A-37
MIDI KEYBOARD CONTROLLER

SERVICE NOTES
First edition
Issued by RES

Specifications

Keyboard: 76 keys, velocity sensitive, with channel Aftertouch

Display: 3 x 7 segments

Realtime controllers: Data Entry slider, Bender/Modulation lever, channel Aftertouch, Hold Foot Switch socket, Foot Pedal socket

Memories: 128 Patches

Connections: MIDI In, Out A, Out B, Thru, Expression Pedal, Sustain Footswitch, DC IN (adaptor)

Compatibility: GM/GM2/GS, all MIDI messages
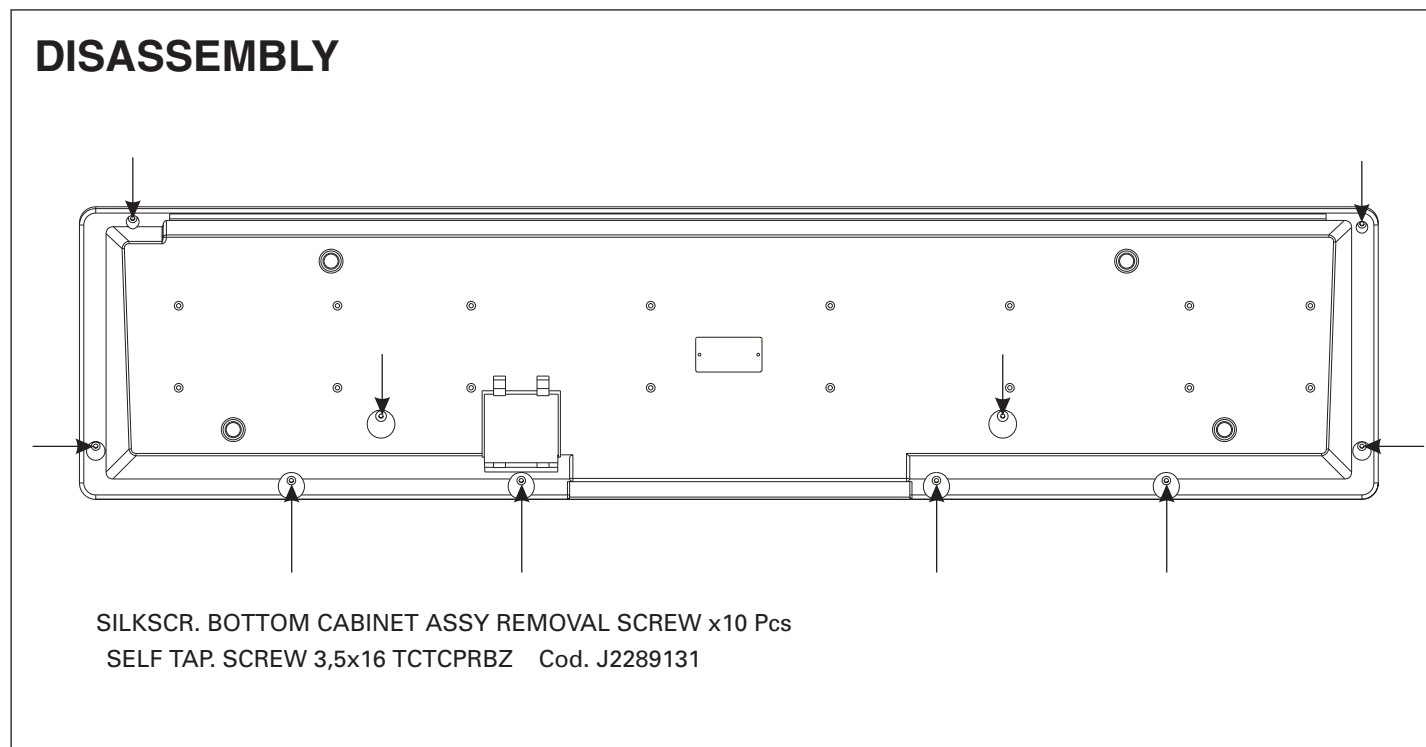
Power supply : Batteries, AC/DC adaptor (DC 9V)

Dimension: 1195 (W) x 270 (D) x 113 (H) mm

Weight:: 7,7 Kg

Supplied accessories: 6 x dry batteries (AA type), MIDI cable, Owner's Manual, Music Rest

Options: Roland ACA adaptor (9V, 200mA); DP-2, DP-6, or BOSS FS-5U footswitch; EV-5, Boss FV-300L expression pedal

Specifications subject to change without prior notice. All other trademarks mentioned in this manual are the property of the respective companies.

