
(5) *L.T. Supply for A.C. Valves.* If the receiver is to be fitted with A.C. Valves the L.T. 4-volt supply should be obtained either by substituting the W.24 transformer (22/6) for the W.20 transformer, or by the use of a separate L.T. transformer 723, etc.

A Highly Adaptable Unit



SET H.T.7

(Unassembled Kit of Parts)

OUTPUT

200 v. 30 ma., or
160 v. 30 ma.

TAPPINGS

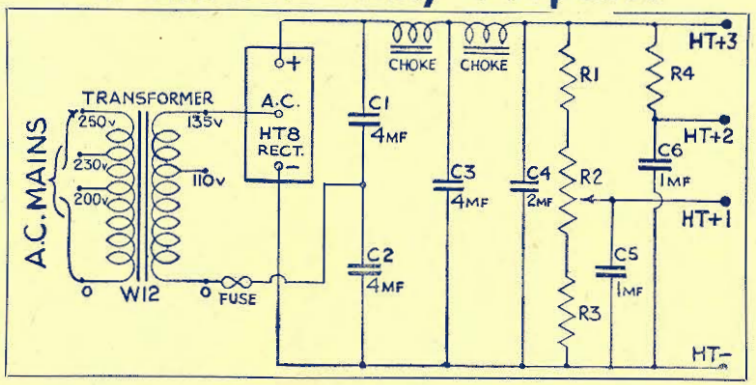
H.T.+1 50-110 v., Variable
H.T.+2 120 v., Fixed
H.T.+3 200 v., Fixed
} at 30 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, W.21	14/-
Heayberd Choke, 751	12/6
Westinghouse Rectifier, H.T.7	17/6
Fuse and Holder	1/3
Resistance, fixed, 20,000 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 20,000 ohms, R.4	1/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block Type J	18/6
Total	72/3
Postage	1/3

NOTES. (1) This Unit is very suitable for receivers using 2 or 3 A.C. Valves or fairly large battery-operated receivers having large output valves.
(2) The alternative output of 160 v. at 30 ma. is obtainable by using the 110-volt tap on secondary of the transformer instead of 135-volt tap.
(3) The condenser C.3 consists of one 4 mf. and one 1 mf. section of the block condenser connected in parallel.
(4) *L.T. Supply for A.C. Valves.* If the receiver is to be fitted with A.C. Valves the L.T. 4-volt supply should be obtained either by substituting the W.25 transformer (22/6) for the W.21 transformer, or by the use of a separate L.T. transformer 723, etc.

A Kit for Many Purposes



SET H.T.8 MINOR

(Unassembled Kit of Parts)

OUTPUT

200 v. at 40 ma., or
160 v. at 40 ma.
Maximum current is 60 m.a.

TAPPINGS

H.T. + 1 50-110 v., Variable
H.T. + 2 120 v., Fixed
H.T. + 3 200 v., Fixed
} at 40 m.a. total.

LIST OF COMPONENTS

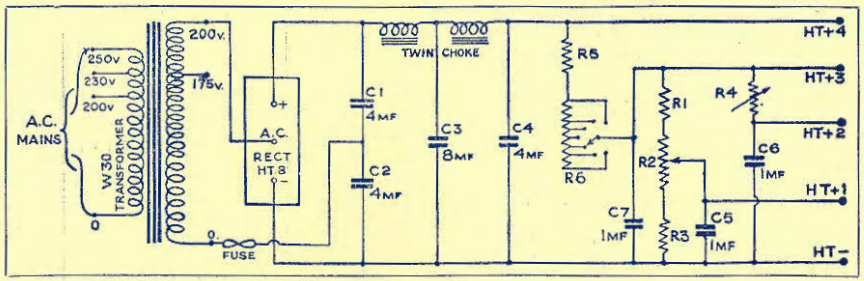
Heayberd Transformer, W.12	17/6
Heayberd Choke, 752	12/6
Westinghouse Rectifier, H.T.8	18/6
Fuse and Holder	1/3
Resistance, fixed, 25,000 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 20,000 ohms, R.4	1/-
Potentiometer WireWound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type J	18/6
Total	76/9
Postage	1/6

When using the above components follow the circuit on page 14 for Set H.T.7 components.

NOTES. (1) This Unit is suitable for multi valve battery operated sets and for incorporating in medium sized A.C. mains receivers.
(2) The recommended output of this Unit is 200 v. at 40 ma., but a current up to 60 ma. can be taken. A lower voltage output of 160 v. at 40 ma. can be obtained by using the 110 v. tapping on the secondary of the Mains Transformer instead of the 135 v. tapping.
When a current output greater than 35 ma. is required it is recommended that the smoothing be improved by the use of another 752 choke or by the use of the double core Choke No. 753 price 22/6. The rearranged circuit is shown in the above diagram.
(3) *L.T. Supply for A.C. Valves.* If the receiver is to be fitted with A.C. Valves the L.T. 4 volt supply should be obtained either by substituting the W.16 Transformer (27/6) for the W.12 Transformer, or by the use of a separate L.T. Transformer 723, etc.

HEAYBERD

A Kit for Any Receiver



SET H.T.8 MAJOR

(Unassembled Kit of Parts)

OUTPUT

250 v. at 60 ma., or
200 v. at 60 ma.

TAPPINGS

H.T.+1 50-110 v., Variable
H.T.+2 80-150 v., Variable
H.T.+3 100-200 v., Variable
H.T.+4 250 v., Fixed
} At 60 ma. Total.

LIST OF COMPONENTS

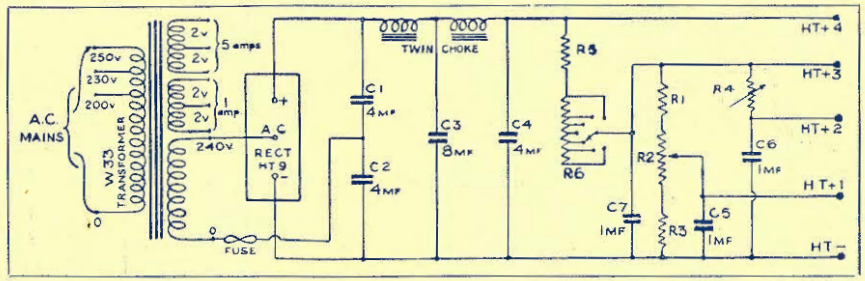
Heayberd Transformer, W.30	22/6
Heayberd Double Core Choke, 753	22/6
Westinghouse Rectifier, H.T.8	18/6
Fuse and Holder	1/3
Resistance, fixed, 20,000 ohms, R.1...	1/-
Resistance, fixed, 12,500 ohms, R.3...	1/-
Resistance, fixed, 5,000 ohms, R.5...	2/9
Resistance, Wire Wound Variable, 25,000 ohms, R.4	5/6
Resistance, Wire Wound Rotary, Tapped, R.6 ...	15/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type P	37/6
Total	133/-

NOTES. (1) This Unit is suitable for practically any receiver from a small one requiring only 10 ma. at 120 v. to a powerful A.C. mains set requiring 60 ma. at 250 v. The H.T.3 tapping can be used as a variable power tapping for receivers consuming up to 40 ma.
(2) The alternative output of 200 v. at 60 ma. is obtained by using the 175 v. tap on the secondary of the mains transformer instead of the 200 v. tap.
(3) *L.T. Supply for A.C. Valves.* If the receiver is to be fitted with A.C. Valves the L.T.4-volt supply should be obtained either by substituting the W.31 transformer (30/-) for the W.30 transformer, or by the use of a separate L.T. transformer 723, etc.

