DISASSEMBLY
INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 2 metal screws holding plastic knob panel.
2. Remove 7 push-on type control knobs from front panel of cabinet.
4. Remove picture tube socket, yoke plug, HV lead and speaker plug.
5. Remove 4 chassis bolts. Remove chassis.
6. Remove 2 speaker nuts. Remove speaker.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 4 wood screws holding metal strip at the top edge of the safety glass. Remove metal strip and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator can be made from the rear panel of the chassis. Set the horizontal hold control to the center of its range and adjust the horizontal oscillator control (RH) until the picture synchronizes horizontally. If results are unsatisfactory, refer to the "Horizontal Sweep Circuit Adjustments".

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L33) located on top of the chassis.

FUSES

One fuse is used for LV power supply protection. (For location see tube placement chart).

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 2 POSITION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured resistance from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No raster, no sound - V16, fuse (M1)

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6, V9
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V6, V17
Has pic, no sound - V7, V8, V9
Overloaded picture - V8

SYNC FAILURE
No vert, sync - V10, V11
No horiz, sync - V16, V17
No vert, or horiz, sync - V19

SWEEP FAILURE
No raster, has sound - V12, V13, V14, V15, V17
No vertical deflection - V11
Poor vert, linearity or foldover - V11
Poor horiz, linearity or foldover - V12, V13, V14
Narrow picture - V12, V13, V14, V15, V16
Vert. off freq. - V16, V17
Horiz. off freq. - V16, V17
ALIGNMENT

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Allow 15 minutes for test equipment and receiver to warm up. There should be a good bond between receiver and test equipment.

Connect the deflection yoke and speaker during alignment. Do not remove the horizontal oscillator tube (V12) to disable the high voltage. The high voltage lead should be securely taped away from the chassis. The IF shield must be in place.

VIDEO IF ALIGNMENT

Set contrast control fully clockwise.

Connect the negative lead of a 5 volt bias supply to the ungrounded side of C40. Connect the positive lead to chassis.

Consult the output of the generator during alignment to keep the peak to peak signal at point <¢> below 4 volts. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

DUMMY ANTENNA

SWEEP GENERATOR COUPLING

SWEEP GENERATOR FREQUENCY

MARKER GENERATOR FREQUENCY

CHANNEL

CONNECT SCOPE

ADJUST

REMARKS

1. Direct

High side to chassis.

Not used

4.75MC (400, 205 Mod.)

4

Vert. amp. thru 150K to point <¢>.

Low side to chassis.

A1, A2

Adjust for minimum 400% indication on scope.

2. " " " 4.4MC " " A3

Adjust for maximum 400% indication on scope.

3. " " " 4.3MC " " A4

4. " " " 4.5MC " " A5

5. " " " 4.5MC " " A6

6. " " " 4.8MC " " A7

7. Fig. 1

Across antenna terminals thru matching network. (Fig. 1).

69MC (6MC 8wp.)

67.25MC thru 70.25MC

" "

Set fine tuning control at its mid-range position. Check response curve against Fig. 2 for curve limits. If necessary, readjust A3 thru A7 for response curve limits as in Fig. 2. Adjust A7 for proper curve level. Adjust A3 to level curve top. Adjust A5 for proper slopes of curve on low frequency side. Readjust adjustments only SLIGHTLY. If unable to obtain proper response curve, repeat step 3 thru 7. Do not reset A1 or A2.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND VTVM

Connect two matched 100K ohm resistors in series from point <¢> to chassis. The junction of these two resistors is alignment point B as shown on the schematic. Remove 6CB6 (V3, 1st video IF tube from its socket. Set volume control for normal volume.

DUMMY ANTENNA

SIGNAL GENERATOR COUPLING

SIGNAL GENERATOR FREQUENCY

MARKER GENERATOR FREQUENCY

CHANNEL

CONNECT VTVM

ADJUST

REMARKS

8. " " High side to point <¢>.

