

EKCO RADIO

INSTRUCTION BOOK

INSTALLING AND OPERATING
SUPERHET MODEL SW86
FOR MEDIUM AND SHORT WAVES

Installing and Operating

EKCO**CONSOLETTE MODEL SW86**

EIGHT STAGE ALL - ELECTRIC
SUPER - HETERODYNE RECEIVER

For A.C. Mains

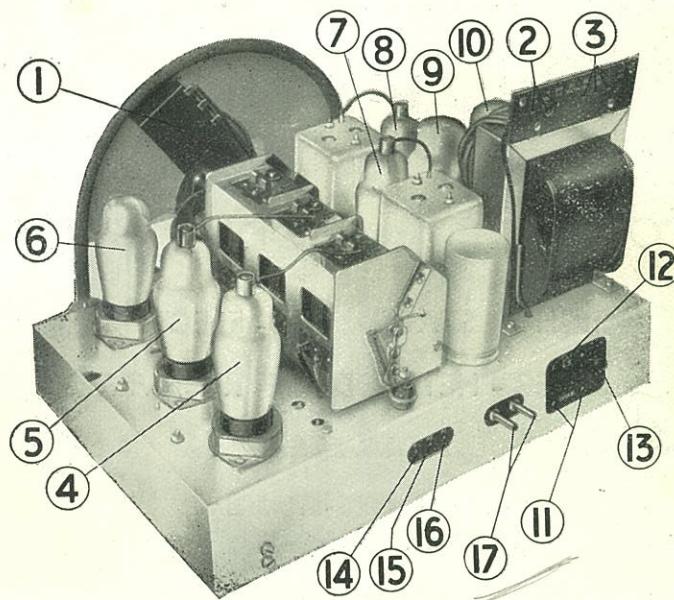
13-60 and 200-570 Metres
23-5 Mc. and 1500-530 Kc.

**THIS BOOK SHOULD BE KEPT
FOR FUTURE REFERENCE**

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E. K. COLE LTD., SOUTHEND-ON-SEA, ESSEX, ENGLAND.



Chassis

1. Pilot-light carrier.
2. Voltage tappings—200/250 volts.
3. Voltage tappings—100/125 volts.
4. H.F. valve (Type 6D6).
5. Detector valve (Type 6C6).
6. Oscillator valve (Type 76).
7. I.F. valve (Type 6D6).
8. 2nd Detector, L.F. and A.V.C. valve (Type 75).
9. Output valve (Type 42).
10. Rectifier valve (Type 80).
11. Gramophone pick-up sockets.
12. External speaker sockets.
13. Internal speaker switch.
14. Earth socket.
15. Aerial socket (2).
16. Aerial socket (1).
17. Plug for mains lead.

(Valves 4-8 have shields, not shown here.)

Model SW86 for A.C. Mains.

Installation Instructions.

CAUTION :

Electricity Supply

Valves

Aerial and Earth

Mains Connection

Method of Operation

Peculiarities of Short-wave Reception

This set is for A.C. mains only and may be damaged unless the following instructions are observed.

Remove the back cover and packing. An insulated screw will be found in a small envelope. Insert this screw in the mains voltage panel (see 2/3 in illustration) in the hole corresponding exactly with the supply voltage. Do not confuse the 100-125v. range with the 200-250v. range.

Check that valves are in their correct sockets as shown opposite. Never interchange the valves or use other types. Re-check that mains voltage screw is in correct socket and replace back cover.

A good Aerial (Antenna) and Earth are essential for short wave reception. Connect the incoming leads to the red and black plugs and insert in sockets "A" and "E" as described on page 6.

Connect mains cord between mains plug on set and electricity supply socket.

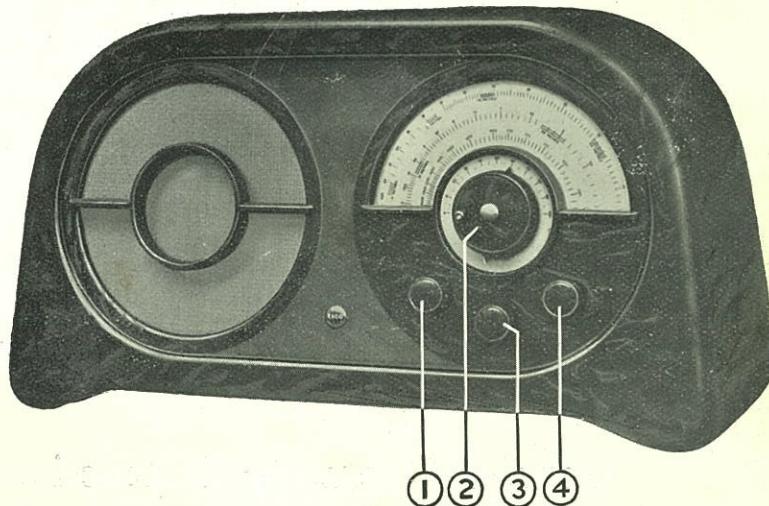
General Operating Instructions.