10, FINSBURY STREET, E.C.2

HEAYBERD

For Receivers Taking a Big Output



SET H.T.9

(Unassembled Kit of Parts)

OUTPUT

H.T. 300 v. at 60 ma.
Raw A.C. for L.T. { 4 v. 5 amps. / 4 v. 1 amp. } Centre Tapped.

TAPPINGS

H.T.+1 50-110 v., Variable
H.T.+2 80-150 v., Variable
H.T.+3 100-200 v., Variable
H.T.+4 300 v., Fixed
} At 60 ma. Total.

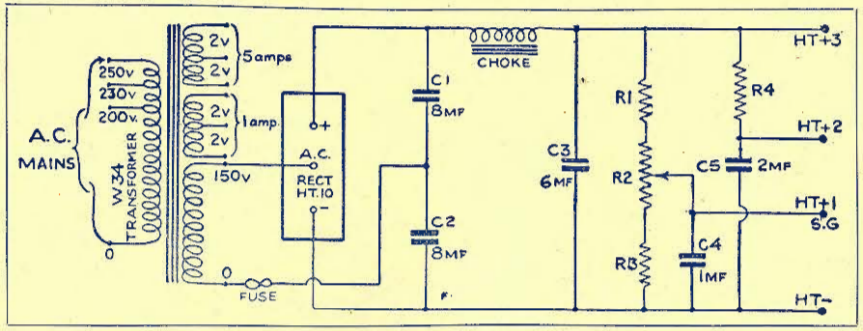
LIST OF COMPONENTS

Heayberd Transformer, W.33	35/-
Heayberd Double Core Choke, 753	22/6
Westinghouse Rectifier, H.T.9	21/-
Fuse and Holder	1/3
Resistance, fixed, 20,000 ohms, R.1...	1/-
Resistance, fixed, 12,500 ohms, R.3...	1/-
Resistance, fixed, 10,000 ohms, R.5...	4/6
Resistance, Wire Wound Variable, 25,000 ohms, R.4	5/6
Resistance, Wire Wound Rotary Tapped, R.6 ...	15/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type P	37/6
Total	149/9

NOTES. (1) This Unit is very similar to the Set H.T.8 Major, but gives an extra 50 volts on the H.T.+4 tapping and is suitable therefore for receivers the output valve of which requires about 300 volts.
(2) The high voltage available from this Unit can be used to supply field current to an energised type of moving coil speaker. The field winding should have a resistance of about 2,500 ohms and is connected in place of one winding of the double choke. The other half of the double choke can then be replaced by the 752 choke. The output of the Unit for H.T. purposes is then about 150 v. at 60 ma., and the resistance R.5 should be omitted to avoid too low a voltage on the intermediate tappings.
(3) Two L.T. windings are fitted to the W.33 transformer :—4 v. 5 amp. C.T. for up to five 4 v. A.C. Valves, and 4 v. 1 amp. C.T. for one 4 v. output valve.

10, FINSBURY STREET, E.C.2.

A Kit for Super-Hets



SET H.T.10

(Unassembled Kit of Parts)

OUTPUT

H.T., 200 v. at 100 ma.

Raw A.C. for L.T. { 4 v. 5 amps. / 4 v. 1 amp. } Centre Tapped.

TAPPINGS

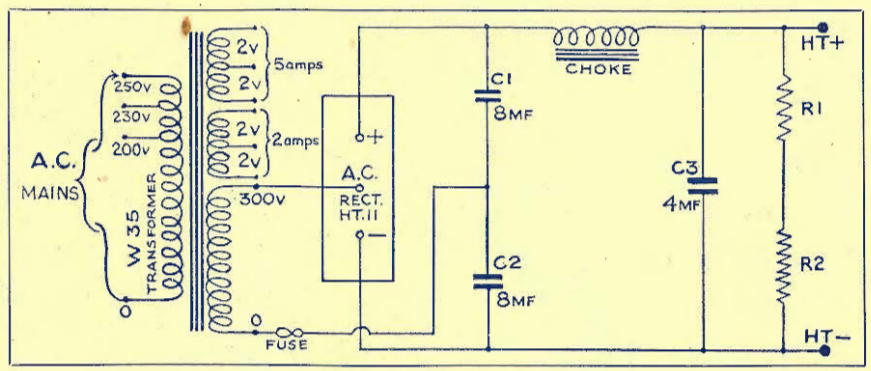
H.T.+1 50-110 v., Variable
H.T.+2 150 v., Fixed
H.T.+3 200 v., Fixed
} at 100 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, W.34	45/-
Heayberd Choke, 757	20/-
Westinghouse Rectifier, H.T.10	21/-
Fuse and Holder	1/3
Condenser, 8 mf. (two 4 mf. No. 614) C.1 ...	19/-
Condenser, 8 mf. (two 4 mf. No. 614) C.2 ...	19/-
Condenser, 6 mf., No. 613, C.3	12/-
Condenser, 1 mf., No. 618, C.4	4/-
Condenser, 2 mf. No. 615, C.5	6/-
Resistance, fixed, 25,000 ohms, R.1...	1/-
Resistance, fixed, 12,500 ohms, R.3...	1/-
Resistance, fixed, 10,000 ohms, R.4...	1/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Total	155/9

NOTES. (1) This Unit is particularly suitable where a large H.T. current is required at a comparatively low voltage.
(2) The normal output is 200 v. at 100 ma., but a current up to 150 ma. can be consumed, when the voltage drops to 150 v.
(3) Two L.T. windings are fitted to the W.34 transformer :— 4 v. 5 amp. C.T. for up to five 4 v. A.C. Valves and 4 v. 1 amp. C.T. for one 4 v. output valve.

Power Kit for Large Amplifiers



SET H.T.11

(Unassembled Kit of Parts)

OUTPUT

H.T. { 500 v. at 120 ma., or / 400 v. at 150 ma. / Maximum current is 150 ma.

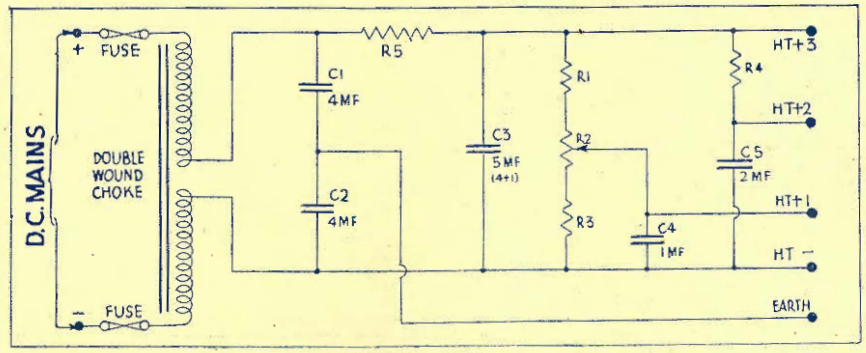
Raw A.C. for L.T. { 4 v. 5 amps. / 4 v. 2 amps.

