ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120VAC. Allow a 15-minute warm-up period. Use only enough generator output to obtain a suitable indication.

AM ALIGNMENT—SELECTOR IN AM POSITION

Connect generator across loop fashioned of several turns of wire. Set volume at maximum.

<table>
<thead>
<tr>
<th>GENERATOR FREQUENCY</th>
<th>RADIO DIAL SETTING</th>
<th>INDICATOR</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>455kHz</td>
<td>Tuning gang fully open</td>
<td>Output meter across voice coil</td>
<td>T302, T304</td>
<td>Adjust for maximum. Repeat until no further improvement is noted.</td>
</tr>
<tr>
<td>400-hertz Modulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600kHz</td>
<td>Tune to signal</td>
<td>&quot;</td>
<td>T202</td>
<td>Adjust for maximum.</td>
</tr>
<tr>
<td>1640kHz</td>
<td>&quot;</td>
<td>&quot;</td>
<td>C232</td>
<td>Adjust for maximum.</td>
</tr>
<tr>
<td>1400kHz</td>
<td>&quot;</td>
<td>&quot;</td>
<td>C225</td>
<td>Adjust for maximum. Repeat AM alignment until no further improvement is noted.</td>
</tr>
</tbody>
</table>

FM IF ALIGNMENT USING AM SIGNAL GENERATOR—SELECTOR IN FM POSITION

High side of generator thru .001mfd to junction L205 and C213, low side to ground.

<table>
<thead>
<tr>
<th>GENERATOR FREQUENCY</th>
<th>RADIO DIAL SETTING</th>
<th>INDICATOR</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.7MHz Unmodulated</td>
<td>Point of non-interference</td>
<td>DC probe of VTVM to cathode D305, common to ground.</td>
<td>T306 (Pri.), T305, T303, T301, T201</td>
<td>Adjust for maximum.</td>
</tr>
<tr>
<td>&quot;</td>
<td>&quot;</td>
<td>DC probe of VTVM to Jct R3125/R319 common to ground.</td>
<td>T306 (Sec)</td>
<td>Adjust for zero reading. A positive or negative reading will be obtained on either side of correct setting.</td>
</tr>
</tbody>
</table>
### ALIGNMENT INSTRUCTIONS (Continued)

#### FM IF ALIGNMENT USING FM SIGNAL GENERATOR—SELECTOR IN FM POSITION

<table>
<thead>
<tr>
<th>GENERATOR FREQUENCY</th>
<th>RADIO DIAL SETTING</th>
<th>INDICATOR</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.7MHz 450kHz Sweep</td>
<td>Point of non-interference</td>
<td>Vert input of scope to cathode D305, side to ground.</td>
<td>T306 (Pri), T305, T303, T301, T201</td>
<td>Disconnect stabilizing capacitor C320. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C320.</td>
</tr>
<tr>
<td>&quot;</td>
<td>&quot;</td>
<td>Vert input of scope to junction R312 &amp; C319, side to ground.</td>
<td>T306 (Sec)</td>
<td>Adjust T306(Sec) to place marker at center of S curve, similar to Fig. 2. Readjust T306(Pri) for maximum amplitude and straightness of line.</td>
</tr>
</tbody>
</table>

#### FM RF ALIGNMENT—SELECTOR IN FM POSITION

Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced.

<table>
<thead>
<tr>
<th>GENERATOR FREQUENCY</th>
<th>RADIO DIAL SETTING</th>
<th>INDICATOR</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>88MHz Unmodulated</td>
<td>Low freq end</td>
<td>DC probe of VTVM to cathode D305, common to ground.</td>
<td>L206, L201</td>
<td>Adjust for maximum.</td>
</tr>
<tr>
<td>108 MC Unmodulated</td>
<td>Tune to signal</td>
<td>&quot;</td>
<td>C217, C212, C203</td>
<td>Adjust for maximum. Repeat FM RF steps until no further improvement is noted.</td>
</tr>
</tbody>
</table>

#### FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (± 0.001% ACCURACY)

High side of generator thru 47K to junction R312 and C319, low side to ground.

<table>
<thead>
<tr>
<th>GENERATOR FREQUENCY</th>
<th>INDICATOR</th>
<th>ADJUST</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>67kHz</td>
<td>Vert input of scope thru 47K to Base Q505, low side to ground.</td>
<td>L502</td>
<td>Adjust for MINIMUM.</td>
</tr>
<tr>
<td>19kHz</td>
<td>Vert input of scope thru 47K to cathode DS01 low side to ground.</td>
<td>L503</td>
<td>Adjust for maximum.</td>
</tr>
<tr>
<td>19kHz</td>
<td>Vert input of scope thru 47K to Jct. DS04 &amp; DS06 low side to ground.</td>
<td>T501</td>
<td>Adjust for maximum 38kHz response.</td>
</tr>
<tr>
<td>Modulated Left Channel</td>
<td>Vert input of scope to point PT12 low side to ground.</td>
<td>R518, R519</td>
<td>Adjust for MINIMUM. This step should require only slight adjustment.</td>
</tr>
<tr>
<td>Modulated Right Channel</td>
<td>Vert input of scope to point PT6 low side to ground.</td>
<td></td>
<td>Check for MINIMUM. If necessary, make compromise adjustment of R518, R519.</td>
</tr>
</tbody>
</table>
NOTES:
1. UNLESS OTHERWISE SPECIFIED:
RESISTANCE IN OHMS 20Ω.
RESISTORS ½ WATT.
CAPACITANCE IN MFDF.
2. ARROWS INDICATE MAIN SIGNAL PATH.
3. TRIMMERS:
   C205 — FM ANT.
   C232 — AM ANT.
   C212 — FM MIX, HIGH ADJ.
   C229 — AM OSC.
   C217 — FM OSC.
4. COILS:
   L201 — FM RF.
   L205 — FM MIX, LOW ADJ.
   L206 — FM OSC.
   TRANSFORMER: T201 — FM I.F.
   T202 — AM I.F.
   T203 — AM OSC.
5. TRANSISTORS:
   G201 — FM RF AMP.
   G202 — FM MIX.
   G203 — FM OSC.
   G204 — AM RF AMP/NUM.
   G205 — AM OSC.
6. POTENTIOMETER:
   R221 — AGC ADJ.
4. HIGHEST SERIES NUMBERS
   CD
   R6
   L2
5. COMPONENTS DELETED ARE: R4, C6.

NOTE:
USE 100-1343-011 ASSEMBLY TO COMPLETE FRONT END ASSEMBLY. USE 010-1107-073/10 COMPONENT LABEL.

AM/FM FRONT END
MULTIPLY DECOR 100-1332-014

NOTES:
1. UNLESS OTHERWISE SPECIFIED RESISTANCE IN OHMS 11%, CAPACITANCE IN UF OF 5%. RESISTED 1/4 WATT.
2. ARROWS ON POTENTIOMETERS INDICATE CW ROTATION.
3. ALL VOLTAGES 15%
4. MODE SWITCH IN STEREO POSITION.
5. HIGHEST SERIES NUMBERS ARE: R521, T601, C521, L505, D503 & PEC501
6. COMPONENTS ARE: Q5
7. VALUES OF THE LAST FOUR DIGITS OF A TEN DIGIT PN PREFIX IS OR-102.

Q4 020-1110-014
Q3 020-1110-005
Q2, Q5 020-1110-013
Q1 020-1110-012

CIRCUIT DIAGRAM 100-1332-014

HKS MULTIPLY DECOR

019-1107-115