The TELEVISION KIT

by TRANSVISION

CABINET for the TRANSVISION TELEVISION KIT

ENGINEERED BY TELEVISION SPECIALISTS

THE KIT FOR THE MILLIONS

A handsome cabinet, made of selected grain wood, with beautiful hand-rubbed walnut finish. Has built-in support for Cathode Ray Tube; labeled knobs. Sturdy construction. Price: $22.50

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INSTRUCTIONS for THE TELEVISION KIT TRANSITION

PRELIMINARY INSTRUCTIONS

Perhaps at this point, you are about to commence the adventure of constructing a modern, advanced-design television set, a word of reassurance is in order. Persons without any technical background, you may feel at this moment that the job will prove too formidable. Though the assembled complexity of this kit has been correctly broken down into correlated sections, each of which consists of simple circuits which can be understood by a technician, with a pair of pliers. By systematically following these instructions, step by step, the TV set will be completed in a simple and logical sequence. This sequence is designed to achieve the successful completion of a television instrument that not only satisfies the needs of your living room for entertainment, but will also turn the television into a valuable asset in your home.

On the other hand, perhaps constructing electronic equipment is not a new experience for you. You might have built other television sets, and consequently you have some self-confidence in your ability to assemble this kit quickly. You may not need these instructions as a learning factor which may I assume. Naturally, previous electronic experience is unquestionably an asset, especially in the practical sense of enabling you to build at a faster rate. Nevertheless, the urgency of following these directions without hasty breakdown can be expected. You will save yourself much time and trouble by not rushing through the high-frequency stages in television, a lot of unpredictable things can happen, and such "haste" can wreck the performance of the set just as effectively as if you were to lose an important component. What we are aiming at is the physical location of every part, and to determine the length and position of every wire so that our carefully designed circuits will give their maximum performance. Why fail to find the pitfalls that we have laboriously remedied when you can avoid them by just FOLLOWING DIRECTIONS?

HINTS ON SAFETY IN BUILDING

While almost every one has had one time or another used a screwdriver and a pair of pliers and perhaps every one has handled an electric soldering iron. And, don't be alarmed into thinking that you are going to light a fire in your room, or hearing requirements. The kit is designed to satisfy this need in mind; refer to the diagram and observe that the lower left corner there is a well defined position for that "iron". A". Why a defined instead of a solid point? Because the "iron" is to be placed on the finished layout. As it emerges from the transformer, the "iron" will naturally make the iron invisible to some one coming into the bottom of the chassis and the "iron" will be in a finished status. If it had been a solid point, the "iron" would have been on the left side, which is the reason that the "iron" is in the bottom left corner. The use of this "iron" is very convenient when any one of the remaining parts is to be soldered.

PHOTOGRAPHS

As a supplement to the diagrams we have also included numerous photographs, and in the basic sections of this kit in descriptive stages of completion. Be sure to study these pictures frequently—especially if you have any doubt about the procedures described.

ERRORS AND CAPACITORS

Incidentally, if you don't know the difference between a resistor and a capacitor, don't worry about it. The component you will want for each connection will be taken from a definite package. Simply follow the instructions and you will learn soon enough how to recognize a resistor from a capacitor. As for distinguishing between...
CONSTRUCTION STAGE #1

BE SURE TO READ THE EXPLANATION OF EACH STEP COMPLETELY BEFORE YOU ATTEND TO PERFORM IT. REFER TO DIAGRAM #1 UNLESS OTHERWISE SPECIFIED.

Remember to check each step as you complete it.

1. The best way to start building your TRANSMISSION television is to mount the low voltage transformer. Select a medium voltage transformer — and make sure the tools you will need for the job. Now pick out the transformer (Package #44), #40, #49, #10, #11, #12, #19, and #16 (chassis).

2. Mount the low voltage transformer (Package #44) in the position given by "Transformer A" on the diagram, sliding the green leads through hole #10, and the red leads through hole #14. At the same time fasten the terminal strip from Package #40 to the top right transformer screw, which is taken from Package #110. The other screws and nuts come from Packages #88 and #109. Remember to place the proper sized lockwasher under each nut.

3. Mount "Transformer B" (Package #25) in accordance with the diagram, lockwashers from Packages #104, #105, and #106. Be sure the red and yellow leads go through the top hole (A) and the black leads through the bottom hole.

4. Take Package #21 (Transformer C) from the kit. With screw, nuts and lockwashers from Packages #105, #110, and #112, mount the transformer in the correct position on top of the chassis, remembering, of course, to include the terminal strip from Package #44 under the screw specified on Diagram A.

5. Mount Choke Box (Package #23), at the same time attaching a terminal strip from Package #30 to the lower right screw. Use the procedure of Step #2. By now you probably have discovered that the chassis can be rested on its bottom side, using the transformer as a support. Generally speaking, this is the most convenient position to use.

