

COSSOR 368 MAINS "THREE"

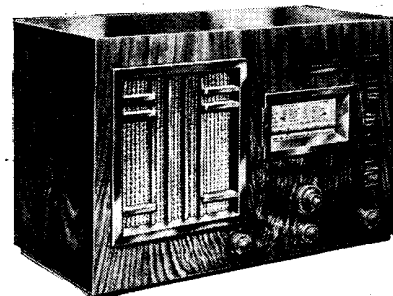
Circuit.—The H.F. valve, MVS Pen. met. (V1), is preceded by a tuned secondary aerial transformer. Volume is controlled by variable cathode resistance and coupling to the following valve is by tuned primary H.F. transformer.

The detector valve, MS Pen. met. (V2),

operates as a semi power-grid detector with reaction, and is resistance capacity coupled to the output valve.

This valve (V3) is an indirectly heated 41MP triode, and is stabilised by both anode and grid condensers.

(Continued on opposite page.)



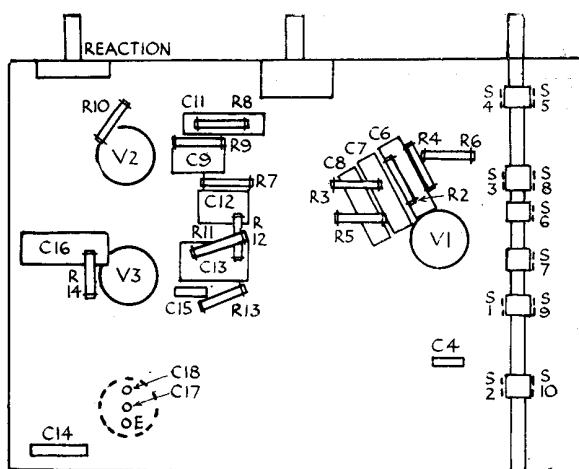
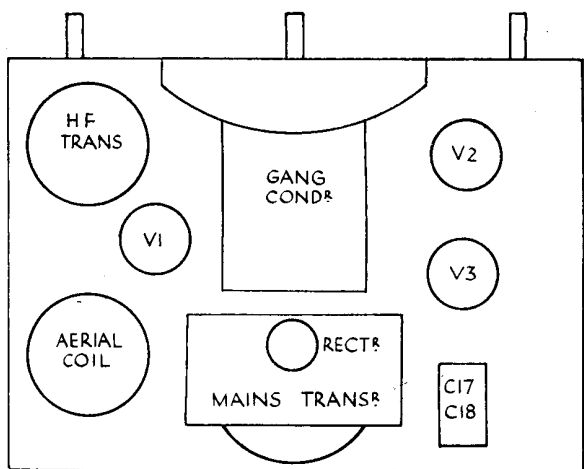
A three-valve plus rectifier "straight" set, the Coszor model 368 Super-Ferrodyn, utilises iron-cored coils. A rather unusual feature is the use of a triode in the output stage.

CONDENSERS

C.	Purpose.	Mfd.
4	Series serial	.0005
6	V1 aux. grid by-pass	.1
7	V1 cathode by-pass	.1
8	Decoupling V1 anode	.1
9	V2 grid reservoir	.0001
10	V2 cathode by-pass	50 el.
11	V2 screen by-pass	.1
12	V3 anode H.F. by-pass	.0002
13	L.F. coupling	.01
14	Tone compensating V3 anode	.005
15	Tone compensating V3 grid	.0002
16	V3 cathode by-pass	50 el.
17	H.T. smoothing	4 el.
18	H.T. smoothing	6 el.

