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17059971 Printed in Japan (AA00) (CR) 1
ORCHESTRAL VOICE
STRINGS, CHOIR, PIANO, BASS,
WIND/BRASS, SYNTH, ATTACK, OTHERS

ORCHESTRAL PART SELECT
UPPER, LOWER, PEDAL

PERCUSSION
SECOND, THIRD, SOFT, SLOW
EDIT
EDIT, EXIT, WRITE, ENTER, PARAMETER

SELECT x 4

KEYBOARD ASSIGN
ORGAN UPPER, ORGAN LOWER, ORGAN PEDAL,
ORCHESTRAL UPPER, ORCHESTRAL LOWER,
ORCHESTRAL PEDAL, EXTERNAL UPPER,
EXTERNAL LOWER, EXTERNAL PEDAL

REGISTRATION
MANUAL, 1, 2, 3, 4, 5, 6, 7, 8, BANK A/B

REGISTRATION LOCK
MASTER VOLUME
REVERB
OVERDRIVE
ORGAN CONTROL
BENDER/MODULATION LEVER

POWER
• Display
16 characters, 2 lines (backlit LCD)

• Connectors
PHONES Jack
MIX OUT Jaccs (L/MONO), R
MIX OUT Jacks (L, R : XLR 3-32 type)
ORGAN OUT Jacks (L/MONO), R
ORCHESTRAL OUT Jacks (L/MONO), R
CONTROL PEDAL Jacks (1, 2)
EXPRESSION PEDAL Jack
HOLD PEDAL Jack
MIDI Connectors (IN/OUT/MIDI PEDAL IN)
PK IN Jack
ROTARY TONE CABINET Jack
AC Inlet

• Power
AC 117 V, AC 230 V, AC 240 V

• Power Consumption
38 W

• Dimensions
1160 (W) x 505 (D) x 190 (H) mm
45-9/16 (W) x 19-15/16 (D) x 7-1/2 (H) inches

・ディスプレイ
16 行 2 行（バック照明つき LCD）

・接続端子
PHONES 端子
MIX OUT 端子（L/MONO, R）
MIX OUT 端子（L, R : XLR 3-32 type）
ORGAN OUT 端子（L/MONO, R）
ORCHESTRAL OUT 端子（L/MONO, R）
CONTROL PEDAL 端子（1, 2）
EXPRESSION PEDAL 端子
HOLD PEDAL 端子
MIDI 端子（IN/OUT/MIDI PEDAL IN）
PK IN 端子
ROTARY TONE CABINET 端子
AC インレット

・電源
AC 100 V (50/60 Hz）

・消費電力
38 W

・外形寸法
1160（幅）x 505（奥行）x 190（高さ）mm
## EXPLODED VIEW / 分解図

### PART LIST / PART NO./ PART CODE / PART NAME

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<th>Part Code</th>
<th>Part Name</th>
<th>Description</th>
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<td>SPACER</td>
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<td>ANGLE</td>
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<td>END BOCK UR</td>
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<td>01452212 UNIVERSAL (EXG)</td>
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### SCREW LIST / SCREW NO./ SCREW CODE / SCREW NAME

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<td>4001187</td>
<td>SCREW M6X8</td>
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<tr>
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<td>SCREW M3X5</td>
<td>PAN WASHER HEAD TAPITTE B BZC</td>
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<tr>
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<td>SCREW M3X16</td>
<td>PAN MACHINE W/SW BZC</td>
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<td>BINDER TAPITTE BZC</td>
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**Disassembling**


**Assembly**

4. Hold and open the upper keyboard and upper panel. The upper panel, when opened to its full extent, will be retained in its full open state.

CAUTION: The open top panel easily loses product balance. Support the product when working on it. Take care not to scratch the inside surface of 35 and 36.

1. Secure PWB holder 00900467 to bottom board with screw (16 pcs).
2. Secure PWB, LCD and bender unit to the bottom board or panel with screw unless otherwise specified. Use screw on the main board and analog board (2 pcs each) where mark "M3 SEMS" is silk-screened.
3. Grounding wires between the rear panel and upper panel and the grounding wire between the rear panel and analog board, if removed, must be reconnected as they were. (Terminate one end at the center of the unit and at the mark B on the analog board.)

4. Hold and open the upper keyboard and upper panel. The upper panel, when opened to its full extent, will be retained in its full open state.

CAUTION: The open top panel easily loses product balance. Support the product when working on it. Take care not to scratch the inside surface of 35 and 36.

1. Secure rear panel and bottom board with screw (6 pcs).

Notes:
1) Secure 8 PWB holders 00900467 to bottom board with screw (16 pcs).
2) Secure PWB, LCD and bender unit to the bottom board or panel with screw unless otherwise specified. Use screw on the main board and analog board (2 pcs each) where mark "M3 SEMS" is silk-screened.
3) Grounding wires between the rear panel and upper panel and the grounding wire between the rear panel and analog board, if removed, must be reconnected as they were. (Terminate one end at the center of the unit and at the mark B on the analog board.)

