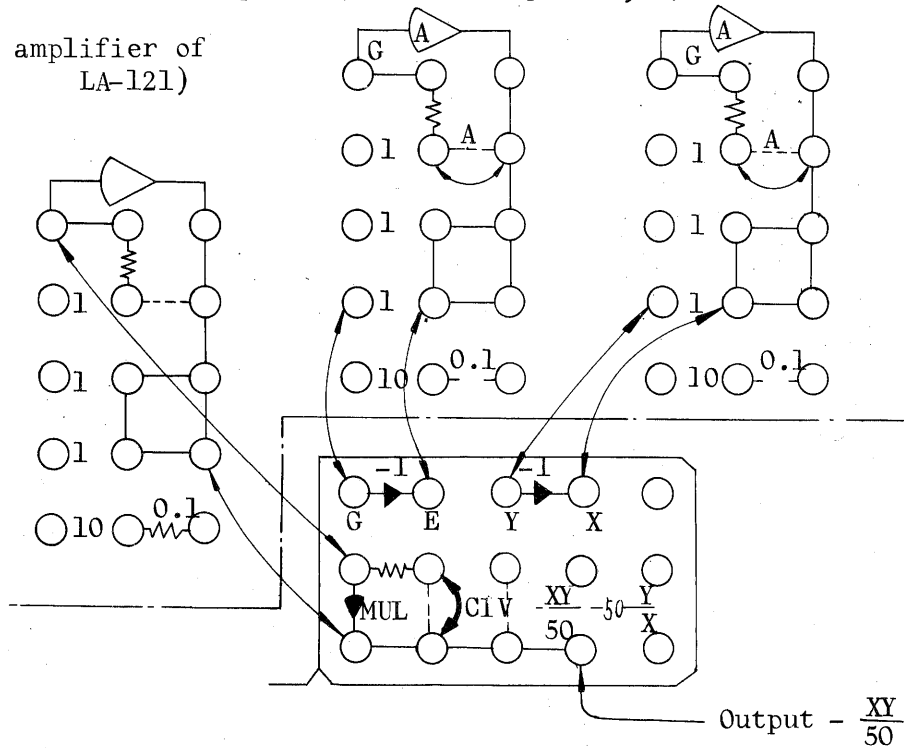


### 4.3.2 Use as a multiplier (with two inputs X, Y)

(Use amplifier of LA-121)



As the input impedance of the multiplier is less than  $100\text{ K}\Omega$ , it is required that every output impedance for X, Y should be low enough in comparison with them.

Fig. 4-14

### 4.3.3 Use as a divider

(Use amplifier of LA-121)

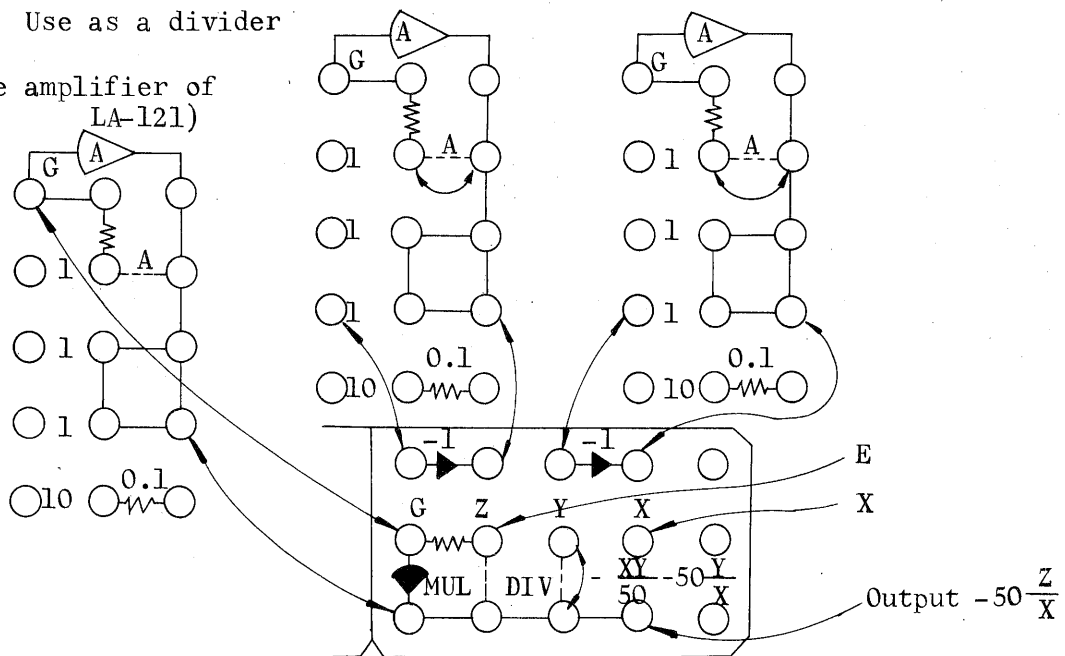


Fig. 4-15

As the input impedance of the divider is  $1M\Omega$  at Z side and about  $100 K\Omega$  at X side, it is required that the output impedance for X should be low enough compared with this input impedance.

(NOTE) Note for division

It is necessary that input signals X, Z should satisfy the condition described below at any moment.

$$X > Z$$

$$X > 0$$

#### 4.4 Voltage comparator (CP)

This voltage comparator is not equipped with an operational amplifier, so it is necessary to combine it with an amplifier of the linear panel. Patching in case of such combination is shown in Fig. 4-16.

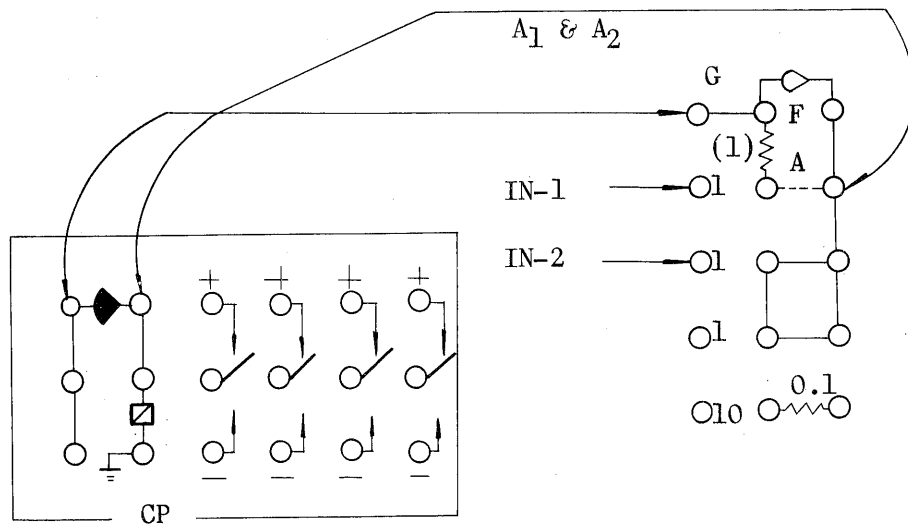


Fig. 4-16

With the patching shown in Fig. 4-16, the comparator relay operates (switched over to  $\ominus$  side in Fig. 4-16) when the sum of compared input IN-1 and IN-2 is negative. An example of operation is shown in

Fig. 4-17.

