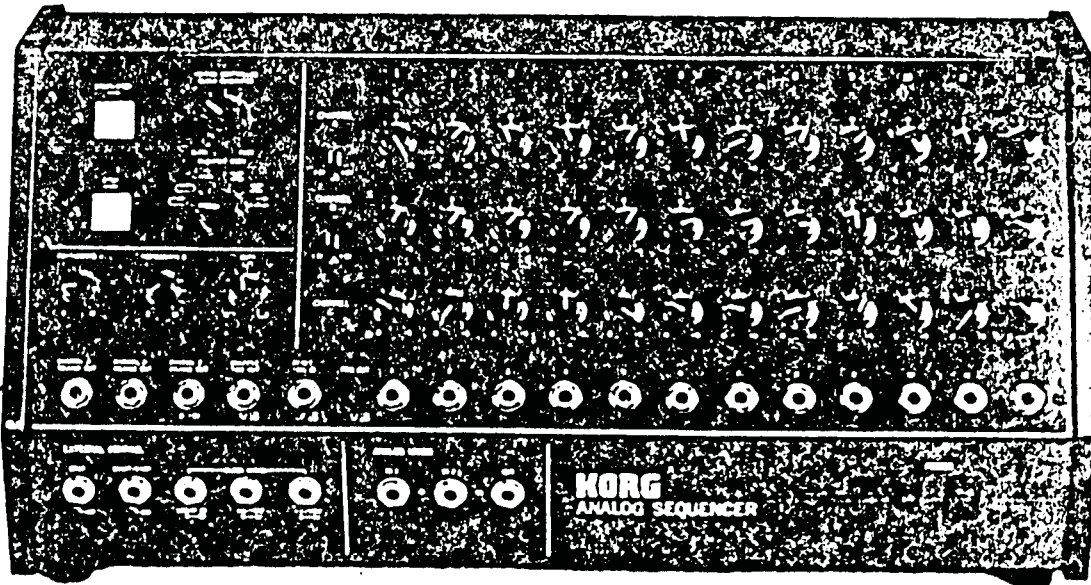


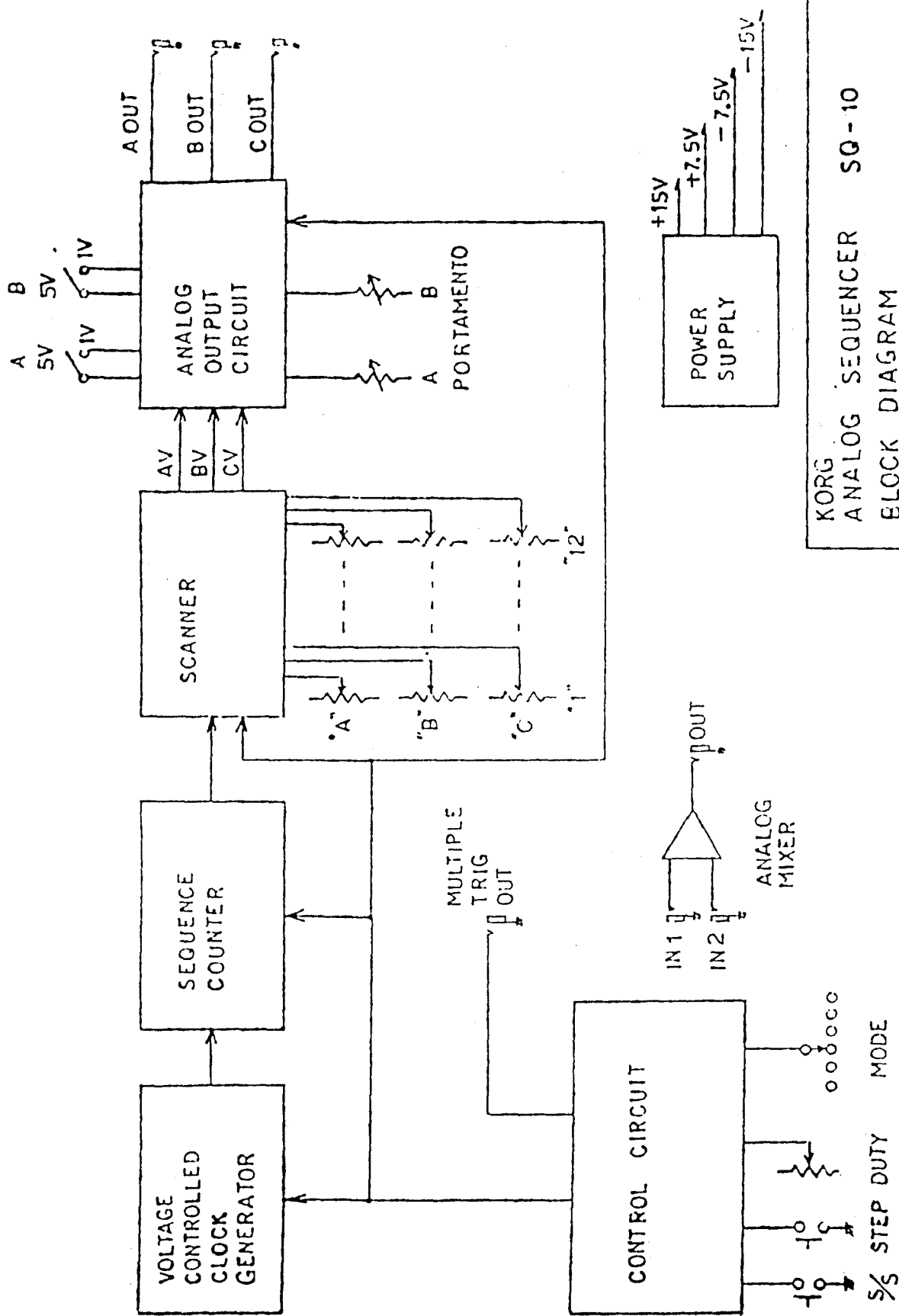
(Bad copy)

SQ-10

SERVICE MANUAL



KEIO ELECTRONIC LAB., CORP.
TOKYO, JAPAN



KORG
ANALOG SEQUENCER SQ-10
BLOCK DIAGRAM


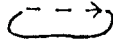

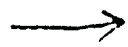
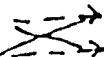

Checking and Adjustment

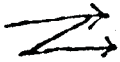
Power Check & Adjust

1. +15V; Should be 14.4V~15.6V.
2. -15V; Should be -14.4V~-15.6V.
3. +7.5V; Adjust VR46 to 7.50V.
4. -7.5V; Adjust VR47 to -7.50V.