1. Secure end block holder 01676756 to end block R with screw (17 pcs).

* 1 Also secure 01455634.
* 2 Secure with washer and nut supplied with the potentiometer.
* 1 01455634 具り
* 2 V R 付屬フランジとナットで固定します。
* 1 Secure with screw (17 pcs).

* Same for righthand side. * 右も同様。

* Same for righthand side. * 右も同様。

Notes:
1) Secure 8 PWB holders 00900467 to bottom board with screw (16 pcs).
2) Secure PWB, LCD and bender unit to the bottom board or panel with screw unless otherwise specified. Use screw on the main board and analog board (2 pcs each) where mark "M3 SEMS" is silk-screened.
3) Grounding wires between the rear panel and upper panel and the grounding wire between the rear panel and analog board, if removed, must be reconnected as they were. (Terminate one end at the center of the unit and at the mark B on the analog board.)

1. Secure 8 PWB holders 00900467 to bottom board with screw (16 pcs).
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Notes:
1) Secure 8 PWB holders 00900467 to bottom board with screw (16 pcs).
2) Secure PWB, LCD and bender unit to the bottom board or panel with screw unless otherwise specified. Use screw on the main board and analog board (2 pcs each) where mark "M3 SEMS" is silk-screened.
3) Grounding wires between the rear panel and upper panel and the grounding wire between the rear panel and analog board, if removed, must be reconnected as they were. (Terminate one end at the center of the unit and at the mark B on the analog board.)
PARTS LIST / パーツリスト

SAFETY PRECAUTIONS:
The parts marked * have safety-related characteristics. Use only listed parts or replacement.

NOTE: *が付いた部品は新製品です。

13449145 YKB21-5010 JACK JK1,5,7 on JB, JK11~13 on PEB
13449146 YKB21-5012 JACK (W/SW) JK10 on PEB

SAFETY PRECAUTIONS:
The parts marked * have safety-related characteristics. Use only listed parts or replacement.

NOTE: *が付いた部品は新製品です。

13449145 YKB21-5010 JACK JK1,5,7 on JB, JK11~13 on PEB
13449146 YKB21-5012 JACK (W/SW) JK10 on PEB

SAFETY PRECAUTIONS:
The parts marked * have safety-related characteristics. Use only listed parts or replacement.

NOTE: *が付いた部品は新製品です。

13449145 YKB21-5010 JACK JK1,5,7 on JB, JK11~13 on PEB
13449146 YKB21-5012 JACK (W/SW) JK10 on PEB
# 71231056 CANNON BOARD ASSY

NOTE: INLET BOARD ASSY includes the following parts.

## LED

- 00899023 LN262RR030 LED
- 00123806 2RS705-10BE LED
- 02346965 1005CAP047 CASHEM LED
- 15019444 MTZ 7.7~9.1B LED
- 15039170 S86956P(TAP) LED
- 15019385 E2VB-20A-60011,15 LED
- 15039505 LED (DIODE) LED24-121,132 LED
- 00899023 LN262RR030 LED

## RESISTOR

- 00123806 2RS705-10BE LED
- 02346965 1005CAP047 CASHEM LED
- 15019444 MTZ 7.7~9.1B LED
- 15039170 S86956P(TAP) LED
- 15019385 E2VB-20A-60011,15 LED
- 15039505 LED (DIODE) LED24-121,132 LED
- 00899023 LN262RR030 LED

## POWER SUPPLY

- 15039170 S86956P(TAP) LED
- 15019444 MTZ 7.7~9.1B LED
- 15039185 E2VB-20A-60011,15 LED
- 15039505 LED (DIODE) LED24-121,132 LED
- 00899023 LN262RR030 LED

## DIODE

- 00899023 LN262RR030 LED
- 00123806 2RS705-10BE LED
- 02346965 1005CAP047 CASHEM LED
- 15019444 MTZ 7.7~9.1B LED
- 15039170 S86956P(TAP) LED
- 15019385 E2VB-20A-60011,15 LED
- 15039505 LED (DIODE) LED24-121,132 LED
- 00899023 LN262RR030 LED

## POTENTIOMETER: ボム

- 01327311 R64013A1-FPN
- 01637394 5MM ROTARY POT.

## CAPACITOR: コンデンサー

- 10129807 10129807 10UF 5% 400V MAB
- 15049133 E305X502J-250UF-35V 1320UF 50V MAB
- 15019444 MTZ 7.7~9.1B LED
- 15039170 S86956P(TAP) LED
- 15039505 LED (DIODE) LED24-121,132 LED
- 00899023 LN262RR030 LED

## WIRING: ケーブル

- 00793705 ROD17-9FN L262RR030 LED
TEST MODE / テストモード

<Tools required>

- Expression pedal (e.g. EV-5)
- Pedal switch (e.g. DP-2)
- MIDI cable
- Headphones
- Oscilloscope
- Tester

<Entering the test mode>

While holding down [VIBRATO AND CHORUS, UPPER], [VIBRATO AND CHORUS, LOWER] and [KEYBOARD ASSIGN EXT, UPPER], turn on power.

