RD-150
DIGITAL PIANO

SERVICE NOTES

First Edition

Issued by RES

TABLE OF CONTENTS

Specifications

Keyboard:
88 weighted keys (TP-23)

Keyboard modes:
Whole, Split, Layer

Sound Source:
Max. polyphony: 64 voices
Tones: 16 Main Tones (Stereo Piano, Pop Piano, Rock Piano, Honky-Tonk, Stage Rhodes, SA Rhodes, E.Piano, Clav, Vibraphone, Ac. Bass, Finger Bass, Orch. Strings, Synth Strings, Synth Pad, Jazz Scat, Choir
8 Variation Tones: Piano 1, Piano 2, Clav 1, Harpsichord, Glockenspiel, Choir 1, Voice Bass

Panel controls:
Sliders: Master Volume, Brilliance, Upper Level, Lower Level
Switches: Tone Selection (x16), Reverb on/off, Chorus on/off, Metronome, Recorder function, KBD Velocity, Split

Adjustable functions:
Master Tuning: 415.3Hz~466.2Hz, 0.1Hz steps
Transpose: -6~+5, semitone steps
Velocity: 3 curves, off (freely adjustable fixed value)
Temperaments: 7 preset temperament
Stretch Tuning: 2 types

Effects:
Digital Reverb and Chorus (level adjustable in 8 steps)
Sympathetic Resonance (for piano Tones): 8 levels

Pedal functions
Damper
Soft/Sostenuto or Expression (auto-detected)

Recorder
2 tracks, 1 song
Note storage: ±5,000 notes
Tempo: 40~210
Resolution: 96 ticks per quarter note
Controls: Play/Stop, Rec, Tempo, track selection

Metronome
Beat: 0/4, 2/4, 3/4, 4/4, 5/4, 6/4, 3/8, 6/8, 9/8
Volume: adjustable in 128 steps

Connectors
Damper, Soft/Expr., Headphone jacks x2 (stereo), Output (L/Mono, R), MIDI IN, OUT

Power consumption:
45W (230V, 230VE)

Dimensions:
1380 (W) x 320 (D) x 105 (H) mm

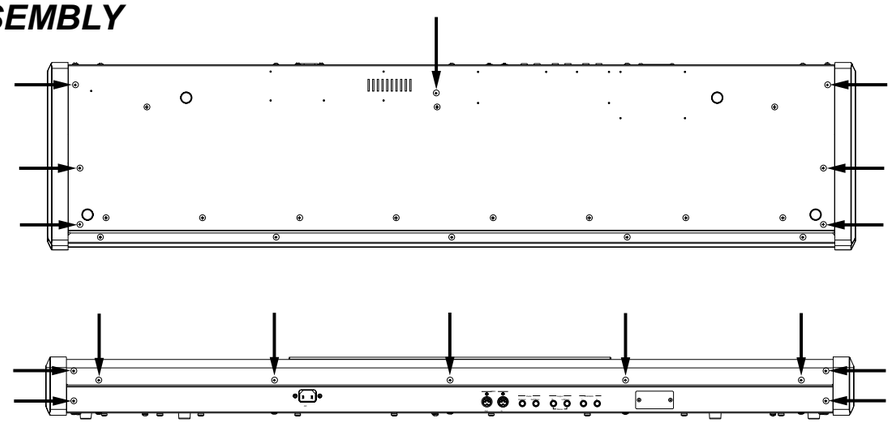
Weight:
22.5 kg

Supplied accessories:
Owner's Manual, Power cable, Music rest, DP-6 footswitch

Options:
MSC series MIDI cables, KS-12 keyboard stand, KC series keyboard amplifiers, RH series headphones, DP-2, DP-6, or BOSS FS-5U foot switch/pedal, EV-5 expression pedal.

In the interest of product improvement, the specifications and/or appearance of this instrument are subject to change without prior notice.

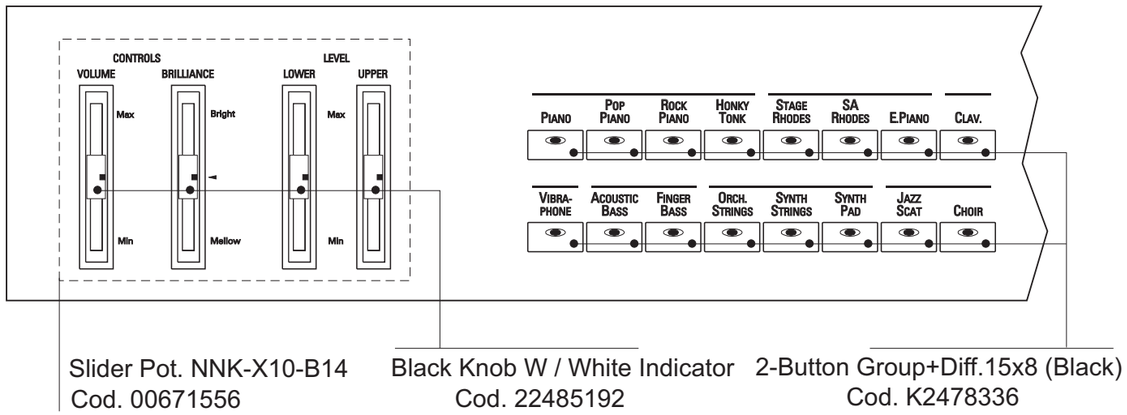
DISASSEMBLY



SELFLOCK SCREW M4x10 TCTC TFR 9,5 cod. J2289221

LOCATION OF CONTROLS

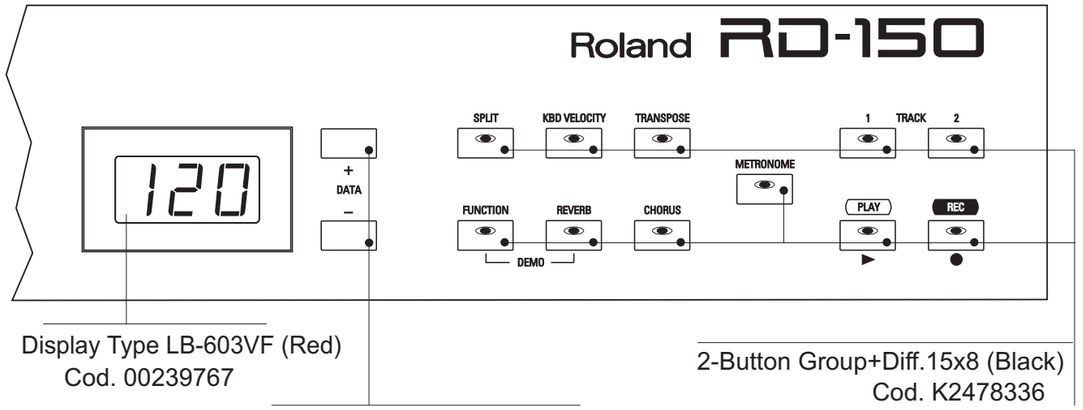
FRONT VIEW



Slider Pot. NNK-X10-B14
Cod. 00671556

Black Knob W / White Indicator
Cod. 22485192

2-Button Group+Diff.15x8 (Black)
Cod. K2478336



Display Type LB-603VF (Red)
Cod. 00239767

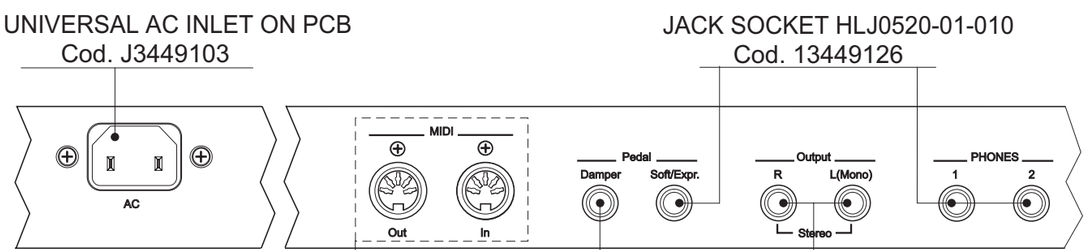
2-Button Group 15x8 (Black)
Cod. K2478337

