

Roland Studio System
STEREO PHASE SHIFTER INSTRUCTIONS
Model **PH-830**

SERVICE NOTES

PROVISIONAL

PARTS PICTORIAL

CIRCUIT DIAGRAM

PCBs LAYOUTS

ET-36

Left Channel

ET-37

Right Channel

PS-39

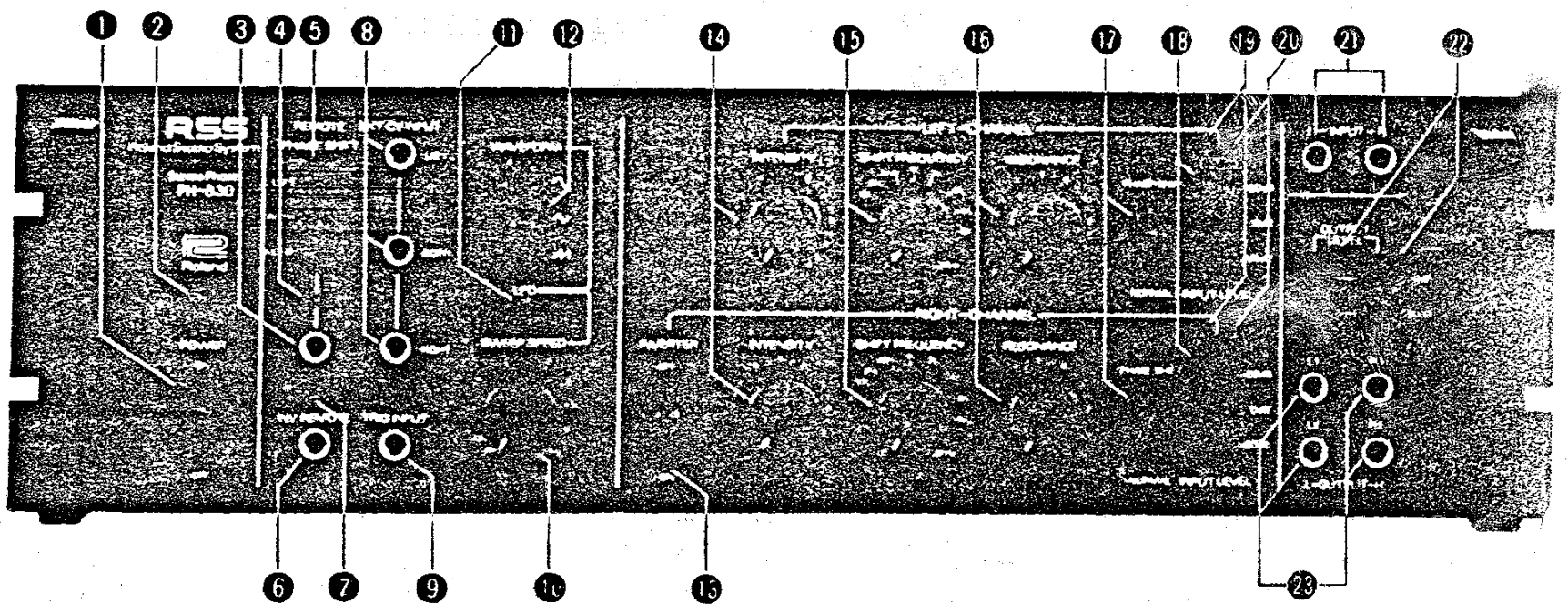
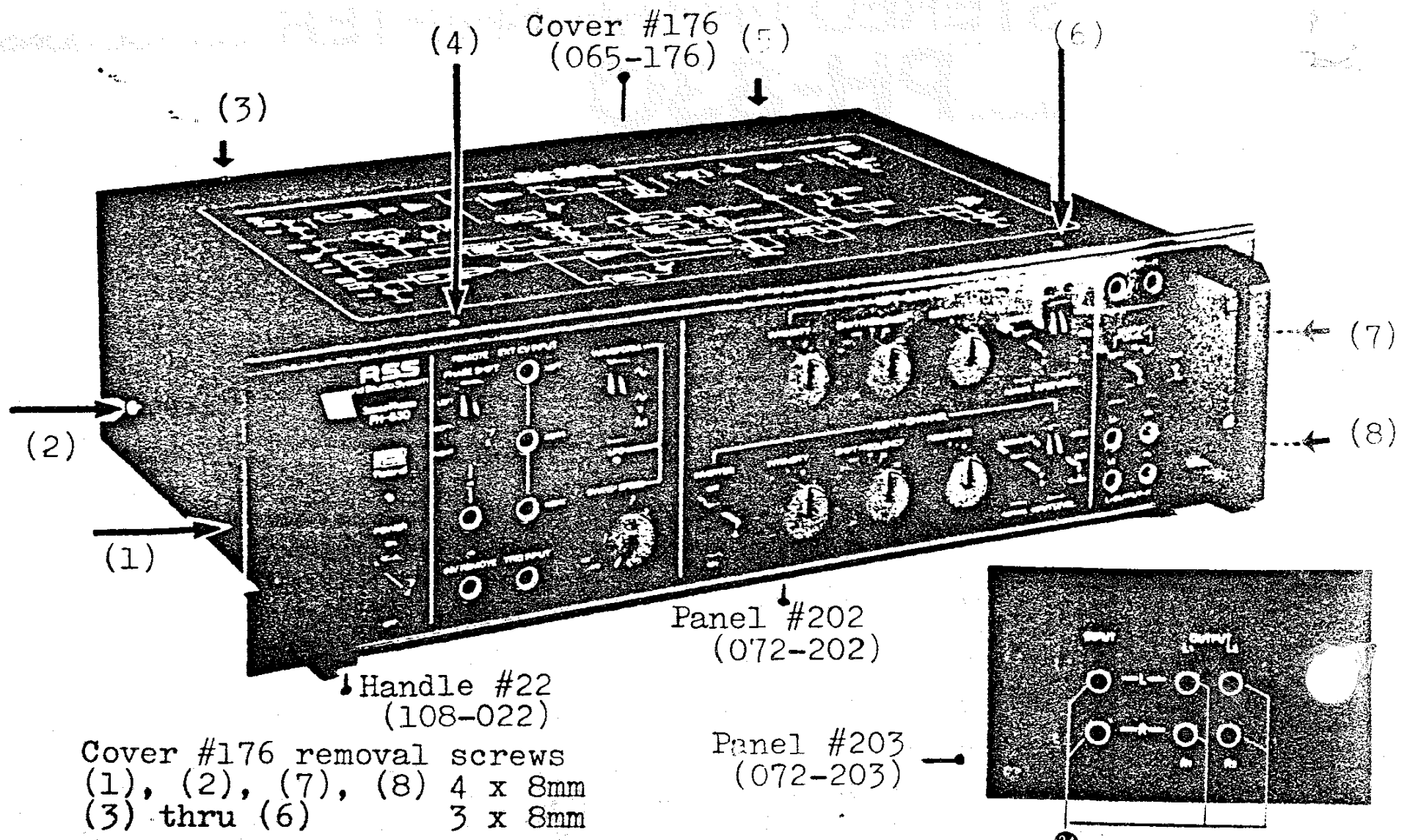
Power Supply