Function Test -- Standard -- Connect MS-10 (fig 1)

Set MS-10 and SQ-10 controls (fig 2)
(fig-3)

No.	Mode Rotary switch	Check
2.		Clock LED flashes on and off.
3.		'12' LED turns on first. Then 1 and 2 each time step button is pressed, so the sequence goes 12, 1, 2. A and B LED's do not turn on in this mode.
4.		LED's 1 through 12 should be off at first. When S/S switch is pressed, sequence goes 1, 2, ..., 12, 1, 2, ... When S/S switch is pressed again, LED's go out. A and B do not light.
5.		LED's 1 through 12 should be off at first. When you turn on the S/S switch, the sequence should automatically advance 1, 2, ..., 12... and then stop after one time, If you press the S/S switch between 1 and 12, the sequence should stop. A and B do not turn on.
6.		B and 12 are on at first. A and 1 turn on when you first press the Step switch. Press it again for 2...12; again for B 1...12; and again for A 1...
7.		A and B and 1 through 12 should all be off at the beginning. When you press the S/S switch, the sequence should go A 1...12, B 1...12, A 1... automatically. Press the S/S switch again to stop.


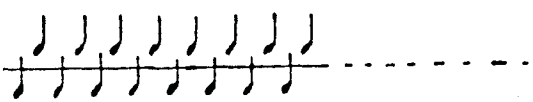
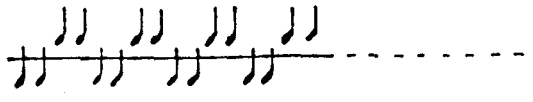

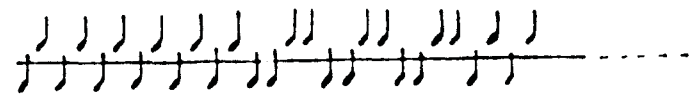
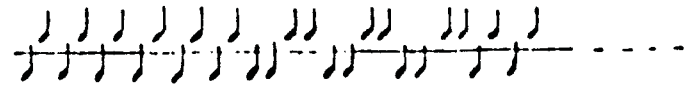
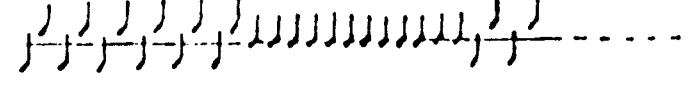
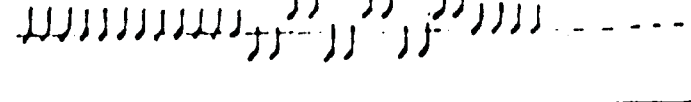
8.  At the beginning A and B and 1 through 12 should all be off. Press the S/S switch and there should be a single cycle of A 1...12 and B 1...12. Then it should stop. It should also stop if you press the S/S switch while the LED's are changing.

Function Test (2)

○ means the phone plug connected to the MS-10 CV IN.

⊗ means the phone plug connected to the opposite side (open).

sa-10 Check 2/4

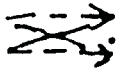

NO	MODE Rotary SW	(OUTPUT)			Musical interval
		A	B	C	
9		○			
10			○		
11					○
12		○			
13			○		
14		○	⊗		
15		⊗	○		

OUTPUT CHECK





NO.	1 st Step VR 3.1	MODE	5V - 1V _{3W}		Digital Volt Mtr			Measure STEP	Limit	
			A	B	A	B	C			
28	"1" A B C		5V	↑ 5V	○			"1"	+4.90 ~ +5.10 V	
29			1V		○			"1"	+0.95 ~ +1.05 V	
30							○		"1"	+4.90 ~ +5.10 V
31					1V		○		"1"	+0.95 ~ +1.05 V
32								○	"1"	+4.90 ~ +5.10 V
33							○		"A" "1"	+4.85 ~ +5.15 V
34					5V	5V	○		"B" "1"	+4.85 ~ +5.15 V
35							○		"A" "1"	-4.85 ~ -5.15 V
36							○		"B" "1"	-4.85 ~ -5.15 V
37	"1" A B C				○			"1"	-4.90 ~ -5.10 V	
38						○		"1"	-4.90 ~ -5.10 V	
39								○	"1"	-0.10 ~ +0.10 V

○ Digital voltmeter to measure the phone jack

Function Test (3)

No.	Item	Check
16	Portamento-A	Portamento effect should only show up in the channel A output when you turn up this knob.
17.	Portamento-B	Portamento should only show up in the B channel output.
18.	Duty	Should get shorter when knob is turned counter-clockwise. Should get longer when turned clockwise.
19.	Reset, Trig Out (1~11)	Connect RESET ^{TRIG} IN jack to each of TRIG OUT jacks 1 through 11 in turn, and see that the sequence returns to 1 after reaching the proper step. Disconnect after check.
20.	Trig Out (12)	With TRIG OUT 12 connected to the MS-10 TRIG IN jack, see that there is only a sound produced at the 12th step in a sequence. Disconnect after check.
21.	Step (jack)	Set mode to  . Connect MS-10 momentary switch to STEP jack and see that steps advance when you press the MS-10 switch. Set mode back to  and disconnect after check.
22.	Start/Stop (jack)	Connect MS-10 momentary switch to S/S jack,

and see that the MS-10 switch will turn the S/S on and off.
Disconnect after check.

23. Linear In Connect MS-10 control wheel  out to
 LINEAR IN jack, and see that the clock
 speed changes with input voltage. It should
 get faster toward +5V. Disconnect after check.
24. x2/V Connect MS-10  out to x2/V jack, and see
 that clock speed changes with input voltage.
 Speed increases towards +5V. Disconnect
 after check.
25. +2/V Connect MS-10  out to +2/V jack, and see
 that clock speed changes with input voltage.
 Speed should decrease toward +5V. Disconnect
 after check.
26. Clock Turning the CLOCK knob all the way counter-
 clockwise should slow down the cycle 10sec ~ 40sec.
 Turning the knob clockwise should speed up the
 clock.
27. Analog The sum of IN 1 and IN 2 voltages should
 Mixer appear in the OUT voltage.
 For example: Connect MS-10  out to IN 1;
 Connect SQ-10 multiple trigger out to IN 2;
 Connect MS-10 CV IN to OUT.

