PHILCO
MADE IN NEW ZEALAND

# MODEL 730

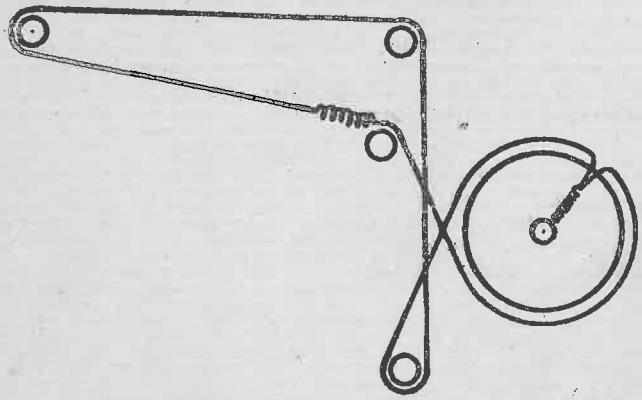
## SPECIFICATIONS.

**TYPE OF CIRCUIT:**

Seven tube alternating current (A.C.) operated superheterodyne circuit with five manual tuning bands. Two of the manual tuning bands are used for spread band tuning of the short-wave frequencies 9.4 to 12 m.c. and 15.1 to 18 m.c. In addition this model includes a continuously variable tone control; automatic volume control, push pull pentode audio output stage; R.F. amplifier stage; audio bass compensation, and an illuminated band indicator.

**INSTALLATION OF DRIVE CORD:**

Pointer at low frequency end of Dial; Gang closed.



**TUNING BAND FREQUENCIES:**

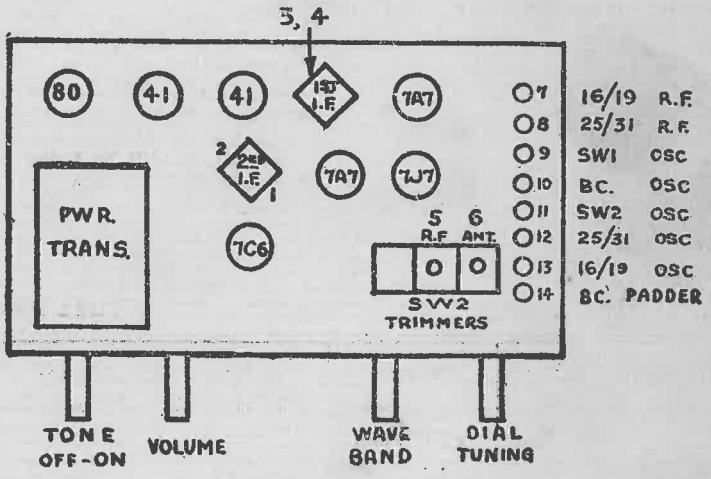
| | |
|---|---|
| Broadcast .. .. .. .. | 540-1600 K.C. |
| Short Wave No. 1 .. .. .. | 2.3-7.5 M.C. |
| Short Wave No. 2 .. .. .. | 7.0-22 M.C. |
| Spread Band No. 1 .. .. .. | 9.4-12 M.C. |
| Spread Band No. 2 .. .. .. | 15.1-18 M.C. |

**INTERMEDIATE FREQUENCY:** 455 K.C.

**Power Supply:** 230 Volt A.C. 50-60 cycle.
**Power Consumption:** 50 watts.
Audio Output: 2.2 watts.

**PHILCO Tubes Used:** 7A7E R.F. Amplifier 7J7E converter; 7B7E I.F. Amplifier; 7C6 second detector, 1st audio; two 41E Audio Output, and type 80 rectifier.

**TUBE LAYOUT. POSITION OF TRIMMERS**

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### ALIGNING R.F. AND I.F. COMPENSATORS

### EQUIPMENT REQUIRED.

**Signal Generator:** One Signal Generator covering all frequencies is required in aligning this model.

**Indicating Device:** To obtain maximum signal strength and accurate adjustment of the padder a vacuum tube voltmeter or rectifier type output meter is necessary. The method of connecting either of these instruments is listed below.

