INTRODUCTION

The installation of the Trans-Vue Model 160-L consists of two units, namely the remote tuner and the deflection chassis, and its antenna installation should be made under the supervision of a qualified serviceman.

THE ANTENNA

Use an antenna with a balanced 300 ohm impedance.

Instructions for installing the antenna should be included with the unit. However, it is well to remember: Television signals, unlike standard radio broadcast signals, travel only in a straight line. Consequently, obstacles such as tall buildings, hills, bridge structures, and even the curvature of the earth (if the transmitting end and receiving antennas are far enough apart) hinder the reception of good, strong signals. Therefore, it is advisable to erect the receiving antenna as high as possible. If it is higher than any other surrounding objects connect the antenna mast through a heavy conductor to a ground rod to reduce the lightning hazard.

INSTALLATION

ANTENNA CONNECTIONS

1. For those who use separate Hi and Low Band antennas, with two lead-in cables, connect the Hi-Band leads to the two top terminals marked Hi-Band, connect the Lo-Band leads to the two bottom terminals marked Lo-Band. See fig. 2, sketch A.

2. For those who use a combined HiLo Band antenna, better known as a "All Wave Antenna" with one lead-in cable, connect as shown in fig. 2, sketch B.

3. In some cases due to location or environment of the receiving antennas, better results can be had by connecting the leads-in as shown in fig. 2, sketch C.

4. An alternate arrangement for those who receive Hi-Band stations only (Channels 7 thru 13), the All Wave antenna lead-in may be connected to the two top terminals marked Hi-Band, with no strap or connection to the Lo-Band terminals.

5. Use the arrangement which gives the most satisfactory results.

POWER

The set should be operated from a 105-125 volt source, alternating current, 50-60 cycles. The Deflection Chassis derives its A.C. supply through the long cord which connects it to the rear of the Remote Tuner where there are four A.C. outlets. One or more deflection units can be used with one Remot Tuner, and all sets will be simultaneously turned off with the On-Off switch or the Remote Tuner (see fig. 1).

CONTROLS

The controls on the Deflection Unit have been properly pre-set at the factory, however due to rough or improper handling in shipping they may need slight readjustment. Although these controls have been intended primarily for the serviceman, it would be well to have him acquaint you with them. This is best done with the help of page 4, "Test Patterns".

ADJUSTMENT OF STATION SELECTOR

The station selector of your television set has been partially pre-set at the factory, but readjustment of the settings may have to be made at the time of the initial installation. This should be done by the serviceman.

If at a later time a new station comes on the air, or if the receiver is moved to a locality where other stations can be received, adjust the station selector in the following manner:

1. Turn the set on. Allow the set to warm up for 20 minutes.
2. Turn the contrast control approximately two-thirds of the way toward its full clockwise position.
3. Turn the volume control approximately to its mid-position.
4. Set the station selector knob to the desired channel.
5. Grasp the station selector knob around its edge and, while rocking it slightly, pull it off its shaft. It may be necessary to slide a cloth, such as a handkerchief, behind the knob to pull it away from the cabinet.
6. Insert a screwdriver into the hole near the station selector knob shaft (see illustration). Turn the screw slowly counterclockwise (and then clockwise, if necessary) until maximum sound is heard. This may require several turns in one direction or the other. Turn up the volume control if necessary. (Do not at any time turn the screw in either direction more than 3 revolutions. Do not force it if turning becomes difficult as the screw has then reached the end of its travel in that direction and its direction should be reversed.)
7. When the sound is at maximum, the picture will appear on the screen but "sound bars" (dark horizontal bars of varying width) will be seen traveling vertically from bottom to top across the picture. With the screwdriver, turn the station selector screw counterclockwise only far enough to remove the sound bars from the picture.
8. After the seven steps above, you cannot receive a proper picture consult your serviceman.

ON THE DEFLECTION CHASSIS

Volume—controls sound at each deflection unit (also see SOUND).

Deflection Yoke *—Provides horizontal and vertical deflection of electron beam.

Focus Coil *—Focuses electron beam on face of picture tube and centers picture on screen.

Ion Trap *—Prevents ions from reaching the picture tube screen.

* Located on neck of picture tube.

Fig. 1. Connecting the remote tuner to one or more deflection chassis.

Fig. 2. Alternate antenna connections.
**WARNING!**

Do not put your hand into the rear of the deflection unit until you have read "Deflection Chassis Adjustment Procedure".

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**SOUND**

After the units have been inter-connected (as shown in fig. 1), to get "sound" the Volume Control on the Deflection Unit should be turned completely clockwise and left in that position, that is, when only one Deflection Unit is being used. When two or more Deflection Units are used and have been set in their respective places, turn the Volume Control on the Remote Tuner to its mid-position, then adjust the volume on each Deflection Unit so that sound from one Unit does not conflict or clash with the sound of the other, thereafter the volume is controlled only at the Remote Tuner. This is called "Phasing of the sound". If sound from two or more units is improperly "Phased" there will be "dead spots" in the room where no sound will be heard, and other spots where sound from one Unit will arrive later than sound from another Unit causing "Clashing".

**Deflection Chassis Adjustment Procedure**

All adjustments are made from the unit, with the exception of ion trap and centering. The following procedure should be followed step by step for best results.

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**WARNING!**

In making adjustments on ion trap, focus coil, and yoke, exercise great caution not to touch the metal shell of the picture tube. This shell is at a 2,000 volt potential. Also avoid touching the portion of the tube which lies between the metal shell and the neck. This is covered with an insulating coating, and should not be smeared by hand or finger prints.

