

BURNDEPT UNIVERSAL MODEL 210

Circuit.—A combined first detector-oscillator, FC13 (V1) met., is preceded by a single tuned aerial transformer with an I.F. trap in the aerial lead and a 1,149 k.c. trap across the primary on long waves.

Volume is controlled manually by simultaneously damping the aerial circuit and varying the bias on V1 and V2. Coupling to the next valve is by band-pass I.F. transformer (frequency 473). The oscillator has the tuned coil in the grid circuit.

The I.F. valve, VP13A (V2) met., is coupled to the second detector by another band-pass I.F. transformer.

The second detector valve, SP13 met. (V3), works as an anode bend detector and has the auxiliary grid fed through a potentiometer. Coupling to the output valve is by resistance capacity filter.

The output pentode, Pen.26 (V4), has an H.F. stopper in the grid circuit and is tone-compensated by a condenser between the anode and chassis.

Tone control is provided by means of a variable resistance in series with a condenser across the grid leak.

Mains equipment consists of a barretter

lamp, C1; a UR2 full-wave rectifier used as a half-wave, and a smoothing choke with electrolytic condensers. The L.S. field is connected across the unsmoothed H.T.

Special Notes.—See that the P.U. shorting link is in the P.U. sockets.

The heater ratings are:—Rectifier, 30 volts at .2 amp.; Pen. 26, 24 volts at .2 amp.; SP13, VP13A and FC13, 13 volts at .2 amp.

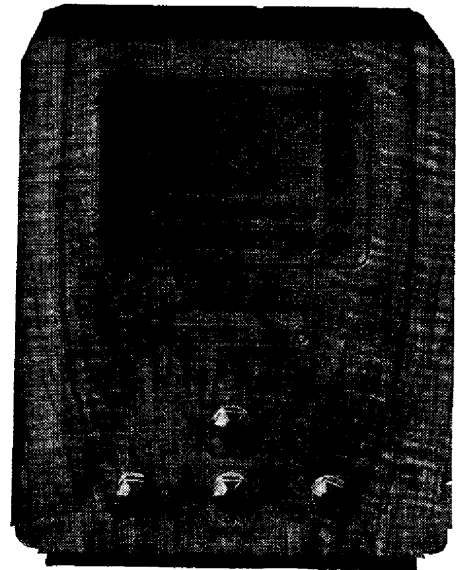
Mullard universal bases are fitted throughout.

Note that in these valves the top terminals are all control grids.

Quick Tests.—The most convenient H.T.—point on the chassis is the frame of the dial. Between the following terminal tags on the speaker and the chassis, (mains voltage 230 A.C.) the voltages are:—

- Top (1) green, 0 volts.
- (2) black, 204 volts (H.T. smoothed).
- (3) blue, 182 volts (V4 anode).
- (4) red, 226 volts (H.T. unsmoothed).