<Tests>

1. Identifying version
2. Memory
3. Battery
4. MIDI circuit
5. Volume controls and pedals
6. Hold pedal
7. Switches and LEDs
8. LCD
9. ROTARY TONE cabinet connectors
10. Sounds
11. Effects
12. Loading factory settings

<Selecting a test>

Pressing the [>] button proceeds to the next test.
Pressing the [<] button proceeds to the next step in the current test sequence.

1. Identifying version
2. Memory test
3. Battery test
4. MIDI circuit test
5. Volume control and pedal tests
6. Hold pedal test
7. Switch and LED tests
8. LCD test
9. ROTARY TONE cabinet connector test

[Manual]: Effects check
[Bank]: ROTARY TONE cabinet connector test
[A/B]: CABI NET端子チェック
[A/B]: サウンドチェック

* To manually exit this test and proceed to the next test, press the [ROTARY SOUND], [BRAKE] and [SLOW/FAST] buttons simultaneously.

<Exiting the test mode>

Simply turn off power.

<Testing procedure>

1. Identifying version

The LCD shows the version of the operating program.

[1.00]
2. Memory test
The test program starts the memory test, and upon completion of successful test goes to the next test.

3. Battery test
When the battery is at a voltage in the range of 2.7 to 3.8 V, the test program displays "OK" and goes to the next test. Otherwise, it displays "NG" and aborts the test sequence. Turn off power, remove the cause (e.g. replace the battery). Turn on power, enter the test mode again and repeat the test.

4. MIDI test
The LCD displays:

- Controllers: 29
- H-BAR (21), REVERB, OVERDRIVE, BENDER, MODULATION, AFTER TOUCH, EXPRESSION PEDAL, CONTROL PEDAL 1, CONTROL PEDAL 2

When a control is operated across its full travel range, the LCD shows the name of the control and current setting. The setting can also be checked by listening to the output sound. When the minimum and maximum settings of the control are detected, the LCD decreases the count next to the [VOLUM, PEAL] by one.

* Activating two or more controls at the same time does not decrease the count on the LCD.

5. Volume control and pedal tests
The LCD displays the number of controls.

- Controls: 29
- H-BAR (21), REVERB, OVERDRIVE, BENDER, MODULATION, AFTER TOUCH, EXPRESSION PEDAL, CONTROL PEDAL 1, CONTROL PEDAL 2

When all MIDI tests are OK, remove the MIDI cable and the program proceeds to the next test.

6. Hold pedal test
The LCD displays:

- HOLD PEDAL

Connect a pedal switch (e.g. DP-2) to HOLD PEDAL socket. Depress the pedal to ON and the LCD displays "ON". The program goes to the next test.

7. Switch and LED test
All LEDs except for registrations 1-8 light.

- LED is not lit.
- The LCD displays the total number of switches and LEDs.

* Verify that approx. 10 V is applied to the pin 7 of PK IN terminal.

PK IN端子の7番ピンの電圧が約10Vあることを確認してください。
A laptop having a window turns off its LED when pressed.

Activating two or more switches simultaneously does not increase SW LED counts on the LCD.

After testing the switches and LEDs, the program goes to the next test.

To proceed to the next test before completing the test, press the [ROTARY SOUND], [BRAKE] and [SLOW/FAST] simultaneously.

