

E-15

INTELLIGENT SYNTHESIZER

SERVICE NOTES

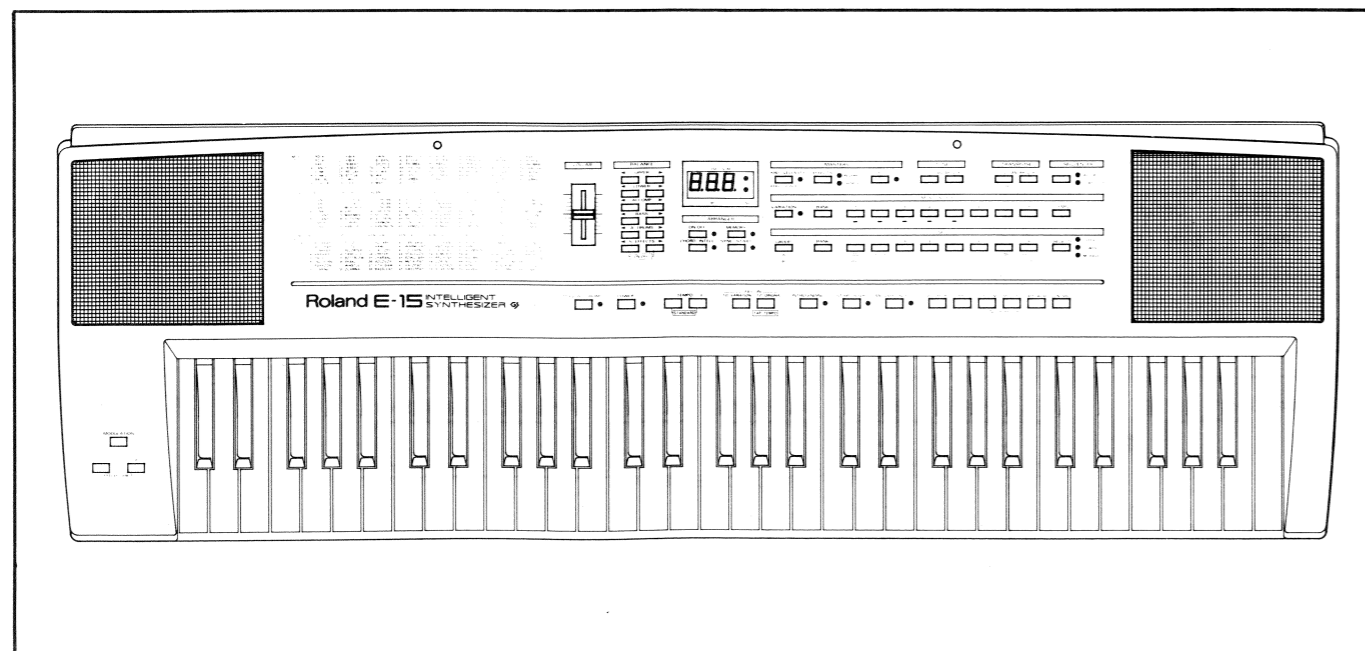
First Edition

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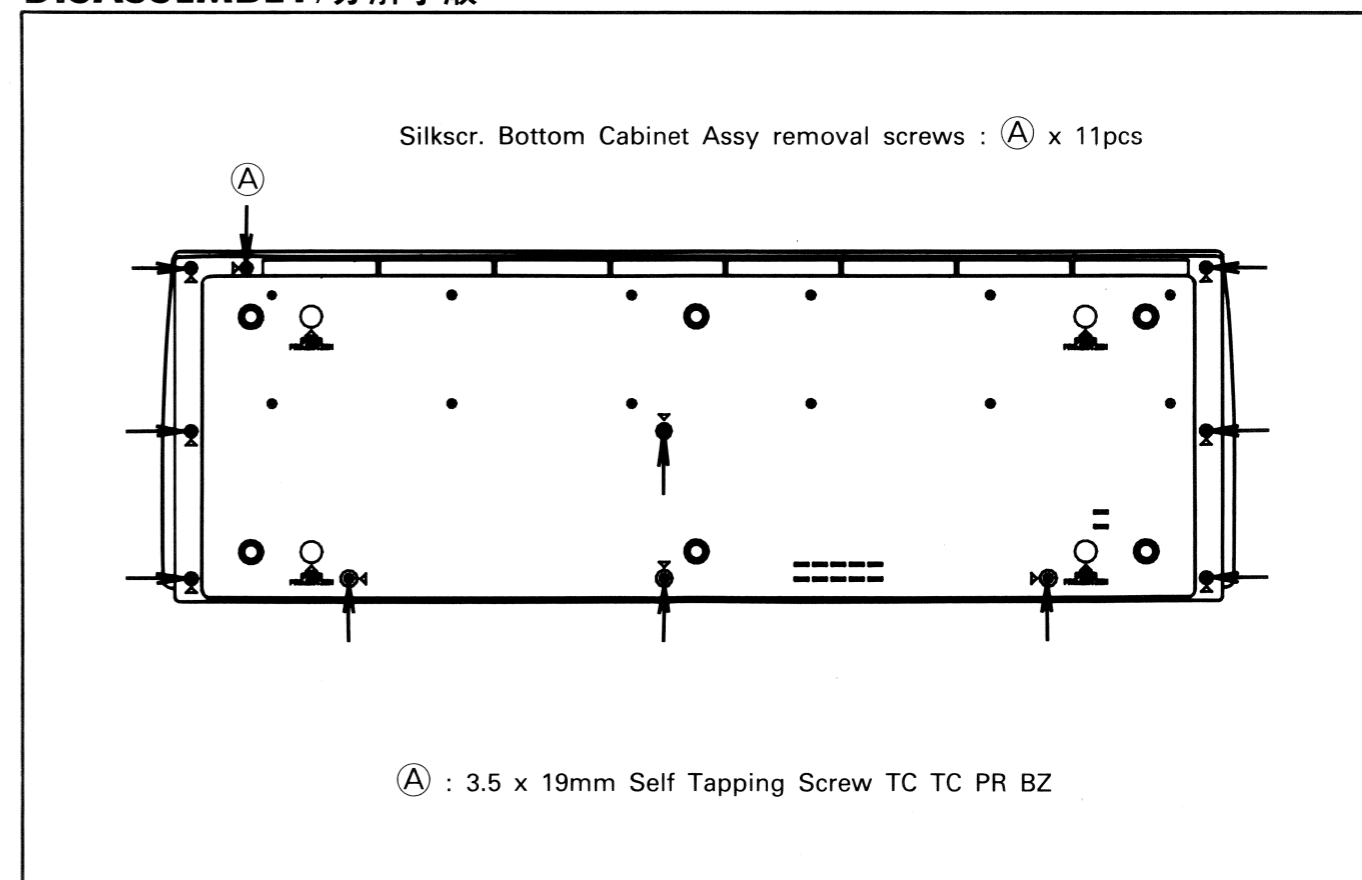
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SPECIFICATIONS/仕様

◎KEYBOARD	61 keys velocity sensitive.	◎ACCESSORIES	Owner's Manual (English/Germany/French) :PNo.K6018108
◎SOUND SOURCE SYSTEM	"GS Standard" generation Sound System. 24 notes polyphony.	Owner's Manual (English/Italy/Japanese) :PNo.K6018115	
◎DISPLAY	7 segments x 3	Music Score Holder (Metal) :PNo.K2198102	
◎BUILT-IN EFFECTS	Digital Reverb and Chorus.	Music Score Holder (Plastic) :PNo.22208320	
◎MUSIC STYLE SECTION	64 styles	AC Adaptor	
◎TONE SELECT SECTION	128 tones	ACI-100 (100V) :PNo.J2449005	
◎POWER AMPLIFIER	3W(stereo) x 2(with 120 mm speakers x 2)	ACI-120 (117V) :PNo.J2449004	
◎DIMENSIONS	4-1/64(H) x 38-1/32(W) x 12-1/64(D) inches. 115(H) x 985(W) x 319(D) mm.	ACI-220 (230V) :PNo.J2449001	
◎WEIGHTS	16lb 1oz/7.7kg (E-15)	ACB-240E (240VE) :PNo.J2449002	
	1lb 1oz/0.5kg (AC Adaptor)	ACB-240A (240VA) :PNo.J2449003	
		◎OPTIONS	Stereo Expression Pedal (FV-200)
			Sustain Pedal (DP-2/DP-6)
			Stands (KS8/KS9)
			Handypad (pad5)
			Dynamic MIDI Pedal (PK5)

