

## STEREO TAPE DECK

### MODEL **GX-646**

THIS MANUAL IS ALSO APPLICABLE TO BLACK PANEL MODELS

SECTION 1	SERVICE MANUAL .....	3
SECTION 2	PARTS LIST .....	33
SECTION 3	SCHEMATIC DIAGRAM .....	48

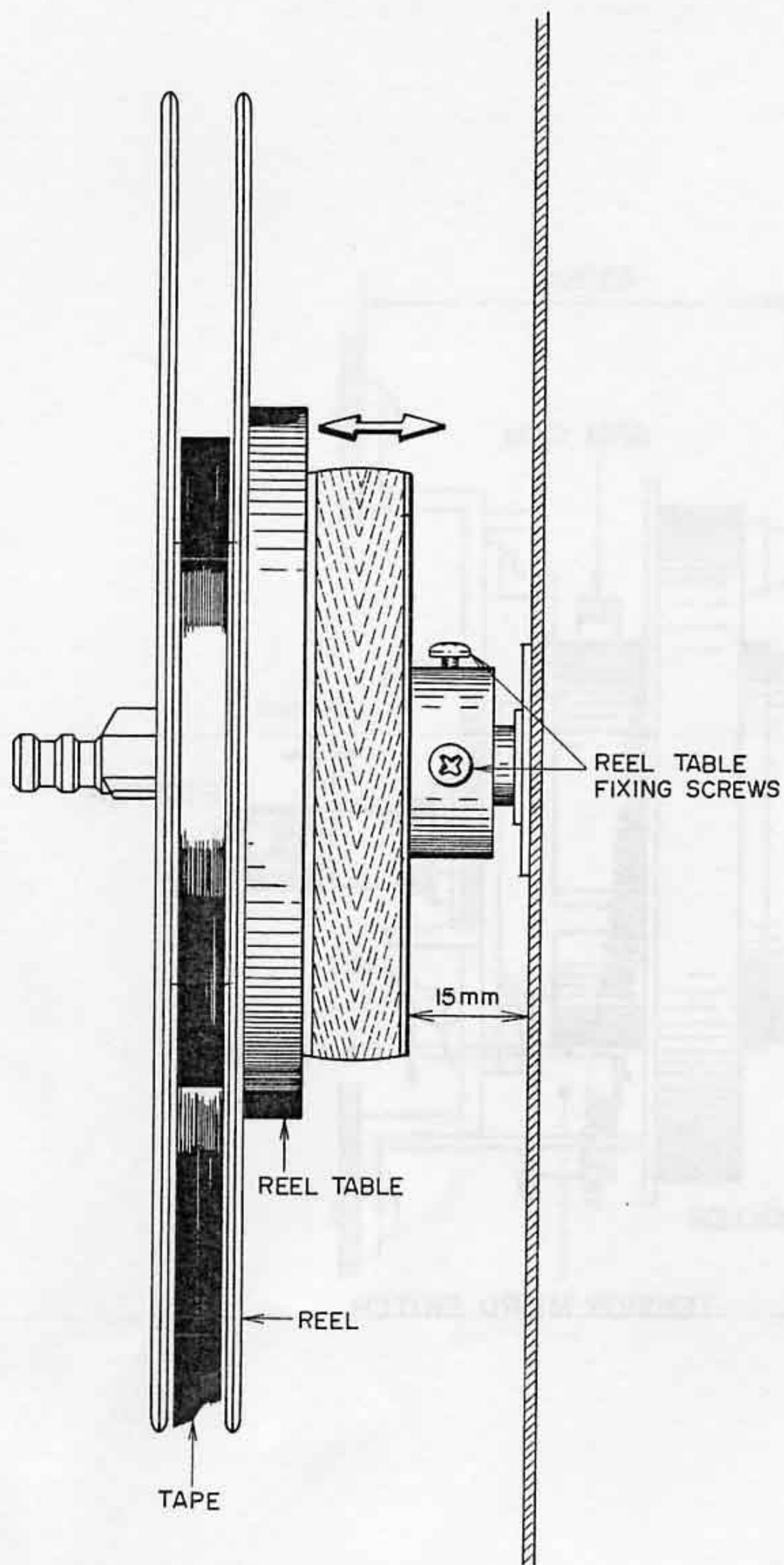


Fig. 6

**4. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 6)**

- 1) Temporarily screw in the fixing screws leaving a gap of 15 mm between the reel table and the chassis board.
- 2) Run the tape and adjust the height of the reel table so that the tape is taken up in the center of the reel. Tighten fixing screws.  
Adjust the height of the right reel table at fast forward, of the left reel table at rewind.

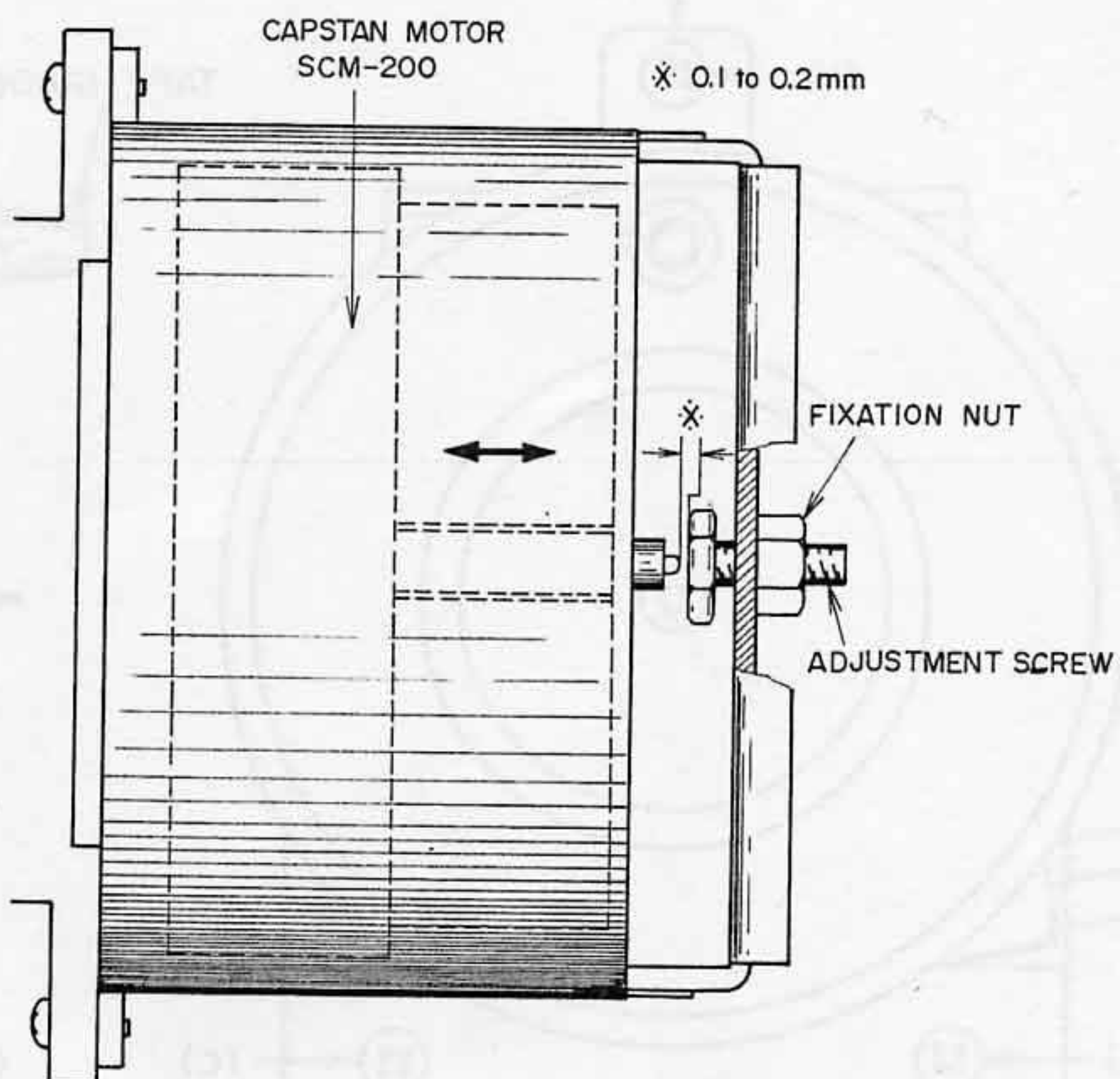


Fig. 7

**5. CAPSTAN SHAFT LOOSE PLAY ADJUSTMENT (Refer to Fig. 7)**

Adjust by turning Adjustment Screw to obtain a 0.1 to 0.2 mm degree of loose play when the capstan shaft is moved as indicated by the arrow mark. Tighten fixation nut to maintain optimum adjusted condition.

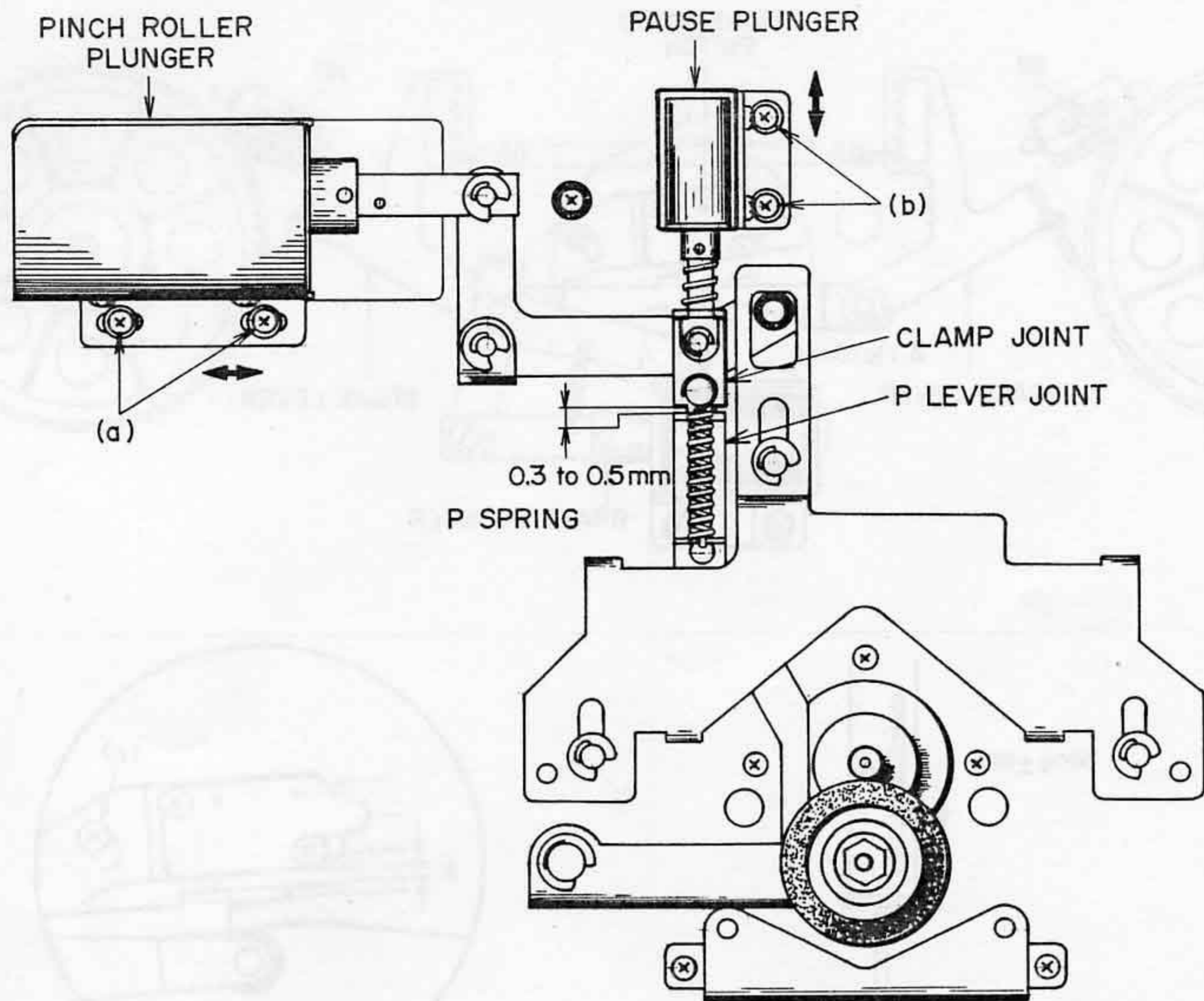


Fig. 11

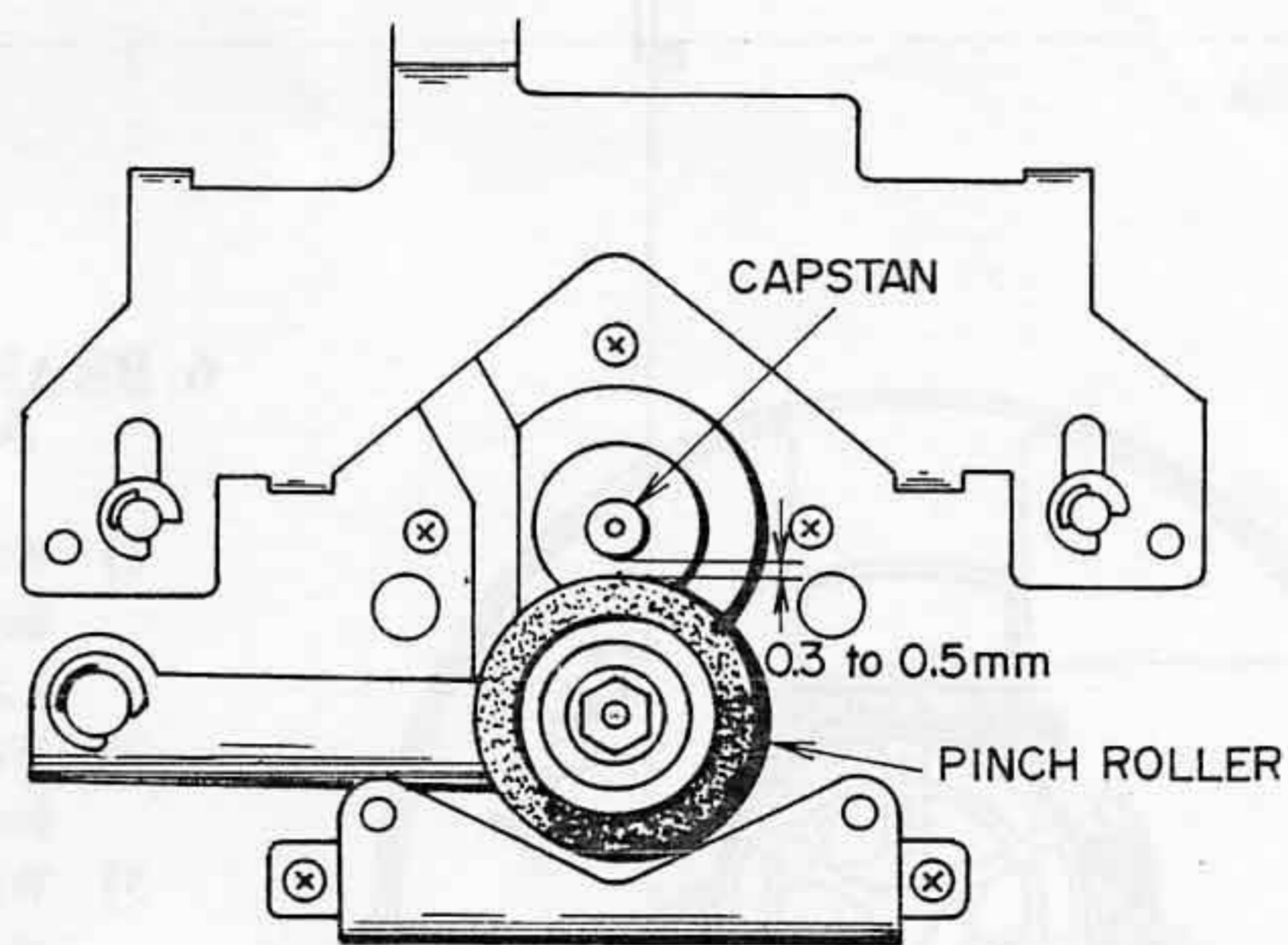


Fig. 12

#### 7. PINCH ROLLER POSITION ADJUSTMENT (Refer to Fig. 11)

At the play mode, the gap between the clamp joint and the P lever joint should be 0.3 to 0.5 mm. Adjust the pinch roller plunger position with screws (a).

#### 8. PAUSE PLUNGER POSITION ADJUSTMENT (Refer to Figs. 11, 12)

At the pause mode, the gap between the capstan and the pinch roller should be 0.3 to 0.5 mm. Adjust the pause plunger position with screws (b).

#### 9. PINCH ROLLER PRESSURE ADJUSTMENT

Connect a 2 kg spring gauge to the pinch roller fixing screws. Pull down the pinch roller and then let it slowly move back. Check that the spring gauge reads  $1.2 \text{ kg} \pm 200 \text{ g}$  at the moment the pinch roller touches the capstan and starts rolling.