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DISASSEMBLY

SILKSCR. BOTTOM CABINET ASSY REMOVAL SCREW x10 Pcs
SELF TAP. SCREW 3,5x16 TCTCPRBZ   Cod. J2289131

LOCATION OF CONTROLS

ANTI-DUST COVER PL30N
Cod. 22248470

POT. COVER
Cod. K2478198

LIN. POT. CURSOR 100KB 10 MS
Cod. J3339101

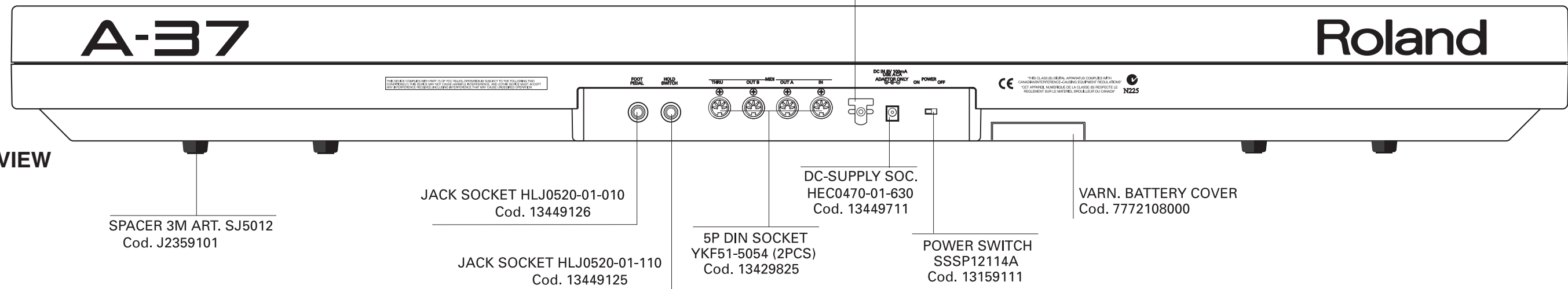BUTTON 20x10 WHITE
Cod. K2478313

SILKSCREENED PLEXIGLASS
Cod. 7770614000

DISPLAY TYPE LB-603VF(RED)
Cod. 00239767

BUTTON 20x10 DARK GREY
Cod. K2478314

BUTTON 20x10 WHITE
Cod. K2478313

BUTTON 20x10 DARK GREY
Cod. K2478314

BUTTON 20x10 RED
Cod. K2478346

Roland **A-37**
MIDI KEYBOARD CONTROLLER
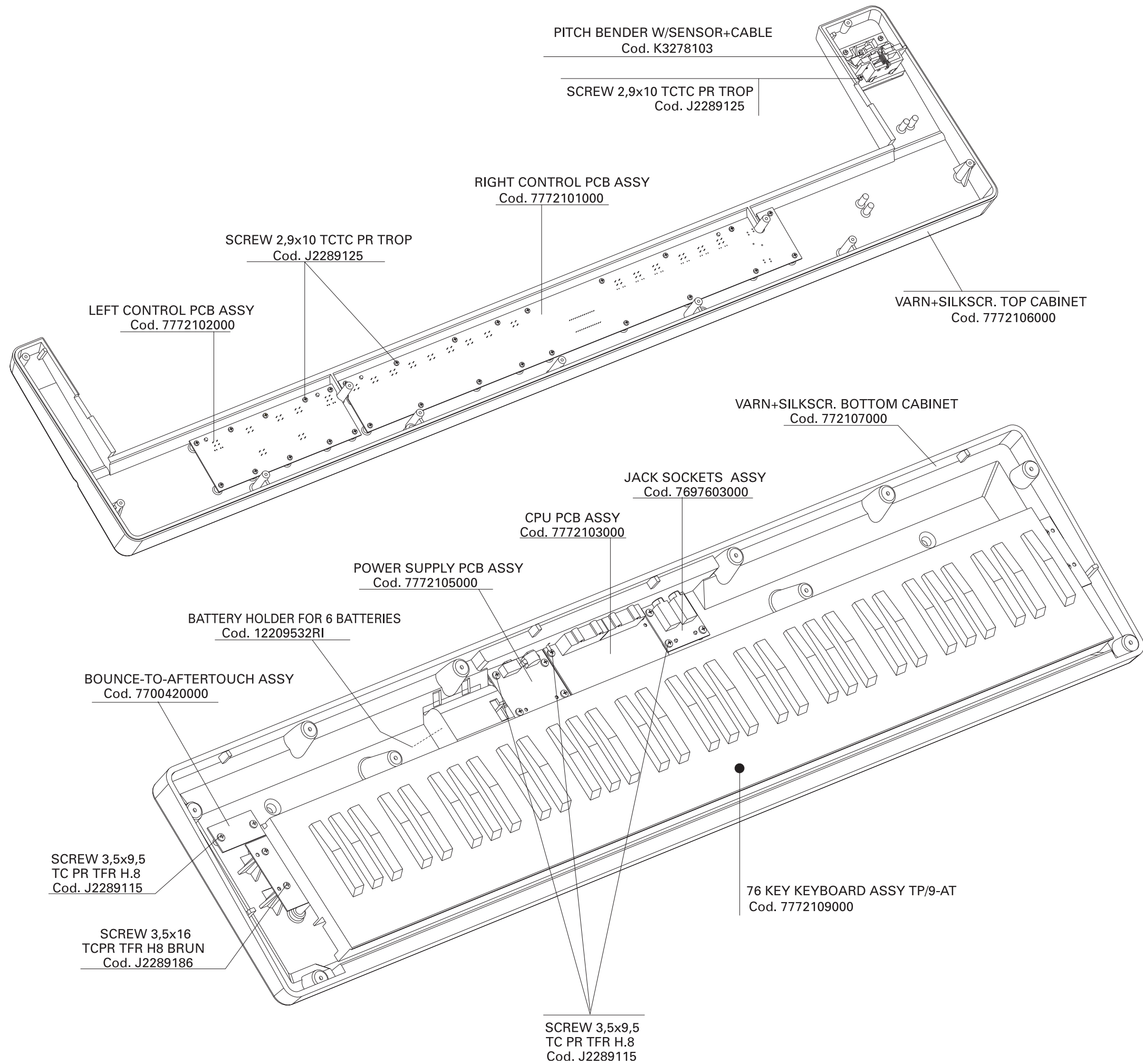
PITCH BENDER W/SENSOR+CABLE
Cod. K3278103

HOLDER F/POWER SUPPLY CBL
Cod. 22365708

A-37   **Roland**

REAR VIEW

SPACER 3M ART. SJ5012
Cod. J2359101

JACK SOCKET HLJ0520-01-010
Cod. 13449126

JACK SOCKET HLJ0520-01-110
Cod. 13449125

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

DC-SUPPLY SOC.
HEC0470-01-630
Cod. 13449711

POWER SWITCH
SSSP12114A
Cod. 13159111

VARN. BATTERY COVER
Cod. 7772108000

EXPLODED VIEW

PITCH BENDER W/SENSOR+CABLE
Cod. K3278103

SCREW 2,9x10 TCTC PR TROP
Cod. J2289125

RIGHT CONTROL PCB ASSY
Cod. 7772101000

SCREW 2,9x10 TCTC PR TROP
Cod. J2289125

LEFT CONTROL PCB ASSY
Cod. 7772102000

VARN+SILKSCR. TOP CABINET
Cod. 7772106000

VARN+SILKSCR. BOTTOM CABINET
Cod. 772107000

JACK SOCKETS ASSY
Cod. 7697603000

CPU PCB ASSY
Cod. 7772103000

POWER SUPPLY PCB ASSY
Cod. 7772105000

BATTERY HOLDER FOR 6 BATTERIES
Cod. 12209532RI

BOUNCE-TO-AFTERTOUCH ASSY
Cod. 7700420000

SCREW 3,5x9,5
TC PR TFR H.8
Cod. J2289115

SCREW 3,5x16
TCPR TFR H8 BRUN
Cod. J2289186

76 KEY KEYBOARD ASSY TP/9-AT
Cod. 7772109000

SCREW 3,5x9,5
TC PR TFR H.8
Cod. J2289115

KEYBOARD PARTS LIST
76 KEY KEYBOARD TP/9-AT   Code: 7772109000

Ref	PARTS NAME		PARTS NUMBER	n.
1	KEY SPRING gr.63		J2179101	76
2	NATURAL KEY C5 (gr.10)	DO	J2579112	6
	NATURAL KEY D6 (gr.10)	RE	J2579113	6
	NATURAL KEY E7 (gr.10)	MI	J2579114	6
	NATURAL KEY F1 (gr.10)	FA	J2579115	7
	NATURAL KEY G2 (gr.10)	SOL	J2579116	6
	NATURAL KEY A3 (gr.10)	LA	J2579117	6
	NATURAL KEY B4 (gr.10)	SI	J2579118	6
	NATURAL KEY C8 (gr.10)	MI (I)	J2579119	1
	NATURAL KEY G (gr.10)	SOL (F)	J2579121	1
3	MATT SHARP KEY (gr.10)		J2579120	31
4	SELF TAP SCREW 2.9x8 TCTCPRBZ		J2289126	42
5	12P RUBBER CONTACT		2218523802	7**
	1P CONDUCTIVE RUBBER LR13/1		7625920000	1
6	LEFT CONTACT BOARD W/RUBBER ASSY		7695005000	1
7	RIGHT CONTACT BOARD W/RUBBER ASSY		7695004000	1
8	PLASTIC CHASSIS		J2589101	1
9	GUIDE BUSHING INFERIOR		J2359104	76
10	GUIDE BUSHING SUPERIOR		22158789	76
11	SENSOR AFTER TOUCH		J3169112	1
✱	CONTACT BOARDS ARE COMPLETE WITH RUBBER CONTACTS			