Multiple trigger signal should modulate pitch of note
when keyboard is played (or momentary switch is pressed)
on MS-10. Changing IN 1 input voltage (from control wheel)
will vary entire pitch.

FREQ CV IN

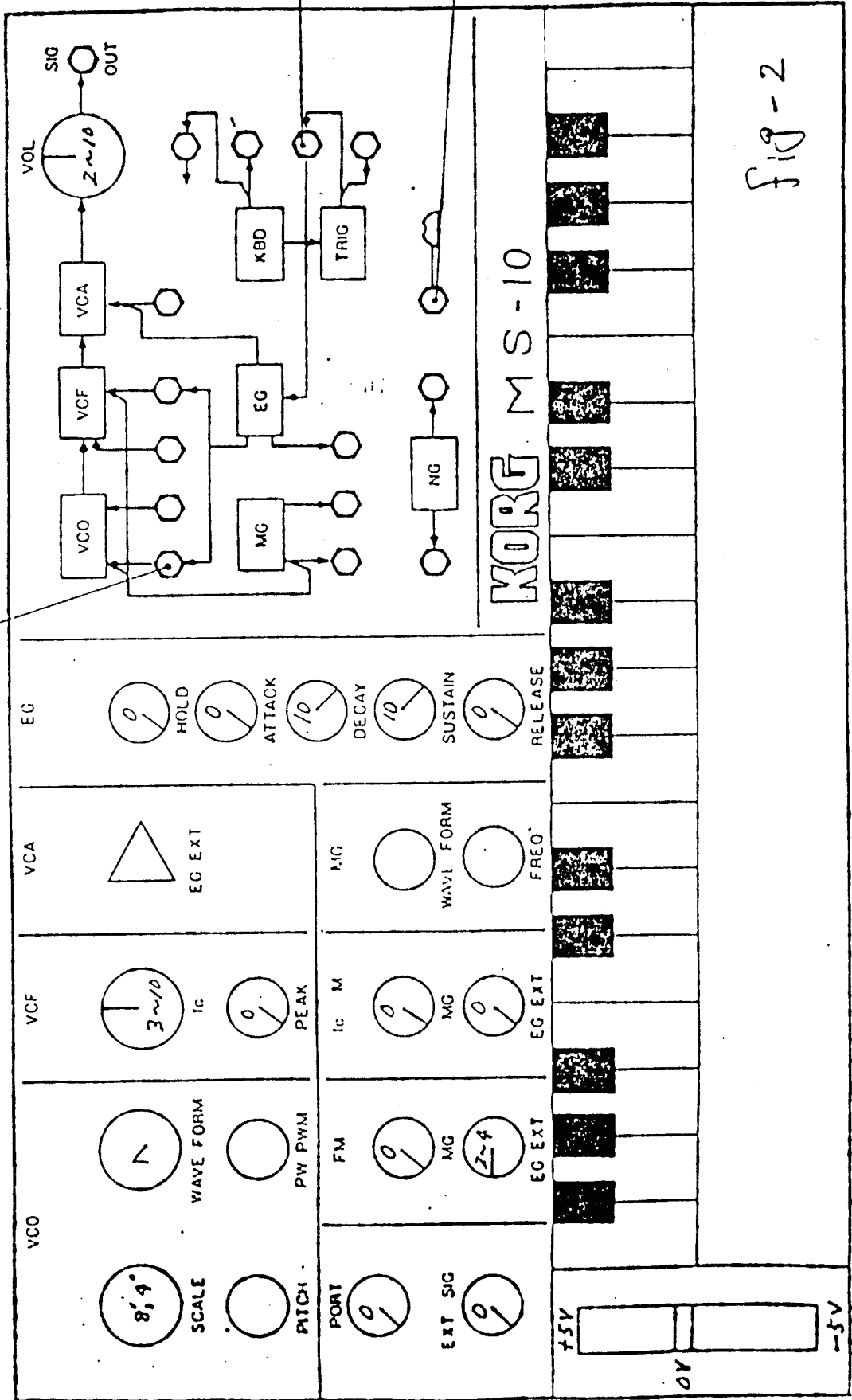


FIG-2

CLOCK 4~7 C

MODE

PERFORMANCE B DUTY

3/S **STEP**

A **B** **C**

1 2 3 4 5 6 7 8 9 10 11 12

0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5)

0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5)

0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5) 0 (5)