6. At this point we are ready to mount the stubs. For this purpose take Package #118, nuts and washers are taken from Packages #112, #110, and #107. Now take the socket in Package #118 and secure it on the right hand side of the chassis (Socket L-1 on Diagram A). On the bottom of the socket, take the screw driver and remove the ring of the terminal legs and be certain that it is painted down toward Transformer D. As indicated by the solid lines, the metal part of the tube set is placed next to the under surface of the chassis. Incidentally, thread the nuts only until snug. If you thread too far, you may destroy the thread of the screw.

7. Now remove the fourteen sockets from Package #41 and fasten them to the chassis in the positions given by L-1 to L-14 on Diagram A, noting in particular the direction of the leads. Some sockets have a set of small nuts attached. Insert ground lug from Package #115 instead of the lockwasher if you so desire.

8. Draw Packages #216, #217, #176 and #171 from the kit. Mount these in their respective positions, taking care not to foul up the timing by changing the diagram. Use nuts from Package #112 and washers from Package #103.

9. Obtain Packages #219, #30, #131, #212, #213, #135, #217, #138, #106, and #161. Using the self-tapping screws from Package #105, secure the terminal strip one by one to the chassis with the aid of Diagram A. Don’t be discouraged if the first time you try to fit a screw seems to be too tight. Choose a screwdriver with a blade that sticks completely into the hole, found on the head of the screw. Grip both the screwdriver head and the chassis, then resolutely thread the self-tapping screw with the suitable terminal strip resting properly in the holes of the chassis are the ones intended for the self-tapping screws. At first the screws may seem to be too tight, but don’t worry. Once inserted, they will not come out. (Two extra long screws and washers will be used later.) First, mount the potentiometer on the chassis at the position shown on Diagram A. Then, again, use the same procedure as before. This potentiometer goes to the spot marked Package #105 on Diagram A.

10. Obtain Packages #36, #48, and #287. Notice how the brackets in Package #40 are designed to clip up over the top of the

11. Mount the two capacitors from Package #43 in the same fashion.

12. Slip the rubber grommets from Packages #101 and #110 into their respective holes (Diagram A). Don’t neglect to see the on the rear skirt of the chassis behind Transformer A.

13. Examine the capacitors from Package #40 and look for the square, half-circle and square looped next to the different terminals of the rear section of the chassis. Taking a capacitor, slide the slip through the holes or through the loop cut into metal plate from Package #100, at the same time lifting the circuit board (B) with the six holes of this metal plate. Place this assembly in the spot labeled "C-D", at the back of the board, and recessing to position the terminals of the terminals and holes indicated on Diagram A. Using the contents of Packages #103, #110, #112, and #117, secure nuts and screws to the chassis.

14. Mount the four outside caps on the chassis as indicated in the upper left corner of the three black caps on the chassis in package #40.

15. Repeat the operation for the capacitor that goes in position 23 (C-D). A terminal strip from Package #44 is fastened under the upper screw, and a lug from Package #115 goes under the lower screw.

16. Obtain the terminal strip from Package #26, a screw from Package #110, a lockwasher from Package #10 and a nut from Package #112. With the head of the screw resting on the top of the chassis, mount the terminal strip in the position shown on Diagram A.

17. Take a ground lug from Package #115 and mount it with a self-tapping screw in the lower right hole of the chassis shown on Diagram A. (Below Package #105).

18. Take the metal support from Package #116, after locating its position (Package #116 is left out of the diagram) turn the chassis top side up. Using self-tapping screws from Package #105, mount the screw to the support with the vertical portion next to the front of the chassis. Slightly bending the metal, try to attach the support this way because the small hole should appear in the upper left corner of the photograph. Using the screw, mount the support to the chassis.

19. Remove the potentiometer from Package #91. Push the shaft through the metal stop from the back to the front direction, extending the shaft over the edge of the chassis. Now fasten the potentiometer securely to the metal support with a nut from Package #115.

20. In the front side of the chassis, directly below the assembly just mounted, you will find another pair of holes (B-2), one small, another relatively large. Take the unit in Package #288 and place it in the larger of these two holes. Using a nut from Package #117, mount the unit so that the three holes are faced away from the chassis surface. (Intake as you have probably noticed, this unit is 005 represented on the diagram.)

21. Still referring to the front side of the chassis find the pair of holes marked "package #30" on Diagram A directly to the right of the 005 intake. Here that the contents of Package #30 will be mounted, using the same procedure as before.

22. Take the potentiometer in Package #30 and mount it in the hole located by the position shown on Diagram A. Again, use the same procedure as before. This potentiometer goes to the spot marked Package #12 on Diagram A.