2-Button Group+Diff.15x8 (Black)
Cod. K2478336

REAR VIEW

UNIVERSAL AC INLET ON PCB
Cod. J3449103

JACK SOCKET HLJ0520-01-010
Cod. 13449126



5P DIN SOCKET YKF51-5054 (2PCS)
Cod. 13429825

JACK SOCKET HLJ0520-01-110
Cod. 13449125

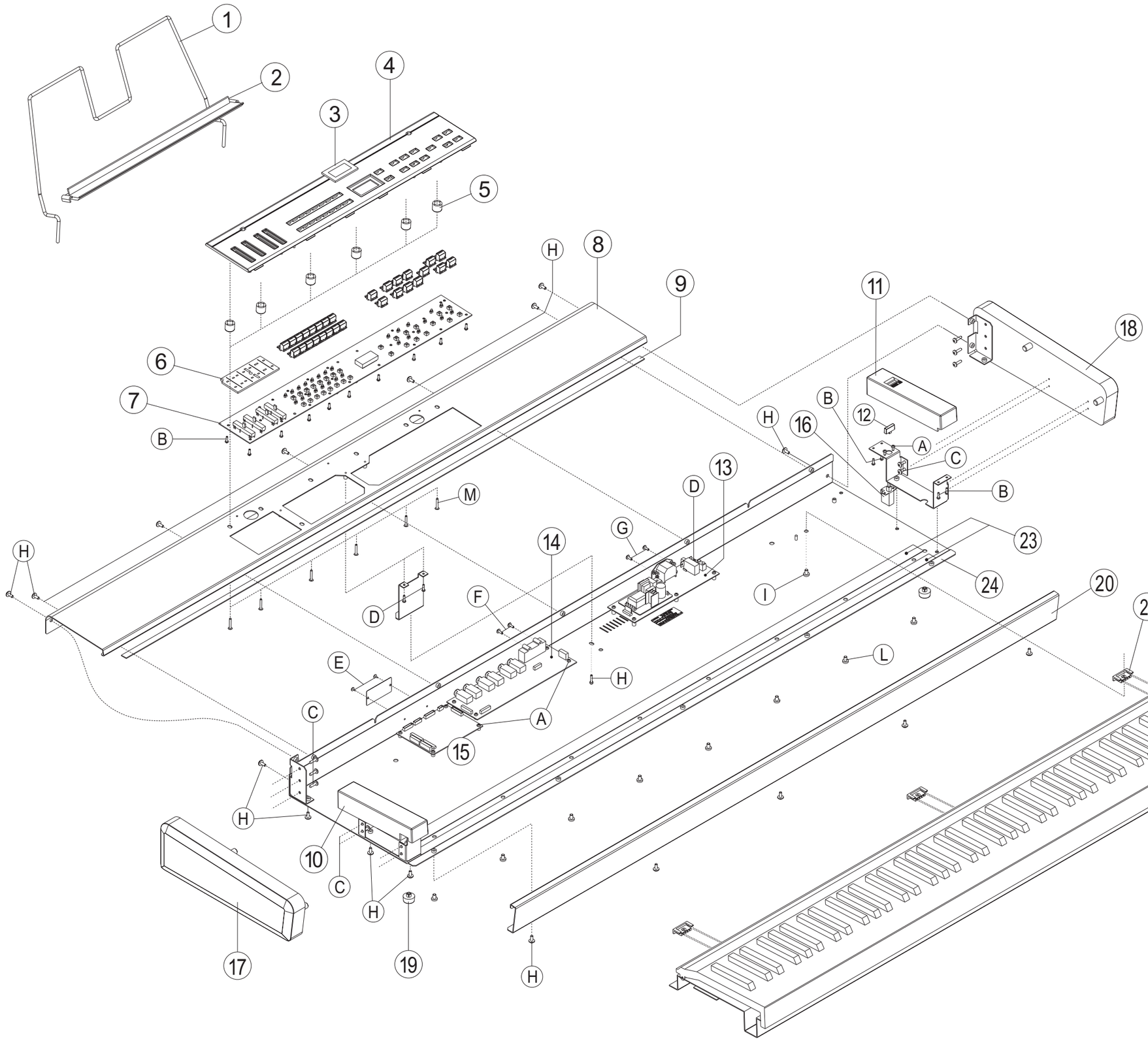
PARTS LIST OF EXPLODED VIEW

No.	*Part No.*	*Description*
1	K2128119	MUSIC REST (BLACK)
2	22208320	MUSIC SCORE HOLDER
3	7770614000	SILKSCREENED PLEXIGLASS RD-150
4	7770610000	VARN.+SILK. TEMPLATE F/TOP CBNT RD-150
5	K2158109	BUSHING D.E.16 H.14
6	K2248156	ANTIDUST COVER FOR POTENTIOMETER RD-150
7	7770601000	CONTROL PCB ASSY RD-150
8	7770612000	VARNISHED TOP CABINET RD-150
9	K2268121	RED FELT MM 1250x12x1,5
10	K1168108	END-BLOCK RD-150
11	K1168109	END-BLOCK (POWER ON) RD-150
12	3249559701	SWITCH CAP
13	7770602000	PRIMARY PCB ASSY RD-150
14	7770603000	JACK SOCKET PCB ASSY RD-150
15	7770604000	MAIN BOARD PCB ASSY RD-150
16	13129160	SWITCH SDDLB1-TV5
17	7770616000	BORED / VARN. SIDE PANEL RD-150
18	7770615000	BORED / VARN. RIGHT SIDE PANEL RD-150
19	J2359105	PRESSURE RUBBER SFF-018
20	7770613000	VARNISHED KEYBOARD BLIND RD-150
21	K1188132	KEYBOARD SUPPORT
22	J2589108	88-KEY KEYBOARD ASSY TP/23
23	K2268148	ADHESIVE BLACK FELT 25x1x1240
24	7770611000	VARN.+SILK. BOTTOM CBNT RD-150

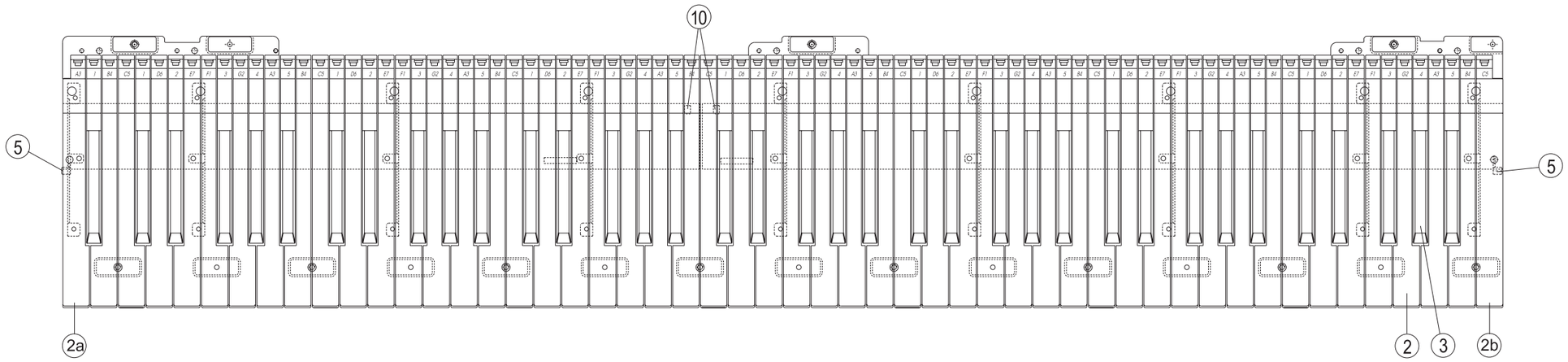
(SCREW)

A	J2289193	SELF LOCK. SCREW M3x6 TCTC H.6
B	J2289125	SCREW 2,9x10 TCTC PR TROP
C	K2288107	SCREW 3,9x15 TC PR TFR H.8
D	J2289108	SELF LOCK. SCREW M3x10 TCTC H.6
E	J2159102	PLASTIC RIVET Sr3055
F	J2289118	SCREW 2,9x16 TCTC PR BRUN
G	J2289213	SELF TAP. SCREW 3,9x16 TCTC
H	J2289221	SELFLOCK. SCREW M4x10 TCTC TFR 9.5
I	K2288110	SCREW M5x20 TCTC TFR H9,5 BRUN
L	J2289232	SCREW M5x8 TCTC BRUN
M	J2289150	SCREW 2,9x16 TC PR TFR H.7

EXPLODED VIEW

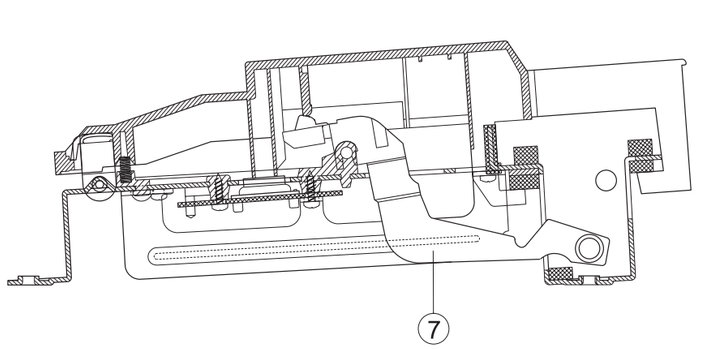


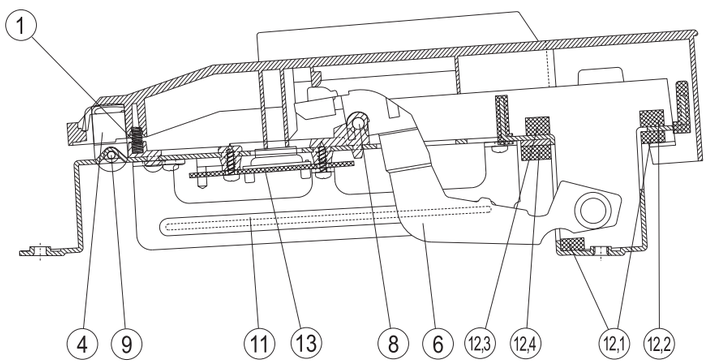
KEYBOARD PARTS LIST
88 KEY KEYBOARD ASSY TP/23 code : J2589108