LIST OF COMPONENTS

Heayberd Transformer, W.35	65/-
Heayberd Choke, 757	20/-
Westinghouse Rectifier, No. H.T.11	35/-
Fuse and Holder	1/3
Condenser, 8 mf. (Two 4 mf. No. 614) C.1 ...	19/-
Condenser, 8 mf. (Two 4 mf. No. 614) C.2 ...	19/-
Condenser, 4 mf. No. 620, C.3	28/6
Resistance, fixed, 50,000 ohms R.1	2/3
Resistance, fixed, 50,000 ohms R.2	2/3
Total	192/3

NOTES. (1) The resistances R.1 and R.2 are intended to protect the condensers from the high no-load voltage.
(2) The smoothing circuit is adequate for the output stage of receivers and amplifiers but when used to supply the earlier stages, the anode circuits should be well decoupled and an extra choke is advisable in the H.T. feed to the detector valve.
(3) Two L.T. windings are fitted to the W.35 transformer :—4 v. 5 amps. for up to five A.C. valves, and 4 v. 2 amps. for the output stage, such as Mazda PP5/400.

Kit for the D.C. Mains Man



SET K.D.C.50

(Unassembled Kit of Parts)

OUTPUT

150 v. at 50 ma.

TAPPINGS

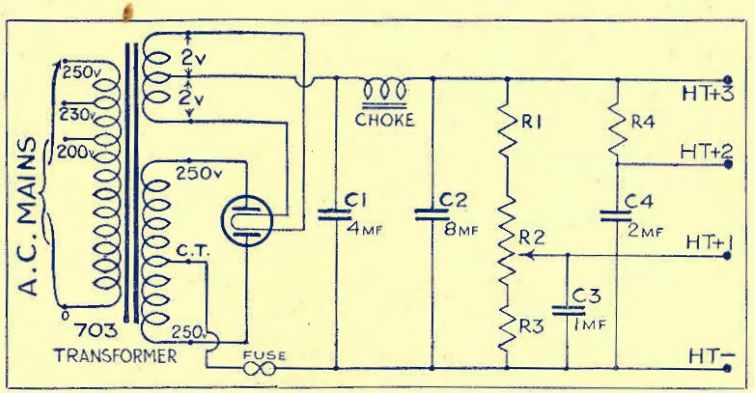
H.T. 1 50-110 v., Variable
H.T. 2 110 v., Fixed
H.T. 3 150 v., Fixed
} at 50 ma. Total.

LIST OF COMPONENTS

Heayberd Double Wound Choke, 751 D.W. ...	12/6
Two Fuses with Holders	2/6
Resistance, fixed, 12,500 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 15,000 ohms, R.4	1/-
Resistance, fixed, 1,000 ohms, R.5	1/9
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type R	15/6
Total	40/9
Postage	1/3

NOTES. (1) The condenser C.3 consists of the third 4 mf. and one 1 mf. section of the block condenser connected in parallel.
(2) The above output is obtained with 230 volt mains. The output will rise or fall in proportion if the mains are greater or less than 230 v.
(3) If a higher voltage output than that stated above is required, then the value of the resistance R.5 should be reduced.
(4) If a lower current output is required the resistance R.5 should be increased in value.
Important. (5) The earth wire must be removed from the receiver and connected instead to the special earth terminal on the Unit. *On no account must any other terminal of the mains unit or receiving equipment be connected directly to earth.*

H.T. Valve Rectifier Kit



SET V.A.30

(Unassembled Kit of Parts)

OUTPUT

250 v. at 30 ma.

TAPPINGS

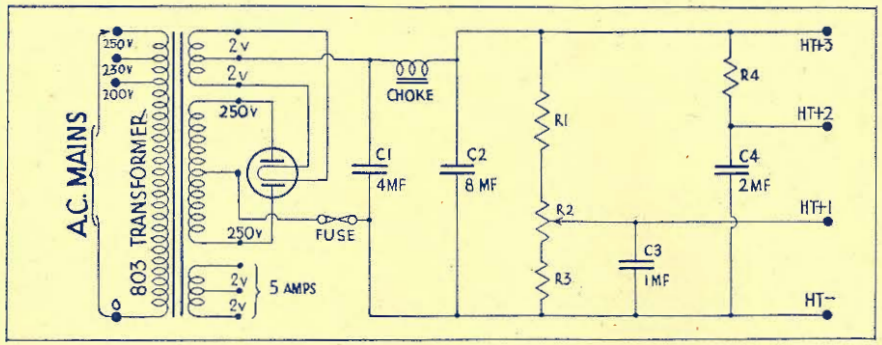
H.T.+1 50-110 v., Variable
H.T.+2 120 v., Fixed
H.T.+3 250 v., Fixed.
} at 30 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, 703	17/6
Heayberd Choke, 751	12/6
Fuse and Holder	1/3
Resistance, fixed, 30,000 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 30,000 ohms, R.4	1/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type J	18/6
Price, less Valve ...	58/3
Postage	1/6

NOTES. (1) The condenser C.2 consists of the first two 4 mf. sections of the block condenser connected in parallel. C.1 is third 4 mf. section in the block.
(2) The correct valve for this Unit is the Mullard D.W.2 or similar.
(3) *L.T. Supply for A.C. Valves.* If the receiver is to be fitted with A.C. Valves the L.T. 4-volt supply should be obtained either by substituting the 715 transformer (28/6) for the 703 transformer, or by the use of a separate L.T. transformer 723, etc.

A General Purpose Kit



SET V.A.60

(Unassembled Kit of Parts)

OUTPUT

H.T. 220 v. at 60 ma.
Raw A.C. for L.T., 4 v. 5 amps C.T.

TAPPINGS

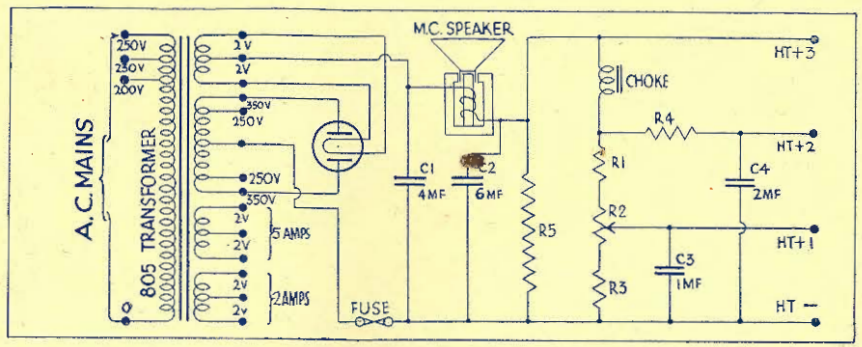
H.T.+1 50-110 v., Variable
H.T.+2 120 v., Fixed
H.T.+3 220 v., Fixed
} at 60 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, 803	32/6
Heayberd Choke, 757	20/-
Fuse and Holder	1/3
Resistance, fixed, 30,000 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 30,000 ohms, R.4	1/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type J	18/6
Price, less Valve ...	80/9
Postage	1/6

NOTES. (1) The condenser C.2 consists of the first two 4 mf. sections of the block condenser connected in parallel. C.1 is the third 4 mf. section in the block.
(2) The correct valve for this Unit is the Mullard D.W.2 or similar.
(3) If the L.T. Supply is not required the Heayberd 709 transformer (28/-) should be ordered instead of the 803 transformer.

All-Mains Kit—H.T., L.T. and Speaker Energising Current



SET V.B.60

(Unassembled Kit of Parts)

OUTPUT

H.T. 230 v. at 60 ma.
Raw A.C. for L.T. { 4 v. 5 amps. C.T. / 4 v. 2 amps. C.T.
Also field current for energised M.C. speaker.

