

# SERVICE BULLETIN

No. 25 (Aug 262)  
11-5-37

SPIRAL DIAL  
METAL VALVES

MODEL 43: 9-Valve All-Wave Receiver, Including Magic Eye  
(8+eye) First Edition: July, 1937.

## RADIO CORPORATION OF NEW ZEALAND LTD.

Printed by R.N.Z.-

Model 43

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1. **GENERAL:** This is a 9-valve all-wave receiver, incorporating 8 metal valves and a "magic eye" tuning indicator, and embodying a number of unique features. The sensitivity on all three bands is of a high order, giving excellent overall performance. The principal feature of this model is its tone, use being made of the "inverse feed-back" principle to obtain a high level of output with minimum harmonic distortion from the single 6F6 pentode. Automatic low-level bass compensation is provided by means of a specially tapped audio volume control with auxiliary resistance-capacity networks. The tuning circuits are grounded and capacity-coupled to their requisite grids, to which automatic volume control voltage is fed through high resistances.

Two stages of intermediate frequency amplification are incorporated, the first two transformers being of comparatively low "Q" to avoid undue cutting of sidebands, with resultant loss of high notes. These two transformers have tapped secondaries to hold the amplification down to a reasonable figure. The final transformer is Litz-wound on iron cores to obtain efficient diode operation.

A grid circuit tone control operating on the "Miller" principle is provided. Special attention has been paid to stability, particularly with respect to oscillator and screen circuits.

The exclusive triple-spiral glass dial, etched and distinctively coloured, with its associated mechanical "eyes" indicating tone and volume settings, is an important feature of this model. The high degree of illumination required is provided by motor-car type general-purpose lamps, giving long service life.

## 2. ELECTRICAL SPECIFICATIONS:

Power supply .....	225-250 volts A.C., 50 cycles	
Power Consumption .....	Approx. 70 watts	
Undistorted power output .....	3 watts	
Valves used .....	Radio-frequency amp. .... 6K7	
	Frequency changer .....	6A8
	1st I.F. amplifier .....	6K7
	2nd I.F. amplifier .....	6K7
	Detector—A.V.C. ....	6H6
	Audio amplifier .....	6J7
	Output pentode .....	6F6
	Rectifier .....	5Z4
	Tuning indicator .....	6E5
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.
	Intermediate H.F. band .....	2.5 and 6 mc/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 .....	400 volts
Filtered voltage, speaker field to ground .....	250 volts

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

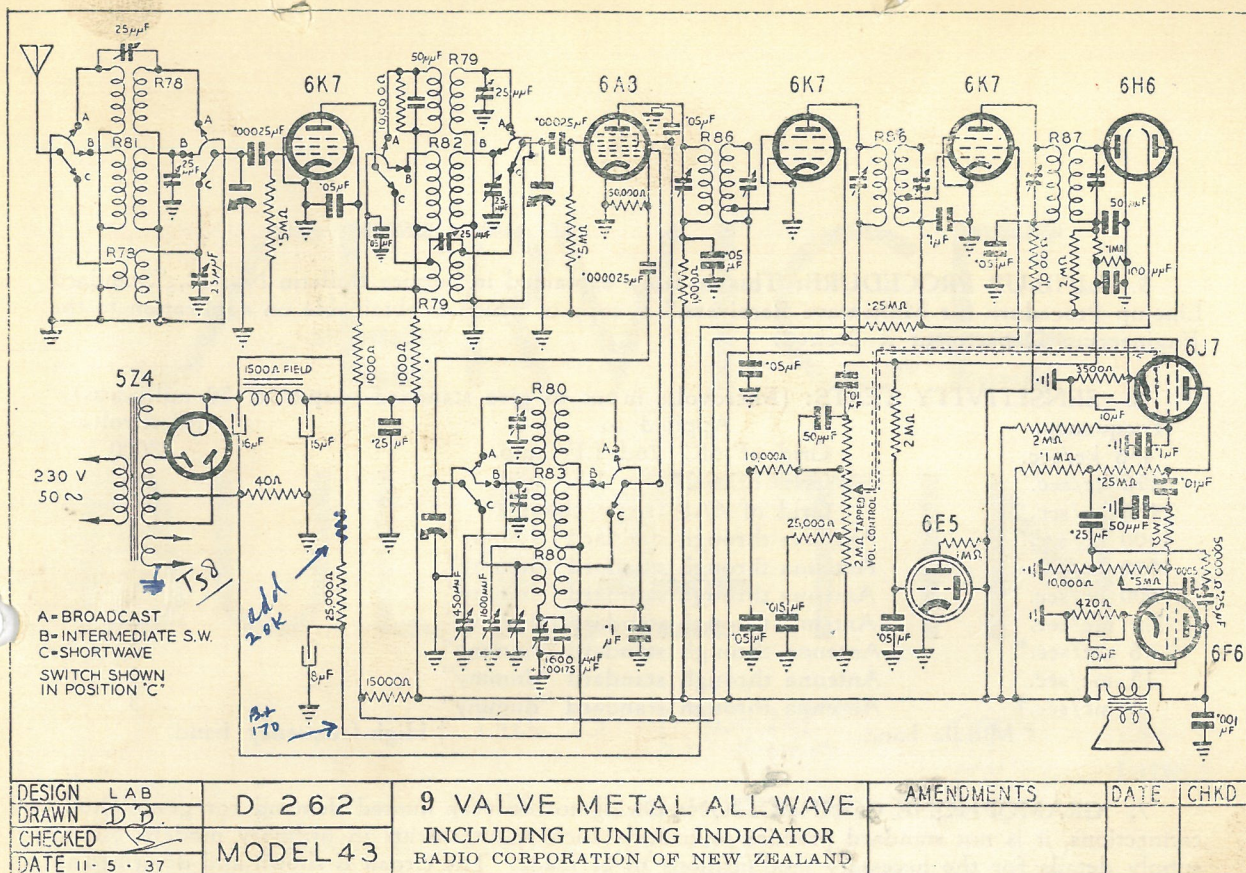
Valve.	Function.	Plate.	Osc. Plate.	Screen.	Cathode.
6K7	R.F. amp.	250	—	100	—
6A8	Freq. changer	250	170	100	—
6K7	1st I.F. amp.	250	—	100	—
6K7	2nd I.F. amp.	250	—	100	—
6H6	Detector-AVC	—	—	—	—
6J7	Audio amp.	65	—	25	1.2*
6F6	Output	230	—	250	13.5†
6E5	Tun'g Indicator	25	—	250	—