A OUT B OUT C OUT M.T. REPT

0 0 0 0 0 0 0 0 0 0 0 0

KORG
ANALOG SEQUENCER

EXTERNAL CONTROL

STEP 1/2 1/4 1/8

0 0 0 0 0 0 0 0

ANALOG MIXER

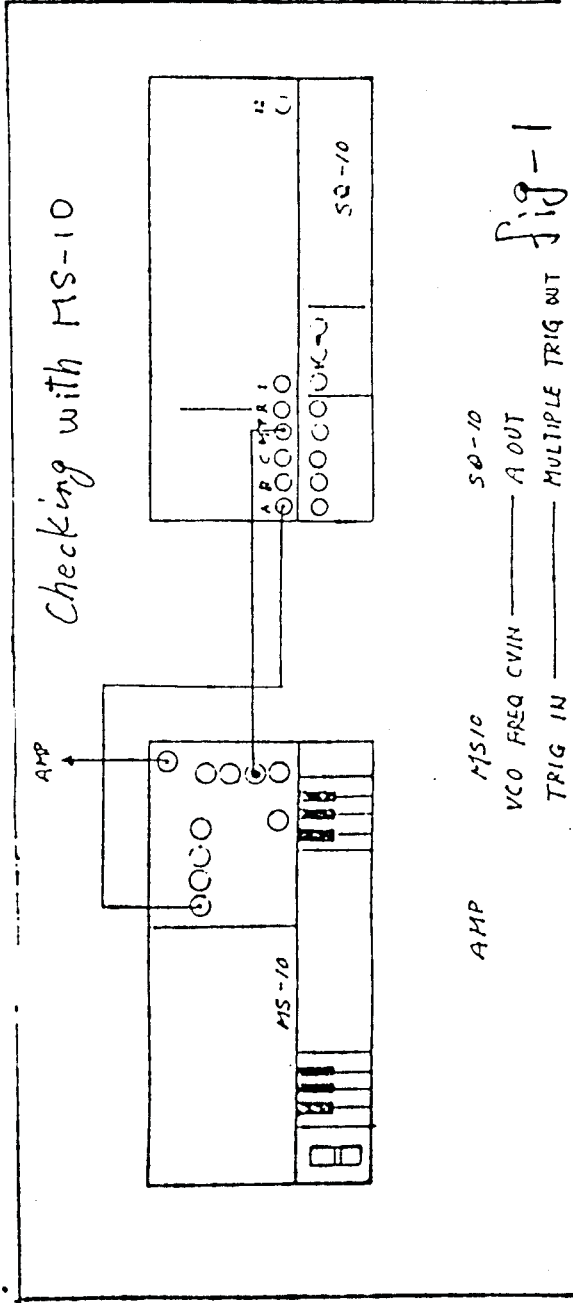
M 1 IN 2 OUT

0 + 0 = 0

POWER ON

0 []