23. Obtain the following packages: #15, #16, #17, #125, #123, #201, and #177. You should now be in possession of a potentiometer, two small nuts, one large nut, two long screws, two small lockwashers and two small lockwashers.

24. Using the contents of Packages #15, #16, #17, and #125, place a nut on the potentiometer bushing, threading it just far enough to allow the bushing to go through the hole. Mounting plate, and then the second nut to hold it in position as shown on Diagram A. Mount both of these nuts with the appropriate lockwashers.

25. Since the units described in Step #27) are on the rear side of the chassis, turn the chassis upside down and, by following the instructions given on Diagram C, mount the rear supports, rest the rear side of the work bench. This gives us the same perspective as seen on Diagram C, for which be sure to mount these and the following controls exactly as shown on Diagram C.

26. Replacing the same procedure described in Step #22, use the screws, bushings, and nuts to mount the assembly. Refer to Diagram D, Packages #31 and #34 on Diagram A.

27. Take the potentiometer from Package #31 and mount it on the rear skirt in the position given by P-P, Diagram F.

28. Mount the potentiometer from Package #36 in the position 102, Diagram F.

29. Mount the potentiometer from Package #35 in the position P-11, Diagram F.

30. Remove the contents of Package #25 and mount these capacitors between the remaining pairs of potentiometers, observing the following pairs of potentiometers:

   1. Since the terminals may not touch the chassis, be certain that the terminals of the small box that will rest on the top of the chassis are those indicated for the small box that will rest on the top of the chassis.

   2. To be sure to place one capacitor on top of the other.

   3. These small boxes leads (Package #125) appear on the right side of the chassis, the nuts (Package #121) rest on the top of the chassis. Refer to Diagram A and Diagram F.

31. Take a terminal strip from Package #12, two screws from Package #110 and a nut from Package #123. Mount mounting the terminal strip, allow three small leads to rest over the sides of the chassis. (Terminal Strip 2 on Diagram F.)

32. Attach a ground lug from Package #115 between the two pairs of terminals shown in the diagram. Use a screw from Package #110 and a nut from Package #112.

33. With the self-tapping screws (Package #125), temporarily mount the audio shield from Package #122 on the bottom side of the chassis so that the upright section is closer to the two nuts from Package #125, and two lock washers from Package #120. Mounting the terminal strip, allow three small leads to rest over the sides of the chassis.

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CONSTRUCTION STAGE #2

Now that the major majority of the mounting has been completed, we are ready to proceed with the wiring. Your soldering iron is in the socket electrical outlet and, while it is still heating up, suppose we discuss some wiring practices which you can use to reduce your troubles. Those of you without any previous electronic experience. To begin with, it is advisable to start connections on the ground connections. After connecting the heater circuits, and here it is important to twist all wires to avoid interference will be avoided. When you first begin, if there is a tendency to underestimate the proper wire length, don’t become impatient. Whether the wires are too short or too long, try doing it over again. After one or two practice trials you will quickly acquire the knack for guessing the right wire length with your first effort.

Another basic rule in making connections, of course, is to remove the insulation covering at the ends of the leads, and then to solder the bare wire to the proper terminals. Therefore, whenever phrases like “connect Pin 1 to Terminal J1” or “solder banana plug to Terminal J1” are used in the instructions that will follow, the constructor will understand that he must solder here, exposed wire to the terminals or pins specified. And since most of the wires supplied in this kit is the type commonly known as “pushback,” wire, he merely has to push the insulation at the end of a lead, and here wire is easily and quickly made available for soldering the required connections.

One final suggestion—within reason, don’t make your wires excessively long.

Is your iron heated? If it is, you are ready to begin. This stage refer to Diagram B. Solder is in

1. Take Package #179 and remove the wire it contains. Look at the (total 6-pronged) sockets on the chassis and take note of the four ground legs of the metal pins. Now connect Pin 20 of Socket 1-1 to ground leg directly below. Then connect Pin 21 to Pin 22. Remember to avoid cold soldered joints. (The number of each pin is recorded on the base of the tube socket.)

2. Connect Pin 12 to #8 of Socket 1-2. Then connect #8 to the ground lug directly below. This will provide for the proper connections to be made on the respective tubes. Diagram B.

3. Ground legs of Package #15 have been attached to Sockets 1-1, 1-2, 1-3 and 1-4. Connect each of these to the ground lug directly below Pin 22 on the respective tube sockets. Diagram B.

4. Return to Socket 1-3, connect Pin 22 to the lug directly below. Then connect Pin 23 and Pin 24.

5. The connections just described in Step #4 are also made on the following tubes: 1-3, 1-4, 1-5, 1-6 and 1-7.

6. On Tube Socket 1-12 Pin 6 is connected to the ground lug directly below. This will provide for the proper connections to be made on the respective tubes. Diagram B.