** CUT AND ASSEMBLY OF RUBBER CONTACTS

12 P RUBBER CONTACT

C

A

B

D

LEFT

A   B   C   C

C   RIGHT   C   C   D

✱ CONTACT BOARDS ARE COMPLETE WITH RUBBER CONTACTS

SM   PM

76 KEY KEYBOARD ASSY TP / 9 - AT

MI (I)   SOL (F)
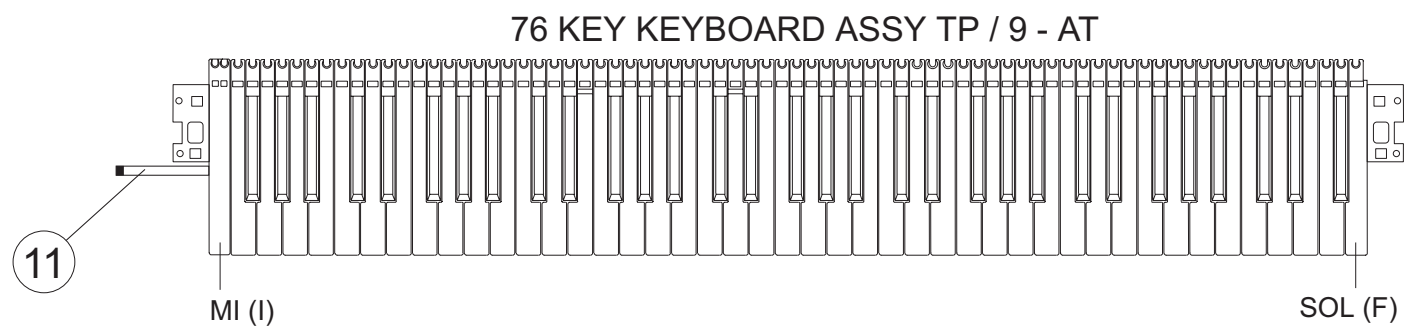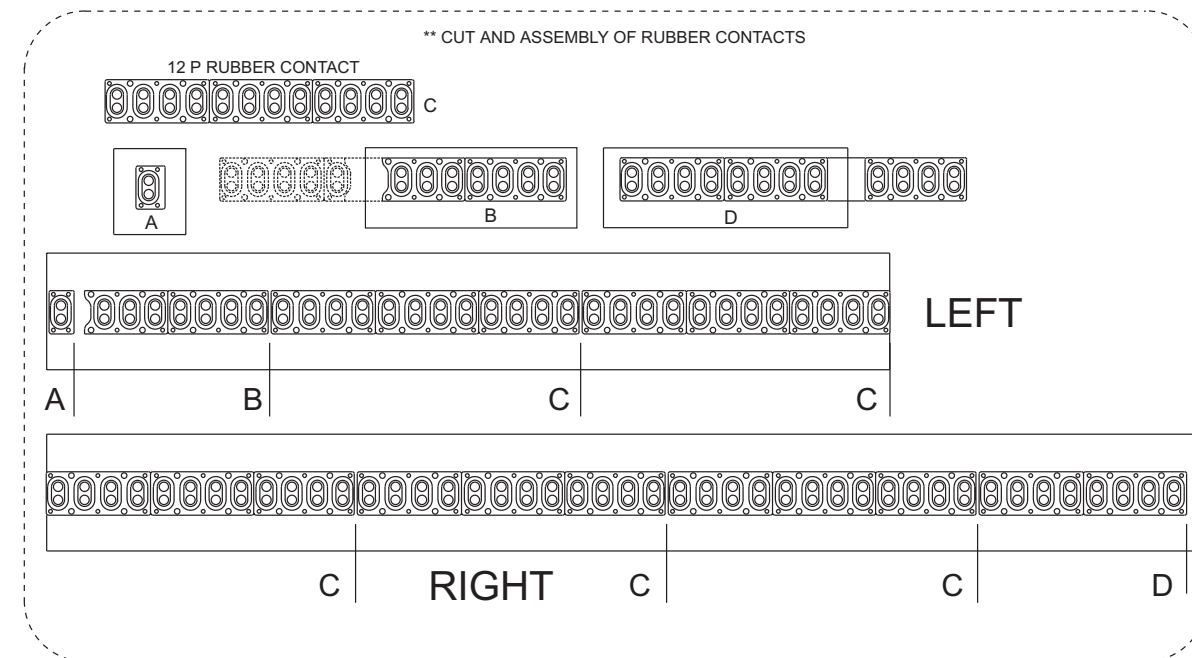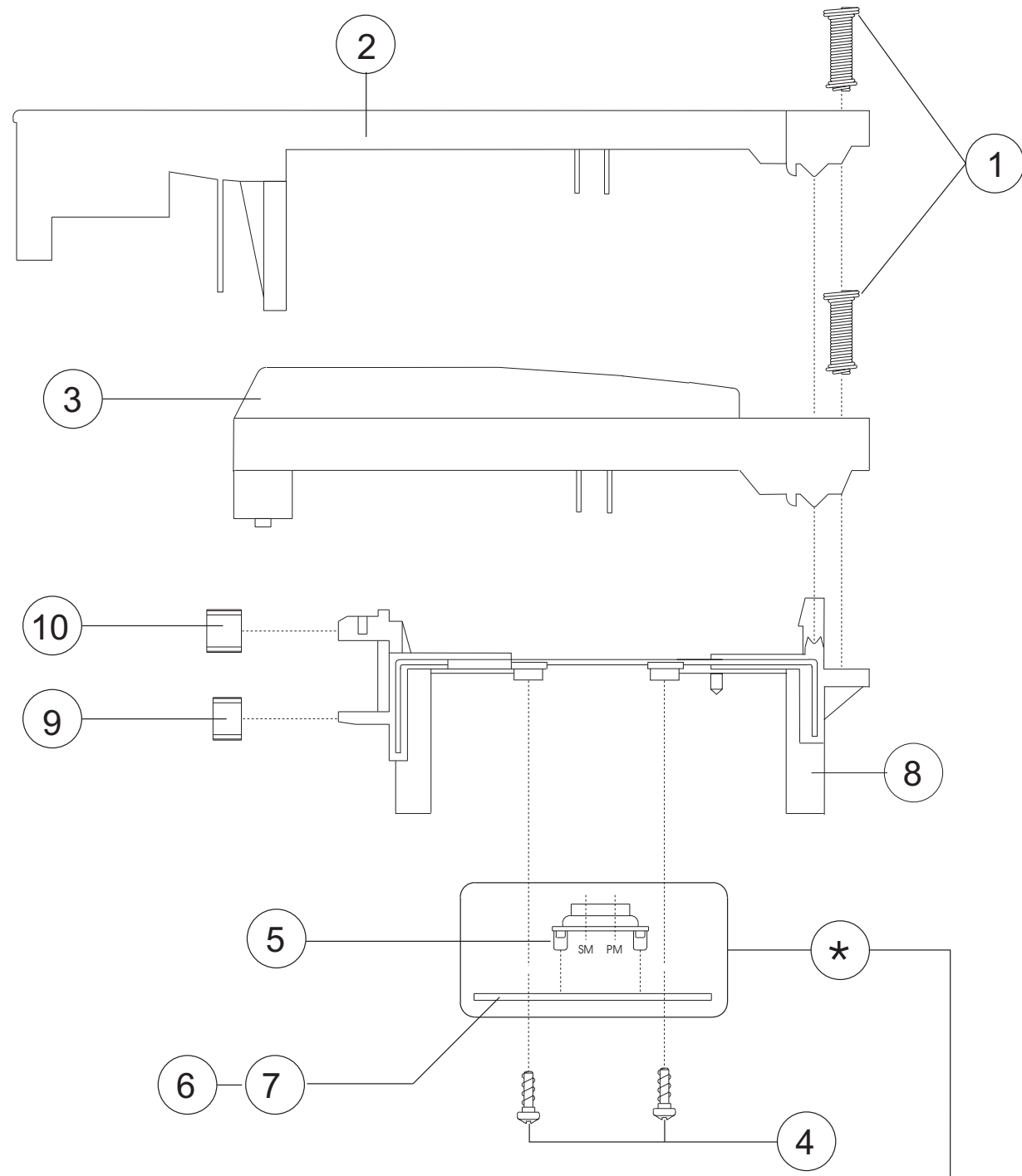
PARTS LIST A-37

SAFETY PRECAUTIONS :	CONSIDERATION ON PARTS ORDERING
The parts marked ⚠ have safety-related characteristics. Use only listed parts for replacement.	When ordering any parts listed in the parts list,please specify the following items in the order sheet.

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.

RCB	= Right Control Board
LCB	= Left Control Board
CPU	= CPU Board
PS	= Power Supply B.
JB	= Jack Board
AFT	= Bounce After Touch Board

CASING

					Q.ty
	K2198102	MUSIC REST			1
	22208320	MUSIC SCORE HOLDER			1
#	7772106000	VARN+SILKSCR. TOP CABINET	A-37		1
#	7772107000	VARN+SILKSCR. BOTTOM CABINET	A-37		1
#	7772108000	VARN. BATTERY COVER	A-37		1
	7770614000	SILKSCREENED PLEXIGLASS	RD-150		1

KNOB BUTTON

	K2478198	POT. COVER			1
	K2478313	BUTTON	20X10 WHITE		8
	K2478314	BUTTON	20X10 DARK GREY		13
#	K2478346	BUTTON	20X10 (RED)		1

SWITCH

	J3169105	SWITCH	EVQ-PAE 05 R	SW1,2,3,4,5,6,7 on CPU / SW1 => 15 on LCB	22
	13159111	POWER SWITCH S	SSP12114A	SW1 on PS	1

JACK, SOCKET

	13449125	JACK SOCKET	HLJ0520-01-110	JK1 on JB	1
	13449126	JACK SOCKET	HLJ0520-01-010	JK4 on JB	1
	13429825	5P DIN SOCKET	YKF51-5054 (2PCS)	JK1,2 on CPU	2
	13449711	DC-SUPPLY SOC.	HEC0470-01-630	JK3 on PS	1

DISPLAY UNIT

	00239767	DISPLAY TYPE	LB-603VF (RED)	DS1 on LCB	1

KEYBOARD ASSY

#	7772109000	76 KEY KEYBOARD ASSY TP/9-AT		1

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

PCB ASSY

#	7772105000	POWER SUPPLY PCB ASSY	A-37		1
	7697603000	JACK SOCKETS ASSY		A-33	1
	7700420000	BOUNCE-TO-AFTERTOUCH ASSY			1
#	7772101000	RIGHT CONTROL PCB ASSY	A-37		1
#	7772102000	LEFT CONTROL PCB ASSY		A-37	1
#	7772103000	CPU PCB ASSY		A-37	1
	7695004000	RIGHT CONTACT BOARD W/RUBBER ASSY			1
	7695005000	LEFT CONTACT BOARD W/RUBBER ASSY			1