fig-3



AMP MS-10

VCO FREQ CVIN A OUT

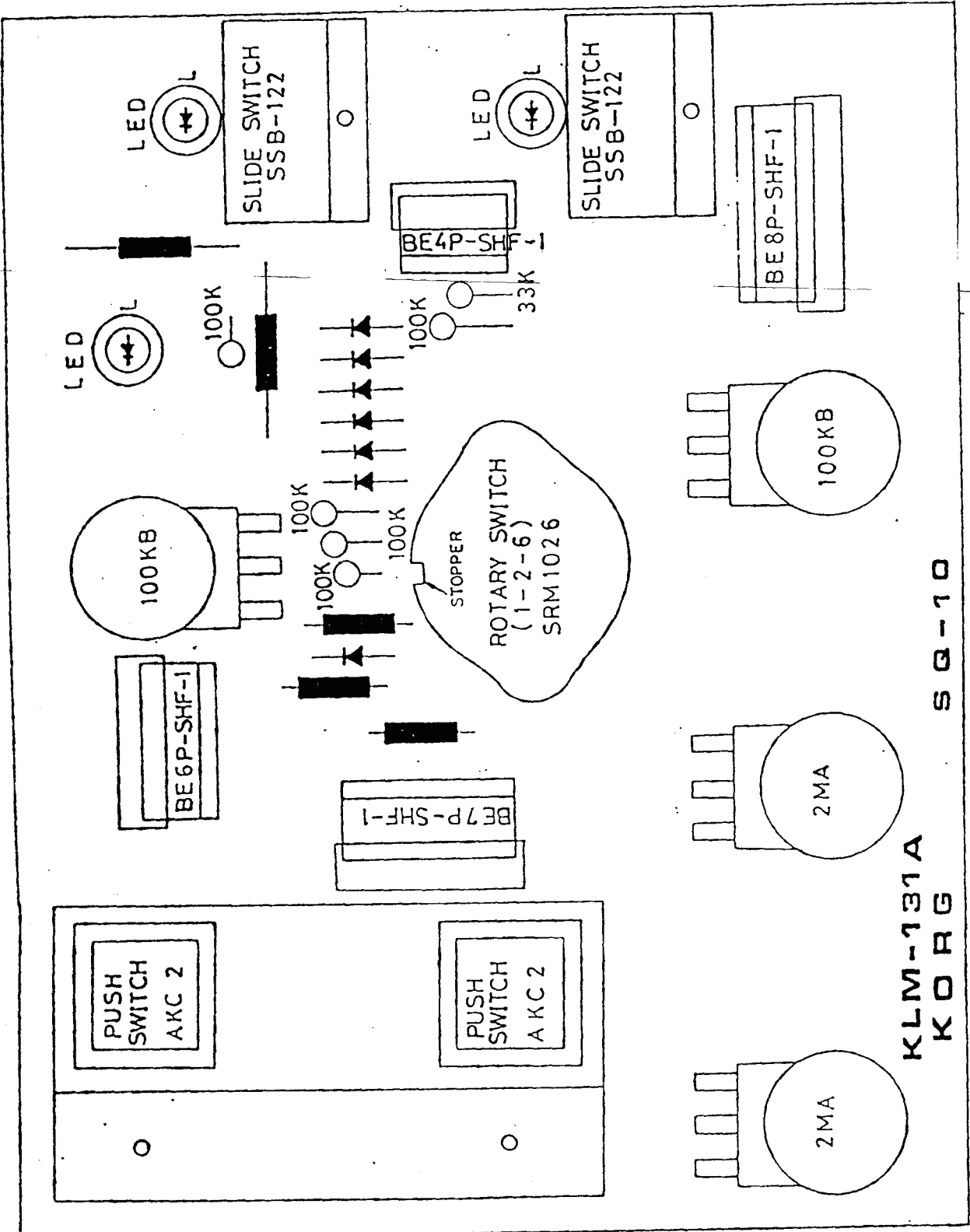
TRIG IN TRIG OUT

INPUT SIG OUT

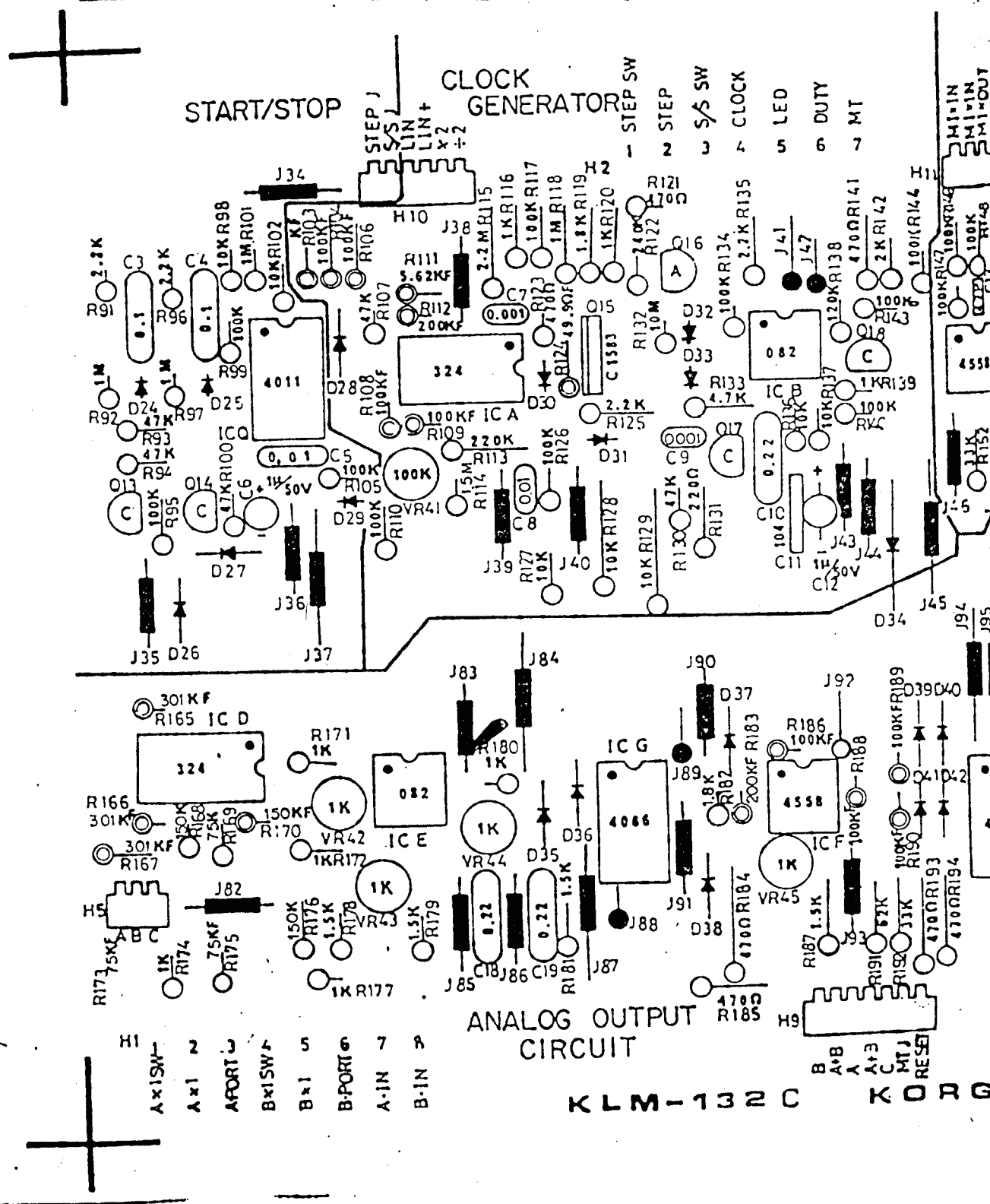
See other chart for MS-10 control settings

