SERVICE BULLETIN

SERVICE BULLETIN No. 20

MODEL 39 : 5-VALVE DUAL-WAVE RECEIVER.

First Edition : December, 1936.

RADIO CORPORATION OF NEW ZEALAND LTD.

39

SERVICE BULLETIN No. 20

MODEL 39 : 5-VALVE DUAL-WAVE RECEIVER.

December, 1936.

First Edition : December, 1936.

1. **GENERAL:** This a 5-valve dual-wave receiver using glass valves and having capacity-coupled band-pass tuning on the broadcast band. Otherwise the circuit follows conventional lines and incorporates two iron-cored intermediate-frequency transformers. This model is designed to operate with quiet background in areas of good field strength.

2. **ELECTRICAL SPECIFICATIONS:**

Power supply		225-250 volts A.C. 50 cycles
Power consumption		Approx. 60 watts
Valves used	Frequency changer	6A7
	I. F. amplifier	6D6
	Detector-amplifier	6B7
	Output pentode	42
	Rectifier	80
Intermediate frequency		456 kc/sec.
Broadcast band		550-1500 kc/sec.
High-frequency band		6-16 mc/sec.
Line-up frequencies	Intermediate frequency	456 kc/sec.
	Broadcast band	600 and 1400 kc/sec.
	High-frequency band	6 and 15 mc/sec.

3. **VOLTAGE TESTS: A.C.—**

High-tension secondary of power transformer, from each rectifier plate to ground	320 volts
Heater of rectifier	5 volts
All other heaters	6 volts

D.C.:

Unfiltered voltage, rectifier heater to ground	320 volts
Filtered voltage, speaker field to ground	230 volts

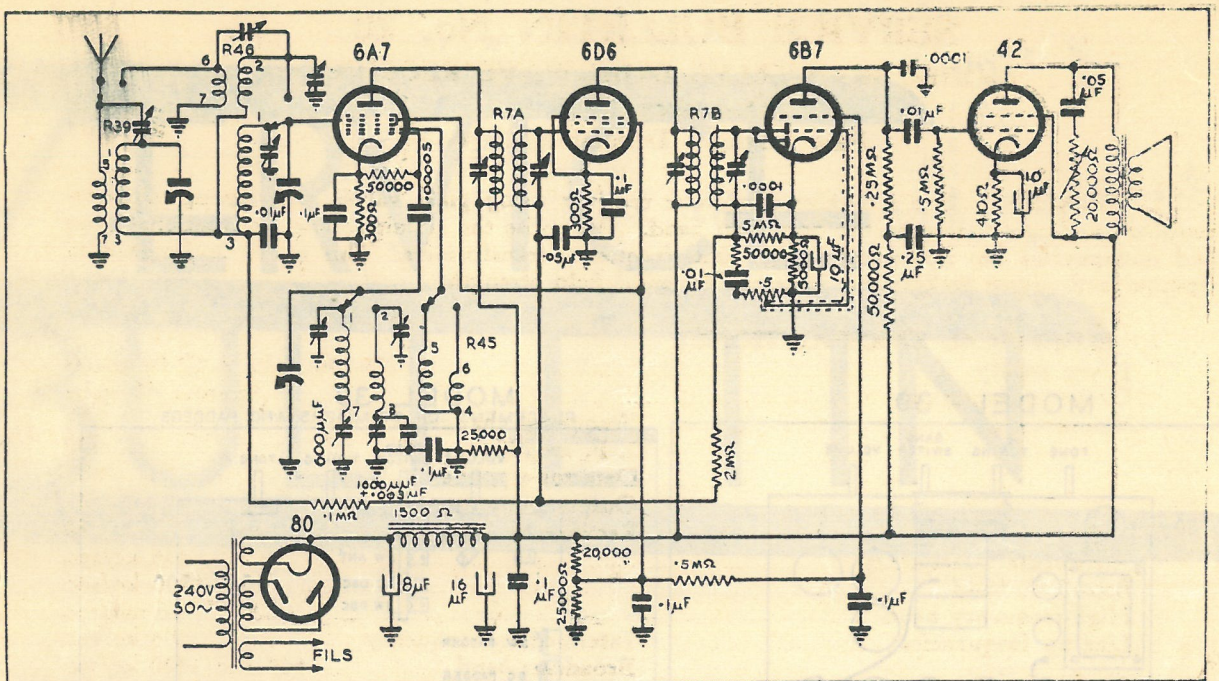
Other voltages to ground, using 1000 ohm per volt meter on 500 volt range except where otherwise stated·—

Valve.	Function.	Plate.	Osc. Plate	Screen.	Cathode
6A7	Freqy. Changer	230	135	70	3†
6D6	I.F. amplifier	230	—	70	3†
6B7	Detector-amp.	65	—	9.5*	2†
42	Output pentode	220	—	230	14*

*100 Volt Range. †10 Volt Range.