OP-81

Fuse Board

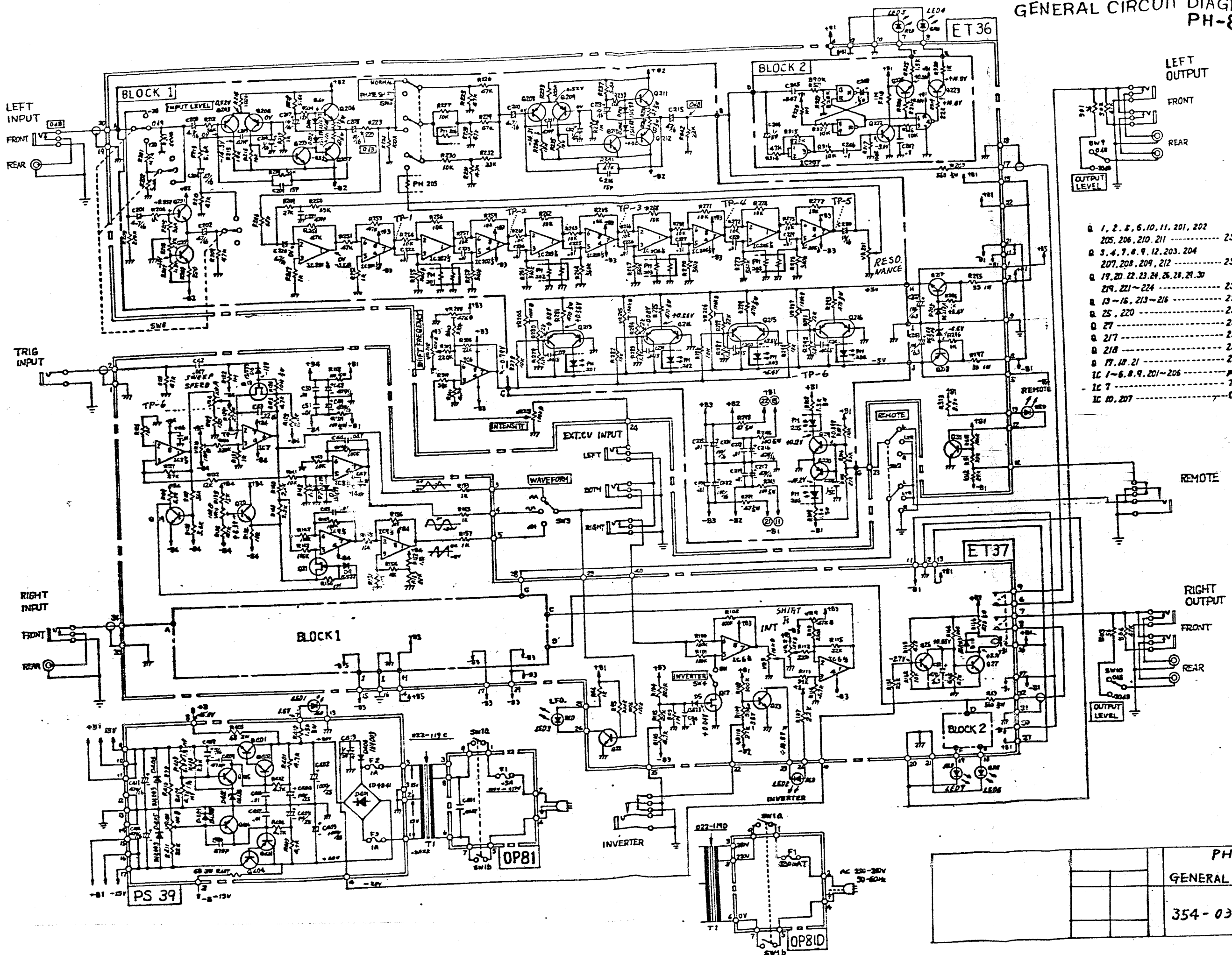
ADJUSTMENT

NOV, 1978



	P/N	PARTS NAME		P/N	PARTS NAME
1	001-185 016-069	Switch SDE-4LSAU Knob #69	13,17	001-186 110-009	Switch SLC-14230 Escutcheon #9
2,4,7 11,20	019-020	LED GL3AR2 red	14	028-620 016-043	Pot. VM1OR726C 10KB Knob #43
3, 6	009-037	Jack HLJ-0261-01-030	15,16	028-617	Pot. VM1OR726C 100KB
5, 12	001-189 110-010	Switch SLC-14306 Escutcheon #10	18	001-188 110-010	Switch SLC-14308 Escutcheon #10
8, 9 21,23	009-030	Jack HLJ-0264-01-030	19	019-021	LED GL3PG2 green
10	028-610	Pot. VM1OR726C 100KA	22	001-187	Switch SLC-1422
			24	009-035	Jacks P670L-144 (set)

