

Stromberg-Carlson

STROMBERG - CARLSON AND AUDIOLA
SERVICE BULLETIN No. 633 and No. 693

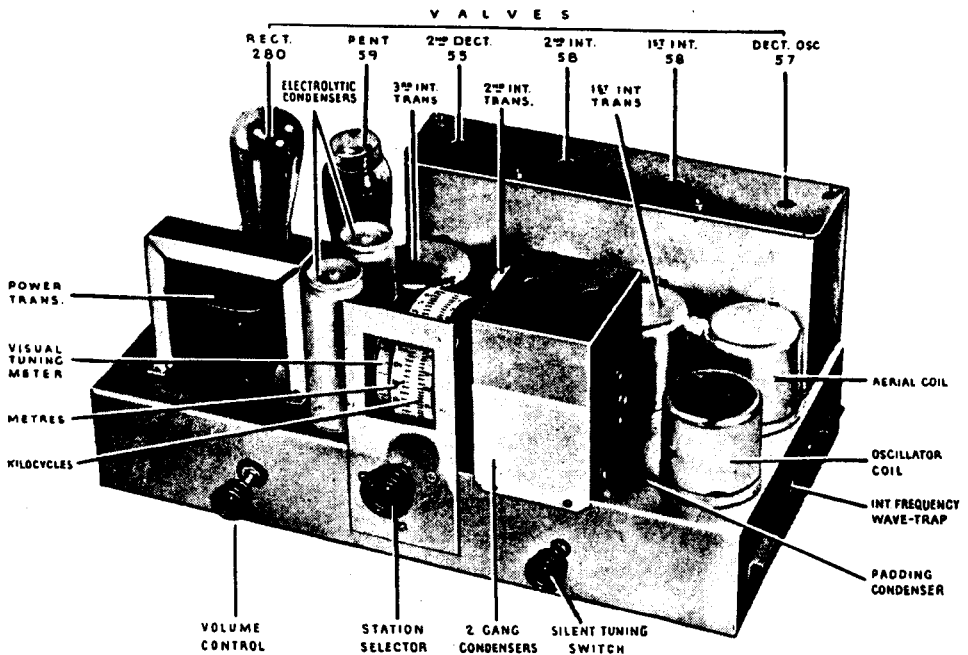
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Stromberg-Carlson Model 633 Superheterodyne

ALL ELECTRIC, FIVE VALVES AND RECTIFIER

Audiola Model 693 Superheterodyne

ALL ELECTRIC, FIVE VALVES AND RECTIFIER



Chassis of 633 and 693 Models

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Stromberg-Carlson Model 633 Superheterodyne

ALL ELECTRIC FIVE VALVES AND RECTIFIER

Audiola Model 693 Superheterodyne

ALL ELECTRIC FIVE VALVES AND RECTIFIER

1. GENERAL DESCRIPTION OF RECEIVER:

This Receiver employs the improved superheterodyne circuit designed and developed in the Stromberg-Carlson Laboratories. The Model also incorporates the latest Automatic Volume Control system coupled with Visual Tuning, and in addition employs a special Muting Device, developed and patented by Stromberg-Carlson (Australasia) Ltd. This Device "silences" or automatically "mutes" the Receiver, when tuning between stations, so that the background of noise, due to static and other sources of interference is reduced to a minimum.

All the components and the R.F. Valves on this Model have been carefully and thoroughly shielded to a degree hitherto not attained commercially in Australia, the result being that this Model does not "pick-up" or amplify unwanted signals and extraneous electrical impulses. This condition is particularly desirable in "noisy" locations and in areas close to powerful broadcasting stations.

Particular attention has been paid to the outlay of the components to permit the greatest possible facility in servicing. The Valves are mounted in a line along the back of the chassis, where they are readily accessible for inspection, testing or replacement.

Beneath the Chassis all the minor components consisting of resistors and capacitors, are mounted on a single strip, and are plainly numbered for ease in checking their values, testing voltages and general servicing. This method of assembly also contributes to the mechanical strength and electrical efficiency of the Chassis.

2. INSTALLATION INSTRUCTIONS:

(a) Aerial.

