DESCRIPTION

Type: Twenty-one tube, twelve channel.
Power Supply: 60 cycle a.c. only.
Voltage Rating: 110-120 volts.
Power Consumption: 75 w.
Max. Audio Output: 1.8 w.
Input Impedance: 300 ohm balanced.
Picture Size: 5-1/4 x 4-5/8 inches (25 sq. in.)
Speaker: 5-inch P.M. (Voice Coil Impedance -
4 ohms at 400 cycle).
Antenna: Portable indoor Dipole.
I.F. Frequencies (Video):
  Transformer T4-25.75 mc.
  Transformer T5-25.75 mc.
  Transformer T3-23.4 mc.
  Transformer T1-23.4 mc.
I.F. Frequency (Sound):
  Transformer T5- 4.5 mc.
  Discriminator Frequency (Sound):
  Transformer T6- 4.5 mc.

TUBE COMPLEMENT

Symbol - Type - Description
V1 6AG5  R.F. Amplifier
V2 6AG5  Modulator
V3 6C4    Oscillator
V4 6AG5  1st I.F. Amplifier
V5 6AG5  2nd I.F. Amplifier
V6 6AG5  3rd I.F. Amplifier
V7 6AL5  Video Detector
V8 6AU6  Video Amplifier
V9 6AU6  Syc. Separator
V10 6A6U  I.F. Amplifier (Sound)
V11 6AL5  Sound Detector
V12 6SN7  Audio Amplifier
V13 6AS5  Audio Output
V14 6SN7GT  Horizontal Oscillator
V15 6SN7GT  Horizontal Amplifier
V16 6SN7GT  Vertical Oscillator
V17 6SL7GT  Vertical Amplifier
V18 6Y6G  H.V. Oscillator
V19 1B3GT  H.V. Rectifier
V20 5.3 ohms at 400 cycle
V21 7JP4  Picture Tube (7")

CAUTION

NEVER GRASP THE PICTURE TUBE BY ITS NECK OR ALLOW PRESSURE TO BE EXERTED ON THE NECK.

If for any reason the picture tube must be removed from the receiver, place it face down on a
flat surface covered with a clean soft cloth in a location where it will not be disturbed. Do not
remove or handle the picture tube in any manner unless heavy gloves and protective goggles
are worn. Persons not so equipped should be kept away while handling picture tube. Keep the
tube away from the body while handling.

FIG. 1

FIG. 2

FIG. 3
ANTENNA

A portable antenna which in many locations will eliminate the need of a permanent television antenna is supplied for use with this receiver. Since the results obtained with an indoor antenna will be determined by the type of building and the distance from the television station, it is important that you understand the proper use and limitations of a portable indoor antenna.

Unless the television station signal reaches the area in which the indoor portable antenna is located, NO television receiver can reproduce the picture. Due to the high frequencies used by television stations, television signals reach only to the “line of sight.” The actual area covered by the television station depends upon the height of the station and receiver antenna. In addition, steel constructed buildings, mountains, etc., reflect television signals so that in some locations the portable antenna will not function satisfactorily indoors even though the television station is only a short distance away.

The two arms of the antenna should be placed in a horizontal position. In general, the best results will be obtained when the antenna is broadside to the television station; however, always rotate the antenna and adjust the length of the arms to the position of the best picture. The lower the channel number of the station tuned in, the greater the length of the two arms will have to be. In changing from one television station to another, it may be necessary to readjust the antenna, as to length and position. Placing the antenna near a window is ordinarily best although sometimes better results will be obtained when it is in a corner of the room, along one wall or mounted on the wall near the ceiling.

In locations where it is impossible to obtain satisfactory results with the indoor portable antenna, because the signal is blocked or reflected by buildings, mountains, etc., or when located too far from the television station, it will be necessary to use an outdoor television antenna.

Crosley “Teleflex,” an outdoor dipole antenna, is designed especially for use with Frequency Modulation receivers and Televisor receivers. It will provide the ultimate in high frequency reception. Crosley “Teleflex” antenna kits are sold by Crosley distributors everywhere.