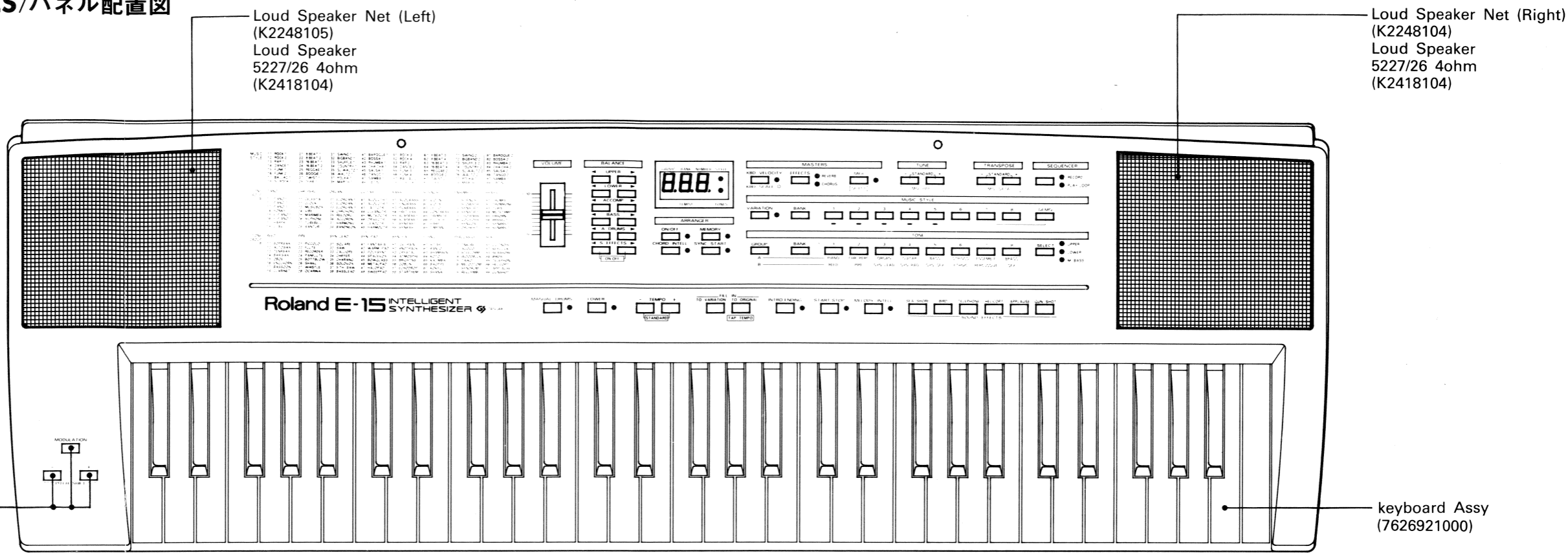


DISASSEMBLY/分解手順



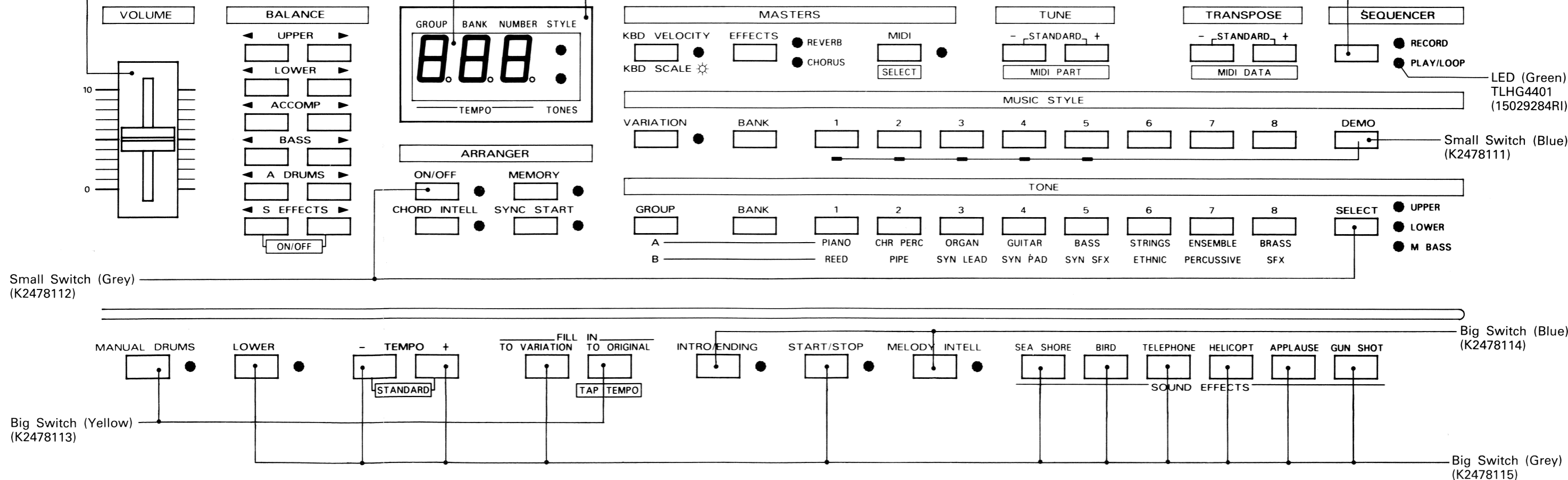
LOCATION OF CONTROLS/パネル配置図

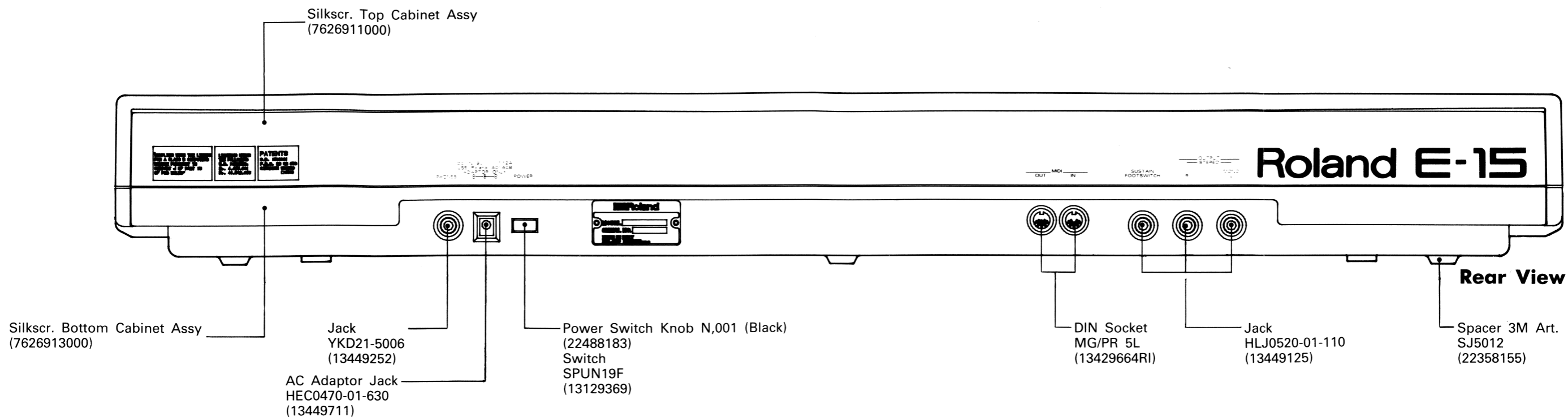
- : Small Switch (Black) (K2478109)
- LED (red) TLHR-4401 (15029284RI)



Front View

- Slider Pot. Knob N,001 (Black) (22488184)
- Stereo Liner Pot. 10KB14 (J3339001)