Removing Chassis.—Remove knobs (grub screw) and release the cleat holding



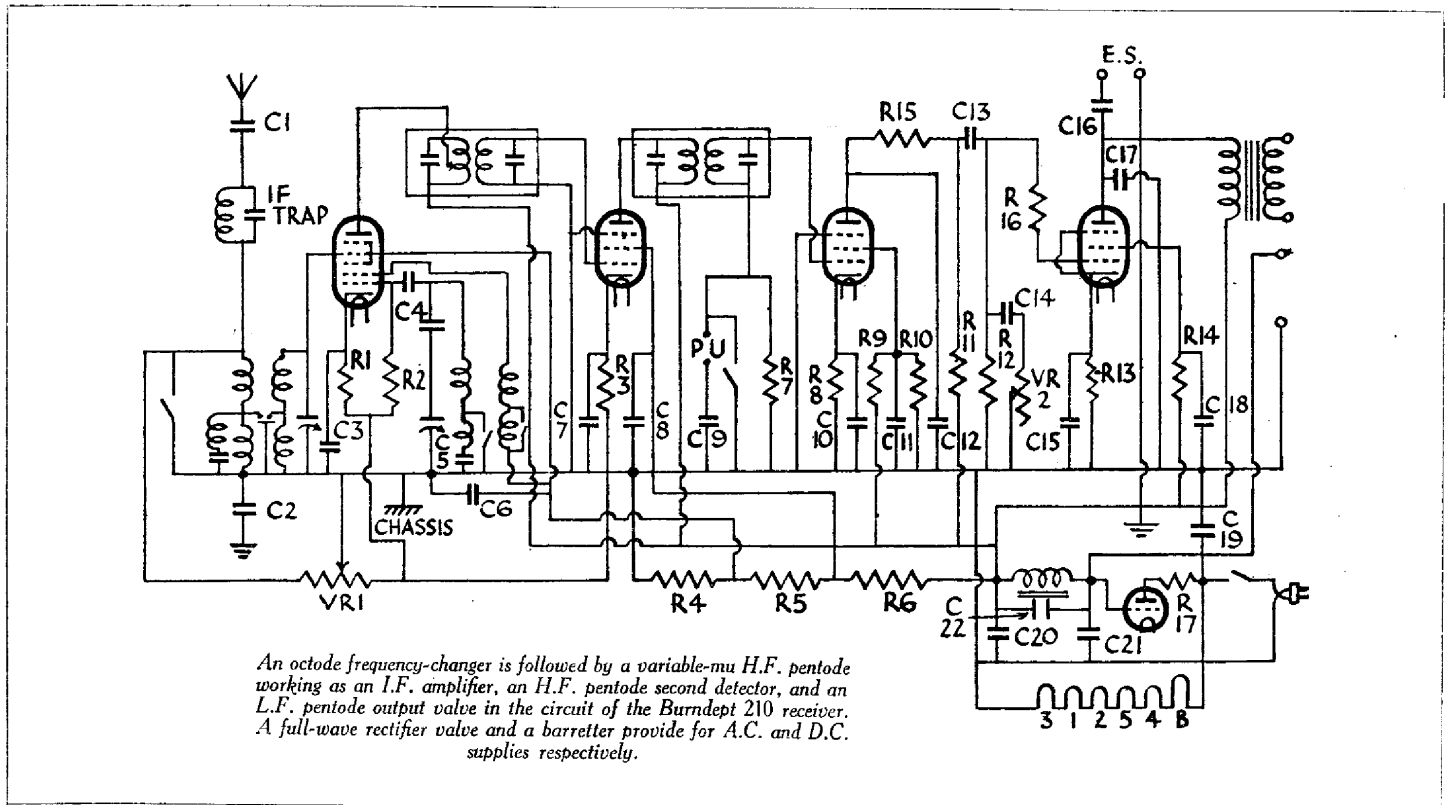
The model 210 Universal superhet receiver by Burndeft, Ltd.

RESISTANCES		
R.	Purpose.	Ohms.
1	V1 cathode bias (fixed) ...	250
2	Osc. grid leak ...	50,000
3	V2 cathode bias ...	500
4	Part of H.T. feed ptr. ...	25,000
5	Part of H.T. feed ptr. ...	2,500
6	Part of H.T. feed ptr. ...	10,000
7	Across P.U. ...	.25 meg.
8	V3 cathode bias ...	5,000
9	Upper part of V3 aux. grid ptr. ...	100,000
10	Lower part of V3 aux. grid ptr. ...	50,000
11	V3 anode L.F. coupling ...	.25 meg.
12	V4 grid leak ...	.5 meg.
13	V4 cathode bias ...	400
14	Voltage dropping to V4 aux. grid ...	20,000
15	H.F. stopper in V3 anode ...	50,000
16	H.F. stopper in V4 grid ...	.5 meg.
17	Anode circuit of rectifier ...	100.
	L.S. Field ...	7,550
	P. of output transformer ...	250