fig-1

452

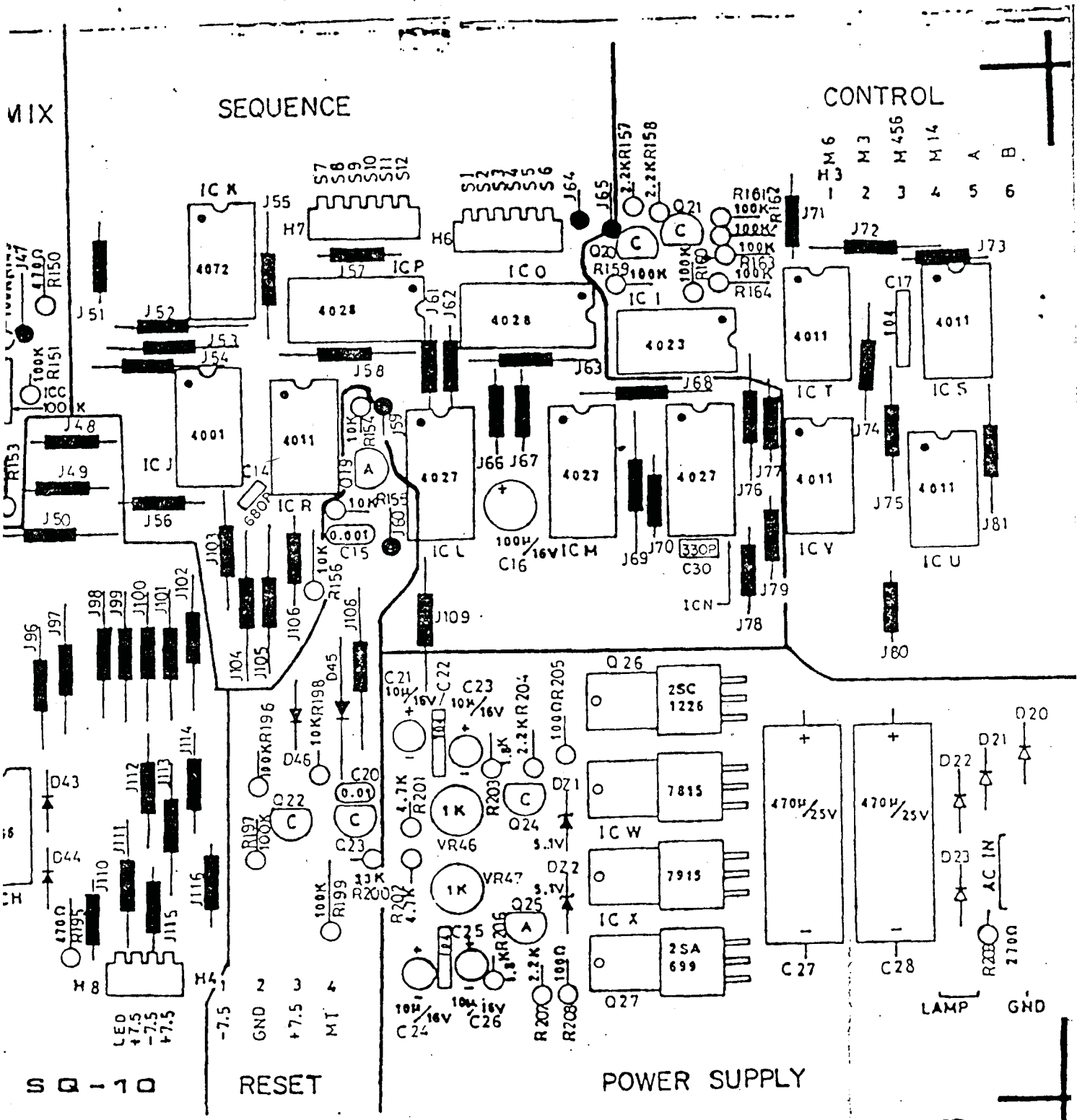


SQ 10 KLM-132C



HI
 A x1 SW
 A x1
 A PORT J
 B x1 SW
 B x1
 B PORT G
 A-IN
 B-IN

KLM-132C K O P G



S Q I 1 0

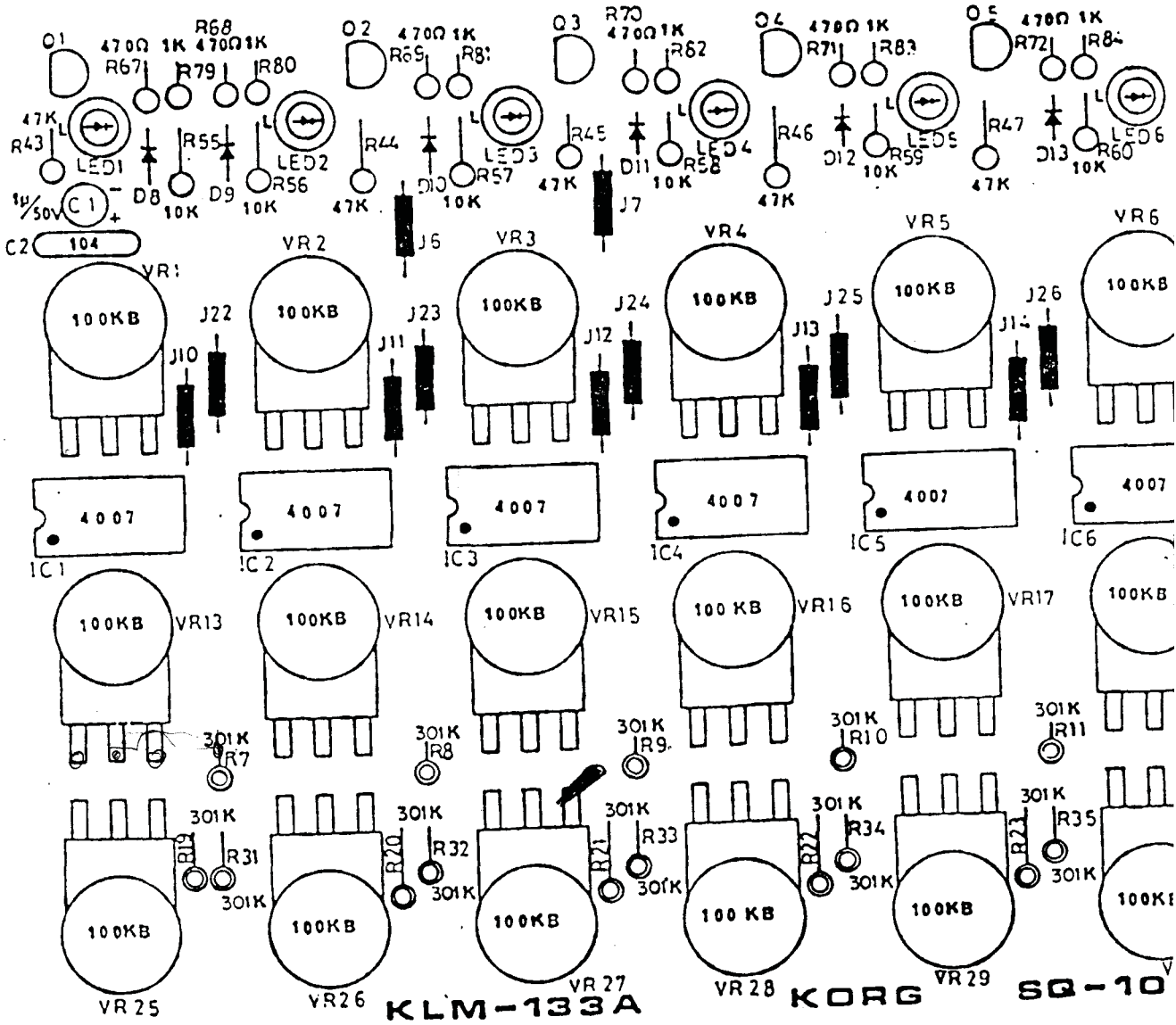