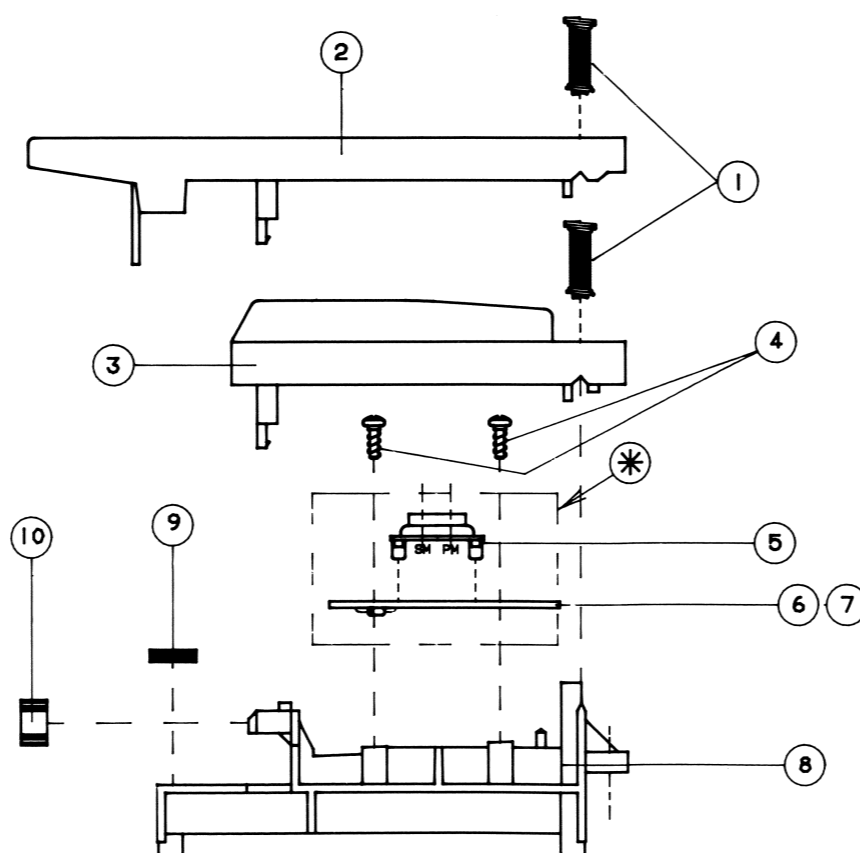




KEYBOARD PARTS LIST/キーボードパーツリスト

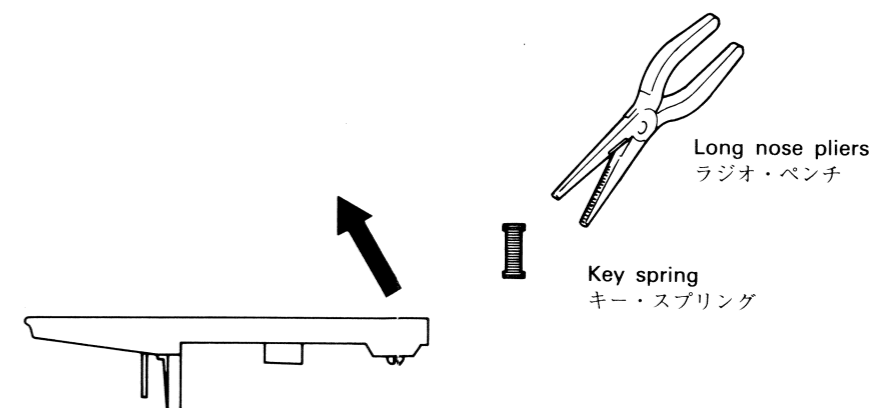
SNo. *****-up/以降
KEYBOARD ASS'Y (61key)
ASSY 7626921000

No.	PART	PART NAME
1	22178226	Double Headed Spring
2	J2579123	White Key (DO) C
	J2579124	White Key (RE) D
	J2579125	White Key (MI) E
	J2579126	White Key (FA) F
	J2579127	White Key (SOL) G
	J2579128	White Key (LA) A
	J2579129	White Key (SI) B
J2579130	White Key (DOfin) C	
3	22578318	Black Key
4	*****	2.9 x 8mm Self Tapping Screw TCTCPRBZ (Screw No.J2289104 or 206132908)
5	J3169001	Rubber Contact (12P)
	J3169002	Rubber Contact (13P)
6	7626923000	Left Contact PCB Assy + Rubber
7	7626922000	Right Contact PCB Assy + Rubber
8	22818746	Keyboard Support 61 keys
9	22358151	Adesive Rubber (8 x 2.5 x 848 mm)
10	22158792	Guide Rushing Superior



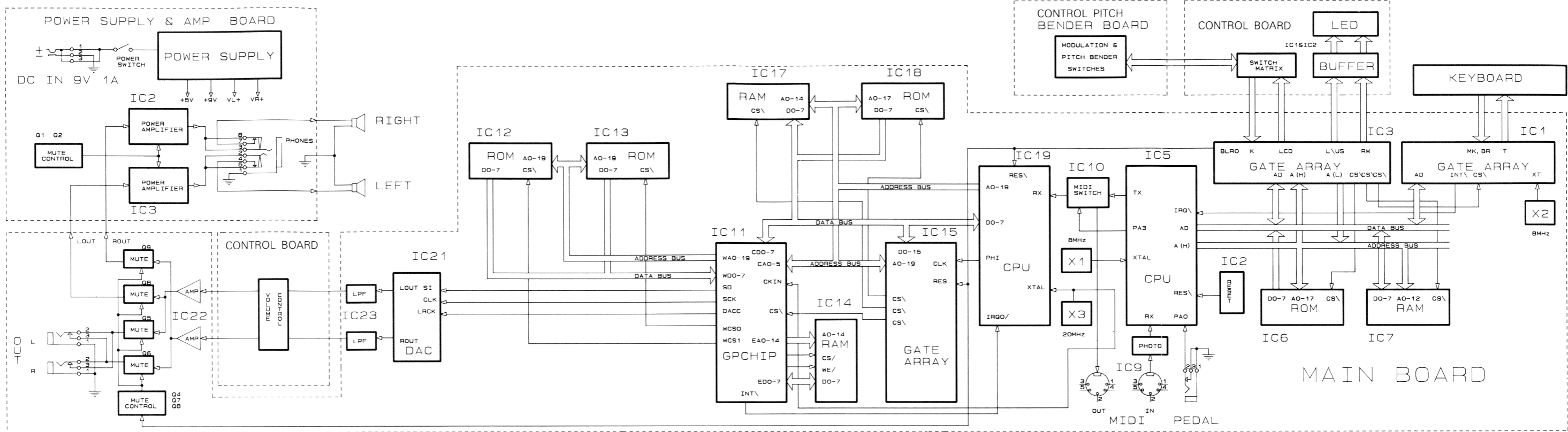
KEY DISASSEMBLY/鍵盤分解手順

1. Remove the key spring from key to be removed.
 2. Remove the key by lifting one end of the key as shown below.
1. キー・スプリングをはずす。
2. キーの後ろ側を上方へ引っ張りながら取り外す。