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**Fig. 3. Picture-tube accessories**

1. Make sure that the yoke and focus coil plugs and picture tube socket are properly inserted on deflection chassis.
2. On the tuner, rotate channel selector to a station channel which is "on the air".
3. Turn CONTRAST control on tuner to extreme counter-clockwise position, (left).
4. Turn VOLUME control on tuner to counter-clockwise position, (left).
5. Turn BRILLIANCE control on deflection unit to extreme right. Remove perforated metal back on cabinet.
6. Make sure that the deflection yoke is pushed forward on the neck of the tube as far as possible. If not, loosen clamping screw on the side of the yoke bracket and move the yoke forward. Tighten screw partially.
7. Turn on tuner with ON-OFF switch. After set is warmed-up, note if a white raster has appeared on screen. (A mirror is helpful in the following adjustment.)
8. Adjust ion trap for maximum brightness on screen. This is done by gently rotating the ion trap and pushing it forward and back slowly on the tube neck until the best position is found. The best position is that in which the screen is evenly and brightly illuminated and no edges of the raster are shaded or cut-off.
9. Now observe whether the top and bottom edges of the raster are parallel to the edge of the mask or (if the unit has been taken out of its cabinet) to the table. If not, adjust this by rotating the deflection yoke slightly until this condition is obtained. Tighten yoke clamp. Do not squeeze yoke unnecessarily.
10. Reduce the brilliance of the raster with the brilliance control until light is barely visible.
11. Increase the CONTRAST at the tuner to secure a picture on the screen. Advance this control just enough to give good graduations of black, gray and white.
12. If the picture is out of sync horizontally, adjust the FINE HORIZONTAL HOLD control to stop picture. If this does not work, set FINE control to mid-position and adjust COARSE.
13. Adjust VERTICAL HOLD control to stop vertical motion, if necessary.
14. Focus picture with the FOCUS control. Try to obtain as uniform a focus as possible across the tube face. (The following steps are best accomplished with a station test pattern.)
15. If picture is not clearly centered, adjust centering roughly by loosening focus coil supporting bracket wing nut, and move focus coil to center the picture. Readjust FOCUS control for sharpest picture. If shadow appears at picture edge, adjust ion trap.
16. Rotate FINE H. HOLD control quickly from left to right and back again. Picture should go out of sync on both ends of the control range. If not, set control to mid-position and adjust COARSE control. Repeat these operations until picture goes out of sync at both ends of FINE control.
17. Set FINE control so that picture is properly phased. This is where vertical lines in the picture are straight and no folding of the picture is seen at either edge.
18. Adjust VERTICAL HOLD control for best interface, that is, where the scanning lines are least distinct.
19. Adjust WIDTH control until picture fills mask opening horizontally.
20. Adjust HEIGHT and VERTICAL LINEARITY controls together to fill mask opening vertically and to achieve best linearity.

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**Fig. 4. Deflection chassis**

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ALIGNMENT PROCEDURE

TELEVISION FREQUENCY RANGES

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<th>Channel</th>
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<th>Sound Carrier</th>
<th>Receiver IF</th>
<th>Oscillator Frequency</th>
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High Band

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EQUIPMENT REQUIRED:

- 3-volt bias battery
- \( \frac{1000}{1000} \) mmf capacitor to the converter.
- Ground the generator to the tuner cover. The converter connection may be made through a hole in the tuner cover [Fig. 7, sketch 4-10].
- Connect the oscilloscope to the generator input to observe the frequency response of the generator.
- Connect the generator to the antenna terminals (Fig. 7, sketch 5).

VIDEO IF ALIGNMENT

1. Connect the 3-volt bias battery from AVC to B.
2. Connect the signal generator, thru a 1000-ohm resistor to the converter. Ground the generator to the tuner cover. The converter connection may be made through a hole in the tuner cover [Fig. 7, sketch A].
3. Connect the oscilloscope to the generator input to observe the frequency response of the generator.
4. Switch the generator to the high band channel.
5. With the signal generator set at the specified alignment frequencies, tune the corresponding coils for maximum output at the output meter, as indicated below. All the coils are slug tuned, with the exception of the 1st IF secondary, which is trimmed tuner.

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<th>Steg</th>
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<th>Adj. Response</th>
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<td>2nd F</td>
<td>L14 Maximum</td>
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<td>L16 Minimum</td>
<td></td>
</tr>
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<td>5th F</td>
<td>L17 Maximum</td>
<td></td>
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</tbody>
</table>

6. Remove bias battery. Connect a sweep generator to the converter and an oscilloscope across diode 9 lead, R38. [Fig. 5].
7. Check the frequency response plot for symmetry. Readjust the IF IF slug if necessary. (If the frequency response plot is not symmetrical, the signal generator and meter may be used for this purpose.)
8. With the signal generator, check the IF sensitivity. At peak response this should be 80 microvolts for a 1 volt dc across diode lead.
9. Check the IF video-carrier to sound-carrier ratio. For all measurements, use the following set-up: The video signal generator is set at the carrier level with the signal generator at the same level. Connect the generator to the generator input to observe the frequency response of the generator. The 1000-ohm resistor to the converter. Ground the generator to the tuner cover. The converter connection may be made through a hole in the tuner cover [Fig. 7, sketch A].
10. Connect the signal generator to the antenna terminals (Fig. 7, sketch 5). Connect the generator to the generator input to observe the frequency response of the generator. The 1000-ohm resistor to the converter. Ground the generator to the tuner cover. The converter connection may be made through a hole in the tuner cover [Fig. 7, sketch A].
11. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151. Check the overall sensitivity at 151.