TABLE OF CONTENTS

GENERAL VIEW ................................................................. 1
SPECIFICATIONS ............................................................. 1
LOCATION OF CONTROLS ................................................... 2
EXPLODED VIEW PARTS LIST ........................................... 2
EXPLODED VIEW ............................................................. 3
PARTS LIST ........................................................... 4
STAND PARTS LIST (KS-305) .................................................... 7
KS-305 STAND EXPLODED VIEW (KS-305) ......................... 7
STAND EXPLODED VIEW PARTS LIST ............................... 7
PEDAL UNIT EXPLODED VIEW ......................................... 8
CONNECT BOARD PARTS LIST ........................................... 8
CONNECT BOARD CIRCUIT DIAGRAM ................................. 8
STAND ASSEMBLY (KS-305) .............................................. 9
KEYBOARD PARTS LIST .................................................... 10
KEYBOARD DISASSEMBLY ................................................ 10
KEYBOARD PA-4A88-C2 CIRCUIT BOARD ......................... 11
KEYBOARD PA-4A88-C2 CIRCUIT DIAGRAM ...................... 12
TEST MODE ............................................................ 12
BLOCK DIAGRAM .......................................................... 15
CIRCUIT BOARD (MAIN) ................................................. 16
CIRCUIT DIAGRAM (MAIN) .............................................. 17
CIRCUIT BOARD (PANEL L) .............................................. 18
CIRCUIT DIAGRAM (PANEL L) ........................................... 19
CIRCUIT BOARD (PANEL R) .............................................. 20
CIRCUIT DIAGRAM (PANEL R) ........................................... 21
CIRCUIT BOARD (FRONT JACK, ANALOG, INLET) ......... 22
CIRCUIT DIAGRAM (FRONT JACK, ANALOG, INLET) ....... 23
CIRCUIT BOARD (MIC) .................................................... 24
CIRCUIT DIAGRAM (MIC) ................................................ 24

GENERAL VIEW

Copyright © 1998 by ROLAND CORPORATION
All rights reserved. No part of this publication may be reproduced in any form without the written permission of ROLAND CORPORATION.
EXPLODED VIEW
PARTS LIST

CONSIDERATIONS ON PARTS ORDERING

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

NOTE:
The part marked # are new (initial parts).

SAFETY PRECAUTION:
The parts marked with an asterisk have safety-related characteristics.

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

NOTE:
The part marked # are new (initial parts).

SAFETY PRECAUTION:
The parts marked with an asterisk have safety-related characteristics.

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

NOTE:
The part marked # are new (initial parts).

SAFETY PRECAUTION:
The parts marked with an asterisk have safety-related characteristics.

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

QTY
PART NUMBER
DESCRIPTION
MODEL NUMBER

NOTE:
The part marked # are new (initial parts).

SAFETY PRECAUTION:
The parts marked with an asterisk have safety-related characteristics.
NOTE: PAB3 ANALOG BOARD includes the following parts.
# 01346412 PAB HOLDER on PAB (1 pcs.)
# 01346423 HEATSEIK on PAB (1 pcs.)
22195973 POWER AMP HOLDER on PAB (1 pcs.)
22195975 TR HOLDER on PAB (5 pcs.)
# 01349912 WIRING 12X130-P2.0-PH-SAN-F on PAB (1 pcs.)
# 01349978 WIRING 7X250-P2.0-PH-SAN-F on PAB (1 pcs.)
# 01349990 WIRING W4 on PAB (1 pcs.)
71011867 PAB3 FRONT JACK BOARD

NOTE: PAB3 FRONT JACK BOARD includes the following parts.
# 01344545 JACK HOLDER

71011901 MIC BOARD ASSY

NOTE: MIC BOARD ASSY includes the following parts.
# 01344489 MIC HOLDER

71011878 PAB3 INLET 100/117V

NOTE1: PAB3 INLET 100/117V includes the following parts.
23425740 AC INLET INL-8 10A/125V 2P PO
12559444 FUSE 5x20 SB 4 4A/125V
00129367 INLET HOLDER

NOTE2: Replacement INLET BOARD "PAB3 INLET ASSY" is for 100/117V version exclusive use.
When using "PAB3 INLET ASSY" for 230/240V version, be sure to make the following modifications.
1. INLET BOARD FOR 100/117V version differs from 230V version in FUSE system.
Replace fuse(F1 on INLET BOARD) to specific one.(#12559550  FUSE 5x20 S506 1.6A T1.6AL250V for 230V version) See TABLE A.
2. For safety standards, place fuse seal (#40013712 FUSE SEAL T1.6AL250V #407) at the proper place of the INLET BOARD.
The location of fuse seal is over the following printing (see fig A) of the PWB.
When necessary, please order fuse seal separately from INLET BOARD.