TAPPINGS

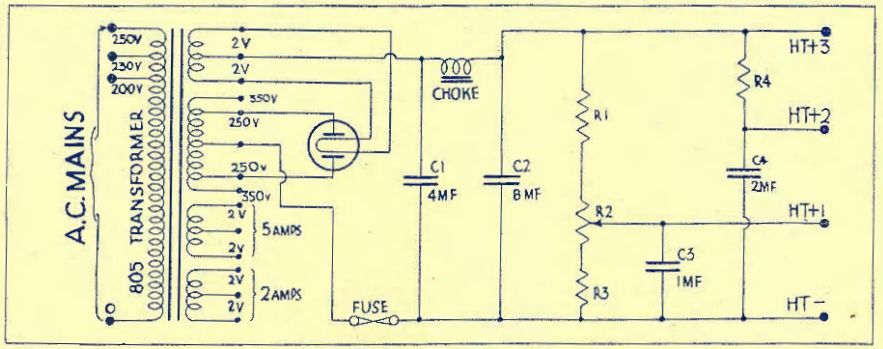
H.T. 1 50-110 v., Variable.
H.T. 2 200 v., Fixed.
H.T. 3 230 v., Fixed.

LIST OF COMPONENTS

Heayberd Transformer, 805	55/-
Heayberd Choke, 751	12/6
Fuse and Holder	1/3
Resistance, fixed, 25,000 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 1,000 ohms, R.4	1/-
Resistance, fixed, 30,000 ohms, R.5	2/3
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser, 4 mf. No. 614, C.1	9/6
Condenser, 6 mf. No. 613, C.2	12/-
Condenser, 1 mf. No. 618, C.3	4/-
Condenser, 2 mf. No. 615, C.4	6/-
Price, less Valve ...	110/6

NOTES. (1) The correct valve for this Unit is the Osram U.12 or similar.
(2) This Unit supplies field current for an energised M.C. loud speaker in addition to the H.T. and L.T. outputs given above. The field winding acts as a smoothing choke and should have a D.C. resistance of about 2,500 ohms.

Powerful Valve Rectifier Kit, H.T. & L.T.



SET V.B.100

(Unassembled Kit of Parts)

OUTPUT

H.T. { 160 v. at 100 ma., or
200 v. at 70 ma.

Raw A.C. for L.T. { 4 v. 5 amps. C.T.
4 v. 2 amps. C.T.

TAPPINGS

H.T.+1 50-110 v., Variable
H.T.+2 120 v., Fixed
H.T.+3 160 v., Fixed
} at 100 ma. Total.

LIST OF COMPONENTS

Heayberd Transformer, 805	55/-
Heayberd Choke, 757	20/-
Fuse and Holder	1/3
Resistance, fixed, 25,000 ohms, R.1	1/-
Resistance, fixed, 12,500 ohms, R.3	1/-
Resistance, fixed, 10,000 ohms, R.4	1/-
Potentiometer Wire Wound Variable 25,000 ohms, R.2	5/6
Condenser Block, Type J	18/6
Price, less Valve ...	103/3

NOTES. (1) The condenser C.2 consists of the first two 4 mf. sections of block condenser connected in parallel. C.1 is the third 4 mf. section of the block.
(2) Although rated at 100 ma. this Unit will give 120 ma., but at this current the voltage drops to about 130 v.
(3) The correct valve for this Unit is the Osram U.12 or similar.
(4) If the 350 volt terminals on the transformer are used instead of the 250 volt terminals the output is increased to about 270 volts at 120 ma., but this must not be done unless separate condensers tested to 1,000 v. D.C. are used instead of the Type J block condenser.

Make your own L.T. Charger

If you prefer to build your own L.T. accumulator Charger, one of the various Kits detailed below will prove ideal for your purpose. These Kits consist of unassembled parts and simply require mounting and wiring on a small baseboard to be ready for immediate operation.

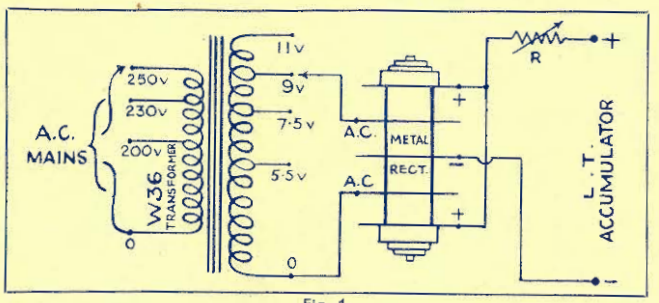


Fig. 1.

SET W.L.T.1 (Fig. 1)

OUTPUT 2—6 v. .25 amp. (max.)

Heayberd Transformer W.36 ...	19/-
Westinghouse Rectifier L.T.1 ...	10/6
Regulating Resistance 0—6 ohms	2/-
Total	31/6
Postage	1/-

Set Resistance R to 3 ohms.

No. of Cells.	Voltage of tapping on Trans.
1	5.5
2	7.5
3	9

SET W.L.T.2 (Fig. 1)

OUTPUT 2—6 v. .5 amp. (max.)

Heayberd Transformer W.36 ...	19/-
Westinghouse Rectifier L.T.2 ...	11/-
Regulating Resistance 0—6 ohms	2/-
Total	32/-
Postage	1/-

Set Resistance R to 2.5 ohms.

No. of Cells.	Voltage of tapping on Trans.
1	7.5
2	9
3	11

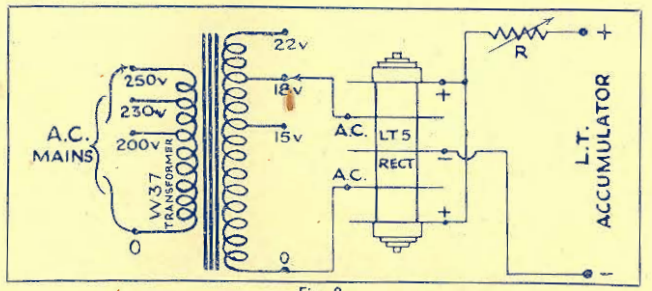


Fig. 2.

SET W.L.T.4 (Fig. 1)

OUTPUT 2—6 v. 1 amp. (max.)

Heayberd Transformer W. 36 ...	19/-
Westinghouse Rectifier L.T.4 ...	13/-
Regulating Resistance 0—6 ohms	2/-
Total	34/-
Postage	1/-

Set Resistance R to 1.75 ohms.

No. of Cells	Voltage of tapping on Trans.
1	7.5
2	9
3	11

SET W.L.T.5 (Fig. 2)

OUTPUT 6—12 v. 1 amp. (max.)

Heayberd Transformer W.37 ...	25/-
Westinghouse Rectifier L.T.5 ...	15/-
Regulating Resistance 0—6 ohms	2/-
Total	42/-
Postage	1/-

Set Resistance R to 1.75 ohms.

No. of Cells.	Voltage of tapping on Trans
3	15
5	18
6	22

Two more Chargers to Build

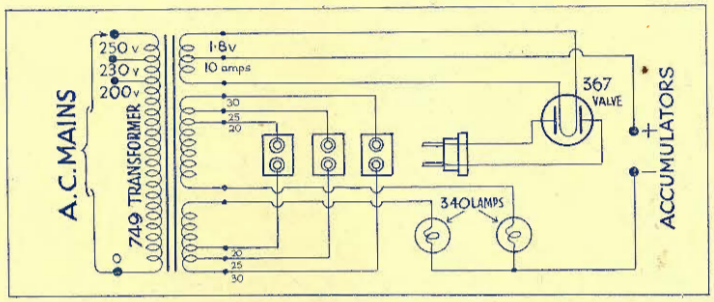
SET W.L.T.6

OUTPUT.—2—6 v., 2 amps.