The wires of the antenna lead-in must be connected to the two posts marked “A” mounted on the cabinet back. When the installation is close to sources of man-made interference, a reduction in this interference may be made by attaching a ground to the post marked “G” on the chassis.

TUBES—All the tubes, including the picture tube, are properly mounted in their sockets when the receiver is shipped. There is a possibility, however, that (except for the picture tube) they have worked loose during shipping. The tubes are accessible through the back of the cabinet; press them (except the picture tube) firmly into the sockets.

INSTALLATION

ADJUSTMENTS

Each receiver is correctly aligned at the factory. However, due to possible rough handling in transit, slight readjustments may be necessary at the time of installation.

To operate the receiver for one-half hour or longer before making adjustments. The oscillator trimmers and the discriminator adjustment should be adjusted with a transmitted television station test pattern.

TO ADJUST OSCILLATOR TRIMMERS AND DISCRIMINATOR ADJUSTMENT:

(A) Pull off the four front panel control knobs and remove the escutcheon by unscrewing the screws holding this to the front panel of the cabinet. This will expose the Oscillator Trimmer adjustment screws located around the Channel Selector Switch shaft.

Starting with the first adjustment screw at the upper left side of the shaft and reading counter-clockwise the first slotted round head screw is the Channel 3 Oscillator Trimmer adjustment screw. The second screw is the Channel 3 Oscillator Trimmer adjustment screw, the third in Channel 4, etc.

The extra adjustment screw located immediately above the Channel 13 adjustment screw is to be used only in case there is not enough range to any oscillator adjustment screw in the Channel 7 to 13 range. If this screw is touched then all channels from 7 to 13 will have to be rechecked.

(B) Turn receiver Channel Selector Switch to channel on which TV station is transmitting its modulated test pattern and adjust “Contrast” and “Brightness” control for best definition of pattern. IMPORTANT—There are 14 positions on the Channel Selector Switch. The MAXIMUM RIGHT and LEFT positions are not used.

(C) Turn proper Oscillator Trimmer adjustment screw clockwise until sound appears on pattern—indicated by bars across pattern and/or lower verticals in pattern becoming wavy—then turn same Oscillator Trimmer adjustment screw counter-clockwise just to the point where the sound bars and/or wavy lines in pattern disappear.

IF STATION BUZZ is excessive and is NOT DUE to “Contrast” control being too far advanced to clockwise direction, adjust Discriminator Secondary adjustment screw for MINIMUM buzz. MAKE SURE THAT THIS POSITION IS BETWEEN the two MAXIMUM buzz peaks that will be noticed when adjusting screw is turned to the right and left of the MINIMUM buzz position. This screw is located on top of the Discriminator Coil Shield Can which is mounted on Tuner Chassis between 6AL5 Sound Detector tube and 6AU6 Sound I.F. Amplifier tube.

IF PATTERN appears the right or left edge of the screen, adjust VERTICAL SIZE CONTROL to make circle fit on screen. Sometimes the vertical shape of the pattern can be improved by removing the act power cord plug in the electric outlet.

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TUNER CHASSIS

Alignment Information

Two alignment methods are shown—Procedures listed in Paragraphs (1) and (2) of Method 1 require the use of a Market Generator, Sweep Generator and Oscilloscope; procedures shown in Paragraphs (4), (5) and (6) of Method 2 require equipment more generally available to the service men.

DO NOT re-align receiver unless it has been definitely determined that this is necessary. When re-aligning, provide a good metal to metal seal between television receiver and test equipment. Keep output of Signal Generator as low as possible to avoid circuit overload. The test equipment calibration MUST have the accuracy specified, if accuracy of Signal Generator is in doubt, be sure to check calibration.