RESISTANCES

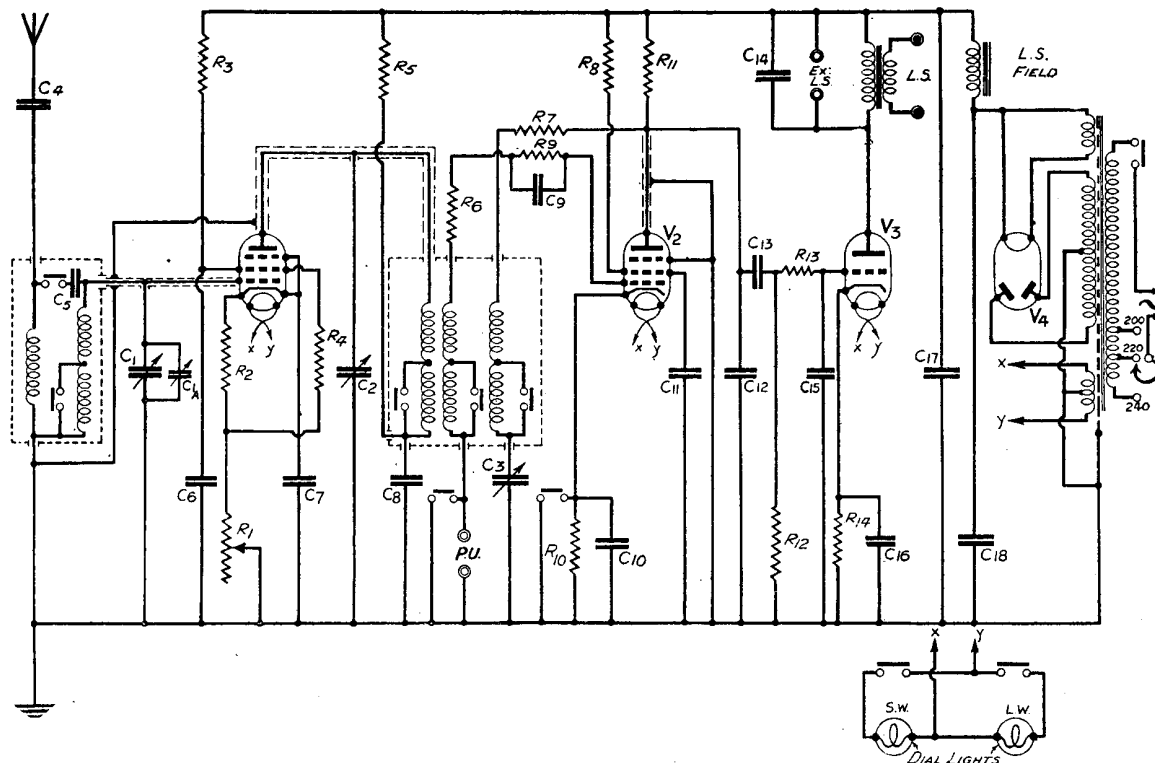
R.	Purpose.	Ohms.
1	V.C. in V1 cathode return	12,000
2	Fixed portion of V1 cathode bias	1,500
3	Top part of V1 aux. grid ptr.	30,000
4	Lower part of V1 aux. grid ptr.	40,000
5	Decoupling V1 anode	10,000
6	Series with V2 grid coil	200
7	Series with reaction coil	300
8	Voltage dropping to V2 screen	.5 meg.
9	V2 grid leak	1 meg.
10	V2 cathode bias on gram.	1,000
11	V2 anode coupling	.1 meg.
12	V3 grid leak	.5 meg.
13	V4 grid stabiliser	.1 meg.
14	V4 cathode bias	300



On the right is the under-chassis layout diagram of the Coszor receiver. A terminal strip in the centre of the chassis acts as an anchorage for several of the smaller components.

Above: how the top-deck components are arranged.

The Coszor circuit is straightforward. The valves are a variable- μ H.F. pentode, an H.F. pentode working as a semi power-grid detector and an indirectly-heated output triode.



COSSOR 368 MAINS "THREE" (Cont.)

Mains equipment consists of: Transformer, 442 BU rectifier, speaker field in the positive H.T. lead, and electrolytic condensers.

The pilot lamps are 6.5 v. .3 amp. type.

Quick Tests.— Voltages between the terminals on the speaker transformer and chassis, counting from the outside:—

- (1) Blue, H.T. unsmoothed, 340 v.;
- (2) Red, V3 anode, 230 v.;
- (3) and (4) Yellow, H.T. smoothed, 240 v.

Removing Chassis.—Remove the knobs (grub screw), undo the speaker leads from the speaker transformer, release the mains

cable from the cleat, remove the holding screws from underneath and lift the chassis out.

