

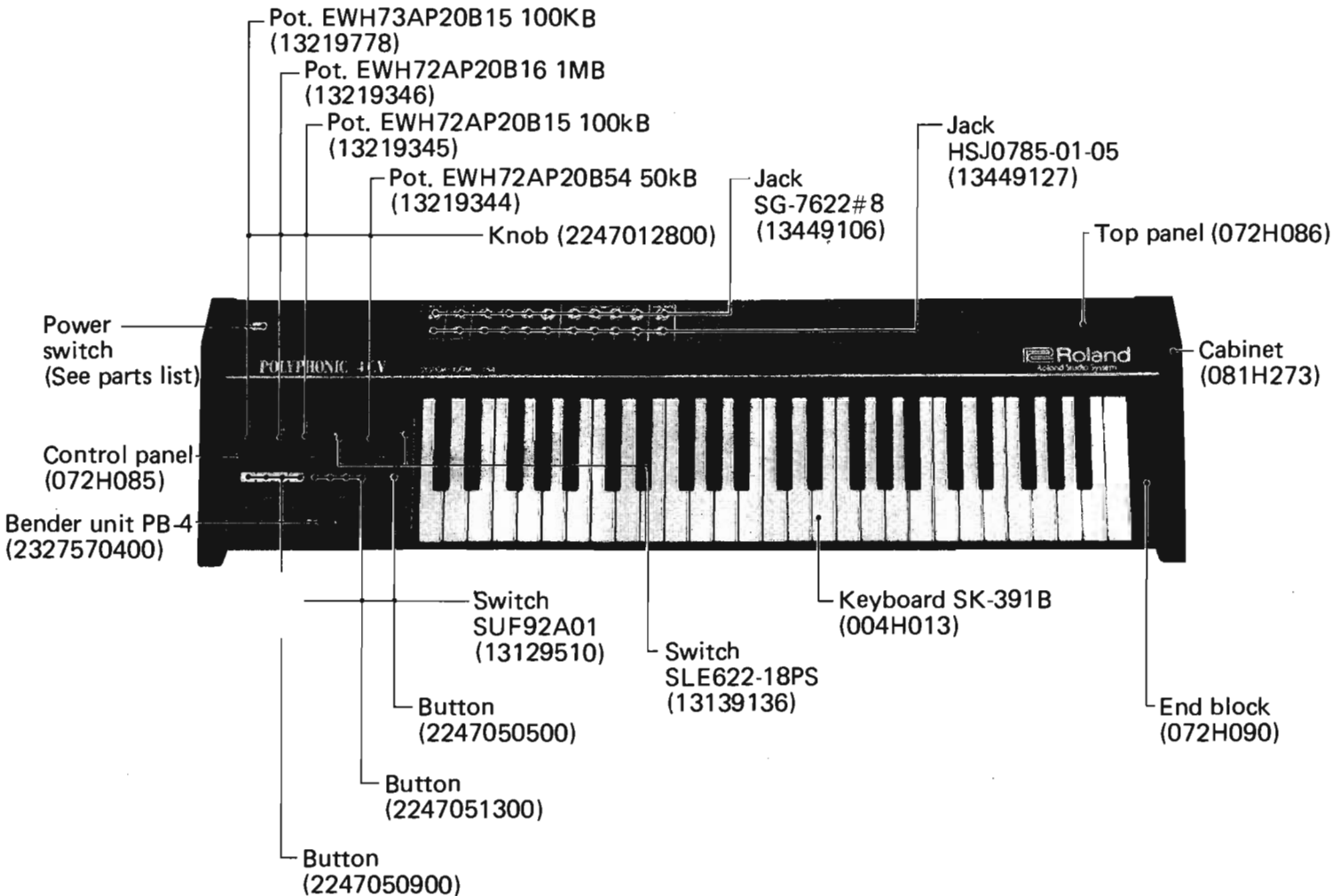
SYSTEM-100M-184

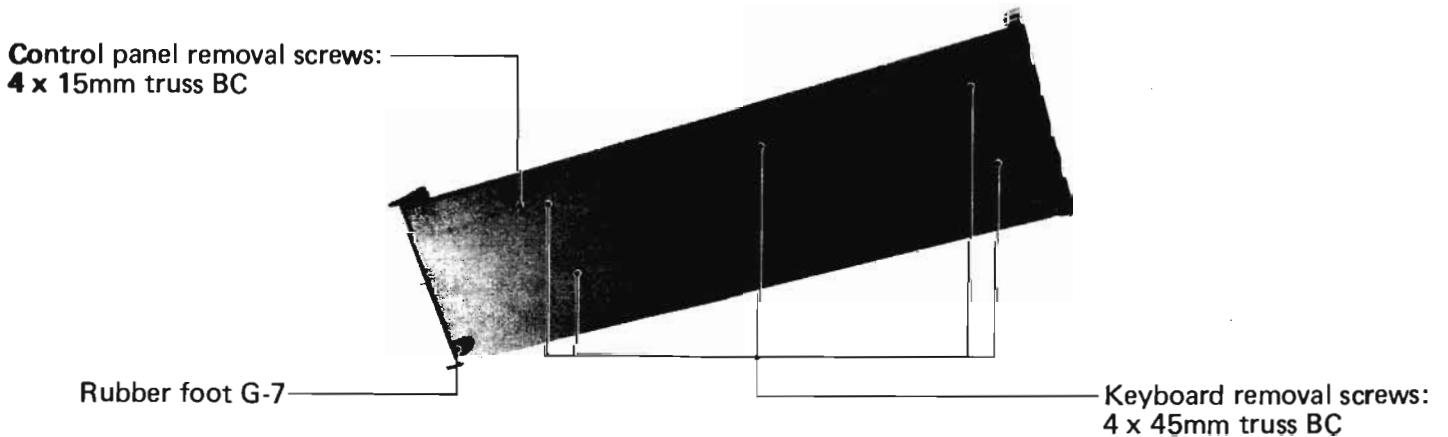
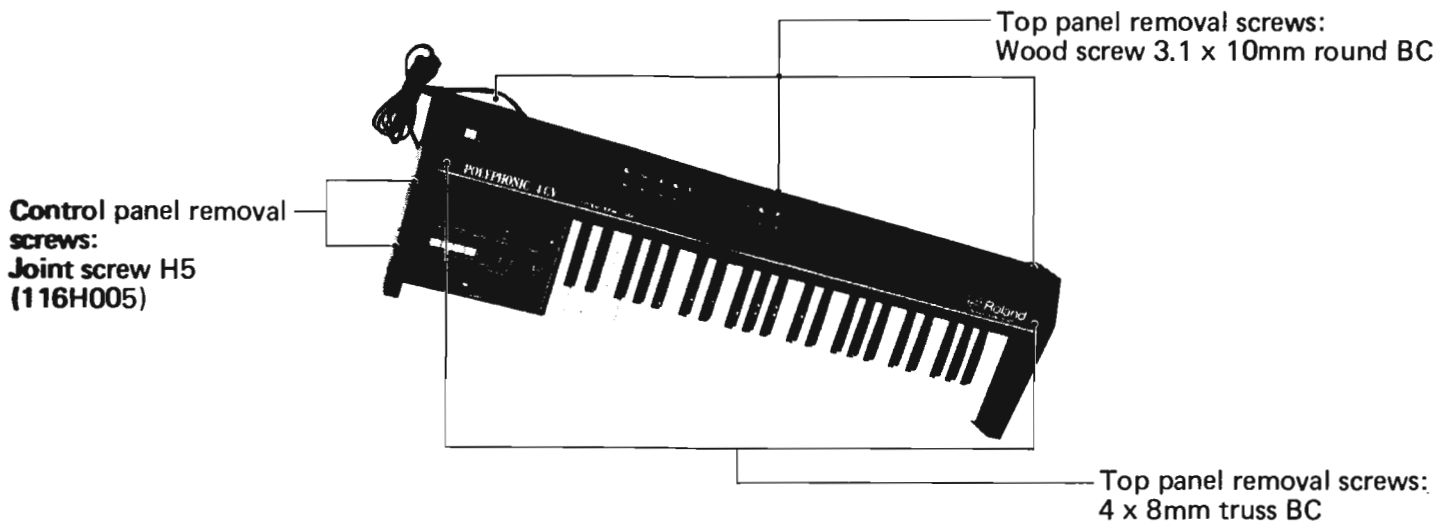
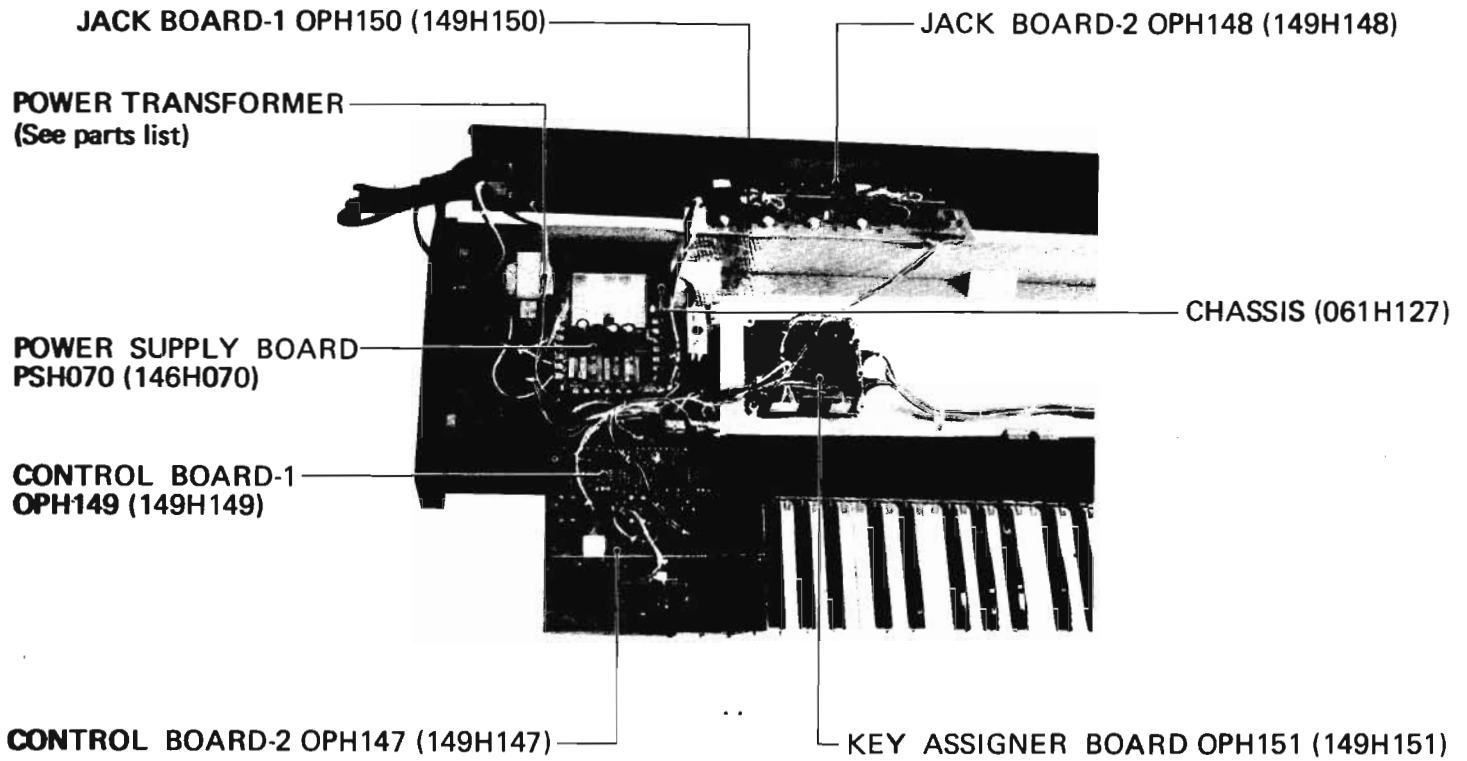
SERVICE NOTES