IC

	15229718RI	I.C. 6N 137	PHOTO-COUPLER	IC1 on CPU	1
	15169550RI	I.C. 74 HC138	DIP CMOS	IC2 on LCB	1
	15249111	I.C. TC7WU04 F	FLAT CMOS	IC13 on CPU	1
	15259821	I.C. TC74HC573AF		IC9 on CPU	1
	00129278	I.C. SSC1080 FOB	(CUSTOM IC)	IC10 on CPU	1
#	J5259153	I.C. AT24C64N-10SC 64K	EPROM	IC5 on CPU	1
	15259884	I.C. TC7S08F	MOS CMOS	IC8 on CPU	1
	15249104	I.C. TC7S04F	FLAT	IC11 on CPU	1
	J2259149	I.C. TC74VHC541FT	FLAT	IC6 on CPU	1
	15219183	I.C. M51953 AL	(STANDING)	IC7 on CPU	1
	15149146	IC TD62583AP	(INTERF.DRIVER IC)	IC3 on LCB	1
	15289141	I.C. M5223FP-600D		IC12 on CPU	1
#	7772104000	I.C. MICRO CONTR.IC2 CPU (PROGRAM.) A-37		IC2 on CPU	1

TRANSISTOR

	15319101	TRANSISTOR	2SC-2412K	Q5 on CPU	1
	15329503	TRANSISTOR	DTA-124 EK CHIP	Q1,2,3 on CPU	3
	15329516	TRANSISTOR	DTC-114EK	Q4 on CPU	1
	15119163	TRANSISTOR	RN2227	Q1,2,3,4 on LCB	4
	J5119105	TRANSISTOR	TN6717A	Q3 on PS	1

DIODE

	15019159RI	DIODE	1N-4148	On LCB / on RCB / on RC/ on LC	158
	15339108	DIODE	DA-204K	D1,2,3 on CPU	3
	J5029112	LED DIODE	5 L-53 SRD-D / RED	D1 =>12 on LCB / D1,2,3,4 on RCB	16
	15019345RI	ZENER DIODE	BZX79C 5.6V	D5 on PS	1
	J5019105	DIODE	1N 4002	D1 on PS	1

RESISTOR

	J3919104	RESISTOR ARRAY	EXB-A10E-103-J	RA1,3,4,5,6 on CPU	5
	J3919108	RESISTOR ARRAY	EXB-V8V-103-JV	RA2 on CPU	1
	J3809129	UNINFL. RES.	220 OHM 0.6W 5%	R1,2,3,4,5,6,7,8 on LCB	8

POTENTIOMETER

	J3339101	LIN. POT. CURSOR	100KB 10 MS	VR1 on LCB	1

CAPACITOR

	J3629103	ELECTRL.COND.	100U 25V P5	C1 on PS	1
	J3629104	ELECTRL.COND.	10U 50V P5	C21,22 on PS	2
	J3629105	ELECTRL.COND.	47U 50V P5	C2 on PS	1
	J5369103	ELECTR. COND. RV2	100U 16V (SMD)	C30 on CPU	1
	J5369104	ELECTR. COND. RV2	10U 16V (SMD)	C2,11,16,23 on CPU	4
	J5369102	ELECTR.COND. RV2	47U 16V SMD	C3,5,65 on CPU	3
	J5369106	ELECTR. COND. RV2	1U 50V (SMD)	C20,33,64 on CPU	3
	J3629150	ELECTR.COND.	47U 16V H.7	C3,2 on LCB	2

INDUCTOR, COIL, FILTER

<<EMI>>	12449382RI	NOISE SUP.	PLT1-R53C	FL1 on PS	1
<<EMI>>	12449370	NOISE SUP.	SBT-0160W	L1,2,3,4 on CPU / L7,9 on JB	6
<<EMI>>	12449326	NOISE SUP.	SBT-0460	L5 on CPU	1

CRYSTAL, RESONATOR

	00894034	X-TAL 16 MHZ	MA-406	X1 on CPU	1
	01124812	QUARTZ 10 MHZ	MA-406	X2 on CPU	1

CONNECTOR

	13419677RI	16P FEM. CONNECTOR AMP 1.27		CN4,2 on CPU / on LC	3
	13369689RI	20P FEM. CONNECTOR AMP 1.27		CN6 on CPU / on RC	2
	J3429122	14P FEM. CONNECTOR AMP 1.27		CN1 on RCB / CN3 on CPU	2
	13439479RI	MALE CONN.AMP 6W STANDING		CN1 on JB / CN8 on CPU	2
	J3439123	6P MALE CONN. P. 2 M 90°		CN4 on LCB	1
	J3429120	3P MALE CONNECTOR P.2 M		CN10 on CPU / CN401 on AFT	2
	J3439168	4P MALE CONNECTOR 76384-404		CN402 on AFT	1

WIRING, CABLE

	7695108001	16P FLAT CABLE (24)	-2C	From CN4 on CPU to LC	1
	7700112000	3P CABLE ASSY (64)	-2C P.2	From CN10 on CPU to CN401 on AFT	1

BATTERY

	J2569102	2-BATTERY SET 'AA'-SIZE (ALK.)		3

SCREW

	J2289122	SCREW	2.2X6 TC TC BRUN		2
	J2289125	SCREW	2.9X10 TC TC PR TROP		32
	J2289131	SELF TAP.SCREW	3.5X16 TCTCPRBZ		26
	J2289118	SCREW	2.9X16 TC TC PR BRUN		5
	J2289115	SCREW	3.5X9.5 TC PR TFR H.8		14
	J2289186	SCREW	3.5X16 TCPR TFR H.8 BRUN		1

PACKING

#	K2638260	RIGHT POLYST. END-SIDE	A-37		1
#	K2638261	LEFT POLYST. END-SIDE	A-37		1
	K2678109	CARTENE ENVELOPE HD 150X40			1
	K2678106	POLYETH.ENVELOPE 4OX55			1
#	K2618257	OUTER PACKING	A-37		1

MISCELLANEOUS

	K2168117	LED SPACER H.1,5 D.E.5,5			16
	J2359101	SPACER 3M ART. SJ5012			4
	22248470	ANTI-DUST COVER PL30N			1
	13419723RI	9V BATTERY CONNECTION			1
	12209532RI	BATTERY HOLDER FOR 6 BATTERIES			1
	22365708	HOLDER F/POWER SUPPLY CBL			1
	13429823RI	P. SUPPLY PLUG LOCKING			1

ACCESSORIES

	23485228	MIDI CABLE 1M - BLACK		1
	K6018109	MIDI GUIDE		1
#	K6018447	OWNER'S MANUAL (E/D/F/SP/IT/OL) A-37		1

TEST MODE

ITEMS REQUIRED:
·   MIDI cable;
·   Dumper Pedal;
·   Expression Pedal EV-5;
·   Digital multimeter.

HOW TO VISUALIZE THE SYSTEM PROGRAM VERSION

Turn the instrument on, while keeping pressed the button 2 of section PATCH.
After a few seconds, the display will visualize a writing identifying the software version:
i.e.: VER 100 - 26 jul 2001

To exit, turn the instrument off.

HOW TO CARRY OUT THE FACTORY SETUP

Turn the instrument on while keeping the button WRITE pressed.
After a few seconds, the display will visualize the writing Factory setup.

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

HOW TO ENTER TEST MODE

Turn the instrument on while keeping pressed the button 1 of section PATCH.

After a few seconds, the display will visualize the following writing:
TEST ROLAND A - 37 VERSION 1.00

Then the display visualizes:

Every button of section Patch corresponds to a test to carry out.

Button 1   ⟹   **Panel check ("F": Front, "R": Rear);**
Button 2   ⟹   **Keyboard check**
Button 3   ⟹   **Memory check**

Turn the instrument off to exit test mode.

Note: After carrying out the tests, the instrument automatically performs the Factory Setup.

1) PANEL CHECK (FRONT / REAR)

Once entered test mode, press button 1. The display visualizes:

If you press button 1, you check the **Front Control Panel (a).**
If you press button 2, you check the **sockets placed on the Rear panel**.

Press EXIT to come back to the previous menu.

a) Front Panel check (Controls)

Once you have entered the control panel check, press button 1:
The display visualizes:

If you press the button 1, you check the **buttons**.
If you press the button 2, you check the **LEDs**.
If you press the button 3, you check the **Controls (modulation, bender, data entry).**

Buttons check

Once you have entered the front panel test mode, press button 1.
The display visualizes pict. A:

A   B
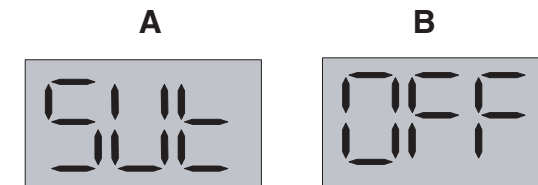
If you press the buttons of the control panel one after the other, the display will visualize their name.
When you release the button, the display will visualize: OFF (See pict. B).

Press EXIT and WRITE at the same time to exit.
The test procedure automatically goes back to the previous menu.

Note: It is not possible to go on to the following step if this test is not carried out correctly.
If you exit the test before checking all the buttons, the display indicates the name of the untested buttons.
Press EXIT to go back to the main menu.

