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SPECIFICATION

KEYBOARD
76 Weighted Keys with Touch-Sensitivity

KEYBOARD MODE
Whole, Layer

MAX. POLYPHONY
64 Voices

TONES
8 Tones with layer possibility
(Piano1, Piano2, E.Piano, Vibraphone, Harpsichord, Organ, Strings, Choir).

MASTER TUNING
Keys Tuning (0.1Hz Steps) 415.3Hz ~ 466.2Hz

TRANSPOSE
Key Transpose (-6 ~ +5 Semitone step)

EFFECTS
Reverb(On/Off) Chorus (On/Off)

METRONOME
Beat: 0, 2, 3, 4, 6
Volume: 8 levels
Sounds: 3 types

TRACKS
1 Track

SONG
1 song

NOTE STORAGE
Approx. 5,000 notes

TEMPO
Quarter note = 40 ~ 208

RESOLUTION
96 ticks per quarter note

CONTROL
Play/Stop, Rec, Tempo

RATED POWER OUTPUT
5W x 2

SPEAKERS
12cm x 2

CONNECTORS
Output Jacks (L/Mono, R)
Input Jacks (L/Mono, R)
Pedal connector x 2 (Damper, Soft)
Headphone Jack x 2 (Stereo)
MIDI In Connector, MIDI Out Connector

POWER SUPPLY
ACO - 12V 1A AC-Adaptor

POWER CONSUMPTION
1600mA

DIMENSIONS
1138(W) x 339 (D) x 108 (H) mm (without music stand)
1144(W) x 370 (D) x 767 (H) mm (with music stand)

WEIGHTS
10.5 Kg. (without music stand)
19.4 Kg. (with music stand)

SUPPLIED ACCESSORIES
AC-Adaptor
Owner's Manual
Pedal Switch (DP 2)
(See Parts List on page 5-6)

OPTIONS
Music Stand KS-EP-77

DISASSEMBLY

SELF TAP, SCREW 3,5x16 TCTCPRBZ cod. J2289131

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### No. | Part No. | Description
--- | --- | ---
1 | 7711507000 | VARN+SILK. TOP CABINET
2 | K2248125 | GRILL/F/LOUDSPEAKER
3 | 7711508000 | VARN+SILK. SOCKET SUPPORT
4 | K2198107 | PLASTIC MUSIC REST
5 | 7711501000 | MAIN PCB ASSY
6 | 7711502000 | CONTROL PCB ASSY
7 | 7711503000 | BEAT & TEMPO PCB ASSY
8 | 7711504000 | HEADPHONE PCB ASSY
9 | 7711504000 | VIBRATION DAMPER PL 45 SHORT
10 | 7697607000 | VIBRATION DAMPER PL 45 (SHORT)
11 | 7697607000 | 76-KEYBOARD ASSY TP/9P
12 | 7418103 | SPEAKER 4 OHM 120.20B/FX
13 | 7418103 | FELT WASHER I/D 7 E/D 13 TH. 1,5

#### (SCREW)

- **A** J2289112 | SCREW 3.5x13 TCTC H.8 BRUN.
- **B** J2289125 | SCREW 2.9x10 TCTC PR TROP
- **C** J2289115 | SCREW 3.5x9.5 TCTC PR TFR H.8
- **D** J2289108 | SELF LOCK. SCREW M3x10 TCTC H.6
- **E** J2289113 | NUT 3MA H.3
- **F** J2139102 | TOOTHED WASHER I/D 3
- **G** J2289102 | SELF TAP. SCREW 2.9x10 TCTC
### KEYBOARD PARTS LIST

**76 KEY TP/9P KEYBOARD ASSY (7697607000)**

<table>
<thead>
<tr>
<th>Ref</th>
<th>PARTS NAME</th>
<th>PARTS NUMBER</th>
<th>n.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KEY SPRING gr.63</td>
<td>J2179101</td>
<td>76</td>
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<tr>
<td>2</td>
<td>NATURAL KEY C5 (gr.10)</td>
<td>J2579112</td>
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<tr>
<td></td>
<td>NATURAL KEY D6 (gr.10)</td>
<td>J2579113</td>
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<tr>
<td></td>
<td>NATURAL KEY E7 (gr.10)</td>
<td>J2579114</td>
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<td>NATURAL KEY F1 (gr.10)</td>
<td>J2579115</td>
<td>7</td>
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<tr>
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<td>NATURAL KEY G2 (gr.10)</td>
<td>J2579116</td>
<td>6</td>
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<tr>
<td></td>
<td>NATURAL KEY A3 (gr.10)</td>
<td>J2579117</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>NATURAL KEY B4 (gr.10)</td>
<td>J2579118</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>NATURAL KEY C8 (gr.10)</td>
<td>J2579119</td>
<td>1</td>
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<tr>
<td></td>
<td>NATURAL KEY G (gr.10)</td>
<td>J2579121</td>
<td>1</td>
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<tr>
<td>3</td>
<td>MATT SHARP KEY (gr.10)</td>
<td>J2579193</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>SELF TAP SCREW 2.9x8 TCTPRBZ</td>
<td>J2289104</td>
<td>42</td>
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<td>5</td>
<td>12P RUBBER CONTACT</td>
<td>J2218523802</td>
<td>72</td>
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<td>LEFT CONTACT BOARD W/RUBBER ASSY</td>
<td>7695005000</td>
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<td>7</td>
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<td>8</td>
<td>PLASTIC CHASSIS</td>
<td>J2589101</td>
<td>1</td>
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<td>9</td>
<td>GUIDE BUSHING INFERIOR</td>
<td>J2359104</td>
<td>76</td>
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<td>10</td>
<td>GUIDE BUSHING SUPERIOR</td>
<td>J2258789</td>
<td>76</td>
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<td>11</td>
<td>1P CONDUCTIVE RUBBER LR 13/1</td>
<td>7625920000</td>
<td>1</td>
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* CONTACT BOARDS ARE COMPLETE WITH RUBBER CONTACTS