First Edition

SPECIFICATIONS

- Keyboard 61 keys, 4 octaves (C-C)
- Tunable range ±100 cents
- Pitch bend sens ±1300 cents (max.)
- Portamento time 0-1 s/oct
- CV out 1 V/oct
- Gate out +15V
- Bender CV out ±1V
- Arpeggio clock in +1V (min.)
- Dimensions 938(W) x 235(D) x 95(H)mm
- Power consumption 8W
- Weight 8.5 kg





SYSTEM-100M-184

PARTS LIST

004H013 Keyboard SK-391B
081H273 Cabinet
Rubber foot G-7
072H085 Control panel
072H086 Top panel
072H090 End block
061H127 Chassis **power supply**
2327570400 Bender unit PB-4

KNOB, BUTTON

2247012800 Knob (016-078)
2247050900 Button white (016-085)
2247051300 Button blue (016-089)
2247050500 Button gray (016-008)

SWITCH

13129101 SDG5P001-1 power 100V
13129102 SDG5P001-2 (CSA) 117V
13129103 SDG5P-502 (DNS) 220/240V
13129510 SUF92A01 push (001-227)
13139136 SLE622-18PS lever

JACK

13449106 SG-7622#8 (009-008)
13449127 HSJ0785-01-05 mini.

TRANSFORMER, COIL

022H045J Power 100V
022H045C Power 117V
022H045D Power 220/240V
2244021100 Coil 24M-067-333 (022-136)

PCB ASSEMBLY

149H151 KEY ASSIGNER BOARD OPH151
(pcb 052H032C)
149H149 CONTROL BOARD-1 OPH149
(pcb 052H314A)
149H147 CONTROL BOARD-2 OPH147
(pcb 052H335)
145H150 JACK BOARD-1 OPH150
(pcb 052H315A)
149H148 JACK BOARD-2 OPH148
(pcb 052H321)
146H070 POWER SUPPLY BOARD PSH070
(pcb 052H172B)
052H195 LED BOARD less parts

IC

15179101 μ PD8048-C11 (179-020)
Single-Chip 8-Bit Microcomputer
15159105T0 TC4013BP (020-041)
Dual D-Flip Flop
15159112T0 TC4049BP (020-075)
Hex Inverter/buffer
15159116T0 TC4069UBP (020-176)
Hex Inverter
15159114H0 MC14052BP (020-175)
Dual 4-Channel Multiplexer
15169301X0 SN74LS00
Quad 2-Input NAND Gate
15169322X0 SN74LS174
Hex D-Flip Flop
15169111X0 SN74LS175
Quad D-Flip Flop
15189118 TL082CP (020-100)
OP Amp
15229801 IR3109 (020-209)
VCF
15189105 μ PC4558 (020-097)
OP Amp
15199106N0 μ PC14305H or TA7805 (020-205)
3-Terminal Regulator
15199118 TA78015
3-Terminal Regulator

TRANSISTOR

15119802 2SB596-Y (017-128)
15119113 2SA1015-Y or GR (017-116)
15129114 2SC1815-Y or GR (017-106)

DIODE

15019103 1S2473 (018-059)
15019108 1S2473FV (018-094)
151019243 1B4B1 (018-098)
rectifier stack
15019245 1B4B41
rectifier stack
15019624 1SZ52 (018-113)
zener
15029103 TLR-124 (019-028)
LED

POTENTIOMETER

13219344	EWH72AP20B54 50kB	
	PORTAMENTO	
13219778	EWH73AP20B15 100kB	
	TUNE	
13219345	EWH72AP20B15 100kB	
	PITCH BEND SENS	
13219346	EWH72AP20B16 1MB	
	ARPEGGIO RATE	
	(trimmer)	
13299116	SR19R	47kB (030-469)
13299138	RJ6P2K	2kB (030-641)
13299139	RJ6P10K	10kB (030-643)
13299131	RJ6P20K	20kB

FUSE

12559133	MGP 1A	(008-014)
	pri. 100V	
12559513	SEMKO T1A (5 x 20mm)	(008-066)
	sec. 100/220/240V	
12559507	SEMKO T200mA	(008-059)
	sec. 100/220/240V	
12559311	MGP 1A CSA	(008-041)
	pri. 117V	
12559333	GGG 1-1/4 1.25A/250V CSA	
	(5x20mm) sec. 117V	
12559334	GGG 1/4 250mA/250V CSA	
	sec. 117V	
12559532	SEMKO T630mA	
	pri. 220/240V	

POSISTOR

15229909	ERS-B33G561 560Ω	(030-680)
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FUSE HOLDER

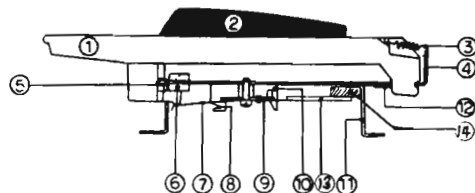
12199519	TF-758	(012-003)
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RESISTOR

044-927	CRB25BY	11k
044-928	CRB25BY	62.5k
044-929	CRB25BY	125k
044-930	CRB25BY	250k
044-931	CRB25BY	500k

MISCELLANEOUS

048H017	Heat sink	
064H076	Holder	power switch



SYS-184 SK-391B (004H013) KEYBOARD PARTS

NO	PART NO	DESCRIPTION	NO	PART NO	DESCRIPTION
1	106H026	Natural key C F	7	071H044	Contact leaf H44
1	106H027	Natural key D	8	071H051	Busbar 8P H51
1	106H028	Natural key D B		071H057	Busbar 1P H57
1	106H029	Natural key G	9	043H007	Switch unit 12P H7
1	106H030	Natural key A		043H008	Switch unit 13P H8
1	106H031	Natural key C'F'		043H011	Switch unit 13P-B H11
2	106H032	Sharp key black	10	064H093	Busbar holder H93
3	070H029	Key spring H29	11	062H024	Chassis bracket H24
4	061H086A	Chassis H86A	12	098H006	Key stopper H6
5	068H004	Guide bushing H4	13	052H283-4	Matrix board H283-4
6	101H142	Level felt H142	14	107H059	Cushion H59

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ADJUSTMENT

ALLOW APPROXIMATELY 20 MINUTES FOR WARMUP PERIOD.

BENDER UNIT PB-4

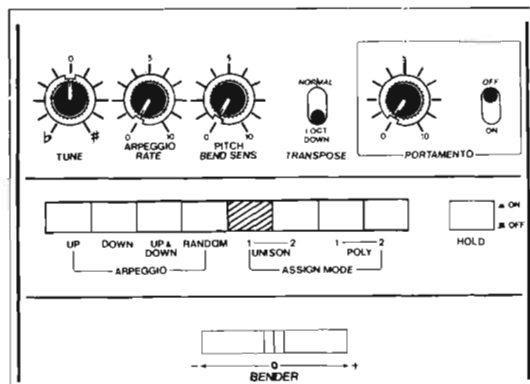
1. Connect digital voltmeter (DVM) across wiper and center tap of the Bender potentiometer.
If the meter reads other than 0.00V,
2. Loosen screw that lockes Bender lever to the Pot's shaft.
Turn the shaft for 0.000V reading.
3. Tighten the screw. Jog the lever and confirm 0V when the lever stands neutral.