KEYBOARD PARTS LIST

Ref	Description	Code	n.
1	KEY SPRING TP/23	J2179113	88
2	NATURAL KEY C5 TP/23	J2579206	7
	NATURAL KEY D6 TP/23	J2579207	7
	NATURAL KEY E7 TP/23	J2579208	7
	NATURAL KEY F1 TP/23	J2579209	7
	NATURAL KEY G2 TP/23	J2579210	7
	NATURAL KEY A3 TP/23	J2579211	7
	NATURAL KEY B4 TP/23	J2579212	8
2a	NATURAL KEY C8 TP/23	J2579213	1
2b	NATURAL KEY A3 TP/23	J2579214	1
3	SHARP KEY TP/23	J2579217	36
4	BAR FOR KEY FIXING TP/20-23	J1189101	88
5	CLAMP F/HAMMER PIVOT TP/20	J2139115	2
6	HAMMER F / NATURAL KEY TP/23	J2139124	52
7	HAMMER F / SHARP KEY TP/23	J2139125	36
8	HAMMER PIVOT TP/23	J2149104	1
9	NUT PIVOT TP/23	J2149105	1
10	4P FLAT CABLE TP/23	J3469160	1
11	RIGHT SUPPORT F/KEYBOARD BASE TP/23	J1189105	8
	LEFT SUPPORT F/KEYBOARD BASE TP/23	J1189106	1
12,1	LOWER FELT END F/NATURAL KEY+HAMMER	J2249104	2
12,2	UPPER FELT END F/NATURAL KEY	J2249103	1
12,3	UPPER FELT END F/SHARP KEY	J2249102	1
12,4	LOWER FELT END F/SHARP KEY	J2249101	1
13	RIGHT CONTACT PCB ASSY TP/23	J2929101	1
	LEFT CONTACT PCB ASSY TP/23	J2929102	1





PARTS LIST RD-150 (117V/230V/230VE/240VA)

SAFETY PRECAUTIONS :

The parts marked ⚠ have safety-related characteristics. Use only listed parts for replacement.

CONSIDERATION 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
Ex.	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

NOTE:

*The parts marked "**#**" are new (Initial Parts).*

A *The parts marked "**A**" are **new (Initial Parts).for RES** but **already used by RJA***

⚠ *The parts marked ⚠ have Safety - Related characteristics. Use only listed parts for replacement.*

<< EMI >> *Component for EMC.*

Note : ***Replacement should be made on a unit basis. No replacements available for individual parts. Replacement only be a unit.***

CONTROL BOARD	=	**CB**
PRIMARY BOARD	=	**PB**
MAIN BOARD	=	**MB**
JACK BOARD	=	**JB**

CASING

				Qty.
	K2128119	MUSIC REST (BLACK)		1
#	K1168108	END-BLOCK	RD-150	1
#	K1168109	END-BLOCK (POWER ON)	RD-150	1
	22208320	MUSIC SCORE HOLDER		1
#	7770610000	VARN.+SILK. TEMPLATE F/TOP CBNT	RD-150	1
#	7770611000	VARN.+SILK. BOTTOM CBNT	RD-150	1
#	7770612000	VARNISHED TOP CABINET	RD-150	1
#	7770613000	VARNISHED KEYBOARD BLIND	RD-150	1
#	7770614000	SILKSCREENED PLEXIGLASS	RD-150	1
#	7770615000	BORED/VARN. RIGHT SIDE PANEL	RD-150	1
#	7770616000	BORED/VARN. SIDE PANEL	RD-150	1

KNOB BUTTON

#	K2478336	2-BUTTON GROUP	15X8 +DIFF.	(BLACK)	14
#	K2478337	2-BUTTON GROUP	15X8	(BLACK)	1
	3249559701	SWITCH CAP			1
	22485192	BLACK KNOB	W/WHITE INDICATOR		4

SWITCH

13129160	SWITCH	SDDLB1-TV5		1
J3169105	SWITCH	TP-1101A / EVQ-PAE 05 R	D101=>129 on CB	29

JACK, SOCKET

13449125	JACK SOCKET	HLJ0520-01-110	JK1, JK2,JK8 on JB	3
13449126	JACK SOCKET	HLJ0520-01-010	JK5, JK6, JK7 on JB	3
13429825	5P DIN SOCKET	YKF51-5054 (2PCS)	JK4 on JB	1

DISPLAY UNIT

Note :	00239767	DISPLAY TYPE LB-603VF (RED)	1

KEYBOARD ASSY

	J2589108	88-KEY KEYBOARD ASSY TP/23	1

NOTE: For details, refer to KEYBOARD PARTS LIST (Page 4)

POWER SUPPLY UNIT

Note : #	02127512	SWITCHING POWER SUPPLY A1DU3L3B104	1

PCB ASSY

#	7770601000	CONTROL PCB ASSY	RD-150	1
#	7770602000	PRIMARY PCB ASSY	RD-150	1
#	7770603000	JACK SOCKET PCB ASSY	RD-150	1
# E	7770604000	MAIN BOARD PCB ASSY	RD-150	1

IC

	15229718RI	I.C. 6N 137	PHOTO-COUPLER	IC4 on JB	1
#	01671378	I.C. ROM LHMNOPWP	FLAT	IC12 on MB	1
#	01672934	I.C. LHMN5KVK	(MASK ROM)	IC11 on MB	1
	01786667	I.C. HD6413006F20	FLAT	IC6 on MB	1
	15169547RI	I.C. 74 HC 08	DIP CMOS	IC102 on CB	1
	15169550RI	I.C. 74 HC138	DIP CMOS	IC101 on CB	1
	15249111	I.C. TC7WU04 F	FLAT CMOS	IC13 on MB	1
	00232645	I.C. TC7W14F	FLAT	IC20 on MB	1
	00129278	I.C. SSC1080 FOB	(CUSTOM IC)	IC16 on MB	1
	J5259110	I.C. HM62256LFP-7T	FLAT SRAM	IC5, IC7 on MB	2
	01126612	I.C. LC324260AJ60/AS4C256K16E050JCT		IC14 on MB	1
	01679978	I.C. RA09-002 (XP6)	CUSTOM	IC9 on MB	1
	15259884	I.C. TC7S08F MOS	CMOS	IC19 on MB	1
	15269214	I.C. 74LS05	FLAT TTL	IC5 on JB	1
	15219183	I.C. M51953 AL	(STANDING)	IC2, IC3 on JB	2
	15189210	I.C. BA 5218F	(OP AMP)	IC1, IC6 on JB	2
	15289105	I.C. UPC 4570G	(OP AMP)	IC7 on JB / IC17 on MB	2
	15189189	I.C. UPC 4570HA VERT.	(OP.AMP.)	IC2, IC3 on CB	2
	01451578	I.C. AK4324-VF-E2 DAC		IC18 on MB	1
	J5199109	I.C. 79L12 TO-92		IC9 on JB	1
	01670890	I.C. PQ3DZ53U	REGULATOR	IC8 on MB	1
	01901012	I.C. PQ05DZ11	REGULATOR	IC21 on MB	1
#	J5199112	I.C. 78L12		IC8 on JB	1
#	J5259138	I.C. FLASH MT25F400B5SG-6BE		IC10 on MB (BLANK)	1

TRANSISTOR

15129136	TRANSISTOR	2SC-2878-A/B	Q7, Q8 on JB	2
15319101	TRANSISTOR	2SC-2412K	Q1, Q2, Q4, Q5 on JB	4
15309101	TRANSISTOR	2SA-1037KR	Q3, Q6 on JB	2
15129164	TRANSISTOR	DTC-114ES	Q106=>109, Q113=>116 on CB	8
15119163	TRANSISTOR	RN2227	Q101=>105, Q110=>112 on CB	8
J5119104	TRANSISTOR	DTA-114 EK CHIP	Q11 on JB	1
00898201	TRANSISTOR	RN2421 CHIP	Q1 on MB	1
15129197	TRANSISTOR	DTC-144 WS	Q9 on JB	1

DIODE

15019159RI	DIODE	1N-4148	D101=>29 on CB	29
15339105	DIODE	DAN-202K	D1, D6 on JB	2
15339108	DIODE	DA-204K	D7, D8 on JB	2
J5029107	LED DIODE	3 SLR-37VR3F- RED	LED101=>127 on CB	27