Heayberd Transformer, W.38	22/6
Westinghouse Rectifier, L.T.6	30/-
Regulating Resistance, 0—2 ohms	2/-
Set Resistance, R to 1 ohm. Total	54/6
Postage	1/-

No. of Cells.	Voltage of tapping on Transformer
1	7.5
2	9
3	11

(Follow diagram for Set W.L.T.1 Components.)



SET A.3 CHARGER KIT

(Valve Rectification)

This Model is designed for charging a number of L.T. accumulators together at a high charging rate and is specially recommended for professional use. The charging rate is 3 to 6 amperes depending upon the voltage of the accumulators, 4 to 10 volts, 10 to 16 volts and 16 to 20 volts. These three output ranges are selected by means of a plug and three sockets which are connected to different tappings on the Transformer.

LIST OF COMPONENTS.

Heayberd Transformer	62/6
Four special valve sockets for valve holder ...	0/8
Two screw cap lamp holders	3/-
Total	66/2
Postage	1/6

In addition to the above the following apparatus is required :—

1 Philips Rectifier Valve No. 367. 1 5-amp. 2-pole plug.
2 Philips Regulator Lamps No. 340. 3 5-amp. 2-pole sockets.

All wiring should be done with low resistance heavy gauge wire and the flex connection to the plug should be 10 amp. size and as short as possible. If an ammeter is inserted in the output to measure the charging rate, it must have a very low resistance, otherwise the full output will not be obtained.

ON SERVICING

ALTHOUGH only a very small percentage of our sales are returned to us for servicing, we have, in our own interests, made a careful survey of our records. An analysis shows that approximately 75 per cent. of these returns need not have been sent.

A Mains Unit is generally regarded as a mysterious object which is placed between the plug in the wall and the receiver. If anything goes wrong the Unit is always the first part of the radio apparatus to be suspected—more than suspected, it is condemned and returned to the Makers. We feel sure, however, that a close study of these pages will result in a good knowledge of the working of these Units being obtained, and it will be found that they are even simpler than the average wireless set.

In these days of scientific achievement a Mains Unit is a most reliable and robust instrument, especially when manufactured by a firm who concentrate solely on Mains components, and the risk of failure is negligible.

It is, therefore, our intention to give below not a technical dissertation, but a few practical hints which are calculated to help anyone, who is experiencing difficulty with his Unit, to obtain complete satisfaction.

COMPLAINT.	CAUSE.	CURE.
HUM. Reproduced in Speaker.	High resistance earth.	Rewire with thick copper wire, as short as possible and refix all connections.
	High resistance connection in S.G. circuit.	All connections up to the detector should be examined and an alternative grid-leak should be substituted, preferably of the value of 2 megohms or lower.
	Overloading Unit.	Total current taken by valves should not exceed that which the particular Unit is capable of delivering. This can be checked by inserting a milliammeter in the return negative lead from the set to the Unit. The consumption of the Set can be reduced by adding more grid bias or by inserting resistances in the anode leads of the intermediate valves ; or by using a valve of lower rated consumption if available.
	Pick-up of H.F. from Mains in detector or H.F. stage of Set.	This species of hum gets louder as a Station is tuned in. It can generally be cured by inserting a buffer condenser across the Mains input to the Unit. The centre point on the condenser is taken to earth.
	Interaction between Mains Transformer and L.F. Transformer.	Move Unit further from Set or alter position.
	Overloading Set.	Hum may be caused by using a Set of small consumption with a Unit capable of delivering a high output. It must be remembered that if the full rated output is not taken the voltage will rise. The output of a Unit can be cut down by inserting a heavy duty resistance across the maximum positive and negative output terminals of the Unit, or by inserting a heavy duty resistance in the maximum positive lead to the set. Again, the output can be cut down by using the alternative Transformer tapping to be found on HEAYBERD Units.
	Loud Speaker.	Loud speakers of the energised Moving Coil type may cause hum. The speech coil should be shorted. If no hum results, the speaker is in order, but if the hum still persists the makers of the speaker should be consulted.
LOW OUTPUTS.	Partial short in Set.	Test out set generally, especially the condensers.
	Due to low resistance voltmeter.	Low voltages will always result from using a low resistance voltmeter owing to its high consumption. To obtain correct readings a voltmeter of at least 1,000 ohms per volt must be used.
	Unsuitable inputs.	Care should be taken to see that the Unit is adjusted to suit the Mains voltage.

(Continued overleaf).

ON SERVICING (*Continued*)

COMPLAINT.	CAUSE.	CURE.
NO OUTPUT.	Blown fuse.	Fuse may blow due to surge in the Mains voltage, overload on Unit or short circuit of Unit. Replace with cartridge type fuse of 150 ma. rating for Units up to 30 ma. output or 250 ma. rating for Units from 30 to 60 ma. output.
	Faulty Mains Contact.	Examine the Mains plug and lead for disconnection.
FUSES BLOWING IN SUCCESSION.	Short in Receiver.	Examine receiver generally and test the by-passing condensers.
	Faulty valve.	Try replacing with similar valve if available.

In the case of HEAYBERD unassembled kits it is most advisable to mount the components on a piece of metal foil and to connect the foil to the H.T. negative tapping of the Unit in order to avoid any trace of back-ground hum.

Every purchaser of a HEAYBERD Mains Unit may possess the sure knowledge that he is backed with a competent Service Department, and it is our object to give every customer the benefit of our experience and, above all—complete satisfaction.

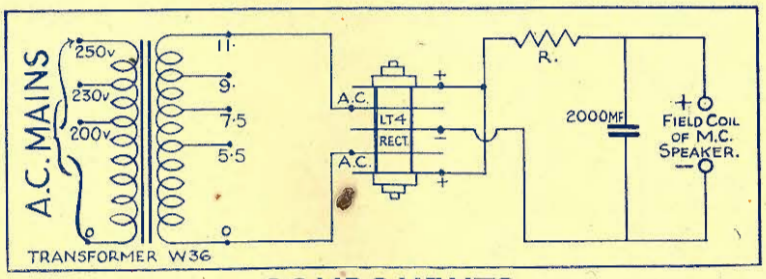
SERVICE DEPARTMENT.

Energising Field for M.C. Speakers

SET K.L.4

This Unit is for supplying the energising current for low voltage moving coil loud speakers.

OUTPUT—6-8 volts, 1 amp.



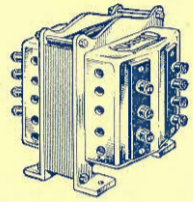
COMPONENTS.

Heayberd Transformer, W.36	19/–
Westinghouse Rectifier, L.T.4	13/–
Regulating Resistance, 0-6 ohms	2/–
Electrolytic Condenser, 2,000 mfd., C.L.2	15/–
Total ... ∴ ...	49/–
Postage	1/3

The Resistance R should be adjusted so that the output current when measured with a low resistance ammeter does not exceed 1 amp. ; otherwise the Rectifier and Transformer may be damaged.