---

**STAND EXPLODED VIEW & PARTS LIST (KS-EP-77)**

---

**PART LIST**

<table>
<thead>
<tr>
<th>No.</th>
<th>Part No.</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>K1128121</td>
<td>RIGHT SIDE FRAME</td>
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<td>2</td>
<td>K1128122</td>
<td>LEFT SIDE FRAME</td>
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<td>3</td>
<td>K1148140</td>
<td>REAR CROSS BAR 1072 mm</td>
</tr>
<tr>
<td>4</td>
<td>K235810101</td>
<td>FOOT F/SIDE PANEL (STAND)</td>
</tr>
<tr>
<td>5</td>
<td>K2128113</td>
<td>KEYBOARD HINGE CHASSIS</td>
</tr>
<tr>
<td>6</td>
<td>J2329107</td>
<td>JOINT BOLT ASSY</td>
</tr>
<tr>
<td>7</td>
<td>J2289186</td>
<td>SCREW 3.5x16 TC PR TFR BRUN</td>
</tr>
<tr>
<td>8</td>
<td>J2329101</td>
<td>SCREW DRIVER TYPE 2</td>
</tr>
</tbody>
</table>
### Wiring, Cable

- **# K3468211** 2P CABLE (100) -1C From CN4 on JB to SPEAKERS
- **K3468159** 10P FLAT CABLE ASSY (72) -2C From CN5 on MB to CN1 on LCB
- **K3468162** 20P FLAT CABLE (56) -2C From CN6 on MB to CN2 on RCB
- **# 7711509000** 4P CABLE ASSY (18) -2C F2 D/D From CN4 on MB to CN103 on BTB
- **# 7711510000** 2P COAXIAL CBL ASSY (20) -2C F2 D/D From CN6 on MB to CN102 on CB
- **# 7711511000** 7P CABLE ASSY (68/60) -2C F2 From CN3 on JB to CN5 on PB + Left Speaker
- **# 7711512000** 7P CABLE ASSY (28) -2C F2 D/R From CN2 on MB to CN2 on JB
- **# 7711513000** 10P CABLE ASSY (24) -2C F2 D/R From CN3 on MB to CN101 on CB
- **# 7711514000** 11P CABLE ASSY (16) -2C F2 D/R From CN8 on MB to CN1 on JB

### Screw

- J2289122 SCREW 2.2X8 TC BRUN
- J2289102 SELF TAP SCREW 2.9X10 TC
- J2289125 SCREW 2.9X10 TC PR TROP
- J2289131 SELF TAP SCREW 3.5X16 TC TOP\#6
- J2289118 SCREW 2.9X16 TC PR BRUN
- J2289108 SELF LOCK SCREW M3X10 TCTC H.6
- J2289109 SELF LOCK SCREW M4X14 TCTC H.9.5
- J2289115 SCREW 3.5X9.5 TC PR TPR H.8
- J2289112 SCREW 3.5X13 TCTC H.8 BRUN
- J2289113 NUT 3MA H.3

### Packing

- K26038171 RIGHT POLYST. END-SIDE EP-75
- K26038172 LEFT POLYST. END-SIDE EP-75
- K2678105 CARTENE ENVELOPE HD 140X57
- K2678106 POLYTEH ENVELOPE 4OX55
- # K2616213 OUTER PACKING EP-77

### Miscellaneous

- K2268128 RED FELT MM. 12050X7X1
- # K2268196 ANTIQUE Q COVER PL45 EP-77/97
- # K2268197 VIBRATION DAMPER PL45 (SHORT) EP77/97
- # K2248150 FELT WASHER ID 7 E D 13 TH 1.5
- 1342682301 POWER SUPPLY SOCKET HOLDER N°2
- J1235102 TOOTHED WASHER VD 3
- K2168102 SPACER FOR LED H.2.8 D.5.5
- K2168105 SPACER FILLED H.12 HEX.
- # K2168114 LED SPACER H.1.8 E.D.0
- J3359101 SPACER 3M ART. S5012