General Notes.—Of the three leads from the condenser block, red is C18, white is C17 and black is common negative.

The wiring and lay-out of this set are particularly simple, and all the components are readily accessible.

Replacing Chassis.—Lay the chassis inside the cabinet, replace the holding screws and knobs, cleat the mains lead and re-connect the speaker leads in the same order.

VALVE READINGS

No signal. Volume control at maximum.

Valve.	Type.	Electrode.	Volts.	M.A.
1	MVS Pen. met (7)	anode .. aux. grid ..	215 .. 120 ..	2 .. 1 ..
2	MS Pen. met. (7)	anode .. aux. grid ..	55 .. 35 ..	1.8 .. .4 ..
3	41 MP (5)	anode ..	230 ..	30 ..

PHILIPS UNIVERSAL 838U

and coupling to the next valve is by another tuned secondary transformer.

The detector valve, SP13 met. (V2), operates as a semi power-grid detector with a very low value of grid condenser. Coupling to the next valve is by resistance capacity filter.

The output valve, Pen. 26 (V3), has both an H.F. stopper and a stabilising re-

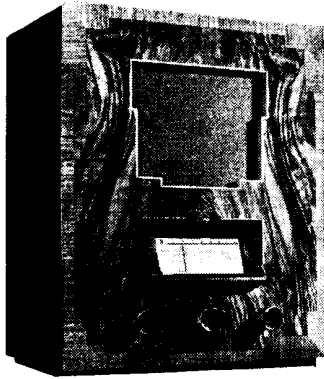
sistance in the grid circuit, and is tone compensated by a condenser across the primary of the output transformer.

Mains equipment consists of: Barretter, type C1; half-wave rectifier, type CY1; and a choke in the positive H.T. lead, with electrolytic condensers.

Special Notes.—The grid return of V1 is connected to a tapping in the grid leak of V2, providing a form of A.V.C.

The reservoir condenser C19 in the grid of V2 is a 25-mmfd. semi-variable condenser.

(Continued on next page.)



The Philips 838U "three" for AC.-DC. mains.

Circuit.—The H.F. valve, VP13A met. (V1), is preceded by a tuned secondary aerial transformer with a Droitwich filter. Volume is controlled by cathode resistance,

VALVE READINGS

No signal. Mullard Universal valves are used. Readings obtained on 220v. A.C. supply.

Valve.	Type.	Electrode.	Volts.	M.A.
1	VP13A met.(P)	anode .. aux. grid ..	180 .. 85 ..	2.7 .. .9 ..
2	SP13 met. (P)	anode .. aux. grid ..	30 .. 25 ..	.5
3	Pen.26 (P)	anode .. aux. grid ..	160 .. 85 ..	35 .. 4.5 ..