CONTROL

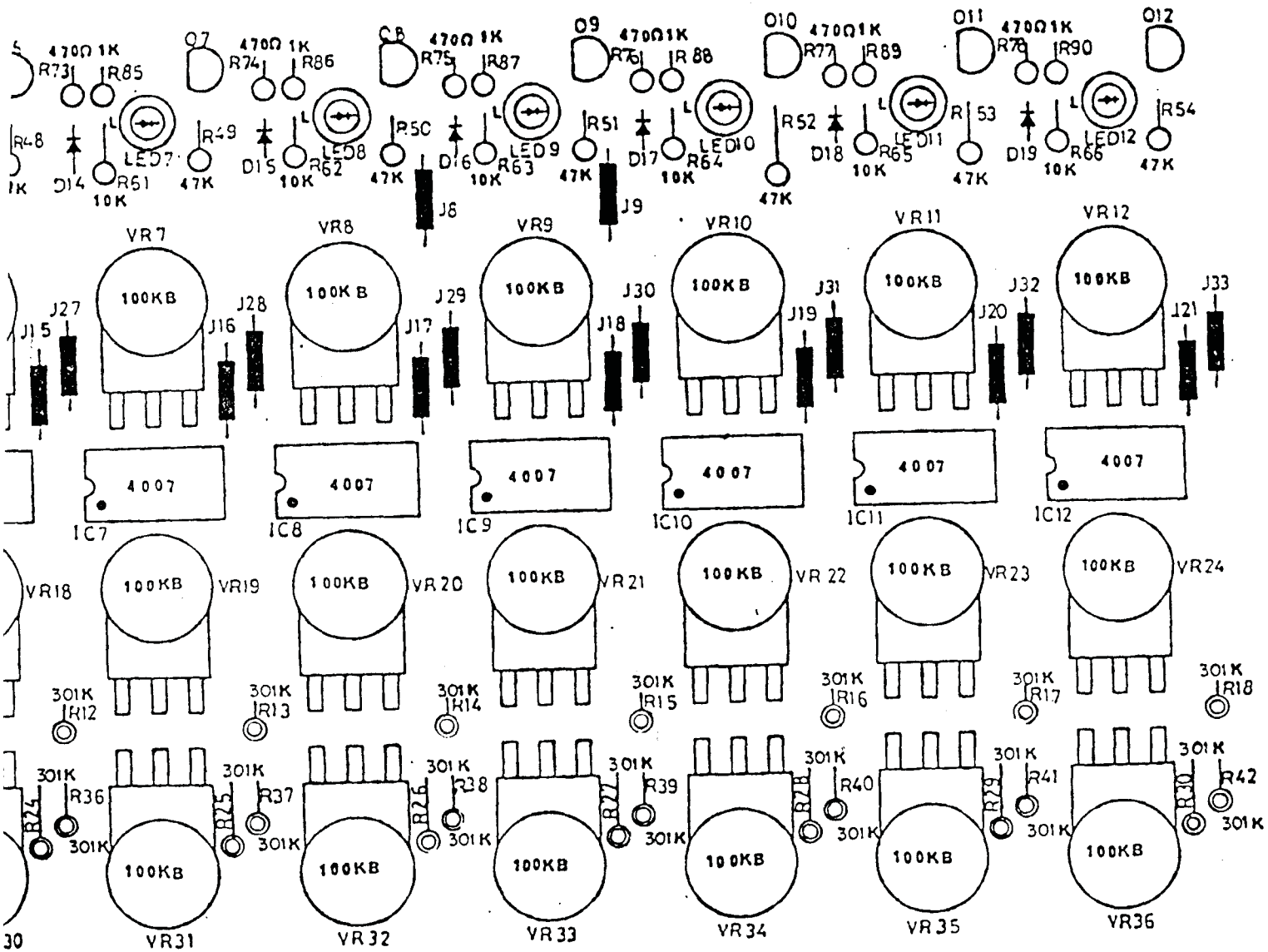
H3	M3	M4	M6	A	B
1	2	3	4	5	6

POWER SUPPLY

LAMP GND

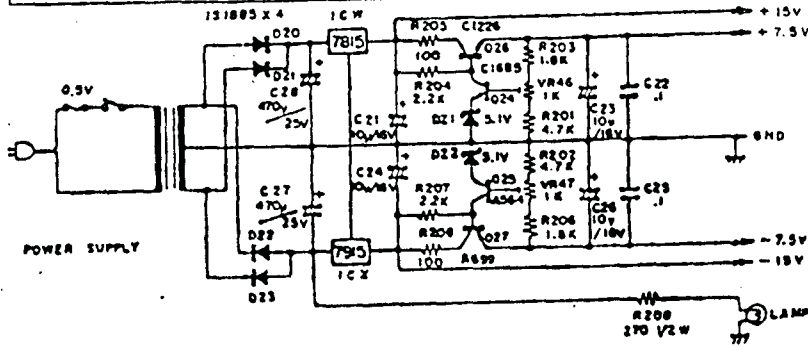
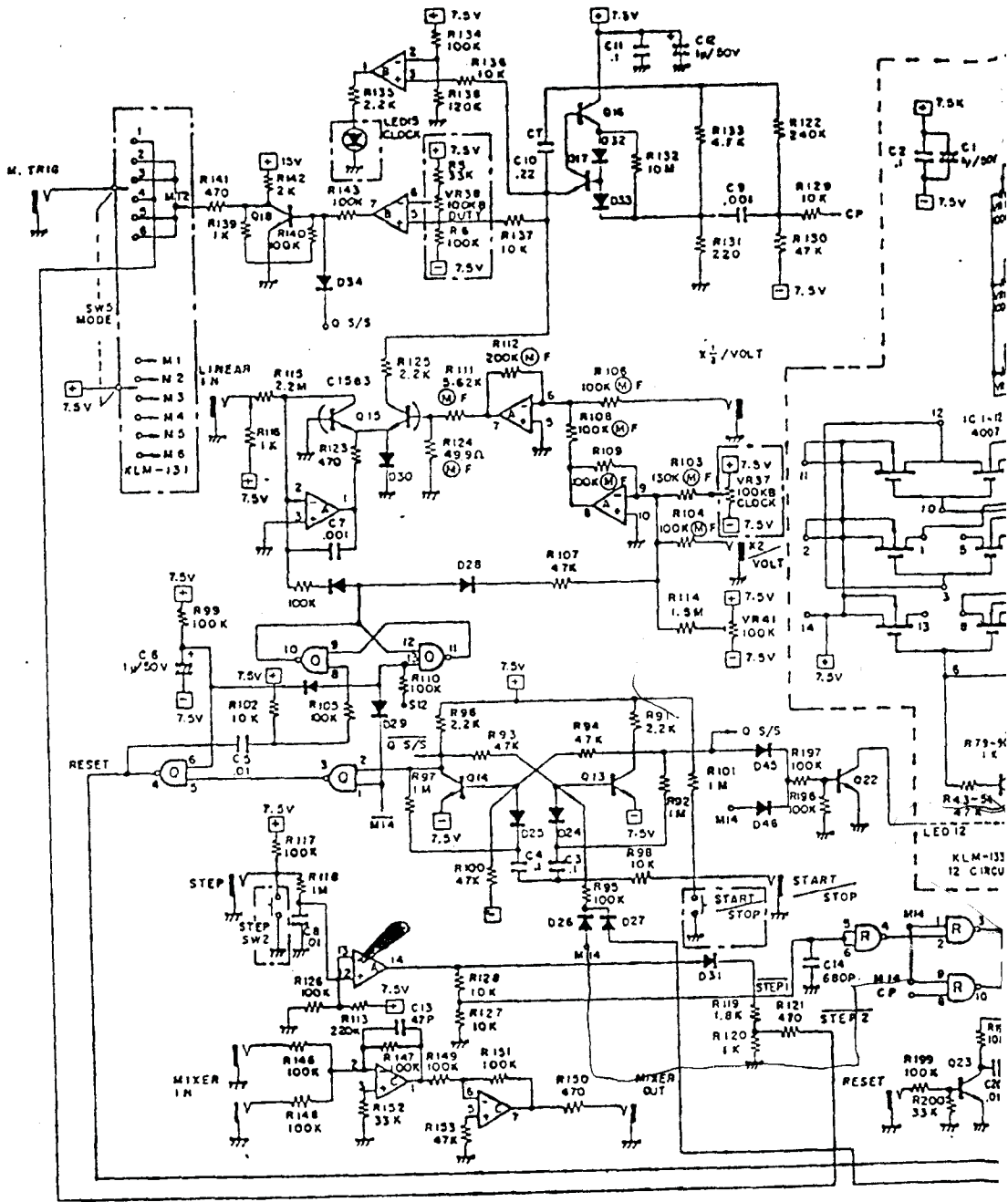
3010 KLM-133A