D/A REFERENCE VOLTAGE OPH149

1. Connect DVM to CP-1 of OPH149 (or terminal 15 or Q1 collector of the board). (Ground DVM at terminal 20 of PSH70.)
2. Adjust VR1 for -15.000V reading.

BASIC SET-UP

for the remaining adjustments



KEY DESIGNATION & KCV OUT

	C0	C1	C2	C3	C4
TRANSPOSE					
NORMAL	1.000V	2.000V	3.000V	4.000V	5.000V
DOWN	0.000V	1.000V	2.000V	3.000V	4.000V

KCV WIDTH (A) OPH151

1. Disconnect connector (terminals 27-36).
Caution: Do not turn the power on/off once connector is separated – no reset signal for CPU.
 2. Connect DVM to terminal 36. (Ground DVM at terminal 20 of PSH70.)
 3. Holding C0 key down, adjust TUNE for 0.000V.
 4. Holding C4 key, adjust WIDTH VR2 for 4.000V.
- Leave the connector disconnected for the next para.

PORTAMENTO TIME OPH151

Reset: PORTAMENTO – ON PORTAMENTO Knob – 10

Others: the same as for above para.

1. Strike C0 key, then hold C4 key. The meter reading will follow the increasing ramp voltage. Time the period required for the CV to reach 4.000V.
2. Adjust VR1 for 4 sec period, or 1 sec/V.

KCV WIDTH (B) OPH150

Settings: Replug The connector housing on OPH151.
Set TUNE at its center.

OFFSET

1. Connect DVM to one of CH1 KCV jacks.
2. While depressing C0 key, adjust VR5 for 0.0mV reading.

WIDTH

1. Adjust VR1 so that KCV changes in 1V/oct steps as C note is depressed on different octaves.
Retain DVM connection for the next para.

TRANSPOSE OPH149

Setting: Set TRANSPOSE into NORMAL.

1. Adjust VR6 so that every KCV jack delivers, on different keys, a voltage 1V higher when compared with the one produced at TRANSPOSE in DOWN.

Leave the DVM connection for the next para.

BENDER SENS OPH149

Setting: BEND SENS – 10

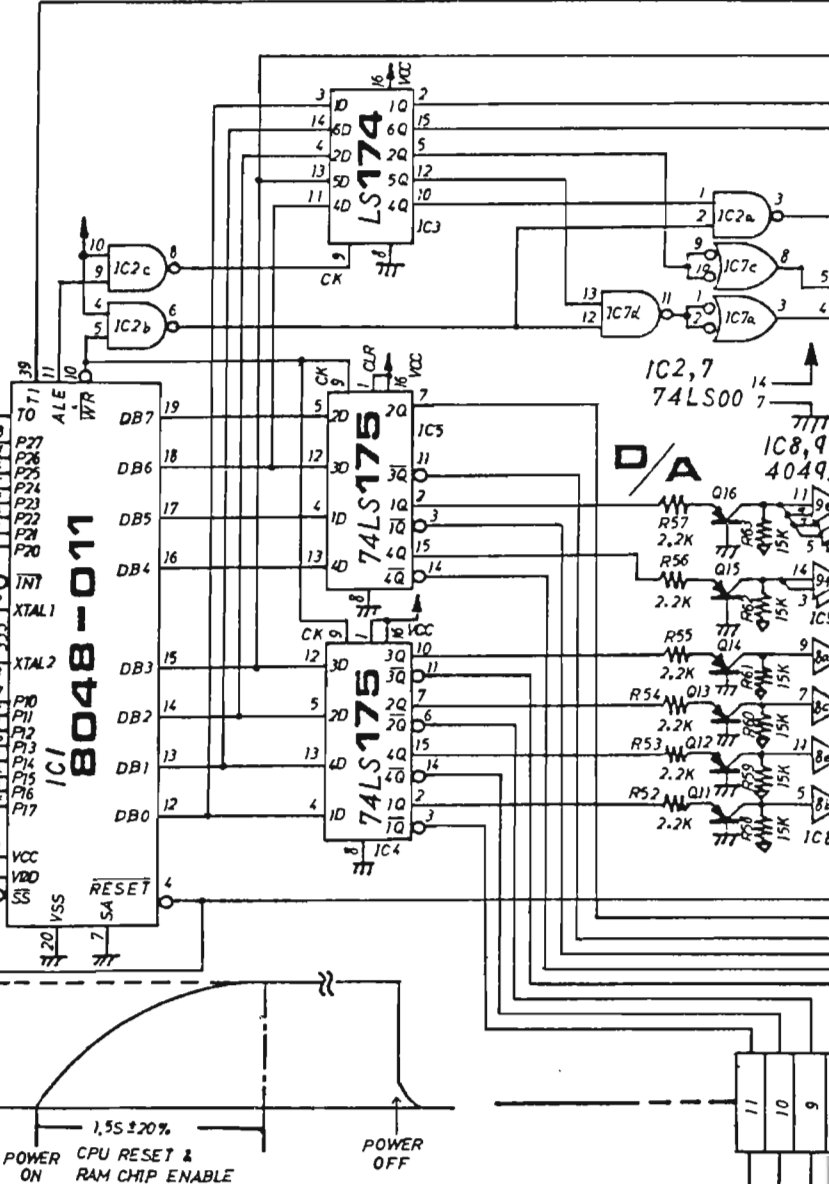
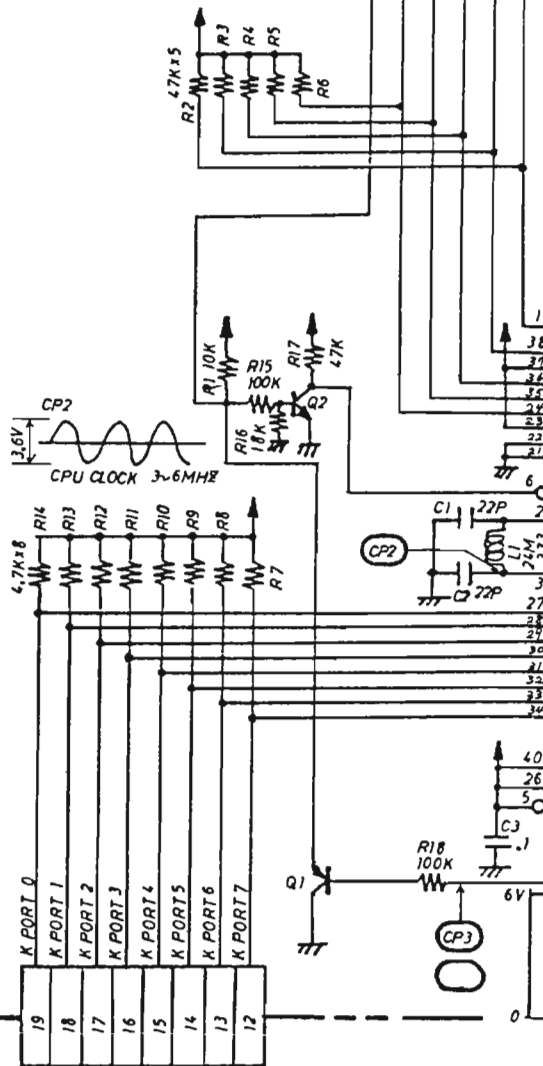
1. Move then holding BENDER lever at "+", adjust VR2 for more than 1.084V (1300 cents) above the voltage at neutral. (Pressing key for 2V or 3V KCV is preferable for easier calculation.)
2. While holding the lever at "-", adjust VR1 for the same amount of voltage change (negative going) as at step 1.
3. Confirm voltage changes at BENDER CV OUT jack.

TUNE SHIFT RANGE

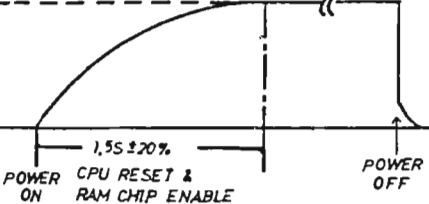
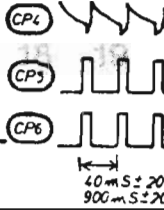
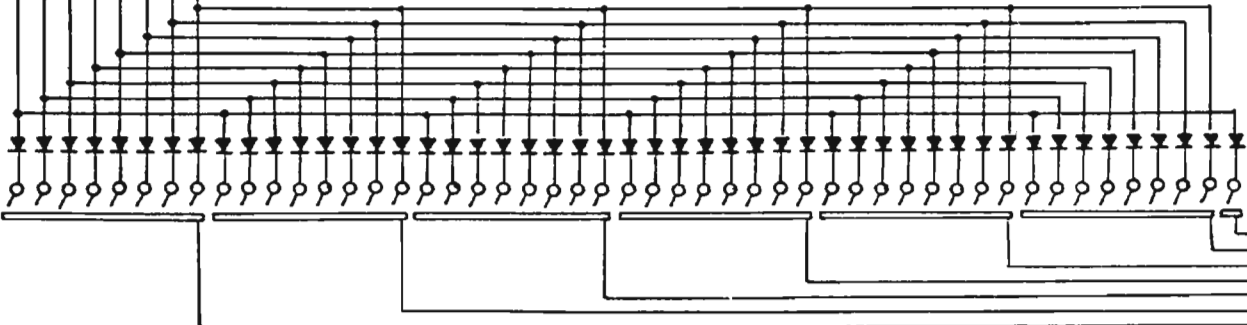
1. Confirm that KCV is shiftable up to $\pm 74\text{mV}$ relative to the center.