MAINS TRANSFORMERS

For Westinghouse H.T. Rectifiers



Below are detailed the full range of Heayberd Mains Transformers designed expressly for the various types of Westinghouse Rectifiers. Constructed of selected steel and finest quality wire. Screened by special metal end-plates, effectively shielding the windings. Voltage Regulation extremely good. Temperature rise negligible when delivering maximum output.

List No.	Secondary Tappings.	For use with Rectifier.	Rectified Output.	Price.
W.12	110 v. 150 ma. 135 v. 150 ma.	H.T.8 H.T.8	160 v. 40 ma. 200 v. 40 ma.	17/6
W.16	110 v. 150 ma. 135 v. 150 ma. 2+2 v. 5 amps.	H.T.8 H.T.8 A.C. valves	160 v. 40 ma. 200 v. 40 ma.	27/6
W.20	0—80 v. 70 ma. 0—110 v. 70 ma.	H.T.5 H.T.6	120 v. 20 ma. 175 v. 25 ma.	14/-
W.21	0—110 v. 70 ma. 0—135 v. 70 ma.	H.T.6 H.T.7	175 v. 25 ma. 200 v. 28 ma.	14/-
W.24	0—80 v. 70 ma. 0—110 v. 70 ma. 2+2 v. 4 amps.	H.T.5 H.T.6 A.C. valves	120 v. 20 ma. 175 v. 25 ma.	22/6
W.25	0—110 v. 70 ma. 0—135 v. 70 ma. 2+2 v. 4 amps.	H.T.6 H.T.7 A.C. valves	175 v. 25 ma. 200 v. 28 ma.	22/6
W.28	0—80 v. 70 ma. 0—100 v. 70 ma.	H.T.5 H.T.6	120 v. 20 ma. 150 v. 25 ma.	14/-
W.29	0—80 v. 70 ma. 0—100 v. 70 ma. 2+2 v. 4 amps.	H.T.5 H.T.6 A.C. valves	120 v. 20 ma. 150 v. 25 ma.	22/6
W.30	0—175 v. 180 ma. 0—200 v. 180 ma.	H.T.8 H.T.8	200 v. 60 ma. 250 v. 60 ma.	22/6
W.31	0—175 v. 180 ma. 0—200 v. 180 ma. 2+2 v. 5 amps. 2+2 v. 1 amp.	H.T.8 H.T.8 A.C. valves Power valve	200 v. 60 ma. 250 v. 60 ma.	30/-
W.33	240 v. 200 ma. 2+2 v. 5 amps. 2+2 v. 1 amp.	H.T.9 A.C. valves Power valve	300 v. 60 ma.	35/-
W.34	150 v. 550 ma. 2+2 v. 5 amps. 2+2 v. 1 amp.	H.T.10 A.C. valves Power valve	200 v. 100 ma.	45/-
W.35	300 v. 550 ma. 2+2 v. 5 amps. 2+2 v. 2 amps.	H.T.11 A.C. valves Power valve	500 v. 120 ma.	65/-

MAINS TRANSFORMERS

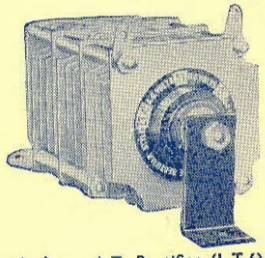
For Westinghouse L.T. Rectifiers

List No.	Voltage of Tappings on Transformer.	For use with Rectifier.	No. of Cells.	Max. Charging Current.	Price.
	5.5		1		
	7.5	L.T.1	2	0.25 amp.	
	9		3		
	7.5		1		
W.36	9	L.T.2	2	0.5 amp.	19/-
	11		3		
	7.5		1		
	9	L.T.4	2	1.0 amp.	
	11		3		
	15		3		
W.37	18	L.T.5	5	1.0 amp.	25/-
	22		6		
	7.5		1	2.0 amps.	
W.38	9	L.T.6	2		22/6
	11		3		

WESTINGHOUSE METAL RECTIFIERS for use with HEAYBERD TRANSFORMERS

List No.	Rectified Output.	Input voltage from Transformer.	Suitable Heayberd Transformer.	Price of Rectifier.
H.T.5	120 v. 20 ma.	80 v. full wave 135 v. half wave	W.20, W.24 W.21, W.25	12/6
H.T.6	175 v. 25 ma.	110 v. full wave	W.20, W.21 W.24, W.25	15/-
H.T.7	200 v. 28 ma.	135 v. full wave	W.21, W.25	17/6
H.T.8	250 v. 60 ma.	200 v. full wave	W.30, W.31	18/6
H.T.9	300 v. 60 ma.	200 v. full wave	W.33	21/-
H.T.10	200 v. 100 ma.	150 v. full wave	W.34	21/-
H.T.11	500 v. 120 ma.	300 v. full wave	W.35	35/-
L.T.1	6 v. ¼ amp.	9 v. full wave	W.36	10/6
L.T.2	6 v. ½ amp.	11 v. full wave	W.36	11/-
L.T.4	6 v. 1 amp.	11 v. full wave	W.36	13/-
L.T.5	12 v. 1 amp.	22 v. full wave	W.37	15/-
L.T.6	6 v. 2 amps.	11 v. full wave	W.38	30/-

Westinghouse (H.T.9 and H.T.10) H.T. Rectifier.



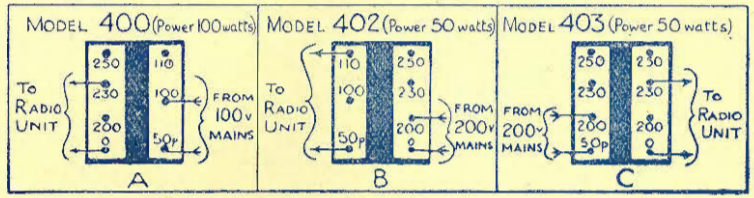
Westinghouse L.T. Rectifier (L.T.4).

CONVERT YOUR MAINS with Auto Transformers

Lack of uniform Mains voltages throughout the country has caused endless trouble in the operation of electrical apparatus. Reasonably priced and efficient Transformers designed expressly for the conversion of Mains are therefore a much more economical proposition than scrapping the apparatus or substituting a new Mains Transformer. Heayberd Auto-Transformers have proved immensely popular and the fact that a number of leading Corporations in Great Britain have placed very large orders is a striking tribute to their quality. Below are typical examples for the use of these Transformers :—

List No.	Primary.	Secondary.	Power.	Price.
400	200-230-250 v. 50 p.	100-110 v. 50 p.	100 watts	22/6
402	100-110 v. 50 p.	200-230-250 v. 50 p.	50 watts	16/-
403	200-230-250 v. 50 p.	200-230-250 v. 50 p.	50 watts	17/6
404	200-230-250 v. 50 p.	100-110 v. 50 p.	200 watts	37/6

All Models are *Reversible*. For A.C. Mains *only*.



"A" has procured an All-Mains Unit and Moving-Coil Speaker both working from a common Mains source of 230 volts, but he finds his house Mains are 100 volts. He connects these 100 volts Mains to the primary terminals 50 p. and 100 volts of the Model 400 Transformer and his radio apparatus to the secondary terminals 0 and 230 volts.

"B" has an H.T. Eliminator consuming 15 watts designed for mains 110 volts. He is transferred to a city where the mains are 200 volts, but solves his difficulty by using a Model 402 Transformer as shown in the diagram.