If it reads otherwise, replace the P spring (See Fig. 12)

# VII. HEAD ADJUSTMENT

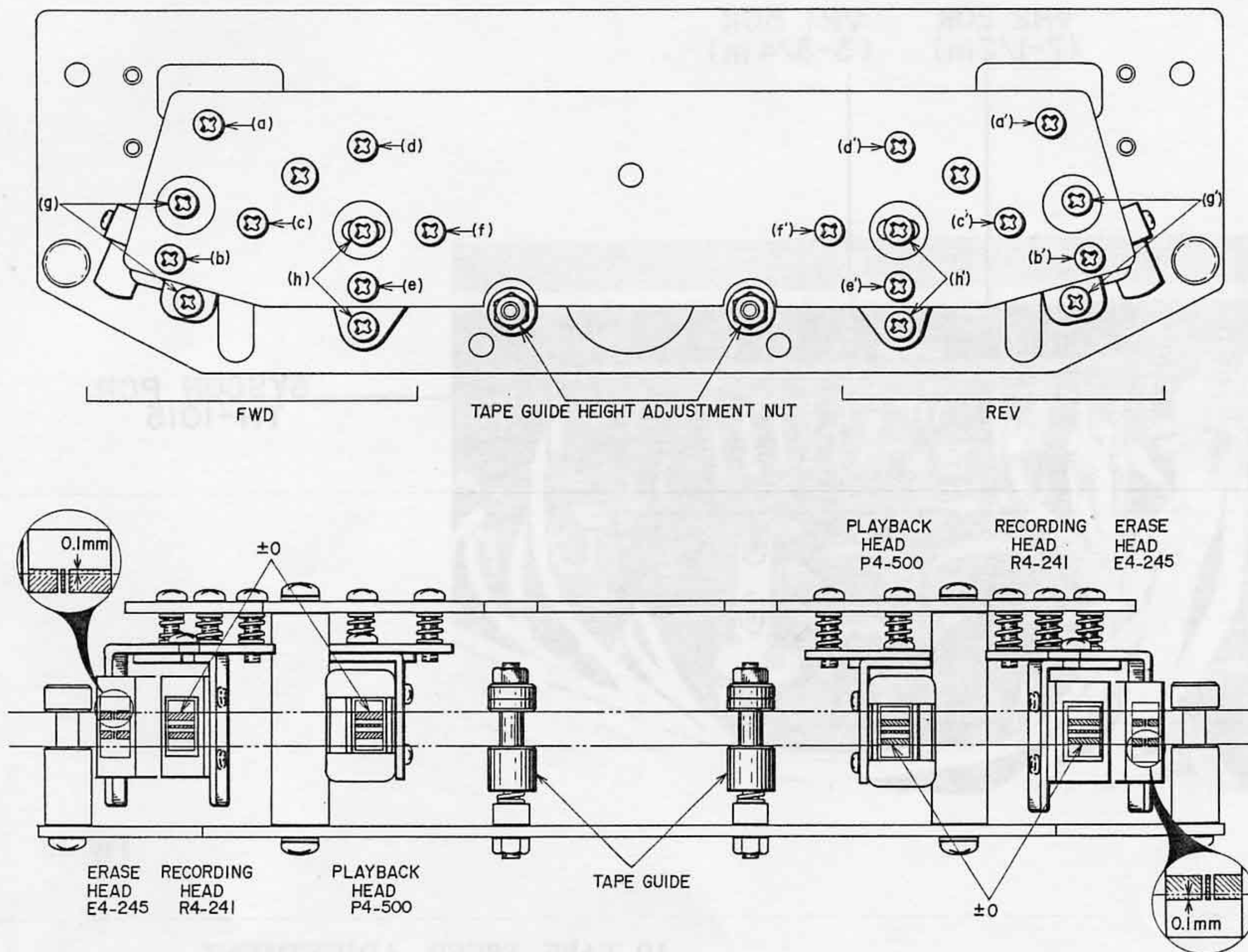


Fig. 14

## VI. MECHANISM ADJUSTMENT

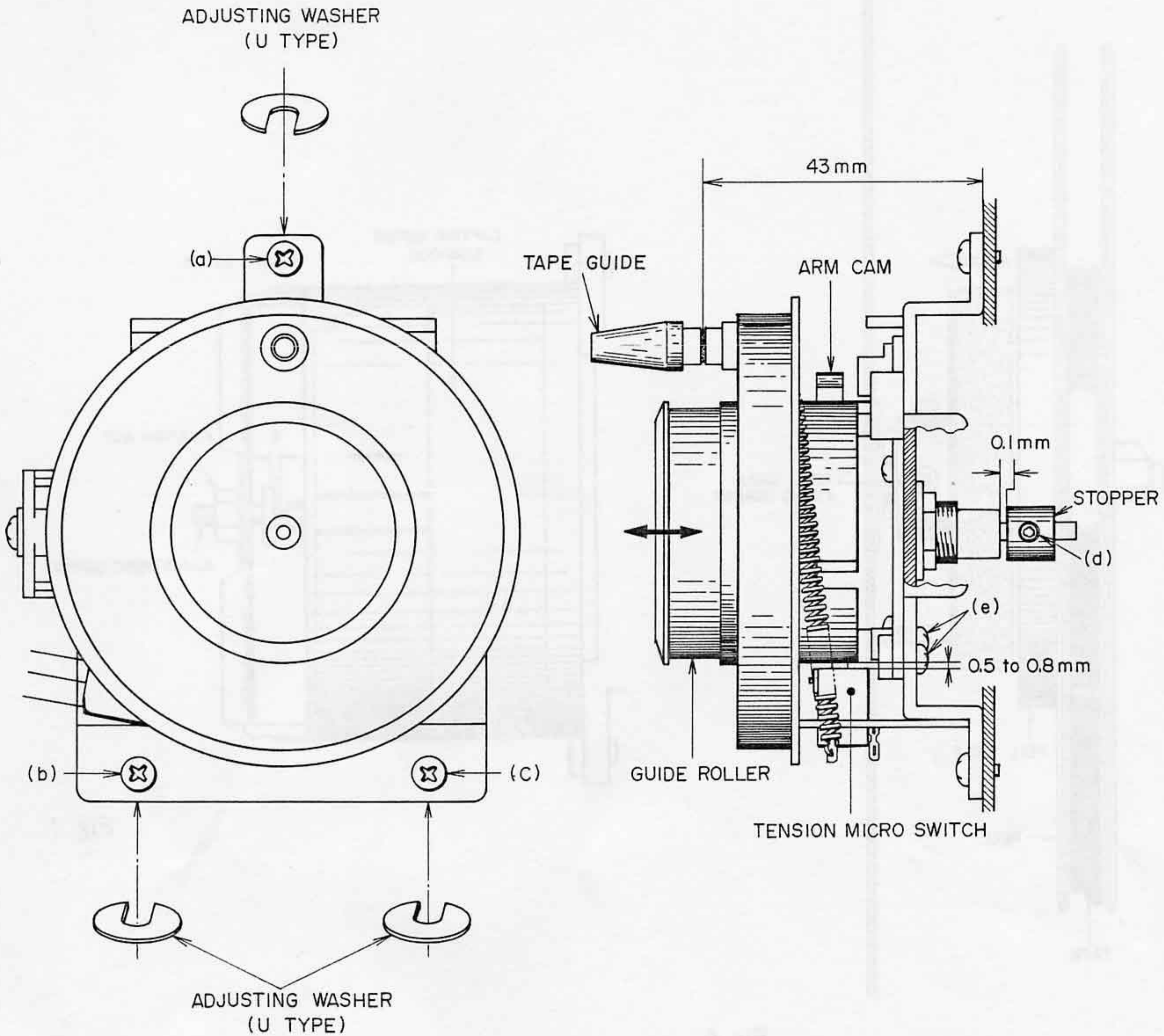


Fig. 5 Roller Block

### 1. GUIDE ROLLER LOOSE PLAY ADJUSTMENT (Refer to Fig. 5)

Adjust the stopper (roller pulley on the right) screw (d) so that the loose play gap is approximately 0.1 mm when the guide roller is moved as indicated by arrow mark in Fig. 5.

### 2. TENSION MICRO SWITCH POSITION ADJUSTMENT (Refer to Fig. 5)

Adjust the screws (e) so that the gap between the arm cam and the micro switch is approximately 0.5 to 0.8 mm. Check the the micro switch works and that the arm lock smoothly disengages.

### 3. ROLLER BLOCK HEIGHT ADJUSTMENT (Refer to Fig. 5)

Use the U type adjusting washers for screws (a), (b), and (c) to adjust the roller block height: the distance between the tape guide center to the chassis board should be 43 mm.

**NOTE:** Steps 1 and 3 also apply to the right guide roller.

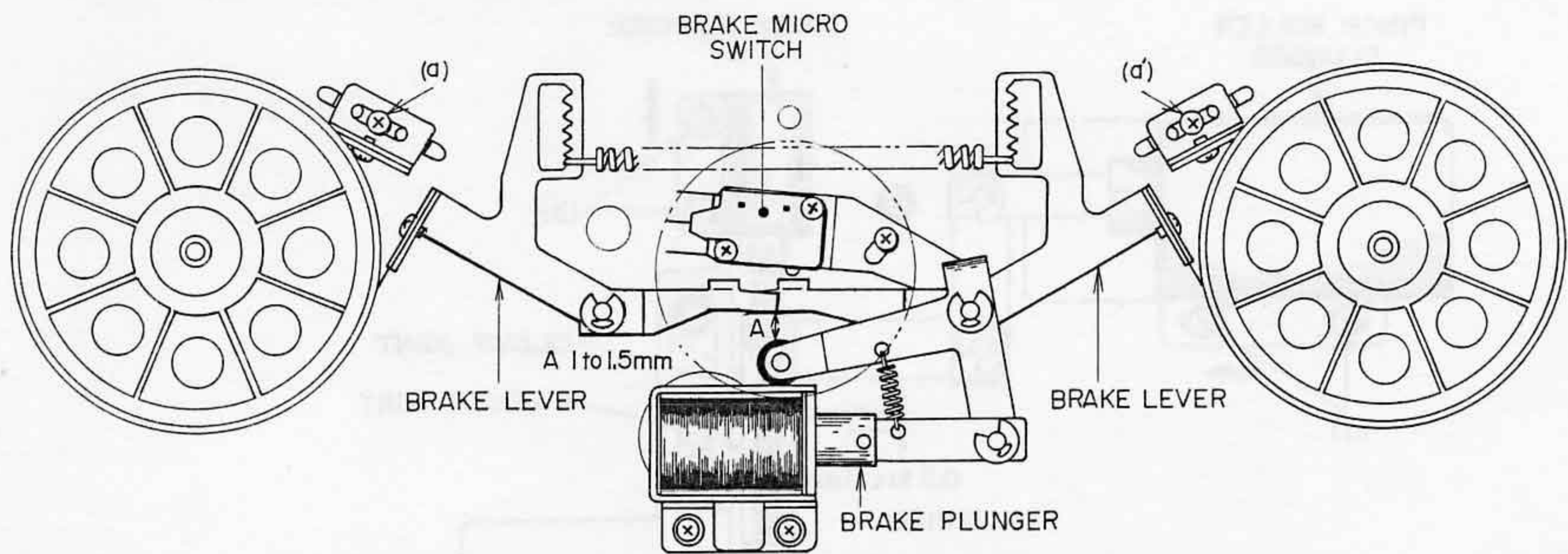


Fig. 8

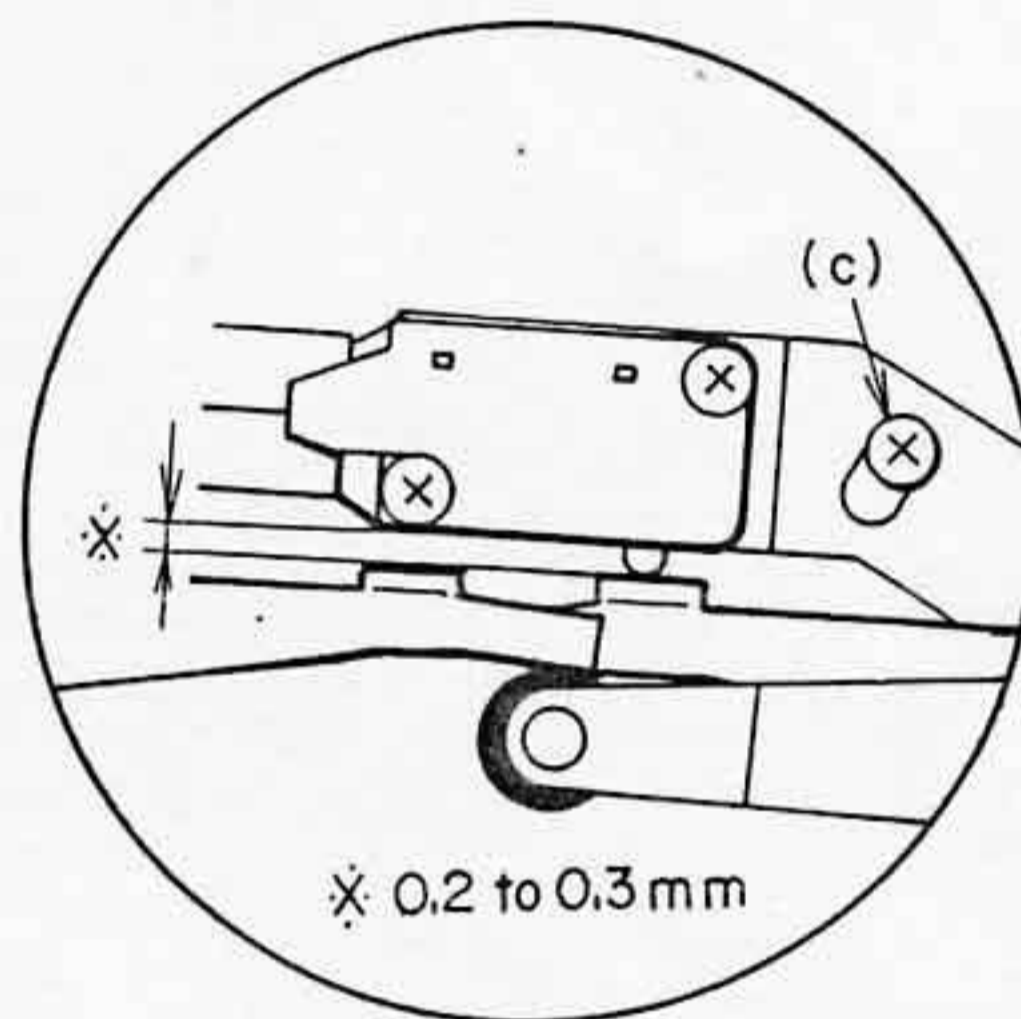
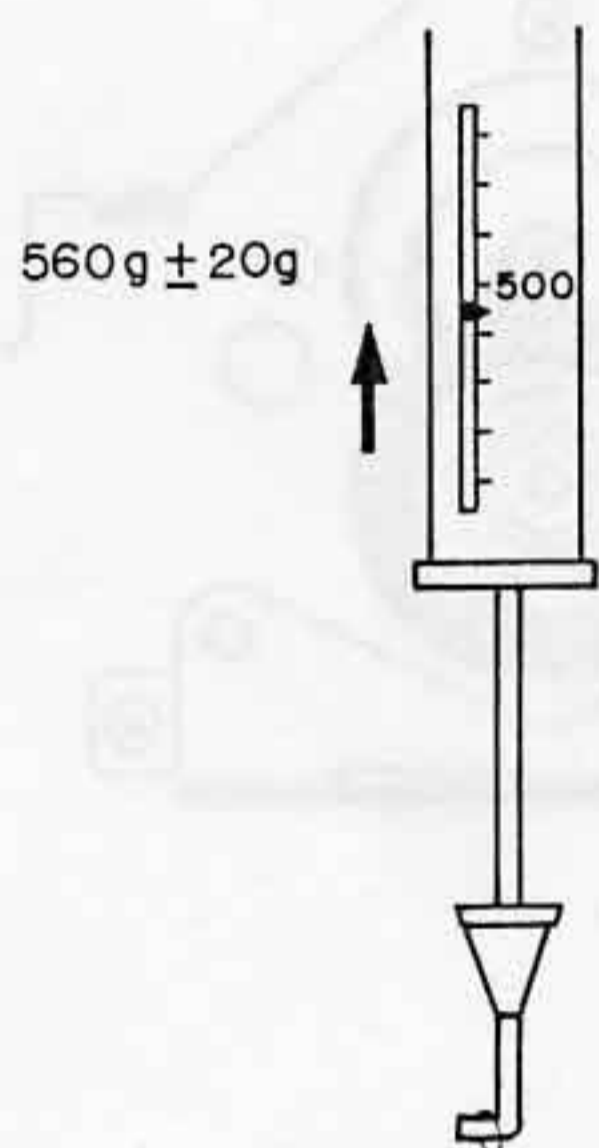


