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Cautionary Notes

Before beginning the procedure, please read through this document. The matters described may differ according to the model.

No User Data

This product cannot save user data. Backing up user data during servicing is not required.

Parts List

A component whose part code is ******** cannot be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).

Circuit Diagram

In the circuit diagram, “NIU” is an abbreviation for “Not in Use,” and “UnPop” is an abbreviation for “Unpopulated.” They both mean non-mounted components. The circuit board and circuit board diagram show silk-screened indications, but no components are mounted.
Main Specifications

DD-7: Digital Delay

Nominal Input Level
-20 dBu

Input Impedance
1 MΩ

Nominal Output Level
-20 dBu

Output Impedance
1 kΩ

Recommended Load Impedance
10 kΩ or greater

Delay Time
1 ms to 6400 ms
* Values may vary according to the mode and connections.

Maximum Recording Time
40 seconds (in HOLD mode)

Controls
Pedal switch
E.LEVEL knob, F.BACK knob, D.TIME knob, MODE knob

Indicator
CHECK indicator
(Used for indication of TEMPO, HOLD, and to check battery)

Connectors
INPUT-A (MONO) jack, INPUT-B jack
OUTPUT-A (MONO) jack, OUTPUT-B jack
TEMPO/EXP jack, AC adaptor jack (DC 9 V)

Power Supply
DC 9 V:
Dry battery 6F22 (9 V) type (carbon)
Dry battery 6LR61 (9 V) type (alkaline)
AC Adaptor (PSA-series: optional)

Current Draw
55 mA (DC 9 V)
Expected battery life under continuous use:
Carbon: 1.5 hours
Alkaline: 6 hours
* These figures will vary depending on the actual conditions of use.

Dimensions
73 (W) x 129 (D) x 59 (H) mm
2-7/8 (W) x 5-1/8 (D) x 2-3/8 (H) inches

Weight
440 g / 1 lb (including battery)

Accessories
Owner’s Manual English (#G2507366R0)
Mode Sticker (#G2547154R0)
Application Sticker (#G2547160R0)
Leaflet ("USING THE UNIT SAFELY," “IMPORTANT NOTES,” and "Information") (#********)
Dry battery 9 V type (6LR61) (#********)
* The battery that was supplied with the unit is for temporary use-intended primarily for testing the unit’s operation.
We suggest replacing this with an alkaline dry cell.

Options
AC adaptor (PSA-series)

* 0 dBu = 0.775 Vrms
* In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.
### Location of Controls

![Location of Controls Diagram]

### Location of Controls Parts List

<table>
<thead>
<tr>
<th>No.</th>
<th>Part Code</th>
<th>Part Name</th>
<th>Description</th>
<th>Q’ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75E593C0R0</td>
<td>CASE</td>
<td>CE-9V N225</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>G2537516R0</td>
<td>PSA CAUTION</td>
<td>HEC2392-01-150</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>13449717</td>
<td>ADAPTOR JACK</td>
<td>D-CUT (BLUE/BLACK)</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>F5029423R0</td>
<td>LED</td>
<td>L-3VEGW</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>G2477127R0</td>
<td>POTENTIOMETER</td>
<td>RD901-20-15FW-B50K-08Q7 8CLIC</td>
<td>3</td>
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<tr>
<td>6</td>
<td>F336952R0</td>
<td>JACK (STEREO)</td>
<td>HTJ-064-12DS</td>
<td>1</td>
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<tr>
<td>7</td>
<td>03344701</td>
<td>6.5MM JACK</td>
<td>HTJ-064-12DS</td>
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<td>8</td>
<td>13449140R0</td>
<td>PANEL PLATE</td>
<td>HTJ-064-14D</td>
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<tr>
<td>9</td>
<td>75E59270R0</td>
<td>PEDAL</td>
<td>M3X10 FE ZC</td>
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</table>
### Exploded View Parts List