RESISTOR

15399965	RESISTOR ARRAY	RCE9A-103-JA	RA13 on MB	1
J3919108	RESISTOR ARRAY	EXB-V8V-103-JV	RA3, RA5, RA6, RA8 on MB	4
00126101	RESISTOR ARRAY	EXB-V8V-221-JV	RA2, RA7, RA9, RA10, RA11 on MB	6
00346690	RESISTOR ARRAY	RCE9A-682-JA	RA16, RA17. RA18 on MB	3
13819132RI	UNINFL.RES.	100 OHM 0.6W 5%	R1, R2, R43, R44, R46, R47 on JB	6
01783623	RESIST. 2010	10 OHM1/2W 5%	R30 on MB	1
15399989	RESIST. 2010	68 OHM1/2W 5%	R65, R66 on MB	2

POTENTIOMETER

00671556	SLIDER POT.	NNK-X10-B14	VR1=>4 on CB	4

CAPACITOR

J3629103	ELECTRL.COND.	100U 25V P5	C117 on MB/C102 on CB/C3, C4, C17, C34, C35, C36 on JB	8
J3629147	ELECTR. COND.	220U 25V P.5	C33 on JB	1
J3629104	ELECTRL.COND.	10U 50V P5	C13 on JB	1
J3629105	ELECTRL.COND.	47U 50V P5	C39=>42 on JB	4
J5369103	ELECTR. COND. RV2	100U 16V (SMD)	C117 on MB	1
J5369104	ELECTR. COND. RV2	10U 16V (SMD)	C13, C16, C45, C48, C54, C78, C81, C92, C101, C104, C107, C110, C115 on MB	13
J5369105	ELECTR. COND. RV3	33U 16V (SMD)	C74, C82, C103, C109 on MB	4
J3629149	ELECTR.COND.	100U 16V H.7	C102 on CB	1
J3629143	ELECTR. COND.	10U 16V H.7	C17, C18, C25, C26 on CB	4
J3629150	ELECTR.COND.	47U 16V H.7	C4, C12 on CB	2
J3629140	ELECTR. COND.	0.33U 63V H.7	C5 on CB	1
13529104RI	CAPACITOR	DE1310E472MVA-KH	C1 on PB	1
13649103J0	UNPOL.COND.	10U 16 P5	C1, C2, C25, C26 on JB	4

INDUCTOR, COIL, FILTER

<<EMI>> 12449370	NOISE SUP.	SBT-0160W	L1, L2, L4, L5 on JB	4
<<EMI>> 12449326	NOISE SUP.	SBT-0460	L3 on JB	1
<<EMI>> 12449380	NOISE SUP.	EXC-ELDR25V	L11 on JB	1
<<EMI>> 12449358	NOISE SUP.	FL5R200N PNT	L9=>13 on JB	4
<<EMI>> 12449392	NOISE SUP.	SNT-D30	L8, L14 on JB	2
<<EMI>> 12449355	NOISE SUP.	FBR07H850TB00	L15, L16, L17 on JB	3

CRYSTAL, RESONATOR

00894034	X-TAL 16 MHZ	MA-406	X1 on MB	1
00901912	X-TAL 24.576 MHZ	MA-406	X2 on MB	1

CONNECTOR

	13369689RI	20P	FEM. CONNECTOR	AMP 1.27	CN5, CN6 on MB	2
	J3439113	7P	MALE CONNECTOR	P 2.5 M	CN2 on PB / CN3 on JB	2
	J3439120	4P	MALE CONNECTOR	P.2 M	CN4 on MB	1
	J3439151	9P	MALE CONNECTOR	P.2 M	CN1 on MB	1
	J3439141	10P	MALE CONNECTOR	P.2 M	CN3 on MB / CN4 on JB	2
	J3439124	10P	MALE CONNECTOR	P. 2 M 90°	CN101, CN104 on CB	2
	J3439146	11P	MALE CONNECTOR	P.2 M	CN5 on JB / CN8 on MB	2
	J3439148	7P	MALE CONNECTOR	P.2 M	CN1 on JB / CN2 on MB	2
	J3439171	4P	MALE CONNECTOR	90° P.2 M	CN105 on CB	1
	J3439174	9P	MALE CONNECTOR	90°P.2 M	CN103 on CB	1
	13439611RI	3P	SCREW CLAMP	P10	CN1 on PB	1

WIRING, CABLE

	K3468199	7P	CABLE	(28) -2C D/R	From CN2 on MB to CN1 on JB	1
	K3468162	20P	FLAT CABLE	(56) -2C	From CN6 on MB to CN1 on RIGHT CONTACT BOARD	1
	K3468178	20P	FLAT CABLE	(44) -2C/D	From CN5 on MB to CN1 on LEFT CONTACT BOARD	1
#	7770606000	4P	CABLE ASSY	(60) 2C P.2 D/R	From CN105 on CB to CN4 on MB	1
	7699408000	7P	CABLE ASSY	(38) -2C P.2	From CN3 on JB to CN2 on PB	1
#	7770607000	4+2P	COAXIAL CBL ASSY	(20) P.2 D/R	From CN104 on CB to CN4 on JB	1
#	7770608000	10P	CABLE ASSY	(56) -2C P.2 D/R	From CN101 on CB to CN3 on MB	1
#	7770609000	9P	CABLE ASSY	(40) -2C P.2 D/R	From CN103 on CB to CN1 on MB	1
	01121256	11P	CABLE ASSY	(9) -2C P.2	From CN8 on MB to CN5 on JB	1

AC INLET

	J3449103	UNIVERSAL AC INLET		INLET1 on PB	1

SCREW

	J2289213	SELF TAP.SCREW	3.9X16 TC TC		2
	J2289125	SCREW	2.9X10 TC TC PR	TROP	31
	J2289118	SCREW	2.9X16 TC TC PR	BRUN	2
	J2289108	SELF LOCK.SCREW	M3X10 TCTC	H.6	10
	J2289221	SELFLOCK. SCREW	M4X10 TC TC TFR	9.5	21
	J2289232	SCREW	M5X8 TC TC BRUN		8
	K2288110	SCREW	M5X20 TC TC TFR	H9,5 BRUN	3
	J2289193	SELF LOCK.SCREW	M3X6 TC TC	H.6	13
	J2289150	SCREW	2.9X16 TC PR TFR	H.7	6
	K2288107	SCREW	3.9X15 TC PR TFR	H.8	14
	J2289113	NUT	3MA	H.3	2

PACKING

#	K2638246	RIGHT LDPE END SIDE	RD-150	1
#	K2638247	LEFT LDPE END SIDE	RD-150	1
#	K2638248	LDPE CENTRAL PROTECTION	RD-150	2
	K2678119	CARTENE ENVELOPE HD CM.170X56		1
	K2678106	POLYETH.ENVELOPE 4OX55		1
#	K2618238	OUTER PACKING	RD-150	1