TABLE A

| 100V/117V | FUSE 5x20 SB 4 4A/125V |
| 230V/240V | FUSE 5x20 SB 4 4A/125V |

Fig A 3.15A/125V

IC

01226012 DRAM T5C14266DS-64VYEL IC 023.23 on MB
01344278 CPU H8S0670Q1U372F IC on MB
00502328 CUSTOM IC M60605-0501FP IC on MB
00897078 CUSTOM IC RA01-005 (TC170C200AF-005) IC ON MB
00129278 CUSTOM IC 551806PB IC ON MB
00628030 FLASH MEM LHD18040U1-70 IC 088 on MB
# 01344245 MASK ROM LHM168P1 WAVE IC 088 on MB
15189150 BIPOLAR OP M2516AL IC 1.4 on PAB/IC5.8 on PLB
15189189 BIPOLAR OP UPC4700A IC 3.4 on MII/IC7.8,9 on PAB
15289105 BIPOLAR OP UPC4700G2-72 IC 12 on MB
15289085 CMOS T757X5FTE1S(L) IC 11 on MB
00127490 CMOS T7W06F(T6E12L) IC 19 on MB
15349111 CMOS T7W06F(T6E12L) IC 17 on MB
15289402 REGULATOR T76809F(T6E12L) IC 088 on MB

15169151 CMOS TC74KC00AP IC 0301 on FIB
15169550 CMOS TC74KC18AP IC 833 on PLB
15169550 CMOS TC74KC574AP IC 01 on PLB
00232567 DAC PS068A1-72 IC on MB
01238012 DIGITAL ECHO IC M65850P IC 01 on MIC
51599094 IC M33105L-600V IC 13 on PAB/IC9 on PLB
00780645 ICM55400LP R5422 TRANSCEIVER IC 1/30 on FIB
15229760 DSP COUPLER PC910X IC 01 on PAB/IC030 on FIB
# 01346047 POWER AMP MKR1-040 IC 012 on MB
15199231 REGULATOR UCP74L15-1 IC 01 on MIC
15191767 REGULATOR U7M12ML 0.5A/12V IC 01 on PAB
15191791 REGULATOR U7M12ML 0.5A/12V IC 01 on PAB
# 01349412 REGULATOR UCP434A15PH IC 01 on MB
00456856 TR-ARRAY TD62593AP IC 01 on PLB
15169040H TTL 74LS40P IC 011 on PAB

CAPACITOR

# 01340389 BLOCK CAPACITOR EOS1VP632BB C93,51 on PAB
# 01453278 CERAMIC CAPACITOR DE3070E-473M-KH C401 on IB
# 01452189 CERAMIC CAPACITOR ECKDHE472ZF C5,44 on PAB
# 15639144MO CHEMICAL CAPACITOR ECAI/CMS662 C22 on PAB

TRANSISTOR

00898201 TRANSISTOR RN2421(TE515L) Q1 on MB
15119132 TRANSISTOR 2SA1015-GR(TPE2) Q3,4,5,15 on MB
15119015 TRANSISTOR 2SB676CTZ Q17 on PAB
15129152 TRANSISTOR 2SC1815-GR(TPE2) Q1,8 on PAB
15129623 TRANSISTOR 2SD667CTZ Q16 on PAB
15139124 TRANSISTOR 2SK363-GR(TPE2) Q6,7,11,12 on PAB
15139194 TRANSISTOR DT124SATP Q22,43 on PAB
15119163 TRANSISTOR RN2227(TPE4) Q4,260 on PAB/Q3,5 on PLB/Q5,7 on PAB

DIODE

15039175 BRIDGE DIODE D95A240-240V/200V D1,13 on PAB
# 01121523 ARRAY DIODE DA24H-T106 D2-4 on MB
150391950 RECTIFIER DIODE 5500G(TPA3) D3,4,11-14 on PAB
15019126 SWITCHING DIODE 1S133-T7-77 D5,8,18,22-24 on PAB/D1,4,13-17,20,21 on PLB
15019126 SWITCHING DIODE 1S133-T7-77 D1-4 on MIC/D1,2 on FIB/D1-12 on PAB
15019145 ZENER DIODE MTZ273-308 on PAB/D303,308 on FIB
15019444 ZENER DIODE MTZ273-308 on FIB/D17,20 on PAB

OPTICAL DEVICE

# 01121489 LED SP-325MVXT31 LED17 on PLB/LED22 on PAB
15039245 LED SEL2105 TPS LED14,15,16 on PAB/LED14,15,16 on PRB
# 01345445 LED L-2344AVVID D3,4 on FIB/D3,4 on PLB
00239767 LED LB-301F/V

RESISTOR

# 01021262 R ARRAY EXVWV1010V RA3,5,19,30-32,38-40 on MB
01031575 R ARRAY EXVWV470V RAB-24 on MB
15039695 R ARRAY RCE51A05G7A RAB-1,4,6,22-28 on MB
15409113 R ARRAY EXVWV1030V RA18-20,24-34,35 on MB
# 0104278 CARBON RESISTOR ERC31V13311T R1,2 on PAB