4. **RESISTANCE TESTS:**

Coil.	Where Measured.	Resistance in Ohms.
Power tran. primary	Across power cord	Approx. 40
H.T. secondary	Each rectifier plate to ground	Approx. 275
Speaker field	"Fill" of speaker socket	Approx. 1500
Speaker input tran.	"P" to "G" of speaker socket	Approx. 500
1st I.F. primary	See circuit	Approx. 10
1st I.F. secondary	See circuit	Approx. 10
2nd I.F. primary	See circuit	Approx. 10
2nd I.F. secondary	See circuit	Approx. 10
Broadcast ant. primary	7 to 5 of coil R 39	Approx. 43
Broadcast ant. secondary	3 to 1 of coil R 39	Approx. 6
Broadcast b/p secondary	3 to 1 of coil R 46	Approx. 7
Broadcast osc. primary	5 to 4 of coil R 45	Approx. 3
Broadcast osc. secondary	7 to 1 of coil R 45	Approx. 4
High-frequency ant. primary	7 to 6 of coil R 46	Approx. 3
High-frequency ant. secondary	2 to 3 of coil R 46	(Short circuit)
High-frequency osc. primary	4 to 6 of coil R 45	Approx. .5
High-frequency osc. secondary	2 to 3 of coil R 45	(Short circuit)



DESIGN LAB DRAWN 8/2 CHECKED DATE 8-1-37	D250 MODEL 39	5 VALVE DUAL-WAVE RECEIVER RADIO CORPORATION OF NEW ZEALAND LTD	AMENDMENTS	CHKD	DATE

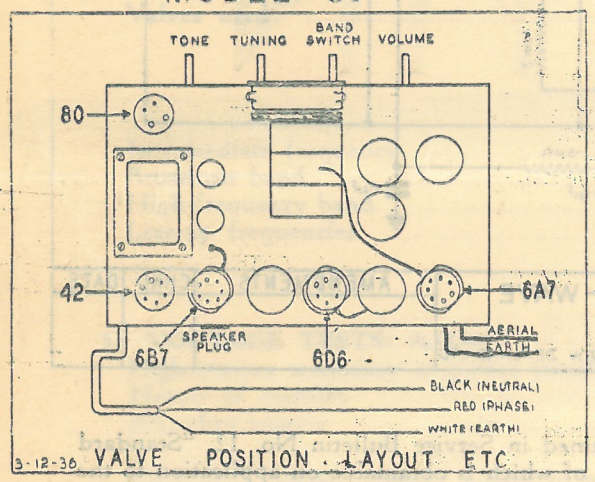
5. **LINE-UP PROCEDURE:** This is fully explained in Service Bulletin No. 12, "Standard Line-up Procedure for Multi-wave Receivers," a copy of which is obtainable on application to the Engineering Department if desired.

6. **SENSITIVITY TESTS:** (Microvolts input to give standard output of 50 milliwatts):

Frequency.	Applied to	Microvolts
456 kc/sec.	Grid of 6D6 I.F. amplifier	2500
456 kc/sec.	Grid of 6A7 frequency changer	40
1400 kc/sec.	Antenna through standard "dummy"	3
1000 kc/sec.	Antenna through standard "dummy"	3
600 kc/sec.	Antenna through standard "dummy"	6
15 kc/sec.	Antenna through standard "dummy"	3
12 kc/sec.	Antenna through standard "dummy"	8
9 kc/sec.	Antenna through standard "dummy"	15
6 kc/sec.	Antenna through standard "dummy"	35

7. **GRAMOPHONE CONNECTION:** Owing to the very limited demand for gramophone connections, it is not standard practice to include such arrangements in ordinary models, but to supply details for the necessary modifications to be made. The circuit is shown and described in Service Bulletin No. 13," "Gramophone Attachment to Standard Model Receivers." The only parts required are one D.P.D.T. switch, one pick-up jack (or two terminals), and the requisite length of twin shielded wire. This bulletin is obtainable on application to the factory, who can, if necessary, supply the above parts already wired for connection to the receiver, at a nominal charge.

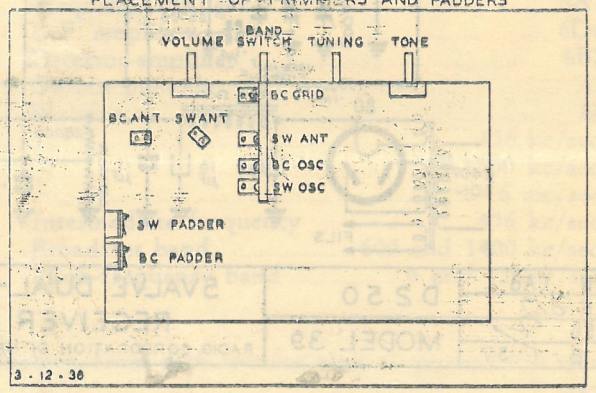
MODEL 39



VALVE POSITION - LAYOUT ETC

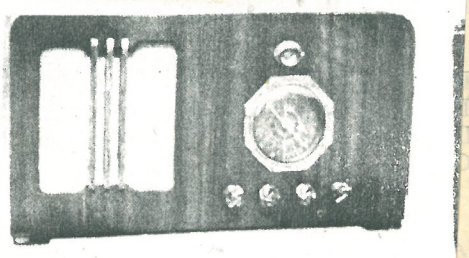
MODEL 39

PLACEMENT OF TRIMMERS AND PADDERS



Model 39

SERVICE BULLETIN No. 20 MODEL - 39



Columbus model 39, 5-valve DW 1937. This was the first sets issued under the Columbus brand name.

Model 39
2/9