With IN-2 grounded, the comparator relay turns to (+) side when (+) voltage is applied to the compared input IN-1 through the switch S and turns to (-) side when (-) voltage is applied.

Fig. 4-18 is the illustration of this operation.

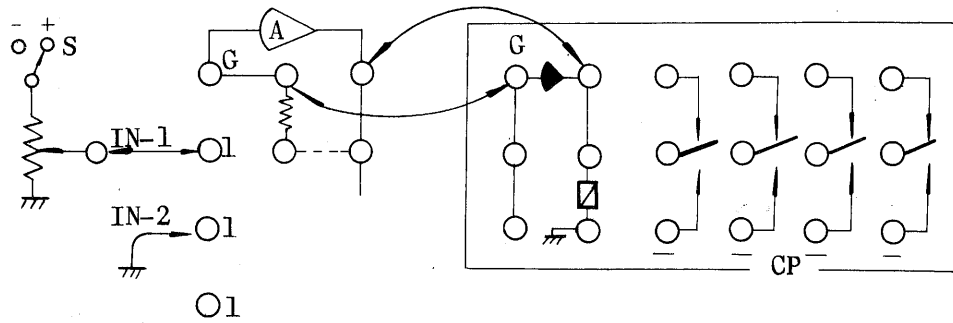


Fig. 4-17

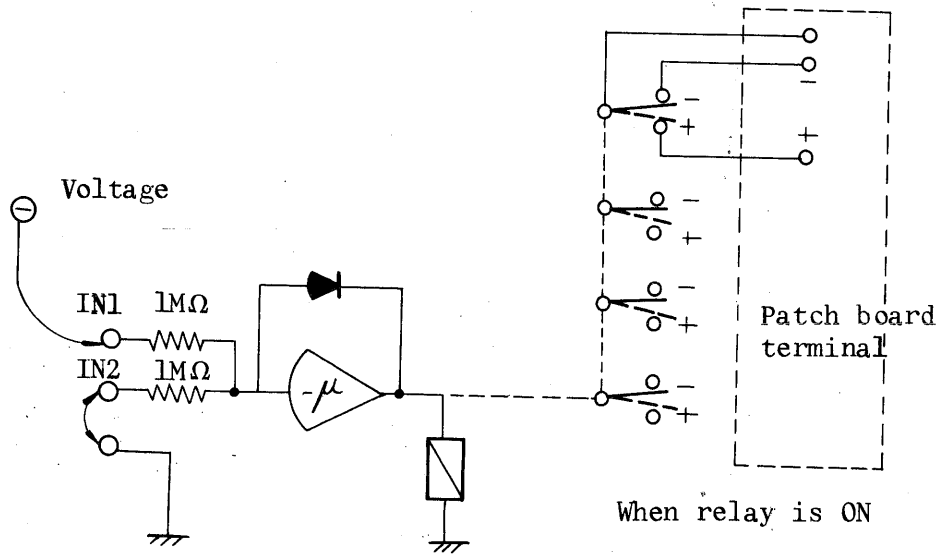


Fig. -4-18

## 5. Control board CT-121

### 5.1 General

The control board CT-121 contains a control panel and an output selecting panel. It is equipped with every device necessary for control, indication and selection. A power supply is also mounted in the rear of the case. Its outside view is shown in Fig. 5-1.