POTENTIOMETER

00671556 40MCM SLIDE POT. EWAN76X030B1410K8X2 VR1 on MB
# 01348189 125MVR ROTARY POT. EV5035HEB114 VR1 on MB

CRYSTAL

00894023 MA3-406 20.000MHZ TE24 CRYSTAL X3 on MB
00901912 MA3-406 24.000MHZ TE24 CRYSTAL X2 on MB
RELAY
- 00899245 RELAY G5Z-2A DC12V/5A at PAB
- 00452034 FERRITE-BEAD BK2135HM102-T L1-20 on MB
- 12449380 FERRITE-BEAD EXC Eldr25V L301-311 on MB

FILTER
- 12559550 FUSE 5X20 3.6A T1.6AL250V P1 on IB
- 12594454 FUSE 5X20 3.6A T1.6AL250V P1 on IB

FUSE/FUSE HOLDER
- 12559445 FUSE 5X20 SB 5 5A/125V F3,4 on PAB

CONNECTOR
- 01345737 100V-ST CN201 on EQ
- 13369928 53253-0610 CN11 on PAB/CN1 on MIC

WIRING,CABLE
- 00347201 FUJI CARD 14X180-A6.0BBR-P1.25-HBL10-S
- 00347234 FUJI CARD 16X180-A6.0BBR-P1.25-HBL10-S

ACCESSORIES
- 0029367 SHOULDER SCREW 1165
- 40011712 WOOD ANCHOR NUT B M4x11.5 ZC
- 40011723 WOOD ANCHOR NUT B M5x12 ZC
- 40012634 WOOD ANCHOR NUT B M6x3.5 ZC
- 40011123 BINDING TAPITTE B 4x0 BZC
- 40012178 TPA BIND 3x12 BZC
- 40012145 TPA TRUSS 4x14 BZC
- 40012490 PAN TAPITTE P 4x10 BZC
- 40011323 PAN TAPITTE P 3x10 BZC
- 40023445 PAN MACHINE SCREW W/SWPW 4x25/16 ZC
- 40126512 BINDING TAPITTE B WH 4x25/20 BZC W=11
- 40012054 TRUSS MACHINE SCREW 4x18 BZC
- 40011101 BINDING TAPITTE B 3x8 BZC

PACKING CASE
- 01344601 PACKING CASE 117/230/240V ONLY
- 01344590 PACKING CASE (FOR JAPAN) 100V ONLY
- 00908112 PAD L
- 00908123 PAD R

MISCELLANEOUS
- 0013712 FUSE SEAL T1.6AL250V #407
- 04017089 CAUTION SEAL CSA
- 04012490 CAUTION SEAL FUSE

TRANSFORMER
- 01493122 POWER TRANSFORMER UNIVERSAL

AC INLET
- 25245740 INL-8 10A/125V 2P-PO JK401 on IB

SCREW
- 40011112 BINDING TAPITTE B 3x10 BZC
- 40012256 BINDING TAPITTE B 3x10 ZC
- 40011056 BINDING TAPITTE B 3x6 ZC
- 40011067 BINDING TAPITTE B 3x0 ZC
- 40011267 BINDING TAPITTE P 3x6 ZC
- 40012534 BINDING TAPITTE S 3x6 BZC
- 22223542 CONNECTING PIN
- 22187056 JACK NUT 2
- 40011940 PAN MACHINE SCREW W/SWPW M3x6 BZC
- 40012980 PAN MACHINE SCREW W/SWPW M3x16 ZC
- 40012990 PAN MACHINE SCREW W/SWPW M3x16 ZC
- 40012867 PAN MACHINE SCREW W/SWPW M3x8 ZC
- 40021900 PAN TAPPING A 8x12 ZC
- 40011312 PAN TAPITTE P3x8 BZC
- 40011956 PLAIN WASHER 3x10d/0.8 ZC
**STAND PARTS LIST (KS-305)**

- **01348789 REAR BOARD**
  
- **71016990 SIDE BOARD ASSY R**
  
  **NOTE:** SIDE BOARD ASSY R includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>22125675</td>
<td>ANGLE</td>
</tr>
<tr>
<td>01348812</td>
<td>TOE BLOCK</td>
</tr>
<tr>
<td>22205518</td>
<td>JOINT HOLDER R</td>
</tr>
</tbody>
</table>

- **71017001 SIDE BOARD ASSY L**
  
  **NOTE:** SIDE BOARD ASSY L includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>22125675</td>
<td>ANGLE</td>
</tr>
<tr>
<td>01348812</td>
<td>TOE BLOCK</td>
</tr>
<tr>
<td>22205517</td>
<td>JOINT HOLDER L</td>
</tr>
</tbody>
</table>