**Aligning Tool:** Fibre handle screwdriver **PHILCO** Part No. 45-2610.

### CONNECTING ALIGNING INSTRUMENTS.

**Vacuum Tube Voltmeter:** To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A.V.C. circuit as follows:—

(1) Connect the negative (—) terminal of the vacuum tube voltmeter through a two megohn resistor to any point where the A.V.C. voltage can be measured.

(2) Connect the positive (+) terminal to the chassis ground terminal.

**Audio Output Meter:** If this type of meter is used as an aligning indicator it should be connected to the plate terminals of the output tubes. Adjust the meter for the 0 to 30 volt A.C. scale. After connecting the aligning meter, adjust the compensators in the order as shown in the tabulations below. Location of the compensators is shown on the schematic diagram.

If the output meter pointer goes off scale when adjusting the padders, reduce the strength of the signal from the generator.

| Operations in Order. | SIGNAL GENERATOR. | | | RECEIVER. | | | Special Instructions. |
|---|---|---|---|---|---|---|---|
| | Output Connections to Radio. | Dummy Aerial Note A | Dial Setting. | Dial Setting. | Control Settings. | Adjust Compensators. | |
| 1 | Lug of R.F. Tuning Cond. | .1 mfd. | 455 KC | 455 KC | Band Switch Broadcast | 1, 2, 3, & 4 | Repeat |
| 2 | Aerial | 400 ohms | 18 MC | 18 MC | Band Switch S.W.2. | 11, 5, 6 | Note B Note C |
| 3 | Aerial | 400 ohms | 7 MC | 7 MC | Band Switch S.W.1. | 9 | Roll Cond. Note C |
| 4 | Aerial | 200 mmfd | 1400 KC | 1400 KC | Band Switch B.C. | 10 | Roll Cond. |
| 5 | Aerial | 200 mmfd | 600 KC | 600 KC | Band Switch B.C. | 14 | Roll Cond. |
| 6 | Aerial | 200 mmfd | 1400 KC | 1400 KC | Band Switch B.C. | 10 | Roll Cond. |
| 7 | Aerial | 400 ohms | 18 MC | 18 MC | Band Switch 16-19 M | 13, 7 | Note C |
| 8 | Aerial | 400 ohms | 12 MC | 12 MC | Band Switch 25-31 M | 12, 8 | Note C |

**NOTE A:** The "Dummy Aerial" consists of a condenser or resistor connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure (a standard dummy aerial may be used).

**NOTE B:** Dial calibration: In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser closed (maximum capacity) set the dial pointer on the line marking the end of (low frequency end) the broadcast scale.

**NOTE C:** When adjusting the oscillator compensators, be sure to tune in the fundamental signal instead of the image signal. If the compensator is correctly adjusted an image signal will be found by tuning the signal generator dial 910 K.C. above the fundamental signal (higher frequency).

## TUBE SOCKET DATA.

| Tube Type. | Plate. | Screen | Cathode | Grid | Osc. Plate | Heater | |
|---|---|---|---|---|---|---|---|
| 80 | 310 A.C. Each Plate | — | 300 | — | — | 5 | Rectifier |
| 41 | 220 | 225 | — | 12.5— | — | 6.3 | Output |
| 41 | 220 | 215 | — | 12.5— | — | 6.3 | Output |
| 7C6 | 85 | — | — | — | — | 6.3 | 1st Audio |
| 7B7 | 220 | 75 | — | — | — | 6.3 | I.F. Amp. |
| 7J7 | 220 | 75 | — | — | — | 6.3 | Dec. Osc. |
| 7A7 | 90 | 75 | — | — | — | 6.3 | R.F. |

All the above readings were taken from under side of chassis using chassis as common.

These voltages were taken with a 20,000 ohm per volt meter. Should the test meter have lower resistance allowance to be made for this fact.