The sensitivity of this model is such that in most installations a well insulated wire about 20 to 30 feet in length, placed along the picture moulding in a room, or beneath the carpet, will prove satisfactory. Care should be taken to place all such indoor aerials, as far away as possible from electric light or power conduits, and in particular, clear of all unshielded flexible leads, since these latter are prolific radiators of undesirable electrical impulses.

Since an out-door Aerial is the most efficient, this type of aerial is to be preferred—especially where facilities for such are readily obtainable. In country areas, where the maximum receptivity of the receiver is desired, an outdoor aerial of from 30 to 50 feet in length is recommended.

In noisy areas (due to electrical interference) the aerial should be erected as far as possible from and at right angles to any electric power or light mains.

As a further precaution against undesirable pick-up, the lead-in should be of the shielded type with the outer sheath connected to earth.

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The chassis should be connected to earth by means of an insulated wire attached to a water pipe by an approved clamp. It is preferable to connect the earth lead to the last section of the pipe where it enters the ground, thus avoiding the high resistance contacts at the joints. Should a water system not be available, an efficient earth may be obtained by driving a metal pipe or burying about four square feet of metal sheeting in moist earth, the connection to the metal should preferably be soldered.

(c) Voltage Adjustment Panel.

Before leaving the factory the power lead is connected to the 240 volt tapping on the power transformer. If the line voltage differs from this, the power lead should be unsoldered from the 240 volt tapping and soldered to the tapping which is marked with the voltage nearest to, but not less than, the measured line voltage in the locality. The voltage tappings for 200, 220, 240, 260 volts are designated on the power transformer.

When making any adjustment, see that the power plug is completely removed from the socket of the supply source.

(d) Trimmer Adjustments.

The tuning adjustments on the gang capacitor (the variable gang tuning condenser) and the trimmer capacitors on the Intermediate Frequency Transformers (tuned to 465 k.c.) are adjusted and sealed at the factory at the time of calibration. These adjustments should on no account be touched or the seals broken unless a specially calibrated oscillator and indicating instrument are available whereby such adjustments can be successfully carried out. In any repairs or adjustments the above remarks in regard to the gang capacitor and intermediate transformers should be carefully noted.

3. OPERATION:**(a) Automatic Volume Control.**

This Model is so designed that the signal voltages feed to the audio system, tend to adjust themselves to a constant level. This signal level, is manually controlled and should be adjusted to the desired volume on a station of moderate or high power. The automatic feature will then tend to maintain this volume at a constant level on different signals, of wide variations in intensity.

The effects of fading being thus reduced to an absolute minimum constant attention to the volume control is obviated, especially on the reception of weak and distant stations.

(b) Visual Tuning Meter.

Since the Automatic Volume Control tends to keep the signal at a constant level, it would be difficult to tune to exact resonance, by aural means (except on very weak signals.) With a Visual Tuning Meter, however, tuning to exact resonance, is always possible, and since improper tuning adversely affects the quality of reproduction, the correct tuning for any station is most important, and this condition is easily and quickly attained by means of the Visual Tuning Meter.

NOTE.—It may be observed that on one or two of the Australian Broadcasting stations better quality is obtained by slightly detuning—to a point where the Tuning Meter indicator is somewhat below the maximum swing. This effect is due to the method of carrier modulation employed by such Broadcasting Stations, and not to any defect in the receiver, nor to the method of tuning.

Should complete silence be desired when tuning over the dial, the Manual Volume Control may be turned to the "off" position, and the tuning performed visually by observing the swing of the Tuning Meter Indicator, then turning up the manual control when the desired setting is obtained.

When the Receiver is first turned on, the indicator on the Tuning Meter will move down to a fixed position.

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OPERATION (Continued)

On tuning to a signal, the indicator will rise, the height of the swing being an indication of the strength of the received signal, i.e., the stronger the signal, the greater the vertical swing.

It is interesting to note the wide variations of intensity from incoming signals, as observed by the swing of the indicator on the tuning meter, at the same time noting that the volume of the receiver is being maintained at a constant value due to the Automatic Volume Control Device.

(c) Muting Switch.

The Muting Control on the right of the receiver, is a two-position switch, turned to the right or clockwise, the receiver is set at the normal or most sensitive position. With the switch turned to the left, or anti-clockwise the automatic "muting" circuit is brought into operation, whereby most of the natural static and practically all of the electrical interference and background of noise is eliminated when tuning between stations.