7. On Tube Socket 1-8 the following connections will be made: Pin 6 to Pin 3; Pin 4 to Pin 2.

8. On Tube Sockets 1-9, 1-10, 1-11, 1-12 and 1-3 connect Pin 8 to the ground lug directly below. On 1-12 also connect Pin 9 to the ground lug directly below it, and on 1-11 connect Pin 10 to the ground lug directly below it, and on 1-10 connect Pin 11 to the ground lug directly below it.

9. On Tube Sockets 1-10 and 1-11, connect Pin #3 to Pin #6.

10. Take the yellow leads from Transformer A, twist them, and run to suitable length, and connect to Pins #2 and #8 of Socket 1-1. It does not matter which wire goes to which pin.

11. Take the yellow leads of Transformer B, twist them, run to suitable length, and connect to Pins #2 and #3 of Socket 1-1. It does not matter which wire goes to which pin.

12. Twist the two brown wires from Transformer A (Note 8), cut to a suitable length, scrape the enamel off the exposed wire and connect to Terminal 1 and Terminal 2 of Socket 1-1. This completes Construction Stage #2.

CONSTRUCTION STAGE #3

Before starting to wire, mount the remaining terminal strip from Package #14. Using screws, nuts and lockwashers from Packages #13A, #13B, and #13C, mount the remaining terminal strip on the lower part of the right hand skirt of the chassis, as shown on Diagram C. (Terminal Strip Y.)

Keeping leads as short as possible and against chassis where possible, follow Diagram C, making the following connections with wire from Package #15:

1. #1 on Potentiometer 7-5 to #3 on Terminal Strip T.
2. #1 on Potentiometer 7-5 to #3 on Terminal Strip T.
3. #2 on Potentiometer 7-5 to #5 on Terminal Strip T.
4. #1 on Capstan (C-1) to #3 on Terminal Strip T.
5. #2 on Capstan (C-2) to #1 on Socket 1-4.
6. #2 on Capstan (C-3) to #1 on Potentiometer 7-5.
7. #2 on Socket 1-3 to #2 on Capstan C-4.
8. #5 on Socket 1-3 to #1 on Capstan C-4.
9. #9 on Capstan C-4 to #3 on Terminal Strip T.
10. #6 on Terminal Strip T goes to #2 of Capstan B8 and #4 on Terminal Strip T goes to #2 of Capstan A4. These leads should be twisted and then directed to the lower part of the chassis.
11. With wire from Package #15 connect #5 on Terminal Strip T to #2 on Terminal Strip Y.

With wire from Package #15 make the following connections:

12. #5 on Terminal Strip T-3 to #5 on Terminal Strip T.
13. #9 on Potentiometer 7-4 to #1 on Terminal Strip T.
14. #11 on Capstan C-1 to #2 on Socket 1-4.
15. #7 on Socket 1-3 to #5 on Terminal Strip T.
16. #7 on Terminal Strip T goes to #2 of Capstan B8 and #4 on Terminal Strip T goes to #2 of Capstan A4. These leads should be twisted and then directed along the lower part of the chassis.
17. #7 on Terminal Strip T goes to #1 on Terminal Strip T.
18. #14 on Capstan C-2 to #2 on Socket 1-4.
19. #5 on Terminal Strip T-1 to #5 on Terminal Strip T.
20. #6 on Socket 1-3 to #6 on Terminal Strip T.
21. #3 on Terminal Strip T goes to #3 on Terminal Strip T.
22. #6 on Terminal Strip T to #2 on Terminal Strip T.
23. #5 on Terminal Strip T-1 to #6 on Terminal Strip T.
24. #5 on Terminal Strip T-1 to #1 on Terminal Strip T.
25. #4 on Terminal Strip T-1 to #2 on Terminal Strip T.
26. #6 on Terminal Strip T to #2 on Terminal Strip T.
27. #5 on Terminal Strip T-1 to #5 on Terminal Strip T.
28. #6 on Terminal Strip T to #1 on Terminal Strip T.
29. #5 on Terminal Strip T-1 to #4 on Terminal Strip T.
30. #5 on Terminal Strip T to #2 on Terminal Strip T.
31. #4 on Terminal Strip T-1 to #2 on Terminal Strip T.
32. #5 on Terminal Strip T-1 to #3 on Terminal Strip T.
33. #4 on Terminal Strip T-1 to #1 on Terminal Strip T.
34. #4 on Potentiometer 7-4 to #4 on Terminal Strip T.
35. #5 on Socket 1-4 to #1 on Capstan C-1.
36. #5 on Socket 1-4 to #1 on Capstan C-1.
37. #7 on Terminal Strip T goes to #1 on Potentiometer 7-10. (See Diagram F.)
38. #6 on Terminal Strip T to #2 on Potentiometer 7-11. (See Diagram F.)
39. #6 on Terminal Strip T to #2 on Potentiometer 7-11. (See Diagram F.)
40. #6 on Terminal Strip T to #2 on Potentiometer 7-11. (See Diagram F.)
41. #7 on Terminal Strip T to #2 on Potentiometer 7-11. (See Diagram F.)
42. #7 on Terminal Strip T to #2 on Potentiometer 7-11. (See Diagram F.)
In package #26 there should still be two balsa plates and two small metal pieces. These components of the interlock switch may already be assembled. If so, proceed directly to next step. If not, examine the balsa sections, and note that one of them has four holes while the other has only two. Then take the four-hole section and rest it flat against the workbench, directing its straight long edge toward you. At this point the metal pieces should be assembled, ASM Ch. 1, and the nuts should be attached. This is done as follows: take two small metal pieces and place them into the grooved portions of the four-hole balsa section. The next step is to assemble the unit with the remaining balsa section, taking care to match its straight long edge with the straight long edge of the first balsa piece.