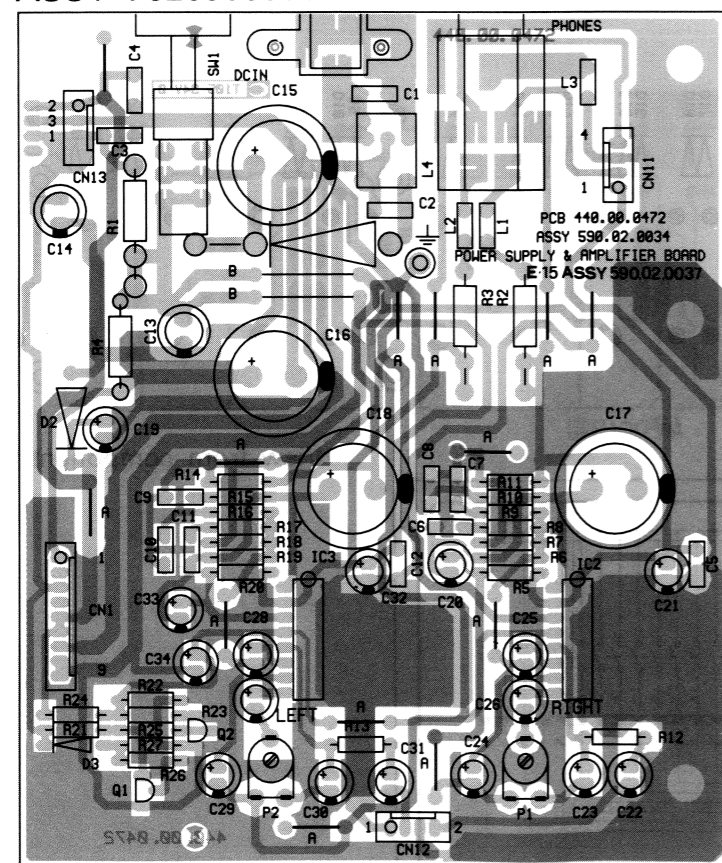


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A BLOCK DIAGRAM/ブロック図

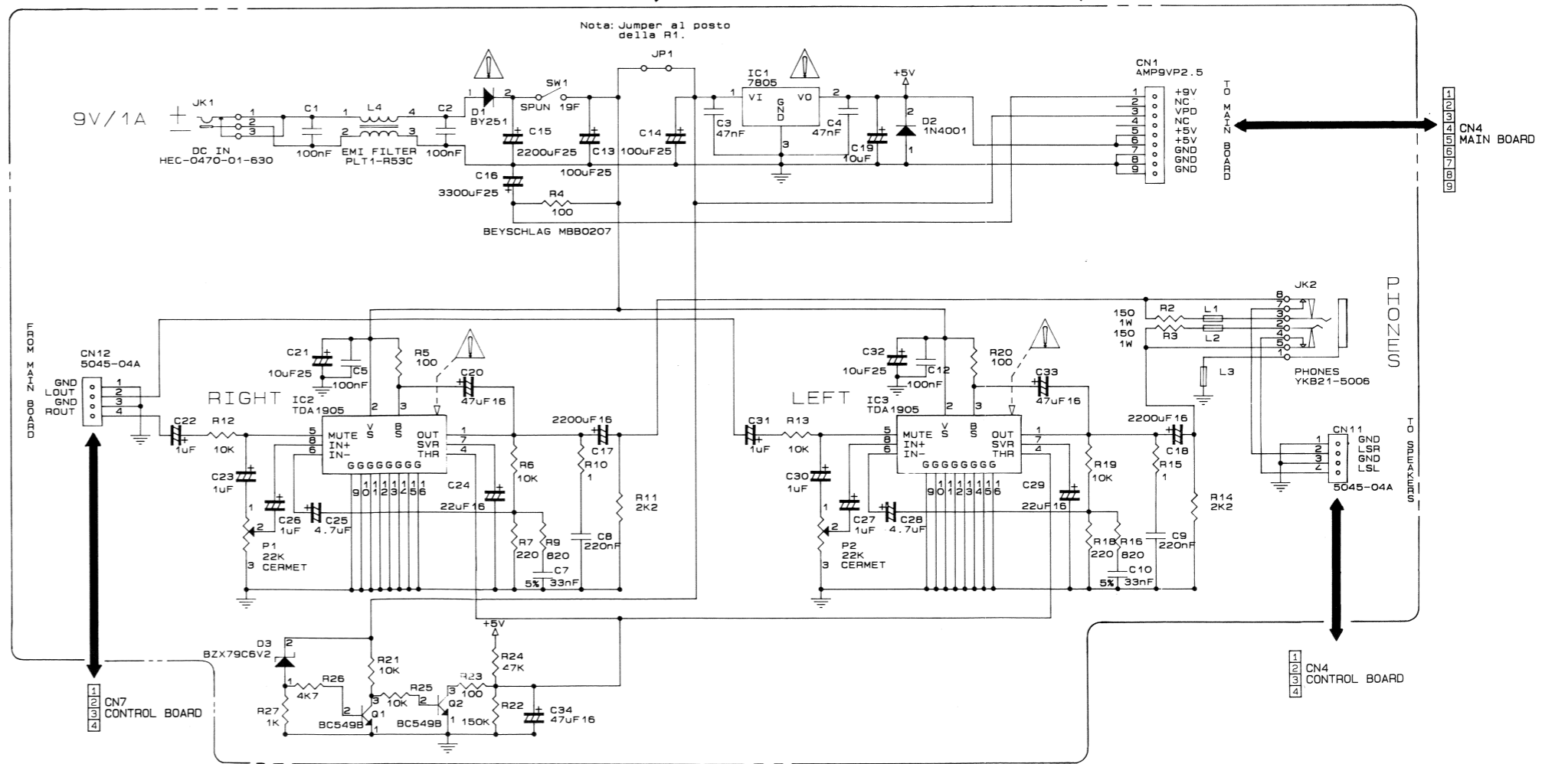


POWER SUPPLY & AMPLIFIER BOARD
 (or DC SUPPLY PCB ASS'Y)
 ASSY 7626906000



View from component side

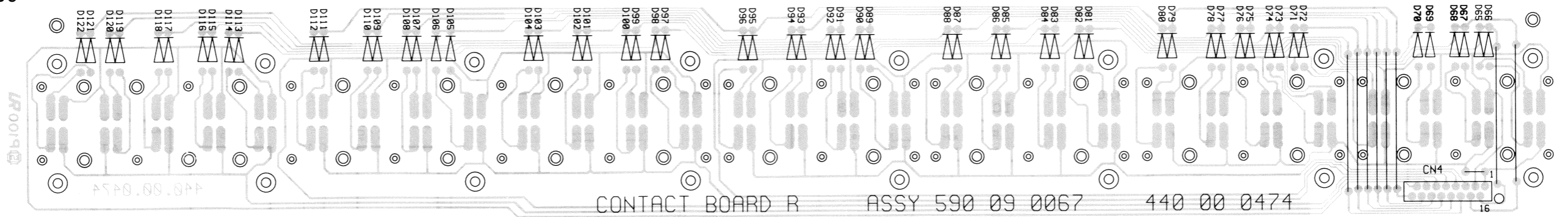
POWER SUPPLY & AMPLIFIER BOARD (or DC SUPPLY PCB ASS'Y)



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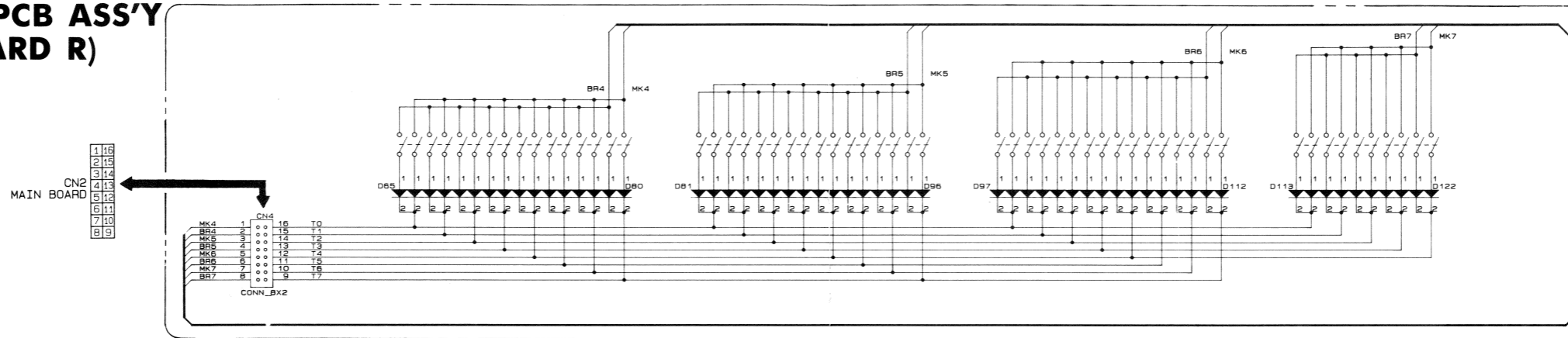
A RIGHT CONTACT PCB ASS'Y (or CONTACT BOARD R)

+ Rubber
ASSY 7624504000



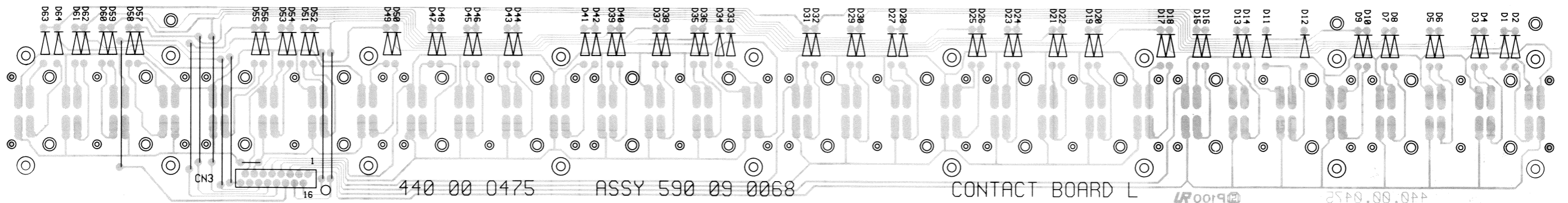
View from component side

B RIGHT CONTACT PCB ASS'Y (or CONTACT BOARD R)



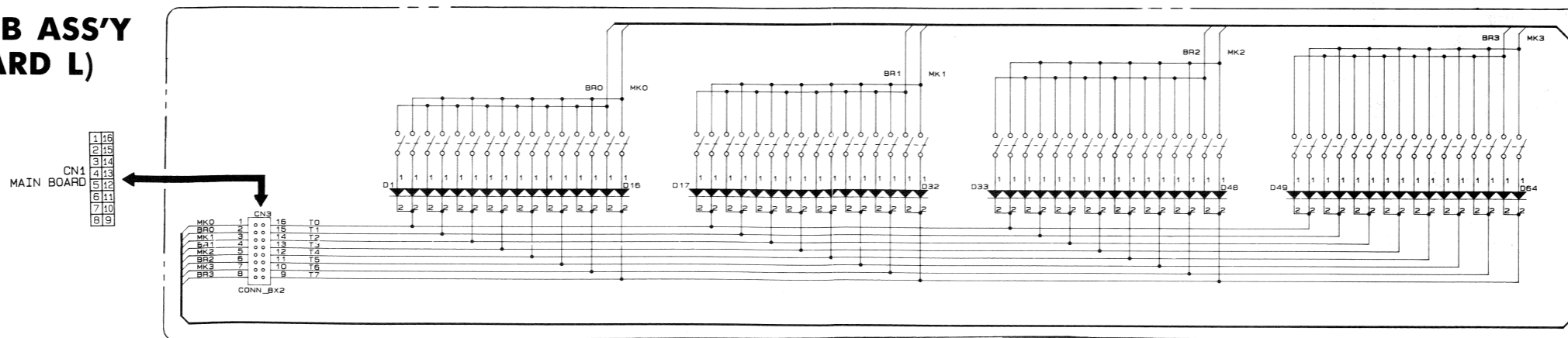
C LEFT CONTACT PCB ASS'Y (or CONTACT BOARD L)