1 2 3 4 5 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

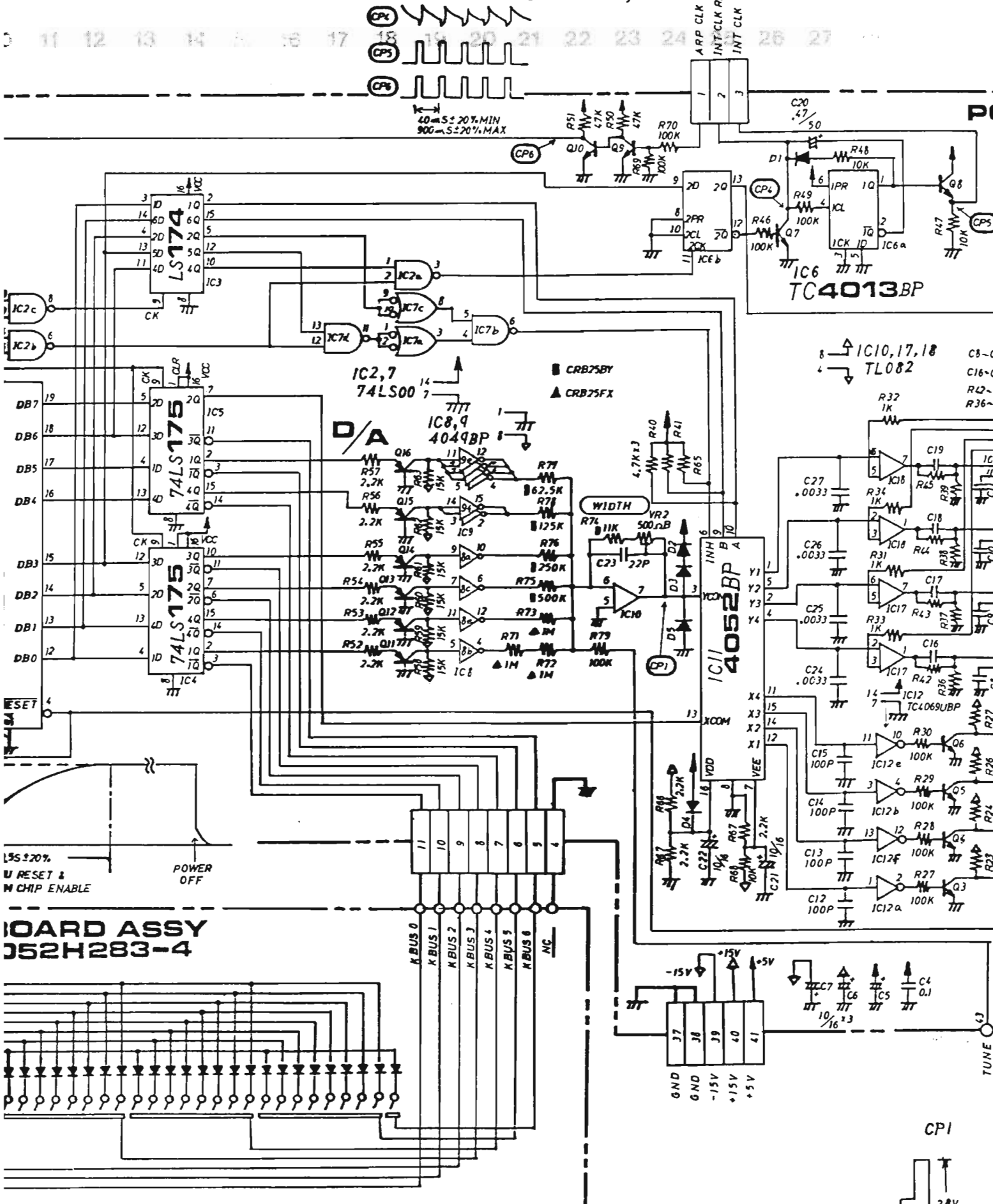
KEY ASSIGNER BOARD ASSY



49 KEY BOARD ASSY PCB 052H283-4



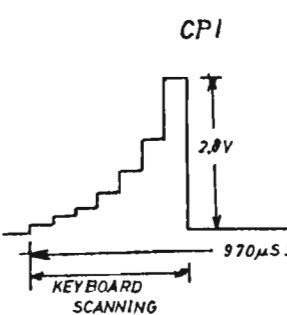
JULY.30,1982



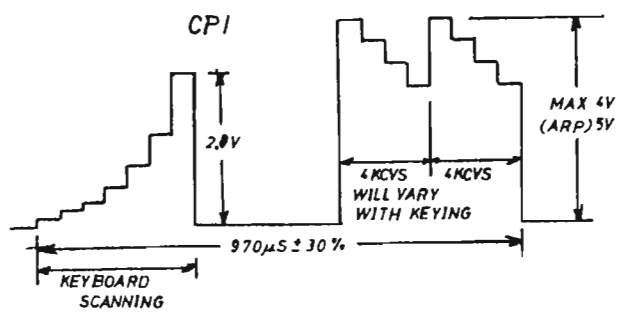
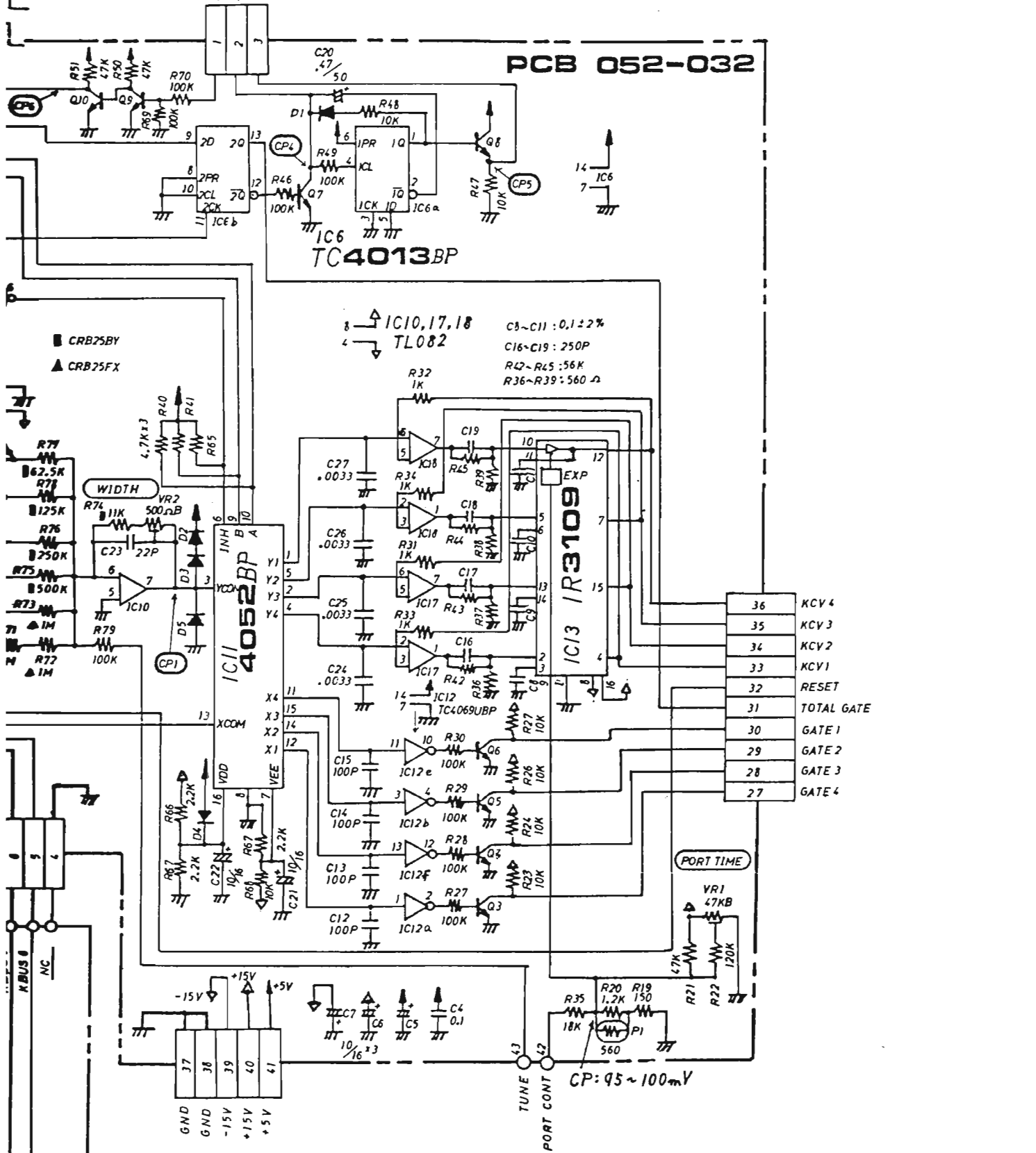
BOARD ASSY
J52H283-4