- **71128167 PEDAL BOARD ASSY**
  
  **NOTE:** PEDAL BOARD ASSY includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>22245308</td>
<td>PEDAL BOARD FELT</td>
</tr>
<tr>
<td>40011712</td>
<td>WOOD ANCHOR NUT M4*11.5 ZC</td>
</tr>
<tr>
<td>40235989</td>
<td>WOOD ANCHOR NUT M6*15.5 ZC</td>
</tr>
</tbody>
</table>

- **71019823 PEDAL UNIT**
  
  **NOTE:** PEDAL UNIT includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>71018601</td>
<td>CONNECT CODE</td>
</tr>
</tbody>
</table>

- **70677445 SCREW SET**
  
  **NOTE:** SCREW SET includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>40010678</td>
<td>4x20mm Truss Head Tapping A1 Fe BZC (x4)</td>
</tr>
<tr>
<td>40010689</td>
<td>4x20mm Truss Head Tapping A1 Fe BZC (x4)</td>
</tr>
<tr>
<td>40233856</td>
<td>6x70mm JBA-0109M Joint Bolt Fe ZC (x4)</td>
</tr>
<tr>
<td>40010589</td>
<td>5x20mm Truss Head Fe BZC (x2)</td>
</tr>
<tr>
<td>40233867</td>
<td>Joint Bolt Cap Black (x4)</td>
</tr>
</tbody>
</table>

**STAND EXPLODED VIEW PARTS LIST**

- **01348799 REAR BOARD**
  
- **71128167 PEDAL BOARD ASSY**
  
  **NOTE:** PEDAL BOARD ASSY includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>22125675</td>
<td>ANGLE</td>
</tr>
<tr>
<td>01348812</td>
<td>TOE BLOCK</td>
</tr>
<tr>
<td>22205518</td>
<td>JOINT HOLDER R</td>
</tr>
</tbody>
</table>

- **71128167 PEDAL BOARD ASSY**
  
  **NOTE:** PEDAL BOARD ASSY includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>22245308</td>
<td>PEDAL BOARD FELT</td>
</tr>
<tr>
<td>40011712</td>
<td>WOOD ANCHOR NUT M4*11.5 ZC</td>
</tr>
<tr>
<td>40235989</td>
<td>WOOD ANCHOR NUT M6*15.5 ZC</td>
</tr>
</tbody>
</table>

- **71019823 PEDAL UNIT**
  
  **NOTE:** PEDAL UNIT includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>71018601</td>
<td>CONNECT CODE</td>
</tr>
</tbody>
</table>

- **70677445 SCREW SET**
  
  **NOTE:** SCREW SET includes the following parts.

<table>
<thead>
<tr>
<th><strong>Part No.</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>40010678</td>
<td>4x20mm Truss Head Tapping A1 Fe BZC (x4)</td>
</tr>
<tr>
<td>40010689</td>
<td>4x20mm Truss Head Tapping A1 Fe BZC (x4)</td>
</tr>
<tr>
<td>40233856</td>
<td>6x70mm JBA-0109M Joint Bolt Fe ZC (x4)</td>
</tr>
<tr>
<td>40010589</td>
<td>5x20mm Truss Head Fe BZC (x2)</td>
</tr>
<tr>
<td>40233867</td>
<td>Joint Bolt Cap Black (x4)</td>
</tr>
</tbody>
</table>

**STAND EXPLODED VIEW PARTS LIST**
PARTS LIST

<table>
<thead>
<tr>
<th>No.</th>
<th>Parts No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>7101623</td>
<td>PEDAL CENTER ASSY</td>
</tr>
<tr>
<td>②</td>
<td>00904190</td>
<td>PEDAL CHASSIS</td>
</tr>
<tr>
<td>③</td>
<td>00909823</td>
<td>FELT L</td>
</tr>
<tr>
<td>④</td>
<td>00904223</td>
<td>COILED SPRING</td>
</tr>
<tr>
<td>⑤</td>
<td>40011334</td>
<td>3x12mm Binding Head P-TITE Fe BZC</td>
</tr>
<tr>
<td>⑥</td>
<td>00908034</td>
<td>6x35mm JOINT BOLT</td>
</tr>
<tr>
<td>⑦</td>
<td>00877978</td>
<td>6x12mm JOINT NUT</td>
</tr>
<tr>
<td>⑧</td>
<td>71018601</td>
<td>CONNECT CORD</td>
</tr>
<tr>
<td>⑨</td>
<td>00907045</td>
<td>PEDAL CABLE</td>
</tr>
<tr>
<td>⑩</td>
<td>22285396</td>
<td>ADJUST BOLT</td>
</tr>
<tr>
<td>⑪</td>
<td>40011278</td>
<td>3x8mm Binding Head P-TITE Fe ZC</td>
</tr>
</tbody>
</table>

CONNECT BOARD PARTS LIST

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>GP2824B</td>
</tr>
<tr>
<td>②</td>
<td>2SA1015V</td>
</tr>
<tr>
<td>③</td>
<td>EVND8AA03B13</td>
</tr>
</tbody>
</table>

CONNECT BOARD CIRCUIT DIAGRAM
STAND ASSEMBLY (KS-305)

Make sure that another person is on hand to help with the assembly and setup.