LED check

Once you have entered the control panel check, press button 2.

The control panel LEDs and the display segments will light in sequence.
Press EXIT to leave this test.
Press EXIT again to go back to the main menu.

#### Control check (modulation, bender, data entry)

Once you have entered the control panel check, press button 3.
The display visualizes:

Pressing the button 1, you check the **MODULATION** (bender lever).
Pressing the button 2, you check the **BENDER**.
Pressing the button 3, you check the **DATA ENTRY** potentiometer.

MODULATION

Once you have pressed the button 1, the display visualizes:
Pict. A (value 0) if the bender lever is released;
Pict. B (value 127) if the bender lever is moved completely forward.

A   B
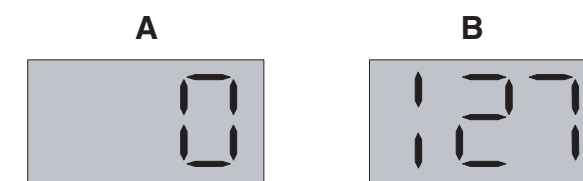
Press EXIT to leave.
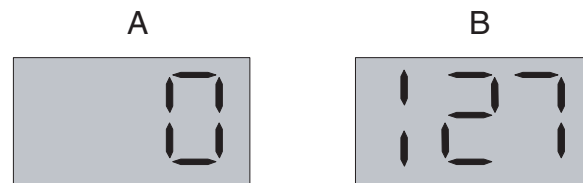Press EXIT again to go back to the main menu.

BENDER

Once you have pressed the button 2, the display visualizes:
Pict. A (value 0) if the bender is in central position;
Pict. B (value 63) if the bender lever is moved completely rightwards;
Pict. C (value - 63) if the bender lever is moved completely leftwards.
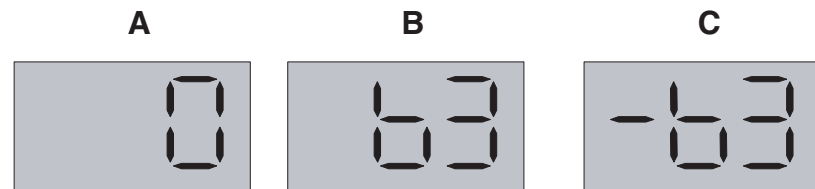
Press EXIT to leave.
Press EXIT again to go back to the main menu.

DATA ENTRY

Once you have pressed button 3, the display visualizes:
Pict. A (value 0) if the potentiometer slider is in low position;
Pict. B (value 127) if the potentiometer slider is in high position.

Press EXIT to leave.
Press EXIT again to go back to the main menu.

b) Rear Panel check (Socket)

Once you have entered the rear panel test mode rear panel, press button 2.
The display visualizes:

Press button 1, to check **DUMPER and EXPRESSION pedals**.
Press button 2, to check the **Power battery**.
Press button 3, to check the **MIDI**.

DUMPER and EXPRESSION pedals check

Once you have entered the rear panel test mode, press button 1.
The display visualizes:

Press button 1, to check the DUMPER pedal.
Press button 2, to check the EXPRESSION pedal.

DUMPER PEDAL
Insert the Dumper Pedal into the HOLD SWITCH socket.
Once you have entered the pedals test mode, press button 1.

If you press the pedal, the display visualzes the status (ON) of the pedal (Pict. A); when you release the pedal, the display visualizes its new status (OFF) (Pict. B).

Press EXIT to leave.
Press EXIT again to go back to the main menu.

EXPRESSION PEDAL
Insert the Expression Pedal into the FOOT PEDAL socket.
Once you have entered the pedals test mode, press button 2.

Before pressing the button, the display visualizes 0 (Pict. A). If you press the pedal to all its stroke, the display visualizes 127 (Pict. B).
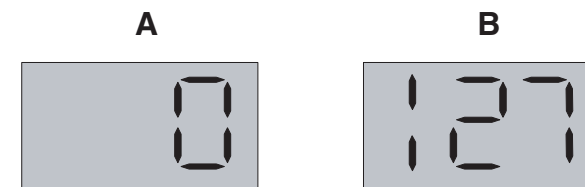
Press EXIT to leave.
Press EXIT again to go back to the main menu.

Power Battery check

Once you have entered the rear panel test mode, press button 2.
The display visualizes a value representing the power battery charge level, expressed in % value (i.e.: 100 = 100 %).
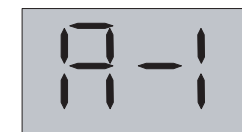

Press EXIT to leave.
Press EXIT again to go back to the main menu.

Midi check

Once you have entered in the rear panel test mode, press button 3.
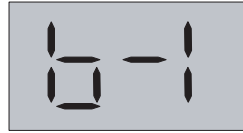The display visualizes:

Press button 1. The display visualizes:

Connect MIDI IN and MIDI OUT A sockets by a Midi cable.
In case of correct data transmission and reception, the display visualizes the writing "go".
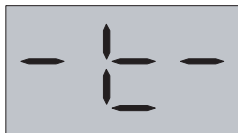In case of failure, the display visualizes "A - I".

Press EXIT to leave.
Press EXIT again to go back to the main menu.

Press button 2. The display visualizes:

Connect MIDI IN and MIDI OUT B sockets by a Midi cable.
In case of correct data transmission and reception, the display visualizes the writing "go".
In case of failure, the display visualizes "b - I".

Press EXIT to leave.
Press EXIT again to go back to the main menu.

2)   KEYBOARD CHECK

Once you have entered test mode, press the button 2:
The display visualizes:

Press button 1, the display visualizes:

Connect one of the Midi outputs (OUT A or OUT B) to the Midi in of another musical instrument or of a dedicated equipment, provided of a sound source.
Press the keyboard keys. When the keys are released, the display visualizes OFF.
When you press a key, you hear a Piano sound and the display visualizes the velocity level (from 0 to 127).

Released key   Pressed key

Press EXIT to leave.
Press EXIT again to go back to the main menu.

AFTER TOUCH CHECK

Once you have entered the keyboard test, press button 2.
The display visualizes:

Press the keyboard keys. When the keys are released, the display visualizes 0.
If you press the key, the display viasualizes the level of the After Touch function, according to the pressure put on the key.

Released Key   Key pressed at max pressure

Note: When carring out this test, make sure you press the key properly.
In case a key does not reack 127, try pressing a few other keys.
In any case, a tolerance 08-10% is acceptable.
Press EXIT to leave.
Press EXIT again to go back to the main menu.

3) MEMORY CHECK

Once you have entered in test mode, press button 3.
The display visualizes:

A   B

The instrument carries out the DEVICE CHECK (Pict. A) automatically.

Caution: Don't turn the power off during this test. If the power goes off accidentally, carry out the test again.

At the end of all the tests, make sure the display visualizes the writing "go" (Pict. B). This means that the instrument memory has been implemented correctly. In case the display visualizes the writing "Err", it means that the memory is damaged.