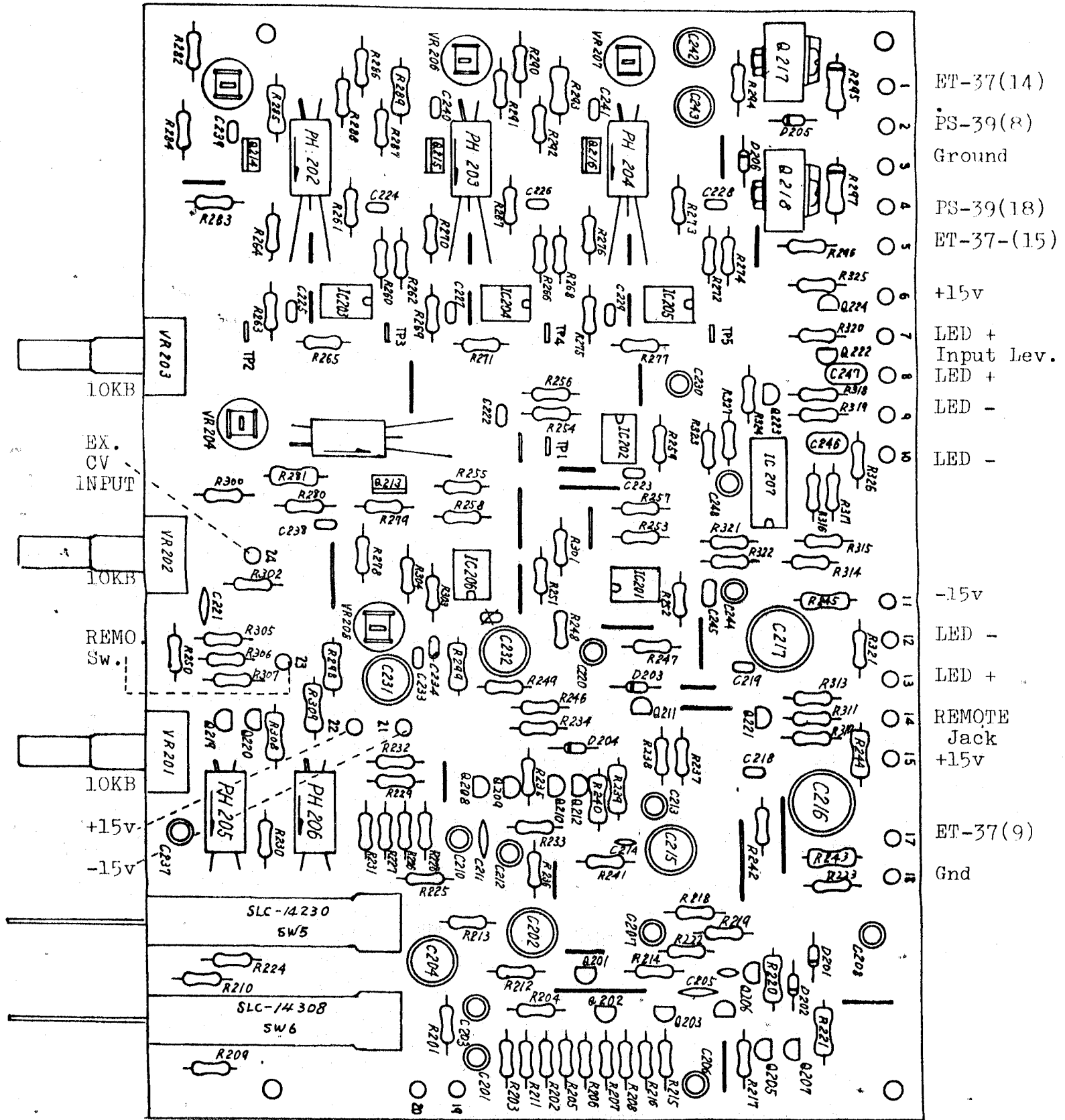
GENERAL CIRCUIT DIAGRAM PH-830



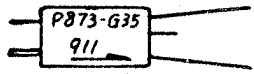
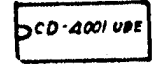
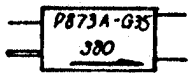
- Q 1, 2, 5, 6, 10, 11, 201, 202 2SC 2240 (GR)
- 205, 206, 210, 211 2SC 2240 (GR)
- Q 3, 4, 7, 8, 9, 12, 203, 204 2SA 470 (GR)
- 207, 208, 209, 212 2SA 470 (GR)
- Q 19, 20, 22, 23, 24, 26, 28, 29, 30 2SC 945 (G)
- 219, 221-224 2SC 945 (G)
- R 13-16, 213-216 2SA 798 (G)
- R 25, 220 2SA 733 (G)
- Q 27 2SC 1627 (Y)
- Q 217 2SD 234 (O)
- R 218 2SB 434 (O)
- R 17, 18, 21 2SK 30A (Y)
- IC 1-6, 8, 9, 201-206 PC 4558 DD
- IC 7 TL 081
- IC 10, 207 CB 4001 UBE