LS ± 20%
U RESET &
M CHIP ENABLE

POWER OFF



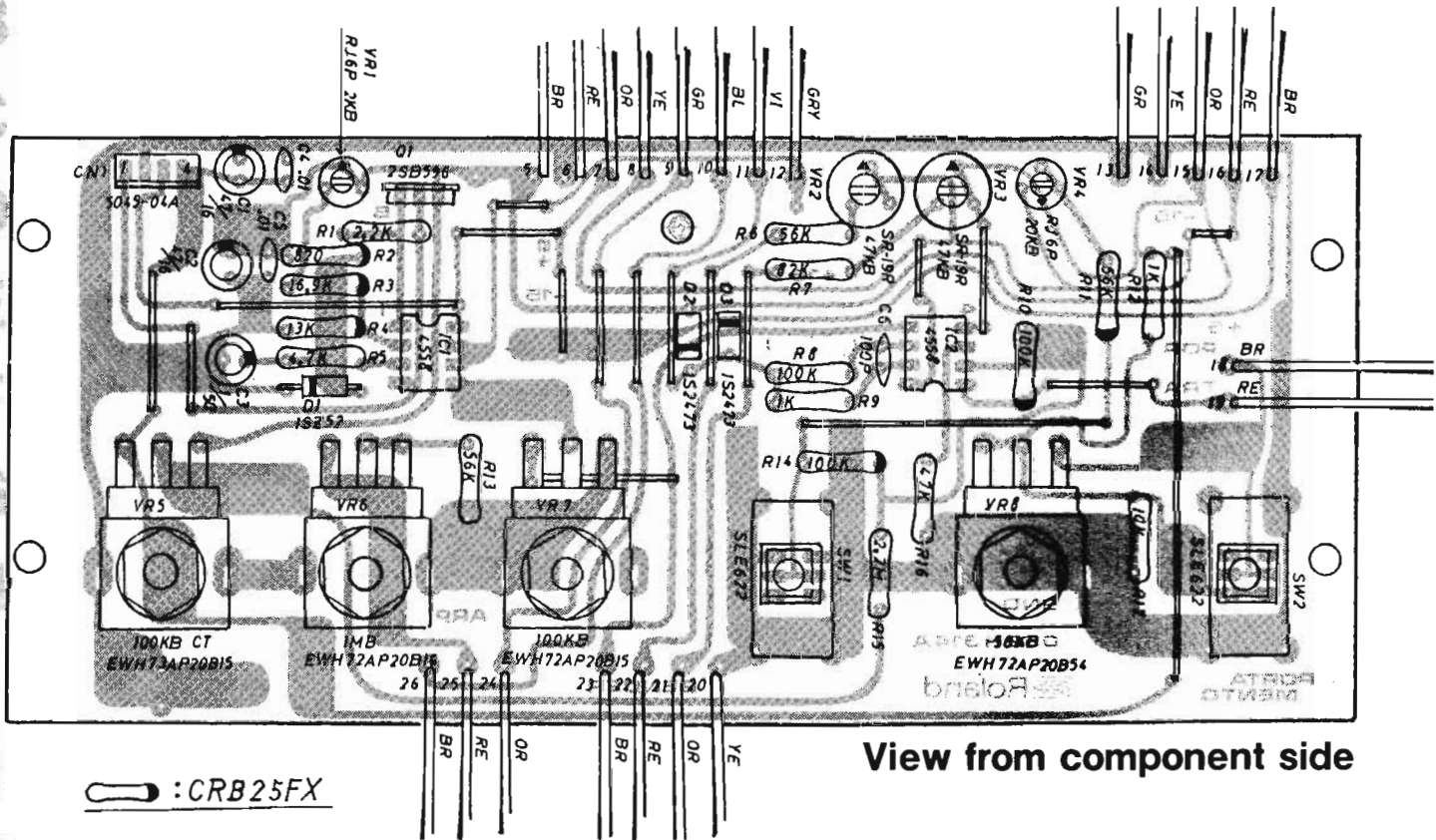
21 22 23 24 26 27 28 29 30 34 35 36 37 38 39 41



JULY.30,1982

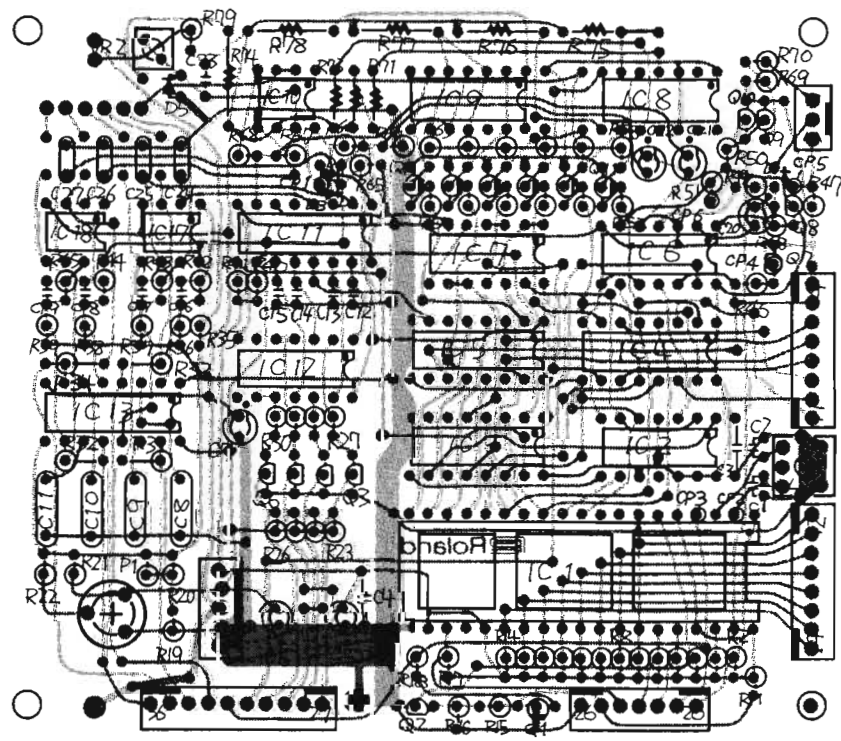
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

**CONTROL BOARD-1 OPH149
(149H149) (pcb 052H314A)**



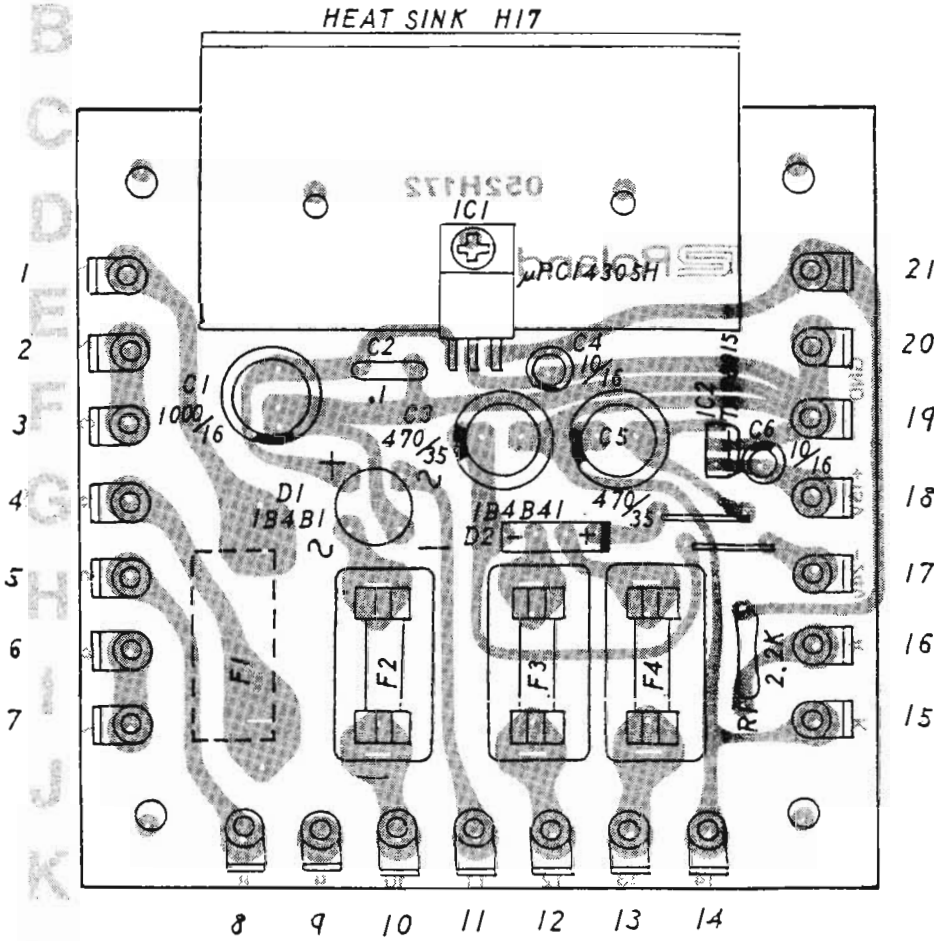
A B C D E F G H I J K L M N O P Q R S T U V