Before mounting this unit to the chassis, grasp it firmly and look at its rear side. It is through these two holes that wires will eventually be inserted, and the two sets of side slots on the end of this unit will be used to clamp these wires tightly in place.

The net screen away from the chassis, mount the interlock switch unit against the side of the chassis and Terminal Strip 2. The positioning should be such that the plunger will be accommodated when the screen is closed. See screw from package #132. The lower terminal on the rear of the interlock switch will be connected to #1 Terminal Strip 2, while the upper terminal is connected to #2 of the interlock switch.

The contents of Package #186, and twisting the leads, solder them to the terminals on #2. Be sure these leads are long enough for the pair to be pressed flat against the back of the chassis and guided to their respective destinations. In making the connection to the interlock switch, first expose about a half inch of bare wire, then bend it to pin #6 of #2, and then tighten by means of the set screw as explained in Step #12.

Connect the lead of choke #C-8 to #4 of capacitor #17.

Connect the lead of choke #C-8 to #5 of socket #9.

Connect the lead of choke #C-8 to #6 of resistor #1, Holz. J.

Connect the lead of choke #C-8 to #7 of socket #9, Holz. J.

Connect the lead of choke #C-8 to #8 of socket #9, Holz. J.

The thin, yellow one from pin #9 goes to #9 of capacitor #8.

Twist the following two wires:

25. The thin, yellow one from pin #10 goes to #10 of terminal strip #9.

26. The thin, brown one from pin #11 goes to #11 of terminal strip #9.

27. With wires from package #195 connect terminal #1 of capacitor #9 to #1 of terminal strip #2, and two wires against chassis. With wires from Package #197 make the following connections and refer to Diagram D.

28. #1 on Potentiometer P-1 to #2 on Resistor #11.

29. #1 on Capacitor C-1 to #2 on Resistor #11.

30. #1 on Terminal Strip 2 to #1 on Resistor #11.

31. #2 on Resistor #11 to #1 on Terminal Strip 2.

32. #2 on Resistor #11 to #1 on Terminal Strip 2.

33. After twisting, guide the insulated leads of transformer C through the ground protected hose ("G") at its side. Connect the one end to the ground channel ("G") of transformer C. Refer to Diagram F. The central unit #2, on the top side of the chassis (see Construction Stage #1 and Diagram D) will now be connected in the circuit.

34. Referring to Diagram D and H, terminal #2 of #2 is to be connected to #1 of terminal strip #8. First, connect wire from package #14 to #1 of #2, then pass it through the ground protected hose ("G") just below and solder the wire to #1 of terminal strip #8.

35. Referring to Diagram D and H and Terminal #2 of #2-1 is to be connected to #1 of terminal strip #9. As before, connect wire from package #14 to #1 of #2-1 and then guide it through the ground protected hose ("G") and solder the wire to #1 of terminal strip #9.

36. Using wire from Package #3, connect #1 to #2-2 and #2-2 to the nearest opposite end of the chassis. Use wire from Package #3 to connect #1 to #2-2 and #2-2 to the nearest opposite end of the chassis. Use wire from Package #3 to connect #1 to #2-2 and #2-2 to the nearest opposite end of the chassis.

37. Use wire from Package #3 to connect #1 to #2-2 and #2-2 to the nearest opposite end of the chassis. Use wire from Package #3 to connect #1 to #2-2 and #2-2 to the nearest opposite end of the chassis.

38. Inspect the contents of Package #171. Probe an end of this shielded material with a pencil point or some other pointed instrument and note that it is incapable of considerable expansion. This kind of a shield is slipped around wires in order to protect circuits from interference.