+ Rubber
ASSY 7624505000

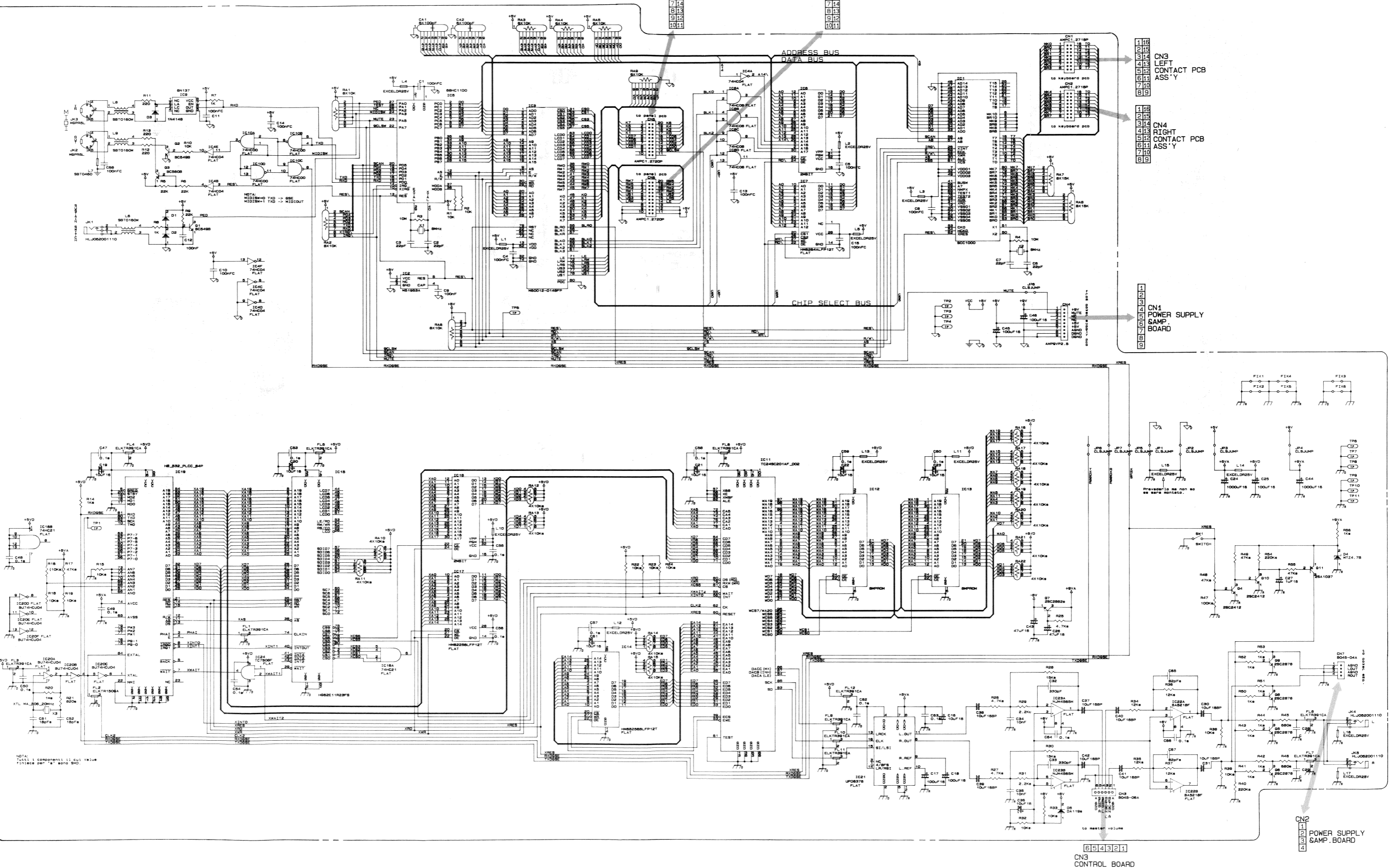


View from component side

D LEFT CONTACT PCB ASS'Y (or CONTACT BOARD L)



MAIN BOARD ASS'Y

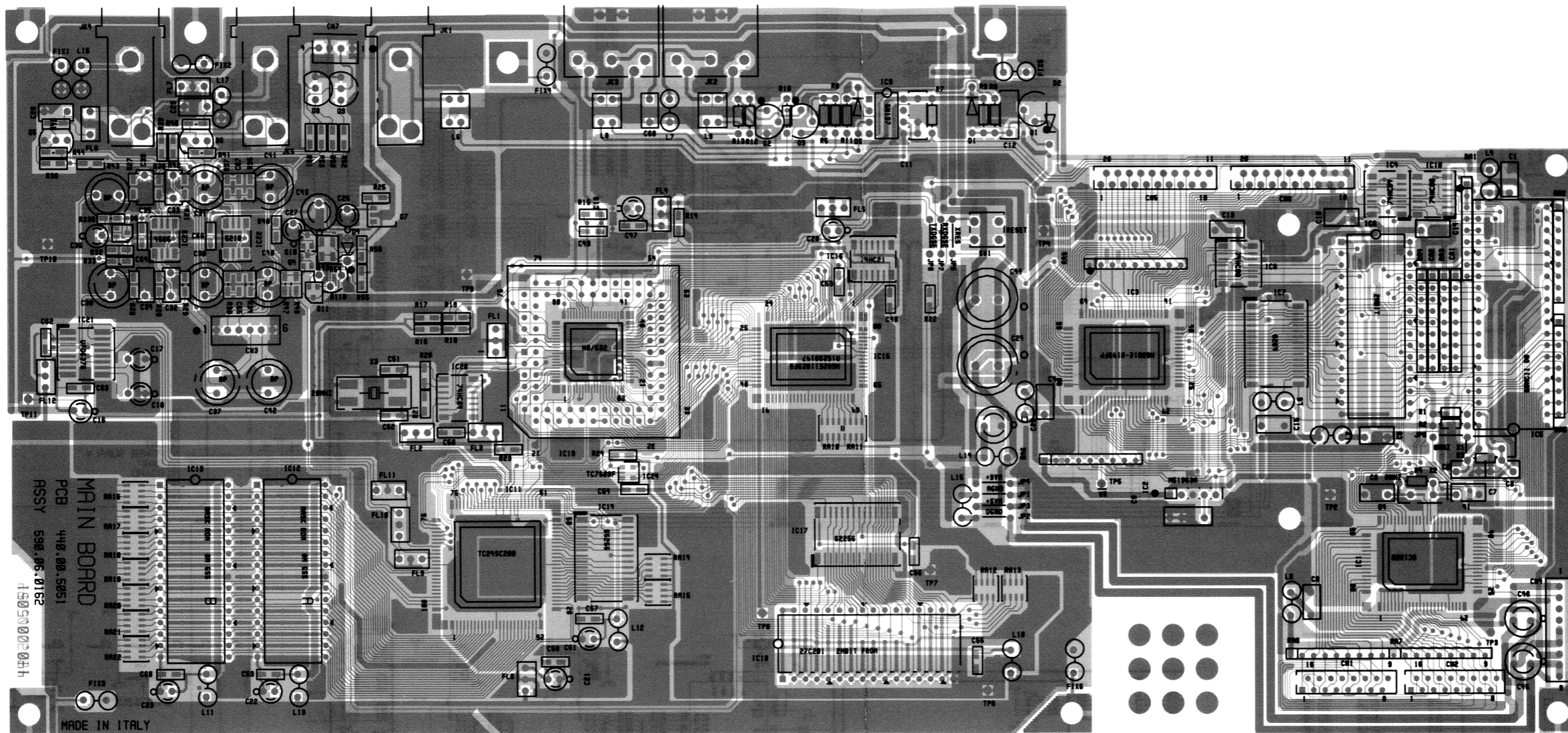


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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

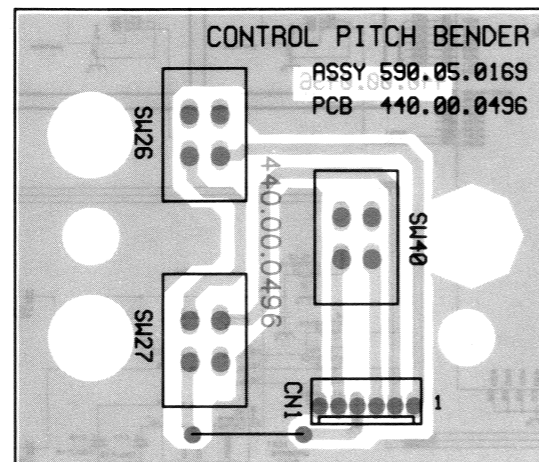
A B C D E F G H I J K L M N O P Q R S T U

E MAIN BOARD ASS'Y
ASSY 7626909000



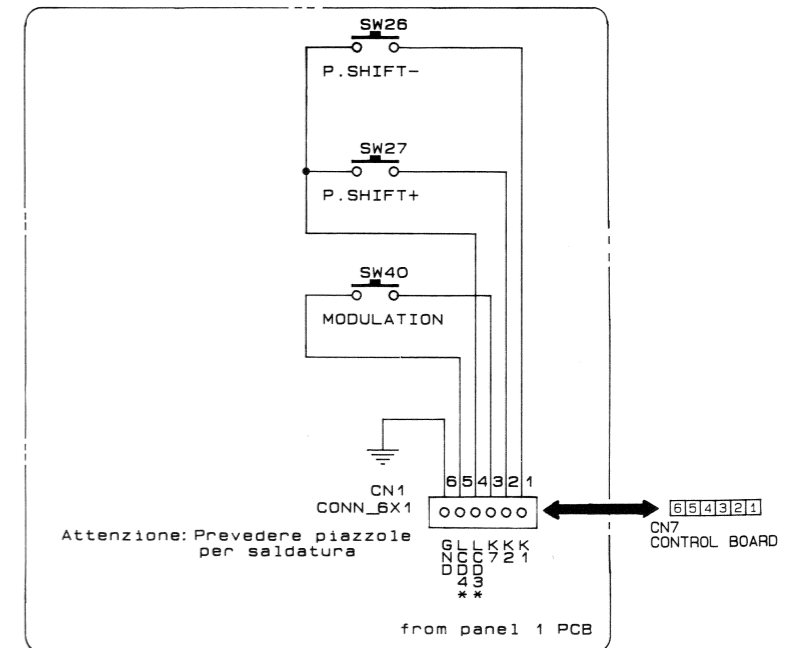
View from component side

CONTROL PITCH BENDER BOARD
(or PITCH BENDER PCB ASS'Y)
ASSY 7626908000



View from component side

CONTROL PITCH BENDER BOARD
(or PITCH BENDER PCB ASS'Y)

