

HIS MASTER'S VOICE



SERVICE SHEET

ISSUED BY SERVICE DIVISION, HIS MASTER'S VOICE (N.Z.) LTD., G.P.O. BOX 296, WELLINGTON.

This set comprises three separate units—

Tuning Unit—R.F. converter.

Amplifier Unit—I.F., detector, output, power supply.

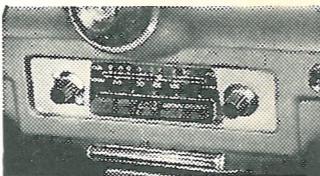
Speaker—Mounted separately.

The tuning unit is mounted either within or beneath the dash panel, the amplifier is concealed inside the bonnet or under the dash panel, and the speaker can be mounted in several suitable positions (see Bulletin).

An extension speaker can be fitted and installed in the rear of the passenger compartment.

VALVE TABLE

Control Unit	Amplifier
W77—R.F. Amplifier	W77—I.F. Amplifier
X78—Frequency changer	DH77—Detector 1st Audio
	N78—Power output
	U78—Rectifier



GENERAL SPECIFICATIONS

Low Tension Supply: 12 volt or 6 volt. No voltage changeover is provided.

Polarity of Supply: Positive earth only.

High Tension Supply: Non-synchronous vibrator with hard valve rectifier.

Power Consumption: 12 volt—2.7 amps; 6 volt—6.5 amps.

Frequency Coverage: Broadcast band 550 kc/s to 1600 kc/s.

Intermediate Frequency: 465 kc/s.

Speaker: 6 inch, separately mounted.

Three Unit Construction: Separate tuning unit and power supply are connected by means of a flexible shielded cable.

Controls: **Tuning**—five push button automatic station selectors and manual tuning knob; **Volume** and ON/OFF switch; **Tone Control**—four position slider switch.

Aerial: The set is designed for use with the aerial and shielded aerial lead supplied. Use of an aerial or lead cable of different length or capacity may cause considerable deterioration in the set's performance.

H.F. ADJUSTMENTS

All H.F. tests must be carried out in conjunction with the appropriate amplifier type "A", "B", "C" or "D"; both amplifier and control unit should be removed from the car.

For accurate servicing suitable test equipment and trimming tools should be used. An All-wave Service Generator, directly calibrated, covering the frequency range 100 kc/s to 120 mc/s and including a special bar Radio Dummy Aerial is particularly recommended.

If the I.F. circuits have been disturbed, complete I.F. and R.F. alignment must follow. Whilst ganging, the input to the receiver must be progressively reduced as the circuits are brought into line so that the output does not exceed 200 mW (1 volt across a 5 ohm non-inductive load).

An A.C. voltmeter (rectifier type) plugged into So 102 may be used as an output meter.

I.F. ALIGNMENT.

1. Set Volume Control fully clockwise; Tone Control fully anti-clockwise, and bring tuning carriage right out, i.e., towards the front panel.
2. Inject a modulated signal at 465 kc/s (modulated at 400 cycles to 30 per cent.) between the grid of V2 and chassis, leaving grid connection made.
3. Adjust cores of L103, L102, L101 and L6 in that order for maximum output. When adjusting any coil, its companion coil must be damped with a 47,000 ohm resistance, e.g., when L6 is adjusted, L101 must be damped.
4. Repeat operations 1-3 until no further output is obtained.

I.F. SENSITIVITY.

1. With controls and conditions as for I.F. Alignment, inject a modulated signal at 465 kc/s (modulated at 400 cycles to 30 per cent.) between the grid of V1 and chassis, leaving grid connection made.
2. With input level 54 db below 1 volt (2000 uV) check that the output is not less than 200 mW using "A" or "C" type Amplifier; 2W using "B" or "D" Amplifier.

R.F. ALIGNMENT—MEDIUM WAVES.

Set Volume Control fully clockwise; Tone Control fully anti-clockwise, and connect the signal generator to the aerial socket and chassis via the dummy aerial.