"C" with a Unit requiring 230 volts desires to use it on Mains which are 200 volts. He installs a Model 403 Transformer and remedies his trouble by connecting up the Mains and Unit as illustrated above.

(These Transformers must *not* be used on apparatus which consumes more than the wattage given. Heavier wattage Transformers, suitable for domestic appliances and other apparatus, will be quoted for on request.)

WHAT USERS SAY.

Messrs. R. A., Ltd. CLERKENWELL, E.C.1.
"The writer has used Transformers of your manufacture for a number of years and in every instance has had 100 per cent. Satisfaction." 8th Aug., 1932.

D.H.F. Stonycroft, LIVERPOOL.
"I have been long aware that, value for money, your components are the *finest on the market*, and when this is allied to service such as I have benefited under, I am surprised that any discriminating buyer should ever consider purchasing elsewhere." 1st June, 1932.

I.C.D. DUBLIN
"I bought a L.T. Transformer from you about eighteen months ago, which has given nothing but satisfaction." 30th Nov., 1931.

TRANSFORMERS FOR VALVE RECTIFIERS

List No.	Secondary Output. Plate.	Filament.	Suitable Rectifier Valves.	PRICE.
700	200 v. 20 ma.	4 v. 1 amp.	Any 4 v. type	12/6
703	250+250 v. 30 ma.	2+2 v. 1 amp.	Any 4 v. type full wave	17/6
709	250+250 v. 60 ma.	2+2 v. 1 amp.	Any 4 v. type full wave	28/-
710	250+250 v. 100 ma.	2½+2½ v. 2 amps.		32/6
783	275+275 v. 100 ma.			26/-

The + sign indicates centre tapping for full-wave rectification.

COMBINED H.T. & L.T. TRANSFORMERS

For Valve Rectifiers and A.C. Valves, &c.

These Transformers are used in semi or full All-Electric Mains Units.

List No.	Secondary Output. S.1 Anode.	S.2 Filament.	S.3 A.C. Valves.	S.4 Power.	PRICE.
715	230+230 v. 30 ma.	2+2 v. 1 amp.	2+2 v. 4 amps.	—	28/6
716	230+230 v. 25 ma.	2+2 v. 1 amp.	2+2 v. 2 amps.	—	26/-
717	250+250 v. 60 ma.	2+2 v. 1 amp.	2+2 v. 6 amps.	—	34/-
803	250+250 v. 75 ma.	2+2 v. 1 amp.	2+2 v. 5 amps.	—	32/6
804	300+300 v. 60 ma.	2+2 v. 1 amp.	2+2 v. 4 amps.	—	36/-
805	350-250+250-350 v. 120 ma.	2+2 v. 2.5 amps.	2+2 v. 5 amps.	2+2 v. 2 amps.	55/-
806	500+500 v. 120 ma.	2+2 v. 2½/3½ amps.	2+2 v. 5/6 amps.	2+2 v. 2 amps.	72/6

L.T. TRANSFORMERS FOR A.C. VALVES

To dispense with the necessity of using L.T. accumulators the receiver should be fitted with indirectly heated A.C. valves, the valves being operated by a mains transformer giving exactly 4 volts.

The Transformers have three secondary terminals. The centre terminal, indicated by the + sign, connects to earth (or to H.T. —). The two outer terminals, giving 4 volts, connect direct to the heater terminals of the A.C. valves. For wiring purposes the 4-volt terminals of the Transformer may be regarded as the 4-volt terminals of an accumulator.

Mostly all A.C. valves are 4-volt type, taking 1 amp. each.

List No.	Secondary Output.	A.C. Valves.	PRICE.
723	2+2 v., 3 amps.	One to three 4-volt type	12/6
727	2+2 v., 5 amps.	Three to five 4-volt type	17/6
731	2+2 v., 10 amps.	Five to ten 4-volt type	22/6

L.T. TRANSFORMER FOR POWER VALVE

The L.F. power valve in a receiver can be fed with raw A.C. current from the secondary terminals of a transformer giving suitable L.T. voltage. The centre secondary terminal generally connects to earth, or it is left unused if the more exact electrical centre is found by means of a potentiometer.

This Transformer can be used also in conjunction with the L.T.1 Westinghouse metal rectifier for charging 2-volt accumulators.

List No.	Secondary Output.	Suitable Valves.	PRICE.
725	3+3 v., 3½ amps.	LS6a or any 6 v. valves	17/6

FOR HOME CONSTRUCTORS

The Latest L.F. Transformer

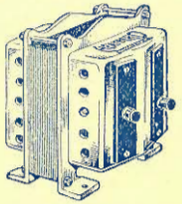
An inter-valve L.F. Transformer of massive construction and sound Engineering design. Silicon steel core ensures uniformity of characteristics. Inductance is maintained at adequate level with normal anode current flowing through the primary. Freedom from breakdown is ensured by the sturdy gauge of wire used in windings. Neatly finished in black, with easily accessible terminals.

Model Number.	Ratio.	Primary Inductance.	Price
503	3—1	30 Henries.	6/6
505	5—1	25 Henries.	7/-

When building your own receiver, you will get much better results by incorporating the Heayberd L.F. Transformer. Compare it with others.

CHOKES AND CONDENSERS

POWER CHOKES FOR FILTER CIRCUITS



Constant Inductance Type.

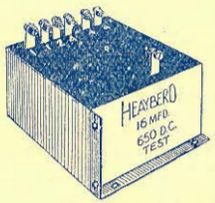
List No.	Inductance in henrys.	Resistance in ohms.	Max. carrying capacity.	Price.
751	50	800	50 ma.	12/6
752	30	300	100 ma.	12/6
757	50	400	200 ma.	20/-
753	30+30	300+300	100 ma.	22/6

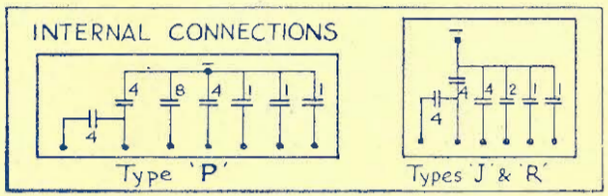
Twin Core Choke.

BLOCK CONDENSERS

Specially arranged internally for Westinghouse voltage doubling circuit. Equally suitable for valve rectifier circuits.

Type.	Tapped.	Test Voltage.	or Use with Rects.	Dimensions.	Price.
R	4, 4, 4, 2, 1, 1	650 v. D.C.	H.T.5, H.T.6	$4\frac{1}{2} \times 4\frac{1}{2} \times 2$ ins.	15/6
J	4, 4, 4, 2, 1, 1	800 v. D.C.	H.T.7, etc.	$4\frac{1}{2} \times 4\frac{1}{2} \times 2$ ins.	18/6
P	4, 4, 8, 4, 1, 1, 1	1,650 v. D.C.	H.T.8, etc.	$5 \times 7\frac{7}{8} \times 2\frac{5}{8}$ ins.	37/6





CONDENSERS FOR H.T. MAINS UNITS

List No.	Cap. mfds.	Test volts.	Peak Working voltage.	Price.
596	2	650 D.C.	200 v.	2/9
600	1	800 D.C.	400 v.	3/-
603	2	800 D.C.	400 v.	4/3
607	4	800 D.C.	400 v.	7/6
611	10	800 D.C.	400 v.	13/9
613	6	1,000 D.C.	500 v.	12/-
614	4	1,000 D.C.	500 v.	9/6
615	2	1,000 D.C.	500 v.	6/-
617	6	1,000 A.C.	750 v.	15/6
618	1	1,000 D.C.	500 v.	4/-
620	4	2,500 D.C.	1,000 v.	28/6
Buffer, 2 x 0.1 mf.				3/3

It is important that Condensers be used with the correct Transformers, otherwise they are liable to breakdown if subjected to too high a voltage strain.