PH-830	
GENERAL CIRCUIT	
354-034	

PHASE BOARD ET-36 (151-036) Left Channel

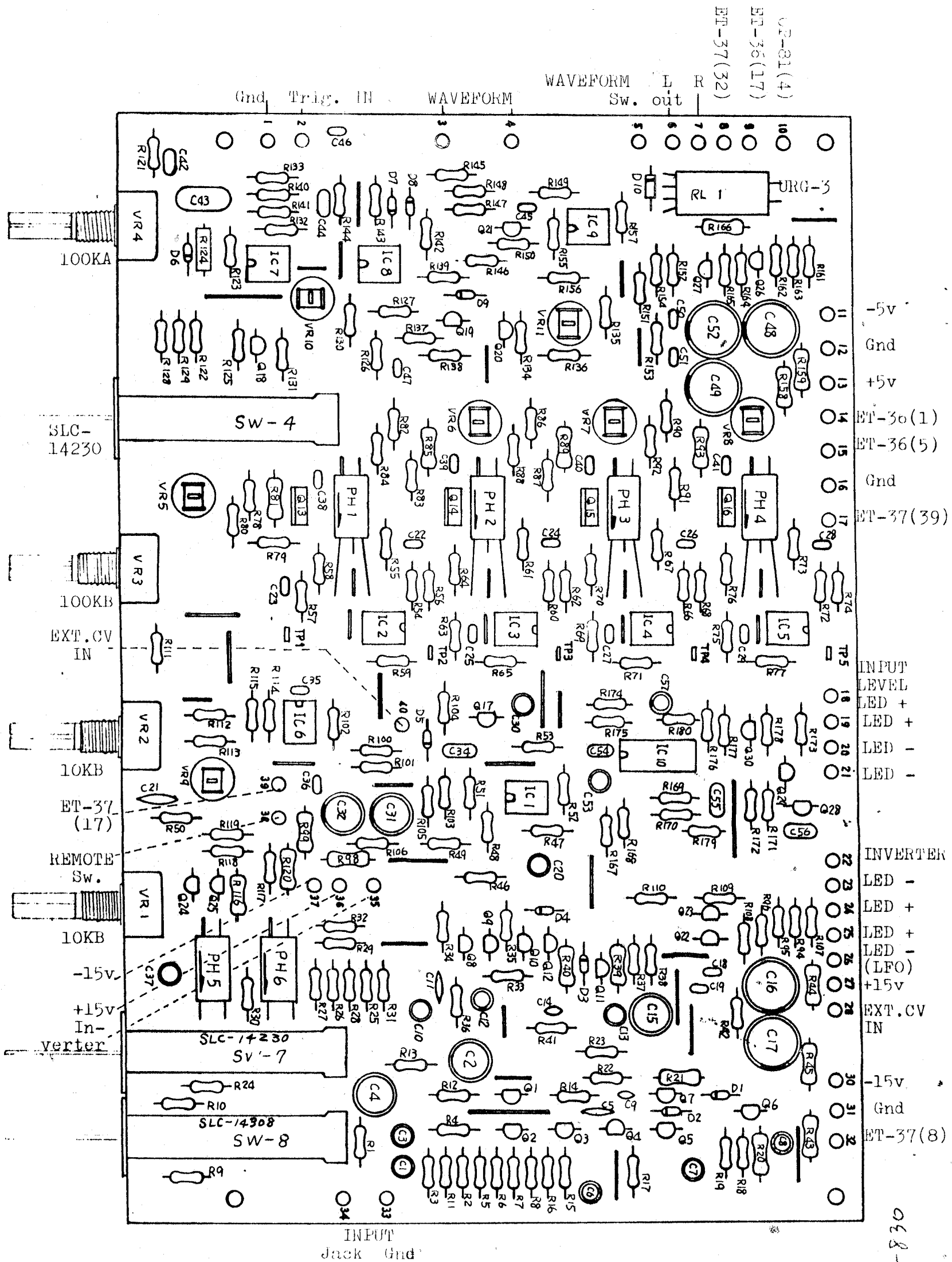


IN Gnd Jack



PH-830

PHASE BOARD ET-37 (151-037) Right Channel



VE-81(4)
 ET-36(17)
 ET-37(32)