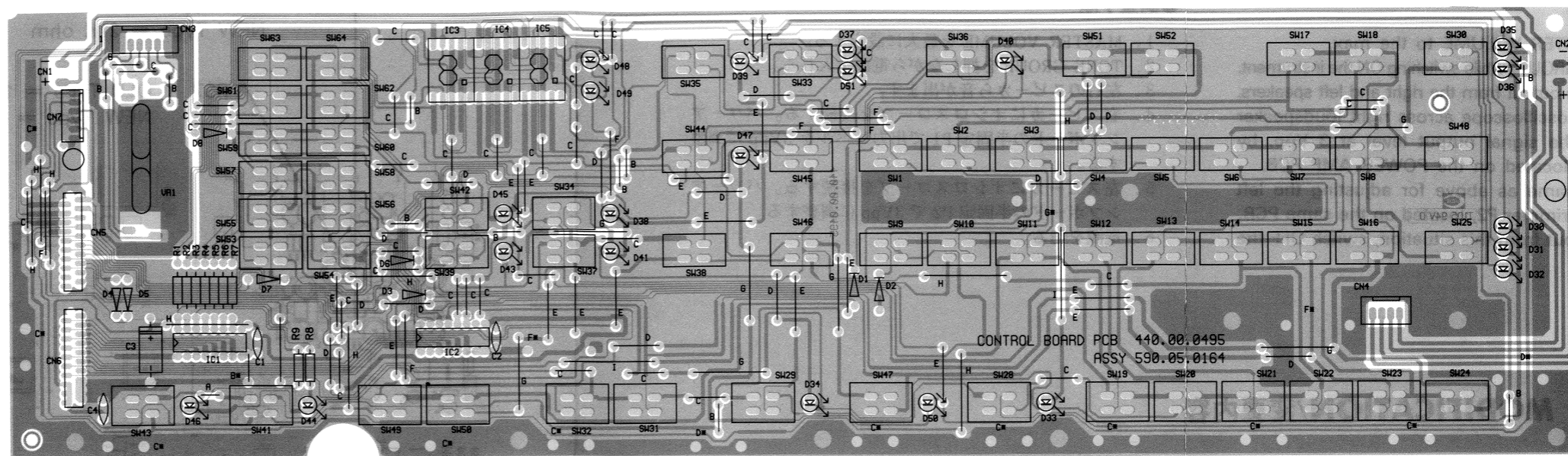


Attenzione: Prevedere piazzole per saldatura

from panel 1 PCB

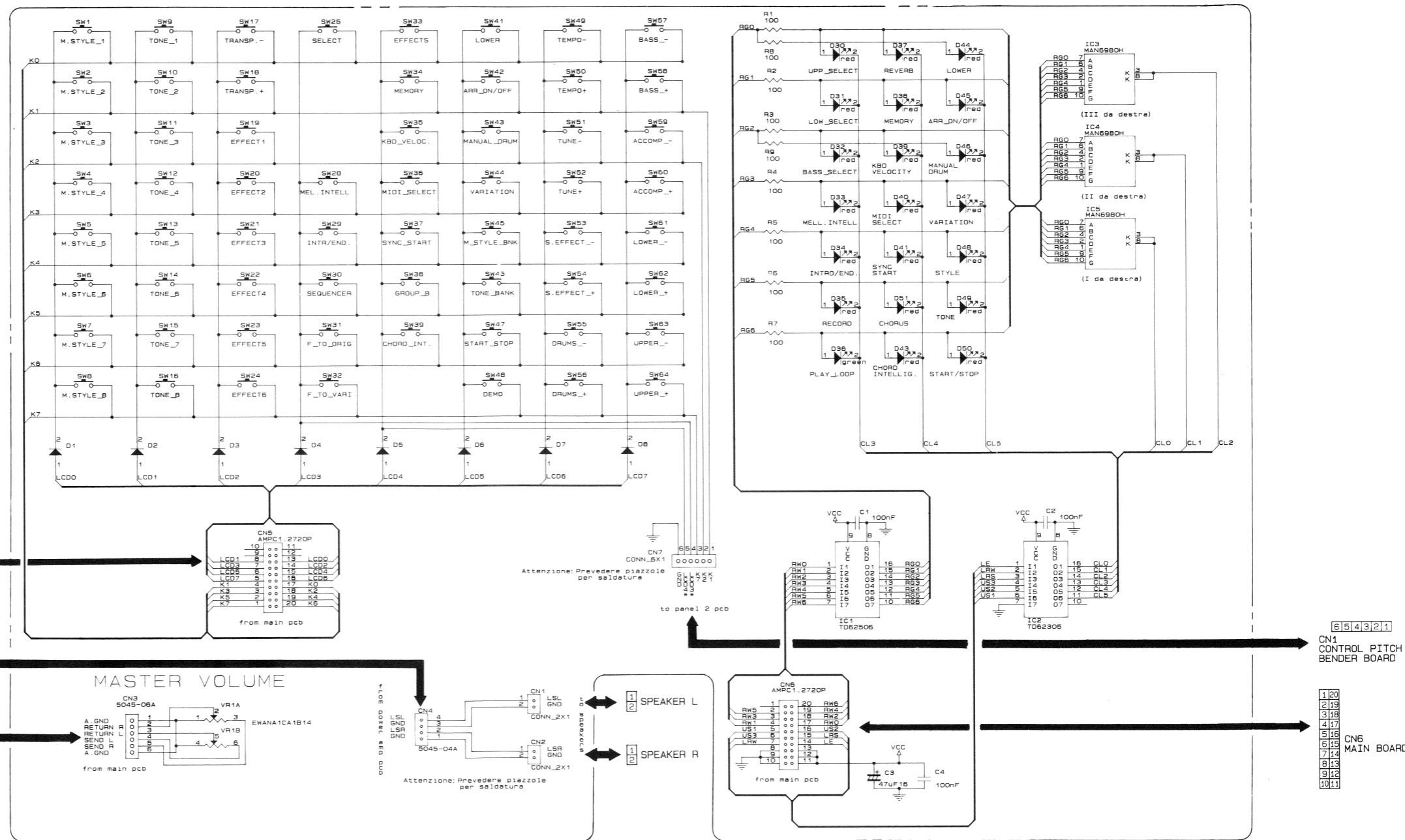
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A CONTROL BOARD
(or CONTROLS PCB ASS'Y)
ASSY 7626907000



View from component side

H CONTROL BOARD
(or CONTROLS PCB ASS'Y)



I
J
K
L
M
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O
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Q
R
S
T
U

ADJUSTMENT/調整仕様

●AUDIO TESTE

1. Set the MASTER VOLUME to the max.
2. Press "TONE GROUP" while switching ON the instrument.
3. A note will be output from the right and left speakers.
4. Connect the oscilloscope across right loudspeaker and adjust the signal output level at 3 Vpp, by trimmer P1, located on the POWER AMP PCB.
5. Repeat the same as above for adjusting the left channel, by trimmer P2, located on the same PCB.
6. For coming out from this situation, switch OFF the instrument.

●調整手順

1. MASTER VOLUME を最大に設定する。
2. TONE GROUP を押しながら電源を入れる。
3. 左右のスピーカから音が出ます。
4. 右スピーカにオシロスコープを接続する。パワーアンプボードの半固定 P1 で出力レベルを 3Vpp に調整する。
5. 左スピーカにオシロスコープを接続する。パワーアンプボードの半固定 P2 で 3Vpp に調整する。
6. 電源を切る。

GUIDE TO MODIFICATION/変更内容

◎Improvement in S/N ratio

(MAIN BOARD, CONTROL BOARD)

- Modification (Details are given in fig. 1, 2)

(1)Parts changed (on MAIN BOARD)

◎S/N 比の改善

(MAIN BOARD, CONTROL BOARD)

- 変更内容 (詳細は図 1, 2 参照)

(1)部品変更 (ON MAIN BOARD)

	Before modification 変更前	after modification 変更後
R36	12K ohm	27K ohm
R37	12K ohm	27K ohm

(2)Part added (on CONTROL BOARD)

R10 (10 ohm/0.5W)

- Products modified
From SNo. ***** on
- Reason of modification
Improvement of S/N ratio
- Application to servicing

When correction has been made to the pre-modified board, "AUDIO TEST ADJUSTMENT" (P.10) must be carried out.