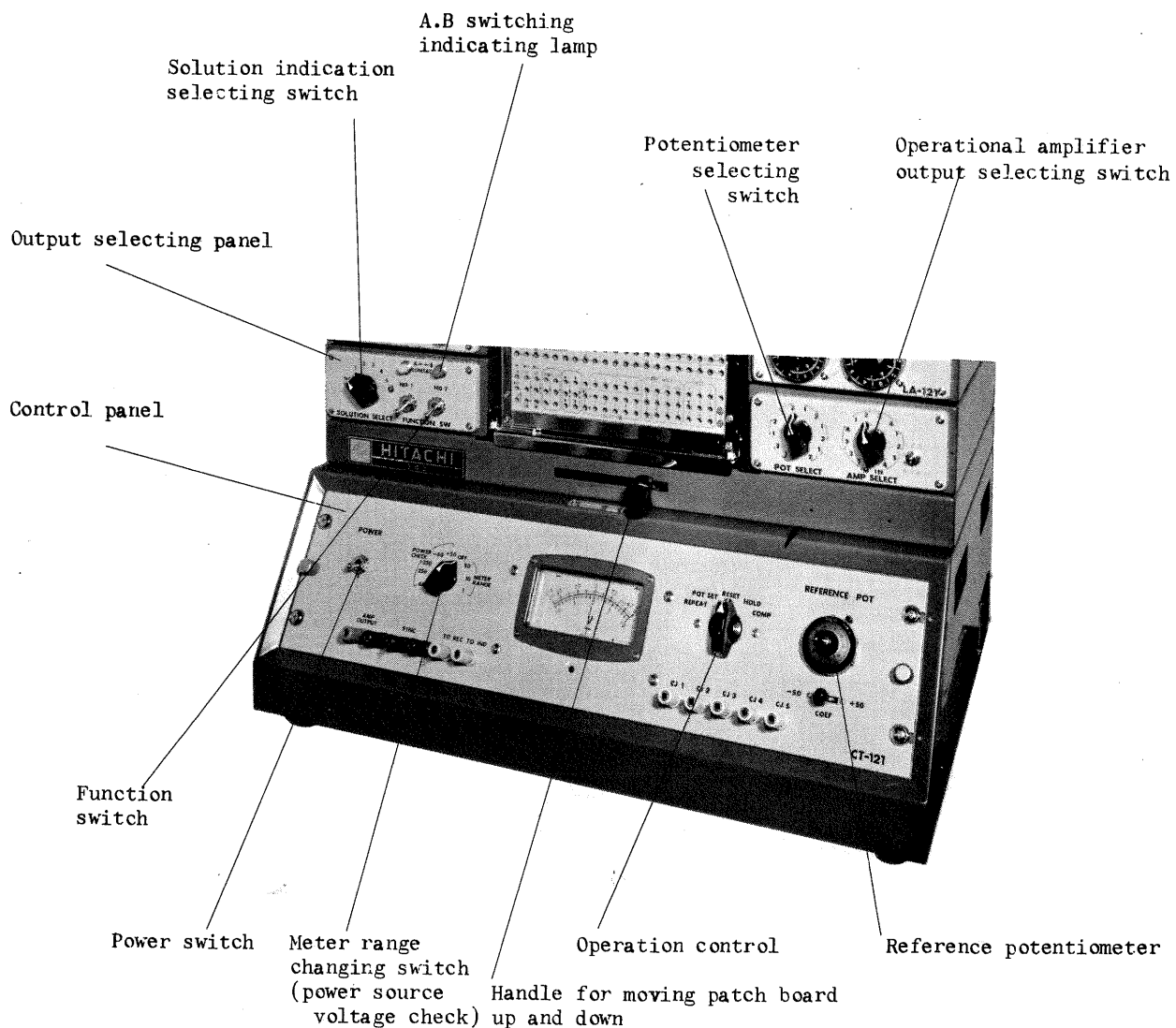
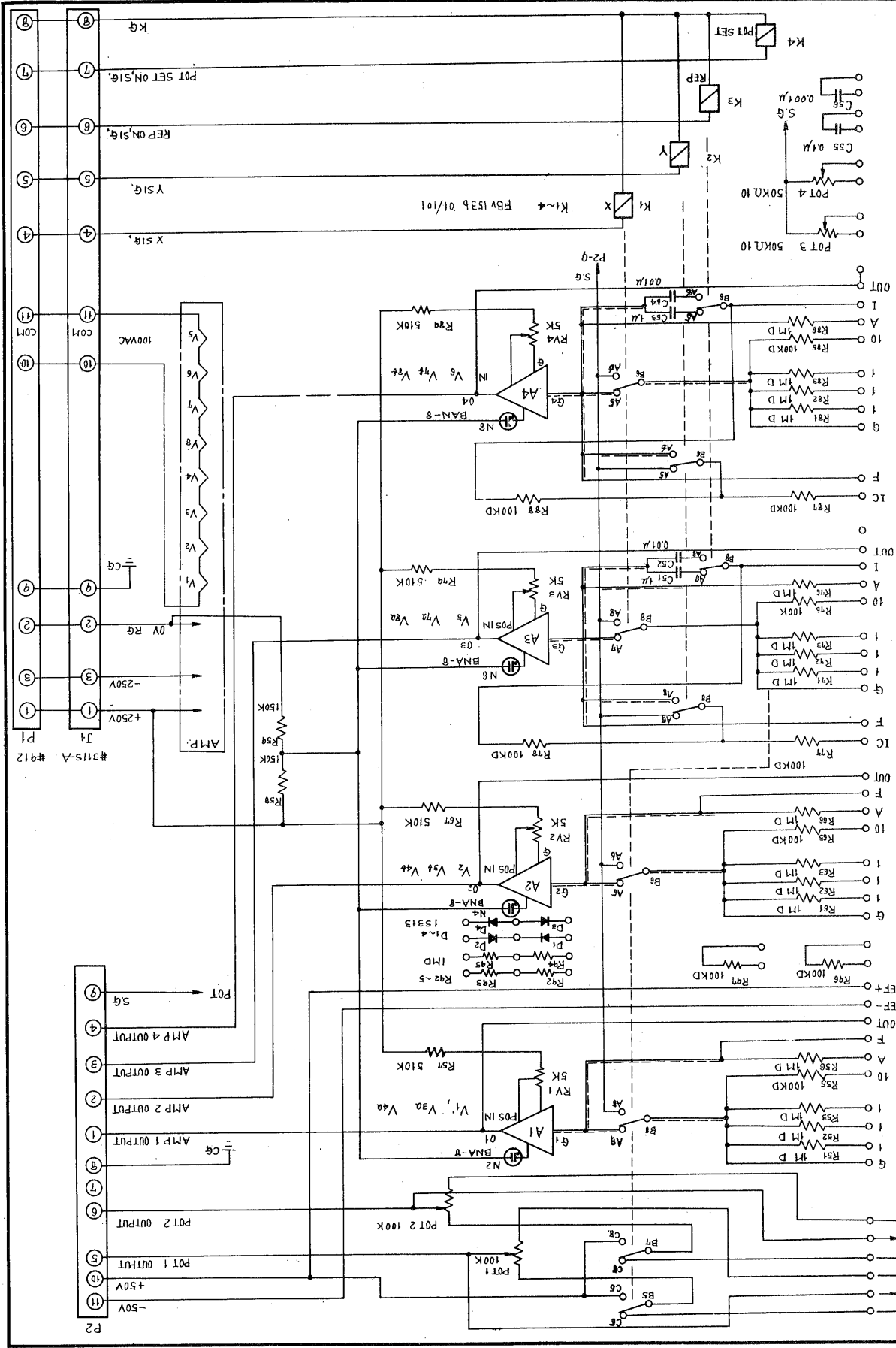


Fig. 5-1 Outside view of control board







633145

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HITACHI-303 LA-121  
LINEAR PANEL  
CIRCUIT DIAGRAM

DR W/OUTURA	APPD
CHK KUMOTO	

P2

⑪ -50V

⑩ +50V

⑨ POT 1 OUTPUT

⑧ POT 2 OUTPUT

⑦ AMP 1 OUTPUT

⑥ AMP 2 OUTPUT

⑤ AMP 3 OUTPUT

④ AMP 4 OUTPUT

③ S.G.

P1

⑪ #315-A #912

⑩ J4

⑨ +250V

⑧ -250V

⑦ 0V Rg

⑥ V1

⑤ V2

④ V3

③ V4

② V5

① V6

①① 100VAC

①② COM

①③ COM

①④ X sig.

①⑤ Y sig.

①⑥ REP ON, sig.