Low side to chassis.

4.5MC

4.5MC (605KC Swp.)

4.5MC

Any

DC probe to point <¢>.

Common to chassis.

A8, A9

Adjust for maximum deflection.

9. " " " " DC probe to point <¢>.

Common to point B.

A10

Adjust for zero reading. A positive and negative reading will be obtained on either side of correct setting. Replace V3 in its socket.

4.5MC TRAP ALIGNMENT

Set contrast control at maximum position.

DUMMY ANTENNA

SIGNAL GENERATOR COUPLING

SIGNAL GENERATOR FREQUENCY

MARKER GENERATOR FREQUENCY

CHANNEL

CONNECT VTVM

ADJUST

REMARKS

10. " " High side to point <¢>.

Low side to chassis.

4.5MC

4.5MC (605KC Swp.)

4.5MC

Any

Vert. amp. to point <¢>.

Low side to chassis.

A8, A9

Disconnect stabilizing capacitor C3. Increase generator output for reading on scope. Adjust for curve of maximum amplitude and symmetry similar to Fig. 3.

Reconnect C3. Increase generator output for reading on scope. Adjust so that 4.5MC occurs at crossover lines as in Fig. 4. SLIGHTLY readjust A9 for maximum amplitude and straightness of crossover lines. Replace V3 in its socket.

Oscillator Alignment for Tuner TS-1022-3

Disconnect white wire going to tuner AGC from main chassis. Connect negative lead of 1.5 volt bias battery to the loose end on the tuner. Connect positive lead to chassis.

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

Set the fine tuning control to the mid-position of its range.

DUMMY ANTENNA

SWEEP GENERATOR COUPLING

SWEEP GENERATOR FREQUENCY

MARKER GENERATOR FREQUENCY

CHANNEL

CONNECT SCOPE

ADJUST

REMARKS

11. Two 150 Carbon Resistors

Across antenna terminals with 1200 in each lead.

Not used

210MC

12

Vert. amp. thru 100K to point <¢>.

Low side to chassis.

A12

Adjust for zero beat on scope. If regeneration occurs, increase bias to 3 volts if necessary. Recheck channels 13 thru 7 and readjust until channels are within 500KC of their proper frequencies.

12. " " " 120MC

12

30MC

2

10MC

2

A19

A20

A21

Adjust for zero beat on scope.
ALIGNMENT INSTRUCTIONS

RF AND MIXER

Connect bias as under "OSCILLATOR ALIGNMENT". Disconnect 6.8 ohm resistor across the lead from the tuner. Remove V3 from its socket. Align the sweep generator output lead which should be terminated with its 500 kHz. The sweep generator output lead should be terminated with its 500 kHz.

GENERATOR AND VTVM

Function of these two resistors is alignment volume.

ADJUST

A8, A9

Remarks

Adjust for zero reading. A positive and negative reading will be obtained on either side of correct setting. Replace V3 in its socket.

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5

FIG. 6A

FIG. 6B

ADJUST

A11

Remarks

Remove V3 from its socket. Adjust for MINIMUM deflection. Replace V3 in its socket.

USER 76-582-3

Use 1.5 volt bias battery to the loose end of the oscilloscope for horizontal deflection.
Conectar base as under "Oscillator Alignment". Disconnect one coupling link at the IF terminal strip near V3 and solder a 683 resistor across the lead from the tuner. Remove V3 from its socket. Adjust scope controls so that the width is twice the height. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

**RF AND MIXER ALIGNMENT FOR TUNER 76-8946-10**

Disconnect white wire going to tuner AGC from main chassis. Connect negative lead of 1.5 volt bias battery to the loose end on the tuner. Connect positive lead to chassis.