Fig. 10

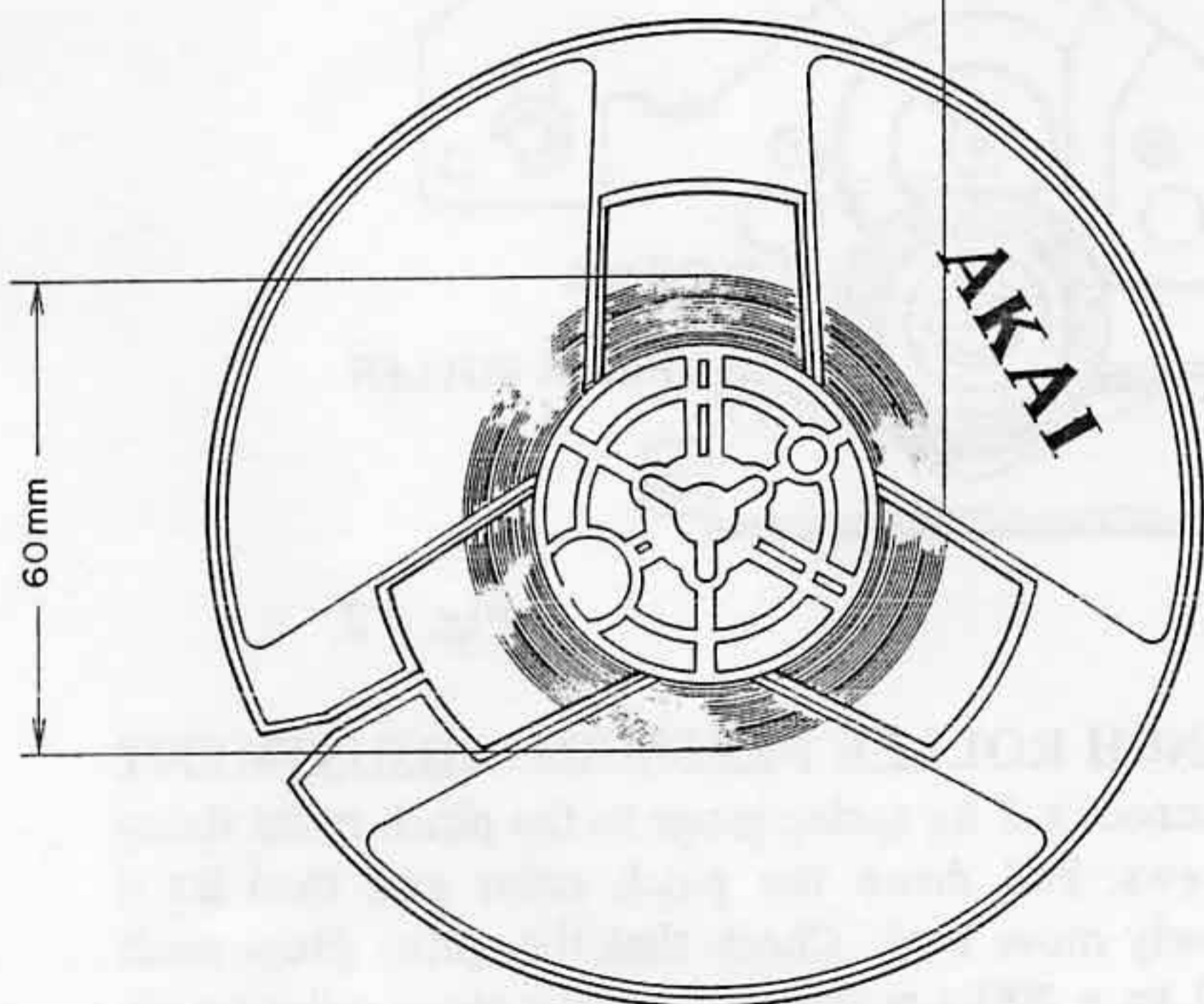
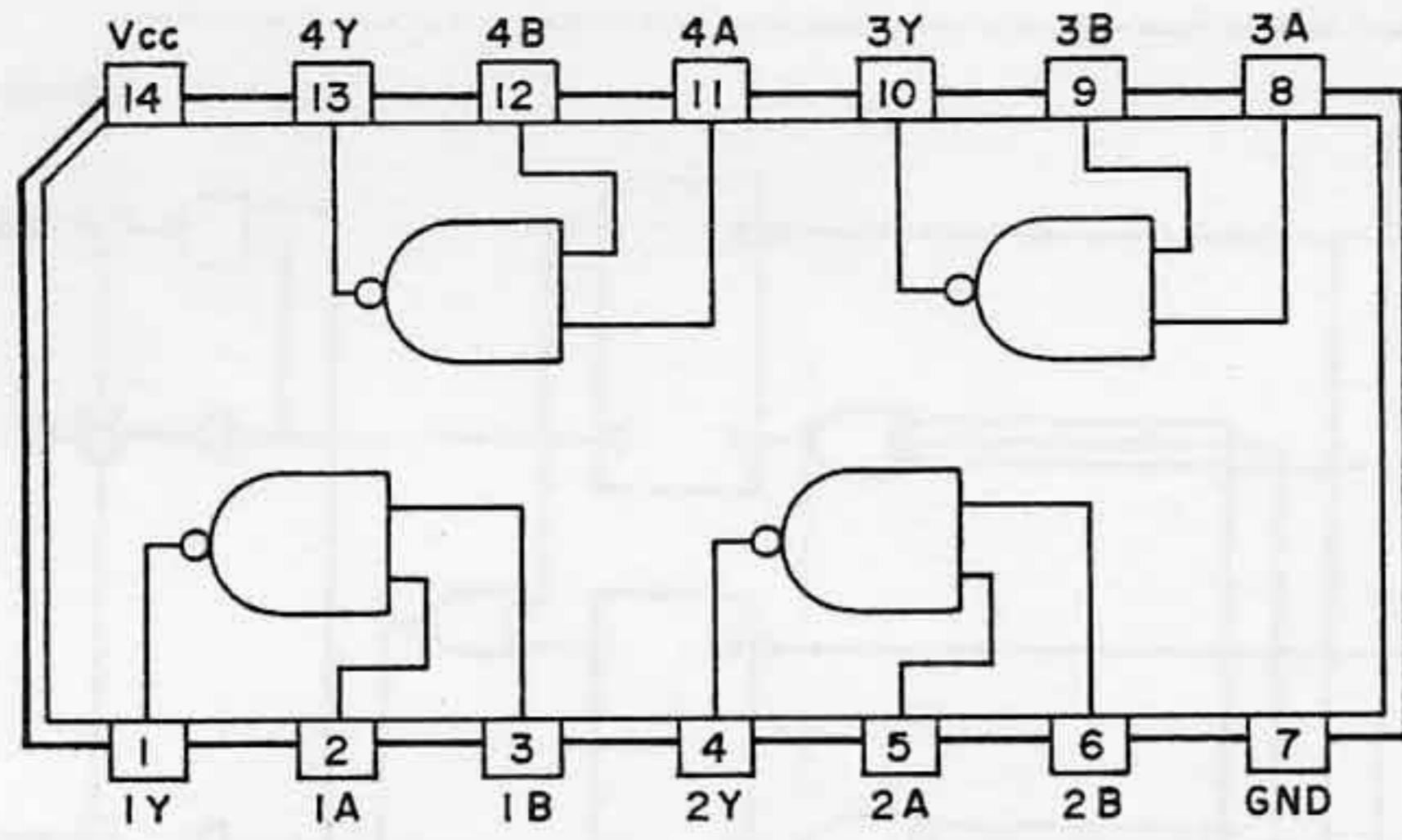


Fig. 9

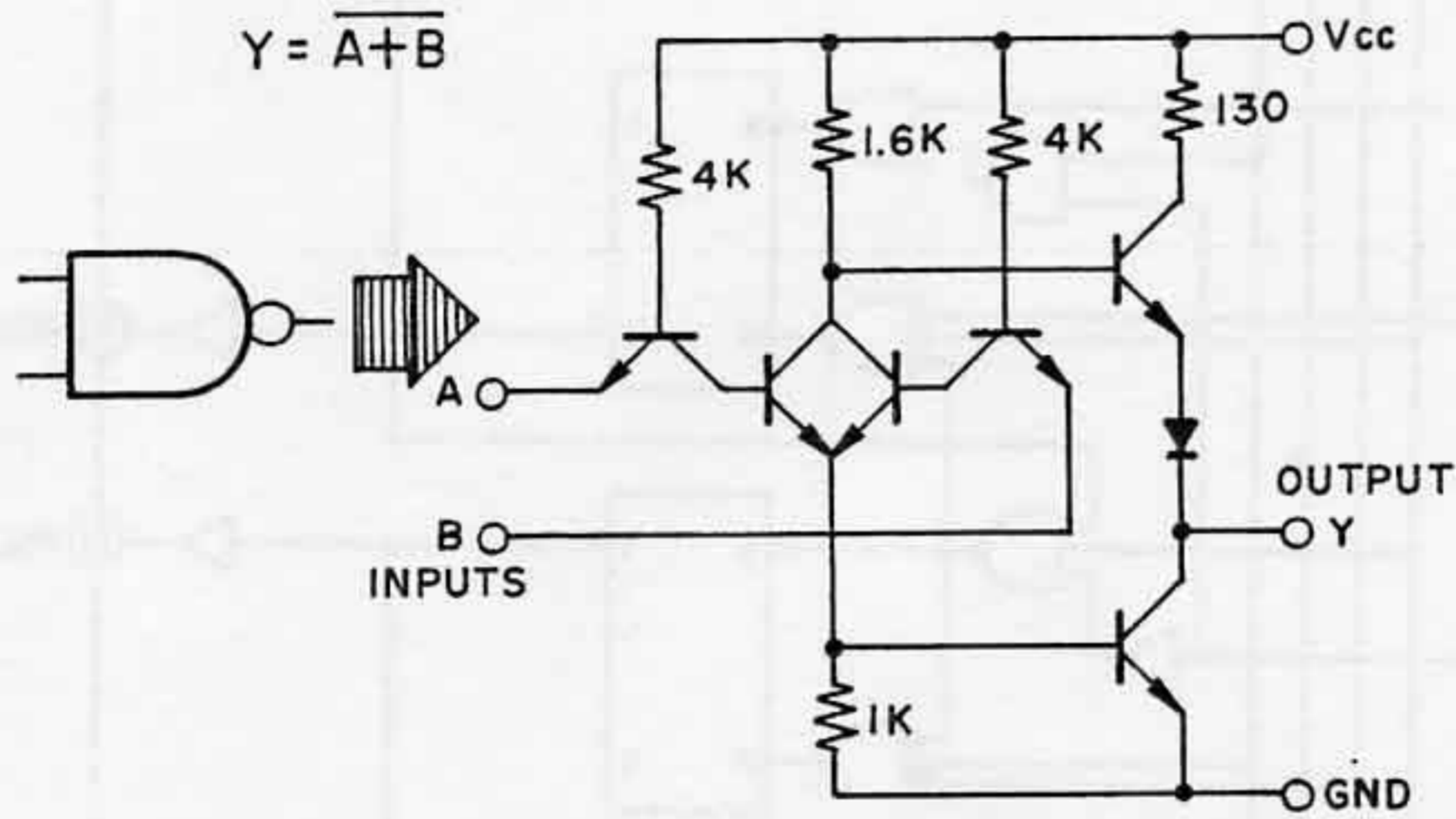
#### 6. BRAKE BAND POSITION ADJUSTMENT AND BRAKE TENSION ADJUSTMENT (Refer to Figs. 8, 9, 10)

- 1) Adjust the screws (a) and (a') so that the gap A between the brake lever and the rubber is 1 to 1.5 mm.
- 2) Work the brake plunger to check that the brake band is not slanted.
- 3) With the machine stopped, adjust the position of the spring so that a brake tension of  $560 \pm 20$  g is obtained on each brake.
- 4) By working the brake plunger with a finger, adjust the position of the micro switch screw (c) so that the gap between the brake lever and the micro switch body is 0.2 to 0.3 mm.