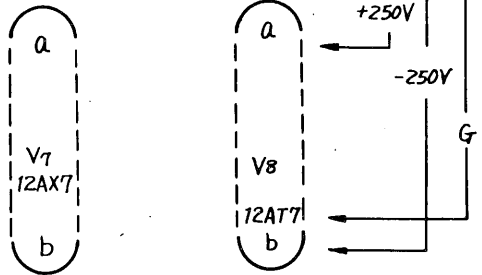
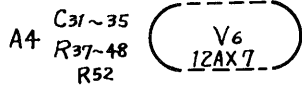
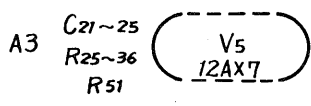
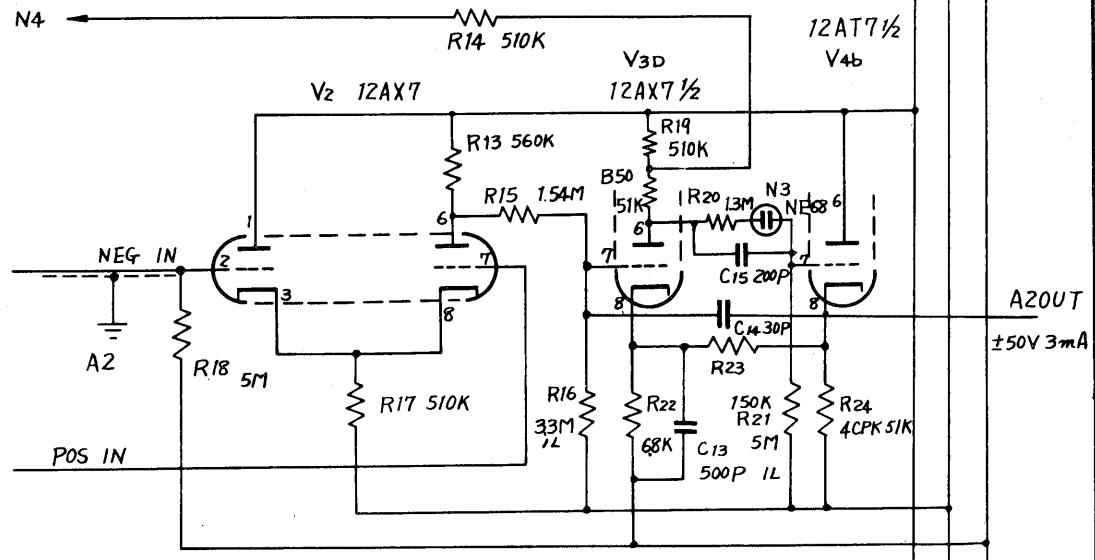
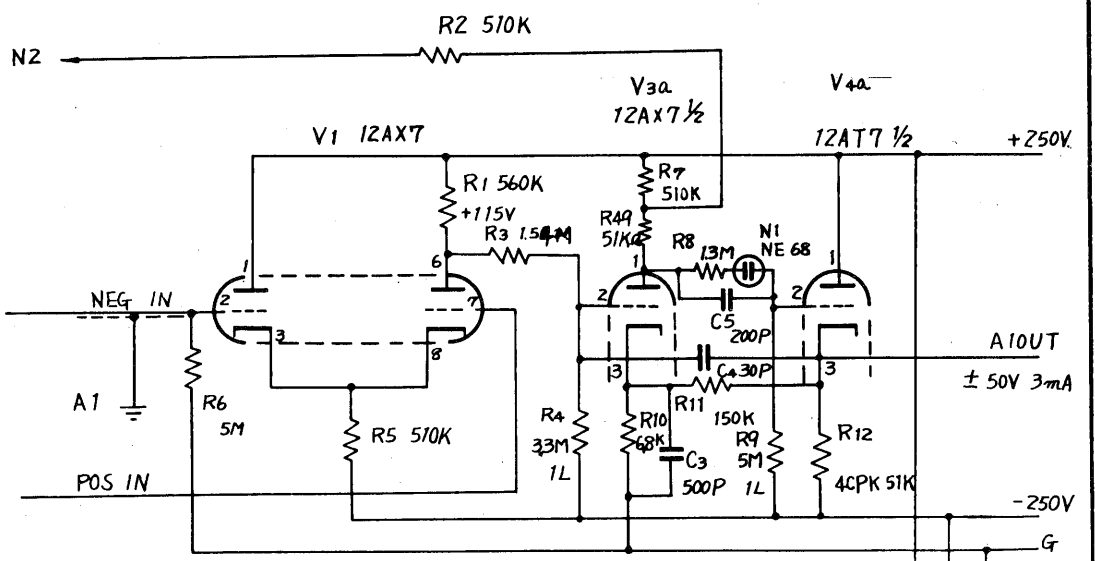
①⑦ POT SET ON, sig.