<table>
<thead>
<tr>
<th>No.</th>
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<th>Part Name</th>
<th>Description</th>
<th>Q’ty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13129710R0</td>
<td>SWITCH(PUSH)</td>
<td>JM-0404</td>
<td>1</td>
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<tr>
<td>2</td>
<td>22267333R0</td>
<td>CUSHION</td>
<td></td>
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<tr>
<td>3</td>
<td>F34191028R0</td>
<td>BATTERY CONNECTOR</td>
<td>006P BATTERY SNAP</td>
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</tr>
<tr>
<td>4</td>
<td>223537516R0</td>
<td>PSA CAUTION</td>
<td>CE 9V N225</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>22357305R0</td>
<td>BOTTOM BASE</td>
<td></td>
<td>1</td>
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<tr>
<td>6</td>
<td>22027835R0</td>
<td>BOTTOM COVER</td>
<td></td>
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<tr>
<td>7</td>
<td>G21673018R0</td>
<td>INSULATING SHEET</td>
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<td>8</td>
<td>22157702R0</td>
<td>PEDAL GUIDE BUSH</td>
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<td>9</td>
<td>22177109R0</td>
<td>COIL SPRING</td>
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<td>10</td>
<td>22357304R0</td>
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<td>11</td>
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<tr>
<td>12</td>
<td>75E593C0R0</td>
<td>CASE</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>a</td>
<td>40125134</td>
<td>NYLON WASHER 3X6X0.5</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>b</td>
<td>H5019413R0</td>
<td>SCREW M3X10</td>
<td>BENDING MACHINE FEBC</td>
<td>2</td>
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<tr>
<td>c</td>
<td>H5020253R0</td>
<td>SCREW 3X6</td>
<td>B1FEBC</td>
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<tr>
<td>d</td>
<td>40125101</td>
<td>THUMB SCREW</td>
<td>M3X10 FE ZC</td>
<td>1</td>
</tr>
</tbody>
</table>
### SAFETY PRECAUTIONS:
The parts marked \( \Delta \) have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code \( \text{*\*\*\*\*\*\*\*\*\*\*} \) cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

NOTE: The parts marked \# are new. (initial parts) The description "Q'TY" means a necessary number of the parts per one product.

#### CASING

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Q'TY</th>
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<tbody>
<tr>
<td>22357305R0</td>
<td>BOTTOM BASE</td>
<td>1</td>
</tr>
<tr>
<td>22029519R0</td>
<td>BOTTOM COVER</td>
<td>1</td>
</tr>
<tr>
<td>75E993C0R0</td>
<td>CASE</td>
<td>1</td>
</tr>
<tr>
<td>75E992T0R0</td>
<td>PANEL PLATE</td>
<td>1</td>
</tr>
<tr>
<td>22357304R0</td>
<td>PEDAL PLATE</td>
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#### KNOB, BUTTON

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Q'TY</th>
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<tbody>
<tr>
<td># G2477127R0</td>
<td>ROUND KNOB D-CUT (BLUE/BLACK)</td>
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#### JACK, EXT TERMINAL

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Q'TY</th>
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<tbody>
<tr>
<td>10344901</td>
<td>6.3MM JACK HTJ-064-12ES</td>
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<tr>
<td>F3449150R0</td>
<td>JACK (STEREO+SW) 2LJ-650NHW00</td>
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<tr>
<td>13449140R0</td>
<td>JACK (STEREO) HTJ-064-14D</td>
<td>2</td>
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<tr>
<td>13449717</td>
<td>ADAPTOR JACK HEC2392-01-150</td>
<td>1</td>
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#### SWITCH

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<thead>
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<th>Description</th>
<th>Q'TY</th>
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</thead>
<tbody>
<tr>
<td>13129710R0</td>
<td>SWITCH(PUSH) JM-0404</td>
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#### PWB ASSY

<table>
<thead>
<tr>
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<th>Description</th>
<th>Q'TY</th>
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</thead>
<tbody>
<tr>
<td># 75E993F0R1</td>
<td>MAIN SHEET ASSY</td>
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</tr>
<tr>
<td># 75E992T0R0</td>
<td>MAIN BOARD</td>
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<tr>
<td># 75E994T0R0</td>
<td>VR BOARD</td>
<td></td>
</tr>
<tr>
<td># 75E995T0R0</td>
<td>INPUT BOARD</td>
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</tr>
<tr>
<td># 75E996T0R0</td>
<td>CTL BOARD</td>
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<td># 75E997T0R0</td>
<td>LED BOARD</td>
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#### DIODE

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<tbody>
<tr>
<td>F5029423R0</td>
<td>LED L-3VEGW</td>
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#### RESISTOR

<table>
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<tr>
<th>Part No.</th>
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<th>Q'TY</th>
</tr>
</thead>
<tbody>
<tr>
<td>F5399101R0</td>
<td>MTL.FILM RESISTOR 0J (1608TYPE)</td>
<td>12</td>
</tr>
<tr>
<td># F5429516R0</td>
<td>MTL.FILM RESISTOR 1R0 (1608TYPE)</td>
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#### POTENTIOMETER