39. Using wire from Package #3, #2 of terminal strip #2 is to be connected to #3 of terminal strip #3 and using wire from Package #196, terminal #2 of terminal strip #2 is to be connected to #3 of terminal strip #3. Solder wire from Package #3 to #2 of terminal strip #3 and from Package #3 to #3 of terminal strip #3. Now slide a piece of shielding material described in step #38 over both of these wires. Push it up about a half inch from terminal #3 of #2 and guide it over the wire to terminal #3 of #3. Now carefully fold lengths along enough of the shielding material so that the ends of the wires are sufficiently free to permit connecting the lead to the terminal strip.

40. Keep leads as short as possible and using wire from Package #3, connect the black dot terminal of TP-4 (screwed H.T. Transformer) to #2 of terminal strip #3.

41. Keep leads as short as possible and using wire from Package #3, connect the black dot terminal of TP-4 to #3 of socket #9.

42. Keep leads as short as possible and using wire from Package #3, connect the black dot terminal of TP-4 to #2 of terminal strip #3.

43. Keep leads as short as possible and using wire from Package #3, connect the black dot terminal of TP-4 to #2 of terminal strip #3.

44. The next step is to mount resistors and capacitors. Solder them to the points as instructed, first cutting the leads to a suitable length. When the resistors are required, take them from Package #173 and cut them slightly shorter than the leads on which they are to be placed before folding over the end of the lead. Refer to Diagram D, the resistors are numbered while the capacitors are lettered. These resistors and capacitors are to be mounted in the order as shown in Diagram D.

1. Take a resistor from Package #3 and connect it from pin #9 to #9 of terminal strip #9. Use a resistor #3 from Diagram D.

Step No.  Package No.  From  To  Resistor No.  Diagram D
44  42  #2 on socket #3  #3 on socket #3
45  61  #3 on terminal strip #3 with spaghettie with spaghettie
46  62  #2 on terminal strip #3  #2 on terminal strip #3
47  63  #3 on terminal strip #3  #3 on terminal strip #3
48  64  #2 on terminal strip #3  #3 on terminal strip #3
49  65  #3 on terminal strip #3  #3 on terminal strip #3

2 (This resistor is in position as shown on diagram).
### Construction Stage #5

**Connect the following resistors as instructed, being sure to keep the leads of the resistors as short as possible and use spaghetti from Package #77 when specified. Refer to Diagram B and place resistors as shown on the diagram.**

<table>
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<tr>
<th>Step No.</th>
<th>Package No.</th>
<th>From</th>
<th>To</th>
<th>Register No. Diagram B</th>
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<tr>
<td>1</td>
<td>54</td>
<td>#1 on terminal strip E</td>
<td>#1 on socket X-10</td>
<td>1</td>
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<tr>
<td>2</td>
<td>54</td>
<td>#2 on terminal strip F with spaghetti</td>
<td>#1 on socket X-11</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>54</td>
<td>#3 on terminal strip G with spaghetti</td>
<td>#1 on socket X-12</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>54</td>
<td>#4 on terminal strip H</td>
<td>#1 on terminal strip I</td>
<td>4</td>
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<tr>
<td>5</td>
<td>54</td>
<td>#5 on terminal strip J with spaghetti</td>
<td>#1 on terminal strip K</td>
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<th>Package No.</th>
<th>From</th>
<th>To</th>
<th>Register No. Diagram B</th>
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<td>67</td>
<td>#1 on terminal strip L with spaghetti</td>
<td>#1 on terminal strip M</td>
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<td>67</td>
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<td>#1 on terminal strip O</td>
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<td>67</td>
<td>#3 on terminal strip P</td>
<td>#1 on terminal strip Q</td>
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<td>67</td>
<td>#4 on terminal strip R with spaghetti</td>
<td>#1 on terminal strip S</td>
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**THIS COMPLETES CONSTRUCTION STAGE #5. BE SURE TO CHECK YOUR WORK. AT THIS POINT TURN THE CHASSIS OVER AND SHAVE OFF ANY EXCESS SOLDER OR OTHER MESSUROUS BITS THAT MAY HAVE FALLEN IN THE CHASSIS.**
### CONSTRUCTION STAGE #6

Connect the following capacitors as instructed, being sure to keep the leads of the capacitors as short as possible and use spaghetti from Package #17 where specified. Refer to Diagram G and place capacitors as shown on the diagram.