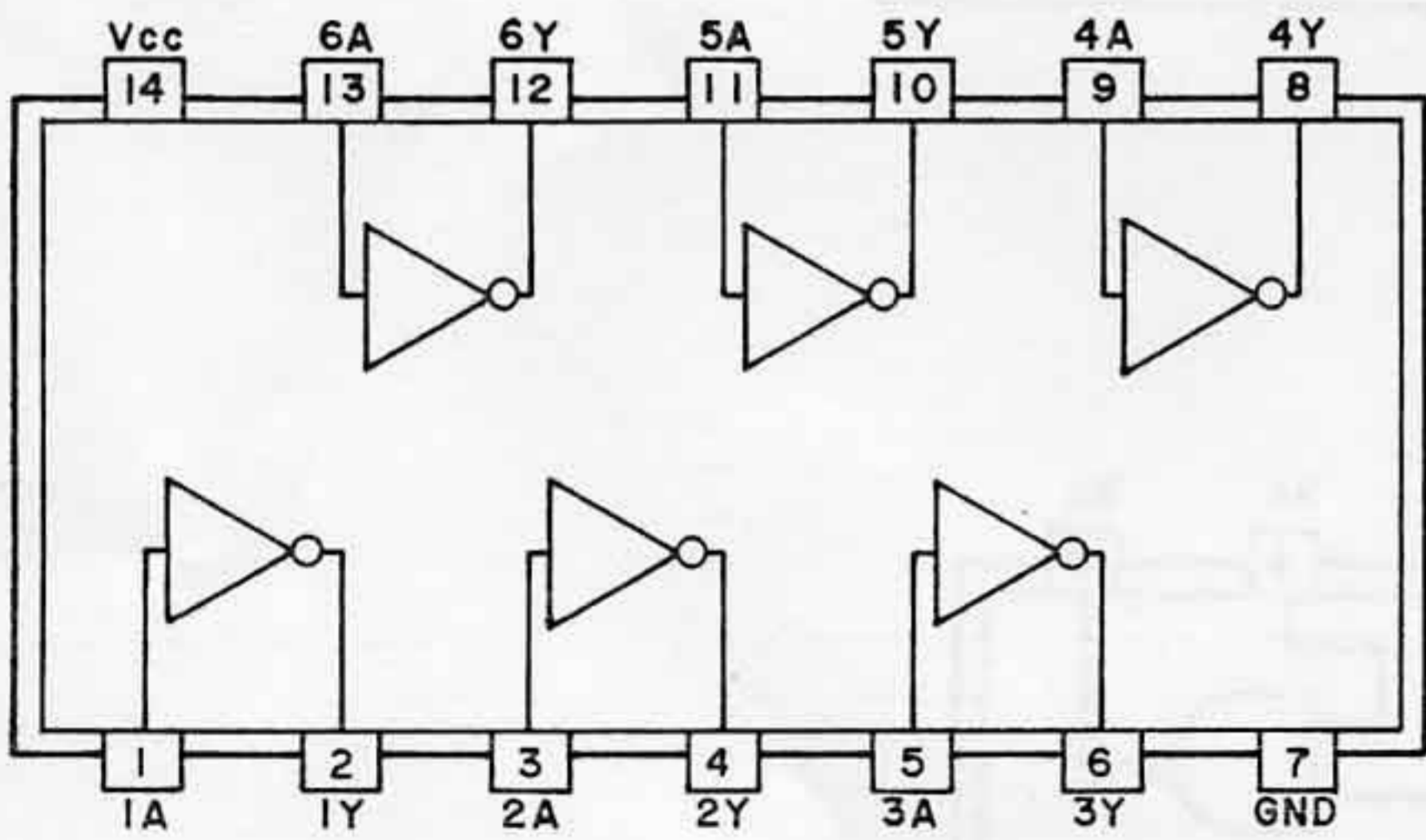
MB417M



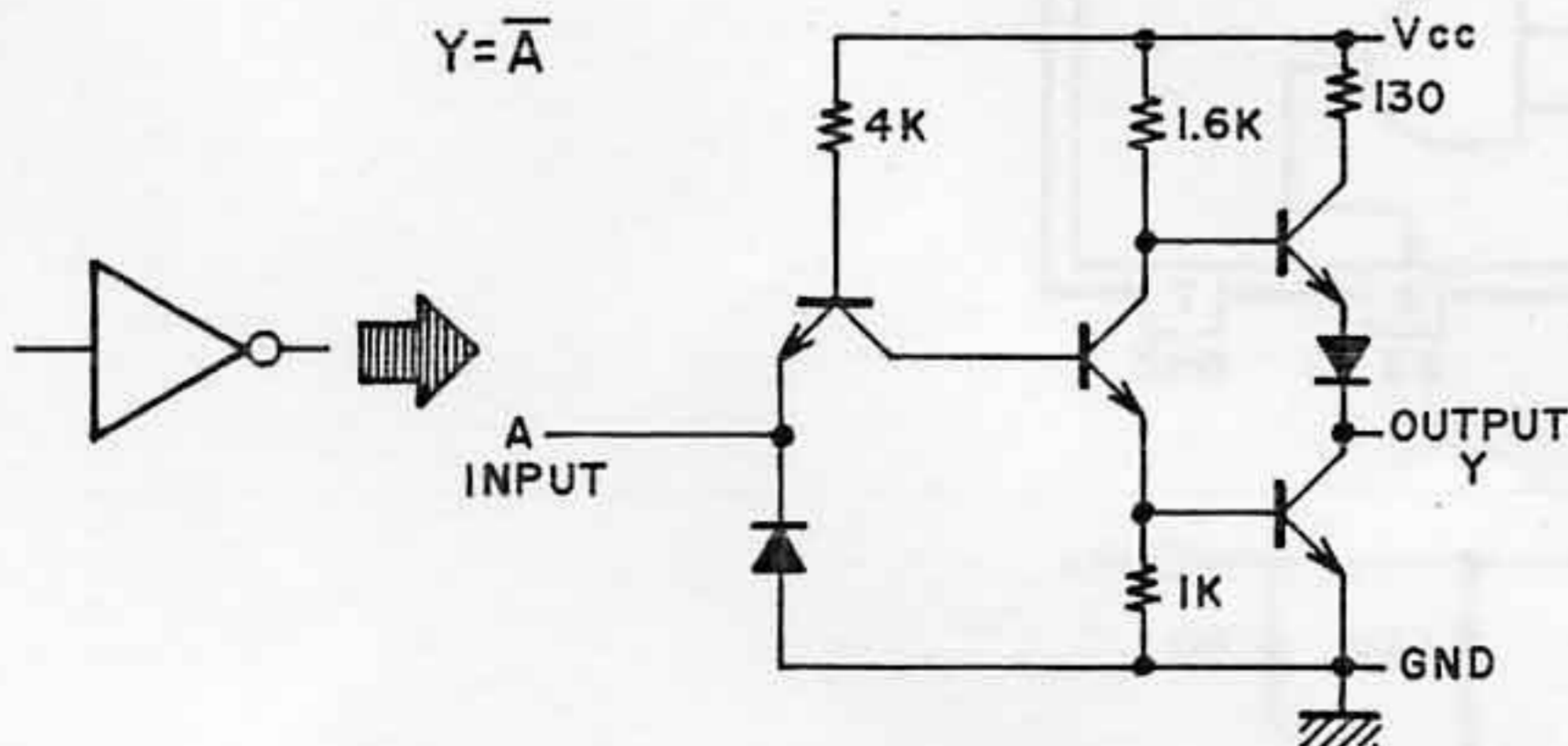
$Y = \overline{A+B}$



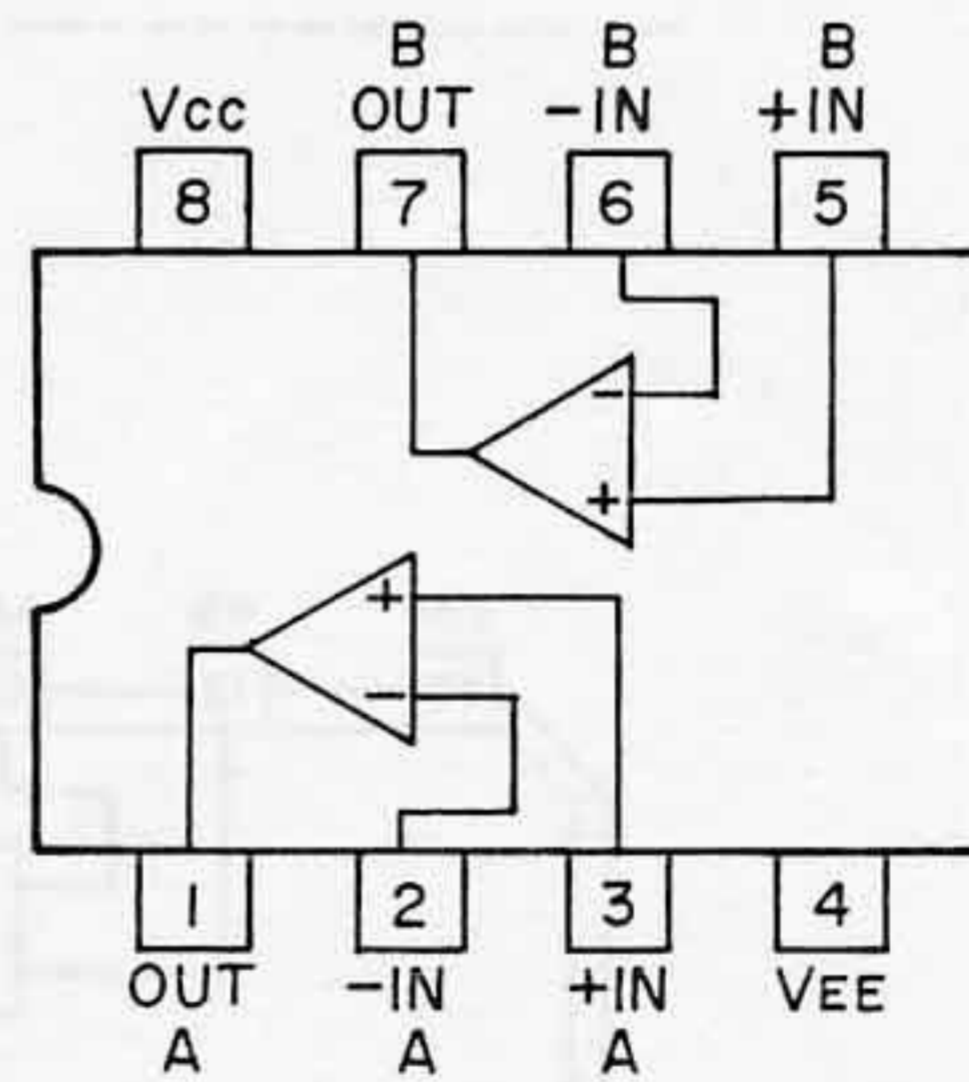
MB418M



$Y = \overline{A}$



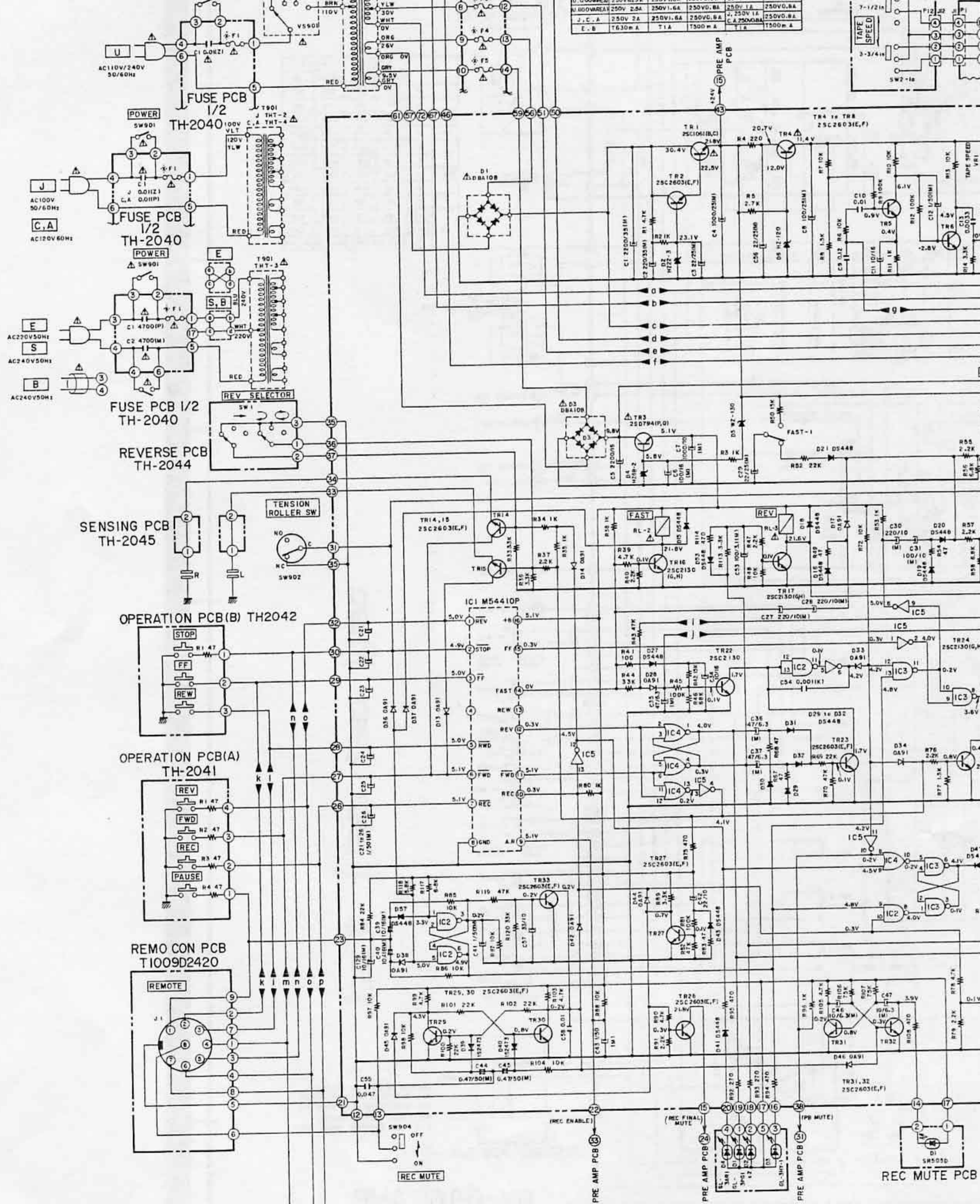
NJM4558D



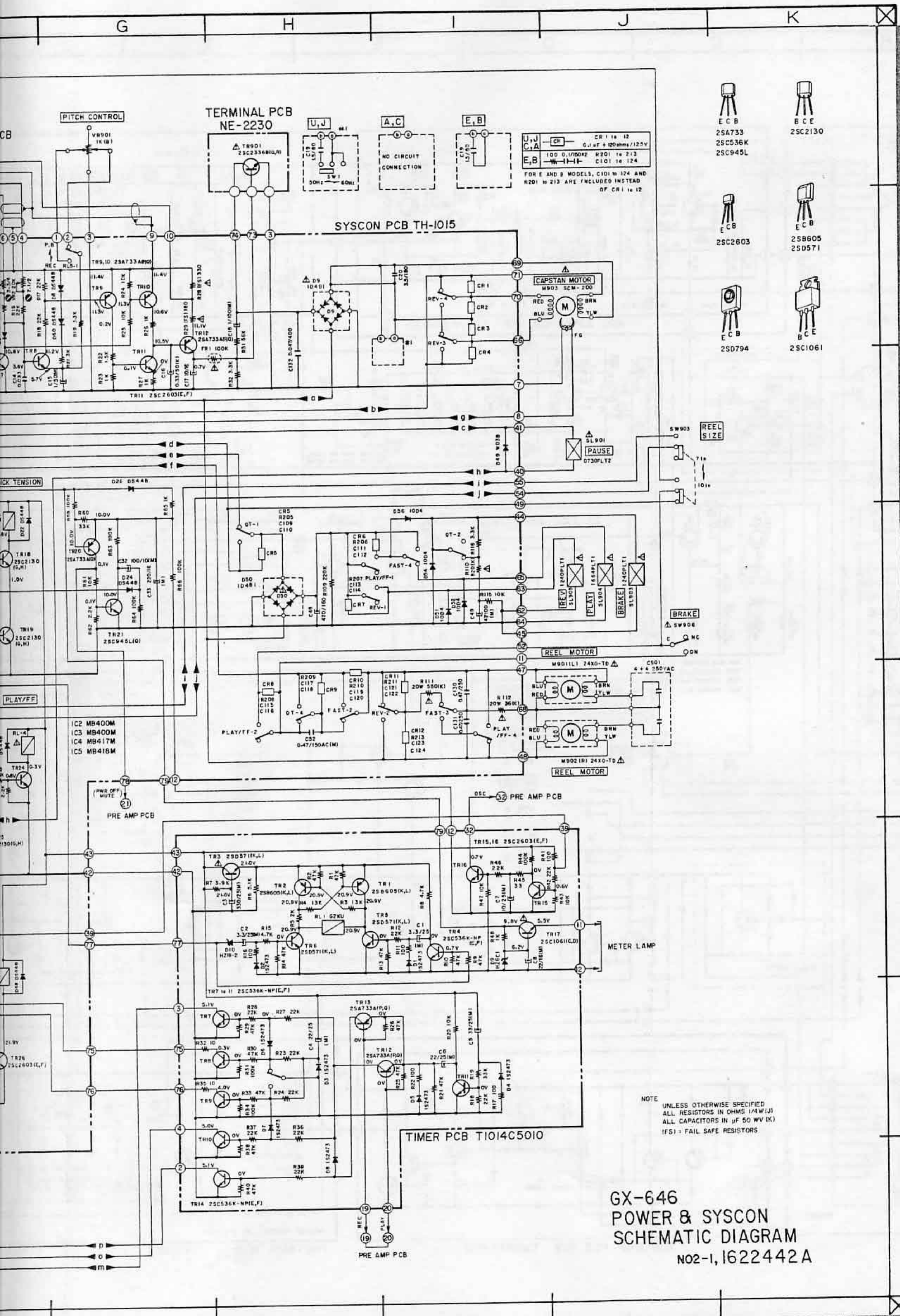
GX-646

A B C D E F

1 2 3 4 5 6 7 8

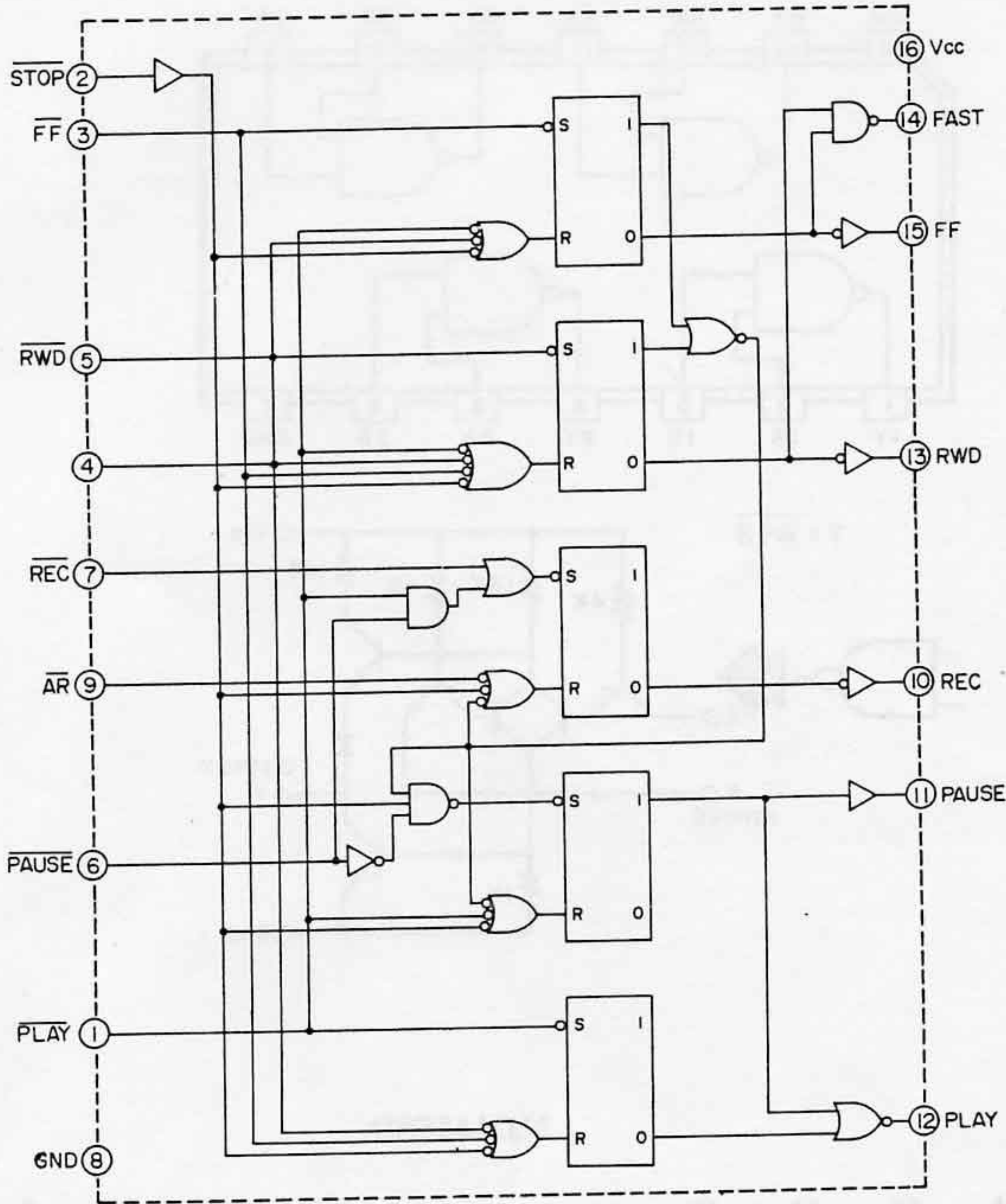




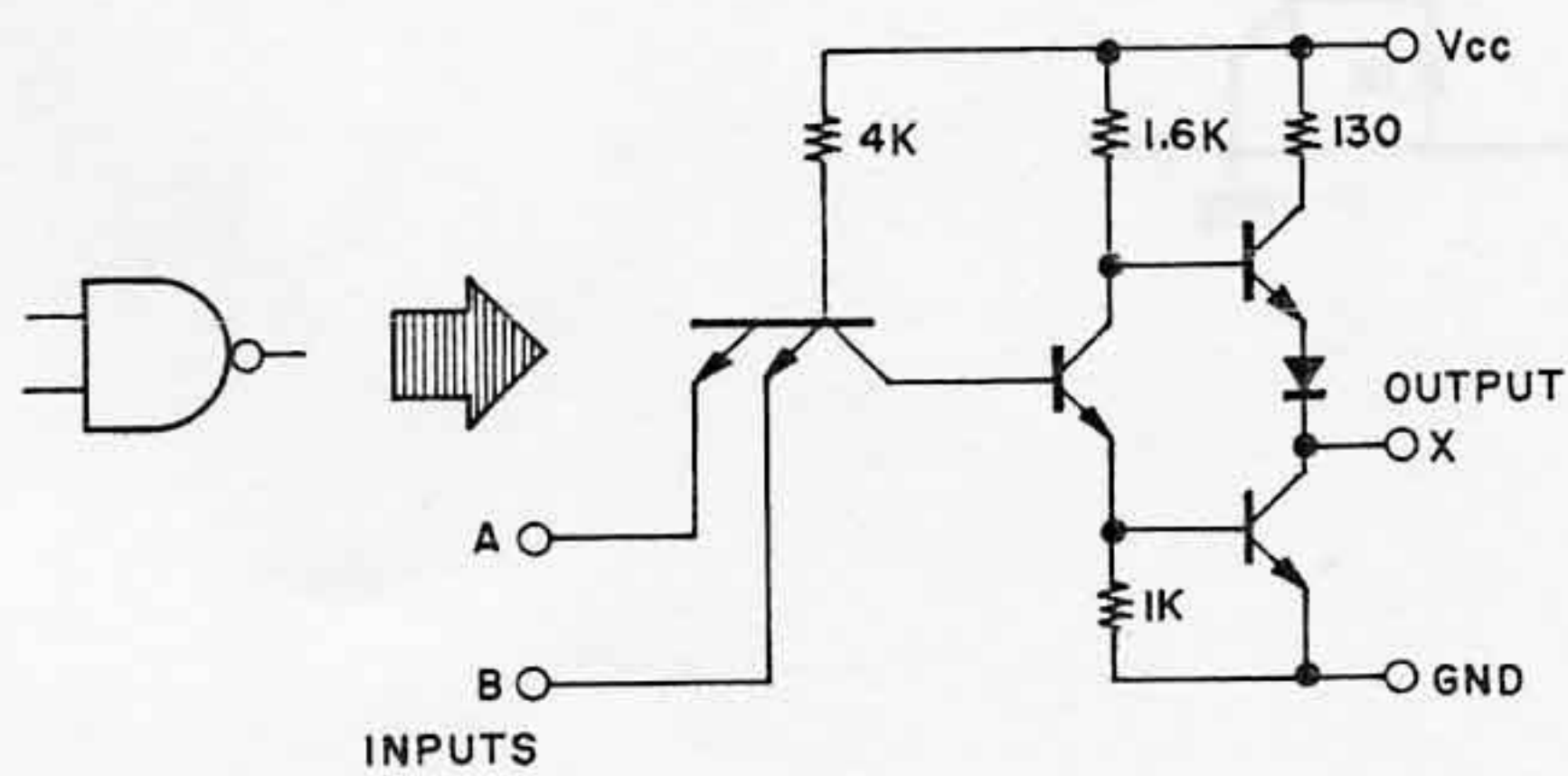
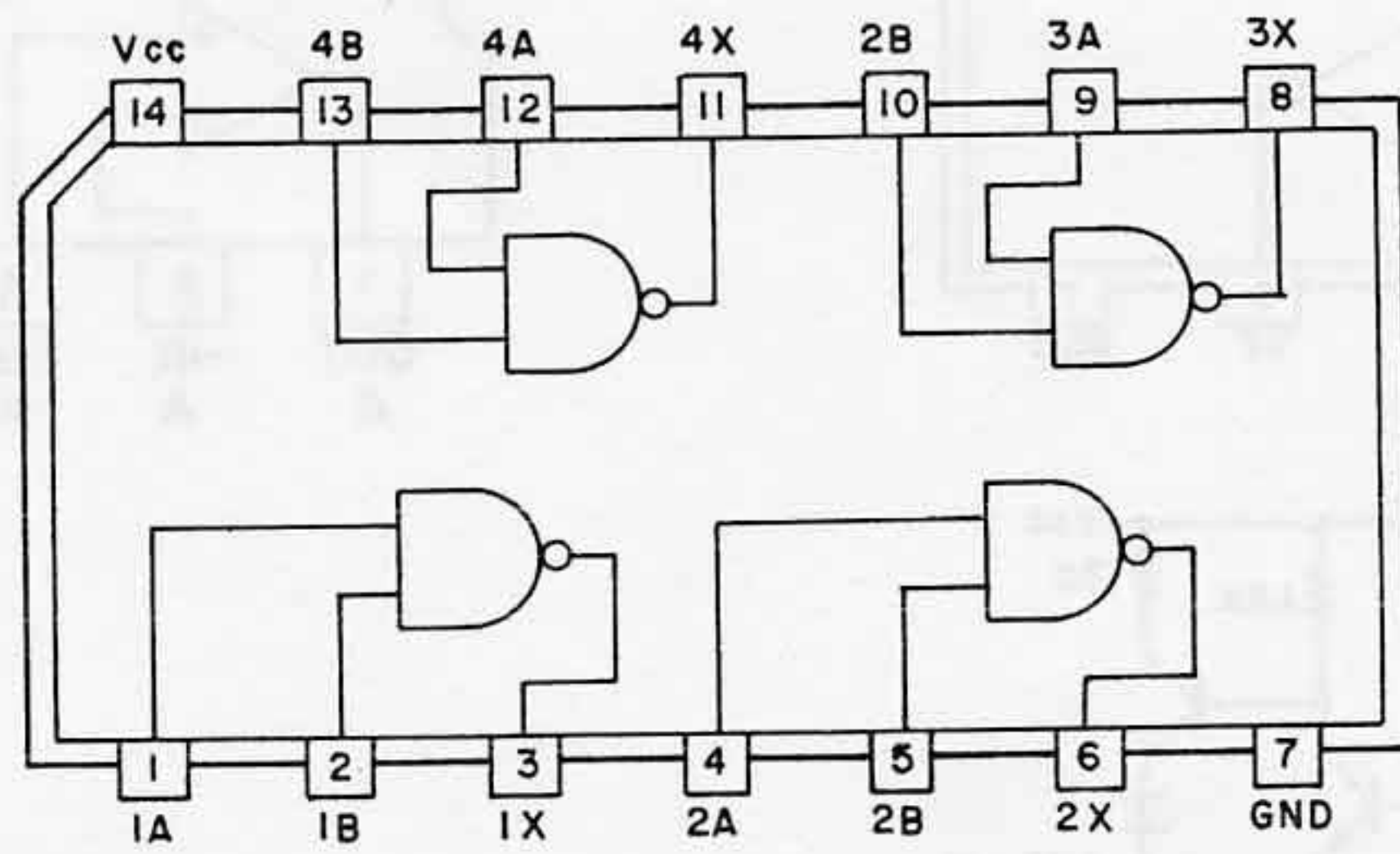


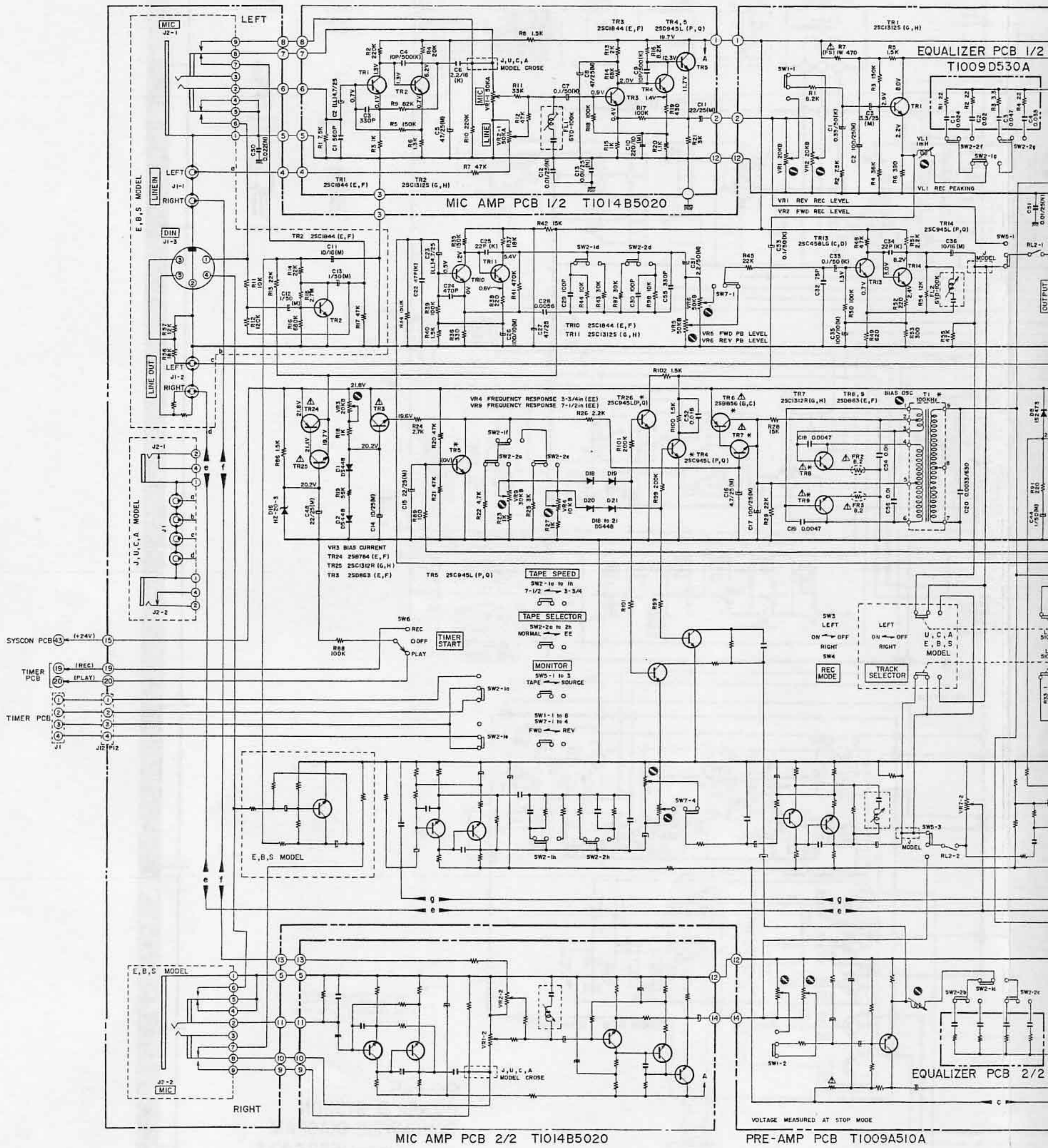
GX-646  
 POWER & SYSCON  
