SAFETY PRECAUTION

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi’s replacement parts. Especially critical parts in the power circuit block should not be replaced with other makes.

   Critical parts are marked with △ in the schematic diagram and circuit board diagram.

2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

Note:

U .................. USA
FS .................. Switzerland and Scandinavia
C .................... Canada
BS .................. Great Britain
AU .................. Australia
W .................... General Area

STEREO CASSETTE TAPE DECK
SPECIFICATIONS

Semi-conductors:
IC's
Transistors
Diodes
LED
Track System:
Tape:
Tape Speed:
Recording System and Bias Frequency:
Erasing System:
Erase Ratio:
Frequency Response:
UD-ER (Normal)
UD-EX (CrO₂)
FeCr
S/N (Signal to Noise Ratio):
Dolby NR OFF
Dolby NR ON
Wow and Flutter:
Input Sensitivity and Impedance:
Microphone
Line in
DIN (Record/Playback)
Output Level:
Output Load Impedance:
Line out
DIN (Record/Playback)
Headphone
Distortion:
Cross Talk:
Between tracks
Between channels
Power Supply:
AC 220V, 50 Hz (For FS)
AC 120V, 60 Hz (For U, C)
AC 240V, 50 Hz (For BS, AU)
AC 100 to 110V/115 to 127V/200 to 220V/230 to 250V, 50/60 Hz (For W)

Power Consumption:
8W (For U, C, FS), 9W (For BS, AU, W)
Dimensions:
110(H)×435(W)×193(D)mm
Weight:
3.4kg
Motor:
Electronically controled DC motor
Heads:
Record/Playback head×1
Erase head×1

* According to DIN 45 500

Specifications and Schematic diagram are subject to change for performance improvement without notice.
1. Cassette lid

2. Top cover
   1) (1—1) 1 screw
   2) (1—2) 1 screw

3. Front panel
   1) Cassette lid (See item 1)
   2) Top cover (See item 2)
   3) (2—1) 4 screws
   4) (2—2) 3 screws (See item 6)
   5) 2 Knobs

4. Meter PC board
   1) Top cover (See item 2)
   2) 4 stoppers

5. Cassette chassis
   1) Front panel
   2) (3) 2 screws (See item 3)

6. Main PC board
   1) Cassette chassis (See item 5)
   2) (4) 1 screw
   3) 2 stopper
   4) (5) 1 screw

7. Bottom cover
   1) (1—2) 1 screw (See item 2)
   2) (5) 1 screw
   3) (6) 2 screws (See item 6)
ADJUSTMENT

Perform the following adjustments in the sequence stated after cleaning the head, pressure roller, and capstan with a head cleaning stick moistened in alcohol. Also, unless specially indicated otherwise, set the switches and controls to the positions indicated in the table.

<table>
<thead>
<tr>
<th>Symbol No.</th>
<th>Switches and Controls</th>
<th>Position</th>
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<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3</td>
<td>Input select switch</td>
<td>LINE</td>
<td>S6</td>
<td>Dolby N R switch</td>
<td>OFF</td>
</tr>
<tr>
<td>S4, S5</td>
<td>Tape select switches (Bias/Equalizer)</td>
<td>UD-ER (NOR)</td>
<td>RV1L, R</td>
<td>Record level controls</td>
<td>Maximum</td>
</tr>
</tbody>
</table>

1. Tape speed adjustment
   **Setting**: Playback mode
   **Connection**:

   ![Connection diagram](image)

   **Adjustment**: Warm up the unit for approximately 20 minutes; then playback test tape MTT-111, 3000 Hz (3150 Hz*) and measure the speed deviation with a frequency counter. If required, adjust the semi-variable resistor on the motor for a reading of 3000 Hz $\pm \frac{30}{10}$ Hz (3150 Hz*). Carry out the measurement at the middle of the tape.
   
   * According to DIN 45 500.

2. Head azimuth adjustment
   **Setting**: Playback mode
   **Connection**:

   ![Connection diagram](image)

   **Adjustment**: Playback a test tape (MTT-316, 12.5 kHz or equivalent) and adjust the azimuth adjustment screw for maximum output.

   **Note**:
   When the maximum values of both channels are different, tune to the maximum value of the L channel. In this case, the difference between the maximum values of both channels should be 2 dB or less.
3. Playback output and VU meter adjustment
   Setting: Playback mode
   Connection:
   
   **Adjustment:** Playback a Dolby calibration tape (MTT-150, 400 Hz 20m Maxwell) and adjust RT1L, R so that the voltage of TP1L, R becomes 0.775V. Then, adjust RT3 so that the meter indicators deflect to the Dolby marks (±1.5VU).

4. Bias current adjustment
   Setting: Recording mode
   Connection:
   
   **Adjustment:** Set the record mode. Adjust RT4L, R so that the bias voltage of 15V is applied to the both ends of Record/Playback head.

5. Record/playback output level, frequency characteristics adjustment
   Setting: Recording/playback mode
   Connection:
   
   **Adjustment:** Record a signal of 400 Hz, 0VU on a Hitachi UD-ER tape. Playback the tape and adjust RT2L, R for a playback output of 0VU±0.5VU. Next, record 1.25 kHz and 12.5 kHz signals at the level of 0VU −20 dB. Playback the tape and adjust RT4L, R for an output difference within ±1 dB.
6. Dolby NR adjustment

Setting: Recording mode
Connection:

Adjustment: Set the record mode. Feed in a 5 kHz signal to the Line in jacks and adjust the input so that the voltage of TP1L, R becomes $-30.4 \text{ dBm} \pm 0.1 \text{ dB}$. Next, put the Dolby NR switch ON and adjust RT5 so that the voltage of TP1L, R becomes $-22.4 \text{ dBm} \pm 0.1 \text{ dB}$.
**REPLACEMENT PARTS LIST**

1. **Pressure of pressure roller**
   - Value: 350gr ± 50gr
   - Note: Check item

2. **Torque**
   - Take-up: 35 to 60gr-cm
   - Measure in playback mode
   - FF: 70 to 120gr-cm
   - Measure in FF mode
   - Rewind: 70 to 120gr-cm
   - Measure in REW mode
   - LESS THAN 6GR-CM

3. **Back-tension**
   - Take-up side: Less than 6gr-cm
   - Supply side: 1 to 3gr-cm
   - VALUES WHEN INSTALLING THE COUNTER

4. **Flywheel thrust gap**
   - 0.05 to 0.5mm

5. **Pressure of take-up roller**
   - 120 to 180gr
   - Note: Check item

6. **Brake torque**
   - More than 15gr-cm

### Notes

**Note 1. Pressure of pressure roller**
Set this unit in the playback mode and press the pressure roller in the direction of the arrow using a fan type tension gauge, and measure the pressure when the pressure roller is released from the capstan.

**Note 2. Pressure of take-up roller**

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**LUBRICATION**

Lubricate one or two drops of machine oil to rotating point or lubricate grease to sliding point. Lubricate the respective parts listed below once every 1000 hours or once a year under normal conditions of use. Avoid oiling excessively, or rotation may become irregular because of oil splashes.

### Lubrication

<table>
<thead>
<tr>
<th>Lubrication</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor shaft bearing</td>
<td></td>
</tr>
<tr>
<td>Capstan shaft bearing</td>
<td></td>
</tr>
<tr>
<td>Pressure roller bearing</td>
<td></td>
</tr>
</tbody>
</table>