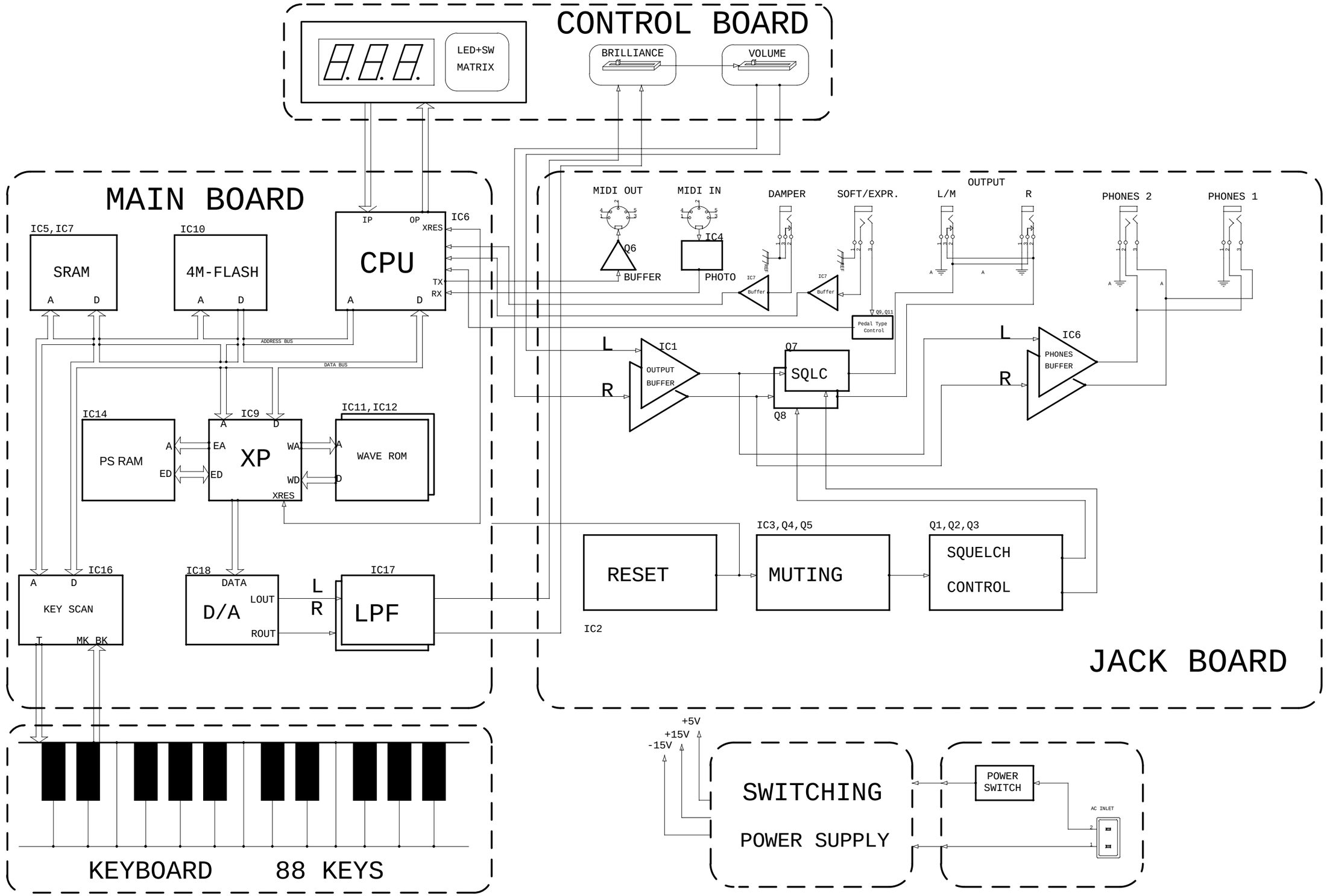
MISCELLANEOUS

	K2168102	SPACER FOR LED H.2.8 D.E. 5.5		27
	J2359105	PRESSURE RUBBER SFF-018		4
	J2159102	PLASTIC RIVET SR3055		2
	K253810302	FUSE WARNING LABEL		1
	K2268121	RED FELT MM 1250X12X1.5		1
	K2248156	ANTIDUST COVER FOR POTENTIOMETER	RD-150	1
	K2268148	ADHESIVE BLACK FELT 25X1X1240		2

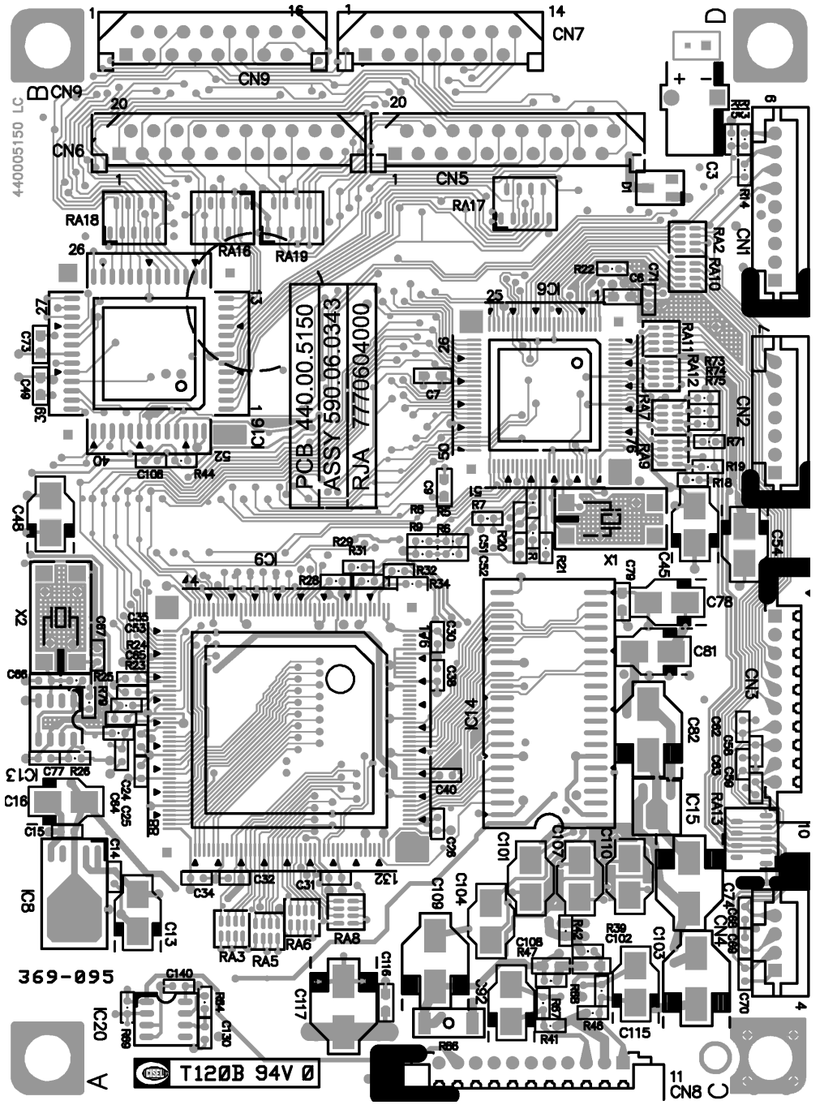
ACCESSORIES

#	K6018408	O. MANUAL (IT/E/D/F/DUTCH/SP)	RD-150	1
	J305910301	PEDAL W/CABLE		1
⚠	J3439150	MAINS CABLE H05VV+POL.. SOCKET	(230V)	1
⚠	J3439128	CABLE 498/3 SJT 2X18 AWG-C17	(117V)	1
⚠	13499152RI	CABLE BS/13/H05VV-F3G0 75-V	(230VE)	1
⚠	J3439167	MAINS CABLE SAA/2-H05VV5 2X1-C17	(240VA)	1