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### CAUTION:
Be sure to keep all the following wires as short as possible. This is extremely important. Refer to Diagram G or with wires from Package #14, make these connections:

- Prior to green dot terminal on I4 to #5 socket #4.
- Prior to green dot terminal on I4 to #5 socket #4.
- With wires from Package #18, make these connections:
  - Prior to red dot terminal on I4-2 to #12 socket #4.
  - Prior to red dot terminal on I4-2 to #12 socket #4.
  - With wires from Package #18, make these connections:
    - Prior to blue dot terminal on I4-2 to #8 socket #4.
    - Prior to blue dot terminal on I4-2 to #8 socket #4.
    - With wires from Package #18, make these connections:
      - Prior to black dot terminal on I4-2 to #4 socket #4.
      - With wires from package #18, connect:
        - 31. The yellow dot terminal on I7-2 to #4 on Socket #3.
17. Paste the wording tag in Package #122 on the side of the chassis next to the four-pin socket.

DO NOT CUT OFF THE CONTROL SHAPED TIPS UNTIL YOU HAVE INSPECTED WHETHER YOU WANT TO USE A CASKET ON THE PANEL SUPPLIED WITH THE KIT.

THIS COMPLETES THE CONSTRUCTION OF THE TRANSITION KIT. DIRECTIONS FOR THE TUNING AND OPERATING OF THE SET WILL FOLLOW.

OPERATION AND ADJUSTMENT OF THE COMPLETED SET

1. First of all, place all of the tubes in their proper sockets except the 6V6 in the low voltage rectifier (and the 5U in Package #27). Refer to Figure #1.

2. Insert the power cord into an AC electrical outlet and turn on the set. Inspect the glass tubes to see if they are lighted. A short circuit in the filament wiring will cause a hum in the low voltage power transformer (Transformer A). If such a short circuit exists, it will be necessary to pull out the plug, check over your work and find the mistake.

3. Turn off the set and put the S14 into its socket. Now turn the set back on and be alert for the presence of noise or hum, which of course, are other manifestations of short circuits.

4. Once more, turn off the set and this time put the S15 into its socket, attaching the screen to the top of the tube. Also check to see that the large parallel socket is firmly in place on the picture tube. CAUTION: For the present, keep the set turned off. But whenever the power is on, remember, TOUCH anything metallic!

5. With the chassis right side up and the rear facing you, examine the six controls. A description of their function will be given:

   (a) Upper extreme right (P-20 on Diagram #8) — horizontal "fader" or "hold" control.

   (b) Lower extreme right (P-11 on Diagram #8) — vertical hold control.

   (c) Upper middle (P-8 on Diagram #8) — vertical control.

   (d) Lower middle (P-9 on Diagram #8) — horizontal control.

   (e) Second from left (P-6 on Diagram #8) — vertical centering control.

   (f) Extreme left (P-6 on Diagram #8) — horizontal centering control.

6. All controls on the rear skirt will be set at a half-way position.

7. At this point the controls on the front panel will be set in the following manner:

   (a) Contrast — turn it all the way clockwise.

   (b) Brightness — half way.

   (c) Focus — half way.

   (d) Channel — to the station you wish to see.

8. Now connect the transmission line to antenna terminals marked either 1 or 2 or 3. A ground wire goes to the terminal marked either 2 or 3. The set is now ready for operation.

9. Turn on the set and adjust the volume control nearly to a full position. During the warm-up period, listen for any unusual noises or hum which could be attributable to faulty wiring.

10. Observe the screen of the picture tube for a rectangular area of light ("framed") to appear. Adjust the brightness control to give a pleasing pattern. Turn the focus control to yield a clearly defined pattern.

11. Adjust the brightness and width controls so that the largest possible rectangle appears on the picture tube. This is the approximate size of the television picture, assuming that the stylus is correctly set for a stable picture can be attained. The purpose of this adjustment is to make it possible to see, ready to your own vision no further addition.

12. Examine the capacitor plates rotated by the Sound Sensitivity control, and be sure that they are approximately half closed, while looking at the picture tube, turn the sound sensitivity control to give these plates a more open position.

13. If because of the procedure in step #11 the contrast between the light and dark areas of the brightness is not to your liking, turn the contrast and brightness knobs on the front panel until you have achieved the kind of picture you desire.

15. The final adjustments concern I.F. traps represented on Fig. #1. Before these adjustments can be made, however, it will be necessary to obtain one insulated or twin-screw driver, (most radio service stores sell this under the name of alignment tool). If one is available, get a small piece of hard wood, and then fashion it into the shape of a screw driver. The required size can be determined by referring to the screws at the top of the traps. AN ORDINARY SCREW DRIVER MAY NOT BE USED.

16. Connect the screws located on the top of the Sound I.F. three full turn en masse, making sure the three screws, manipulate the Sound I.F. screws for the lowest sound (audio) output. If correct, proceed to Trap #2.

17. Trap #2 has received appropriate positioning before shipment. As a result, only a slight adjustment is required now, and this also may be determined by holding the front of the picture tube. CAUTION: If not, correct the trap as described above. The required size can be determined by referring to the screws at the top of the traps. AN ORDINARY SCREW DRIVER MAY NOT BE USED.