①⑧ Kg





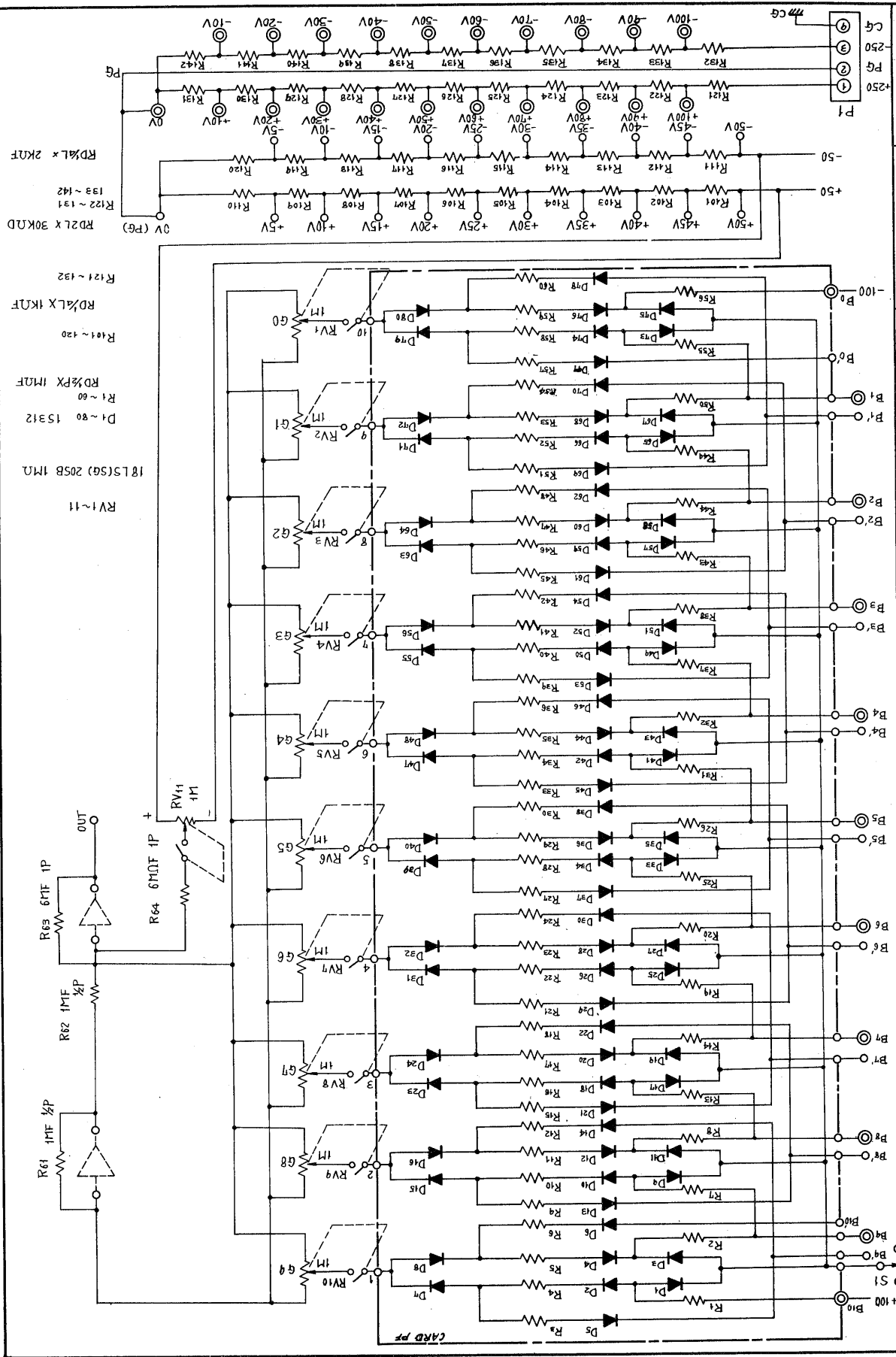
643359



A3, A4 equal A1, A2.