8. LCD test

The LCD displays:

```
[ ] ボタンを押すと、ドットが点滅します。もう一つ [ ] ボタンを押すと、ドットが消えます。
LCD コントラストは [OVER DRIVE] ボブで変わります。
LCD の表示状態を確認後、[ ] ボタンを押して次のテスト項目に進みます。

9. ROTARY TONE cabinet connector test

Perform this test when necessary to check rotary speaker.

* Connecting a speaker which does not meet the following specifications may cause malfunctions.

The pinout for the ROTARY TONE CABINET connector is as follows:
No. 1 ORGAN (ROTARY)
No. 2 ORGAN (STATIONARY)
No. 3 ORCHESTRAL L
No. 4 GND
No. 5 GND
No. 6 POWER ON-OFF CONTROL
No. 7 FAST CONTROL
No. 8 SLOW CONTROL
No. 9 NC
No. 10 ORCHESTRAL R
No. 11 +24V IN

Pin Nos. 1 and 2 are the output of the organ voice.
Pin Nos. 3, 4, and 5 are the input of the organ voice. Pin Nos. 6, 7, and 8 are the output of the organ voice.
Pin Nos. 9, 10, and 11 are the output of the organ voice. Pin Nos. 1, 10, and 11 are the input of the organ voice.

10. Sound test

This test requires the oscilloscope and headphones. Insert the plug from the headphones into the [PHONES] socket.

1) Verify sine waves from the headphones.

The volume of the external speaker can be adjusted by the MASTER VOLUME knob. [FAST/SLOW] will switch the rotational speed of the connected rotary speaker. [BRAKE] will temporarily stop the rotation of the connected speaker. To resume rotation, press [BRAKE] again, or press [FAST/SLOW].

The rotary speaker effect of the organ voice will not be applied to the audio signal that is output from the ROTARY TONE CABINET connector.

1) The VK-77 judges that it is being connected to a rotary speaker when approx. DC 24 V is on pin 11 of the rotary speaker.

The LCD will display:

9. ROTARY XROTIARY: OFF

Apply approx. DC 24 V to the pin 11.

The LCD will read:

Verify that sound is output to pins 1, 2, 3 and 10 of the rotary speaker connector.

9. ROTARY XROTIARY: ON

Verify that sound is output to pins 1, 2, 3 and 10 of the rotary speaker connector.

1) No.1 ORGAN(ROTARY)
No.2 ORGAN(STATIONARY)
No.3 ORCHESTRAL L
No.4 GND
No.5 GND
No.6 POWER ON-OFF
No.7 FAST CONTROL
No.8 SLOW CONTROL
No.9 NC
No.10 ORCHESTRAL R
No.11 +24V IN

2) Check SLOW/FAST control signal.

The LCD reads SLOW and FAST alternatively as shown below.

Check the voltage on the pin 7 and 8 of the rotary speaker connector.

10. Sound test

This test requires the oscilloscope and headphones. Insert the plug from the headphones into the [PHONES] socket.

1) Verify sine waves from the headphones.

The volume of the external speaker can be adjusted by the MASTER VOLUME knob. [FAST/SLOW] will switch the rotational speed of the connected rotary speaker. [BRAKE] will temporarily stop the rotation of the connected speaker. To resume rotation, press [BRAKE] again, or press [FAST/SLOW].

The rotary speaker effect of the organ voice will not be applied to the audio signal that is output from the ROTARY TONE CABINET connector.

1) The VK-77 judges that it is being connected to a rotary speaker when approx. DC 24 V is on pin 11 of the rotary speaker.

The LCD will display:

9. ROTARY XROTIARY: OFF

Apply approx. DC 24 V to the pin 11.

The LCD will read:

Verify that sound is output to pins 1, 2, 3 and 10 of the rotary speaker connector.

9. ROTARY XROTIARY: ON

Verify that sound is output to pins 1, 2, 3 and 10 of the rotary speaker connector.
11. Effects test

Connect the headphones to the [PHONES] socket.

The LCD displays:

B. EFFECT

After approx. 4 second of muting, sine wave will be heard.

Check for unusual sounds or noises for approx. 4 seconds until the LCD displays:

B. EFFECT

Press the [ ] button to proceed to the next test.

---

5) Verify the sawtooth wave sound from the right headphone.

A. SOUND ORGAN

--- RIGHT

Verifie the square wave sound from the right headphone.

A. SOUND ORGAN

--- RIGHT

Upgrade the version / バージョンアップ方法

**CAUTION!**

Be sure to read the following precautions before starting the upgrading.

1) Strictly follow the version-updating procedure described below and never turn off power until all steps are completed.

Otherwize, the VK-77 will not start again.

2) User data may be erased as the result of updating.

Save the user data.

**Preparation**

1) A program of latest version is available from the Roland service center in a form of 3.5" disk (17048945 VK-77 Ver.up).

2) The program is in SMF format. A compatible sequencer is required (SB-55).

3) File names:

- 0000000.mid
- 0000001.mid
- 0000002.mid
- 0000003.mid
- 00000017.mid

---

**NOTE!**

一覧に必ずお読みください。

（１）バージョンアップの手順を間違えたり、途中で電源を切ったりすると、バージョンアップが動かない場合があります。必ず後述の手順に従い、作業中は絶対に電源を切らないようにお願いいたします。