To move the piano, lift it carefully—all the while keeping it level. Be very careful, when you assemble and move the piano, to make sure that you do not drop it on your hands or feet.

Part Check

Before you begin assembling the stand, check that all the parts were supplied. You will also need to have a Phillips screwdriver.

A: Side Board (left) 1: Screw a (4 × 16 mm) × 4
B: Side Board (right) 2: Screw b (4 × 25 mm) × 4
C: Pedal Board 3: Screw c (M6 × 70 mm) × 4
D: Rear Board 4: Screw d (M5 × 20 mm) × 2
5: Cap × 4

Assembly Procedure

* Fasten each screw tightly, then place the stand in a stable and horizontal place.
* Do not allow the pedal cord or power cable to get twisted or pinched while assembling the stand.

1. Stand Assembly

(1) Attach the side boards for the right and left sides to the pedal board (so that the metal parts face inside) using screws “c” (M6 × 70 mm).

(2) Place the rear board as shown below, with the wood grain side facing inside.

(3) Attach the rear board to the metal parts on the side boards from the front using screws “a” (4 × 16 mm). For clamping the rear board, press each upper portion of both side boards. Then, fasten it to the pedal board from the back using screws “b” (4 × 25 mm) and attach the caps on screw “c.”

* At first, assemble the entire stand in a temporary fashion, without really tightening the screws. Then, after checking the overall alignment of the boards (and gently shifting certain parts where necessary), go around and tightly fasten each of the screws.

2. Installing the Piano on the Stand

(4) Align the protruding screws (one each at right and left) on the bottom of the piano with the openings in the metal fittings on the side board, then slide the piano forward until the screws are held in place.

(5) Fasten the piano to the stand with the screw “d” (M5 × 20 mm) (one each for the right and left).

* When handling the piano, firmly grasp it at the front and back. Be careful, so you do not get your fingers pinched.

3. Connecting the Pedal and Power Cords

(6) Connect the pedal cord to the Pedal jack on the rear of the piano.

(7) Connect the power cord to the power inlet on the piano, then plug the other end into a wall socket.

4. Adjusting the Adjuster

(8) Lower the adjuster at the bottom of the pedal board (by rotating it), so that the pedal board touches the floor. If you have the piano placed on a carpet, lower it until it pushes into the carpet.

When Moving the Piano

Disconnect the power cord and raise the stand’s adjuster. Then lift the piano while keeping it level, and move it with care, so that you do not drop it on your feet, or get your hands caught.
**KEYBOARD PARTS LIST**

