

COSSOR 350 and 353

Three-valve, two-wa.eband TRF battery receivers with reaction and sensitivity controls. Provision is made for a pick-up. Marketed by A. C. Cossor, Ltd., Highbury Grove, London, N5.

INPUT to model 350 is through a series condenser C1 to the aerial coil L1, inductively and capacitatively coupled to the grid coils L2 (MW) and L3 (LW) of the iron-cored aerial coil assembly, tuned by VC1 section of the ganged' condenser.

VALVE READINGS

V	Type	Electrode	Volts	Mas
1	Cossor 220 VS	Anode	120	.4-4*
2	Cossor 210 HL	Screen	66	.2-1.5*
3	Cossor 220 P	Anode	110	6

* According to the position of VR1. Measured with a 1,000 opv meter with reaction at zero. Cossor fuse bulb 150ma type.

From the grid coils the signal is passed direct to the grid of the variable-mu tetrode RF amplifier V1. Variable bias is applied to the grid via R1 from the slider of the volume control, VR1, connected across the bias battery. The screen is fed direct from the high tension line and decoupled by C4.

Output from V1 is coupled to the triode detector V2 by an RF transformer with a tuned secondary. The anode primary windings are L4 (MW), L5 (LW),

BATTERY CONNECTIONS

The following refers to the diagram showing the underside of chassis.

- GB-3 goes to the point marked A on potentiometer.
- HT- to D on fuse holder.
- HT+ 120 to G on C7.
- GB+ to H on on/off switch.
- HT+ 66 to J on LF transformer.
- GB-1 to F on PU terminal.
- LT+ to K on V3 valve holder.
- LT- to L on on/off switch.
- GB-2 to N on LF transformer.

CONDENSERS

C	Mfids
1	.0005
2	15.0 mmfd
3	.1
4	.1
5	.0001
6	.0035
7	2.0

RESISTORS

R	Ohms
1	2 meg
2	.1 meg
3*	2 meg
4	2 meg
5	.1 meg
VR1	50,000

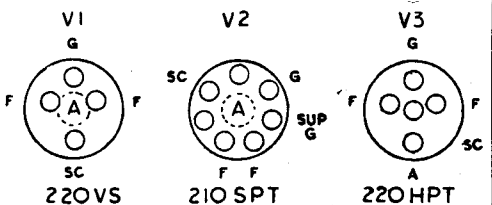
* Incorporated in C5 in some sets.

and the secondary windings L6 (MW), L7 (LW) which are tuned by VC2 of the gang. The reaction winding, L8 (MW) and L9 (LW), introduces some of the amplified RF from the anode of V2, the amount of feedback being controlled by the variable condenser VC3.

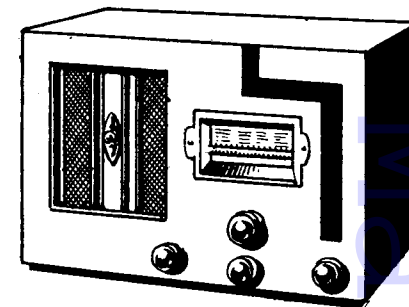
Leaky grid detection is employed with C5 and R4 as the grid condenser and leak. In some models a further grid leak R3 is incorporated in the condenser C5.

Pick-up sockets are provided and V2 is automatically biased when the pick-up leads are inserted. A separate volume control is required for pick-up.

The AF signals from the anode of V2 are fed to the primary L10 of an AF transformer, and the



Valve pins are identified by these base drawings viewed as with chassis inverted. Types not shown are of the simple four-pin variety.



Models 350 and 353 are identical in appearance except for the speaker mounting on the fret.

secondary L11 transfers the signal through the grid stopper R5 to the grid of the output triode V3. Bias is supplied to the grid in the usual manner through L11 and the GB-2 connection.

Continued overleaf

VALVE READINGS (353)

V	Type	Electrode	Volts	Mas
1	Cossor 220 VS	Anode	120	1-4*
2	Cossor 210 SPT	Screen	66	.2-1.5*
3	Cossor 220 HPT	Anode	115	4

* According to position of VR1. Reaction at zero. Fuse bulb = Cossor 150ma type.

BATTERY CONNECTIONS (353)

- GB-2 goes to the point marked A on potentiometer.
- HT- to D on fuse holder.
- HT+ 120 to G on L5.
- GB+ to H on on/off switch.
- HT+ 66 to J on screen pin of V1 holder.
- GB-1 to F on LF auto-transformer.
- LT+ to K on V3 valve holder.
- LT- to L on on/off switch.