18. If you are completely satisfied with the picture as it now appears, jump Trap #2. Trap #2 may be ignored. Otherwise, unscrew the trimmer screw on Trap #1 several turns, then slowly tighten until the brightest picture is obtained. Repeat this procedure for Trap #3.

19. All of the permanent adjustments have now been made, and the TRANSMISSION SET is ready for normal operation. From this point on, the entire set is subject to further regulation, and with the exception of the tuning, the television set is subject to the same kind of adjustment as described in the manual for the receiver. If you are satisfied, you can follow the manual for the receiver. If you are satisfied, you can continue to watch television. If not, you can make any further adjustments necessary. If so, you should be satisfied.
3. Before making the following adjustment observe that the silver half-moon (with the solder connection on top of I) of the oscillator timer A is on the side adjacent to the oscillator tube grid. See sketch. Now turn to the first position on the band switch, which is to the extreme left on the switch. Note: This corresponds to the highest frequency setting. Set the sound sensitivity trimmer (in the halfway position between the movable plates are half engaged with the fixed plates). Note: In all of the following adjustments the contrast control should be set to the lowest point possible, just above where the picture begins to tear up from lack of synchronisation.

4. Using the type of screwdriver mentioned in step #3 on page 7 of these instructions, turn oscillator trimmer A for maximum vertical detail. This corresponds to the minimum capacity setting or highest frequency setting that will still admit the picture from the desired station. Note: This adjustment does not correspond to the bright picture obtainable but does correspond to the clearest picture with the sharpest detail shown on the vertical edges of the test pattern. For close adjustment of this point the sound sensitivity trimmer is used.

5. Now adjust antenna trimmer A and grid coil C for highest picture, readjusting the oscillator trimmer for best detail, if necessary.

6. Loosen trimmer screw on I.F. trap #2 and watch the picture carefully for the point where it first begins to fade. The proper setting of this screw is just short of this point. The silver half-moon with the solder connection on top need not be in any particular position. Do not, at any time, touch the band width trimmer.

7. Adjust both trimmers on the sound I.F., for maximum sound output.

8. Readjust trimmer on I.F. trap #2 for maximum sound output and if picture is affected adjust for the best compromise.

9. Tighten trimmers on I.F. traps #1 and #2 to a point where the picture begins to get dim, then back off about one-eighth of a turn to the point where the picture is the sharpest.

10. This completes the alignment of the Transvision Set on the highest frequency setting.

In areas where there are several television stations in active use, the following procedure should be followed:

1. For alignment of the second band turn to the second position of the band switch, which is somewhere in medium frequency, or one position to the right from the extreme left. For alignment of the third and last band the same procedure is followed with the band switch on the third position while making the above adjustments on the oscillator C, grid coil C and antenna trimmer C. Be certain to touch any of the previously adjusted trimmers. Note: In the adjusting of oscillator trimmer C, the silver half-moon (with the solder connection on top) need not be in any particular position. Do not, at any time, touch the band width trimmer.

2. Do not touch any of the trimmers on the I.F. traps.

3. Repeat the above steps #1 to #10, except those referring to I.F. traps, using the following components that is, oscillator B, grid coil B and antenna trimmer B. Be certain to touch any of the previously adjusted trimmers. Note: In the adjusting of oscillator trimmer B, the silver half-moon (with the solder connection on top) need not be in any particular position.

Special Notes

Trouble Shooting Information

All of the following information is given with the assumption that the circuit is correct and allows operation. Before any action is taken, a logical analysis of the situation is extremely important in order that unnecessary adjustments with resultant disaster, may be avoided.

The following important factors should be noted:

1. Is the station in question transmitting signals (both sound and picture) at the time?

2. Is television reception in your particular area satisfactory as indicated by observers of other television stations?

3. Check your antenna system paying particular attention to see whether your television antenna is facing in the proper direction of the station that is transmitting. Now after having satisfied yourself on the above points we come to some of the possible conditions that might warrant alignment of some (or all) of the adjustments.

A. Sound is heard without picture.

B. Sound is heard without picture.

C. Picture is seen without sound.

D. Picture is heard satisfactorily (vertical wedges should be sharply defined).

E. Sound is distorted.

F. Signal is received weakly.

G. Neither sound nor picture is received.

Complete Visual Alignment Procedure for Transvision Kit

WARNING: All steps must be in the following sequence:

1. All tuning and adjusting must be done when the station is transmitting a test pattern only.

2. Loosen trimmer screws on picture I.F. traps #1 and #2, being careful not to loosen to the point where the screw may fall out. Tighten the trimmer screw on I.F. trap #2 until screwdriver tight. This provides maximum bandwidth for the picture circuit.
<table>
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<tr>
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<th>Quantity</th>
<th>No.</th>
<th>Description</th>
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