<table>
<thead>
<tr>
<th>No.</th>
<th>PARTS No.</th>
<th>PARTS NAME</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>00453301</td>
<td>PA-4A N-KEY A</td>
<td>1/1</td>
</tr>
<tr>
<td>02</td>
<td>00450512</td>
<td>PA-4A N-KEY B</td>
<td>8/ 1</td>
</tr>
<tr>
<td>03</td>
<td>00450534</td>
<td>PA-4A N-KEY C</td>
<td>7/ 1</td>
</tr>
<tr>
<td>04</td>
<td>00450545</td>
<td>PA-4A N-KEY D</td>
<td>7/ 1</td>
</tr>
<tr>
<td>05</td>
<td>00450506</td>
<td>PA-4A N-KEY E</td>
<td>7/ 1</td>
</tr>
<tr>
<td>06</td>
<td>00455718</td>
<td>PA-4A N-KEY F</td>
<td>7/ 1</td>
</tr>
<tr>
<td>07</td>
<td>00450269</td>
<td>PA-4A N-KEY G</td>
<td>7/ 1</td>
</tr>
<tr>
<td>08</td>
<td>00458689</td>
<td>PA-4A N-KEY A</td>
<td>1/ 1</td>
</tr>
<tr>
<td>09</td>
<td>00458280</td>
<td>PA-4A N-KEY U</td>
<td>1/ 1</td>
</tr>
<tr>
<td>10</td>
<td>30275291</td>
<td>PA-4 S-KEY</td>
<td>36/ 1</td>
</tr>
<tr>
<td>11</td>
<td>00458178</td>
<td>PA-4A S-KEY HAMMER</td>
<td>52/ 1</td>
</tr>
<tr>
<td>12</td>
<td>00450189</td>
<td>PA-4A S-KEY HAMMER</td>
<td>36/ 1</td>
</tr>
<tr>
<td>13</td>
<td>********</td>
<td>PA-4A CHASSIS BP-CK ASSY</td>
<td>1/ 1</td>
</tr>
<tr>
<td>14</td>
<td>01019690</td>
<td>PA-4A SUB CHASSIS A</td>
<td>7/ 1</td>
</tr>
<tr>
<td>15</td>
<td>01019701</td>
<td>PA-4A SUB CHASSIS B</td>
<td>7/ 1</td>
</tr>
<tr>
<td>16</td>
<td>22155794</td>
<td>PA-4 GUIDE BUSHING A</td>
<td>50/ 1</td>
</tr>
<tr>
<td>17</td>
<td>00019912</td>
<td>PA-4 GUIDE BUSHING S-KEY</td>
<td>36/ 1</td>
</tr>
<tr>
<td>18</td>
<td>22265498</td>
<td>PA-4 CUSHION A</td>
<td>2/ 1</td>
</tr>
<tr>
<td>19</td>
<td>00452145</td>
<td>PA-4 CUSHION U JUREN DBK-2</td>
<td>1/ 1</td>
</tr>
<tr>
<td>20</td>
<td>00564267</td>
<td>PA-4 CUSHION T</td>
<td>1/ 1</td>
</tr>
<tr>
<td>21</td>
<td>01237089</td>
<td>PA-4A CUSHION RZA</td>
<td>1/ 1</td>
</tr>
<tr>
<td>22</td>
<td>00561900</td>
<td>PA-4 CHANNEL</td>
<td>8/ 1</td>
</tr>
<tr>
<td>23</td>
<td>40017106</td>
<td>BINDING TAPTITE B 3X2 3C</td>
<td>16/ 1</td>
</tr>
<tr>
<td>24</td>
<td>40017256</td>
<td>BINDING TAPTITE B 3X10 2C</td>
<td>30/ 1</td>
</tr>
<tr>
<td>25</td>
<td>70844556</td>
<td>PA-4A PWB LOW ASSY</td>
<td>1/ 1</td>
</tr>
<tr>
<td>26</td>
<td>70854567</td>
<td>PA-4A PWB MID ASSY</td>
<td>1/ 1</td>
</tr>
<tr>
<td>27</td>
<td>70854578</td>
<td>PA-4A PWB H III ASSY</td>
<td>1/ 1</td>
</tr>
<tr>
<td>28</td>
<td>22153267</td>
<td>PA-4 RUBBER SWITCH 12P</td>
<td>8/ 1</td>
</tr>
<tr>
<td>29</td>
<td>20475965</td>
<td>FUJI CARB 14X7/15AS UBBP PT-25-HBL8</td>
<td>1/ 1</td>
</tr>
<tr>
<td>30</td>
<td>20475342</td>
<td>FUJI CARB 8X6/6.5 AS UBBP PT-25-HB</td>
<td>1/ 1</td>
</tr>
<tr>
<td>31</td>
<td>30611246</td>
<td>BINDING TAPTITE P 5X2 2C</td>
<td>10/ 1</td>
</tr>
<tr>
<td>32</td>
<td>00347201</td>
<td>FUJI CARB 14X180-A6.00BB-P1-25-HBL10-S</td>
<td>1/ 1</td>
</tr>
<tr>
<td>33</td>
<td>00347254</td>
<td>FUJI CARB 16X180-A6.00BB-P1-25-HBL10-S</td>
<td>1/ 1</td>
</tr>
</tbody>
</table>

Item 18 marked * is included in each unit of item 17.

---

**KEYBOARD DISASSEMBLY**

**Removing PA-4A key**

While holding the front end of the key, insert the tip of long-nose pliers into the U-groove on the shaft side (shaded area in Fig.1) and hold down the key in the direction of arrow A.

**Installing the PA-4A key**

While placing the front inner wall of the key against the guide, pass the foot through the hole of the chassis, as shown in Fig.2. Then press the dotted area of the key in the direction of arrow.
Installing the PA-4A board
As shown in Fig. 3, place the board against the hook part a of the sub-shassis, and screw the board into the sub-shassis.
Screw in order, from the round hole (positioning hole) on the connector side.
Be sure to screw manually. (Care should be taken to avoid screw damage.)

Greasing points
After the key or hammer has been replaced, the specified grease must be applied to the following 4 points as shown in Fig. 4.

Fig. 4
1. Foir GP-1RS...gray (PNo. 17049544)
   (a) Key and hammer bearing section
   (b) Key and hammer joint section (actuator section)
2. Foir G-336A...white (PNo. 17049543)
   (a) Side of guide bushing for white key and black key
TEST MODE

Required items
MIDI cable (1.5m or longer Part No.23485229 1.5m)
Computer test cable for SOUND CANVAS SC-88 (Part No.17049906)
Microphone
Oscilloscope

1. To enter the test mode
Get into the FUNCTION MODE from pressing [Function] button after turning the power On. (Each LED may blink.)
Then press [Function] button while holding down the [Track 2] and [Play] buttons. ‘JIG’ is displayed and the piano shall automatically enter into the TEST MODE.
Press [Function] button to get into stage 2.
* To exit the Test Mode, turn the power Off.
* To proceed on the next mode, press [Function] button. However, there are some mode that will move to the next item automatically. Please refer to the explanations written to the each mode.