Press EXIT to leave.
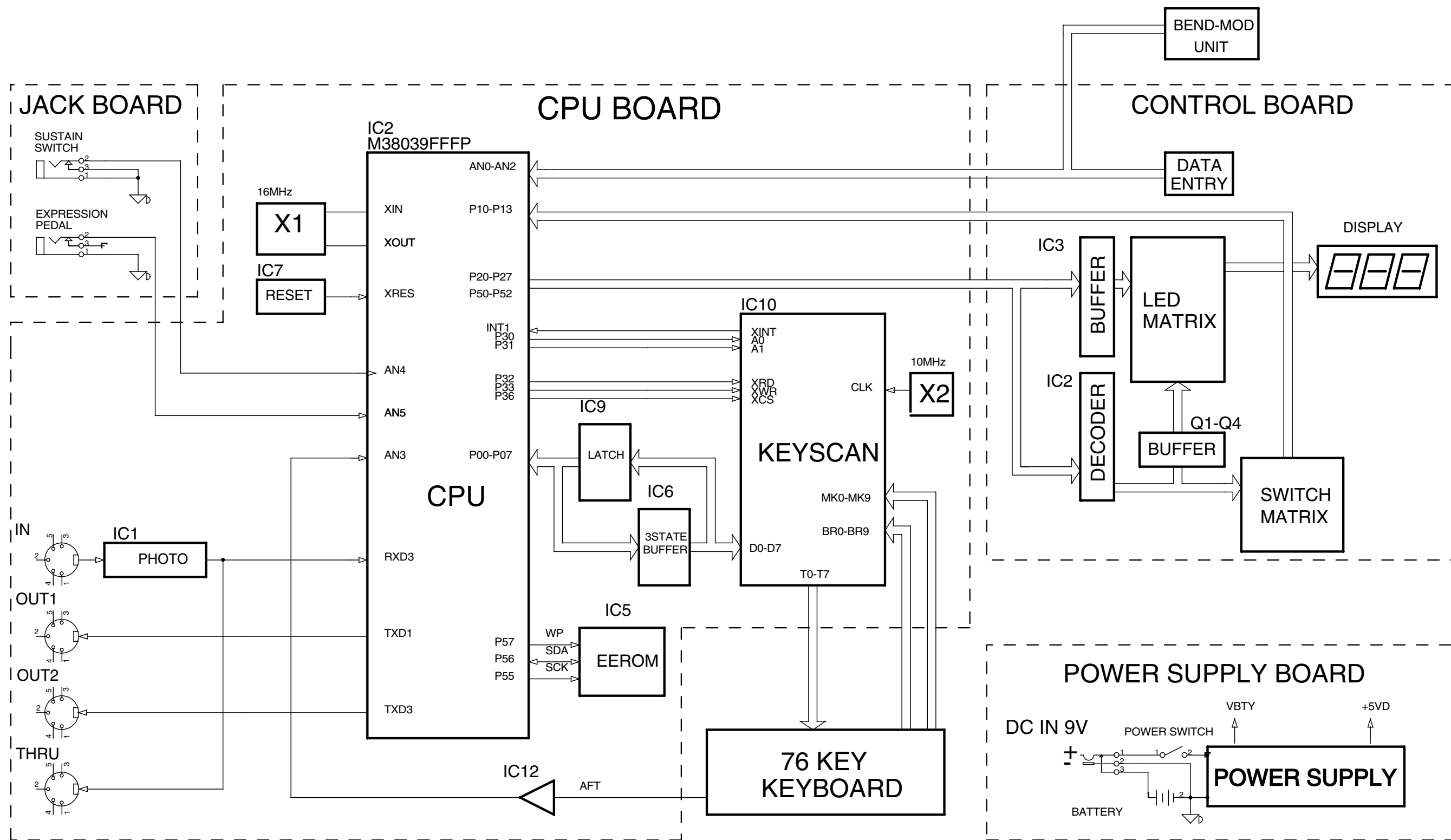
To exit, turn the power off.

Note 1: When you turn the power on again, the Factory Setup is carried out automatically.

Note 2: If you press EXIT when the display visualizes the main menu, you enter test mode again.

BLOCK DIAGRAM

JACK BOARD

SUSTAIN
SWITCH

EXPRESSION
PEDAL

CPU BOARD

IC2
M38039FFFP

16MHz

X1

IC7

RESET

XIN
XOUT
XRES

AN4
AN5
AN3

P00-P07

RXD3

TXD1

TXD3

P57
P56
P55

CPU

AN0-AN2
P10-P13

P20-P27
P50-P52

INT1
P30
P31

P32
P33
P36

IC9

LATCH

IC6

3STATE
BUFFER

WP
SDA
SCK

IC5

EEROM

IC10

XINT
A0
A1

XRD
XWR
XCS

KEYSCAN

MK0-MK9

BR0-BR9

T0-T7

D0-D7

10MHz

X2

CLK

CONTROL BOARD

BEND-MOD
UNIT

DATA
ENTRY

IC3

BUFFER

IC2

DECODER

LED
MATRIX

Q1-Q4

BUFFER

SWITCH
MATRIX

DISPLAY

IN

IC1

PHOTO

OUT1

OUT2

THRU

IC12

AFT

76 KEY
KEYBOARD

POWER SUPPLY BOARD

DC IN 9V

POWER SWITCH

VBTY   +5VD

POWER SUPPLY

BATTERY

9

1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28   29   30

A   **JACK PCB ASSY & CIRCUIT DIAGRAM**
    ASSY   7697603000
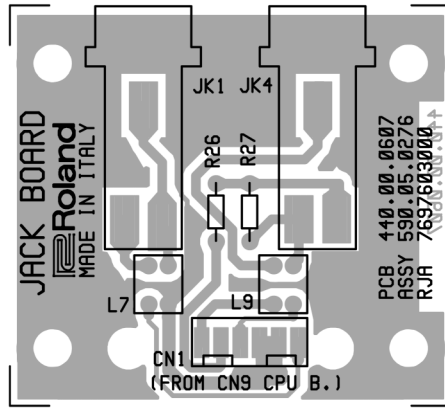
View from component side

SUSTAIN SWITCH

JK1
HLJ_0520_01_110

L7

SBT0160W
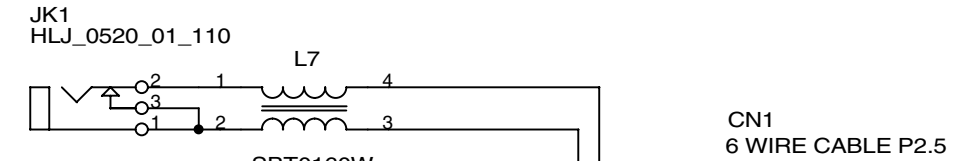
EXPRESSION PEDAL

JK4
HLJ_0520_01_010

R26
1K8

R27
470K

L9
SBT0160W

VRH

VRH

CN1
6 WIRE CABLE P2.5

SUST   1
DGND   2
DGND   3
EXPJ   4
VRH   5
VRL   6

From CPU Board
(CN5)