High Voltage Warning: Operations of this receiver, with the interlock bypassed, or the chassis removed from the cabinet involves a shock hazard from the high voltage components. Work on the receiver should not be attempted by anyone not thoroughly familiar with the precautions necessary on high voltage equipment. When handling the high voltage lead to the picture tube the receiver power plug should be disconnected from the power receptacle.

Alignment Method:

Alignment instructions in Paragraphs (1) to (3) indicate cover procedures for alignment with the following content:

D.C. Vacuum Tube Voltmeter of the Voltmistor Type.

NOTE: IMPORTANT—There are 26 positions of the channel selector switch (See Paragraph 4 and 5) and all positions are Gill Pres.

MARKER GENERATOR: having a coverage from 35.75 Mc. to 25.4 Mc. and 50 Mc. to 215 Mc.

SWEEP GENERATOR: capable of sweeping from 20 Mc. to 30 Mc. and 50 Mc. to 215 Mc. with a 10 Mc. sweep.

OSCILLATOR VOLTAGE ACCURATELY CALIBRATED SIGNAL GENERATOR that will supply a 4.5 Mc. modulated signal within 1/4 of 1/4 of this frequency.

SAG MODULATOR TUBE ADAPTER with a 1/4 needle battery.

Procedure for Video F.L. Alignment:

(1) Connect the Vacuum Tube Voltmeter across the SAG video second detector 8200 ohm load resistor. This resistor is in the Tuner Chassis and is accessible from the rear side of the chassis alongside of power transformer.

(2) Attach the flexible wires of the SAG Adapter to the Grid (Pin 4) of the SAG Modulator tube. Then press adapter down so that ground contact on bottom of adapter clamp to chassis—also hold adapter in place and provide ground connections.

(3) Connect the Marker Generator leads to the two SAGS Modulator tube leads. This adapter will then feed the output of the Marker Generator into the grid (Pin 1) of the SAGS Modulator tube and ground, and will apply a 1/4 needle bias on grid of the SAGS Modulator tube.

(4) Set Marker Generator to deliver a 25.75 Mc., signal. KEEP OUTPUT OF GENERATOR SO THAT Z-ARMING OF APPROXIMATELY 1 FULTS IS OBTAINED ON V.T.V.M.

(5) Adjust the fourth (44th) and second (42nd) Video F.L. adjustment screws (in that order) for maximum reading on the V.T.V.M.

(6) Connect the Video second detector 8200 line load resistor. This resistor is in the Tuner Chassis and is accessible from the rear side of the chassis alongside of power transformer.

(7) Set receiver Channel Switch and Sweep Generator Switch for channel to be aligned.

(8) Connect the proper modulator pipe for the channel to be aligned. See Fig. 3. Then for proper modulator frequency to be used set each of the 12 television channels.

(9) Adjust the proper Oscillator Trimmer screw on each of the picture carrier, pip in 109, down from the top peak of the Sweep Generator curve and the sound modulator pip in appropriate sequence. See Fig. 3 for proper setting of trimmers. The Oscillator Trimmer screw is located around the Channel Selector Switch shaft, and are accessible through holes in the front of the tuner chassis. Lookin at the
Front of the chassis and reading—clockwise, the first tilted round head screw located in the second adjustment hole is the Channel 3 oscillator trimmer adjustment screw. The second screw is the Channel 3 Oscillator Trimmer adjustment screw, the third in Channel 4, etc. The individual oscillator trimmer adjustments are independent of each other and can be aligned in any order.

The extra oscillator trimmer screw located above the Channel 3 Oscillator Trimmer adjustment screw is to be used only in case the Channel 3 oscillator is not tuned or is not performing properly.

If in any of the 2 through 6 range, or the 7 through 13 range, the oscillator trimmer adjustment screw can be brought in by means of the Pedlar trimmer screw located above the Channel Selector Switch shaft. It is very important to remember that adjusting this trimmer will necessitate the realignment of ALL of the oscillator trimmer adjustments.

The above procedures cover all adjustments. The antenna and I.F. stages are factory pre-set and, because they are sufficiently broad, will not require adjustment.