 SCHEMATIC DIAGRAM  
 NO2-1,1622442A

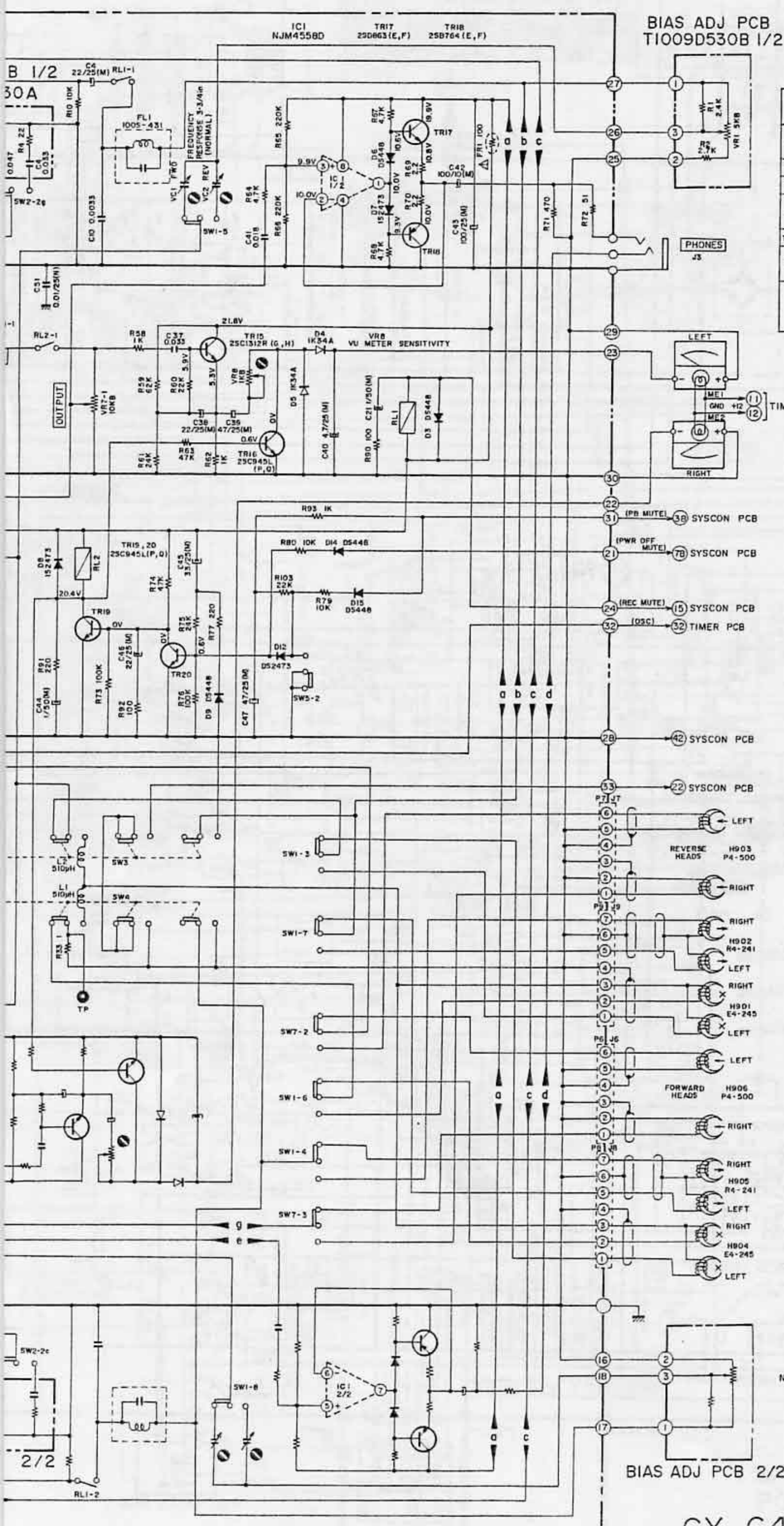
M54410P



MB400M







REC MODE

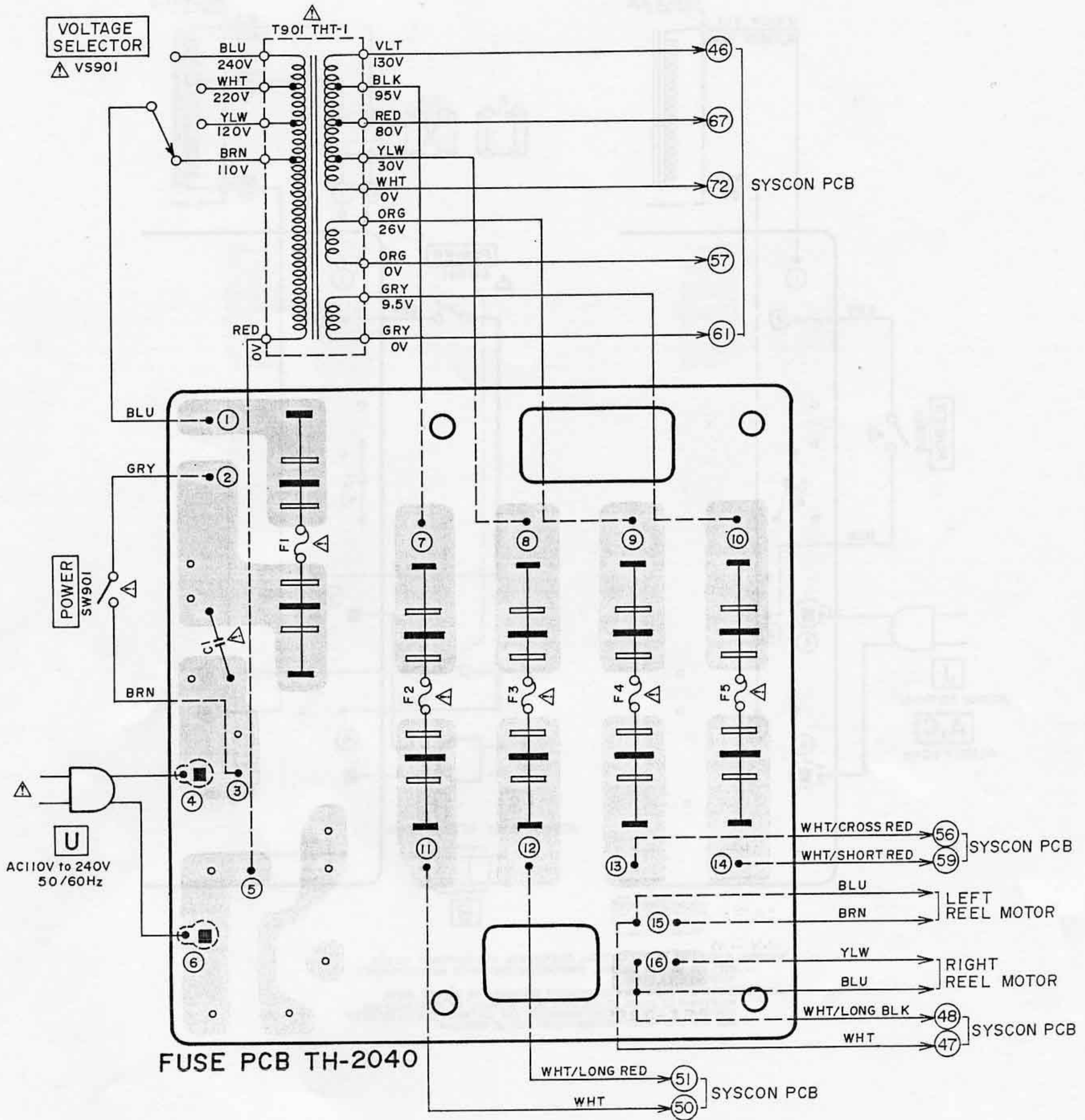
*	3-3/4in		7-1/2in	
	NORMAL	EE	NORMAL	EE
TR4	B	0.2V	0.6V	0.2V
	C	0V	0V	0V
TR5	C	10.3V	12.7V	12.5V
	C	9.7V	12.2V	11.9V
TR6	B	10.3V	12.7V	12.5V
	C	21.2V	21.2V	21.2V
TR7	B	10.3V	12.7V	12.5V
	C	21.2V	21.2V	21.2V
TR8, 9	E	0.3V	0.3V	0.3V
	B	0.2V	0.2V	0.3V
TR26	C	0V	0V	0V
	C	0V	0V	0V
L3	①⑥③	0.6V	0.6V	0.6V
	④⑦⑥②	9.7V	12.1V	11.9V
	⑧	65.0V AC	83.4V AC	82.1V AC
			112.7V AC	