**KEY ASSIGNER BOARD
OPH151
(149H151)
(pcb 052H032C)**

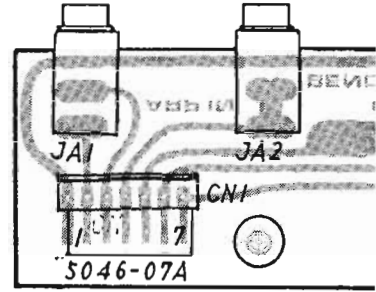


- R71~R73 : CRB25FX
- R74~R78 : CRB25BY
- : 2SA1015Y
- : 2SC1815Y
- : IS2473FV

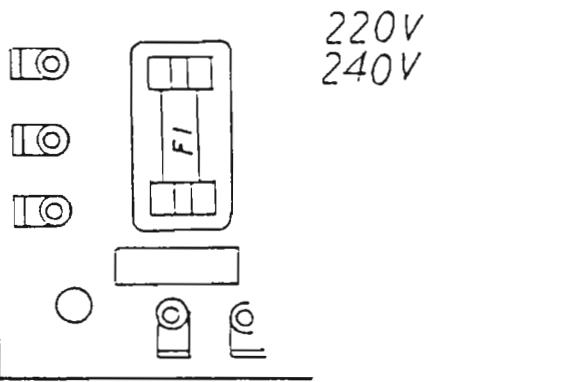
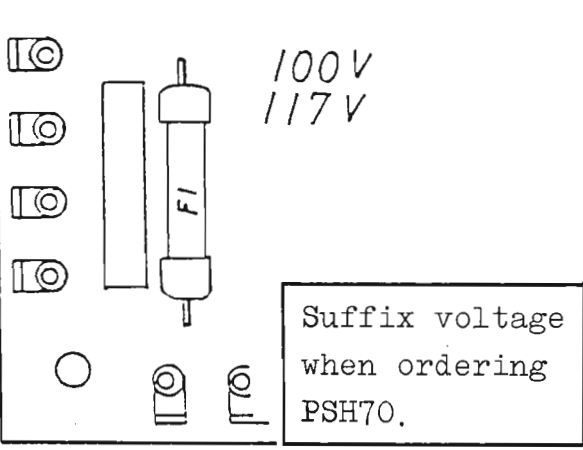
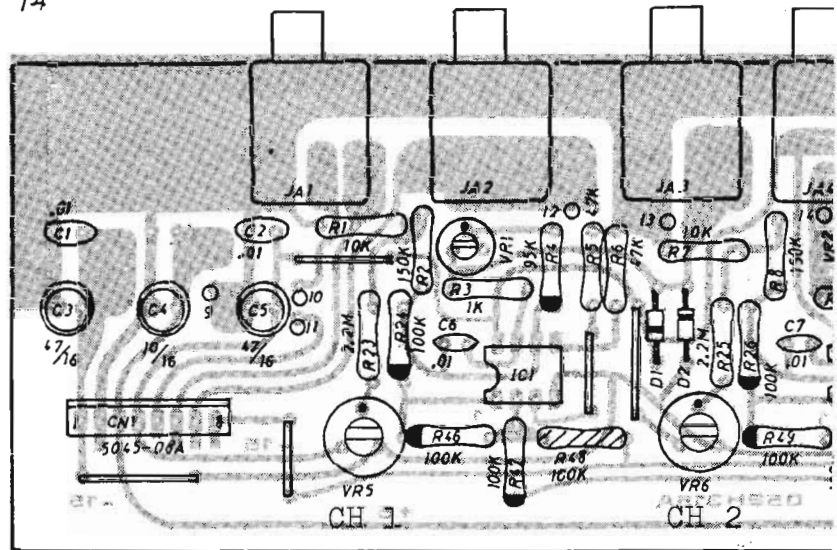
**POWER SUPPLY BOARD PSH070
(146H070) (pcb 052H172B)**



**JACK BOARD-2 OF
(149H148) (pcb 0521**



JACK BO

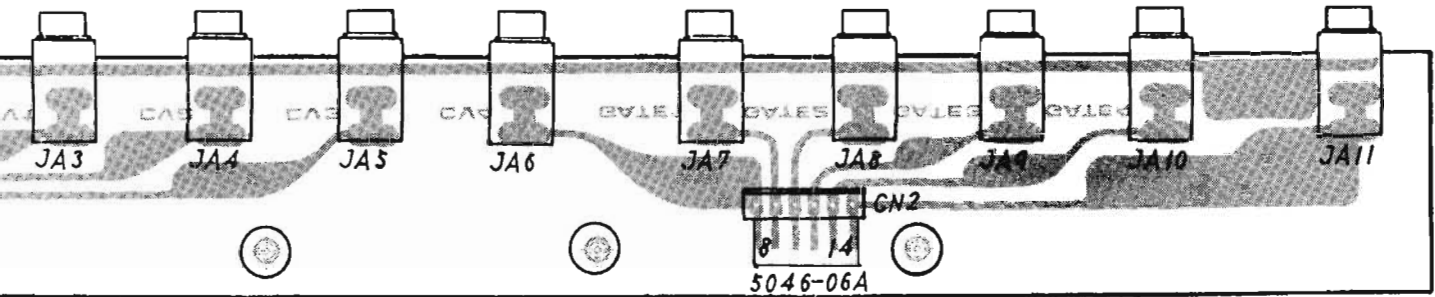


	F1	F2	F3,4
100V	MGPIA ∇	(S) 1AT	(S) 200mAT
117V	MGPIA CSA	GG5 $1\frac{1}{4}$	GG5 $\frac{1}{4}$
220/240V	(S) 630mAT	(S) 1AT	(S) 200mAT

FUSE HOLDER : TF758

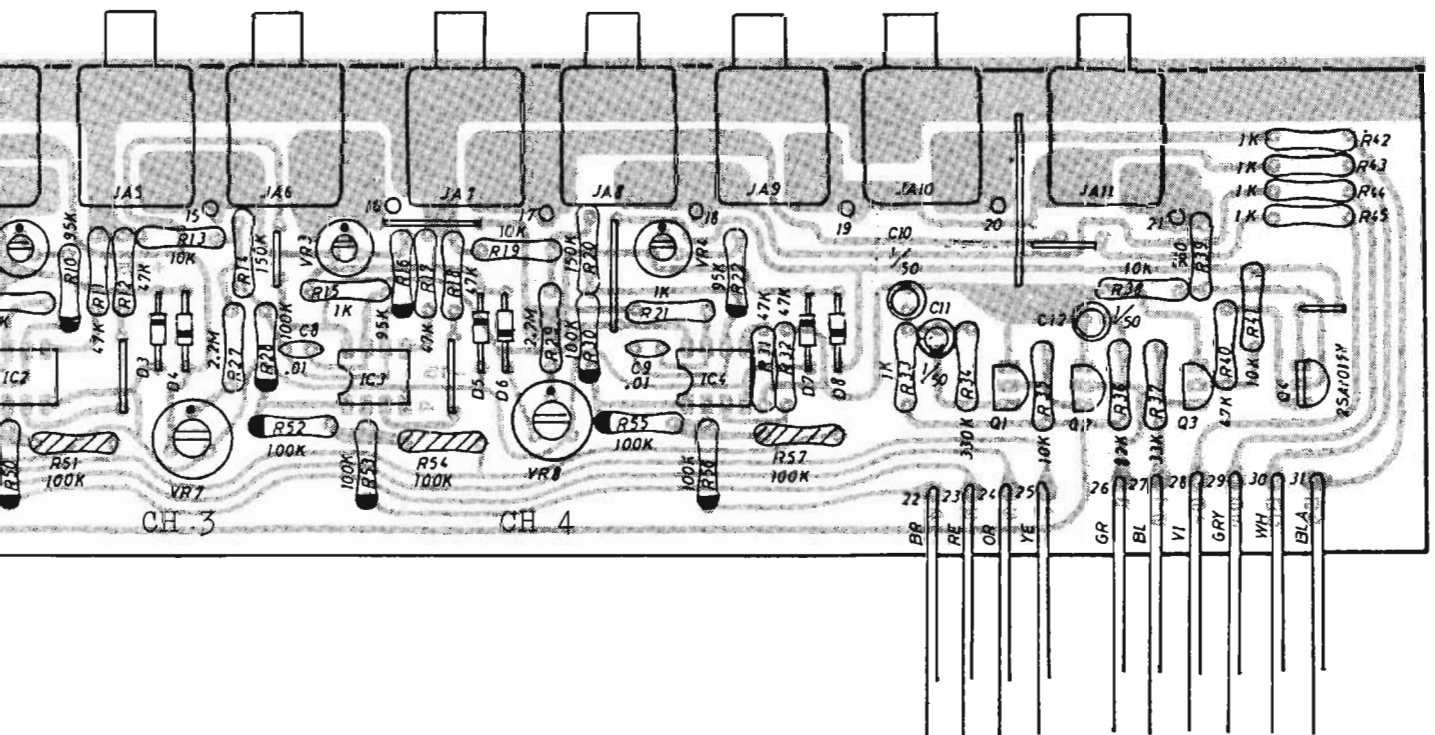
11 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41

H148
1321)