**OSCILLATOR ALIGNMENT FOR TUNER 76-8946-10**

Connect bias as under "Oscillator Alignment". Disconnect one coupling link at the video IF terminal strip near V3 and solder a 68 ohm resistor across the lead from the tuner. Remove V3 from its socket. Adjust scope controls so that the width is twice the height. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

<table>
<thead>
<tr>
<th>DUMMY ANTENNA</th>
<th>SWEEP GENERATOR COUPLING</th>
<th>SWEEP GENERATOR FREQUENCY</th>
<th>MARKER GENERATOR FREQUENCY</th>
<th>CHANNEL</th>
<th>CONNECT SCOPE</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Fig. 1</td>
<td>Across antenna terminals thru antenna matching network (Fig. 3).</td>
<td>312.5MC (10MC Swp.)</td>
<td>312MC</td>
<td>13</td>
<td>Vert. amp. thru X1D to point &lt;&gt; Low side to chassis</td>
<td>A25, A33</td>
<td>Check for response similar to Fig. 5. If response is not flat between limits shows, adjust A26 and A39 alternately to produce symmetrical response about 85MC marker. Adjust A24 for proper tilt.</td>
</tr>
<tr>
<td>13. Fig. 1</td>
<td>Across antenna terminals thru antenna matching network (Fig. 3).</td>
<td>8.5MC (10MC Swp.)</td>
<td>8.5MC</td>
<td>6</td>
<td>Vert. amp. thru X1D to point &lt;&gt; Low side to chassis</td>
<td>A26, A27</td>
<td>Adjust for symmetrical response centered in pass band. Adjust A26 counter clockwise until single peak appears. Adjust A27 until peak falls on 85MC marker. Adjust A25 for proper tilt.</td>
</tr>
<tr>
<td>14. &quot;</td>
<td>&quot;</td>
<td>17.7MC (5MC Swp.)</td>
<td>17.7MC</td>
<td>7</td>
<td>&quot;</td>
<td>A25, A27</td>
<td>Check for response indicated by dotted lines in Fig. 6A and 6B. If necessary, adjust mirror image of response curve (tilt in opposite direction). If response curve appears as in Fig. 6A, adjust A24 and A26 counter clockwise until curve appears as in Fig. 6B. This adjustment overcompensates to allow for channel 13 adjustment. Repeat steps 13 and 14 until centered and symmetrical response is obtained on channels 7 and 13.</td>
</tr>
</tbody>
</table>

**REMARKS**

Adjust for a flat response.

Adjust for zero beat on scope. If regeneration occurs, increase bias to 3 volts if necessary. Recheck channel 13 thru 7 and readjust until channels are within 5000 of their proper frequencies.

Adjust A22 sets the carrier level, A23 is adjusted for proper tilt.

Adjust A26 counter clockwise until single peak appears. Adjust A27 until peak falls on 85MC marker. Adjust A25 for proper tilt.

Check for response similar to Fig. 5. If response is not flat between limits shows, adjust A26 and A39 alternately to produce symmetrical response about 85MC marker. Adjust A24 and A39 sets the carrier level and A39 is adjusted for proper tilt.

Check for response similar to Fig. 5. If response is not flat between limits shows, adjust A26 and A39 alternately to produce symmetrical response about 85MC marker. A24 sets the carrier level, and A39 is adjusted for proper tilt.

Adjust A26 counter clockwise until single peak appears. Adjust A27 until peak falls on 85MC marker. Adjust A25 for proper tilt.