NOTE  
 UNLESS OTHERWISE SPECIFIED  
 ALL RESISTORS IN OHMS (1/4W, 1/2W)  
 ALL CAPACITORS IN μF (50 WV, 1/2W)  
 (FS) = FAIL SAFE RESISTORS  
 (LL) = LOW LEAKAGE CAPACITORS

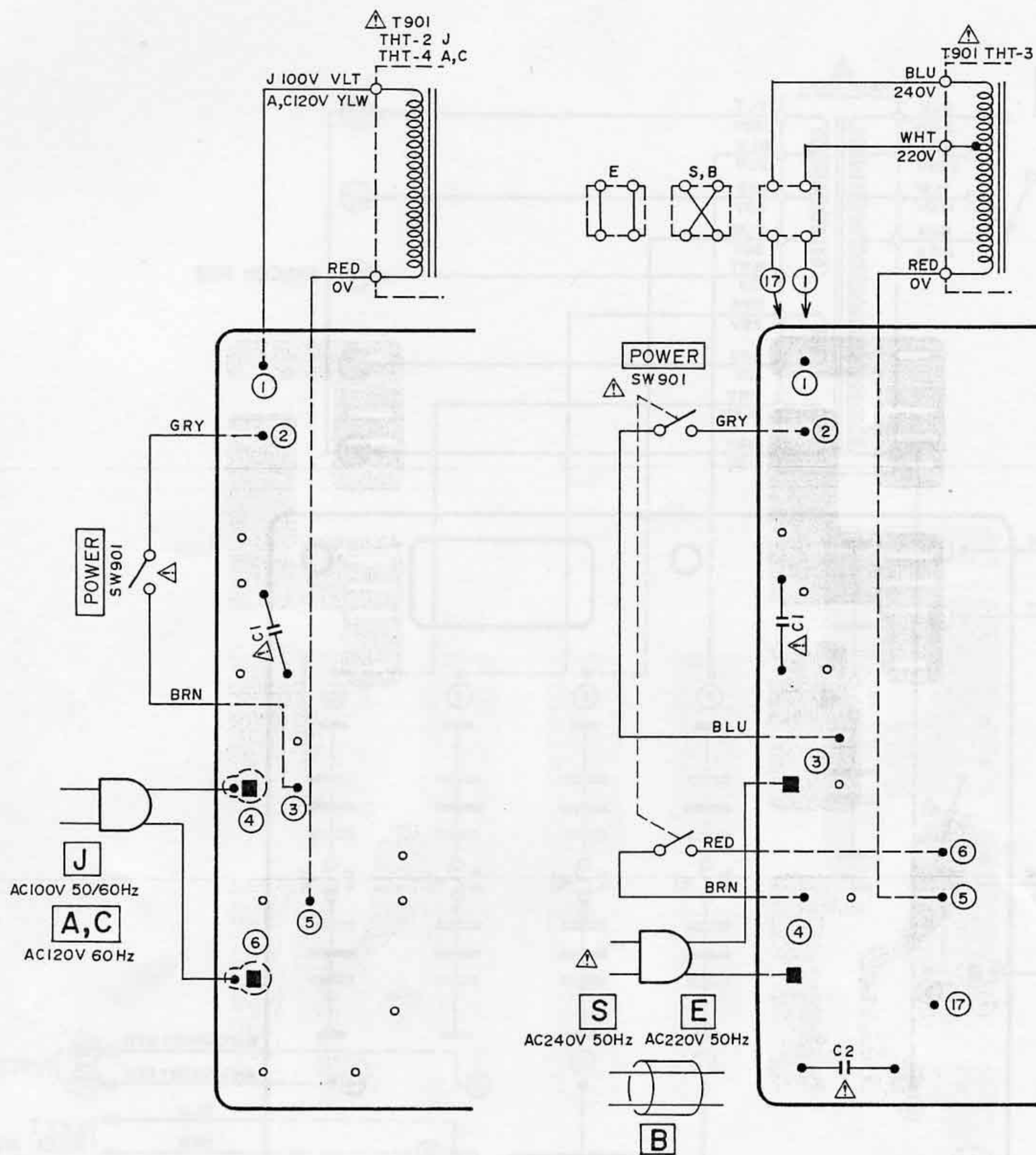
GX-646 AMP  
 SCHEMATIC DIAGRAM

7) Fuse P.C Board TH-2040 (2ED)



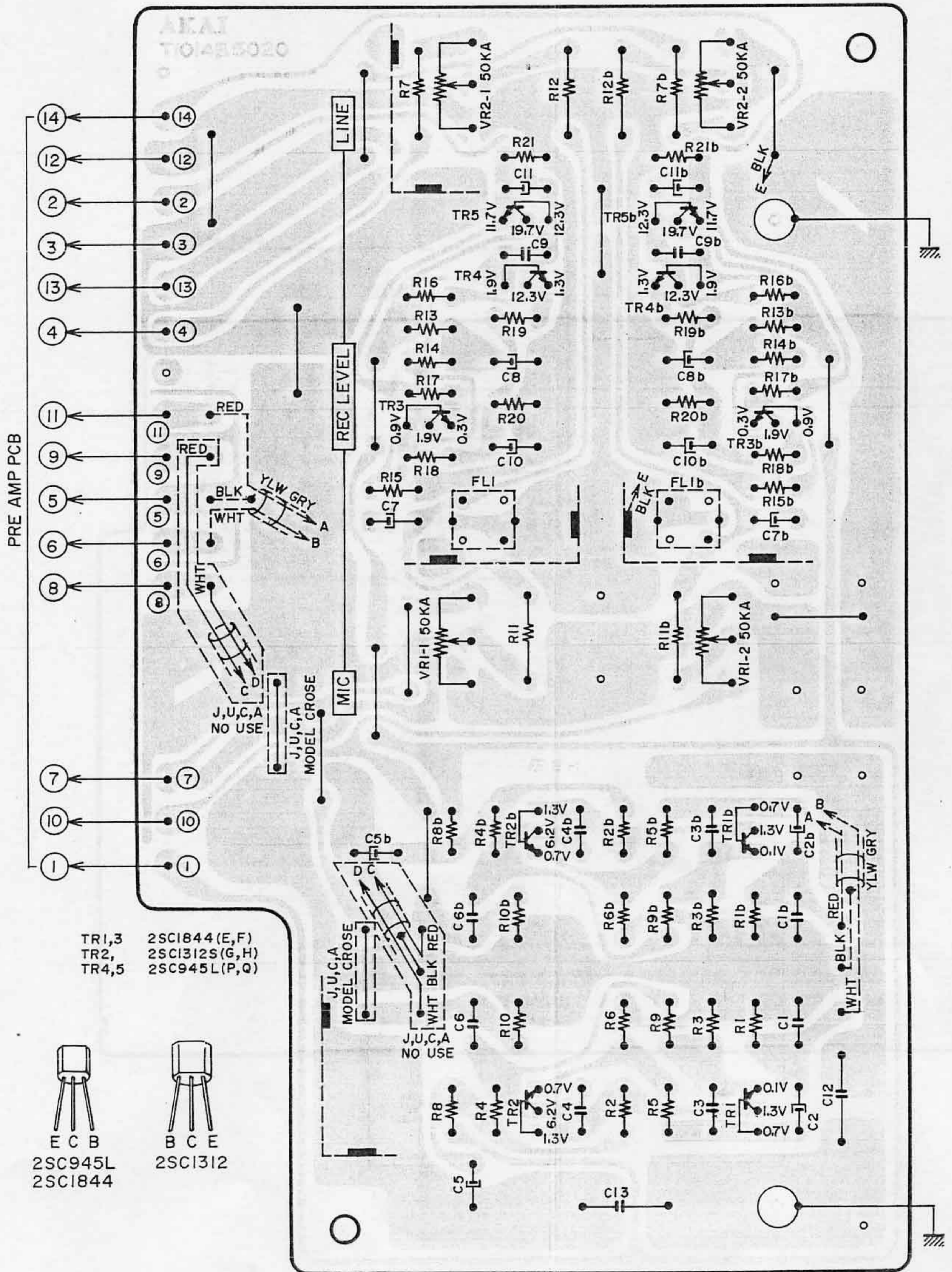
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SÛRETÉ DE L'APPAREIL, NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÛRETÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

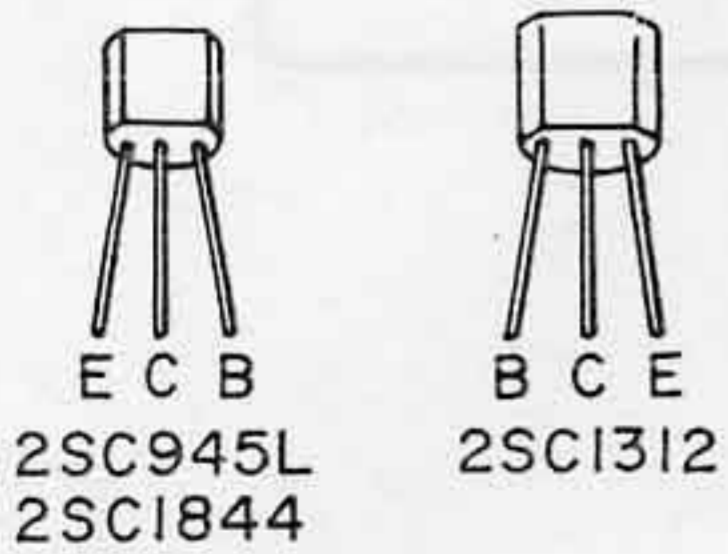


WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY,  
 REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S  
 RECOMMENDED PARTS  
 AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR  
 MAINTENIR LE DEGRÉ DE SÛRETÉ DE L'APPAREIL NE REMPLACER LES  
 COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÛRETÉ  
 QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

3) Mic Amp P.C Board T1014B5020

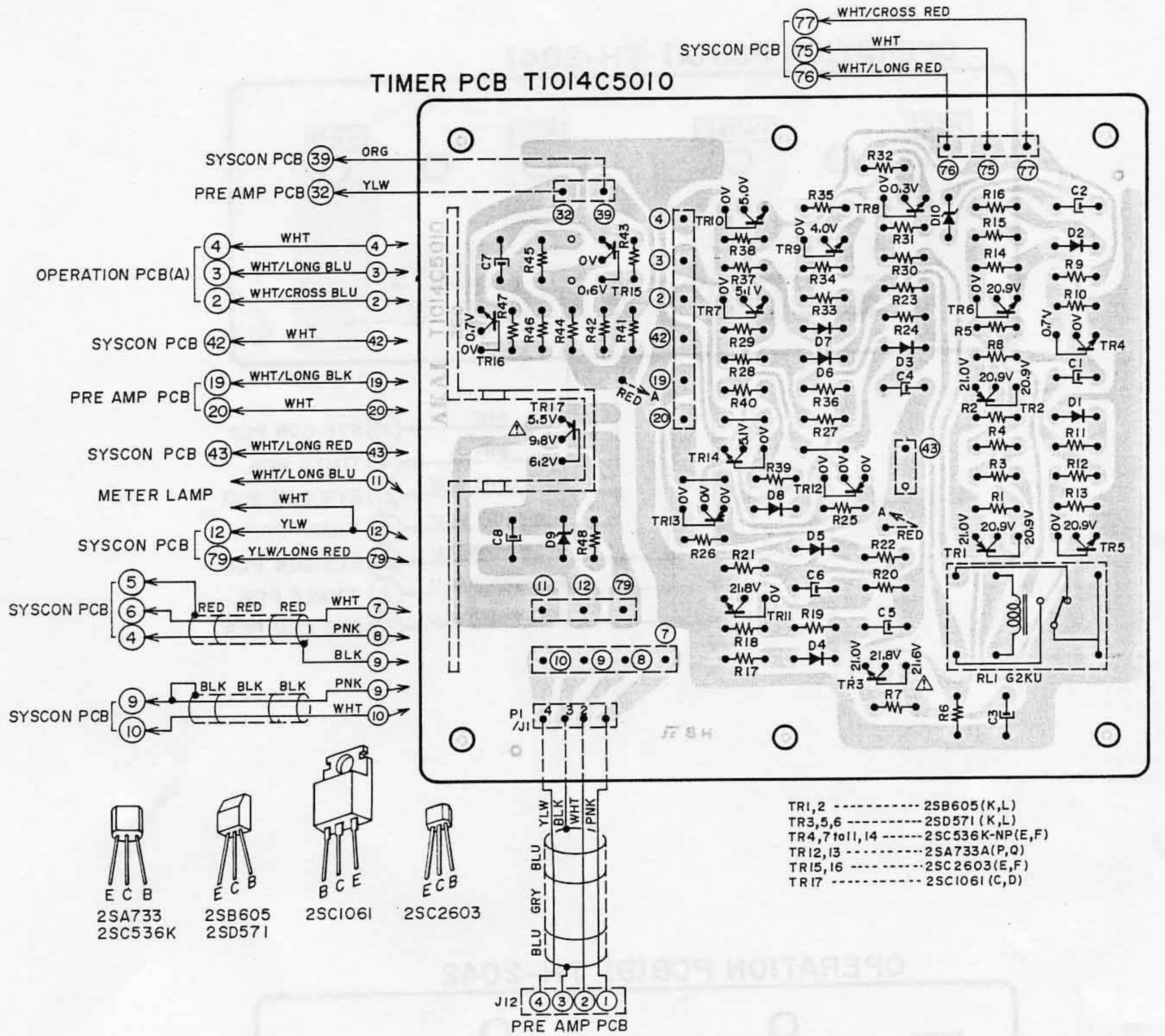


TR1,3 2SC1844 (E,F)  
 TR2, 2SC1312S (G,H)  
 TR4,5 2SC945L (P,Q)