（２）バージョンアップ作業によってユーザーデータエリアが消去される場合があります。作業前に必ずユーザーデータのバックアップを行ってください。

---

**Upgrading the version / バージョンアップ方法**

1) A program of latest version is available from the Roland service center in a form of 3.5" disk (17048945 VK-77 Ver.up).

2) The program is in SMF format. A compatible sequencer is required (SB-55).

3) File names:

- 0000000.mid
- 0000001.mid
- 0000002.mid
- 0000003.mid
- 00000017.mid

---

**Validation!**

作業前に必ずお読みください。

（１）バージョンアップの手順を間違えたり、途中で電源を切ったりすると、バージョンアップが動かない場合があります。必ず後述の手順に従い、作業中は絶対に電源を切らないようにお願いいたします。

（２）バージョンアップ作業によってユーザーデータエリアが消去される場合があります。作業前に必ずユーザーデータのバックアップを行ってください。
To upgrade the VK-77 program

1. Connect: MIDI IN of VK-77 to MIDI OUT of SB-55. MIDI OUT of VK-77 to MIDI IN of SB-55.

Set the SB-55 to:
• MIDI CLOCK selector: Remote
• SOFT THROUG: OFF
• AUTO PLAY: OFF
• SINGLE PLAY button: ON
• SONG SELECT button: Select the second song.

2. Upgrading the version

While pressing the buttons [WRITE], [REGISTRATION LOCK] and [KEYBOARD ASSIGN EXT PEQ], turn on power.

3. The LCD shows the message as the updating completes. The LCD returns to the previous screen.

4. Press the [ENTER] or [ ] button.

5. Press the [WRITE] button. The LCD displays "Factory Reset."

6. To recover the factory settings, press the [ENTER] button.

7. The LCD will show: "Factory Reset Complete."

8. Press the [EXIT] button twice or press the [EDIT]. The [EDIT] indicator will be turned off and the program will exit the edit mode.

* Alternative method

The VK-77 will also load the factory settings when it is turned on in the following way:
• [VIBRATO AND CHORUS SELECT: C]
• [VIBRATO AND CHORUS TYPE: C]
• [KEYBOARD ASSIGN EXT -UPPER]

Now, factory settings have been loaded.

LOADING FACTORY SETTINGS / ファクトリー・リセットの方法

The following steps are designed to reset the information contained in the VK-77 to the factory settings.

1. Press the [EDIT] button. The [EDIT] indicator lights showing that the VK-77 is in the edit mode.

2. Press the [ ] button. The LCD will display the utility menu.

Parameter Group: UTILITY

3. Press the [ENTER] or [ ] button.

4. Press the [ ] and [ ] buttons. The LCD will display "Factory Reset."

5. Press the [WRITE] button. The LCD will display "Factory Reset Complete."

6. To recover the factory settings, press the [ENTER] button.

7. The LCD will show: "FACTORY SETTING COMPLETE."

SENDING AND RELOADING DATA / データのセーブとロード

Sending the settings of the VK-77 as MIDI data (bulk dump)

VK-77の設定をMIDIデータとして送信する (バッチ・ダンプ)

Registrations, orchestral voices and system settings made on the VK-77 can be saved on a sequencer.
This feature is useful when current settings are to be modified extensively but saved for future use.


2. Perform the bulk dump in the edit mode.

2.1 Press the [EDIT] button. The [EDIT] indicator lights showing that the VK-77 is in the edit mode.

2.2 Press the [ ] button. The [EDIT] indicator lights showing that the VK-77 is in the edit mode.

Parameter Group: UTILITY

Parameter Group: UTILITY

Parameter Group: UTILITY
2.3 Press the [ENTER] or [ ] button.
2.4 Using the [ ] and [ ] buttons, display "Bulk Dump".

Bulk Dump: All:

2.5 Using the [ ] and [ ] buttons, select the information to be output.

ALL: outputs all VK-77 information.
Regist: outputs the information stored in the registration.
The desired registration can be selected (see step 2.6 below).
Orch: outputs the orchestral voice settings.
Desired setting can be selected (see step 2.6 below).
System: outputs the VK-77 system settings.

2.6 After selecting Regist or Orch, select the information to be output by using the [ ], [ ], [ ] and [ ] buttons.

Once the information is selected, start the recording on the sequencer.

2.8 Press the [ENTER] button and the information is output to the [MIDI OUT].

Bulk Dump: Executing...

2.9 When the data is transferred to the sequencer, the LCD displays "Complete". Stop the sequencer.

2.10 Press the [EXIT] button twice, or press the [EDIT] button.
The [EDIT] indicator turns off and the VK-77 exits the edit mode.

• Reloading saved data
To load the data saved on the sequencer back to the VK-77, first connect the [MIDI OUT] of the VK-77 to the [MIDI IN] of the sequencer, and then [MIDI IN] of the VK-77 to the [MIDI OUT] of the sequencer.

The display of the VK-77 will occasionally show messages regarding a special operation, or error messages that indicate that an operation was incorrect or could not be performed. This section explains the meaning of each messages/error messages, and describes the action that you should take. Carefully read the explanation and take the appropriate measures.