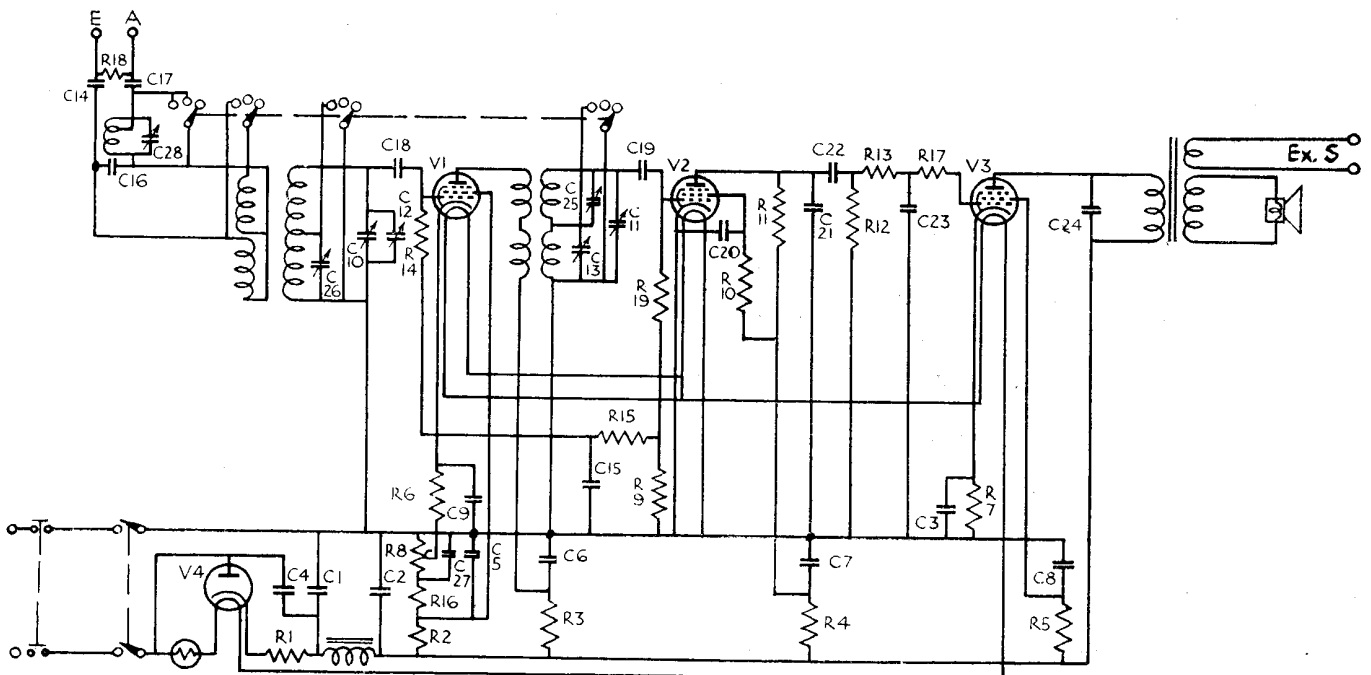
RESISTANCES

R.	Purpose.	Ohms.
1	Series with rect. cathode ..	315
2	Top part of ptr. to V1 aux. grid ..	20,000 (1)
3	Decoupling V1 anode ..	1,000 (½)
4	Decoupling V2 anode ..	20,000 (1)
5	Voltage dropping to V3 aux. grid ..	20,000 (½)
6	V1 cathode bias (fixed) ..	400 (½)
7	V2 cathode bias (fixed) (2) in parallel ..	640 ea.(1)
8	V.C. ptr. ..	var.
9	V2 grid leak (part) ..	.64 meg(½)
10	Voltage dropping to V2 aux.grid ..	1 meg. (½)
11	V2 anode coupling ..	.32 meg.(½)
12	V3 grid leak ..	.64 meg.(½)
13	V3 grid, H.F. stopper ..	.1 (½)
14	V1 grid leak ..	1.25 (½)
15	Decoupling V1 grid ..	.8 (½)
16	Middle part of ptr. to V1 aux. grid ..	25,000 (½)
17	V3 grid stabiliser ..	1,000
18	Across A and E input ..	.1 meg.(½)
19	V2 grid leak (part) ..	1.25meg. (½)

Bracketed figures denote wattage rating.

CONDENSERS

C.	Purpose.	Mfd.
1	H.T. smoothing .. el.	32
2	H.T. smoothing .. el.	32
3	V3 cathode by-pass .. el.	25
4	H.F. by-pass from rectifier ..	.1
5	V1 aux. grid by-pass ..	.5
6	Decoupling V1 anode ..	.1
7	Decoupling V2 anode ..	.5
8	V3 aux. grid by-pass ..	.5
9	V1 cathode by-pass ..	.1
14	Series earth ..	.1
15	Decoupling V1 grid ..	.1
17	Series aerial ..	.001
18	V1 grid ..	64mmfd
20	V2 aux. grid by-pass ..	.1
21	H.F. by-pass from V2 anode ..	.000125
22	L.F. coupling ..	.02
23	H.F. by-pass from V3 grid ..	.000125
24	Tone compensating V3 anode ..	.004
27	Decoupling V1 bias ptr. ..	.5



The provision of a form of A.V.C. by connecting the grid return of V1 to a tapping on the grid leak of V2 is an original feature in the circuit of the Philips 838U.