NOTE: When there is a malfunction during the TEST MODE, switch the power On again.

2. Display of DEVICE CHECK, ROM VERSION

* DEVICE CHECK
When enter into the TEST MODE, the DEVICE CHECK will be executed automatically. If there is no malfunction, ROM VERSION is displayed to the 7-SEG LED.
In the event of a malfunction, one of the following shall be displayed.

<table>
<thead>
<tr>
<th>7-SEG LED</th>
<th>Failed DEVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E01</td>
<td>Program ROM</td>
</tr>
<tr>
<td>E02</td>
<td>Working DRAM</td>
</tr>
<tr>
<td>E03</td>
<td>Wave ROM</td>
</tr>
<tr>
<td>E04</td>
<td>DSP RAM</td>
</tr>
</tbody>
</table>

Press [Function] to go on the TEST MODE.

* BUILD NUMBER
This numbers are displayed for factory purpose only, please ignore when you execute test mode.
NOTE: Basically, this mode will be bypassed and jump to the MODEL NAME mode. However, with early productions, the BUILD number will be displayed to the 7-SEG LED.

Press [Function] to go on the TEST MODE.

4. Effect Sound, Speaker and Panning Check

(When you want to proceed on to the next stage during this test, press [Function] button.)

When you get into this mode, 7-SEG LED displays “Pan”.

Press following buttons and confirm the Effect sound and other settings.

<table>
<thead>
<tr>
<th>BUTTON</th>
<th>PANNING</th>
<th>TONE</th>
<th>EFFECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>piano</td>
<td>Center</td>
<td>Piano</td>
<td>Non</td>
</tr>
<tr>
<td>E.piano</td>
<td>Center</td>
<td>Piano</td>
<td>Chorus</td>
</tr>
<tr>
<td>Harpsi</td>
<td>Center</td>
<td>Piano</td>
<td>Reverb</td>
</tr>
<tr>
<td>Vibes</td>
<td>Center</td>
<td>Piano</td>
<td>Resonance</td>
</tr>
<tr>
<td>Organ</td>
<td>Left</td>
<td>440Hz Square Wave</td>
<td>Non</td>
</tr>
<tr>
<td>Strings</td>
<td>Right</td>
<td>440Hz Square Wave</td>
<td>Non</td>
</tr>
<tr>
<td>Choir</td>
<td>Center</td>
<td>440Hz Square Wave</td>
<td>Non</td>
</tr>
</tbody>
</table>

Press [Function] to go on the TEST MODE.

5. Pedal Check

(When you want to proceed on to the next stage during this test, press [Function] button.)

When you get into this mode, 7-SEG LED displays [ ]

Depress each [Soft], [Sostenuto] and [Damper] pedals one by one slowly. The output sound (Tone) should be changed related to the depressed depth of the pedal and also the value should appear on the 7-SEG LED. The value may change from 0 to 9 and at the full depressed position, a Metronome sound could be heard.

The correspondence between the display and the Pedals are as follows.

<table>
<thead>
<tr>
<th>7-SEG LED display</th>
<th>Checked Pedal</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd figure of the 7-SEG LED</td>
<td>Soft Pedal</td>
</tr>
<tr>
<td>2nd figure of the 7-SEG LED</td>
<td>Sostenuto Pedal</td>
</tr>
<tr>
<td>1st figure of the 7-SEG LED</td>
<td>Damper Pedal</td>
</tr>
</tbody>
</table>

When you finish checking and there is no malfunction with all of the three Pedals, it automatically moves to the next Test mode.
6. Serial Interface Check

When press [Function] during this Serial Interface Check, it will jump back to the beginning of the Test Mode (2. Device Check).

When you get into this mode, 7-SEG LED displays [SE].

* MIDI CHECK

Set the Computer Switch on the underside of the keyboard to “MIDI”. The LED on the left side of the 7-SEG LED will be illuminated.

Connect MIDI In on the underside of the keyboard and MIDI Out on the rear panel. If there is no malfunction, the following is displayed on the 7-SEG LED.

Connect MIDI In and MIDI Out on the rear panel. If there is no malfunction, the following is displayed on the 7-SEG LED.

* COMPUTER I/F CHECK

To perform this test, a “Computer Test Cable for SOUND CANVAS SC-88” (#17049906) is required. Please order this cable from the local Roland Service Center if necessary.

1) Set the Computer Switch on the underside of the keyboard to “Mac”. The LED on the right side of the 7-SEG LED will be illuminated.

Connect the Computer Test Cable to the Computer Jack on the underside of the keyboard. Connect the oscilloscope to a white terminal (Signal line) of Computer Test Cable and the GND to a black terminal (GND line). Check if the 1MHz square wave appears or not.