ERROR MESSAGES / エラーメッセージ

The display of the VK-77 will occasionally show messages regarding a special operation, or error messages that indicate that an operation was incorrect or could not be performed. This section explains the meaning of each messages/error messages, and describes the action that you should take. Carefully read the explanation and take the appropriate measures.
BLOCK DIAGRAM / ブロック図
MAIN BOARD XP2,3
MAIN BOARD AD
CIRCUIT BOARD / 基板図
MAIN BOARD ASSY (71124445)

View from component side.
MAIN BOARD ASSY (71124445)

View from foil side.
CIRCUIT DIAGRAM / 回路図
ANALOG BOARD ASSY (71124467)
PEDAL BOARD ASSY (71232267)
MIDI BOARD ASSY (71124489)
CIRCUIT BOARD / 基板図
MIDI BOARD ASSY (7124489)/ ANALOG BOARD ASSY (71124467)/ JACK BOARD ASSY/
VOLUME BOARD ASSY (71124490)/CANNON BOARD ASSY (71231056)/
PEDAL BOARD ASSY (71232267)/ PHONES BOARD ASSY (71124501)

CANNON BOARD ASSY (71231056)  MIDI BOARD ASSY (71124489)  PHONES BOARD ASSY (71124501)

VOLUME BOARD ASSY (71124490)  JACK BOARD ASSY  ANALOG BOARD ASSY (71124467)  PEDAL BOARD ASSY (71232267)
PANEL C BOARD ASSY (71124534)
PS BOARD ASSY (71231034)
接続図

- PANEL A BOARD ASSY (71124512)
- PANEL B BOARD ASSY (71124523)
- PANEL C BOARD ASSY (71124534)
- PANEL D BOARD ASSY (71124545)
- PS BOARD ASSY (71231034)
- INLET BOARD ASSY (71231078)

接続図は、各部品の関係を示しています。
CIRCUIT BOARD / 基板図
UPPER H-BAR BOARD ASSY (71231012)/ LOWER H-BAR BOARD ASSY (71231001)
CIRCUIT BOARD / 基板図
REGIST L BOARD ASSY (71230934)/ REGIST R BOARD ASSY (71230945)

View from component side.

View from foil side.
KEYBOARD PARTS LIST / 鍵盤パーツリスト

<table>
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<th>No.PARTS No.</th>
<th>PARTS NAME</th>
<th>Qty.</th>
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<td>SK-9 NATURAL KEY EB (WEIGHT)</td>
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<td>SK-9 GUIDE</td>
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<td>SK-961 PWB HI ASSY</td>
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<td>70899323</td>
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<tr>
<td>40233545</td>
<td>3x10mm BINDING VWH ZC</td>
<td>13</td>
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</tbody>
</table>

＜Attaching the RUBBER SWITCHES and PCB＞

To fasten the SK-9 PWB, be sure to use 3*10mm BINDING VWH (PART No.40233545).

1) Turn the chassis over as shown in Fig.1. Next, place 4 pieces of RUBBER SWITCH 12P in turn, on the chassis from the left end (the bass side of keyboard), aligning them with the long holes provided on the chassis. At this point, be sure that the air-escape grooves of each RUBBER SWITCH are positioned at the respective air-escape grooves on the chassis. (See Fig.2)

Then on the right side (the high note area), place RUBBER SWITCH 13P in the same way.

＜RUBBER SWITCH および基板の取り付け方法＞

SK-9の基板固定用ビスは、必ず3*10mm BINDING VWHを使用してください。

1) キャビネットにシュリンクを巻きつける。次に RUBBER SWITCH 12P を長穴を合わせて左側（鍵盤の低音部）より順に4つシュリンクに配置します。

このとき RUBBER SWITCH とキャビネットの穴内位置が合っていることを確認してください。(Fig.2) そして右側（高音部）には RUBBER SWITCH 13P を同様にして配置します。
2) Aligning the cutouts in the PWB with the lugs on the chassis, put one side of the PCB into the chassis hooks. Place the PCB on the Chassis so that the chassis positioning pins fit into the positioning holes. (See fig.3) At this point, the chassis positioning reference pin should first be fitted into the hole. There are two PCBs, LOW and HI, as shown in fig.4. The Chassis positioning reference pins are located near the connector each of the LOW and HI PCBs.

3) Then, using the screws, fasten the LOW and HI PCBs to the chassis from the center of the keyboard, that is, from the LOW PCB as shown in fig.5. While you are screwing down the PCBs, it may float from the chassis. To avoid this, after screwing in the PCB at the center of the keyboard, screw down opposite ends and then screwing in other areas in the middle of the PCB. (See fig.5) In addition, the PCBs may be warped by soldering, etc. It is recommended that each PCB be fastened with screws while holding down the middle of the PCB lightly. Finally, screw down the adjacent area between the LOW and HI PCBs.

Note) When using an electric screwdriver, be careful of the torque. If excessive force is applied, the PCB may break or chip. (Suitable torque: 8kgf-cm)

2) 次にPWBの切り欠き部とシャーシの凹部を对応としてシャーシフックにPWB端面を並び込み、シャーシ位置決めピンにPWBの位置決め穴が合うようにPWBを固定します。（Fig.3参照）このとき、シャーシ位置決めピンを最初に合わせるようにしてください。PWBは、Fig.4のようにLOW、HIの2種で構成されており、シャーシ位置決め基準ピンはLOW、HIともにコネクタ付近に配置されています。