11 -5v
 12 Gnd
 13 +5v
 14 ET-36(1)
 15 ET-36(5)
 16 Gnd
 17 ET-37(39)
 TP5 INPUT LEVEL
 18 LED +
 19 LED +
 20 LED -
 21 LED -
 22 INVERTER
 23 LED -
 24 LED +
 25 LED +
 26 LED -
 27 (LFO)
 28 +15v
 29 EXT.CV IN
 30 -15v
 31 Gnd
 32 ET-37(8)

038-HJ

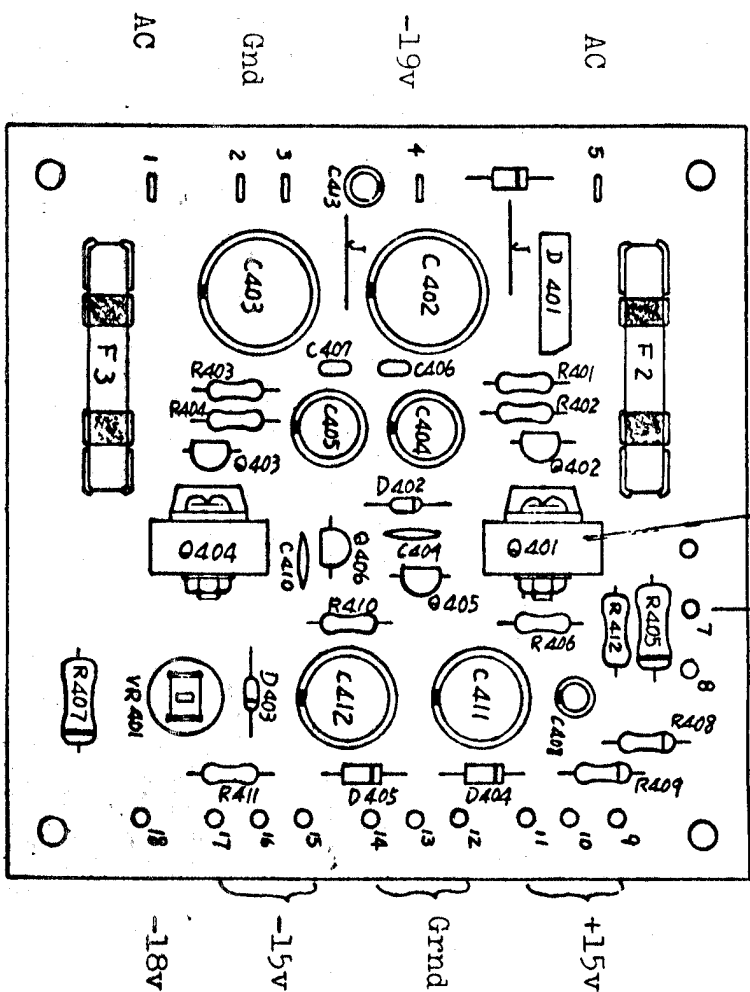
TL 081

IC7

PA-830

PL

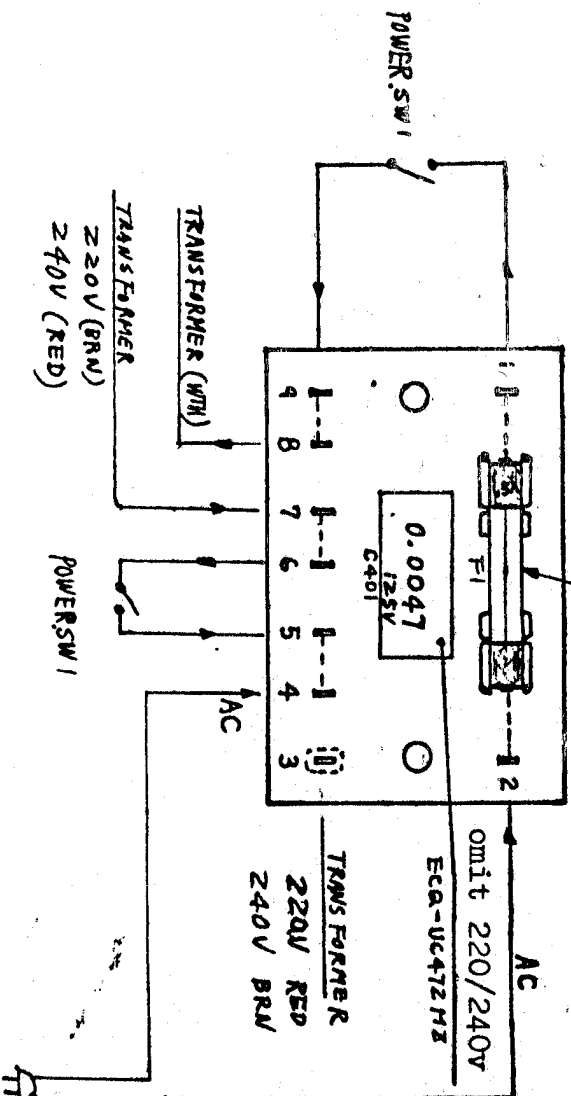
Heatsink #18



F2, F3 : MGC 1A (008-155) 117V
SGA 1AT (008-026) 220/240V

FUSE BOARD OP-81 (149-081)

FUSE 117V MGC 1A (008-155)
220V - 240V CEE 250-AT (008-026)



1. BALANCING DC SUPPLY PS-39
When the DC supply is at imbalance, with respect to the ground, adjust VR-401 on PS-39 to match negative with positive.