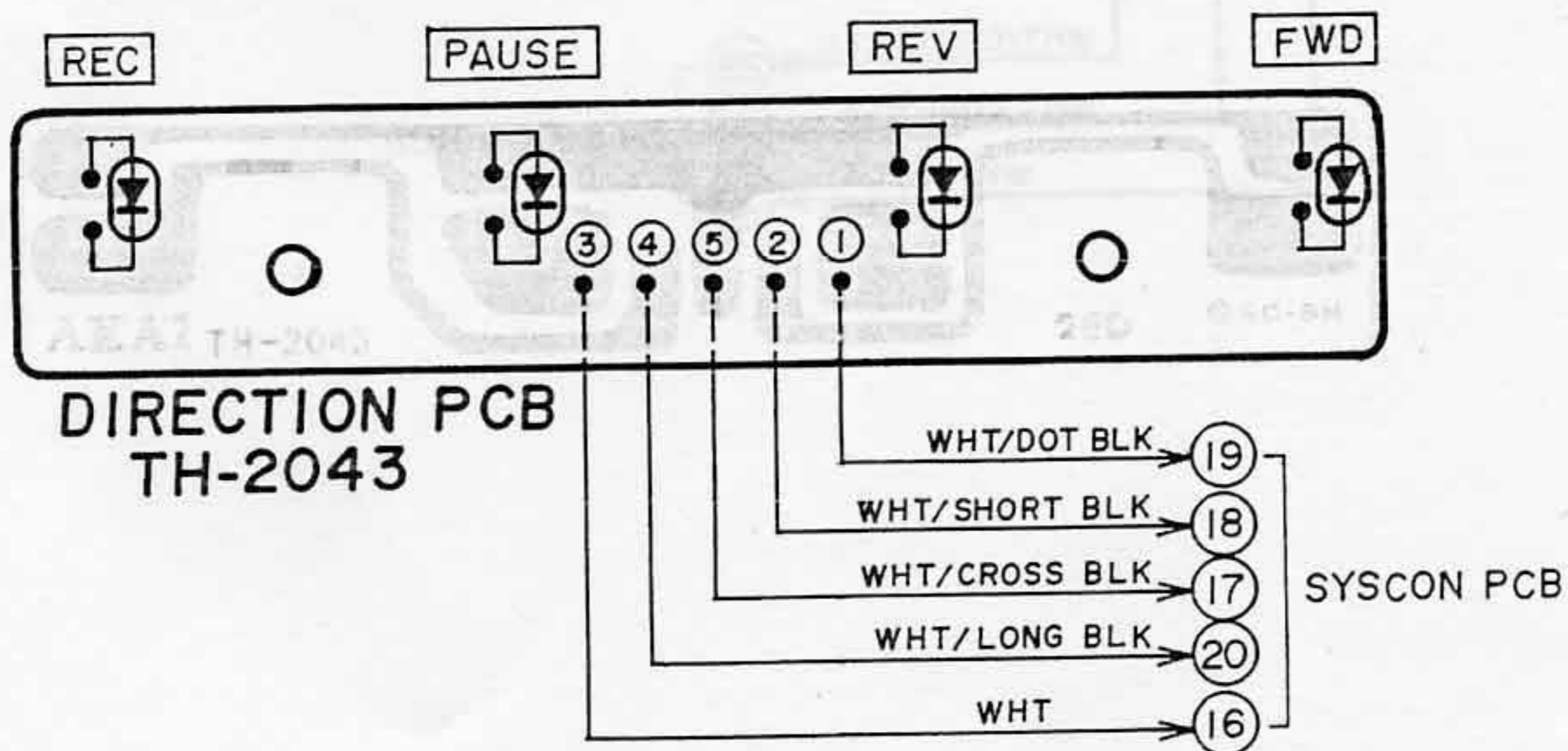


MIC AMP PCB T1014B5020

4) Timer P.C Board T1014C5010

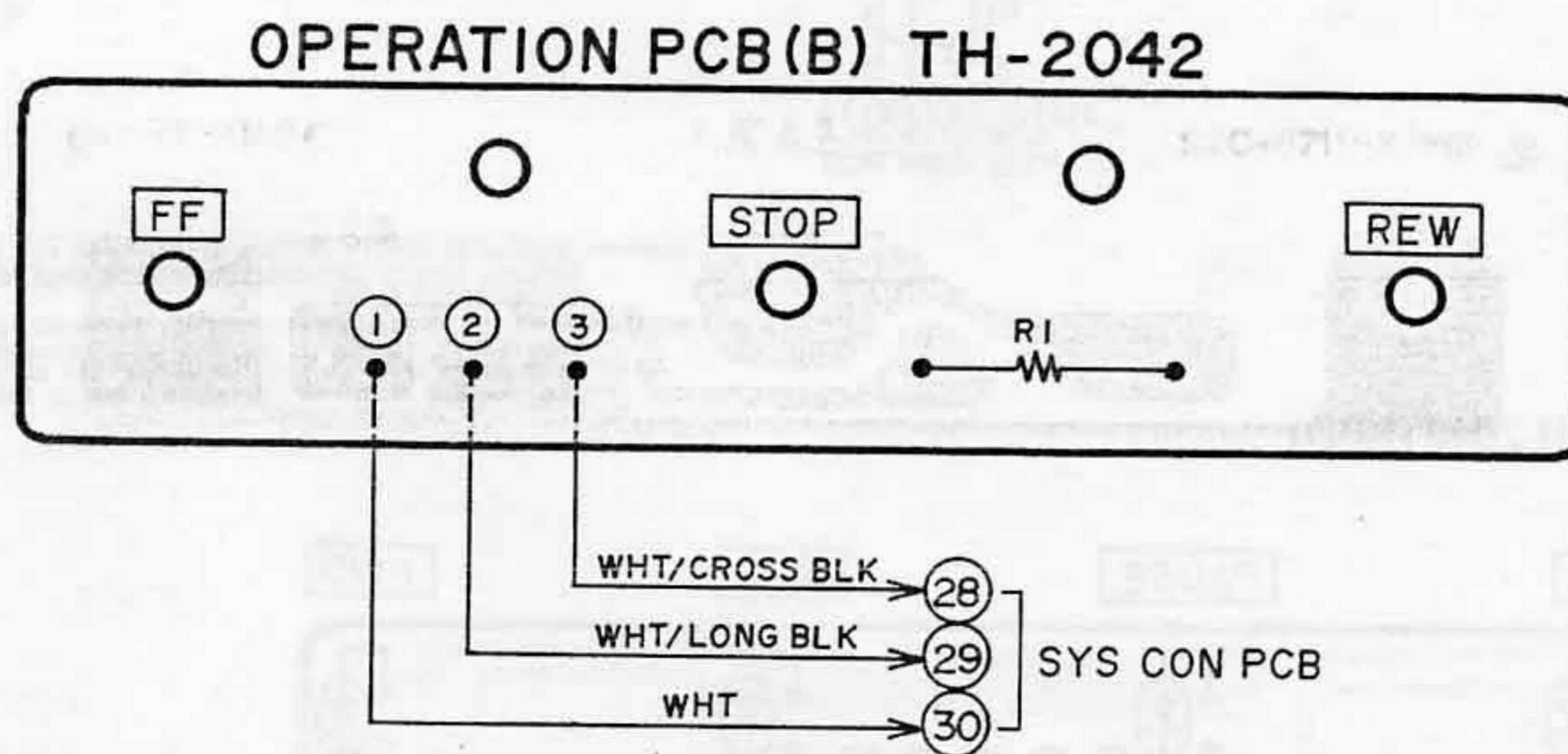
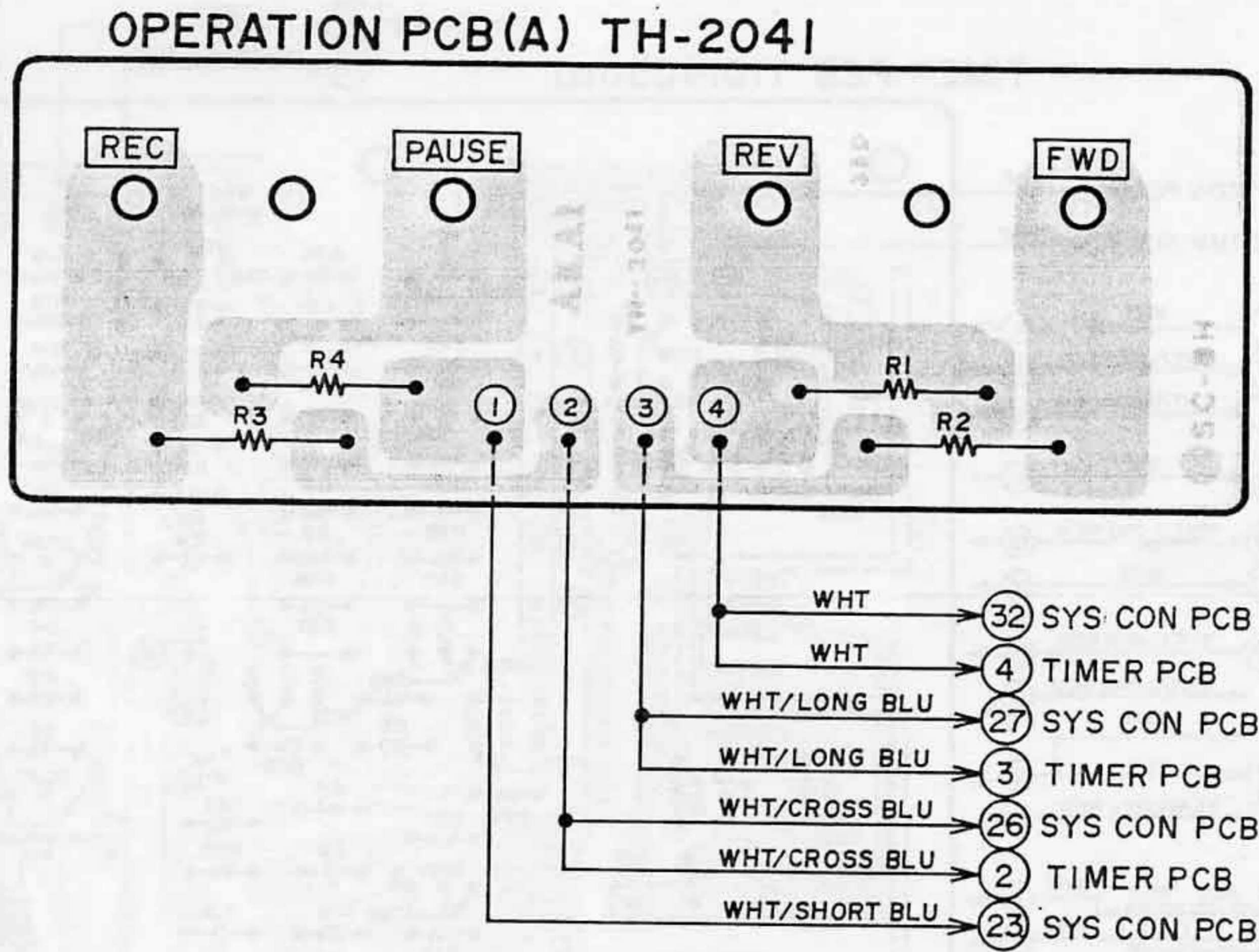


5) Direction P.C Board TH-2043 (2ED)



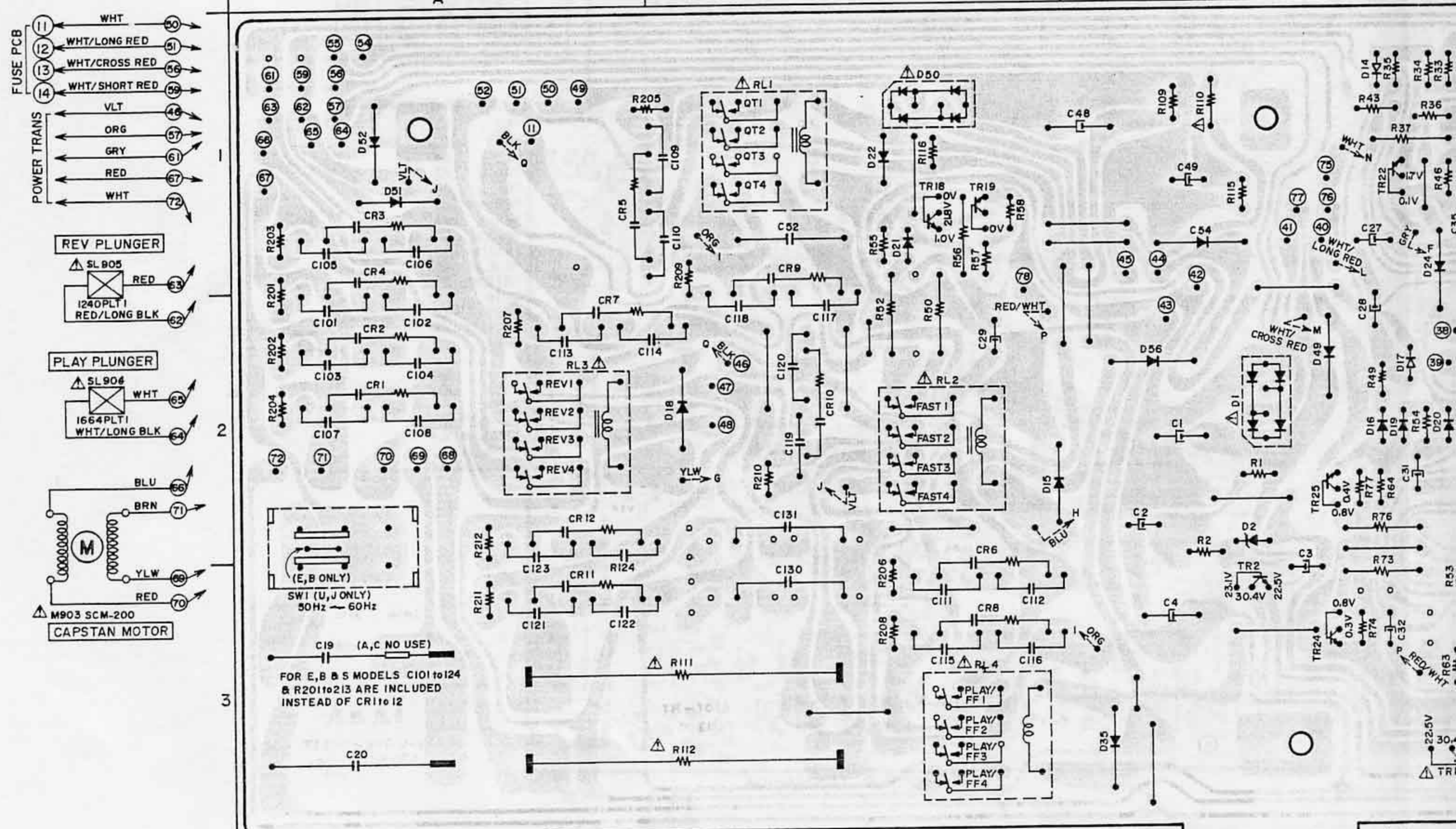
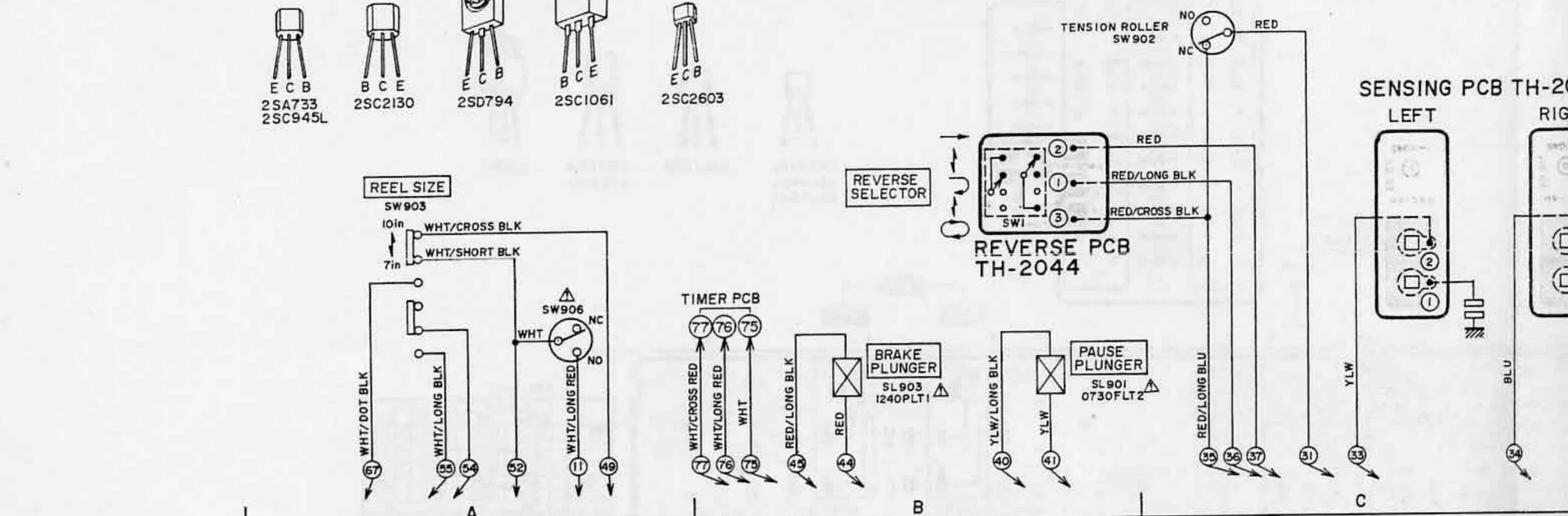
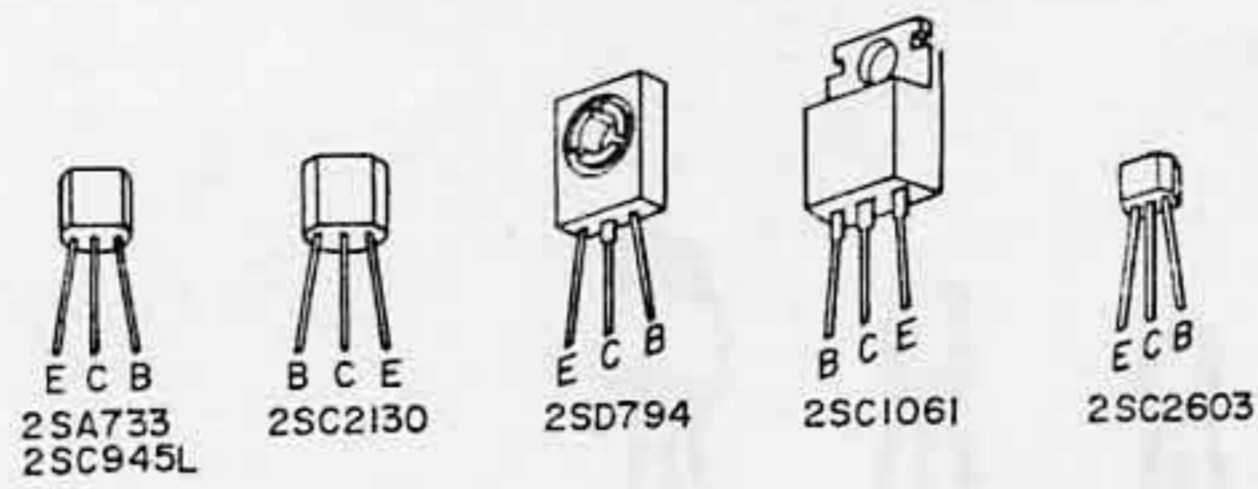


6) Operation P.C Board (A) TH-2041 (3ED) and Operation P.C Board (B) TH-2042 (3ED)