In this position, the Manual Volume Control may be set for comfortable room volume and thereafter station after station tuned in quickly and at practically constant volume, irrespective of the varying intensity of the received signals.

4. VALVES:

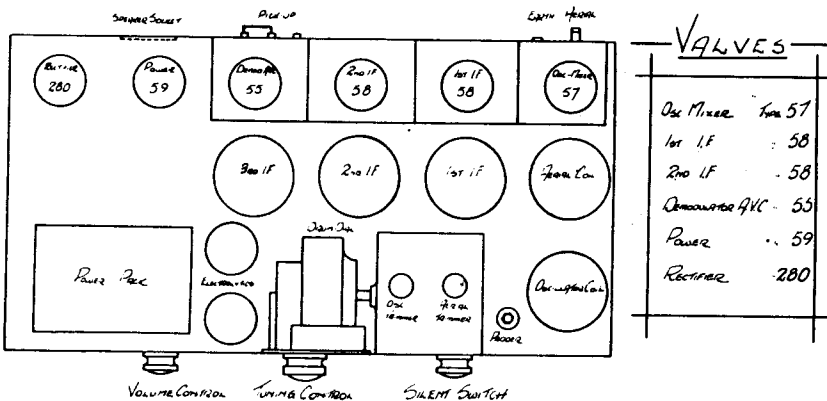
All Receivers leaving the factory are equipped with valves inserted into the sockets. If for any reason it becomes necessary to remove the valves, care should be taken to see that each one is replaced in the socket from which it was taken. The photograph of the chassis on Page 1 shows the type and function of the valves and their exact location.

Function of Valve.				Type of Valve.
Oscillator-Mixer	.....	.....	.....	57
First I.F.	.....	.....	.....	58
Second I.F.	.....	.....	.....	58
A.V.C.-Detector	.....	.....	.....	55
Power Pentode	.....	.....	.....	59
Rectifier	.....	.....	.....	280

5. SPEAKER:

The speaker in this Model is the Dynamic or moving coil type, and is matched to the pentode output valve. The field coil being used at the date of issue of this Bulletin has a resistance of 1000 ohms. The speaker terminates in a four-pin plug at the receiver chassis. Where Dual speakers are employed, the second speaker field has a resistance of 5300 ohms. This field replaces the screen section of the voltage divider which is of similar resistance.

With Dual speakers a five-pin plug is used. THIS PLUG SHOULD NOT BE REMOVED WHILE THE CURRENT IS TURNED ON.



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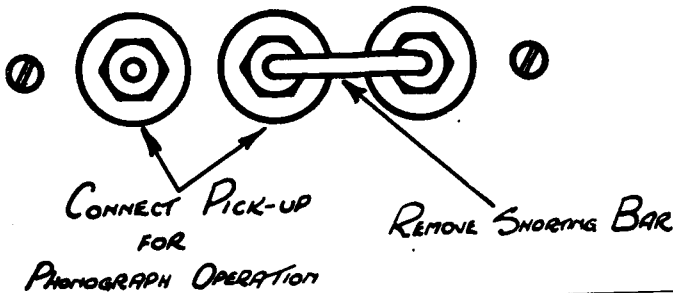
6. PICK-UP JACKS:

Provision is made at the back of the Chassis for the attachment of a Phonograph Pick-up. To operate the pick-up, remove the metal bar between the centre and right hand jacks, and connect the leads from the pick-up to the centre and left hand jacks, as illustrated. The metal bar must be replaced when the receiver is again required for radio operation.

The volume control on the receiver may be used to regulate the audio output from the pick-up.

Some makes of Magnetic Pick-ups deliver comparatively low voltages, and in such cases, where these are used, an audio transformer of approximately 1-3 ratio should be used between the pick-up and receiver.

PICK-UP



7. VOLTAGES:

All voltages shown in the chart on Page 6 are those which should be obtained when using a 0-10-120-300-600 volt voltmeter having a resistance of 1,000 ohms. per volt. Voltages shown below 10 are to be read on 0-10 scale, those below 120 on the 0-120 scale, those below 300 on the 0-300 scale, and those above 300 on the 0-600 scale. It is important to note that other voltmeters having different internal resistances will give voltage readings different from those mentioned in the following table. Therefore, a 1,000 ohm. per volt voltmeter should be used.