(2)部品追加 (on CONTROL BOARD)

R10 (10 ohm/0.5W)

- 実施製番
SNo. ***** 以降
- 変更理由
S/N 比の改善
- サービスの対応
変更前の基板を修正した場合、必ず "AUDIO TEST ADJUSTMENT" (P. 10) をおこなって下さい。

Fig. 1/図 1
MAIN BODRD

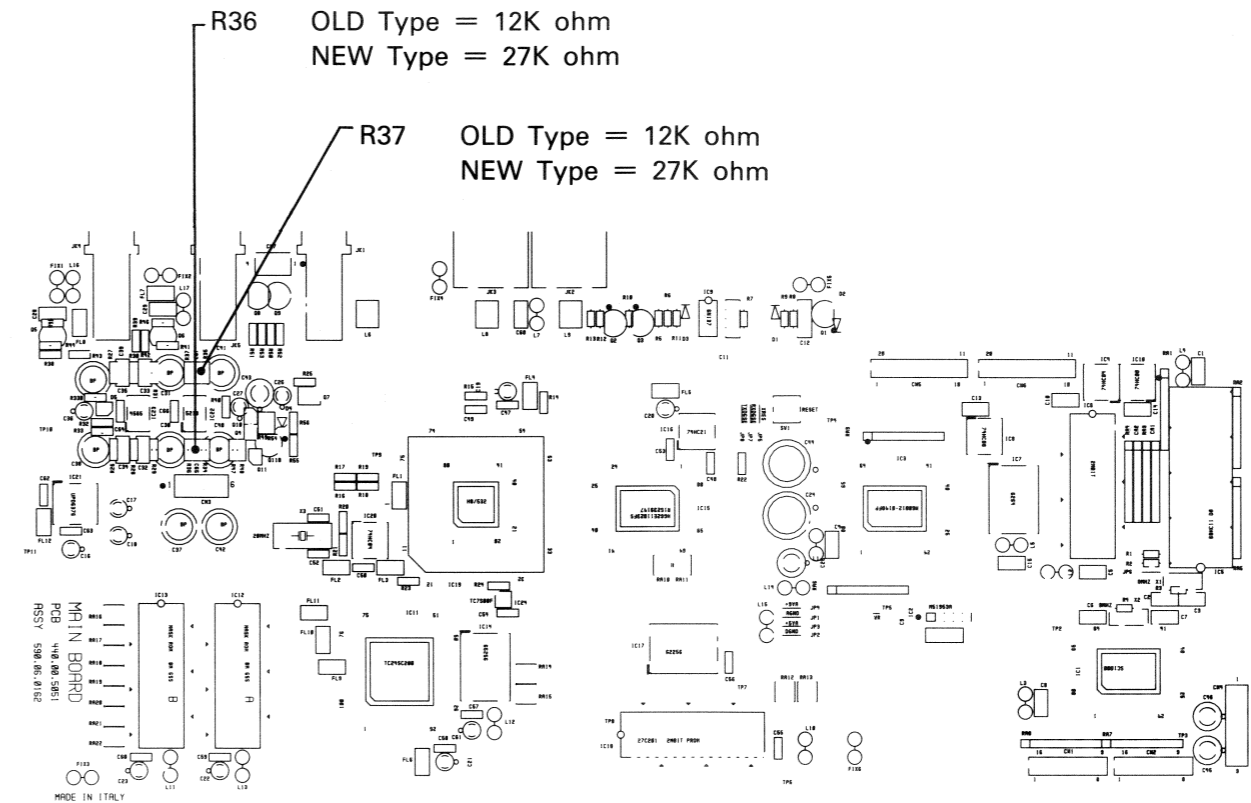
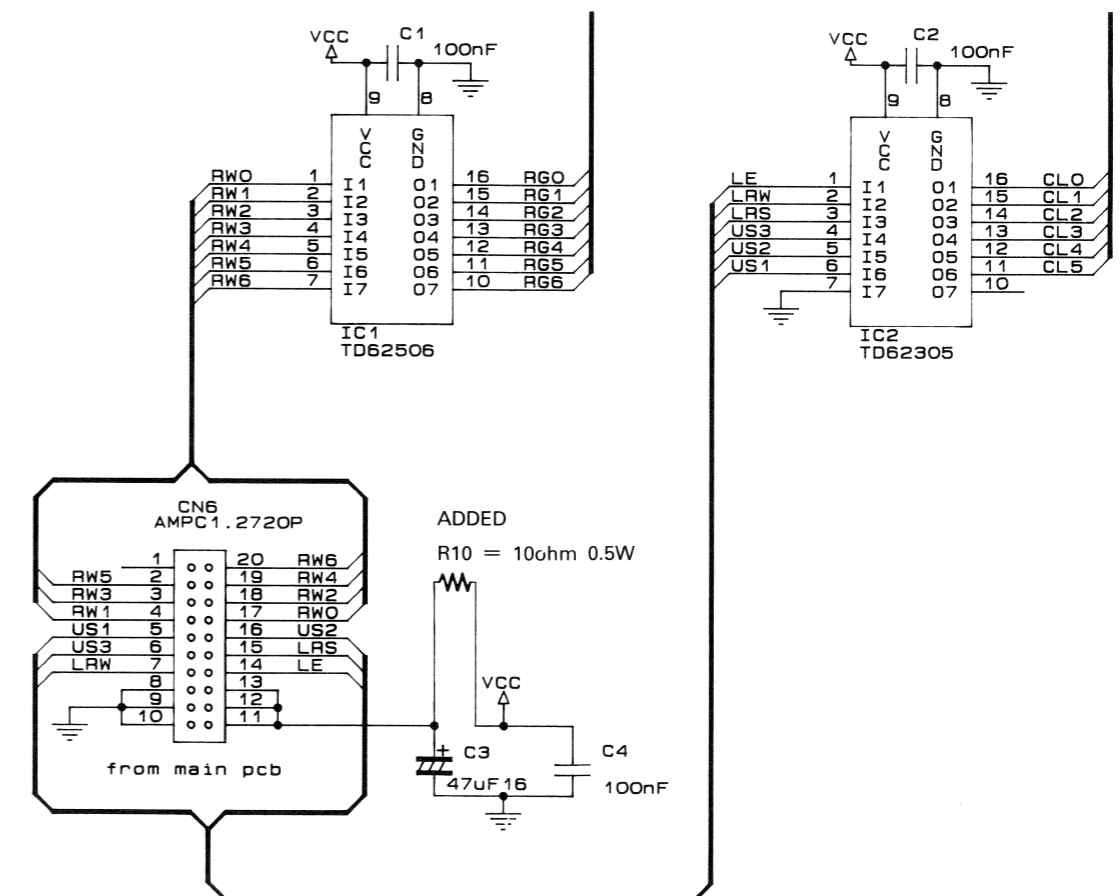
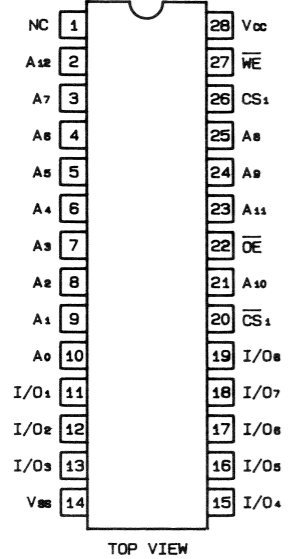


Fig. 2/図 2
CONTROL BOARD

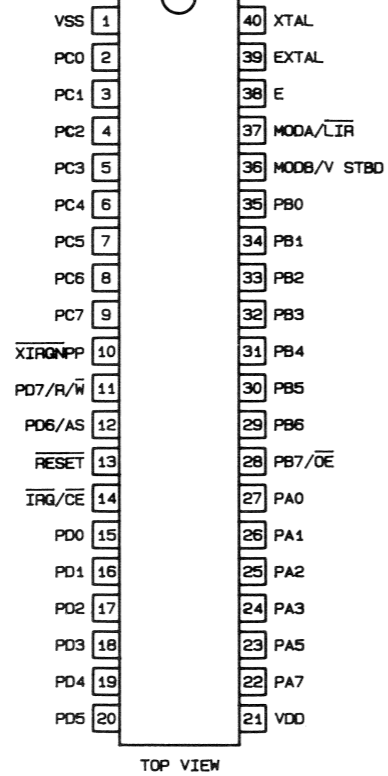


IC DATA/IC データ

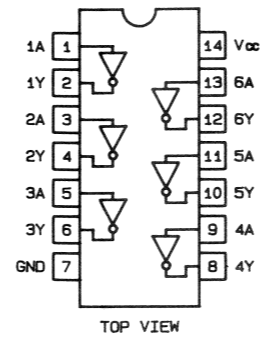
SRAM (IC7 on MAIN PCB)
HM6264ALFP-12T (FLAT)
(J5259008)



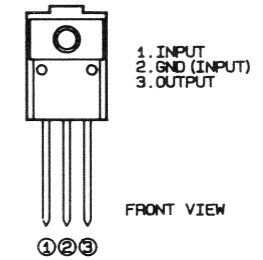
CPU (IC5 on MAIN PCB)
MC68HC11DOP
(J5179004)



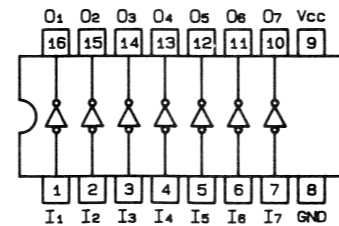
HEX Inverter
(IC4, 20 on MAIN PCB)
74HC04 (FLAT)
(J5259001)



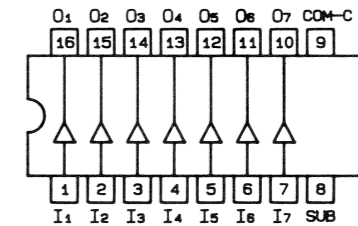
+5V Voltage Regulator
(IC1 on P.S. PCB)
UA7805 SCNC
(15199197RI)



BUFFER
(IC1 on PANEL PCB)
TD62506P
(15199559RI)



BUFFER
(IC2 on PANEL PCB)
TD62305AP
(15199560RI)