DRW	OMURA	HITACHI 303LA-121	Hitachi.Ltd.	643359
CHK	FUKUMOTO	LINEAR PANEL		
APPO	.	AMPLIFIER UNIT CIRCUIT DIAGRAM		





633146

**Hitachi, Ltd.**

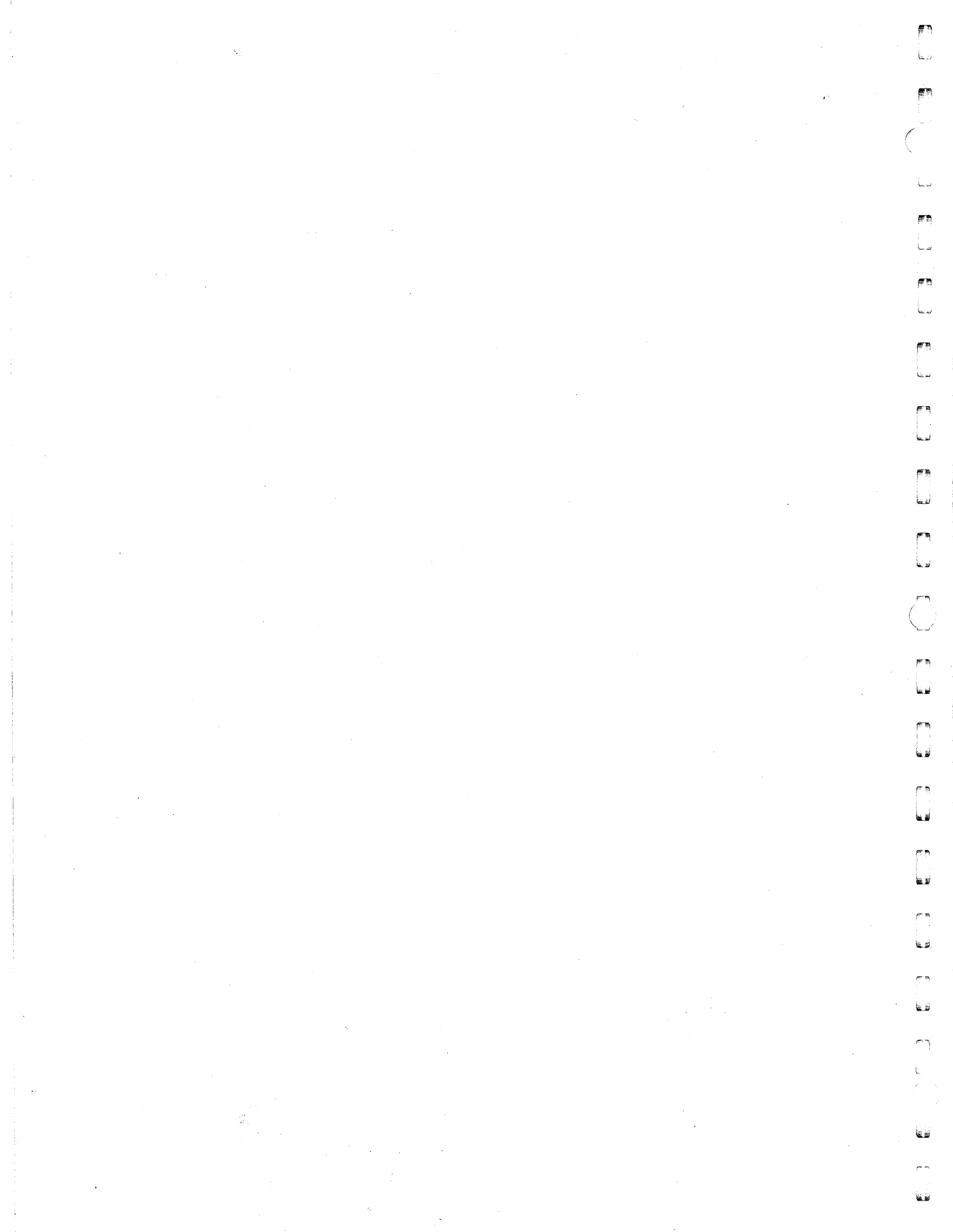
DRAWN	CHK	APPD
OTURA	FUKUMOTO	7

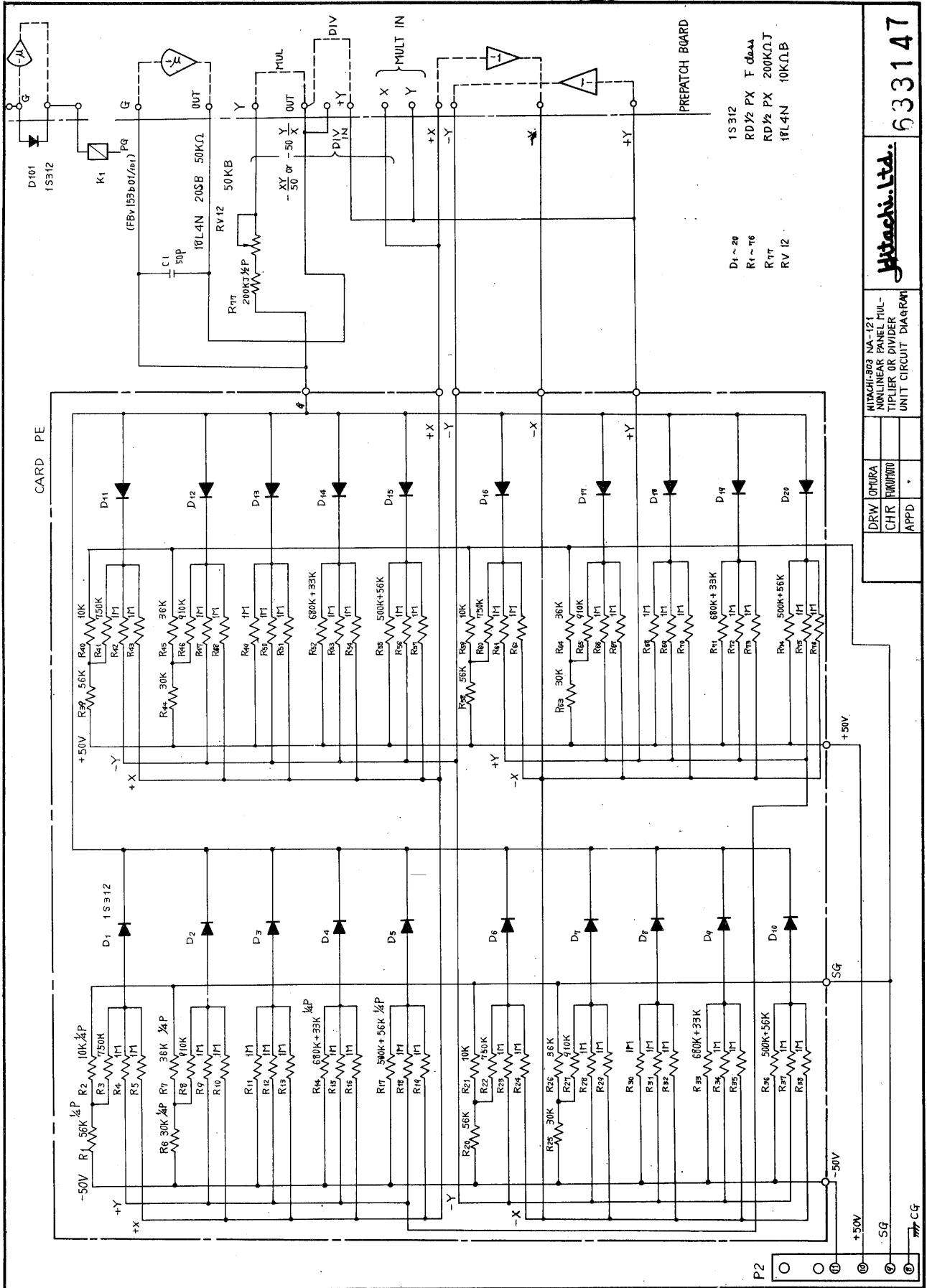
HITACHI-303 NA-121  
 NONLINEAR PANEL  
 DIODE FUNCTION GENERATOR UNIT  
 CIRCUIT DIAGRAM

RD2L X 30KND  
 R110 ~ R131  
 R122 ~ R142  
 RD1/2L X 2K1F  
 R121 ~ R132  
 RD1/2L X 1K1F  
 R101 ~ R120  
 RD1/2PX 1M1F  
 R1 ~ R60  
 D1 ~ R80 1S312  
 181S(SG) 205B 1MΩ  
 RV1 ~ R11

R61 1M 1/2P  
 R62 1M 1/2P  
 R63 6M 1P  
 R64 6M 1P  
 RV11 1M

CARD PP





HITACHI, Ltd.