Turn the Computer Test Cable SW to On. If there is no malfunction, the following is displayed on the 7-SEG LED.

Turn the Computer Test Cable SW to Off. If there is no malfunction, the following is displayed on the 7-SEG LED.

2) Set the Computer Switch on the underside of the keyboard to “PC1”.

The Beat LED on the right side of the 7-SEG LED will be illuminated.

Connect the Computer Test Cable to the Computer Jack on the underside of the keyboard and turn the Computer Test Cable SW to On.

If there is no malfunction, the following is displayed on the 7-SEG LED.

Turn the Computer Test Cable SW to Off. If there is no malfunction, the following is displayed on the 7-SEG LED.

3) Set the Computer Switch on the underside of the keyboard to “PC2”.

The Song LED on the right side of the 7-SEG LED will be illuminated.

Connect the Computer Test Cable to the Computer Jack on the underside of the keyboard and turn the Computer Test Cable SW to On.

If there is no malfunction, the following is displayed on the 7-SEG LED.

Turn the Computer Test Cable SW to Off. If there is no malfunction, the following is displayed on the 7-SEG LED.

It will jump to the beginning of the Test Mode (2. Device Check) by pressing [Function] button.

7. To exit the Test Mode

To exit the Test Mode, turn the power Off.

8. Microphone Check

After executing the Test Mode, turn the power On again and connect a Microphone to the Mic In Jack on the underside of the keyboard.

Confirm if it functions correctly or not by turning the Echo Knob and Volume Knob near the Mic In Jack.
BLOCK DIAGRAM
CIRCUIT BOARD (MAIN)
71013190 MAIN BOARD ASSY

View from components side.

View from foil side.
CIRCUIT BOARD (PANEL L)

71013490 PANEL L BOARD ASSY

NOTE

PANEL L BOARD ASSY includes the following parts.

- 01450023 WIRING 9X350-P2.0-51065-51015-F on PLB
- 01450034 WIRING 12X400-P2.0-51065-51015-F on PLB
- 01450045 WIRING 8X400-P2.0-51065-51015-F on PLB

View from components side.
CIRCUIT DIAGRAM (PANEL L)
CIRCUIT BOARD (PANEL R)
71011834  PANEL R BOARD ASSY

PANEL R BOARD ASSY includes the following parts.

- 12169390 LED SPACER LH-36-4 on PRB
- 01450001 WIRING 14X120-P2.0-51065-51015-F on PRB
- 01450012 WIRING 15X180-P2.0-51065-51015-F on PRB

NOTE

View from components side.
CIRCUIT DIAGRAM (PANEL R)
CIRCUIT BOARD (FRONT JACK, ANALOG, INLET)

**NOTE**

PAB3 ANALOG PHANTOM includes the following PWBs.

******* PAB3 EQ BOARD
******* PAB3 ANALOG BOARD

NOTE PAB3 ANALOG BOARD includes the following parts.

- 22195975 TR HOLDER
- 22195973 POWER AMP HOLDER
- 01349990 WIRING W4
- 01349978 7x250-P2.0-PH-SAN-F
- 01349912 12x130-P2.0-PH-SAN-F
- 01346423 HEATSINK
- 01346412 PAB HOLDER

PAB3 FRONT JACK BOARD includes the following parts.

- 01344545 JACK HOLDER

PAB3 INLET 100/117V includes the following parts.

- 23425740 AC INLET INL-8 10A/125V 2P PO
- 12559444 FUSE 5x20 SB 4.4A/125V
- 00129367 INLET HOLDER

Replacement INLET BOARD “PAB3 INLET ASSY” is for 100/117V version exclusive use.

When using “PAB3 INLET ASSY” for 230/240V version, be sure to make the following modifications.

1. INLET BOARD FOR 100/117V version differs from 230V version in FUSE system. Replace fuse (F1 on INLET BOARD) to specific one (#12559550 FUSE 5X20 S506 1.6A T1.6AL250V for 230V version) See TABLE A.
2. For safety standards, place fuse seal (#40013712 FUSE SEAL T1.6AL250V #407) at the proper place of the INLET BOARD. The location of fuse seal is over the following printing (see fig A) of the PWB.

When necessary, please order fuse seal separately from INLET BOARD.

**TABLE A**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Fuse Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>100V/117V</td>
<td>5x20 SB 4.4A/125V</td>
<td></td>
</tr>
<tr>
<td>230V/240V</td>
<td>5x20 S506 1.6A T1.6AL250V</td>
<td></td>
</tr>
</tbody>
</table>

Fig A 3.15A/125V
CIRCUIT DIAGRAM (FRONT JACK, ANALOG, INLET)
CIRCUIT BOARD (MIC)

71011901  MIC BOARD ASSY

NOTE

MIC BOARD ASSY includes the following parts.

# 0134449 MIC HOLDER

CIRCUIT DIAGRAM (MIC)