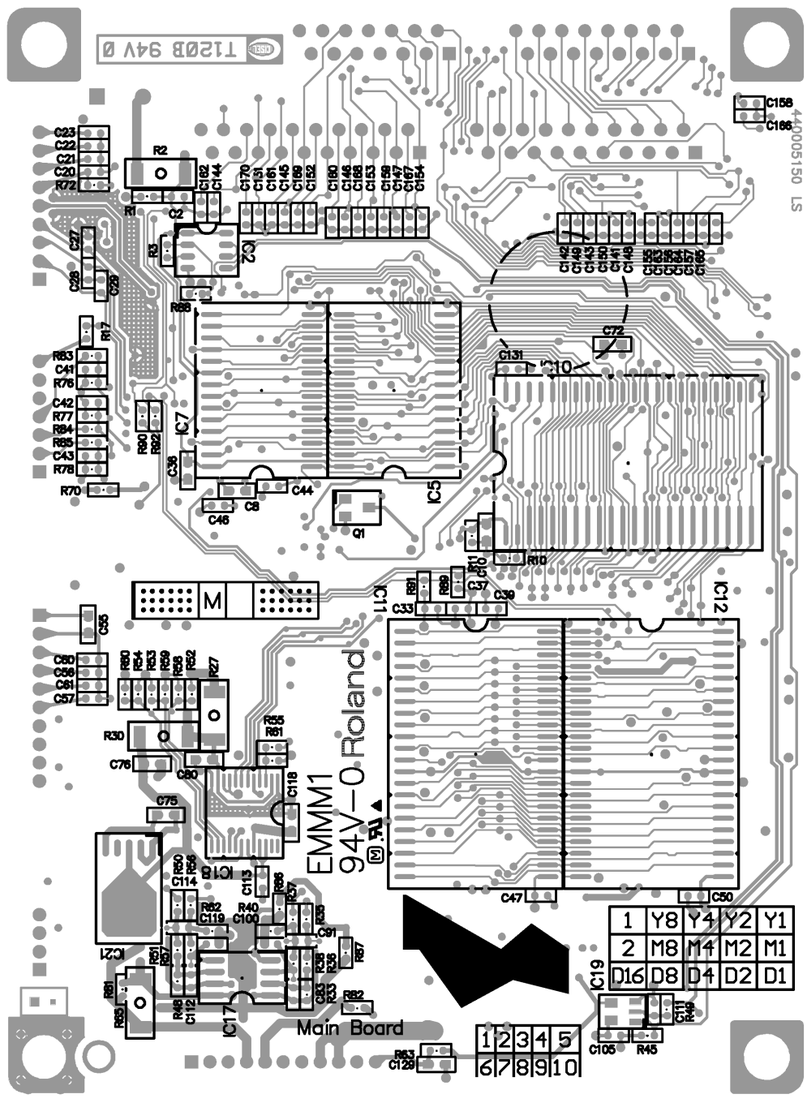
BLOCK DIAGRAM



E MAIN PCB ASSY ASSY 7770604000

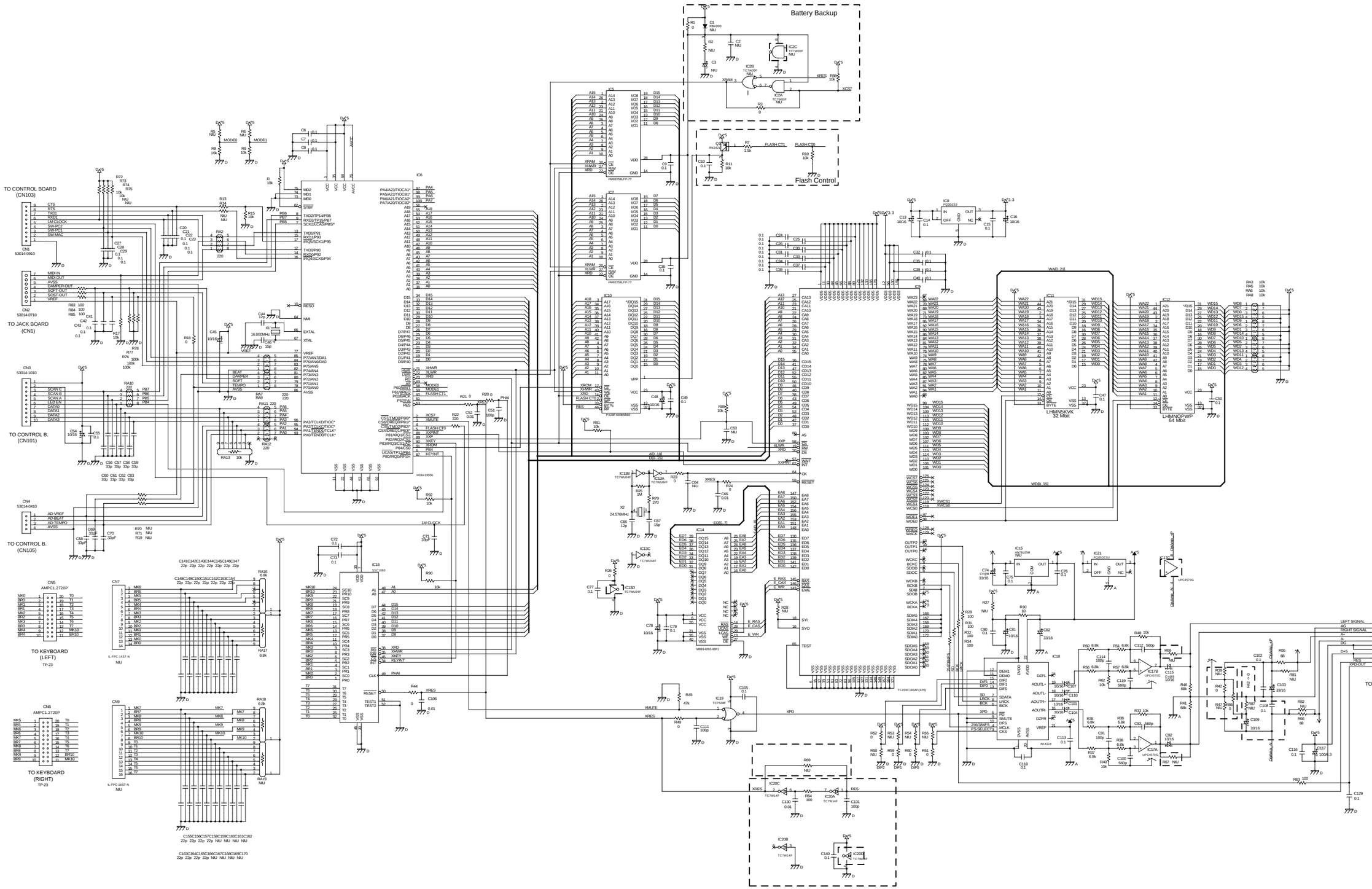


View from component side



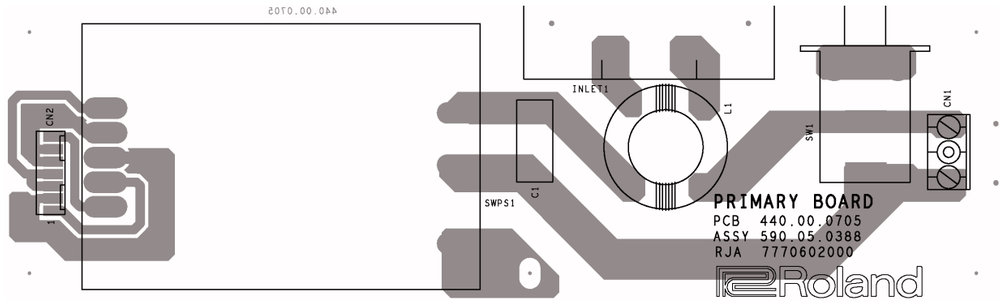
View from solder side

CIRCUIT DIAGRAM (MAIN PCB ASSY)