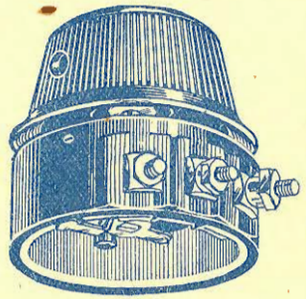
HIGH CAPACITY CONDENSER

Working voltage 12 volts maximum.

This Smoothing Condenser is used in the filter circuits of L.T. Eliminators and in the L.T. field circuit of moving coil speakers.

List No.	Capacity.	Price.
C.L.2	2,000 mf.	15/-

RESISTANCES



VARIABLE WIRE WOUND RESISTANCE

For voltage regulation and volume control. The Value of this Resistance value is 25,000 ohms and it will carry a current of 10 ma. Wound with extreme accuracy with finest wire obtainable. Self cleaning contact and single hole fixing. The Resistance is fitted with three screw terminals so that it can be used as a variable Resistance or as a potentiometer. The Resistance element is mounted in a strong moulded Bakelite case and is supplied complete with knob.

Price ... 5/6

FIXED RESISTANCES

Resistance in ohms.	Wire Wound 1 watt.	5 watt.	10 watt.	15 watt.	20 watt.
100	—	1/9	—	—	—
200	—	1/9	—	—	—
500	—	1/9	—	—	—
600	—	1/9	—	—	—
700	—	1/9	—	—	—
1,000	1/-	1/9	—	—	—
2,000	—	1/9	2/3	3/-	4/-
3,000	—	1/9	—	—	—
5,000	1/-	1/9	2/6	3/6	4/-
10,000	1/-	1/9	3/6	4/-	4/6
12,500	1/-	—	—	—	—
15,000	1/-	1/9	—	—	—
20,000	1/-	1/9	—	—	—
25,000	1/-	1/9	—	—	—
30,000	1/-	2/3	—	—	5/-
50,000	1/-	2/3	—	—	5/6
100,000	1/-	—	—	—	—

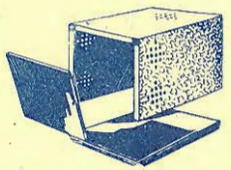
PRE-SET RESISTANCES FOR L.T.

Resistance in ohms.	Maximum current carrying capacity.	Price.
0—2	2 amps.	2/-
0—6	$1\frac{1}{2}$ amps.	2/-
0—10	$\frac{3}{4}$ amp.	2/-

METAL BOXES

Very suitable for housing the Heayberd Sets of Components. With Bakelite Panels. Crystalline finish.

Dimensions : 7 in. x $9\frac{1}{2}$ in. x $6\frac{1}{2}$ in. ... 9/-
„ 7 in. x $11\frac{1}{2}$ in. x $6\frac{1}{2}$ in. ... 12/6
„ 9 in. x $14\frac{1}{2}$ in. x $6\frac{1}{2}$ in. ... 17/6



HUM ADJUSTER

Used across the 4 volt circuit to A.C. valves. Centre adjusting screw connects to H.T.—. Resistance 30 ohms.

Price ... 3/-

MAINS FLEX

Eight feet twin flex, ends trimmed and looped for connection to Transformer terminals, complete with Bakelite lamp adaptor.

Price ... 1/6

HEAYBERD

TRANSFORMERS, CHOKES AND UNITS.

Specified during 1932 for the following Sets.

Date.	Name of Set.	Model No.	Paper.
26 Mar.	"P.W." Single Dial Super	D.150 Mains Unit	Popular Wireless
9 Apl.	Eckersley A.C.2	*M.W.1 Mains Unit	,,
9 July	"P.W." A.C. Radio-gram.	*Pop. Power Pack.	,,
19 Nov.	"Alpha" A.C.-D.C. Unit	*751 Choke, *715 trans.	Practical Wireless
19 Nov.	A.C. Charger	*W. 36 Transformer	,,
27 Feb.	"Home-lovers All-Elec. 3"	*715 Transformer	Amateur Wireless
11 June	"Inexpensive All-Elec. 2"	*716 Transformer	,,
2 July	"Mascot" H.T. Unit	*715 Transformer	,,
3 Dec.	"New A.C. Century Super"	*717 Transformer, 757 Choke	,,
Jan.	A.C. "Super-Quad"	M.W.1 Mains Unit	Mod. Wireless
Feb.	"Eckersley A.C. 3"....	M.W.1 Mains Unit	,,
Jan.	"Super Sixty 1932"	D.150 Mains Unit	Wireless Mag.
May	"W.M." H.T. Unit	*709 Transformer	,,
June	"Economy A.C.2"	*752 Choke	,,
July	"Ideal Home Super" A.C.	*752 Choke	,,
Aug.	A.C. Radio-gram.	*W. 25 Transformer	,,
April	A.C. S.T.300	*M.W.1 Unit	Wireless Constructor
Dec.	S.T.400	M.W.1 or D.150 Mains Unit....	,,
Dec.	"Direct Coupled Amplifier"	*757 Choke	Television

*Denotes **Exclusive** specification.

10, FINSBURY STREET, E.C.2.

TELEPHONE
METROPOLITAN
7516, 7517 & 7518.

HEAYBERD
MONARCH OF THE MAINS.

TELEGRAMS
HEAYBERD
Finsquare—London.

To

F. C. HEAYBERD & Co., 10, Finsbury St., London, E.C.2

ORDER FORM.

Please supply :—

	Quantity	Type Number	Voltage of Mains	PRICE £	s.	d.
MAINS UNITS						
MAINS TRANSFORMERS						
CHOKES						
CONDENSERS						
MISCELLANEOUS						
ADD POSTAGE OR CARRIAGE (WHEN ORDER UNDER £5)						
Total Amount.....£						

I enclose :

£ : :

Name :

.....

Address :

.....

.....

.....

Date :

.....

Goods can be sent C.O.D. within Great Britain.
(Carriage is paid on orders of the value of £5 nett and over.)

MANUFACTURERS OF
MAINS UNITS
TRANSFORMERS
CHOKES
BLOCK CONDENSERS
BATTERY CHARGERS
.....

HEAYBERD
MONARCH OF THE MAINS.

TELEPHONES :
METROPOLITAN - - { 7516. 7517. 7518.
.....
TELEGRAMS :
HEAYBERD
FINSQUARE, LONDON
.....
WORKS - - GREENWICH
.....

F. C. HEAYBERD & CO.

Head Offices & Showrooms : 10, FINSBURY STREET, LONDON, E.C.2.

Ref: FL1/C.

Dear Sir,

We were very pleased to get your enquiry and have pleasure in enclosing our Catalogue and Handbook, as requested.

This will enable you readily to decide on the Mains Apparatus most suitable for your particular requirements. If, however, you should be doubtful about any point do not hesitate to write our Technical Service Department -- they will be only too pleased to answer any queries concerning Mains Working.

We are certain the Catalogue will be of real service to you, and we look forward to giving you complete satisfaction in your coming purchase.

Yours faithfully,

F.C. HEAYBERD & CO.,

Robert H. Hatley

General Manager.