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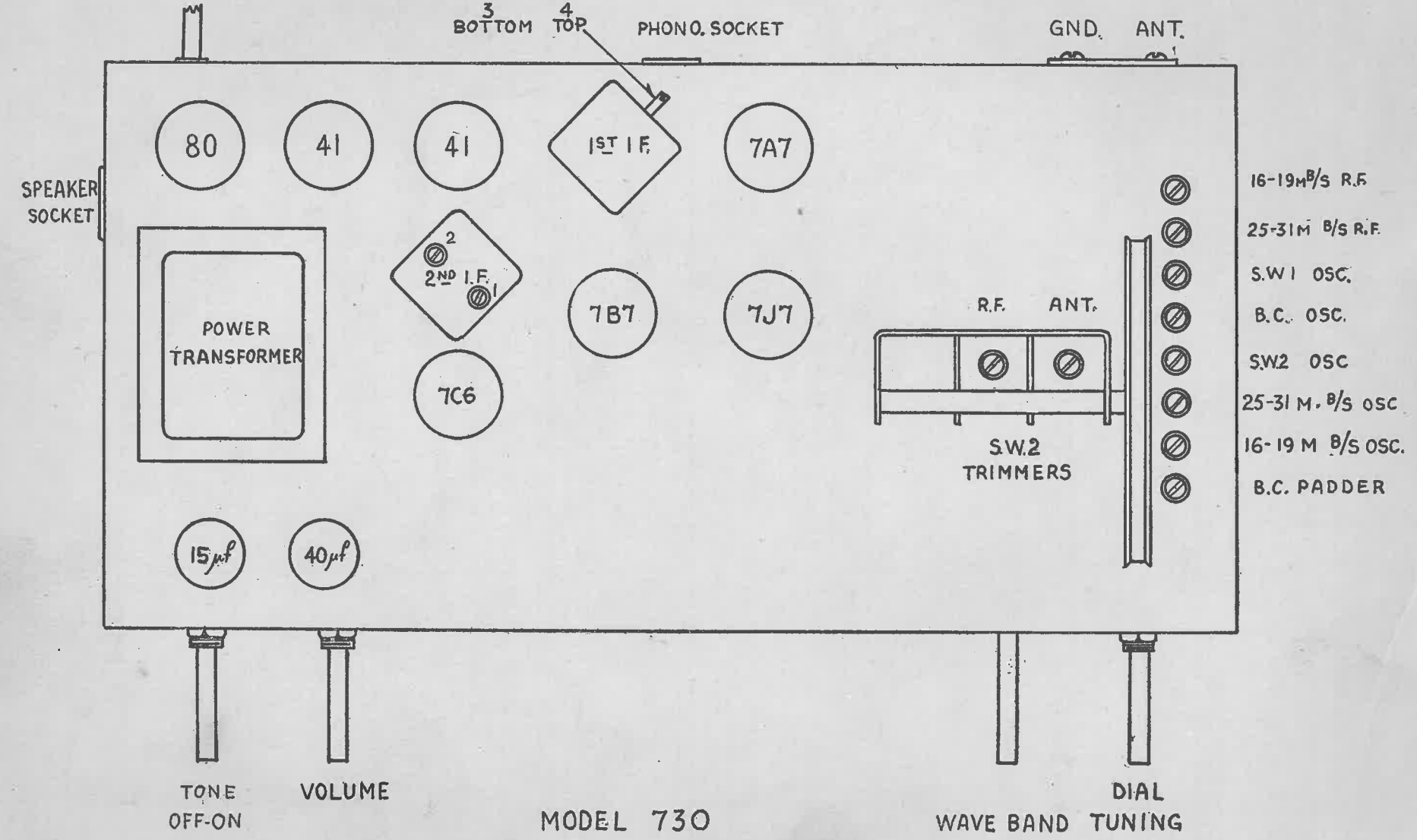


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