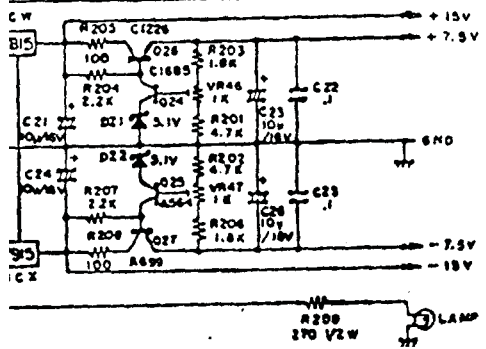
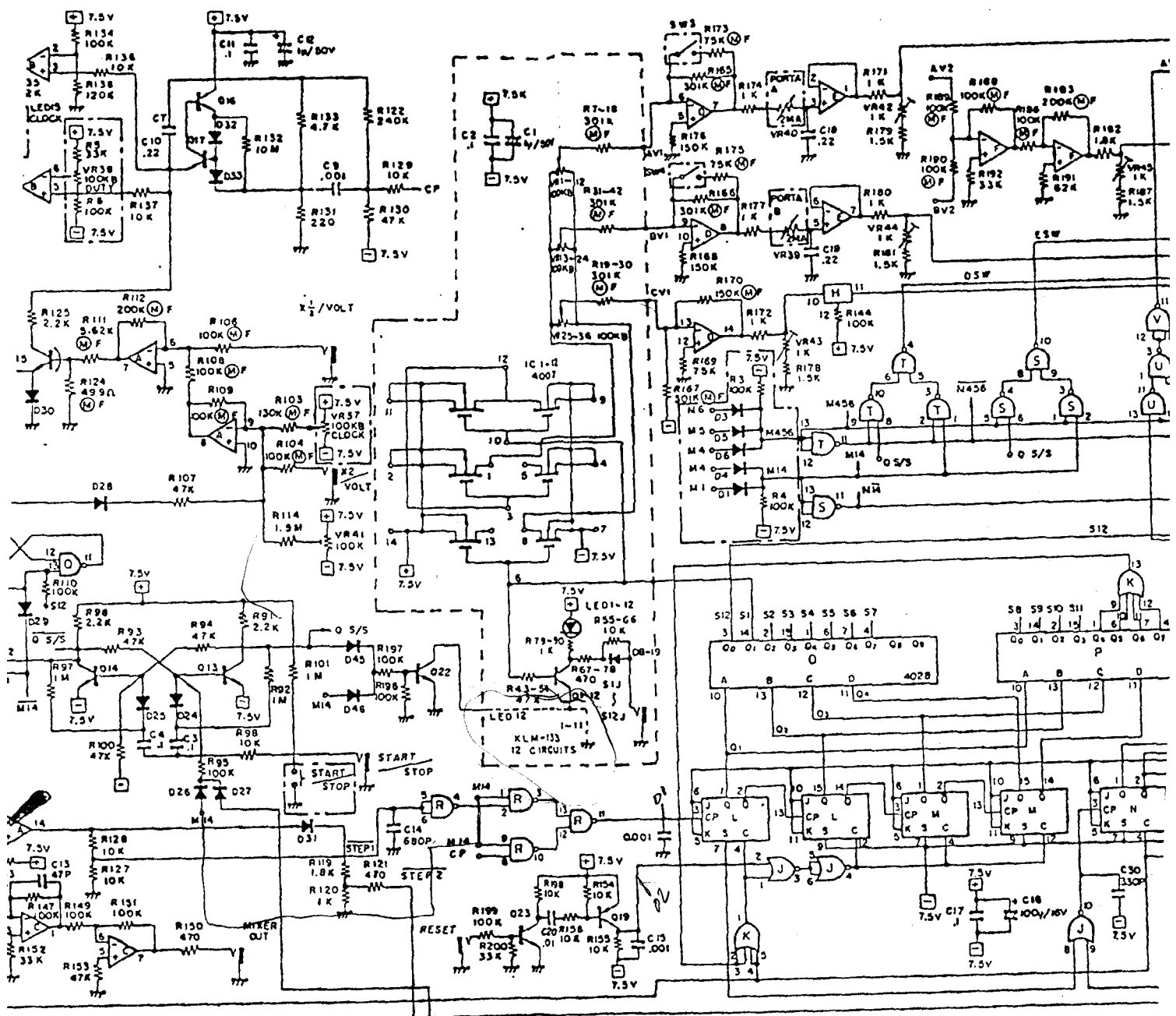


⊙ = 5SC-16P5

50-10		KLM-133A	
京王技研工業株式会社		KOD-F10004	



IC CHART			
No.	OP	CMOS	
1		334	022
2			



KLM132: MAIN CIRCUIT BOARD
 KLM133: SEQUENCE CIRCUIT BOARD
 KLM131: CONTROL CIRCUIT BOARD

* 2SA564 PNP
 * 2SC1683 NPN
 OP Amp : 2.5V
 ANALOG SW : 7.5V
 DIGITAL IC : 2.75V

IC CHART	NO.	OP	CHOS
A	34		
B	022		
C	038		
D	021		
E	021		
F	038		
G	066		
H	066		
I	023		
J	001		
K	022		
L	027		
M	027		
N	028		
O	028		
P	011		
Q	011		
R	011		
S	011		
T	011		
U	011		
V	011		
W	011		
X	011		
Y	011		
Z	011		
1	007		