Op. No.	Ganged Inductances or Tuner Pointer Setting	Tune m.	Generator to kc/s	Operation
1.	186.2m	186.2	1610	Adjust TC5 for maximum output.
2.	500m	500	600	Adjust L13 for maximum output.
3.	—	—	—	Repeat operations 1-2 for optimum results.
4.	250m	250	1200	Adjust TC1, TC3 and TC7 † for maximum output.
5.	—	—	—	Repeat operations 1-4 and reseal trimmers.

†Models 4202/3 only.

SENSITIVITY—MEDIUM WAVES.

With control and conditions as for M.W. Alignment inject the following signals (modulated at 400 c/s to 30 per cent.) via the dummy aerial.

- (a) 207 metres, input level 103 db below 1 volt (7 uV).
- (b) 250 metres, input level 103 db below 1 volt (7 uV).
- (c) 500 metres, input level 103 db below 1 volt (7 uV).

In each case the output is not to be less than 200 mW using "A" or "C" type Amplifier; 2W using "B" or "D" type Amplifier.

R.F. ALIGNMENT—LONG WAVES, Models 4200 and 4201 only.

Set Volume Control fully clockwise; Tone Control fully anti-clockwise, and connect the signal generator to the aerial socket and chassis via the dummy aerial.

Op. No.	Ganged Inductances or Tuner Pointer Setting	Tune m.	Generator to kc/s	Operation
1.	1400m	1400	214.3	Adjust TC6 for maximum output.
2.	1620m	1620	185.2	Adjust TC2 and TC4 for maximum output.
3.	—	—	—	Repeat operations 1 and 2 and reseal trimmers.