†100 Volt Range.

\* 10 volt range.

?  
Note  
5Z4 rect





#### 4. RESISTANCE TESTS:

Coil.  
Power tran. primary  
H.T. secondary  
Speaker field  
Speaker input tran.  
1st I.F. primary  
1st I.F. secondary  
1st I.F. secondary  
2nd I.F. primary  
2nd I.F. secondary  
2nd I.F. secondary  
3rd I.F. primary  
3rd I.F. secondary  
Broadcast ant. primary  
Broadcast ant. secondary  
Broadcast R.F. primary  
Broadcast R.F. secondary  
Broadcast osc. primary  
Broadcast osc. secondary  
Intermed. H.F. ant. primary  
Intermed. H.F. ant. secondary  
Intermed. H.F. osc. primary  
Intermed. H.F. osc. secondary  
Intermed. H.F. R.F. primary  
Intermed. H.F. R.F. secondary  
High-freq'y ant primary  
High-freq'y ant. secondary  
High-freq'y R.F. primary  
High-freq'y R.F. secondary  
High-freq'y osc. primary  
High-freq'y osc. secondary

Where measured.  
Across power cord.  
Each rectifier plate to ground.  
"Fil." of speaker socket.  
"P" to "G" of speaker socket  
See Circuit  
Grid to AVC end  
Total winding  
See circuit  
Grid to AVC end  
Total winding  
See circuit  
See circuit  
5 to 7 of Coil R 78  
1 to 3 of Coil R 78  
5 to 7 of Coil R 79  
1 to 3 of Coil R 79  
4 to 5 of Coil R 80  
1 to 7 of Coil R 80  
5 to 7 of Coil R 81  
1 to 3 of Coil R 81  
5 to 7 of Coil R 83  
1 to 3 of Coil R 83  
5 to 7 of Coil R 82  
1 to 3 of Coil R 82  
6 to 7 of Coil R 78  
2 to 3 of Coil R 78  
6 to 7 of Coil R 79  
2 to 3 of Coil R 79  
4 to 6 of Coil R 80  
2 to 3 of Coil R 80

Resistance in Ohms.  
Approx. 43  
Approx. 250-300  
1500  
Approx. 500  
Approx. 19  
Approx. 9  
Approx. 18  
Approx. 18  
Approx. 9  
Approx. 18  
Approx. 9  
Approx. 9  
Approx. 30  
Approx. 5  
Approx. 30  
Approx. 7  
Approx. .5  
Approx. 4  
Approx. 8  
(Short circuit)  
(Short circuit)  
(Short circuit)  
Approx. 15  
(Short circuit)  
Approx. 2  
(Short circuit)  
Approx. 4  
(Short circuit)  
(Short circuit)  
(Short circuit)



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.

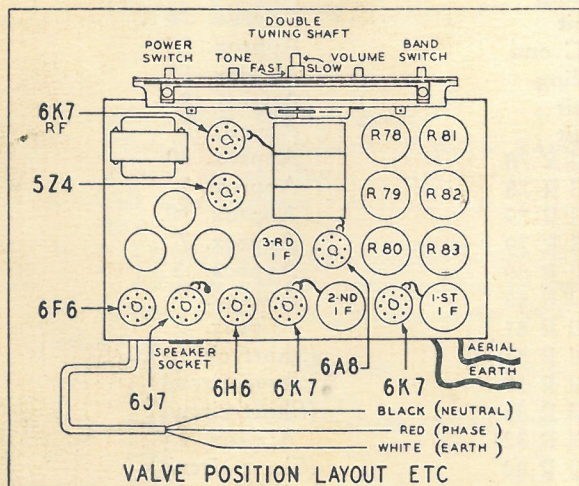
Frequency.	Applied to	Microvolts.
456 kc/sec.	Grid of 6K7 2nd I.F. amp.	8000
456 kc/sec.	Grid of 6K7 1st I.F. amp.	600
456 kc/sec.	Grid of 6A8 freq'y changer	90
1400 kc/sec.	Antenna through standard "dummy"	1
1000 kc/sec.	Antenna through standard "dummy"	1
600 kc/sec.	Antenna through standard "dummy"	1
2.5 mc/sec.	Antenna through standard "dummy"	2
6 mc/sec.*	Antenna through standard "dummy"	5
15 mc/sec.	Antenna through standard "dummy"	1
6 mc/sec.†	Antenna through standard "dummy"	3

\* Middle band.

† High-frequency band.

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 43



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PLACEMENT OF TRIMMERS AND PADDERS