- A. Rotate the "On-off" switch (1) in a clockwise direction about half-way round.
- B. Set the wavechange switch (3) to the required waveband, i.e. so that the appropriate section of the tuning scale is illuminated.
- C. Tune receiver to required station by Station Selector (2) and adjust volume and pitch as desired.

Short-Wave Reception.

Listeners will experience no difficulty in tuning stations on the medium wavebands but short-wave reception has many peculiarities which should be understood if the best results are to be obtained.

In the first place, reception conditions on the short-wave bands change daily, even hourly, and stations which may be heard clearly at one period may be inaudible a few minutes later. Another common phenomenon is that the reception of different stations rarely has any bearing on their distance away. Very frequently it will be found that nearby stations are weak or inaudible, while reception from more distant stations is strong and clear.



Controls

1. Combined On-off Switch and Volume Control—Turn clockwise to switch on and increase volume, anti-clockwise to switch off.
2. Station Selector—Main tuning control.
3. Combined Wavechange and Gramophone Switch—Pilot lights indicate the waveband in use. In gramophone position, two bands are illuminated.
4. Tone Control—Turn clockwise to vary pitch continuously from low to high.

(Also see Operating Instructions)

Front View of Model SW86

Time of Day

Another peculiarity is that the volume of reception is apt to change from time to time, depending upon the amount of daylight between the transmitter and the receiver.

These peculiarities do not affect all wavebands at the same time and almost invariably it is found that when reception on one waveband is poor, it will be at its best on another.

Programme Sectors

It may prevent misapprehension if it is remarked at once that only over small ranges of the short-wave band are there programmes of entertainment value. "Broadcast" programmes generally are confined to the six small sectors marked on the scale, the remaining portions being occupied by amateur and commercial transmitters.

Nevertheless, in the six groups marked a very large number of stations is concentrated. Care and patience in tuning will reveal a wide variety of alternative programmes.

Careful Tuning

Even a fractional movement of the tuning condenser is sufficient to pass right through a station of medium strength; hence the slow-motion drive fitted to the Station-Selector. The small crank handle is provided for rapid movement between one sector and another and should never be used for accurate tuning. Always use the large milled knob and tune slowly and gradually across the scale. The auxiliary pointer attached to this knob moves over a numbered scale and enables an exact reading of the station position to be obtained.

Tuning Operation

(1) Bring tuning indicator to one of the marked sectors by means of the "rapid-traverse" handle. Turn Station Selector gradually across the sector.

(2) When reaching a station, set the Selector (as distinct from the Tone Control) so that reproduction is at its lowest pitch. This is essential for good quality reproduction. Do NOT tune to greatest volume.

(3) Note the scale and auxiliary pointer readings for future reference.

Choice of Wavebands

As previously mentioned conditions of reception vary with the time of day. The following approximate table shows the wavebands most likely to give good reception at any particular time of day.

Morning : Best reception on 13, 16 and 19 metre sectors.

Afternoon : Best reception on 16, 19 and 31 metre sectors.

Evening : Best reception on 19, 25, 31 and 49 metre sectors.

Aerial and Earth Systems.

Efficient aerial and earth systems are essential if best results are to be obtained. The number, volume and quality of stations receivable are largely governed by these systems and every effort should be made to have them as perfect as local conditions permit.

Aerial

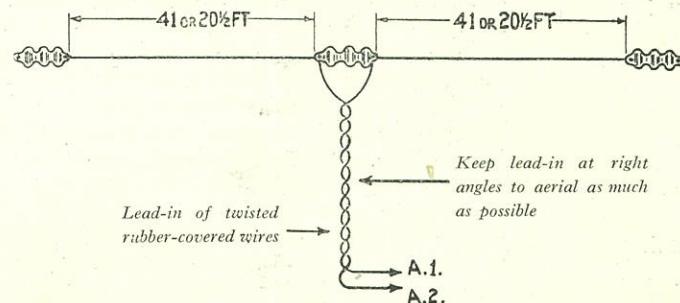
In areas where considerable interference is experienced an aerial with a total length (including lead-in) of 30-60 feet will give most satisfactory results. Where interference is only slight, the total length may be extended to 150 feet.