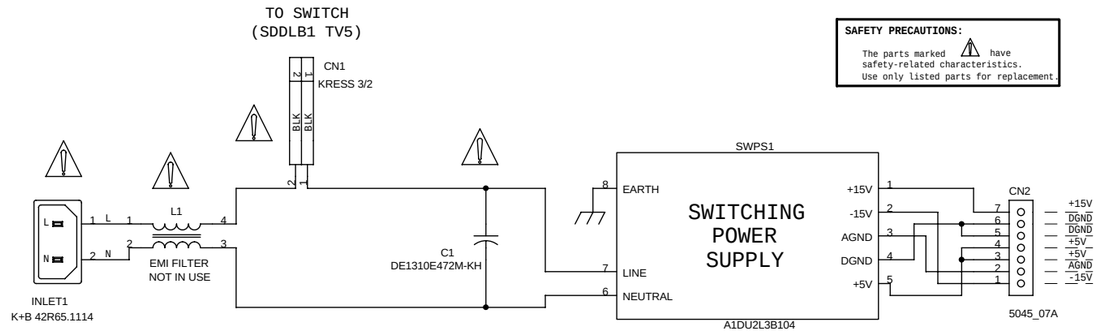


INLET PCB ASSY & CIRCUIT DIAGRAM

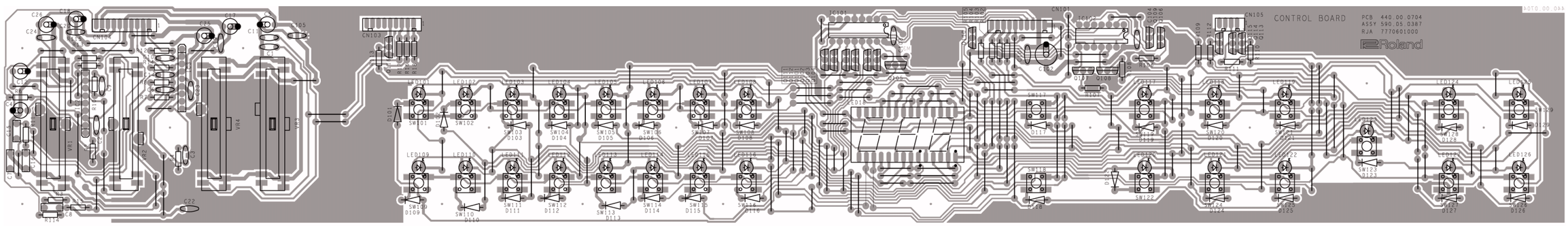
ASSY 7770602000



View from component side

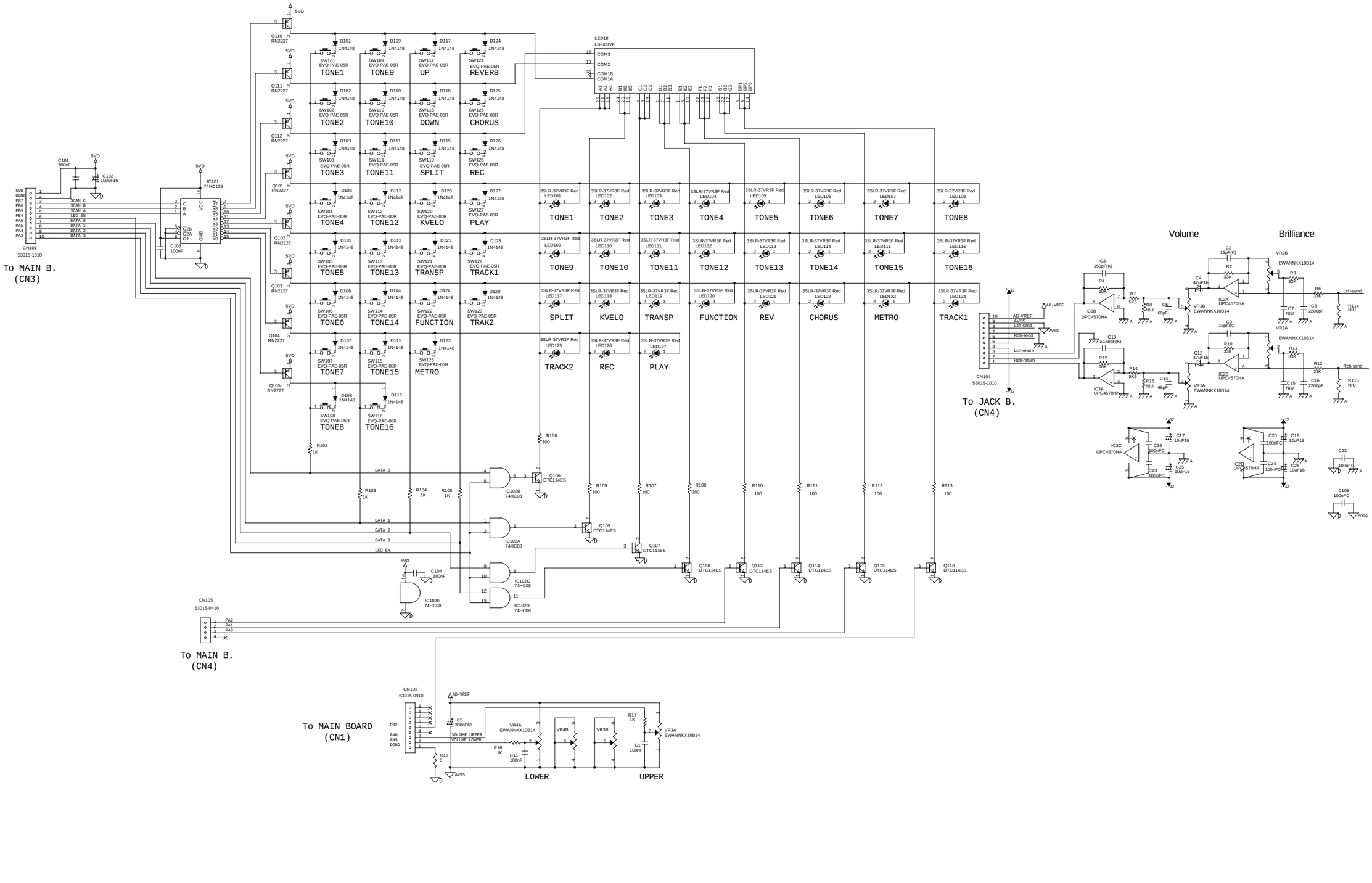


CONTROL PCB ASSY ASSY 7770601000

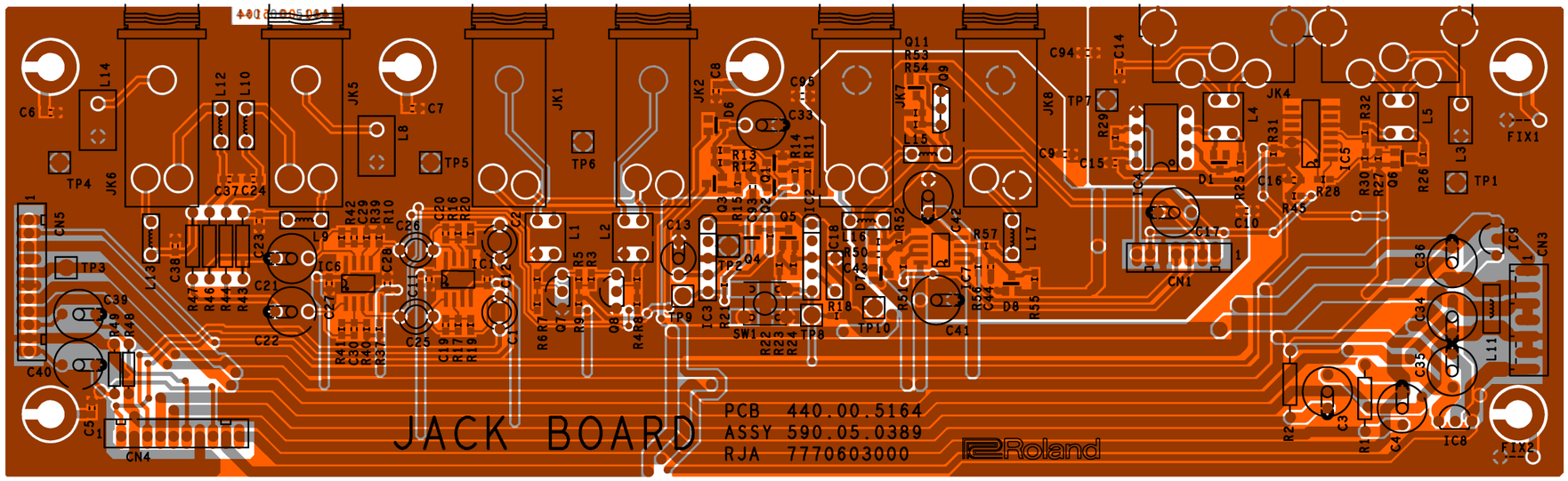


View from component side

CIRCUIT DIAGRAM (CONTROL PCB ASSY)

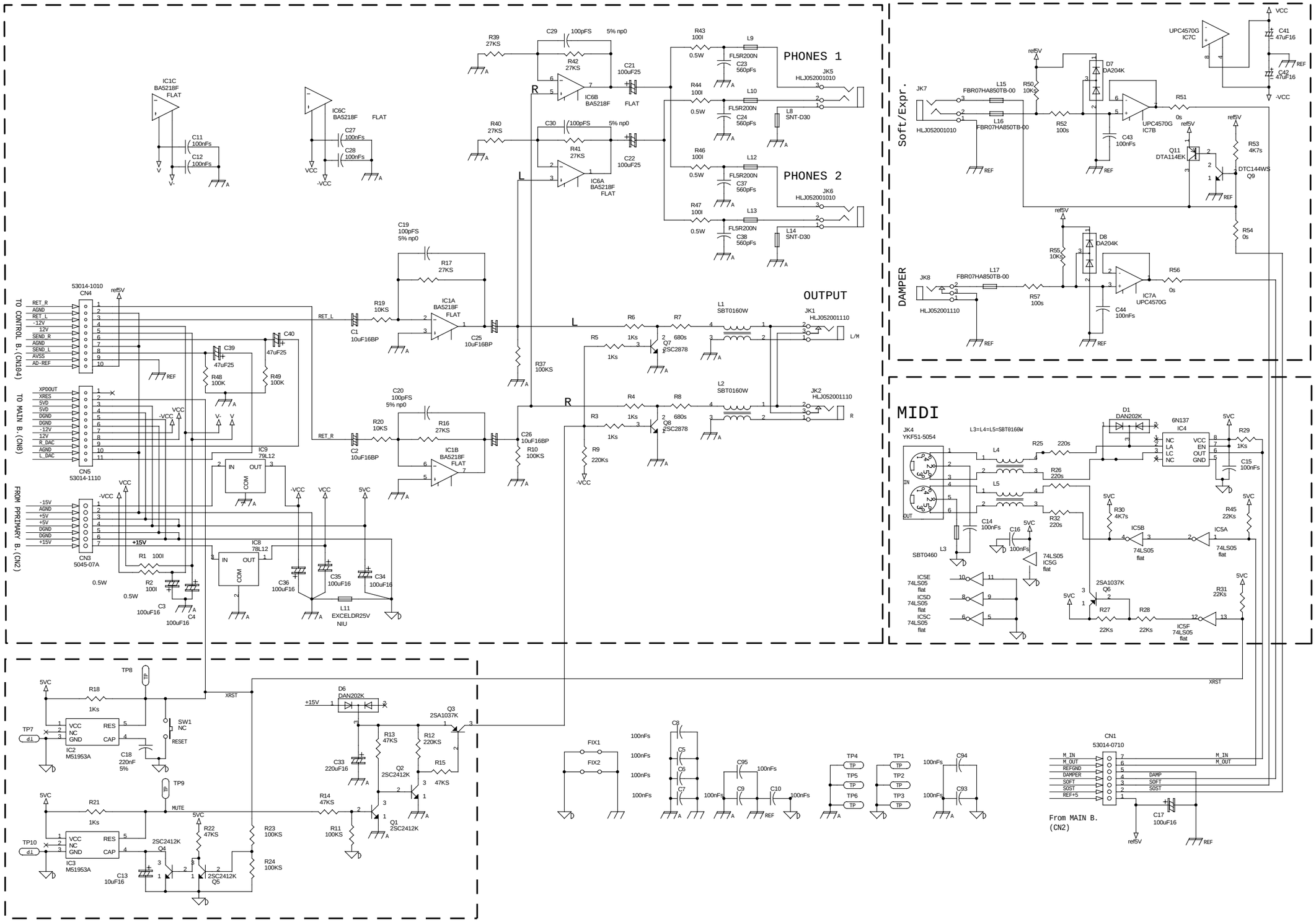


JACK PCB ASSY ASSY 7770603000



View from component side

CIRCUIT DIAGRAM (JACK PCB ASSY)



TEST MODE

The following devices are required:
- MIDI cable
- An oscilloscope
- Damper and Soft pedals
- EV-5 Expression Pedal.