WINDINGS (350, 353)

L	Ohms	L	Ohms
1	8.0	8	1.0
2	1.5	9	5.0
3	12.5	10	1,400
4	1.5	11	3,500
5	12.5	12 (353 only)	1,190
6	1.5	13 (353 only)	.17
7	12.5		

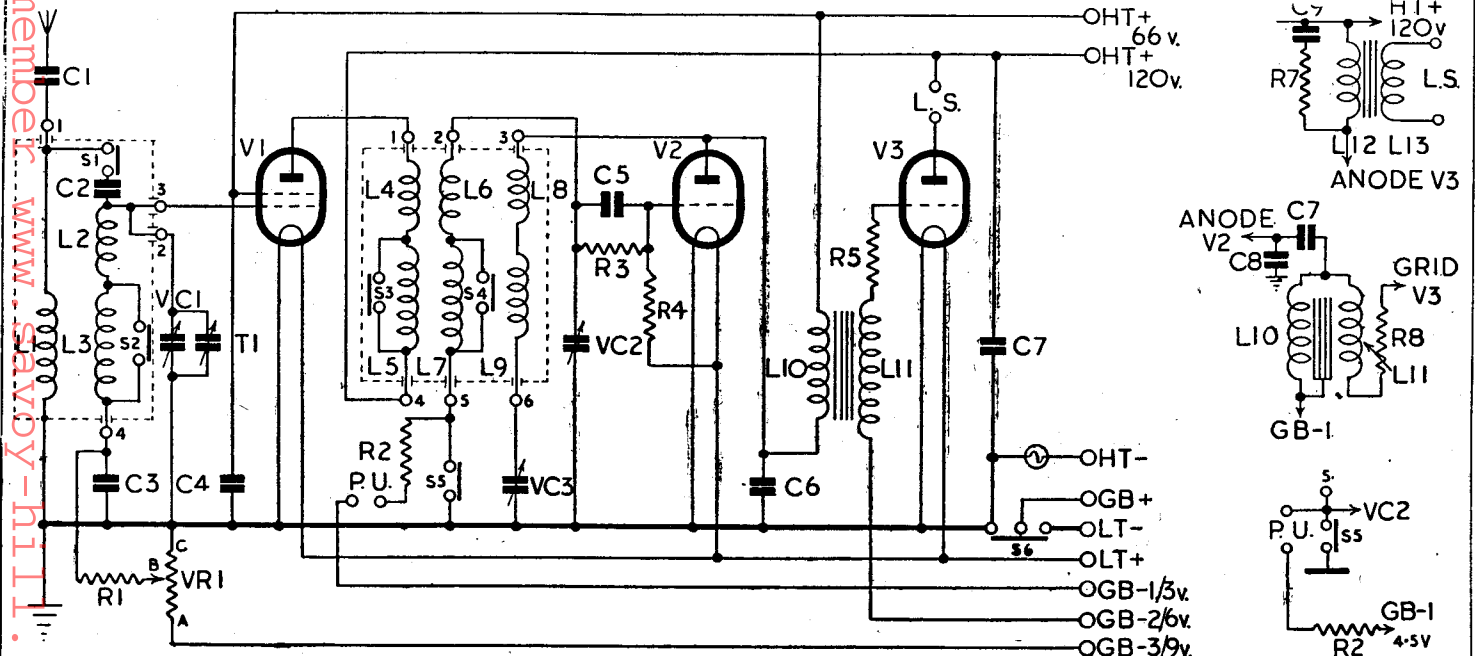
MODEL 353 CONDENSERS

C	Mfids
1	.0005
2*	15 mmfd
3	.1
4	.1
5	.0001
6	.1
7	.1
8	.0002
9	.01
10	2.0

RESISTORS

R	Ohms
1	2.0 meg
2	.1 meg
3	.5 meg
4†	3.0 meg
5	2.0 meg
6	50,000
7	10,000
8	.1 meg

* Incorporated in C5 in some parts.
† In coil assembly.



The circuit of the Cossor 350 with, on the left, three details showing the differences which are found in model 353. These relate to tone control across the output transformer, auto connection of inter-valve transformers and modified PU switch connections.

COSSOR 350 and 353

Continued

C6 by-passes any RF that may be present, and C7 decouples the HT battery.

Output from the anode of V3 is direct to a permanent magnet loudspeaker.