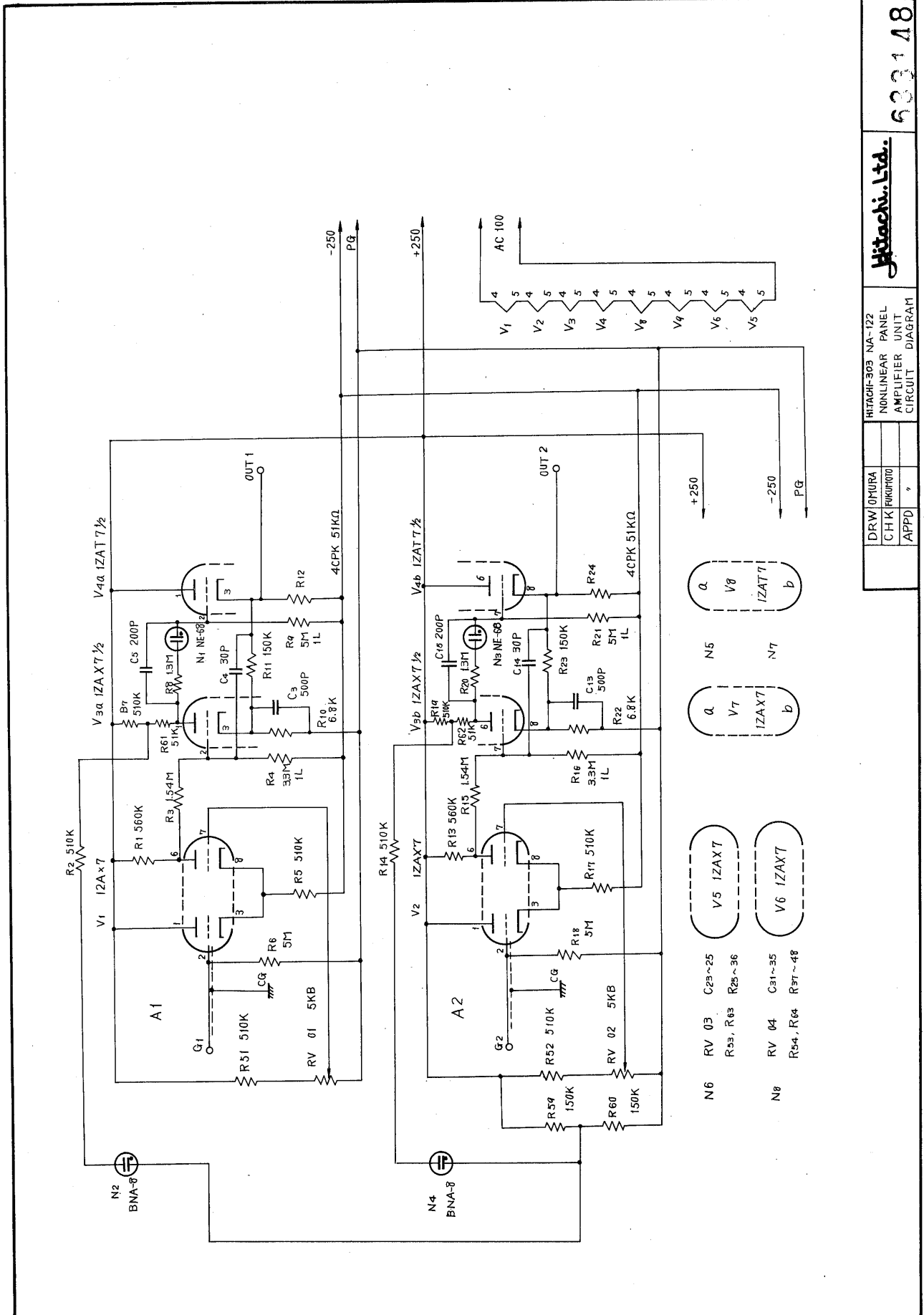
633147

HITACHI-903 NA-121  
NONLINEAR PANEL MULTIPLIER OR DIVIDER  
UNIT CIRCUIT DIAGRAM

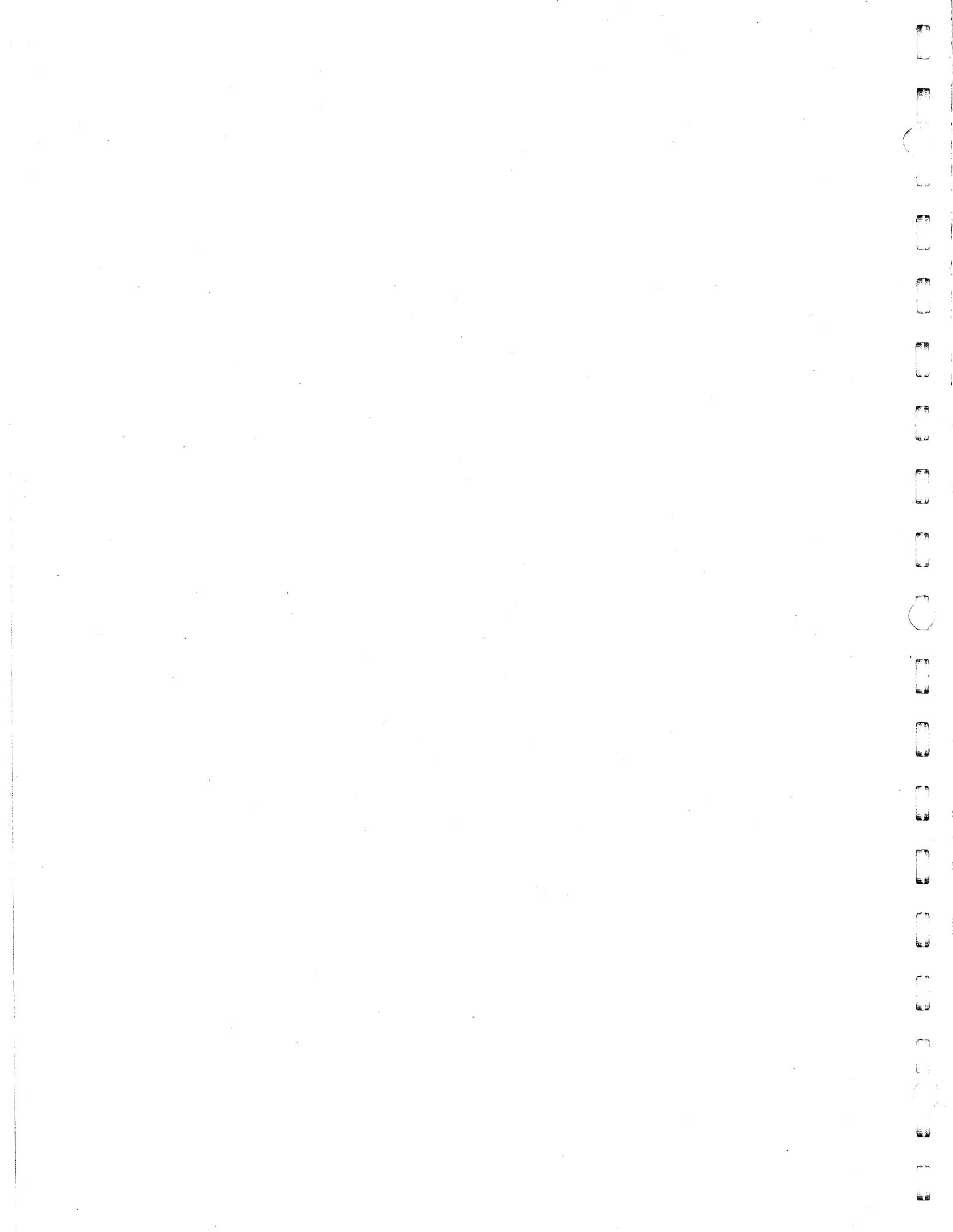
DRW. (OHTURA)  
CHR. (KAWAMOTO)  
APPD.