JAI~JAI1 : JACK HSJ0785-01

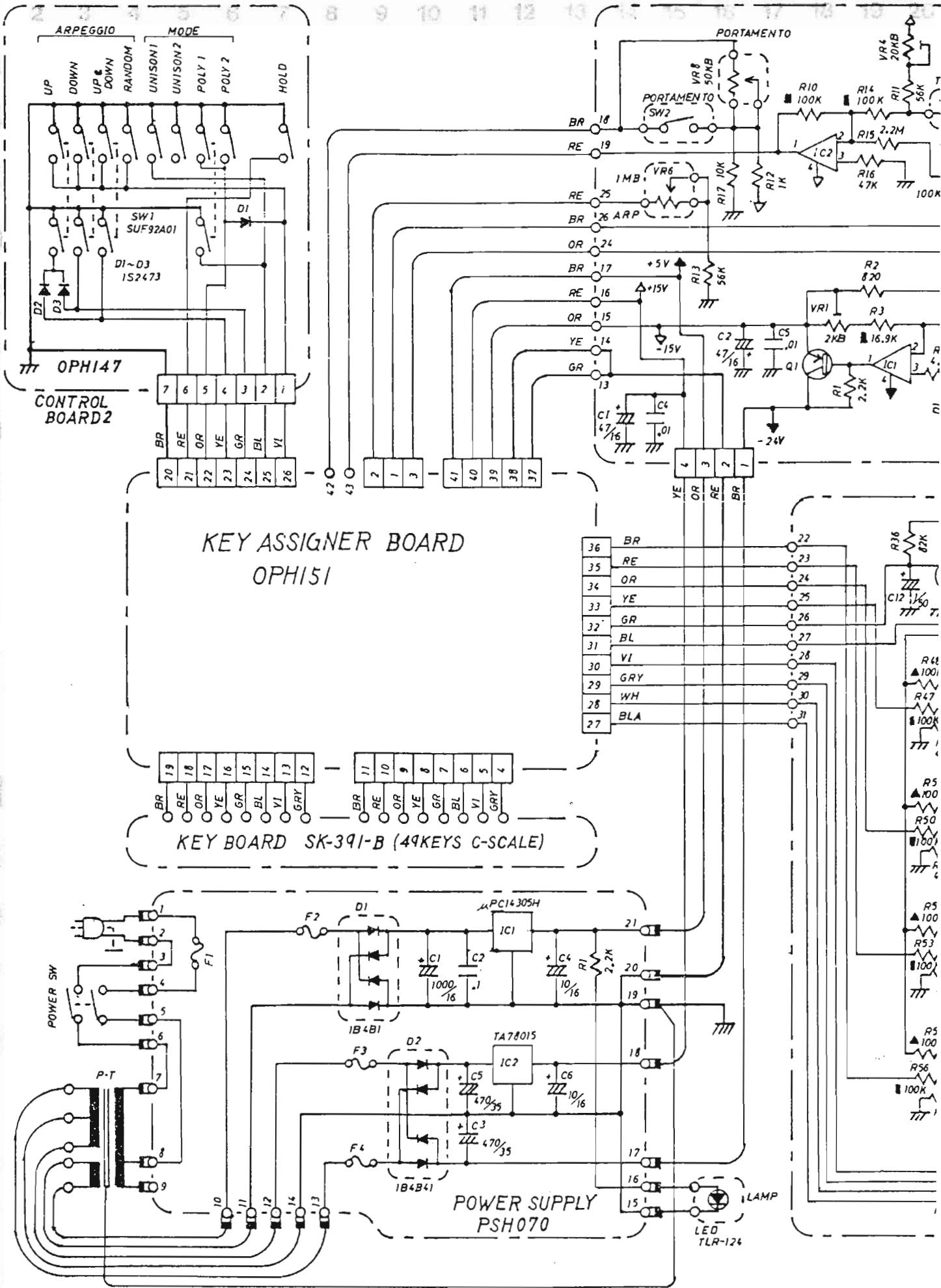
ARD-1 OPH150 (149H150) (pcb 052H315A)



Q1~Q3 : 2SC1815Y
D1~D8 : IS2473
IC1~IC4 : μPC4558
JAI~JAI1 : Jack SG7622-08

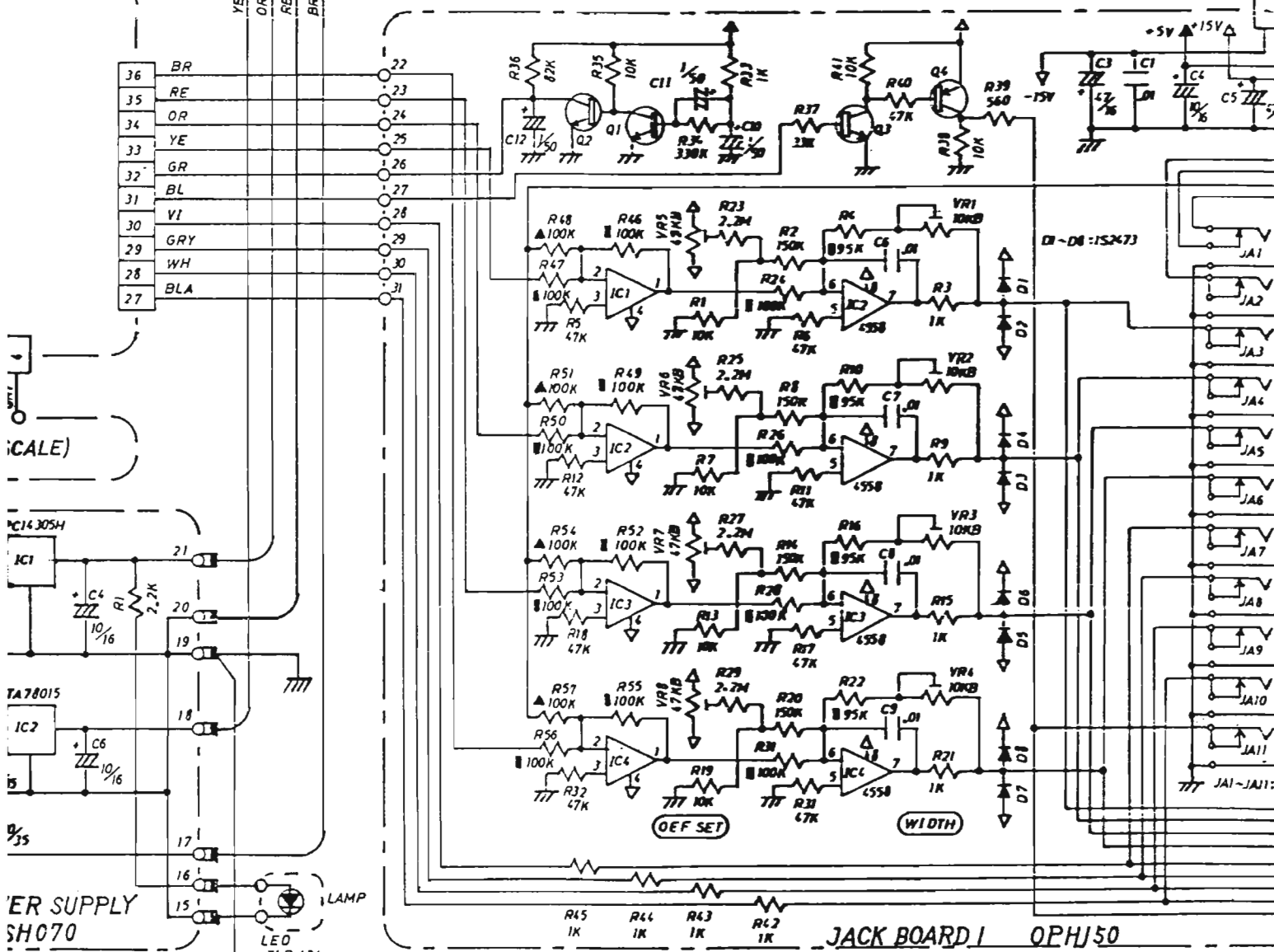
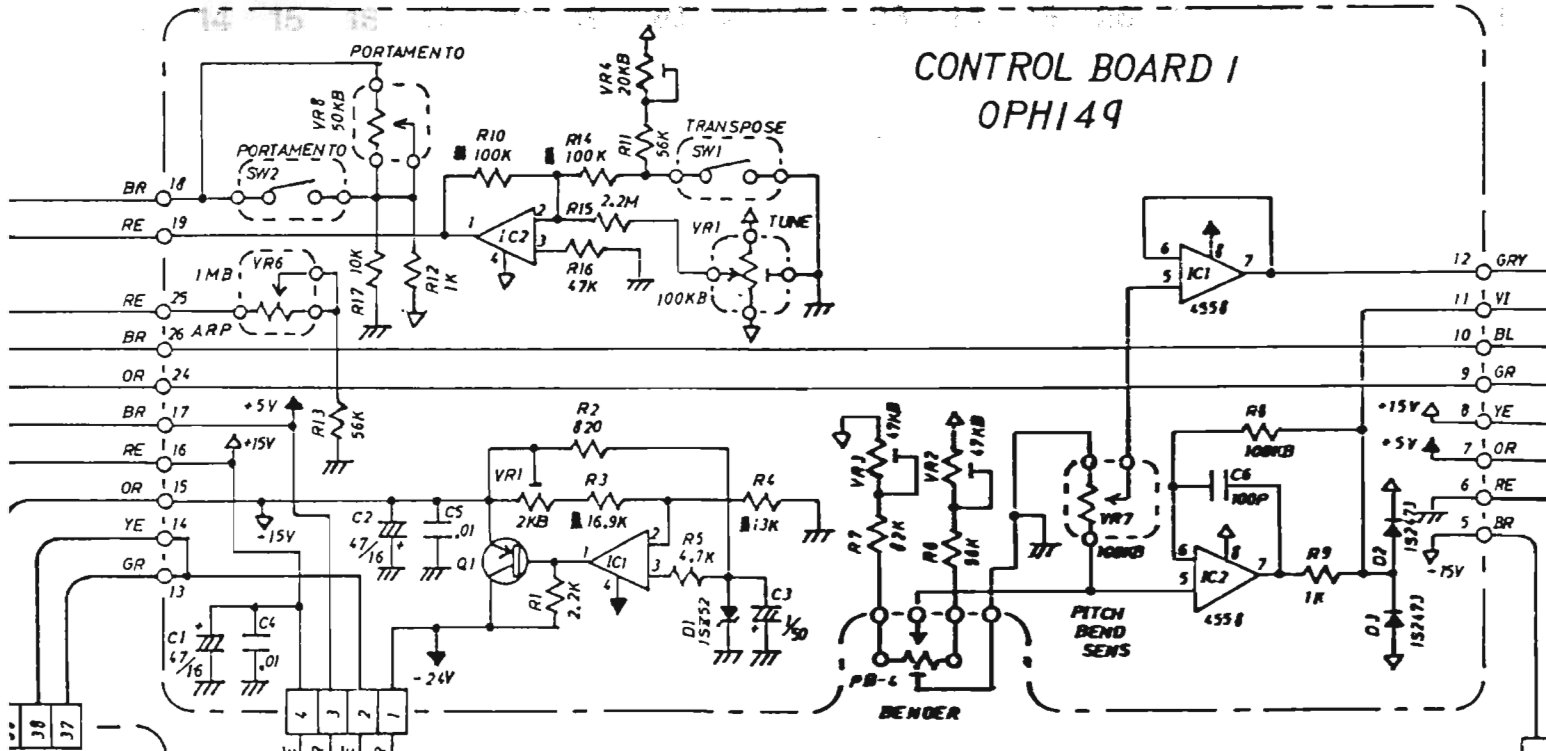
VR1~VR4 : RJ6P 10KB
VR5~VR8 : SR-19 47KB
◯ : CRB25FX
▨ : CRB25FX selected (±0.1%)