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Q'TY</th>
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<tbody>
<tr>
<td>F3229825R0</td>
<td>POTENTIOMETER RD901-20-15FW-B54-006</td>
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<tr>
<td># F3229206R0</td>
<td>POTENTIOMETER RD901-20-15FW-B50K-08Q7 8CLIC</td>
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#### CONNECTOR

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Q'TY</th>
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<tbody>
<tr>
<td>F3419102R0</td>
<td>BATTERY CONNECTOR 006P BATTERY SNAP</td>
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#### WIRING, CABLE

<table>
<thead>
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<th>Description</th>
<th>Q'TY</th>
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</thead>
<tbody>
<tr>
<td># F3487013R0</td>
<td>WIRING YELLOW 110X6X6(EXP)</td>
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<tr>
<td>H4009408R0</td>
<td>WIRING 1007 WHITE 85X6X3</td>
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<tr>
<td># F3477063R0</td>
<td>WIRING RIBBON CABLE 6P X80MM</td>
<td>1</td>
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<tr>
<td>H4009498R0</td>
<td>WIRING IP VIOLET L=160MM</td>
<td>1</td>
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<tr>
<td># H4009305R0</td>
<td>WIRING ORANGE 100X3X6 (OUTPUT)</td>
<td>1</td>
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<tr>
<td>F3466705R0</td>
<td>WIRING 1007-26X3P L=65MM CONNECT X 1</td>
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</tr>
<tr>
<td># H4009610R0</td>
<td>WIRING GREY 100X3X6 (OUTPUT)</td>
<td>1</td>
</tr>
<tr>
<td>H4009499R1</td>
<td>WIRING GREEN L=160MM</td>
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</tr>
<tr>
<td>H4009597R0</td>
<td>WIRING BROWN 105X6X3</td>
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<tr>
<td># H4009458R0</td>
<td>WIRING BLACK 45X6X6 (INPUT)</td>
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<tr>
<td># F34667058R1</td>
<td>INPUT WIRING BOARD IN CONNECTOR</td>
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## SCREWS

<table>
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<th>Part No.</th>
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<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>H5039158R0</td>
<td>WASHER M9X14X0.5T</td>
<td>NI</td>
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<tr>
<td>40125101</td>
<td>THUMB SCREW</td>
<td>M3X10</td>
<td>1</td>
</tr>
<tr>
<td>40125134</td>
<td>NYLON WASHER 3X6X0.5</td>
<td>FE ZC</td>
<td>2</td>
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<tr>
<td>22137709R0</td>
<td>WASHER 9.6X14X1.0</td>
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<tr>
<td>#</td>
<td>WASHER</td>
<td>HALF MOON SHAPE</td>
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<tr>
<td>#</td>
<td>SCREW M3X10</td>
<td>BOUNDING MACHINE FEBC</td>
<td>2</td>
</tr>
<tr>
<td>#</td>
<td>SCREW 3X6</td>
<td>B1FEBC</td>
<td>5</td>
</tr>
<tr>
<td>#</td>
<td>TOOTH WASHER</td>
<td>9.1X13</td>
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<tr>
<td>H5039510R0</td>
<td>NUT M9X12X2T NI</td>
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<tr>
<td>H5039521R0</td>
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## PACKING

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<tbody>
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<td>G2627738R0</td>
<td>INNER BOX</td>
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<tr>
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<td>PACKING CASE</td>
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## MISCELLANEOUS

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<tbody>
<tr>
<td>H2569451R0</td>
<td>LED SPACER</td>
<td>LEDH-5 SMM 3P</td>
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</tr>
<tr>
<td>G2537516R0</td>
<td>PSA CAUTION</td>
<td>CE 9V N225</td>
<td>1</td>
</tr>
<tr>
<td>22177109R0</td>
<td>COIL SPRING</td>
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<td>1</td>
</tr>
<tr>
<td>22267333R0</td>
<td>CUSHION</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>G2167301R0</td>
<td>INSULATING SHEET</td>
<td></td>
<td>1</td>
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<tr>
<td>22157702R0</td>
<td>PEDAL GUIDE BUSH</td>
<td></td>
<td>1</td>
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<tr>
<td>22257257R0</td>
<td>EARTH TERMINAL</td>
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## ACCESSORIES (Standard)

<table>
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<th>Part No.</th>
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<th>Quantity</th>
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<tbody>
<tr>
<td>#</td>
<td>OWNER'S MANUAL</td>
<td>JAPANESE</td>
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<tr>
<td>#</td>
<td>OWNER'S MANUAL</td>
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<tr>
<td>#</td>
<td>MODE LABEL</td>
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</tr>
<tr>
<td>#</td>
<td>APPLICATION LABEL</td>
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</tr>
</tbody>
</table>
Verifying the Version Number

1. Connect an AC adaptor.
2. Turn down all controls all the way counterclockwise.
3. Holding down the foot pedal and inserting a plug into the INPUT jack makes the CHECK LED light up.
   * Continue holding down the pedal until the LED goes dark.