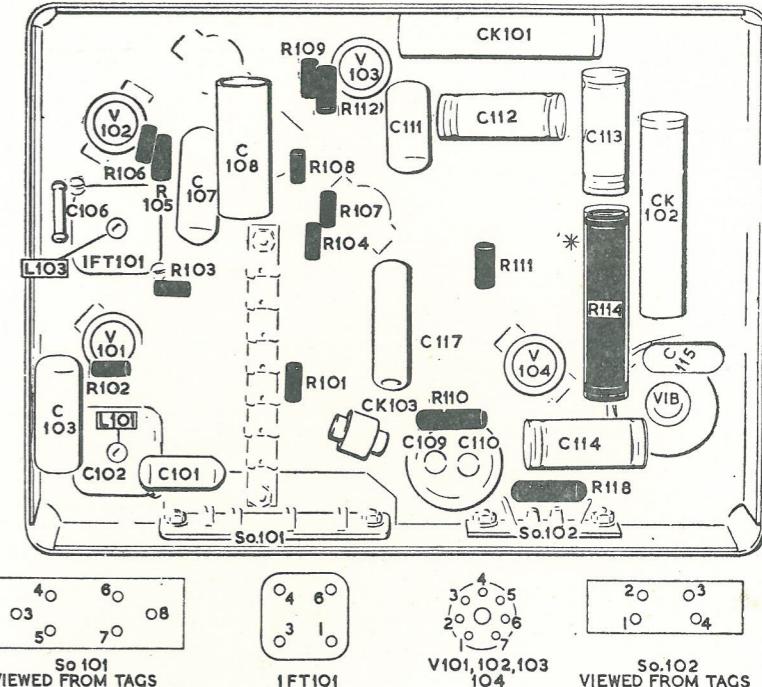
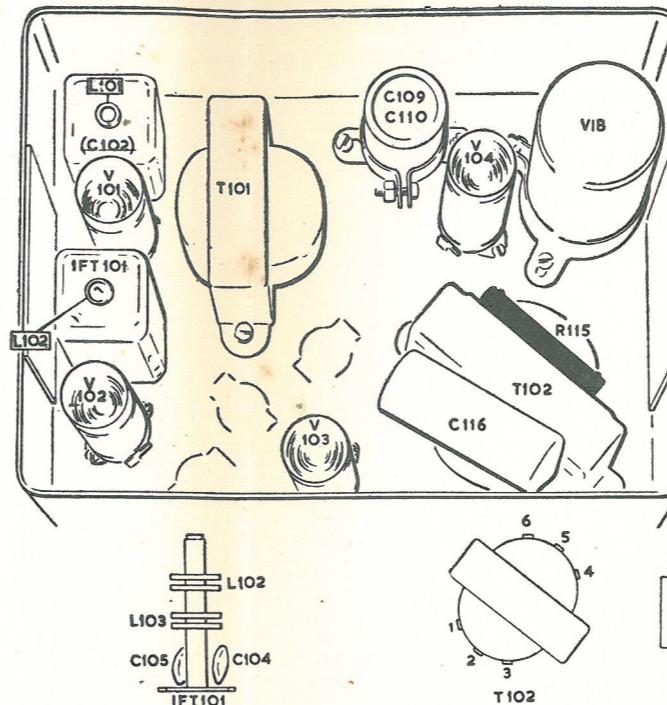
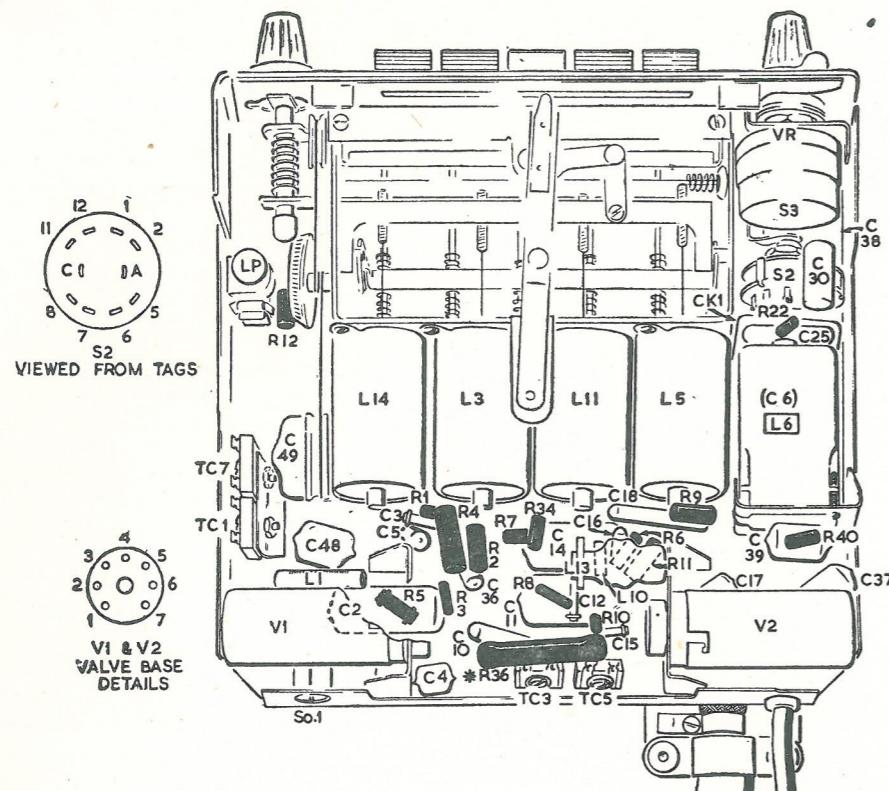
SENSITIVITY—LONG WAVES.

With controls and conditions as for L.W. Alignment inject the following signals (modulated at 400 c/s to 30 per cent.) via the dummy aerial.

- (a) 1153 metres, input level 95 db below 1 volt (22 uV).
- (b) 1620 metres, input level 97 db below 1 volt (26 uV).

In each case output is not to be less than 200 mW using "A" or "C" type Amplifier; 2W using "B" or "D" type. Unless otherwise stated details apply to all the above models.

* R36 USED ON MODEL 4202 ONLY.



TOP-SIDE CHASSIS

UNDERSIDE CHASSIS

GENERAL CHASSIS VIEW