### Accessories

- # K6018362 ASSEMBLY INSRUCTIONS KS-EP-77
- 7710610000 PEDAL DP-2
- # K2448106 POWER ADAPTOR ACO 230V 12V 1A for (230V)
- # K2448107 POWER ADAPTOR ACO 230VE 12V 1A for (230VE)
- # K2448109 POWER ADAPTOR ACO 120V 12V 1A for (117V)

### Parts List Stand KS-EP-77

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Q.ty</th>
</tr>
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<tbody>
<tr>
<td>K2358101</td>
<td>FOOT FISIDE PANEL (STAND)</td>
<td>2</td>
</tr>
<tr>
<td>K1128212</td>
<td>RIGHT SIDE FRAME (2ND VERSION)</td>
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</tr>
<tr>
<td>K1128212</td>
<td>LEFT SIDE FRAME (2ND VERSION)</td>
<td>1</td>
</tr>
<tr>
<td>K1148140</td>
<td>REAR CROSS BAR 1072 MM. (2ND VERSION)</td>
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</tr>
</tbody>
</table>

**Screw**

- J2289186 SCREW 3.5X16 TCPR TFR H.8 BRUN
- J2329101 SCREW DRIVER TYPE 2
- J2329107 JOINT BOLT ASSY

**Packing**

- K2638134 RIGHT POLYST. END-SIDE
- K2638135 LEFT POLYST. END-SIDE
- K2638136 MIDDLE POLYST. END-SIDE
- K2668102 CARTON PLATE MM. 1440X440

**Miscellaneous**

- # K2128113 KEYBOARD HINGE CHASSIS

**Accessories**

- # K6018362 ASSEMBLY INSRUCTIONS KS-EP-77
PHONES PCB ASSY & CIRCUIT DIAGRAM

ASSY 7711504000

View from component side

JACK PCB ASSY

ASSY 7711505000

View from component side
CIRCUIT DIAGRAM (MAIN PCB ASSY)
If device error does not occur, version will be displayed after Device Check. If device error occurs, press the [Demo] button. Then, version will be displayed.

| Version Display | 1.00 1.01 1.02 1.03 1.04 1.05 |
|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Demo | @ | @ | @ | Metro | # | # | # |
| Metro | - | - | - | * | * | * | * |
| Play | - | * | * | - | - | * | - |
| Rec | * | - | * | - | - | - | - |

And now, you can find out ep-77 by checking Cho/Rev LED.

ep-77

Chorus LED @
Reverb LED -

Press the [Demo] button, then you can go Button/LED Check.

2. Button/LED Check

At first, all LED turn on. By pressing each buttons, each LED turn off and piano sound is on. After all LED is off, you can go to Effect Check.

Each button's sound:
- [REV]=C4
- [CHO]=C#4
- [Tone1]=D4
- [Tone2]=D#4
- [Tone3]=E4
- [Tone4]=F4
- [Tone5]=F#4
- [Tone6]=G4
- [Tone7]=G#4
- [Tone8]=A4
- [Sound]=A#4
- [Metro RED]=B4
- [Metro GRN]=C5
- [PLAY]=C#5
- [Rec]=D5
- [DEMO]=D#5

You can jump to Effect Check by pressing the [Rev]+[Demo] buttons.

3. Effect Check

* Demo --- Go to Panning Check.
# Metro --- Make a piano sound with Chorus effect.
# Play --- Make a piano sound with Reverb effect.
# Rec --- Make a piano sound with Resonance effect.

4. Panning Check

* Demo --- Go to Tempo & Beat Check.
# Metro --- Make a C3 sine-wave sound from left.
# Play --- Make a C4 square-wave sound from right.
# Rec --- Make a C4 sine-wave sound from center.
5. Tempo & Beat Check (A/D)

<table>
<thead>
<tr>
<th>Tempo Knob</th>
<th>Rev</th>
<th>Cho</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>@</td>
</tr>
<tr>
<td>Center</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>@</td>
</tr>
<tr>
<td>Right</td>
<td>-</td>
<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beat knob</th>
<th>Metro</th>
<th>Play</th>
<th>Rec</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>-</td>
<td>*</td>
</tr>
</tbody>
</table>

Press the [Demo] button, then you can go to Pedal/MIDI Check.

6. Pedal/MIDI Check

Connect the MIDI Out to the MIDI In.

- Demo
  - @ Metro --> Display Soft Pedal status. (6-1)
  - @ Play --> Display Damper Pedal status. (6-1)
  - * Rec --> Display MIDI status. (6-2)

After detecting each pedal's A/D max(7FH)/min(00H) value and MIDI connection on/off, you can automatically exit TestMode.

(6-1) Notation of Pedal status:
#Unchecked. @
#A/D value is max(pedal is depressed): *
#A/D value is min(pedal is released): -

#If two pedal's A/D value move simultaneously, the pedal status returns to be Unchecked.
#If A/D value is max(7FH), bell sound is on.

(6-2) Notation of MIDI status:
#Unchecked. @
#While connecting MIDI Out to MIDI In. *
#While cutting off MIDI connection. -

Press the [Rev]+[Demo] buttons. Then, you can exit TestMode.

7. End

All LED is blinking.
If you press the [Demo] button, you can start TestMode once again.