   After approximately 2 seconds, the CHECK LED goes dark.

   * The CPU and DSP checks are performed before the LED goes dark as just described. If a problem is found in the CPU, DSP, or the like, the LED may not go out.

   After approximately 1 second the CHECK LED flashes, and the number of flashes indicates the version.
   - 1 flash: Ver. 1.00
   - 2 flashes: Ver. 1.01
   - 3 flashes: Ver. 1.02
4. After the version display, execution shifts to the Test Mode.

Performing a Factory Reset

This product has no factory-reset feature.

Updating the System

A system update cannot be performed for this product. If an update is required, replace with an updated circuit board.
Test Mode

Items Required

- Oscillator x 2
- Oscilloscope x 1
- Noise meter x 2
- AC adaptor (PSA series device or 9 V DC power source) x 1
- Powered monitor x 2
- Expression pedal (EV-5) x 1
- 47-kΩ short plug x 2

Entering the Test Mode

1. Refer to the figure below and connect the measuring equipment to a connector other than the INPUT jack.

2. Turn down all controls all the way counterclockwise.

3. Holding down the foot pedal and inserting a plug into the INPUT jack makes the CHECK LED light up.

   * Continue holding down the foot pedal until the LED goes dark.

   After approximately 2 seconds, the CHECK LED goes dark.

   * The CPU and DSP checks are performed before the LED goes dark as just described. If a problem is found in the CPU, DSP, or the like, the LED may not go out.

   After approximately 1 second the CHECK LED flashes, and the number of flashes indicates the version.

   1 flash: Ver. 1.00
   2 flashes: Ver. 1.01
   3 flashes: Ver. 1.02

4. Release the foot pedal.

Quitting the Test Mode

Pull out the plug from the INPUT jack and switch off the power.
Test Items

1. VR Check (E.LEVEL) (p. 10)
2. VR Check (F.BACK) (p. 10)
3. VR Check (D.TIME) (p. 11)
4. VR Check (MODE) (p. 12)
5. DA Check (EXP [Expression Pedal] Check) (p. 13)
6. DSP Through Check (INPUT B Check) (p. 14)
7. DSP Through Check (INPUT A Check) (p. 14)
8. DSP Through Check (OUTPUT A Check) (p. 15)
9. DSP Through Check (OUTPUT B Check) & CLIP Check (p. 15)
10. Residual Noise Check (p. 16)
11. Battery Operation Check (p. 16)

1. VR Check (E.LEVEL)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- INPUT A: Input a rectangular wave at 400 Hz, 800 mVp-p.
- INPUT B: Input a rectangular wave at 400 Hz, 800 mVp-p.
- OUTPUT A: Connect the oscilloscope.
- OUTPUT B: Connect the oscilloscope.

Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Verify that the E.LEVEL control is turned down counterclockwise all the way.
   The CHECK LED lights up orange.

2. Adjust the E.LEVEL control to the 12 o’clock position. With the control turned down counterclockwise all the way, turn it clockwise to the 12 o’clock position, and verify that the CHECK LED goes dark. At the 12 o’clock position, the LED lights up red.

3. Turning the control all the way counterclockwise again makes the CHECK LED light up red.

4. Turn the E.LEVEL control clockwise all the way. Verify that while the control is being turned all the way clockwise from the 12 o’clock position, the CHECK LED stays dark. When the control has been turned clockwise all the way, the LED lights up red.

2. VR Check (F.BACK)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- INPUT A: Input a rectangular wave at 400 Hz, 800 mVp-p.
- INPUT B: Input a rectangular wave at 400 Hz, 800 mVp-p.
- OUTPUT A: Connect the oscilloscope.
- OUTPUT B: Connect the oscilloscope.

Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Verify that the F.BACK control is turned down counterclockwise all the way.
   The CHECK LED lights up orange.

2. With the E.LEVEL control turned down counterclockwise all the way, turn it clockwise to the 9 o’clock position.
   Verify that the CHECK LED goes dark.