MODEL 353

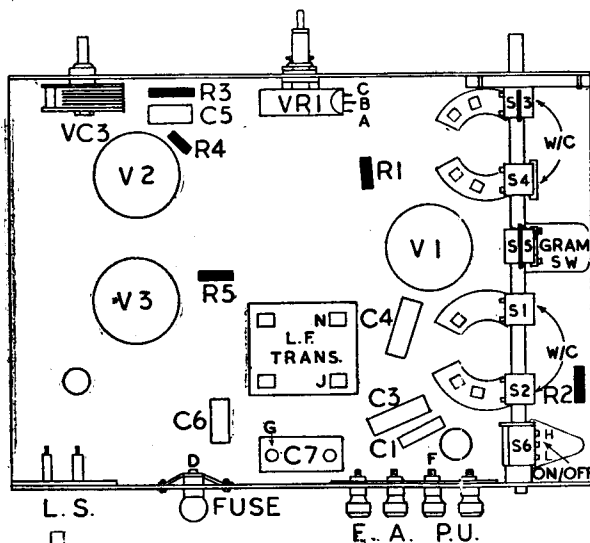
It is not necessary to give a complete circuit outline for model 353, as it is basically similar to that of the 350 but for the additional components shown on the chassis layout and the following divergencies:—

Bias for the pick-up is fed through R2.

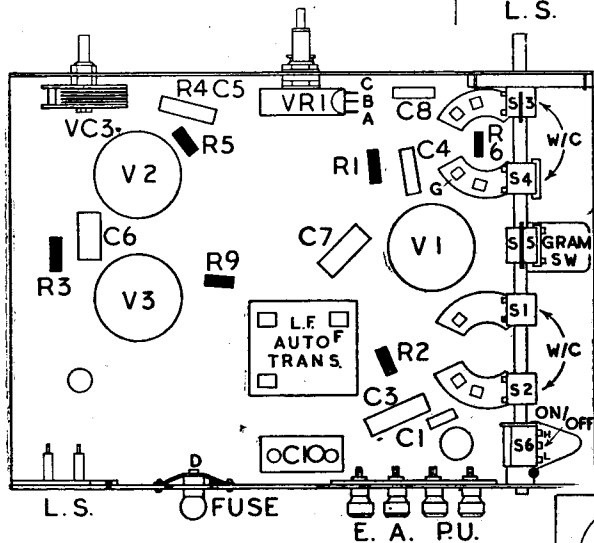
V2 is a pentode used as a detector.

V2 and V3 coupling is by auto-transformer.

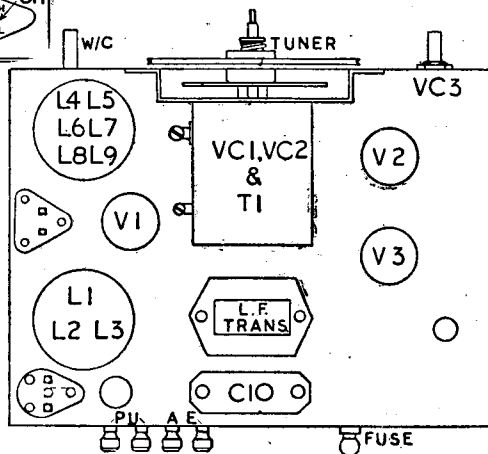
Output from a pentode output valve is coupled to the loudspeaker by a transformer which has C9 and R7 across its primary to prevent shrillness. These components are not shown on the chassis layout, as they are mounted on the speaker.



Above: How the components are arranged below the chassis of the COSSOR 350. The design is simple and straightforward with everything accessible. The modifications in model 353 introduce slight changes in the layout and these are illustrated on the left.



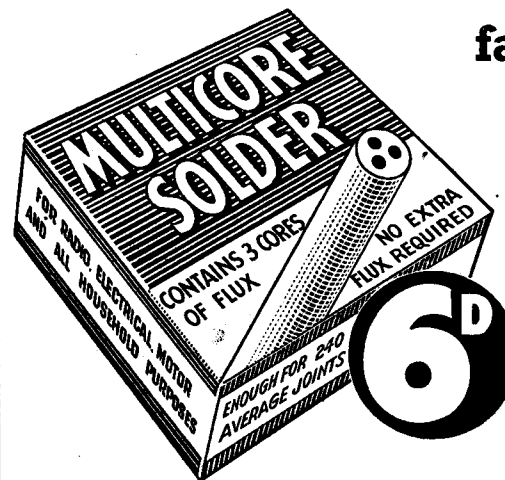
Below: Top of chassis is just the same in models 350 and 353 despite the circuit differences and therefore the single layout diagram below is sufficient.



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Triode Acted as Demodulator

THE volume could not be reduced to zero in a Bush set which was perfect in reproduction. The volume control was first suspected but found correct.

The LF signal in this set was fed from one diode via the volume control to the grid of the same valve (a DDT type). By testing with a pair of phones and a valve voltmeter, it was found that between chassis and the cathode of the DDT a small signal was apparent. Further testing showed that the cathode bias condenser of 60 mfd was open circuited. This produced a small LF signal from the diode circuit across the bias resistor and was causing, in turn, a signal between the cathode and chassis.