633147

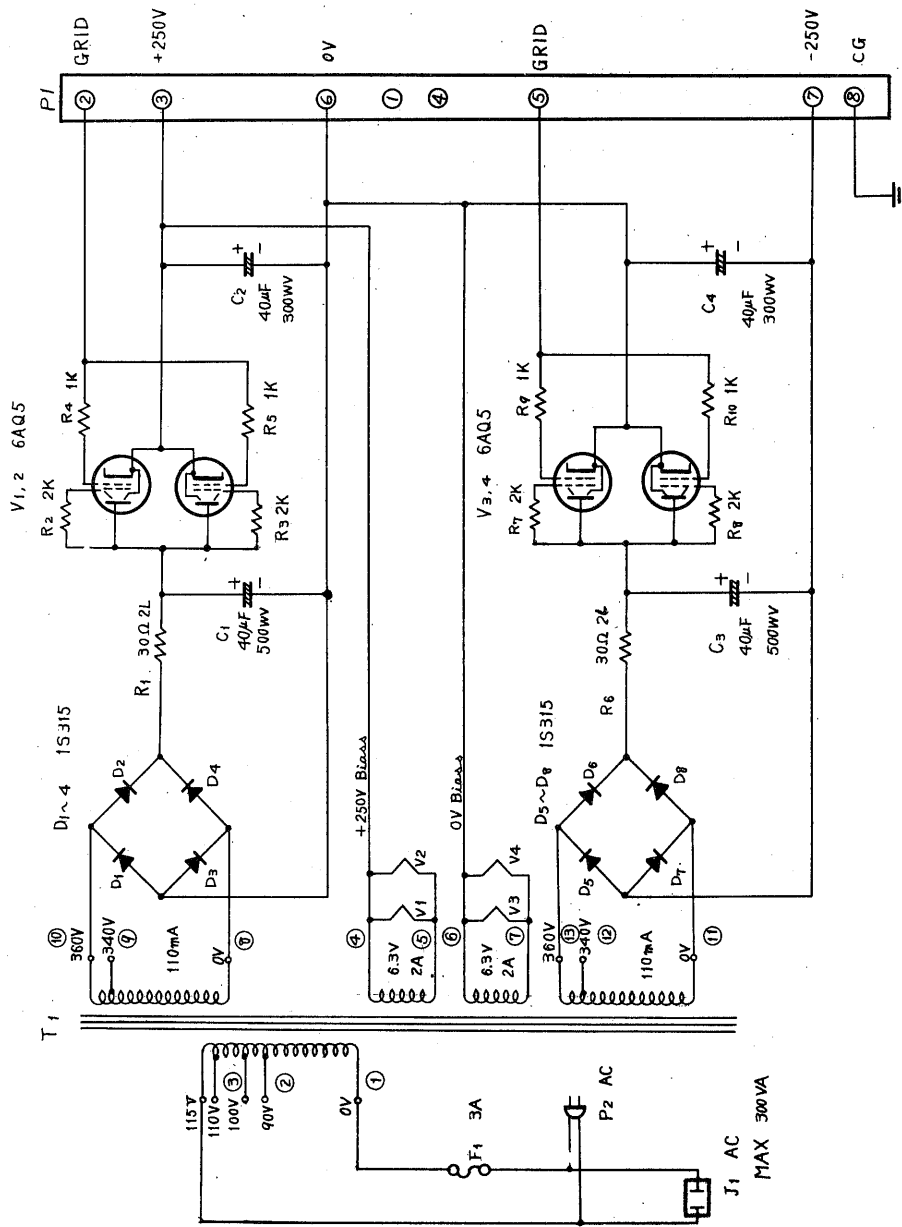




DRW/OMURA	
CHK/IKUMOTO	
APPD	





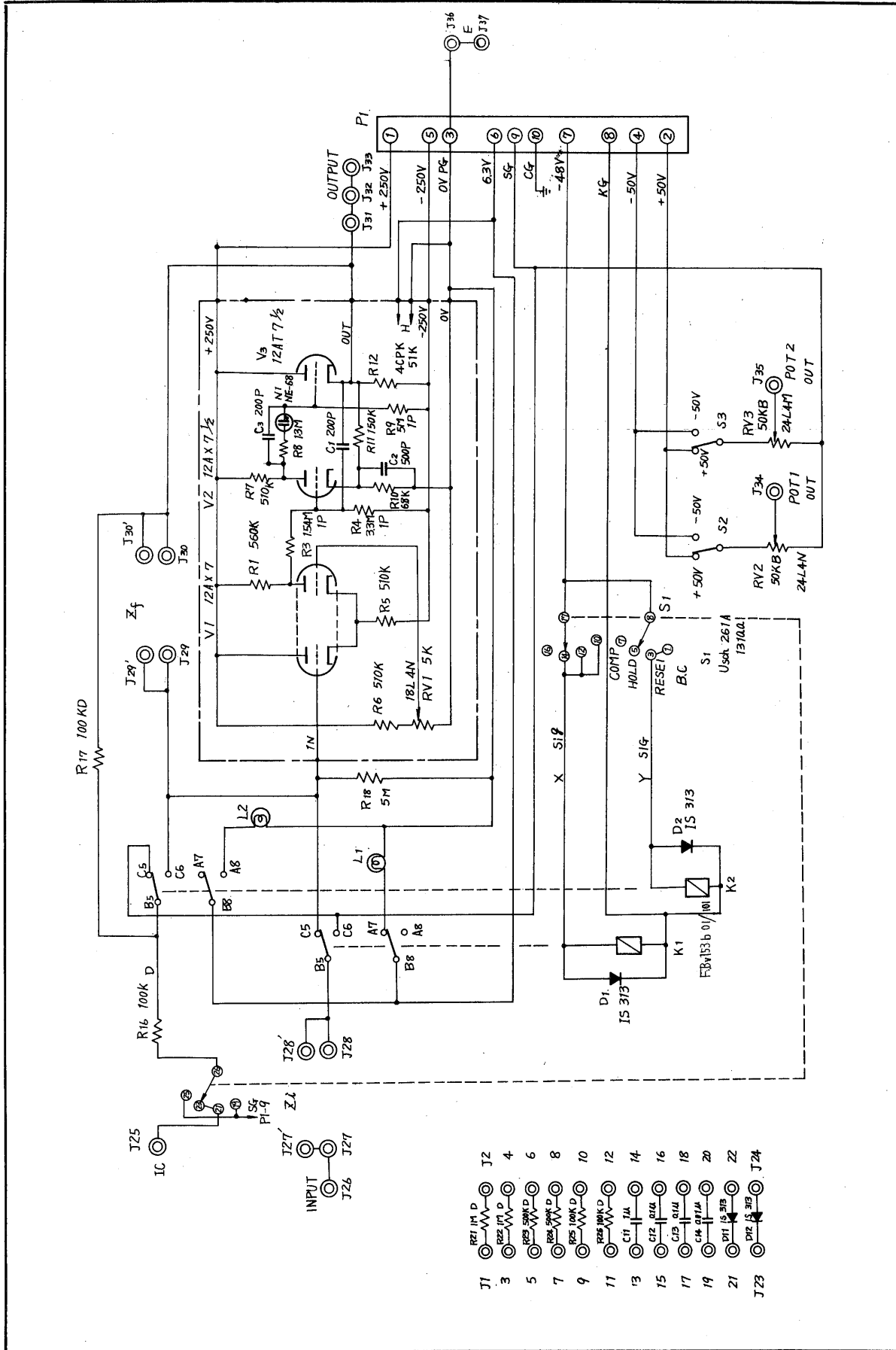


DRW/07UPRA	HITACHI303 PS-021
CHK/07UPRA	ADDITIONAL POWER UNIT
APPD	CIRCUIT DIAGRAM

Hitachi, Ltd.

933150





- J1 ① R1 100K D
- 3 ② R2 100K D
- 5 ③ R3 500K D
- 7 ④ R4 33M 1P
- 9 ⑤ R5 100K D
- 11 ⑥ R6 50K
- 13 ⑦ C1 100P
- 15 ⑧ C2 500P
- 17 ⑨ C3 200P
- 19 ⑩ C4 0.01A
- 21 ⑪ R7 100K D
- 23 ⑫ R8 13M
- J2 ⑬ J2
- 4 ⑭ 4
- 6 ⑮ 6
- 8 ⑯ 8
- 10 ⑰ 10
- 12 ⑱ 12
- 14 ⑲ 14
- 16 ⑳ 16
- 18 ㉑ 18
- 20 ㉒ 20
- 22 ㉓ 22
- J24 ㉔ J24