3. Turning the control all the way counterclockwise again makes the CHECK LED light up red.
2. With the F.BACK control turned down counterclockwise all the way, turn it clockwise to the 9 o’clock position. Verify that the CHECK LED goes dark.

3. Turning the control all the way counterclockwise again makes the CHECK LED light up red.

4. Adjust the F.BACK control to the 12 o’clock position. With the control turned down counterclockwise all the way, turn it clockwise to the 12 o’clock position, and verify that the CHECK LED goes dark. At the 12 o’clock position, the LED lights up red.

5. Turn the F.BACK control clockwise all the way. Verify that while the control is being turned all the way clockwise from the 12 o’clock position, the CHECK LED stays dark. When the control has been turned clockwise all the way, the LED lights up red.

3. VR Check (D.TIME)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- INPUT A: Input a rectangular wave at 400 Hz, 800 mVp-p.
- INPUT B: Input a rectangular wave at 400 Hz, 800 mVp-p.
- OUTPUT A: Connect the oscilloscope.
- OUTPUT B: Connect the oscilloscope.

Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Verify that the D.TIME control is turned down counterclockwise all the way. The CHECK LED lights up orange.

2. With the D.TIME control turned down counterclockwise all the way, turn it clockwise to the 9 o’clock position. Verify that the CHECK LED goes dark.

3. Turning the control all the way counterclockwise again makes the CHECK LED light up red.

4. Adjust the D.TIME control to the 12 o’clock position. With the control turned down counterclockwise all the way, turn it clockwise to the 12 o’clock position, and verify that the CHECK LED goes dark. At the 12 o’clock position, the LED lights up red.
5. Turn the D.TIME control clockwise all the way. Verify that while the control is being turned all the way clockwise from the 12 o'clock position, the CHECK LED stays dark. When the control has been turned clockwise all the way, the LED lights up red.

4. VR Check (MODE)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

INPUT A: Input a rectangular wave at 400 Hz, 800 mVp-p.
INPUT B: Input a rectangular wave at 400 Hz, 800 mVp-p.
OUTPUT A: Connect the oscilloscope.
OUTPUT B: Connect the oscilloscope.

1. Verify that the MODE control is at the REVERSE position.
   Verify that waveforms like those shown in the figure below are output.
   The CHECK LED lights up orange.

2. Adjust the MODE knob to the ANALOG position.
   Verify that waveform output stops.
   The CHECK LED goes dark.

3. Adjust the MODE knob to the MODULATE position.
   Verify that waveforms like those shown in the figure below are output.
   The CHECK LED lights up orange.

4. Adjust the MODE control to the HOLD position.
   Verify that waveform output stops.
   The CHECK LED goes dark.

5. Adjust the MODE control to the 50 ms position.
   Verify that waveforms like those shown in the figure below are output.
   The CHECK LED lights up orange.
6. Adjust the MODE control to the 200 ms position.
   Verify that waveform output stops.
   The CHECK LED goes dark.

7. Adjust the MODE control to the 800 ms position.
   Verify that waveforms like those shown in the figure below are output.
   The CHECK LED lights up orange.

8. Adjust the MODE control to the 3,200 ms position.
   Verify that waveform output stops.
   The CHECK LED goes dark.

5. DA Check (EXP [Expression Pedal] Check)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- INPUT A: Input a rectangular wave at 400 Hz, 800 mVp-p.
- INPUT B: Input a rectangular wave at 400 Hz, 800 mVp-p.
- OUTPUT A: Connect the oscilloscope.
- OUTPUT B: Connect the oscilloscope.

Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Adjust the MODE control to the 800 ms position.
   Verify that the CHECK LED is lighted up orange.

2. Connect the EV-5 to the TEMPO/EXP jack.
   Verify that the CHECK LED is lighted up red.

3. Depress the heel of the EV-5 pedal all the way.

4. Depress the toe of the EV-5 pedal, and stop when the intermediate position is reached.
   Verify that the CHECK LED is lighted up green.
5. Depress the toe of the EV-5 pedal all the way. Verify that the CHECK LED is lighted up red.

6. Unplug the EV-5 from the jack.

6. DSP Through Check (INPUT B Check)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- **INPUT A**: Input a rectangular wave at 400 Hz, 800 mVp-p.
- **INPUT B**: Input a rectangular wave at 400 Hz, 800 mVp-p.
- **OUTPUT A**: Connect the oscilloscope.
- **OUTPUT B**: Connect the oscilloscope.

Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Adjust the MODE control to the **200 ms** position. Verify that the CHECK LED goes dark.