OP AMP
(IC22 on MAIN PCB)
BA5218F (FLAT) (15189210)
(IC23 on MAIN PCB)
NJM4565M-TE3 (FLAT) (15289120)

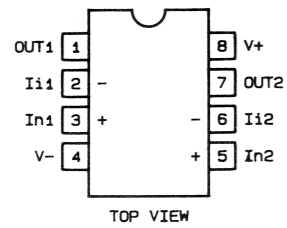
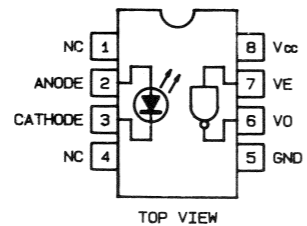
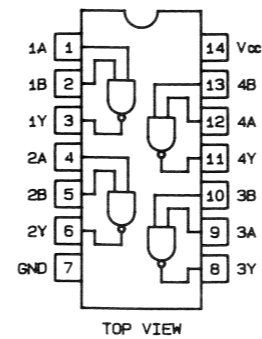


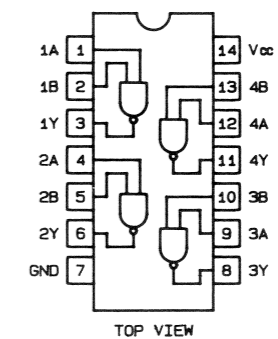
Photo Coupler (Opto-isolator)
(IC9 on MAIN PCB)
6N137
(15229718RI)



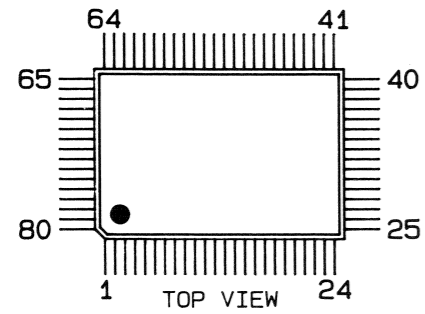
Quad 2 Input NAND (IC10 on MAIN PCB)
74HC00 (FLAT)
(15259701)



Quad 2 Input AND Gates (IC8 on MAIN PCB)
74HC08 (FLAT)
(J5259007)

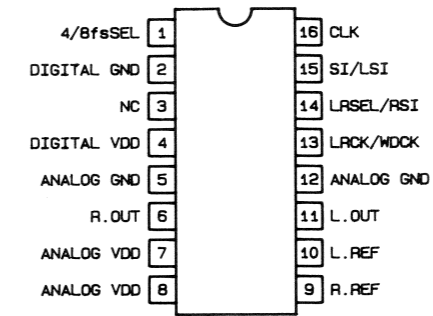


Gate Array (IC3 on MAIN PCB)
M60012-0148FP (FLAT)
(15238122)

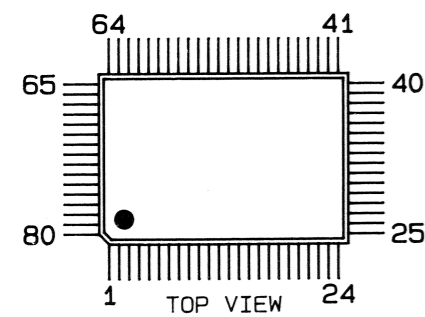


PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	AD0	I/O	21	A1	0	41	RW3	0	61	BLK3	0
2	AD1	I/O	22	NC	-	42	RW4	0	62	NC	-
3	AD2	I/O	23	A2	0	43	RW5	0	63	LCD0	I/O
4	AD3	I/O	24	A3	0	44	RW6	0	64	LCD1	I/O
5	AD4	I/O	25	A4	0	45	RW7	0	65	LCD2	I/O
6	AD5	I/O	26	A5	0	46	K0	I	66	LCD3	I/O
7	AD6	I/O	27	A6	0	47	K1	I	67	LCD4	I/O
8	AD7	I/O	28	A7	0	48	K2	I	68	LCD5	I/O
9	AS	I	29	RD	0	49	K3	I	69	LCD6	I/O
10	E	I	30	WR	0	50	K4	I	70	LCD7	I/O
11	R/W	I	31	CS0	0	51	K5	I	71	LE	0
12	A9	I	32	GND	-	52	VDD	-	72	LR/W	0
13	VDD	-	33	CS1	0	53	K6	I	73	NC	-
14	A10	I	34	CS2	0	54	K7	I	74	GND	-
15	A11	I	35	CS3	0	55	BLR0	0	75	LRS	0
16	A12	I	36	CS4	0	56	BLR1	0	76	US3	0
17	A13	I	37	CS5	0	57	BLKR	0	77	US2	0
18	A14	I	38	RW0	0	58	BLK0	0	78	US1	0
19	A15	I	39	RW1	0	59	BLK1	0	79	RST	0
20	A0	0	40	RW2	0	60	BLK2	0	80	POC	0

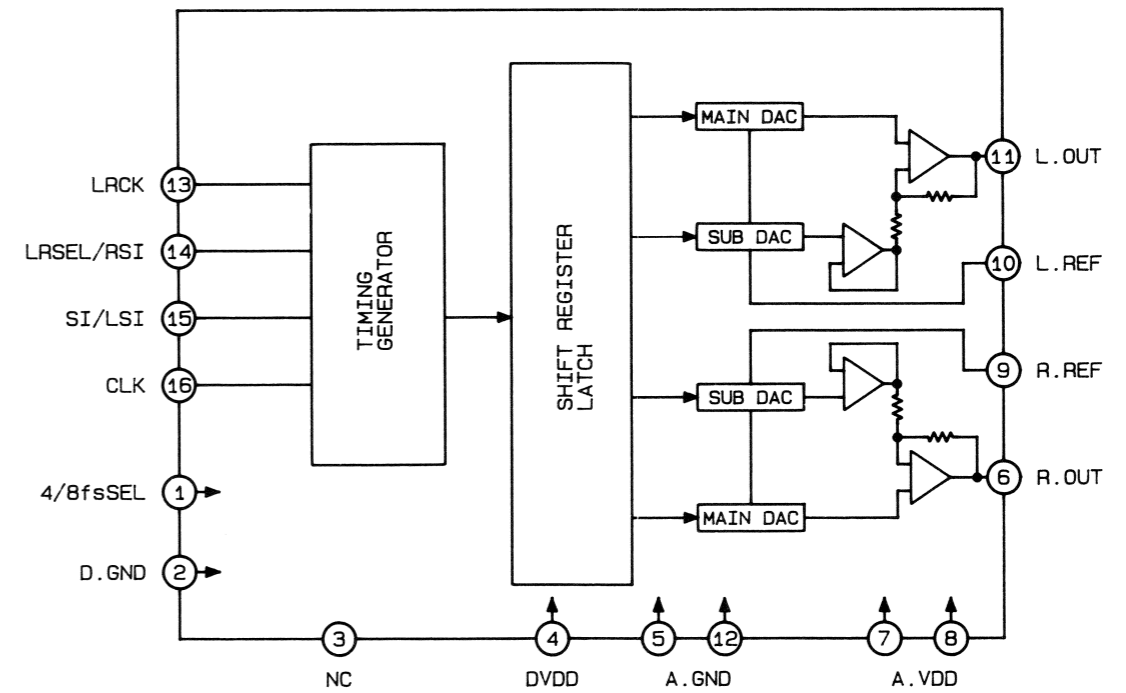
D/A Converter (IC21 on MAIN PCB)
MPD6376 (FLAT)
(15289702)



Gate Array (Key Scan)
SSC1000 (IC1 on MAIN PCB)
(15239124)



PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	BR8	I	21	T11	0	41	BUSW	I	61	XCS	I
2	MK8	I	22	T12	0	42	AD8	I/O	62	XPRES	I
3	BR9	I	23	T13	0	43	AD9	I/O	63	BR0	I
4	MK9	I	24	T14	0	44	AD10	I/O	64	MK0	I
5	BR10	I	25	T15	0	45	AD11	I/O	65	BR1	I
6	MK10	I	26	XINT	0	46	AD12	I/O	66	MK1	I
7	VDD	P	27	VSS	P	47	AD13	I/O	67	BR2	I
8	T0	0	28	XMR	I	48	AD14	I/O	68	MK2	I
9	T1	0	29	XDS	I	49	VDD	P	69	TEST	I
10	T2	0	30	ALE	I	50	X2	0	70	BR3	I
11	T3	0	31	XRD	I	51	X1	I	71	MK3	I
12	VSS	P	32	VRR	P	52	VSS	P	72	BR4	I
13	T4	0	33	AD0	I/O	53	CK0	0	73	MK4	I
14	T5	0	34	AD1	I/O	54	HCK0	0	74	BR5	I
15	T6	0	35	AD2	I/O	55	NMPX	I	75	MK5	I
16	T7	0	36	AD3	I/O	56	A7	I	76	TEST	I
17	T8	0	37	AD4	I/O	57	A8	I	77	BR6	I
18	T9	0	38	AD5	I/O	58	A9	I	78	MK6	I
19	T10	0	39	AD6	I/O	59	ECK	I	79	BR7	I
20	VSS	P	40	AD7	I/O	60	VSS	P	80	MK7	I



Roland®

17059599

UPC

17059599



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Roland