TECHNICAL INFORMATION

This information manual describes Cassette Deck Chassis FL-12 for model D-E55, so read this together with the Service Manual No. 1470.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

FL-12 Mechanism

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FL-12 Mechanism TK No. 1474E (G, F) TOKAI
Printed in Japan (H.M.)
DISASSEMBLY

1. Cassette holder
Press the stopper shown inside the circle in Fig. 1 in the direction of the arrow to remove it, and then push the cassette holder forward and down.

Next, remove the spring shown in Fig. 2, adjust the direction of the stopper inside the circle and remove the cassette holder.

2. Flywheel bracket ass’y and solenoid plate
   1) Flywheel bracket ass’y
Remove the take-up belt from the take-up pulley and set it in the groove of the flywheel bracket ass’y, then set the flywheel belt in the groove of the chassis, and remove the mounting screw (A).

2) Solenoid plate
Remove the 3 mounting screws (B).
* Check the position shown in Fig. 4 when installing the solenoid plate.
3. Reel disk
Remove 3 mounting screws ©

4. Cautions on handling leaf clip
The leaf clips are used at 3 positions (clamping play gear, play arm, cassette detector arm) in this chassis. Use the designated "clip clamping ring jig" when installing the clip.
* Adjust rattling of the jig using an adjustment screw so that the gap at the tip (r) is 2.5-2.8mm when it is widened, before using it.

**EXPLANATION OF NEW MECHANISM**

In this chassis, one of two solenoids or both are operated in each mode: the design is such that the performance is not inferior to that of a 2-motor system.

Table 1 shows the solenoid operation during button operation.

<table>
<thead>
<tr>
<th>Solenoid</th>
<th>Operation button</th>
<th>FF</th>
<th>REW</th>
<th>PLAY</th>
<th>PAUSE</th>
<th>STOP</th>
<th>REC</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF/PLAY</td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Electronic selection by REC switch</td>
</tr>
<tr>
<td>REW/PLAY</td>
<td></td>
<td>ON</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*ON means attraction.
1. PLAY mode

1. With the PLAY button pressed, FF/PLAY, Rew/PLAY solenoids are simultaneously turned ON (attraction).

2. The PLAY lock arm rotates and locking between the PLAY gear is released.

3. PLAY gear rotates, engages with the flywheel gear and continues rotation.

4. PLAY gear locks with PLAY lock arm. (Fig. 8)

5. The cam of the PLAY gear pushes the PLAY arm up, and the pin of the PLAY arm pushes the head plate up to the PLAY position.

6. Head plate pushes the brake plate up.

7. The idler is compressed against the FF/REW arm ass'y and the take-up reel.

Enters the PLAY mode and rotation is transmitted.
2. Fast-forward mode

1. With the FF button pressed, the FF/PLAY solenoid turns ON (attraction).

2. The FF/REW spring pushes the select slider up.

3. The select slider pushes the FF gear arm up.

4. The pin of the FF gear arm pushes the brake plate up to release braking.

5. The FF gear engages with the FF/REW gear and the take-up reel.

The FF mode is entered and rotation is transmitted.
3. REWIND mode

1. With the REW button pressed, the REW/PLAY solenoid turns ON (attraction).
2. The FF/REW spring pushes the select slider down.
3. The FF/REW arm ass'y rotates by means of the select slider.
4. The supply reel and the FF/REW gear engage.
5. The select arm pushes the brake plate up to release braking.

The unit enters the rewind mode and rotation is transmitted.

---

**Fig. 11**

**INSPECTION/ADJUSTMENT**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Inspection item</th>
<th>Reference value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pressure roller pressure</td>
<td>300～400g</td>
<td>Note 1</td>
</tr>
<tr>
<td>2</td>
<td>Tape driving strength</td>
<td>120～180g</td>
<td>Note 1, After cleaning with alcohol</td>
</tr>
<tr>
<td>3</td>
<td>Take-up torque</td>
<td>35～65g·cm</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>FF torque</td>
<td>75～110g·cm</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>REW torque</td>
<td>75～110g·cm</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Supply side back-tension</td>
<td>2g·cm±0.4g·cm</td>
<td>Note 2, PLAY mode</td>
</tr>
<tr>
<td>7</td>
<td>Take-up side back-tension</td>
<td>2g·cm±0.4g·cm</td>
<td>Note 3, PLAY mode</td>
</tr>
<tr>
<td>8</td>
<td>Supply side brake torque</td>
<td>50～100g·cm</td>
<td>Note 4, STOP mode</td>
</tr>
<tr>
<td>9</td>
<td>Take-up side brake torque</td>
<td>50～100g·cm</td>
<td>Note 4, STOP mode</td>
</tr>
<tr>
<td>10</td>
<td>Head plate return strength</td>
<td>200g or more</td>
<td>Note 5, STOP mode</td>
</tr>
<tr>
<td>11</td>
<td>Play lock allowance</td>
<td>300g or more</td>
<td>Note 6, PLAY mode</td>
</tr>
</tbody>
</table>
LUBRICATION

Lubricate the rotary section with 1 or 2 drops of Pan motor oil or Sonic slider oil, and apply Hitasol or white grease to the sliding section.