2. Disconnect the plug from the INPUT B jack. Verify that the CHECK LED lights up green.

If the waveforms grow larger, operation is correct. If the waveforms show no change, operation is faulty.

7. DSP Through Check (INPUT A Check)

Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- **INPUT A**: Input a rectangular wave at 400 Hz, 800 mVp-p.
- **INPUT B**: Input a rectangular wave at 400 Hz, 800 mVp-p.
- **OUTPUT A**: Connect the oscilloscope.
- **OUTPUT B**: Connect the oscilloscope.

Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Adjust the MODE control to the **50 ms** position. Verify that the CHECK LED lights up orange.

2. Disconnect the plug from the INPUT A jack. Verify that the CHECK LED lights up red.

If the waveforms grow larger, operation is correct. If the waveforms show no change, operation is faulty.
3. Insert the plug into the INPUT A jack.
Verify that the CHECK LED lights up orange.

8. DSP Through Check (OUTPUT A Check)
Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- INPUT A: Input a rectangular wave at 400 Hz, 800 mVp-p.
- INPUT B: Input a rectangular wave at 400 Hz, 800 mVp-p.
- OUTPUT A: Connect the oscilloscope.
- OUTPUT B: Connect the oscilloscope.
Set the oscilloscope to 500 mV/DIV, 1 ms/DIV, and coupling: DC.

1. Adjust the MODE control to the **HOLD** position.
Verify that the CHECK LED has gone dark.

2. Disconnect the plug from the OUTPUT A jack.
Verify that the CHECK LED lights up green.

3. Insert the plug into the OUTPUT A jack.
Verify that the CHECK LED goes dark.

9. DSP Through Check (OUTPUT B Check) & CLIP Check
Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7, using the settings indicated.

- INPUT A: Input a sine wave at 400 Hz, 4.0 V p-p.
- INPUT B: Input a sine wave at 400 Hz, 4.0 V p-p.
- OUTPUT A: Connect the oscilloscope.
- OUTPUT B: Connect the oscilloscope.
Set the oscilloscope to 2.0 V/DIV, 1 ms/DIV, and coupling: DC.

1. Adjust the MODE knob to the **MODULATE** position.
Verify that the CHECK LED lights up orange.
Verify that the waveforms are not clipped.

2. Disconnect the plug from the OUTPUT B jack.
Verify that the CHECK LED lights up red.

2. Disconnect the plug from the OUTPUT B jack.
Verify that the CHECK LED lights up red.
3. Insert the plug into the OUTPUT B jack.
   Verify that the CHECK LED lights up orange.

4. Adjust the MODE knob to the ANALOG position.
   Verify that the CHECK LED lights up orange.
   Verify that the waveforms are not clipped.

5. Disconnect the plug from the OUTPUT B jack.
   Verify that the CHECK LED lights up red.

6. Insert the plug into the OUTPUT B jack.
   Verify that the CHECK LED lights up orange.

7. Adjust the MODE control to the REVERSE position.
   Verify that the CHECK LED lights up orange.
   Verify that the waveforms are not clipped.

10. Residual Noise Check

    Make the connections shown below to the INPUT and OUTPUT jacks on the DD-7.
    
    INPUT A: Connect a 47-kΩ dummy plug.
    INPUT B: Connect a 47-kΩ dummy plug.
    OUTPUT A: Connect a noise meter (JIS-A) and monitor speaker.
    OUTPUT B: Connect a noise meter (JIS-A) and monitor speaker.

    1. Adjust the MODE knob to the ANALOG position.
       Verify that the CHECK LED goes dark.
       Verify that residual noise is -93.0 dB or less.
       Verify that no audible noise or shock noise is present.
    
    2. Adjust the MODE control to the REVERSE position.
       Verify that the CHECK LED lights up orange.
       Verify that residual noise is -99.0 dB or less.
       Verify that no audible noise or shock noise is present.
    
    3. Detach the plugs from the INPUT A and INPUT B jacks and switch off the power.

11. Battery Operation Check

    1. Insert batteries into the battery compartment, connect the AC adaptor (to INPUT A), and switch on the power.
       Make sure the CHECK LED lights up.
    
    2. Rapidly disconnect the AC adaptor and verify battery operation.
    * Failing to disconnect rapidly triggers a reset. If reset occurs repeatedly, a problem such as faulty contact in the AC adaptor jack may be present. If the CHECK LED is dark, check the battery voltage.
Circuit Board (Main Board)

View from components side

View from foil side