J   **CPU PCB ASSY**
    ASSY   7772103000

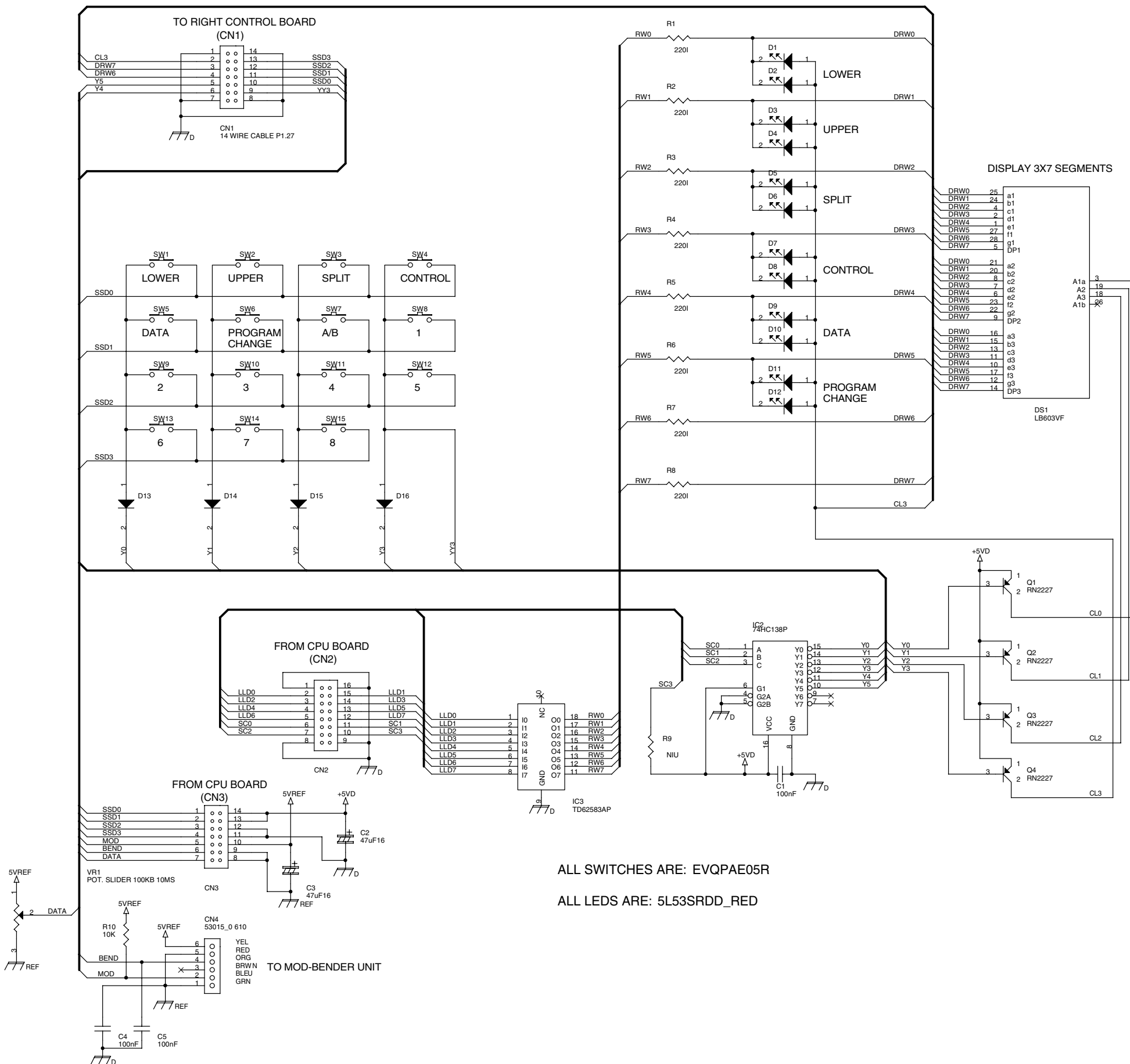
View from component side

CIRCUIT DIAGRAM (CPU PCB ASSY)
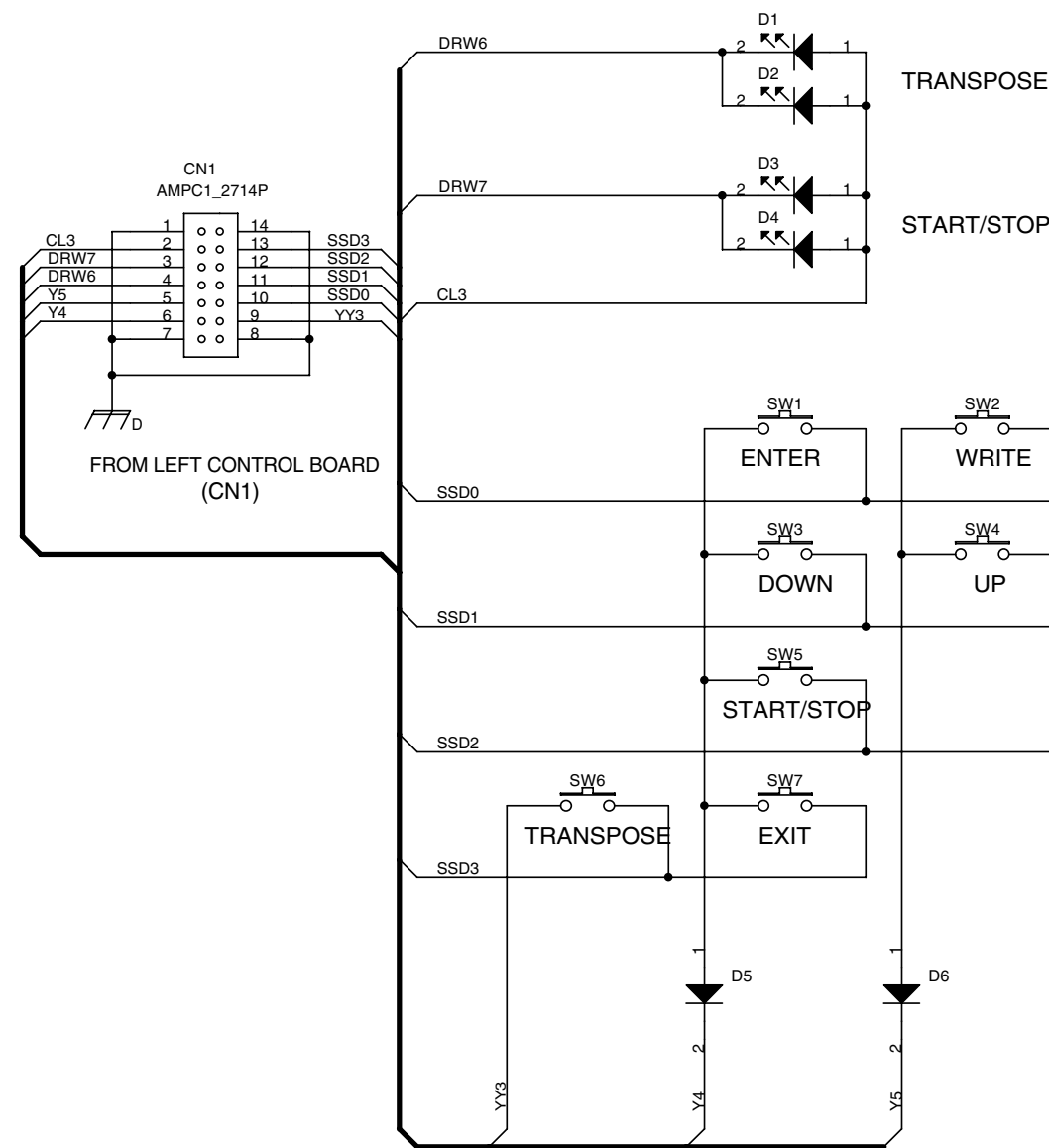
1   2   3   4   5   6   7   8   9   10   11   12   13   14   15   16   17   18   19   20   21   22   23   24   25   26   27   28   29   30

POWER SUPPLY PCB ASSY & CIRCUIT DIAGRAM

ASSY   7772105000

VBT

CN3
6 WIRE CABLE P2.5

VCC

To CPU Board
(CN8)

P

JK3
HEC047001630

FL1
PLT1R53C

SW1
SSSP12114A

VBT

Q3
TN6717A

VCC

DC IN 9V +
          -

C14
100nFC

C15
100nFC

D1
1N4001

C1
100uF16

R24
270

C2
47uF16

D5
BZX79C5V6

BATTERY
(MN1500 6 pcs)

+
-

CN4

CONN_2X1

P

C21
10uF16

C22
10uF16
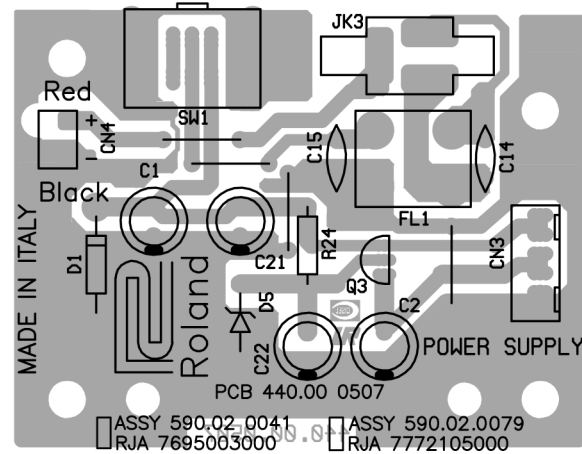
View from component side
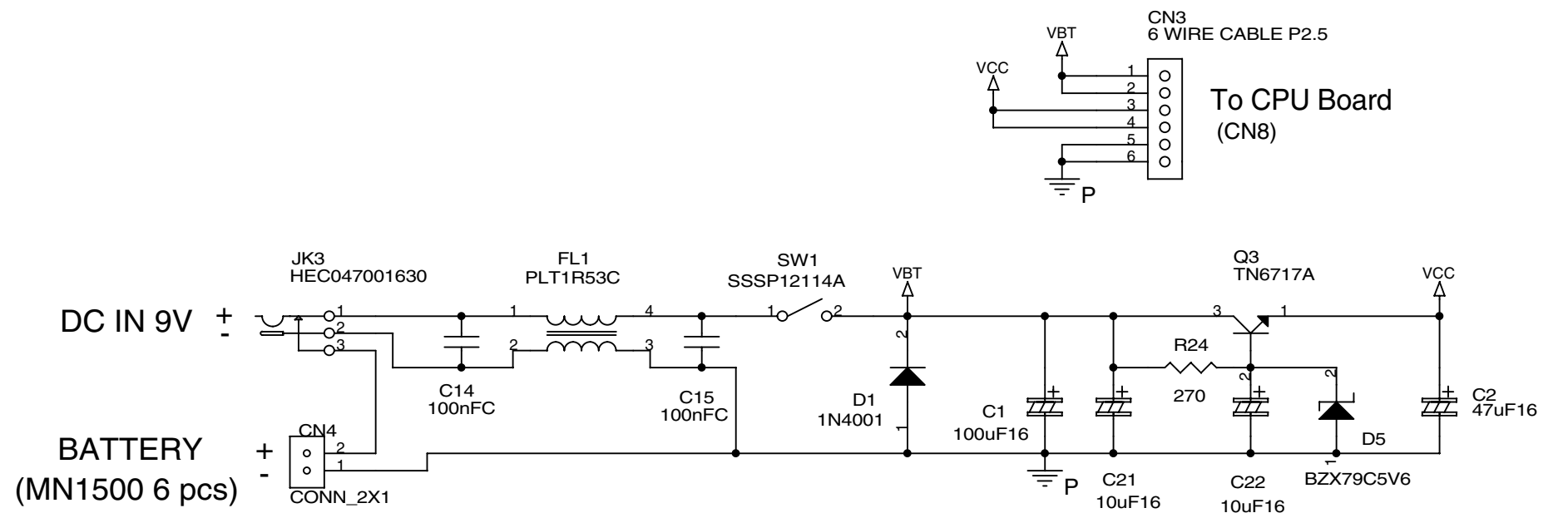
LEFT CONTROL PCB ASSY   ASSY 7772102000