**RESISTANCE MEASUREMENTS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Tube</th>
<th>Pin 1</th>
<th>Pin 2</th>
<th>Pin 3</th>
<th>Pin 4</th>
<th>Pin 5</th>
<th>Pin 6</th>
<th>Pin 7</th>
<th>Pin 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>69Q7A</td>
<td>1.8KQ</td>
<td>220KQ</td>
<td>INF</td>
<td>00</td>
<td>10</td>
<td>INF</td>
<td>2.5MΩ</td>
<td>00</td>
</tr>
<tr>
<td>V2</td>
<td>6X8</td>
<td>00</td>
<td>22KQ</td>
<td>1.8KQ</td>
<td>00</td>
<td>10</td>
<td>100KQ</td>
<td>10KΩ</td>
<td>10KΩ</td>
</tr>
<tr>
<td>V3</td>
<td>6CB6</td>
<td>120KΩ</td>
<td>470Ω</td>
<td>10</td>
<td>00</td>
<td>2.2MΩ</td>
<td>470Ω</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>V4</td>
<td>6CB6</td>
<td>330KΩ</td>
<td>470Ω</td>
<td>10</td>
<td>00</td>
<td>2.2MΩ</td>
<td>470Ω</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>V5</td>
<td>6CB6</td>
<td>1KΩ</td>
<td>220KΩ</td>
<td>10</td>
<td>00</td>
<td>470Ω</td>
<td>470Ω</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>V6</td>
<td>6F87V</td>
<td>82Ω</td>
<td>390KΩ</td>
<td>00</td>
<td>00</td>
<td>6KΩ</td>
<td>6KΩ</td>
<td>00</td>
<td>00</td>
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<tr>
<td>V7</td>
<td>6AU6</td>
<td>10Ω</td>
<td>0Ω</td>
<td>10Ω</td>
<td>0Ω</td>
<td>5.5KΩ</td>
<td>32KΩ</td>
<td>330Ω</td>
<td>0Ω</td>
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<tr>
<td>V8</td>
<td>6T8</td>
<td>250KΩ</td>
<td>22KΩ</td>
<td>250KΩ</td>
<td>0Ω</td>
<td>12MΩ</td>
<td>500KΩ</td>
<td>TP</td>
<td>0Ω</td>
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<tr>
<td>V9</td>
<td>6W5GT</td>
<td>TP</td>
<td>1Ω</td>
<td>1Ω</td>
<td>INF</td>
<td>TP</td>
<td>550KΩ</td>
<td>TP</td>
<td>0Ω</td>
</tr>
<tr>
<td>V10</td>
<td>12BH7</td>
<td>50KΩ</td>
<td>1MΩ</td>
<td>50KΩ</td>
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<td>1MΩ</td>
<td>0Ω</td>
<td>390KΩ</td>
</tr>
<tr>
<td>V11</td>
<td>12BH7A</td>
<td>1KΩ</td>
<td>2.3MΩ</td>
<td>600Ω</td>
<td>0Ω</td>
<td>0Ω</td>
<td>2.3MΩ</td>
<td>1MΩ</td>
<td>14Ω</td>
</tr>
<tr>
<td>V12</td>
<td>12AU7A</td>
<td>50KΩ</td>
<td>50KΩ</td>
<td>6MΩ</td>
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<td>0Ω</td>
<td>50KΩ</td>
<td>130KΩ</td>
<td>1.5KΩ</td>
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<tr>
<td>V13</td>
<td>6CU6</td>
<td>TP</td>
<td>1Ω</td>
<td>NC</td>
<td>1.8KΩ</td>
<td>TP</td>
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<td>0Ω</td>
<td>0Ω</td>
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<tr>
<td>V14</td>
<td>6AX4GT</td>
<td>NC</td>
<td>NC</td>
<td>60KΩ</td>
<td>TP</td>
<td>130KΩ</td>
<td>NC</td>
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<td>0Ω</td>
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<tr>
<td>V15</td>
<td>185GT</td>
<td>PINS 1-8 HAVE INF RESISTANCE</td>
<td>NC</td>
<td>TOP CAP TP</td>
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<td></td>
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<tr>
<td>V16</td>
<td>5U4G</td>
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<td>17KΩ</td>
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<tr>
<td>V17</td>
<td>21ZP4B</td>
<td>0Ω</td>
<td>1MΩ</td>
<td>PIN 10</td>
<td>30KΩ</td>
<td>PIN 11</td>
<td>170KΩ</td>
<td>PIN 12</td>
<td>1Ω</td>
</tr>
</tbody>
</table>

* MEASURED FROM PIN 2 OF V18.
* MEASURED FROM 130V LINE.
* MEASURED FROM PIN 3 OF V14.