3) 次に、PWBLOW、HIともに鍵の中央部1および2、3の順に取り付けてください（Fig.5参照）。鍵がフック付け等によってソリを生じていることがあるため、中央部を軽く押さえながらビス止めするように。最後にPWB間隔部をビス止めします。

「鍵の取り外し方」
鍵の先端を押さながら側面のU字溝（Fig.6、6個溝）にラジオペンチを差し込み、矢印Aの方向へ押し込みます。

「鍵の取り付け方」
シャーシにスプリングをはめてから、鍵をFig.7のように置き、点線部分を矢印Bの方向に押します。
CIRCUIT DIAGRAM / 回路図 (SK-961-D / SK-961-F)
KS-77(1st) PARTS LIST & HOW TO ASSEMBLE THE STAND /
KS-77(1st) のパーツリストと組み立て方法
PARTS LIST / パーツリスト

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<th>Description</th>
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<td>15</td>
<td>17048638</td>
<td>HEAD</td>
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How to Assemble the Stand / KS-77(1st) 組み立て方法

1. Using the supplied hexagon wrench, loosen the two screws shown below.

2. As shown below, first remove the thumb screws from the support rods. Then, screw the support rods into the stand, while keeping them tilted inward by approximately 10 degrees.

3. As shown below, lift up the central column (it should turn smoothly if the screw was loosened enough in step1).

4. As shown below, rotate the arms of the stand, and insert the tips of the support rods through the holes on the arms. Then, screw in the thumb screws.

1. 付属の六角レンチで、次の2ヶ所のボルトを緩めます。

2. 次のように、シャフトからサムスクリューを外し、シャフ トをスタンラ角10度傾けながらねじ込みます。

3. 次のように、スタンドの柱を上昇させながら立てます。

4. 次のように、スタンドの腕を回転させ、シャフトの上端を 腕の穴に差し込み、サムスクリューをねじ込みます。
5. As shown below, tighten the two screws with the wrench.

6. Place the stand where it is level and sure to remain stable. If the stand is not level, adjust the height of either side using the height adjusting screws on the bottom of the stand's legs.

### CAUTIONS/ ご注意

- **Fasten the screws, support rods and thumb screws securely.** Otherwise, the stand could topple and/or cause injury. Since the screws and other parts may become loose over time, during normal use of the stand, try to make a habit of periodically tightening them up again when necessary.

- **Do not place the stand in a location that is not stable, or is inclined.** The stand must be carefully placed so it is level and sure to remain stable. Otherwise, it may topple, causing injury.

- **Do not sit on, or otherwise get onto the stand.** In households with children, parents should be especially careful, and never allow a small child to play near, or climb onto the stand. Injury could result if the stand is toppled.

- **Make sure that you place only an VK-77 on this stand.** If used for keyboards other than the VK-77, or for other objects, the weight distribution may be incorrect. This can cause the stand to topple, which could lead to injury.

- **When placing a keyboard onto the stand, always have two or more persons take part in lifting it.** Try to keep it level at all times. Be careful so that it is not dropped on your feet or hands.

- **In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for its safe use.** Do not allow a small child to play near the stand.

- **When moving this unit, you must detach the VK-77 from the stand and move each unit separately.** Before removing the VK-77 from the stand, please make sure that all cables (power cables etc.) have been disconnected.

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### Mounting the VK-77 on the KS-77/ VK-77 と KS-77 の組み立て

1. Align the connection pins located on the lower panel of the VK-77 (one connecting pin located at the right and another at the left) with the slotted holes of the stand, and slide the VK-77 backward to hook the pins into the slots.

2. Tighten the knob bolts to fasten the VK-77 to the stand (two bolts; one left and one right).

* When mounting the VK-77, grasp the VK-77 at the front and back, and be careful not to pinch your hand.

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### Using the cable clip and cover of the stand/ スタンのコード・クリップとコード・カバーの使用方法

1. As shown in the diagram, hook the various cables from the VK-77 through any or all of the three cable clips attached to the central support of the stand.

2. Align the two holes of the cable cover with the two screws of the stand support, and hook the cover onto the support.

* By using the cable cover you can tidy up the appearance of the cables.

* If you do not wish to use this feature, you may use a screwdriver to remove the screws and cable clips.

---

### Cable Cover/コード・カバー

- **Knob Bolt/ノブボルト**
- **Cable Clip/コード・クリップ**
- **Cable, etc./接続コードなど**

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### Cable Clip/コード・クリップ

- **Connection Pin/接続用ネジ（コネクティング・ピン）**