Single Wire Aerial

(a) Single wire aerial : Erect as high as possible, use good quality copper wire and high class insulators and keep well away from telephone or electricity cables or metal-ridged roofs. Carefully insulate the lead-in, which must be kept to the minimum length consistent with the height of aerial. Plug lead into socket A1 and short-circuit sockets A2 and E by means of the clip provided, E being connected to earth.

Doublet Aerial

(b) Doublet aerial : this type of aerial should be used where interference picked up by the lead-in is excessive. If a home constructed doublet aerial is used, care should be taken to ensure that it conforms with the measurements given in the diagram.



This is important because the length of the aerial tunes it to a frequency where the maximum signal to noise ratio is obtained. If the two sides are unequal, the effectiveness of the aerial to reduce local interference will be reduced.

Lead-in

A suitable lead-in consists of rubber-covered twin flex or, if available, a proper screened lead-in should be used. (Do not earth screen).

A doublet aerial may be fitted at any distance from the receiver, regardless of the length of lead-in, and where possible it should be erected outside the field of local interference.

The two wires of the lead-in should be plugged separately into sockets A1 and A2. Sometimes better results may be obtained by reversing the leads.

Directional Effect

A single wire aerial gives best reception from stations in the line of its path; a doublet aerial from stations at right-angles to its path. This should be borne in mind when erecting the aerial. When it is desired to obtain maximum signals from stations "end-on" to a doublet aerial, the twin lead-ins may both be connected to A1 (with A2 connected to E), thus obtaining the "directional" effect of a single wire "T" type aerial.

Earth

A good earth is just as important as a good aerial. An earth lead should be soldered or clamped to a nearby main cold water pipe. Hot water pipes and radiator pipes are unsatisfactory owing to the use of non-metallic packing at the joints. Alternatively, a good earth can be obtained by burying a copper or aluminium plate of reasonable dimensions, stoutly soldered to the earth lead.

Always keep the earth lead as short as possible.

Static

While natural static does not seriously interfere with short-wave reception, man-made static (caused by electrical machinery or illuminated signs) is liable to be more troublesome. Even the ignition system of a passing vehicle may be reproduced by the speaker. If local machinery interferes with the satisfactory operation of the receiver, the owner should be approached and persuaded to fit static suppressors to the offending equipment.

Reducing Interference

Alternatively, local interference will be substantially reduced by the use of a doublet aerial, a description of which will be found opposite.

If the interference continues when the aerial and earth have been disconnected, the fault is probably internal and due to a faulty valve or connection inside the set.

It is useful to remember that by turning the tone control in an anti-clockwise direction, much of the high pitched static will be reduced.

External Speaker

Connect to sockets marked "EXT.L.S." The external speaker should be of the moving coil type with a transformer having a primary impedance of about 7000 ohms.

Interference.

Additional Operating and Maintenance Notes.

Disconnecting
Internal
Speaker

To switch out internal speaker, slightly unscrew the small knob marked (13) in the illustration on page 2.

Gramophone
Pick-up

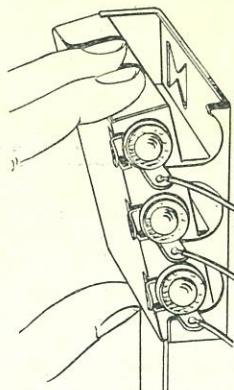
Connect pick-up leads, which should be as short as possible, to "GRAM" sockets. Turn Wave-change switch to position in which bands 1 and 3 are illuminated. Make sure that the switch actually "clicks" into place and is not balanced between the two wavebands. Screened leads, with the screen connected to earth, will reduce hum if this should be apparent.

Pilot lamp
Replacement

The correct replacement lamp for this receiver is:—6.5 volts, 0.3 amps. (spiralled filament) 12 mm bulb. This can be obtained

from most electrical stores, or direct from the makers, General Electric Company Ltd., Magnet House, Kingsway, London, England, or their representative.

- (1) Remove mains plug and aerial and earth leads. Take off back cover.
- (2) Turn station selector until the lamp carriage is in a convenient position. The carriage is in two sections, clipped together. Unclip the near section and replace the faulty lamp.
- (3) Replace the section of the lamp carriage screw back cover in position and reconnect leads.



Unclipping lamp-carriage.