ADJUSTMENT

2. ADJUSTING LFO ET-37
 - 2-1. IC-7 OFFSET (check point ET-37 terminal no.3)
 - A. Set "SWEEP SPEED" knob on the control panel at 0.016 (min).
 - B. Jumper TP-6, TP-7 (foil side) to short R129(270k).
 - C. Adjust VR-10 (from foil side through hole) for Fig.1.

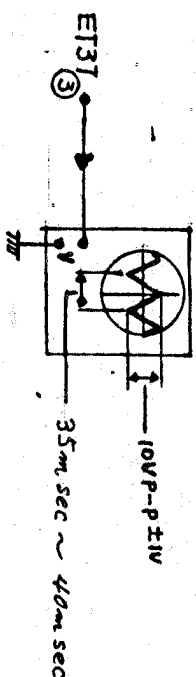
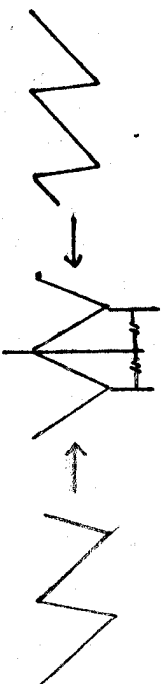


Fig-1.



- 2-2. SAWTOOTH WAVE LINEARITY (check point terminal no.5)
 - A. Reset "SWEEP SPEED" at 10Hz (max).
 - B. Disconnect the jumper wire.
 - C. Adjust VR-11 for Fig.2.

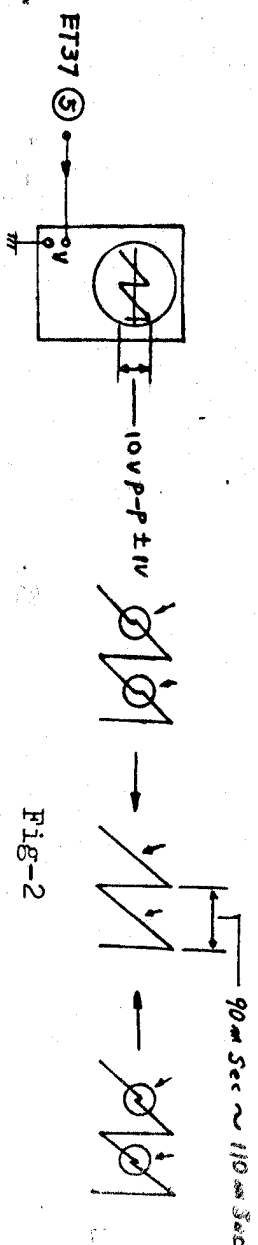
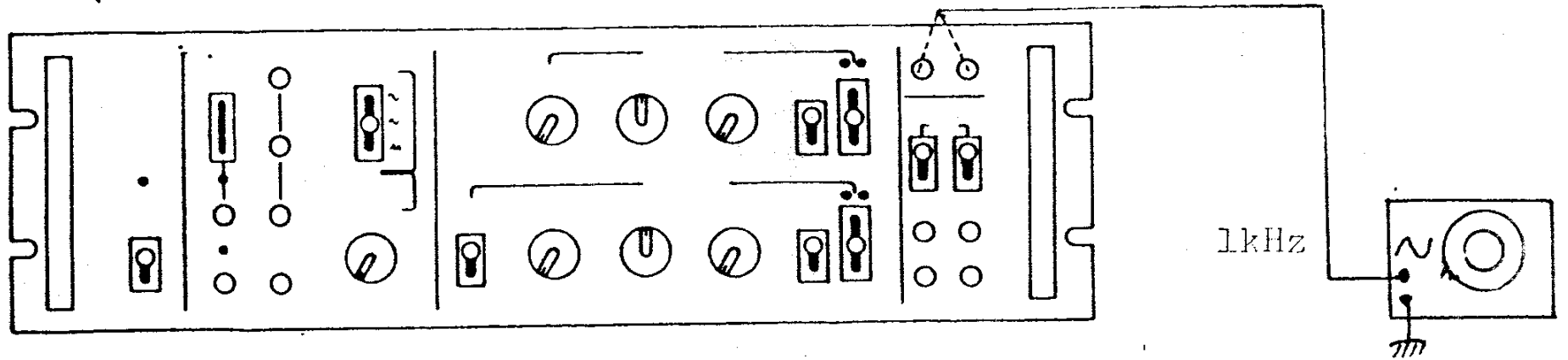