View from component side
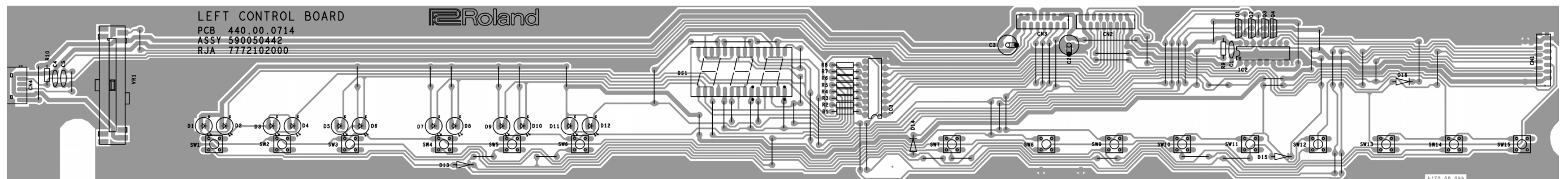
CIRCUIT DIAGRAM (LEFT CONTROL PCB ASSY)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U

RIGHT CONTROL PCB ASSY & CIRCUIT DIAGRAM   ASSY 7772101000
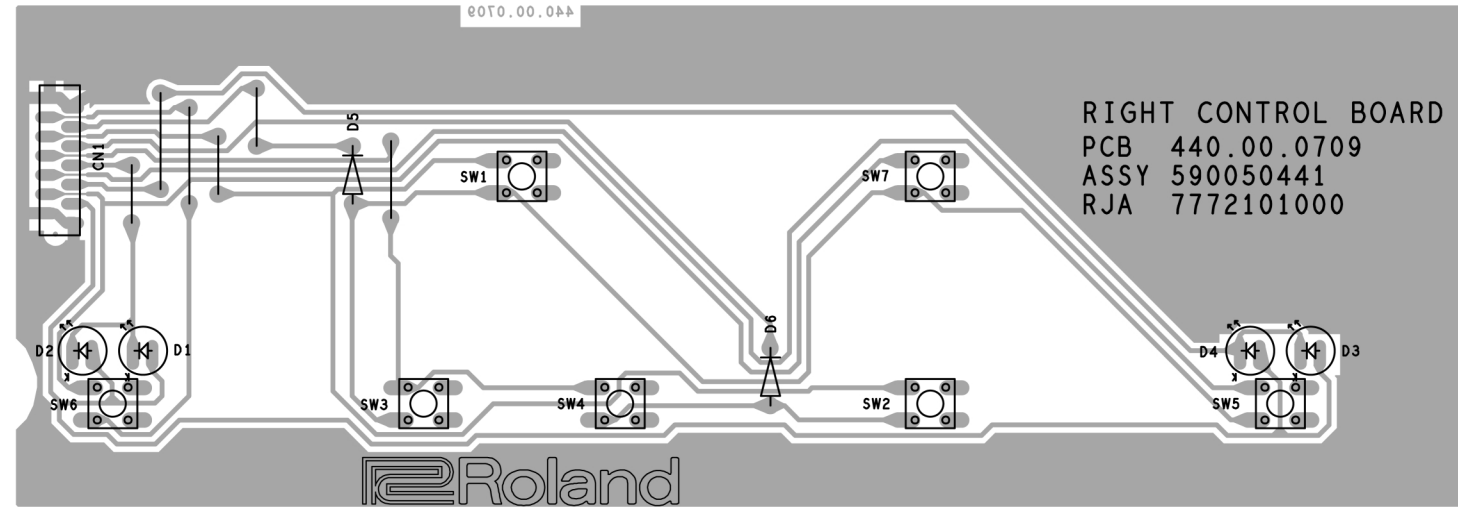
RIGHT CONTROL BOARD
PCB 440.00.0709
ASSY 590050441
RJA 7772101000

View from component side

14

LEFT CONTACT PCB ASSY w/RUBBER   ASSY 7695005000
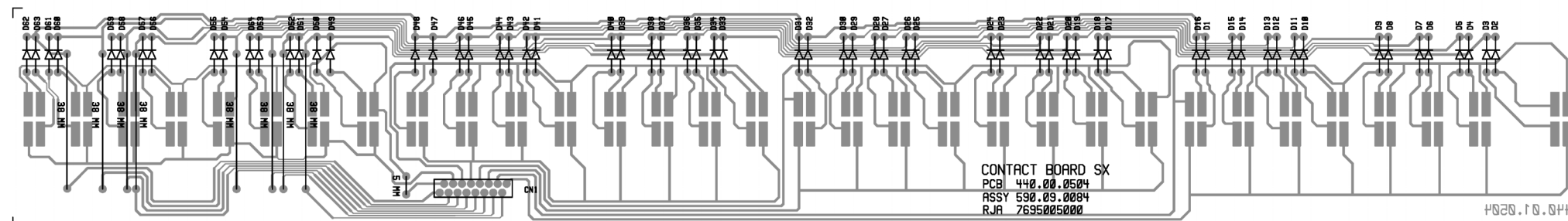
CONTACT BOARD SX
PCB 440.00.0504
ASSY 590.09.0004
RJA 7695005000

View from component side

RIGHT CONTACT PCB ASSY w/RUBBER   ASSY 7695004000

CONTACT BOARD
PCB 440.01.0503
ASSY 590.09.0083
RJA 7695004000
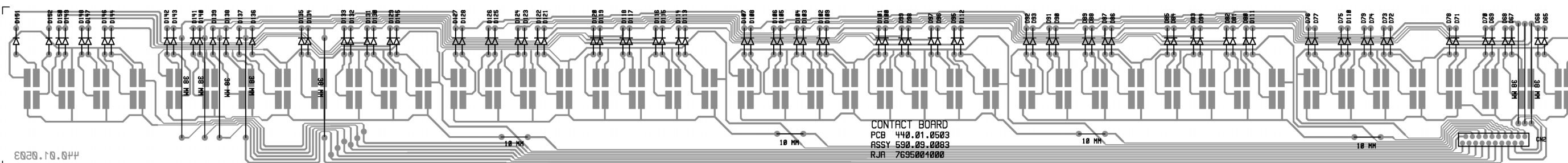
View from component side

CIRCUIT DIAGRAM (LEFT CONT.PCB ASSY)
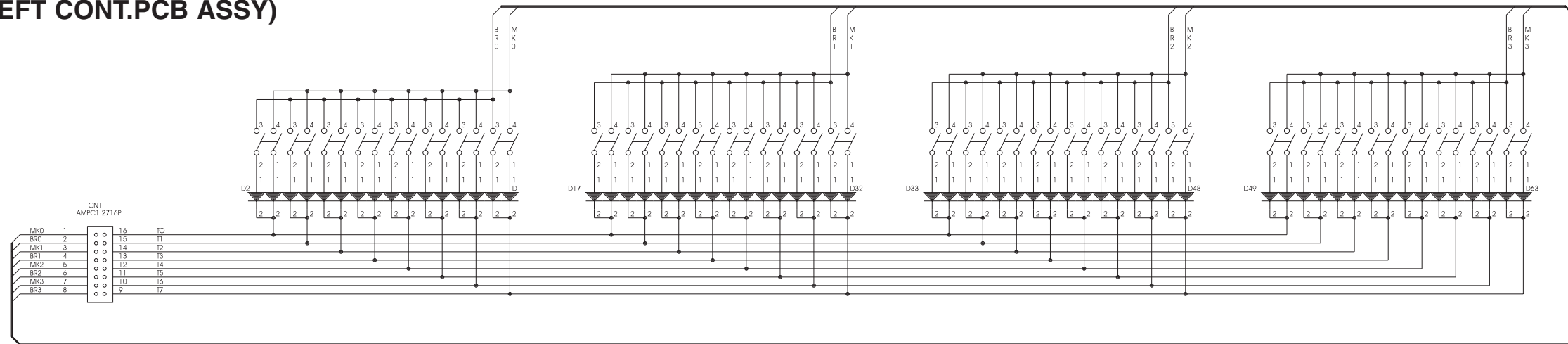
CN1
AMPC1.2716P

CIRCUIT DIAGRAM (RIGHT CONT.PCB ASSY)

CN2
AMPC1.2720P