---

### Cable Cover/コード・カバー

1. VK-77 本体の後部にある接続用ネジ（左右各1個）をステントの接続用装置に取付、VK-77本体を後方にずらして接続用ネジを接続用装置に引っ掛けてください。

2. ノブボルトでVK-77本体とスタンドを固定します（左右 各1個）。

*組み立て時には、VK-77本体の前と後をつつくんで、手をはさまないように注意してください。
### KS-77(2nd) PARTS LIST & HOW TO ASSEMBLE THE STAND / KS-77(2nd) のパーツリストと組み立て方法

**PARTS LIST / パーツリスト**

<table>
<thead>
<tr>
<th>NO.</th>
<th>PARTS CODE</th>
<th>PART NAME</th>
<th>DESCRIPTION</th>
<th>Q'TY</th>
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<tr>
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<td>2</td>
<td>17048476</td>
<td>ARM PIPE(2nd)</td>
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<td>3</td>
<td>17048461</td>
<td>CENTER PIPE</td>
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<td>17048477</td>
<td>FRONT PIPE</td>
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<td>5</td>
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<td>THUMB SCREW(2nd)</td>
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<td>ADJUSTER SCREW</td>
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<td>TAPPING SCREW</td>
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<td>CORD CLIP</td>
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<td>SCREW M5X10</td>
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<td>13</td>
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<td>HEAD</td>
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### How to Assemble the Stand /KS-77(2nd) 組み立て方法

1. Using the supplied hexagon wrench, loosen the two screws shown below.

2. As shown below, first remove the thumb screws from the support rods. Then, screw the thumb screws into the stand with the wrench, while keeping the support rods tilted inward by approximately 10 degrees.

3. As shown below, lift up the central column (it should turn smoothly if the screw was loosened enough in step1).

4. Rotate the arms of the stand as shown below. Then, after aligning the holes on the tips of the support rods with the holes on the arms, screw in the thumb screws, using the wrench.

4. 次のように、スタンドの腕を回転させ、フロントパイプの上部を親の穴に合わせて、六角穴付ボルトを六角レンチでねじ込みます。
1. VK-77 本体の前面にある接続用ネジ（左右各1個のコネクティング・ピン）を、スタンドの接続用部品に合わせ、万科-77 本体を後方にずらして接続用部品に引っ掛けます。

2. ノズル部で VK-77 本体とスタンドを固定します（左右各1箇所）。

組み立て時は、VK-77 本体の前後をつつけで、手をはさまないように注意してください。

5. 大角レンチで、次の2ヶ所のボルトをしっかり緩めます。

6. ガイドの上に、次の2ヶ所の穴を設置します。スタンドが安定していない場合は、二眼調節ネジでスタンドを安定させてください。

6. スタンドを安定させた水平な場所に設置します。スタンドが安定していない場合は、二眼調節ネジでスタンドを安定させてください。

CAUTIONS/ご注意

- 電子部品をしっかりと確保してください。緩んだ状態で使用すると、キーボードが落とされたり、転倒したりして、けがの原因となることがあります。また、長時間使用していると、ボルトなどが緩むことがあります。時にはボルトなどを持ってください。

- このスタンドを、くつろいだ場所や狭い場所に設置しないでください。必ず安定した水平な場所に設置してください。転倒した場合、けがの原因となります。

- このスタンドの上に乗らないでください。特に、子供のいるご家庭では注意してください。転倒した場合、けがの原因となります。

- このスタンドの上には、VK-77 だけを設置してください。VK-77 以外のキーボードや、キーボード以外のものを設置した場合、バランスが取れて重さまたは、転倒したりして、けがの原因となることがあります。

- キーボードは、必ず2人以上で水平に設置してください。このとき、台をはずしたり、足の上に置かないように注意してください。

- お子様のいる家庭で使用する場合、お子様の取り扱いや、上に置かないように注意してください。必ず、大人の手が使える場所に設置しておください。

- 本体を移動する場合は、必ずVK-77 本体とスタンドを分離させて移動してください。

Before removing the VK-77 from the stand, please make sure that all cables (power cables, etc.) have been disconnected.

Mounting the VK-77 on the KS-77/VK-77 との組み立て

1. Connect the pin located on the lower panel of the VK-77 (one connecting pin located at the right and another at the left) with the slotted holes of the stand, and slide the VK-77 backward to hook the pins into the slots.

2. Tighten the knob bolts to fasten the VK-77 to the stand (two bolts: one left and one right).

* When mounting the VK-77, grasp the VK-77 at the front and back, and be careful not to pinch your hand.
Change Information / 変更案内

Products with the new main board: S/N ZM30330 and up

Field replacement procedure; see below.

When replacing the main board with a board of the suffix 02, take the following steps.

1. Replace the wirings 1 and 2:
   - Wiring 1: between CN10 on the main board and CN10 on the panel A board
     Use 01902956 FUJI card 24x350-A6.0BRR-P1.25-HBL10-S-C.
   - Wiring 2: between CN8 on the main board and LCD unit
     Use 01902967 FUJI card 14x800-A6.0BRR-P1.25-HBL10-S-C.

   Dress the wirings 1 and 2 as shown below.

2. Keep the shielding paper and metal panel absolute contact with one another.

3. Keep the shielding paper and metal panel absolute contact with one another.

4. Replace the top board with one having shielding.
   The products manufactured June 1999 and later have shielded top board.

   1. 1と2のワイヤリングを交換します。
   2. この様に金属パネルにシールド紙が密着するように固定して下さい。
   3. この様に金属パネルにシールド紙が密着するように固定して下さい。
   4. トップボードをシールド処理されたものに交換して下さい。