Fig-2

3. ADJUSTING PHASE

Set the control panel as below.



Left Channel ET-36

3-1. CENTERING SHIFT RANGE (check point TP-6)

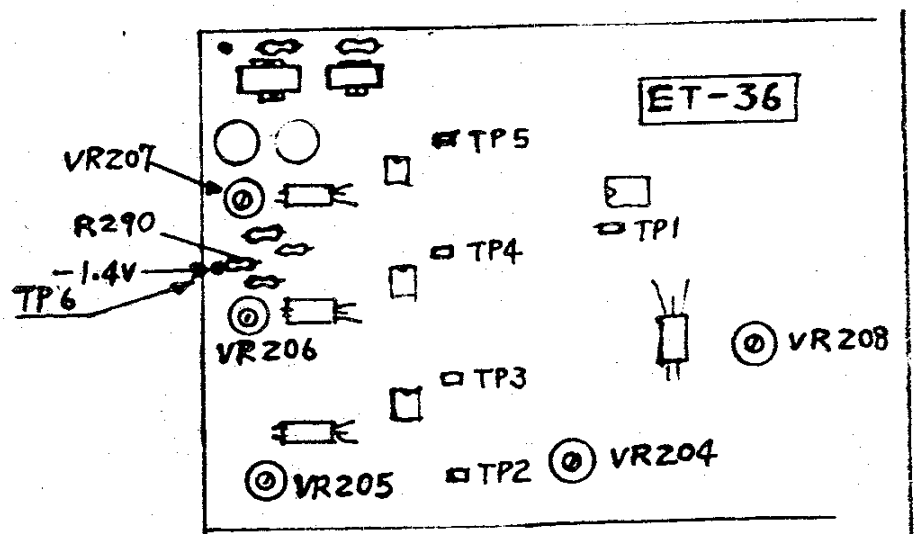
IMPORTANT: "SHIFT FREQUENCY" must be kept at 1kHz throughout this section.

- A. Connect a DC voltmeter to TP-6 on ET-36 and adjust VR-9 for a reading of -1.4v on the meter.

3-2. FINE SHIFTING

- A. Connect oscilloscope leads (V,H) to TPs (combination in the table below) and adjust corresponding VR so that the lissajous figures show one straight line -- two signals at adjacent TPs are 180° out of phase.
- B. Adjust other combinations in any sequence.
- C. Check signals at TP-1 and TP-5 for in phase.

TP-1	TP-2	VR-204
TP-2	TP-3	VR-205
TP-3	TP-4	VR-206
TP-4	TP-5	VR-207



Right Channel ET-37

3-3. CENTERING SHIFT RANGE (check point TP-8)

3-4. FINE SHIFTING

Referring the table and figure below, follow the procedure outlined above, 3-1, 3-2.

TP-1	TP-2	VR-5
TP-2	TP-3	VR-6
TP-3	TP-4	VR-7
TP-4	TP-5	VR-8