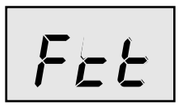
HOW TO VISUALIZE THE INSTRUMENT SOFTWARE VERSION

Turn the power on while keeping the [POP PIANO] button pressed.
After a few seconds the 7-segment display visualizes:

Turn the power off to exit Test Mode

FACTORY SETUP

Turn the power on while keeping the [PLAY] and [REC] buttons pressed.
After a few seconds the 7-segment display visualizes:



The Factory function re-establishes the instrument's default settings.

HOW TO ENTER TEST MODE

Turn the power on while keeping the [PIANO] button pressed.

After a few seconds, the display will show the Test Mode main menu, visualising the following writing:

TEST RD-150 VERSION 1.00

The LEDs relative to Piano, Pop Piano, Rock Piano, Honky Tonk, Stage Rhodes, Sa Rhodes timbres light up, indicating the test to be carried out. As far as the tests are carried out, the corresponding LEDs will turn OFF.

1) Piano	Switch and LED Test
2) Pop Piano	Memory Test (FLASH, RAM, Wave ROM, Effect RAM)
3) Rock Piano	Adc Test
4) Honky Tonk	Keyboard Test
5) Stage Rhodes	Midi Test
6) Sa Rhodes	Audio Test

Turn the power off to exit Test Mode.

1) LED AND SWITCH TEST

Press the [PIANO] button.

The display visualizes:

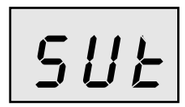
All the LEDs on the panel are on.
Press one by one all the switches on the panel so as to turn the corresponding LED off.
Every time you press a switch, you hear a sound indicating that the contact has been established.
The LEDs turn OFF and ON in sequence. When you press a button having no LED connected (Data + and Data -), the segments of the upper and lower part of the display will turn off.

Note: If you press the [Data + Data -] button in sequence, the display segments turn off alternatevely and you hear a sound. If you keep it pressed, the display segments turn off one after the other very quickly and you do not hear any sound.
Note: If this test is not carried out completely, it is not possible to go on to the following step.

When all the LEDs will be off, the Master screen will be shown on the display, indicating which test has to be carried out immediately after:

You can leave the Switch/LED test, pressing the [CLAV] and [PIANO] buttons at the same time.

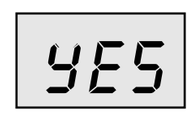
Note: If you do not carry out the Switch test, the display visualizes the writing "Sut " every time you press the [CLAV] button, until you perform it.

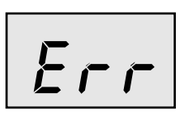


2) MEMORY TEST

Press the [POP PIANO] button.

The DEVICE CHECK is automatically carried out by the CPU board.
The result of the test is visualized on the four LEDs corresponding to the name of the buttons described below.
If a DEVICE is damaged, the corresponding LED flashes, otherwise it stays on.
If at least one DEVICE is damaged, the writing Err is visualized on the display, otherwise Yes is visualized.



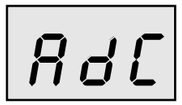


The LEDs' associations are the following:

Vibraphone	**FLASH**
Acustic bass	**RAM**
Finger Bass	**WAVE ROM**
Orch Strings	**EFFECT RAM**

To go to the next test, press the [CLAV] button.

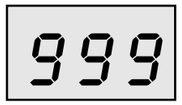
The display visualizes:



3) A.D.C. TEST

Press the [Rock Piano] button.

The display visualizes:



The Analog Digital Converter test has to be carried out following the procedure below:

a) Move the Level Lower slider potentiomenter from the bottom upwards and from the top downwards. The first digit on the left will show all the values between 0 and 9 and vice versa. An increasing and decreasing sound will follow the change of this value.

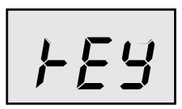
b) Move the Level Upper slider potentiomenter from the bottom upwards and from the top downwards. The first digit on the left will show all the values between 0 and 9 and vice versa. An increasing and decreasing sound will follow the change of this value.

c) Connect the Expression Pedal (EV-5) in the Soft socket. Move the Expression Pedal from the bottom upwards and from the top downwards. The first digit on the left will show all the values between 0 and 9 and vice versa. An increasing and decreasing sound will follow the change of this value. At the same time, the "Finger Bass" LED will be on.

d) Disconnect the Expression Pedal (EV-5) and connect the Soft pedal. Pressing and releasing the soft pedal alternatively, the "Vibraphone" LED will be switched on and off. A sound will be heard during this operation. At the same time, the "Finger Bass" LED will be off.

e) Connect the Damper pedal in the Damper socket. Pressing and releasing the Damper pedal alternatively, the "Acoustic Bass" LED will be switched on and off. A sound will be heard during this operation.

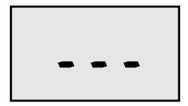
To go to the next test, press the [CLAV] button.
The display visualizes:



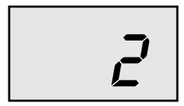
4) KEYBOARD TEST

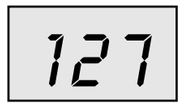
Press the [Honky Tonk] button.

When you press this button, you hear a Piano sound and its dynamic level is visualized on the display with a value going from 2 to 127.



Released key

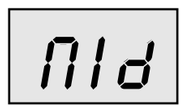




Pressed key

To go to the next test press the [Clav] button.

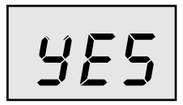
The display visualizes:

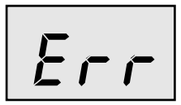


5) MIDI TEST

Press the [Stage Rhodes] button.

The display visualizes :

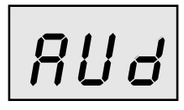




Connect a Midi cable into MIDI IN and MIDI OUT sockets. The display shows "Yes" if transmission and reception are OK. If the writing "Err" is visualized, it means that data transmission and/or reception do not work.

To go to the next test press the [Clav] button.

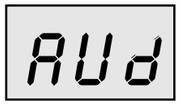
The display visualizes:



6) AUDIO TEST (*)

Press the [Sa Rhodes] button.

The display visualizes:

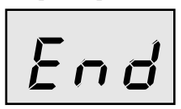


When pressing the following buttons in sequence, you hear the corresponding sounds:

Piano	Piano Chorus sound	
Pop Piano	Piano Reverb	
Rock Piano	Piano Resonance	
Honky Tonk	Sin Wave from the left channel	L. 2,1 Vpp
Stage Rhodes	Sin Wave from both channel	L. 1,6/ R.1,74 Vpp
Sa Rhodes	Square Wave from the right channel	R. 1,8 Vpp.
E. Piano	Sound OFF	

(*) You can enter the Audio Test when powering on the instrument, by keeping the button [Rock Piano] pressed.

At the end of the Audio Test, if you press the [Clav] button, the display visualizes:



Note: If you want to carry out a test again, select the corresponding button. To exit the previous screen, press the [Clav] button.

To exit Test Mode: Power the instrument off and carry out the Factory Setup.

HOW TO UPDATE THE FLASH MEMORY

The RD-150 has an internal flash memory and can be updated via MIDI.
The update procedure has to be carried out by using the Roland Sound Brush.

Item Required
RD-150 Version up disk (code: 7770617000)

1. Turn the RD-150 off.
2. Connect the Roland Sound Brush MIDI OUT to the RD-150 MIDI IN.
3. Make sure that the Midi Clock is set on Remote and that AutoPlay is in OFF position.
   - **a.** While pressing the [SET] button, press the [TEMPO <] button
   - **b.** Select “rEt”(Remote) by the [REW] or [FW] button
   - **c.** Press the [SET] button
   - **d.** While pressing the [SET] button, press the [PLAY] button
   - **e.** Select “oFF”(Auto Play Off) by the [REW] or [FW] button
   - **f.** Press the [SET] button
4. Insert the *RD-150 Version up disk* containing the update midi file ver. X.XX into the Roland Sound Brush.
5. Turn the RD-150 on while keeping the [Piano], [Pop Piano], [Rock Piano] buttons pressed at the same time.
6. After the RD-150 LEDs stop flashing, press PLAY on the Sound Brush control panel. Play the Version Update Midifile (Time: about 6 1/2 min).
   During this time, do not turn the RD-150 off and make sure that the power does not stop in any case.
7. During the SW update, the [Vibraphone], [Acoustic Bass], [Finger Bass], [Orch. Strings] LEDs will light on according to the following chart:

LED Vibra-Phone	LED Acoustic Bass	LED Finger Bass	LED Orch. Srings	Block Number
On	On	On	On	Block 1
On	Off	Off	Off	Block 2
Off	On	Off	Off	Block 3
On	On	Off	Off	Block 4
Off	Off	On	Off	Block 5
On	Off	On	Off	Block 6
Off	On	On	Off	Block 7
On	On	On	Off	Block 8

8. At the end of this operation all the above LEDs will flash contemporarily.
   Turn the power off and then turn on while keeping the [TONE2] button pressed in order to have the version number visualized on the display.
9. We also suggest to turn the power off again and then turn it on while keeping the [Play] and [Rec] buttons pressed contemporarily, so as to carry out the Factory Setup.