TP—TIE POINT.
NC—NO CONNECTION.

**TUBE PLACEMENT CHART**
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 2 POSITION

VHF TUNER T-36D USED WITH CHASSIS TV-330U

ALTERNATE TUNER SCHEMATIC

A PHOTOFAX STANDARD NOTATION SCHEMATIC
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### ELECTROLYTIC CAPACITORS

<table>
<thead>
<tr>
<th>PART No.</th>
<th>VOLT</th>
<th>CAP.</th>
<th>MALLORY PART No.</th>
<th>CAPACITOR</th>
<th>VOLT</th>
<th>PART No.</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1A</td>
<td>1</td>
<td>40</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
</tr>
<tr>
<td>C1A</td>
<td>2</td>
<td>100</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
</tr>
<tr>
<td>C1A</td>
<td>3</td>
<td>220</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
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<tr>
<td>C1A</td>
<td>4</td>
<td>470</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
</tr>
<tr>
<td>C1A</td>
<td>5</td>
<td>1000</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
</tr>
<tr>
<td>C1A</td>
<td>6</td>
<td>4700</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
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</table>

### REPLACEMENT DATA

<table>
<thead>
<tr>
<th>PART No.</th>
<th>MALLORY PART No.</th>
<th>CAPACITOR</th>
<th>VOLT</th>
<th>PART No.</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1A</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
</tr>
</tbody>
</table>

### TUBES (GENERAL ELECTRIC, Sylvania)

<table>
<thead>
<tr>
<th>TUBES</th>
<th>CAPACITY VALUES</th>
<th>RATING</th>
<th>PART No.</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st. Video IF Amplifier</td>
<td>1500</td>
<td>SIF-680</td>
<td>PHILCO</td>
<td>100K</td>
</tr>
<tr>
<td>2nd. Video IF Amplifier</td>
<td>1500</td>
<td>SIF-680</td>
<td>PHILCO</td>
<td>100K</td>
</tr>
</tbody>
</table>

### PARTS LIST AND REPLACEMENT DATA

<table>
<thead>
<tr>
<th>PART No.</th>
<th>MALLORY PART No.</th>
<th>CAPACITOR</th>
<th>VOLT</th>
<th>PART No.</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1A</td>
<td>F6378</td>
<td>0.04µF</td>
<td>50</td>
<td>913-004</td>
<td></td>
</tr>
</tbody>
</table>

### FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.
### PARTS LIST AND DESCRIPTIONS

#### CAPACITORS (con)

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part No.</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1000</td>
<td>66-2323</td>
<td>6CAP-B33</td>
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<tr>
<td>C1002</td>
<td>66-2324</td>
<td>6CAP-B20</td>
<td></td>
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<tr>
<td>C1003</td>
<td>66-2325</td>
<td>6CAP-B10</td>
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<tr>
<td>C1004</td>
<td>66-2326</td>
<td>6CAP-B05</td>
<td></td>
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</tbody>
</table>

#### CONTROLS

- Connect red lead to yellow lead, to grid capacitor (C6).
- Black new mounting bracket.
- Alternate fill-up part number.
- Includes resistors R16 and R19.
- Use original yoke damping network.
- Connect horizontal yoke terminals to yoke terminal 1 to yoke plug pin 3.

#### RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

### TRANSFORMER (POWER)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>T1</td>
<td>65-8680</td>
<td>65-8680</td>
<td>65-8680</td>
<td>65-8680</td>
<td>65-8680</td>
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</tr>
</tbody>
</table>

### HORIZON

1. If the picture is out of phase, reverse the yoke lead.
2. To reduce yoke "ringing" add capacitors to yoke terminals #1 and #2 (gauge .047).
**TRANSFORMERS (SWEEP CIRCUITS)**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>USE</th>
<th>PHILCO PART No.</th>
<th>Hallidron PART No.</th>
<th>Merit PART No.</th>
<th>RCA Type No.</th>
<th>Stancor PART No.</th>
<th>Thordarson PART No.</th>
<th>Triad PART No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Vert. Osr. Trans.</td>
<td>32-1875-1</td>
<td>22041</td>
<td>31010</td>
<td>A-2225</td>
<td>A-4609</td>
<td>A-1102</td>
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**TRANSFORMER (AUDIO OUTPUT)**

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<td>T6</td>
<td>L.A.R.S.H 1-1/4</td>
<td>33-9974</td>
<td>21001</td>
<td>31026</td>
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**PART No. USE**

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<td>30008</td>
<td>A-2225</td>
<td>A-4609</td>
<td>A-1102</td>
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**INSTALLATION NOTES**

- Connect correct blue lead to grid lead, red lead to cathode (pin #6 of V7); green lead to grid capacitor (C61).
- Use PHILCO part number.
- Includes retainer RT1 and R7.
- Use original yoke clamping network.
- Horizontal yoke terminal #3 to yoke plug pin 6; horizontal yoke terminals #2 and #7 to yoke plug pin 9; horizontal yoke terminal #1 to yoke plug pin 4.

**HORIZONTAL OUTPUT TRANSFORMER DATA**

Use Original Width Coil Unless Replacement Type is Listed

| T1   | L.A.R.S.H 1-1/4 | 33-9974 | 21001 | 31026 | A-3322 | 22056 | 8-125 |

**NOTES**

- If the picture is out of phase, reverse width coil primary or secondary.
- 4. To reduce yoke "ringing" add capacity suppressor. "WHTM® Ref. 3" in series with resistor R94 across horizontal yoke terminals #1 and #2 (yoke socket plus #1 and #2).

**COILS (RF-IF)**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>USE</th>
<th>PHILCO PART No.</th>
<th>MILLER PART No.</th>
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<tr>
<td>L1</td>
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<td>Wound on 23M8 MF cap.</td>
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**NOTES**

- Channel 13 Note 1. |
- Channel 6 Note 1. |
- Channel 3 Note 3. |
- Channel 4 Note 3. |
- Channel 13 Note 3. |
- Channel 3 Note 3. |
- Channel 3 Note 3. |
- Channel 13 Note 3. |
- Channel 13 Note 3. |
- Channel 13 Note 3. |
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- Channel 13 Note 3. |
- Channel 13 Note 3. |
- Channel 13 Note 3. |

**POWER**

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### PARTS LIST AND DESCRIPTIONS (Continued)

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Note 1. Part of complete assembly. Complete assembly Part #76-9710.

#### TRANSFORMER (HORIZ. OSC.)

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#### FILTER CHOKE

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#### MISCELLANEOUS

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* Alternate Part No. 76-9192-L
† Alternate Part No. 76-8946-L
■ Alternate Part No. 76-9172
Tune in a TV station, preferably with a test pattern. Reduce the picture width until approximately one inch of blank screen appears on each side of the picture.

Increase the brightness control setting until the blanking becomes visible as indicated by a dark bar at each side of the picture. Connect a .1MFD capacitor from point V1 to chassis.

Set the horizontal hold control to the center of its range.

Adjust the horizontal oscillator control (R9) until the picture is centered between the two blanking bars.

Remove the .1MFD capacitor.

Adjust the horizontal oscillator slug (R1) until the picture is again centered between the two bars.

Rotate the horizontal hold control slowly thru its range. The picture should lose sync between the two extreme ends of the rotation. If it does not, readjust the horizontal oscillator control until that condition is obtained.

Check the number of diagonal bars on either side of the pull-in range of the horizontal hold. There should be one or two bars present.

If proper pull-in is not obtained, repeat the above procedure. Adjust the width control for a picture slightly wider than necessary to fill the picture mask horizontally.