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ALIGNMENT INSTRUCTIONS

PHASE SHIFTER ADJUSTMENTS

To align the receiver, follow these general instructions:
1. **Phasing**
   - Adjust the phase shifter to achieve the correct phase balance.
   - Ensure the phase shifter is correctly set for both receive and transmit modes.

2. **Gain Adjustments**
   - Adjust the gain to achieve the correct level for both receive and transmit.
   - Ensure the gain is set to the proper level for both the front-end and back-end sections.

3. **Calibration**
   - Calibrate the receiver to achieve the correct performance characteristics.
   - Ensure the calibration is accurate for both receive and transmit modes.

4. **Output Power Adjustment**
   - Adjust the output power to achieve the correct level for both receive and transmit.
   - Ensure the output power is set to the proper level for both the front-end and back-end sections.

**Alignment Tools**

- **Scope and Oscilloscope**
- **Power Meters**
- **Calibration Equipment**

**Alignment Procedure**

1. **Initial Alignment**
   - Follow the general instructions for initial alignment.
   - Ensure all components are properly connected and calibrated.

2. **Specific Adjustments**
   - Adjust the phase shifter to achieve the correct phase balance.
   - Ensure the phase shifter is correctly set for both receive and transmit modes.

3. **Final Calibration**
   - Calibrate the receiver to achieve the correct performance characteristics.
   - Ensure the calibration is accurate for both receive and transmit modes.

**Troubleshooting Tips**

- Check for loose connections and proper grounding.
- Ensure the power supply is stable and properly adjusted.
- Check for any internal component failures.

**Notes**

- Always perform alignment checks in a controlled environment.
- Record all alignment settings for future reference.
- Keep all alignment settings within specified limits.

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**Figure 1**

- Schematic diagram of the receiver's phasing system.

**Figure 2**

- Graph showing the output levels vs. input levels.

**Figure 3**

- Graph showing the output levels vs. input levels with phase adjustments.

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**Alignment Procedure (continued)**

1. **Phase Matching**
   - Adjust the phase matching circuit to achieve the correct phase balance.
   - Ensure the phase matching circuit is properly set for both receive and transmit modes.

2. **Gain Matching**
   - Adjust the gain matching circuit to achieve the correct gain balance.
   - Ensure the gain matching circuit is properly set for both receive and transmit modes.

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**Alignment Procedure (continued)**

1. **Final Checks**
   - Perform final checks to ensure all alignment settings are within specified limits.
   - Record all alignment settings for future reference.

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**Alignment Notes**

- Always perform alignment checks in a controlled environment.
- Keep all alignment settings within specified limits.
- Record all alignment settings for future reference.

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**Conclusion**

- Ensure all alignment procedures are followed to achieve the correct performance characteristics.
- Keep all alignment settings within specified limits.
- Record all alignment settings for future reference.
<table>
<thead>
<tr>
<th>ITEM</th>
<th>RF AMPLIFIER</th>
<th>CONN</th>
<th>RF CONNECT</th>
<th>ATTEND</th>
<th>REMARKS</th>
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**REMARKS:**
- Adjust for proper bias voltage.
- Ensure bias voltage is maintained.
- Check connections and adjust as necessary.
TV CHASSIS BOTTOM VIEW—CAPACITOR IDENTIFICATION
VERTICAL CENTERING

HORIZONTAL CENTERING

ANT. CABLE ASSEMBLY

CABINET-REAR VIEW

AFC ADJUSTMENT

Rotation of the horizontal hold control to either extreme should not move the horizontal oscillator out of synchronisation. If it does fall out of synchronisation, the aid system should be aligned.

With a test signal tuned in, adjust the vertical hold control until the picture is stable vertically. Set the horizontal hold control in the center of the rotation. Insert the grid of F-3 which removes any horizontal lines from both the horizontal and the vertical systems, as the picture will drift vertically. Adjust H-1 until the picture lines are stable horizontally. Remove the grid. The picture should look odd, but will probably be folded on the left side. Adjust H-6 until the picture unclips. Reaplace the grid and again adjust H-1 for picture stability. After removing the grid, again adjust H-6 for maximum picture width.

HORIZONTAL LINEARITY AND SIZE ADJUSTMENTS

The horizontal size control I27 should be adjusted for a minimum picture width of 1½ inches.

Any change in the adjustment of the horizontal size control will probably necessitate readjustment of the horizontal linearity controls. The horizontal linearity control I21 affects primarily the left side of the picture, the horizontal linearity with I22 will have its major effect near the center of the picture, while the horizontal size control operates mainly on the right half of the picture. The adjustments should be made while receiving a test pattern or while using a cross-hatch generator.
### Voltage and Resistance Measurements

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Table 2</th>
<th>Table 3</th>
<th>Table 4</th>
<th>Table 5</th>
<th>Table 6</th>
<th>Table 7</th>
<th>Table 8</th>
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<tr>
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<td>Value 3</td>
<td>Value 4</td>
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### Notes:
- All voltage measurements are at 50.0Hz and are stated in Table 1.
- Readings are taken with the meter in the resistance mode and the range in Table 2.
- Measurements are taken with the meter in the resistance mode and the range in Table 3.
- Readings are taken with the meter in the resistance mode and the range in Table 4.
- Measurements are taken with the meter in the resistance mode and the range in Table 5.
- Readings are taken with the meter in the resistance mode and the range in Table 6.
- Measurements are taken with the meter in the resistance mode and the range in Table 7.
- Readings are taken with the meter in the resistance mode and the range in Table 8.

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1. Voltage measurements are at 50.0Hz and are stated in Table 1.
2. Resistances are taken with the meter in the resistance mode and the range in Tables 2-8.
3. Readings are taken with the meter in the resistance mode and the range in Tables 2-8.
4. Measurements are taken with the meter in the resistance mode and the range in Tables 2-8.
5. Readings are taken with the meter in the resistance mode and the range in Tables 2-8.
6. Measurements are taken with the meter in the resistance mode and the range in Tables 2-8.
7. Readings are taken with the meter in the resistance mode and the range in Tables 2-8.
8. Measurements are taken with the meter in the resistance mode and the range in Tables 2-8.
9. Readings are taken with the meter in the resistance mode and the range in Tables 2-8.
10. Measurements are taken with the meter in the resistance mode and the range in Tables 2-8.
### PARTS LIST AND DESCRIPTIONS (Continued)

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<thead>
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<th>PART</th>
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### TRANSFORMER (AUDIO OUTPUT)

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### COILS (RF-IF)

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NOTES:
- All components are listed in the order of their installation.
- Part numbers and manufacturers are provided for reference.
- Installation notes are included for each component.