<table>
<thead>
<tr>
<th>Section</th>
<th>Metal and metal</th>
<th>Mold and metal</th>
<th>Mold and mold</th>
<th>Mold and metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotary section</td>
<td>Pan motor oil (10W-40)</td>
<td>Sonic slider oil (#1600)</td>
<td>Hitasol (MO-138)</td>
<td>Froil (GB-TS-1)</td>
</tr>
<tr>
<td>Sliding section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cautions on replacing plunger

Apply markings to the solenoid plate as shown in the diagram before removing the plunger when replacing it. Mount the plunger while matching the markings.
# REPLACEMENT PARTS LIST

<table>
<thead>
<tr>
<th>SYMBOL-NO</th>
<th>P-NO</th>
<th>DESCRIPTION</th>
<th>SYMBOL-NO</th>
<th>P-NO</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7330715</td>
<td>CHASSIS BASE HOLDER ASSEMBLY</td>
<td>25</td>
<td>7330662</td>
<td>EJECT HOLDER ASSEMBLY</td>
</tr>
<tr>
<td>2</td>
<td>6430864</td>
<td>PLAY GEAR</td>
<td>26</td>
<td>6435361</td>
<td>PUSH SWITCH</td>
</tr>
<tr>
<td>3</td>
<td>6761782</td>
<td>PLAY ARM</td>
<td>27</td>
<td>6671310</td>
<td>DT SCREW-2.6X30X10MM</td>
</tr>
<tr>
<td>4</td>
<td>7774761</td>
<td>CLIP</td>
<td>28</td>
<td>6761814</td>
<td>RECORD PREVENTION ARM</td>
</tr>
<tr>
<td>5</td>
<td>6761821</td>
<td>PICK UP ARM</td>
<td>29</td>
<td>6761694</td>
<td>REEL BASE ASSEMBLY</td>
</tr>
<tr>
<td>6</td>
<td>7774761</td>
<td>CLIP</td>
<td>30</td>
<td>6414202</td>
<td>TURNTABLE ASSEMBLY (SUPPLY)</td>
</tr>
<tr>
<td>7</td>
<td>7350620</td>
<td>HEAD PLATE ASSEMBLY</td>
<td>31</td>
<td>6414212</td>
<td>TURNTABLE ASSEMBLY (TAKE UP)</td>
</tr>
<tr>
<td>8</td>
<td>5440041</td>
<td>RECORD PLAYBACK HEAD</td>
<td>32</td>
<td>6761671</td>
<td>FF/REWIND ARM ASSEMBLY</td>
</tr>
<tr>
<td>9</td>
<td>5445342</td>
<td>ERASE HEAD</td>
<td>33</td>
<td>6761732</td>
<td>SELECT SLIDER</td>
</tr>
<tr>
<td>10</td>
<td>6761753</td>
<td>HEAD PLATE</td>
<td>34</td>
<td>7330724</td>
<td>SOLENOID PLATE ASSEMBLY</td>
</tr>
<tr>
<td>11</td>
<td>7761102</td>
<td>SPACER</td>
<td>35</td>
<td>5642831</td>
<td>DC SOLENOID</td>
</tr>
<tr>
<td>12</td>
<td>7775211</td>
<td>SPECIAL SCREW</td>
<td>36</td>
<td>6741605</td>
<td>BAND SCREW-3MMDX3MM</td>
</tr>
<tr>
<td>13</td>
<td>6521733</td>
<td>HEAD SPRING C</td>
<td>37</td>
<td>6375751</td>
<td>FLYWHEEL ASSEMBLY</td>
</tr>
<tr>
<td>14</td>
<td>7771401</td>
<td>WASHER 3 - 7 MM</td>
<td>38</td>
<td>6450932</td>
<td>FLYWHEEL GEAR</td>
</tr>
<tr>
<td>15</td>
<td>7761010</td>
<td>HEAD SPACER</td>
<td>39</td>
<td>7788623</td>
<td>POLY SLIDER WASHER</td>
</tr>
<tr>
<td>16</td>
<td>7771452</td>
<td>WASHER-2HMD</td>
<td>40</td>
<td>6534162</td>
<td>FLYWHEEL SUPPORT SPRING</td>
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<tr>
<td>17</td>
<td>7771644</td>
<td>WASHER-2HMD</td>
<td>41</td>
<td>5577671</td>
<td>DC MOTOR ASSEMBLY</td>
</tr>
<tr>
<td>18</td>
<td>6301042</td>
<td>RUBBER FOR RECORD PREVENTION</td>
<td>42</td>
<td>6582591</td>
<td>RUBBER PLATE</td>
</tr>
<tr>
<td>19</td>
<td>6302375</td>
<td>SPRING</td>
<td>43</td>
<td>7350007</td>
<td>SPECIAL SCREW</td>
</tr>
<tr>
<td>20</td>
<td>6761741</td>
<td>REWIND ARM</td>
<td>44</td>
<td>6355195</td>
<td>BELT</td>
</tr>
<tr>
<td>21</td>
<td>6761704</td>
<td>TAKE UP IDLER ASSEMBLY</td>
<td>45</td>
<td>6357301</td>
<td>FLYWHEEL BELT</td>
</tr>
<tr>
<td>22</td>
<td>6320576</td>
<td>SPRING FOR TAKE UP IDLER</td>
<td>46</td>
<td>6761044</td>
<td>CASSETTE HOLDER</td>
</tr>
<tr>
<td>23</td>
<td>7330581</td>
<td>PRESSURE ROLLER ARM ASS</td>
<td>47</td>
<td>6763451</td>
<td>DAMPER ASSEMBLY</td>
</tr>
<tr>
<td>24</td>
<td>6301361</td>
<td>SPRING</td>
<td>48</td>
<td>6301721</td>
<td>SPRING</td>
</tr>
</tbody>
</table>

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**Type of head**

- **P**: Pan head screw
- **BT**: Binding head tapping screw
- **F**: Flat countersunk head screw
- **BL**: Bolt
- **B**: Binding head screw
- **W**: Washer
- **T**: Round head tapping screw
- **E**: "E" ring

**Length (L, mm)**

**Diameter (D, mm)**

When ordering hardware excluding stated on these lists, be sure to make your orders with type and size.