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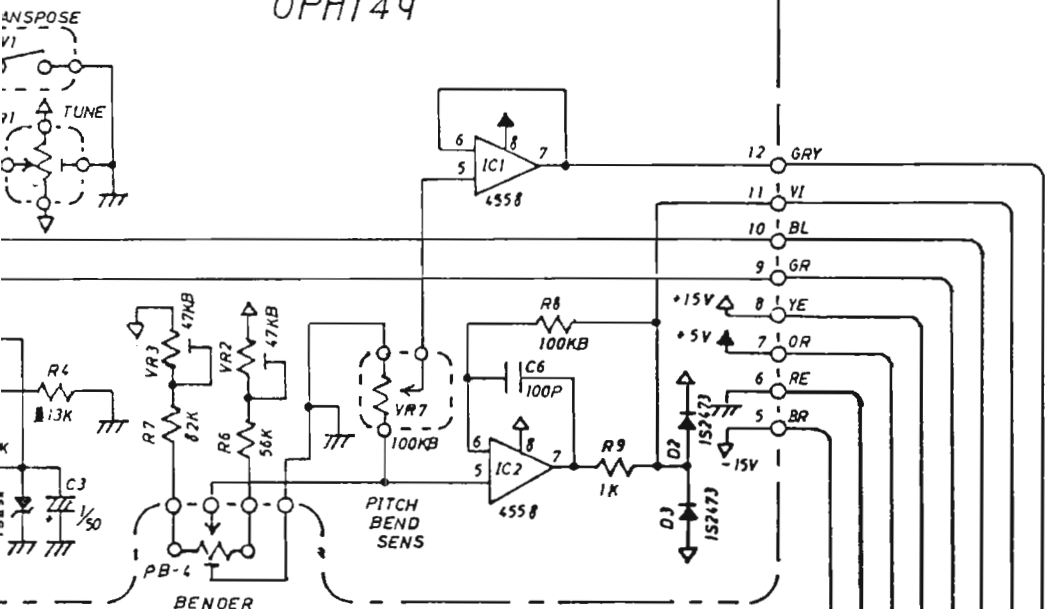
	100 V	117 V	220/240 V
P-T	022H045J	022H045C	022H045D
P-SW	SDG5P001-1	SDG5P001-2	SDG5P-502

CONTROL BOARD I OPH149

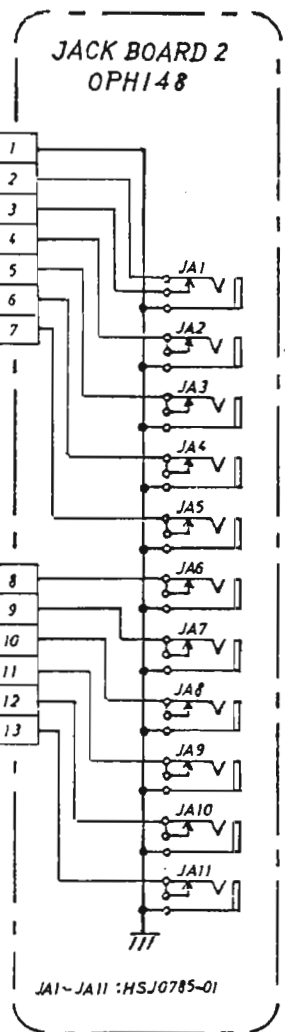
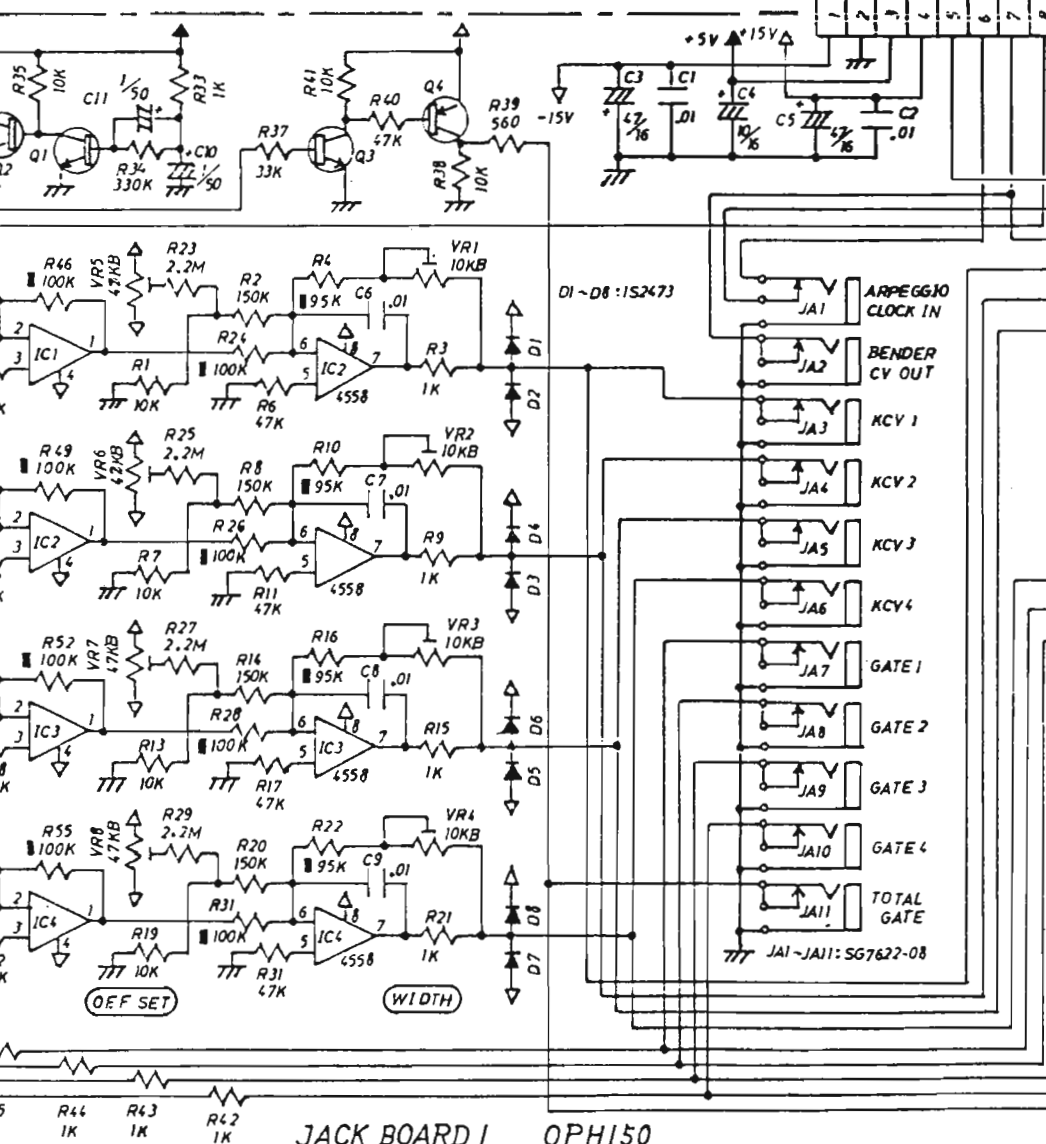


JACK BOARD I OPH150

CONTROL BOARD I
OPH149



PNP: 2SA1015Y
NPN: 2SC1815Y
▲: CRB25FX
■: CRB25FX SELECTED ($\pm 0.1\%$)



JACK BOARD I OPH150

JACK BOARD 2 OPH148

ARPEGGIO
CLOCK IN
BENDER
CV OUT
KCV 1
KCV 2
KCV 3
KCV 4
GATE 1
GATE 2
GATE 3
GATE 4
TOTAL
GATE