CONDENSERS		
C.	Purpose.	Mfd.
1	In series with aerial lead ...	.02
2	In series with earth lead ...	.5
3	V1 cathode ...	.1
4	Osc. grid ...	.001
5	L.W. tracking on osc. ...	var.
6	V1 aux. grid ...	.1
7	V2 cathode ...	.05
8	V2 aux. grid ...	.05
9	In P.U. lead ...	.25
10	V3 cathode ...	50 el.
11	V3 aux. grid ...	.05
12	V3 anode by-pass ...	.0002
13	L.F. coupling V3 to V4 ...	.02
14	Tone control circuit ...	.002
15	V4 cathode ...	25 el.
16	V3 cathode ...	.25
17	Extra L.S. filter ...	.25
18	Tone compensating V4 anode ...	.005
19	V4 aux. grid ...	.5
20	H.F. by-pass from mains ...	.1
21	H.T. smoothing ...	8 el.
22	H.T. smoothing ...	16 el.
	Forming hum trap with choke ...	.02

VALVE READINGS				
Valve	Type.	Electrode.	Volts.	M.a.
1	F.C.13 ..	anode ..	208	.6
		aux. grid ..	76	4.3
		osc. anode ..	76	1.6
2	V.P.13A	anode ..	204	3.2
		aux. grid ..	100	1.4
3	S.P.13 ..	anode ..	49*	.3
		aux. grid ..	55	.1
4	Pen.26 ..	anode ..	182	33
		aux. grid ..	110	4.8

* Deceptive reading due to high value of anode resistance. The important factor is the anode current.



BURNDEPT MODEL 210 UNIVERSAL (Cont.)

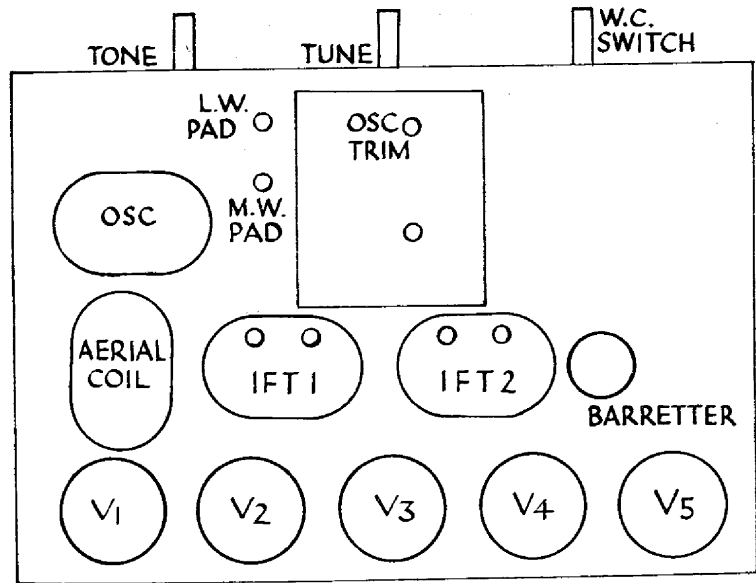
the speaker cable. Remove four holding screws underneath and lift the chassis out.

General Notes.—The I.F. frequency is 473 k.c. The correct method of trimming is as follows:—Connect modulated oscillator to top (grid) cap of V1 and gang IFT1 and IFT2. Connect oscillator to aerial socket on same frequency, and after increasing volume to maximum, reduce to minimum by adjusting the I.F. trap (see diagram).

Adjust on M.W. at 200 metres and at 500 metres. Adjust L.W. padding condenser on 2,000 metres.

Before attempting to replace any component on the resistance and condenser panel make sure with which tag the leads should make contact. Several of them appear to be connected to tags with which they are not actually making any contact. If in any doubt the resistance table and the circuit diagram should be consulted.

Replacing Chassis. Lay chassis inside cabinet, replace holding screws, cable cleat and knobs.



Above is shown the arrangement of parts on top of the Burndept chassis including the padding trimmers. How the set should be trimmed is described under "General Notes."

Below on the left is the underneath layout of the chassis of the Burndept 210 A.C.-D.C. receiver. On the right is a detail drawing of the condenser block.