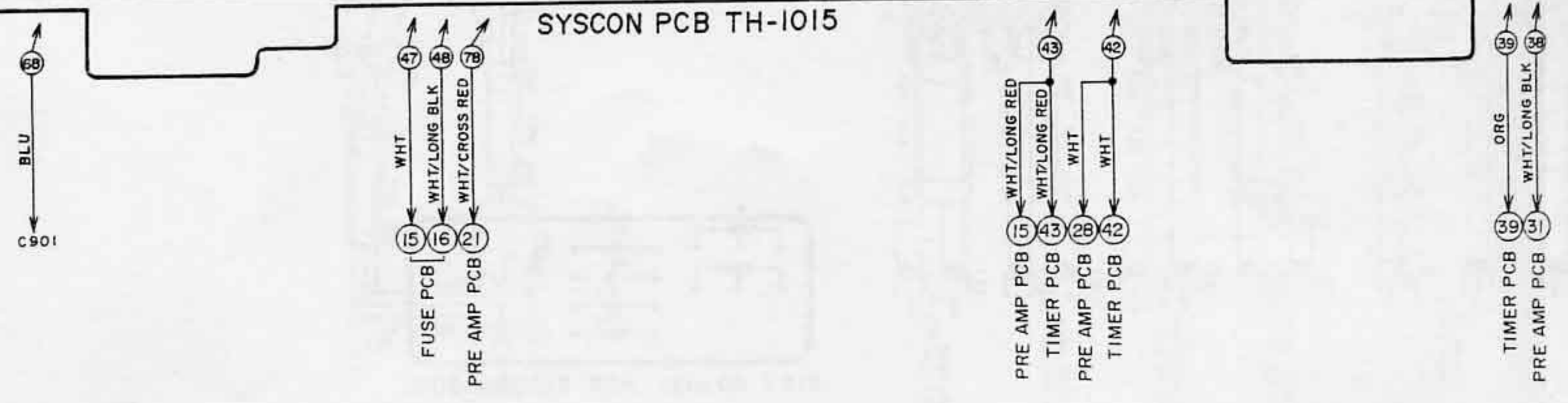


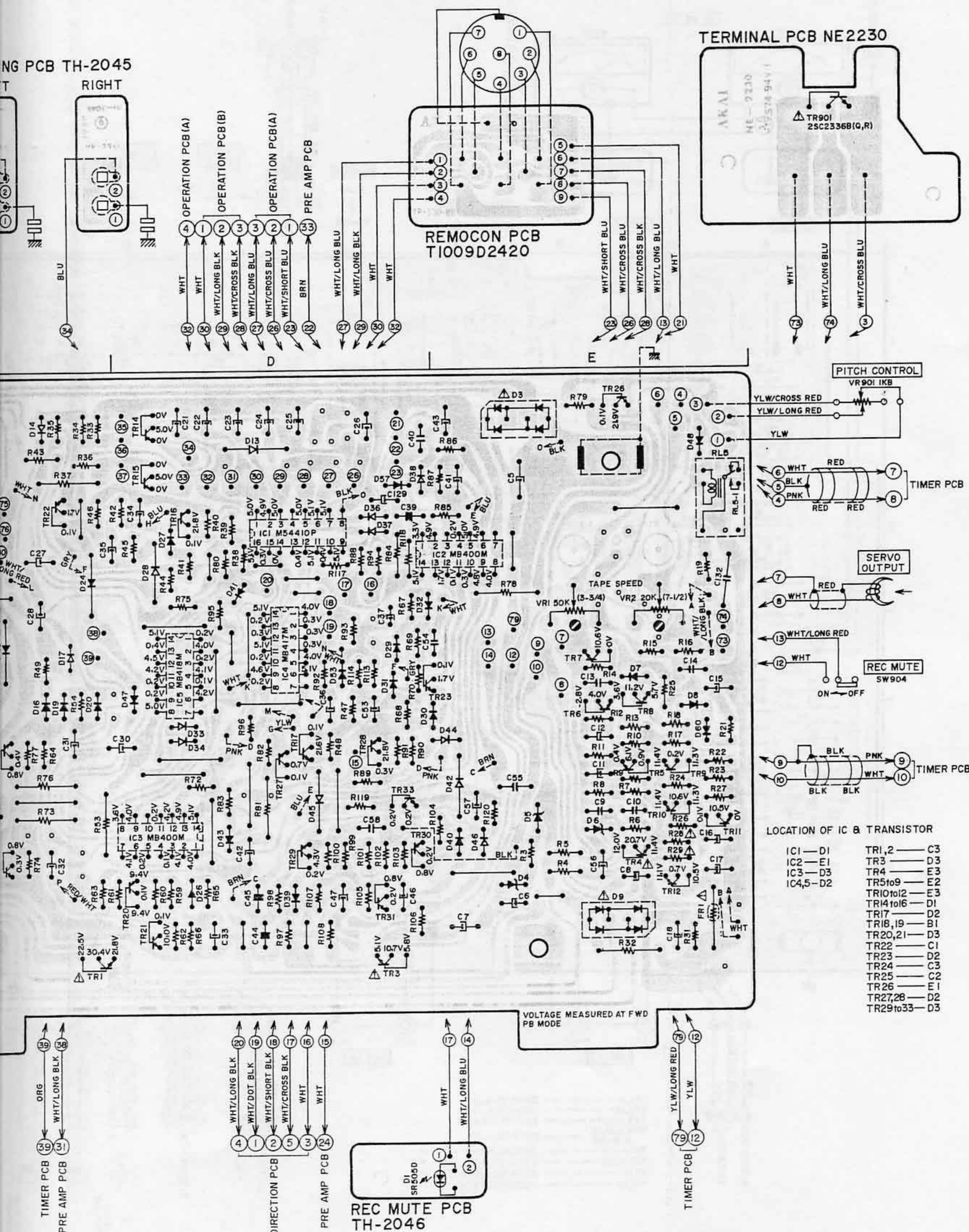
## 2. COMPOSITION OF VARIOUS P.C BOARDS

1) Syscon P.C Board TH-1015 (10ED), Reverse P.C Board TH-2044, Sensing P.C Board TH-2045, Rec Mute P.C Board TH-2046



- TR1 ..... 2SC1061 (B,C)
- TR2,4 to 6,11,14,15 ..... 2SC2603 (E,F) 23,26 to 33
- TR3 ..... 2SD794 (P,Q)
- TR9,10,12 ..... 2SA733A (P,Q)
- TR16 to 19,22,24,25 ..... 2SC2130 (G,H)
- TR20 ..... 2SA733A (Q)
- TR21 ..... 2SC945L (Q)





LOCATION OF IC & TRANSISTOR

IC1 — D1	TR1,2 — C3
IC2 — E1	TR3 — D3
IC3 — D3	TR4 — E3
IC4,5 — D2	TR5to9 — E2
	TR10to12 — E3
	TR14to16 — D1
	TR17 — D2
	TR18,19 — B1
	TR20,21 — D3
	TR22 — C1
	TR23 — D2
	TR24 — C3
	TR25 — C2
	TR26 — E1
	TR27,28 — D2
	TR29to33 — D3

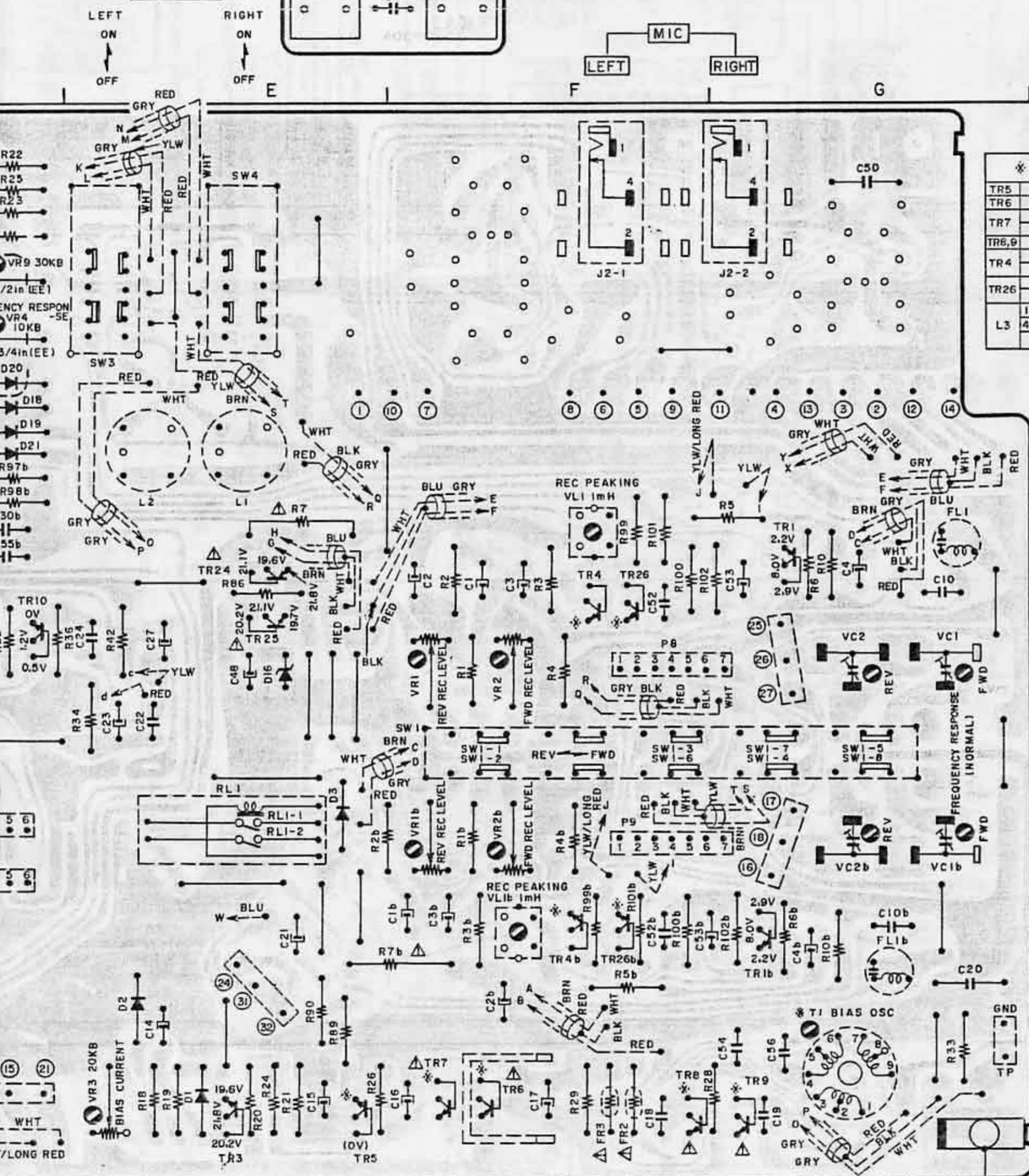
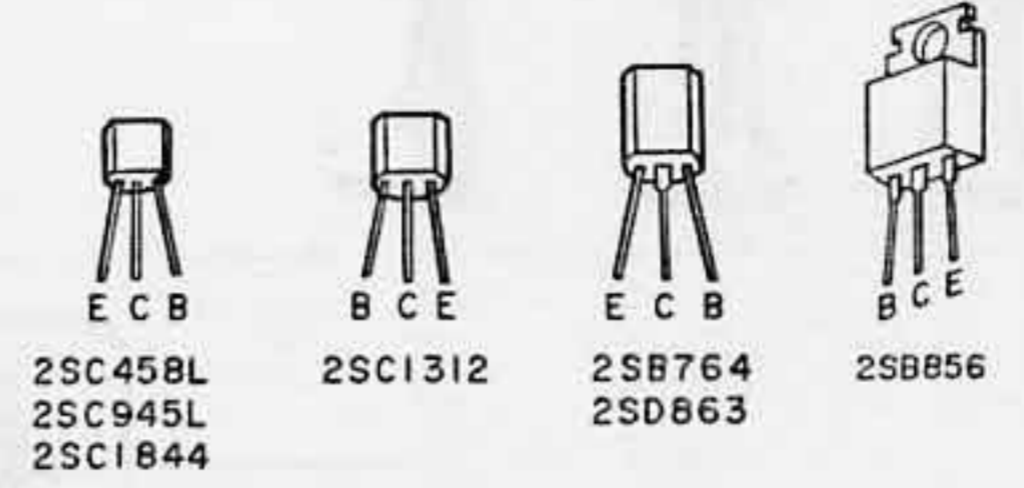
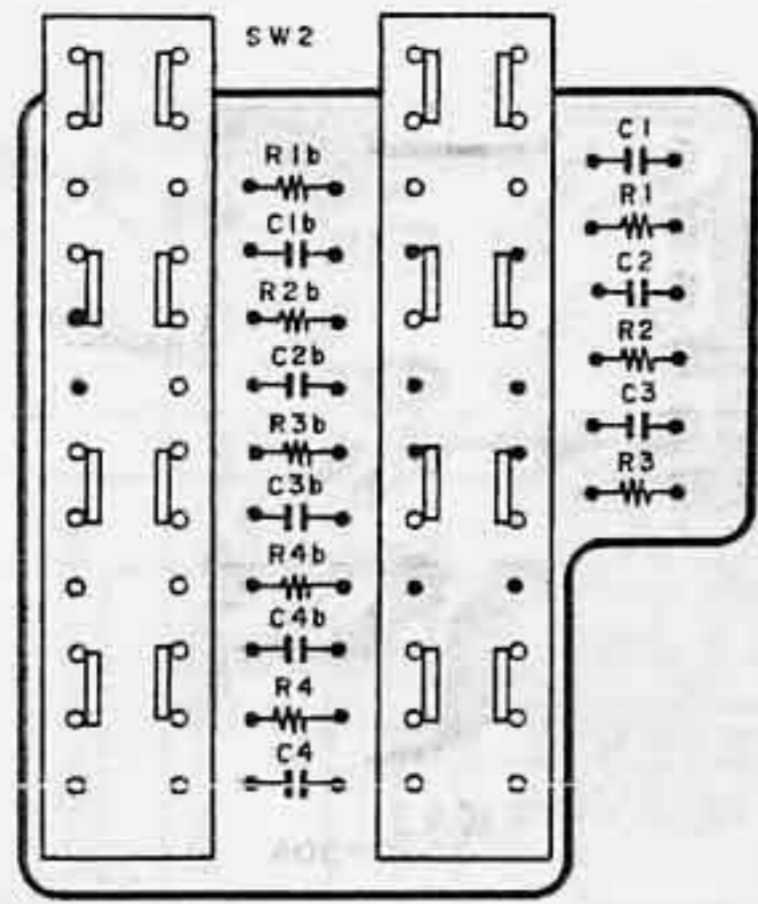
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT



# Adjustment P.C Board T1009D530B

## EQUALIZER PCB T1009D530A

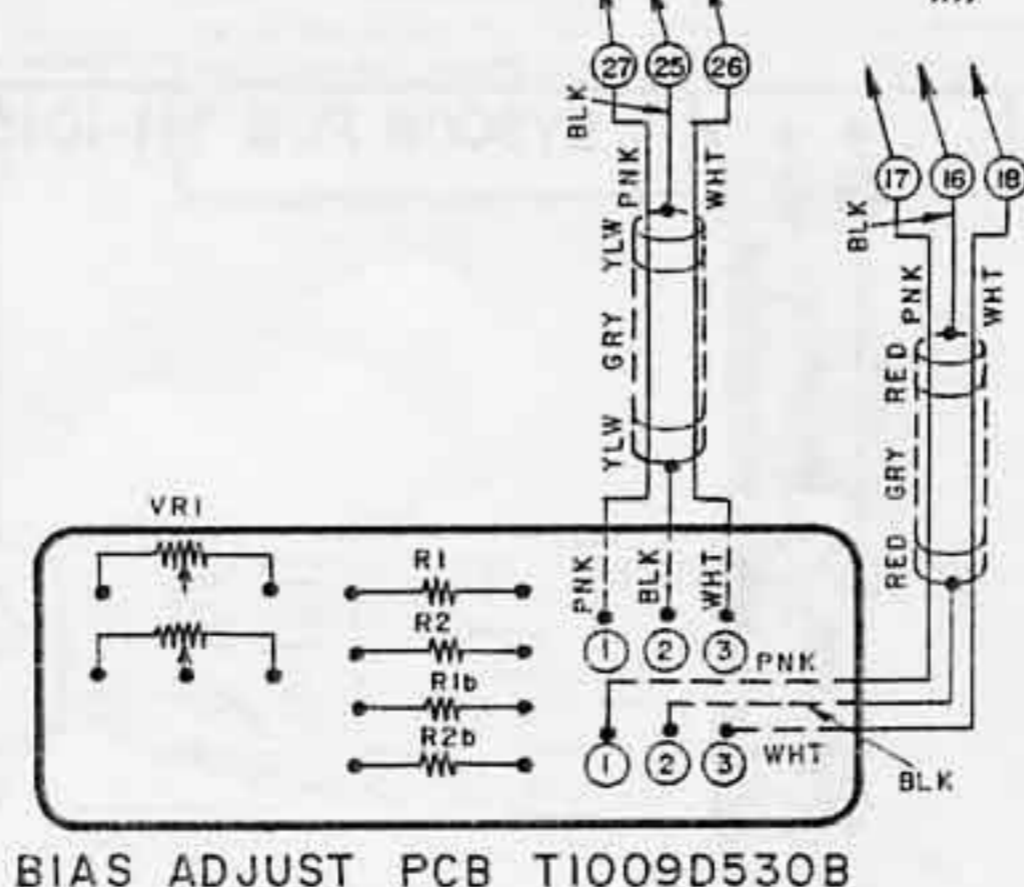
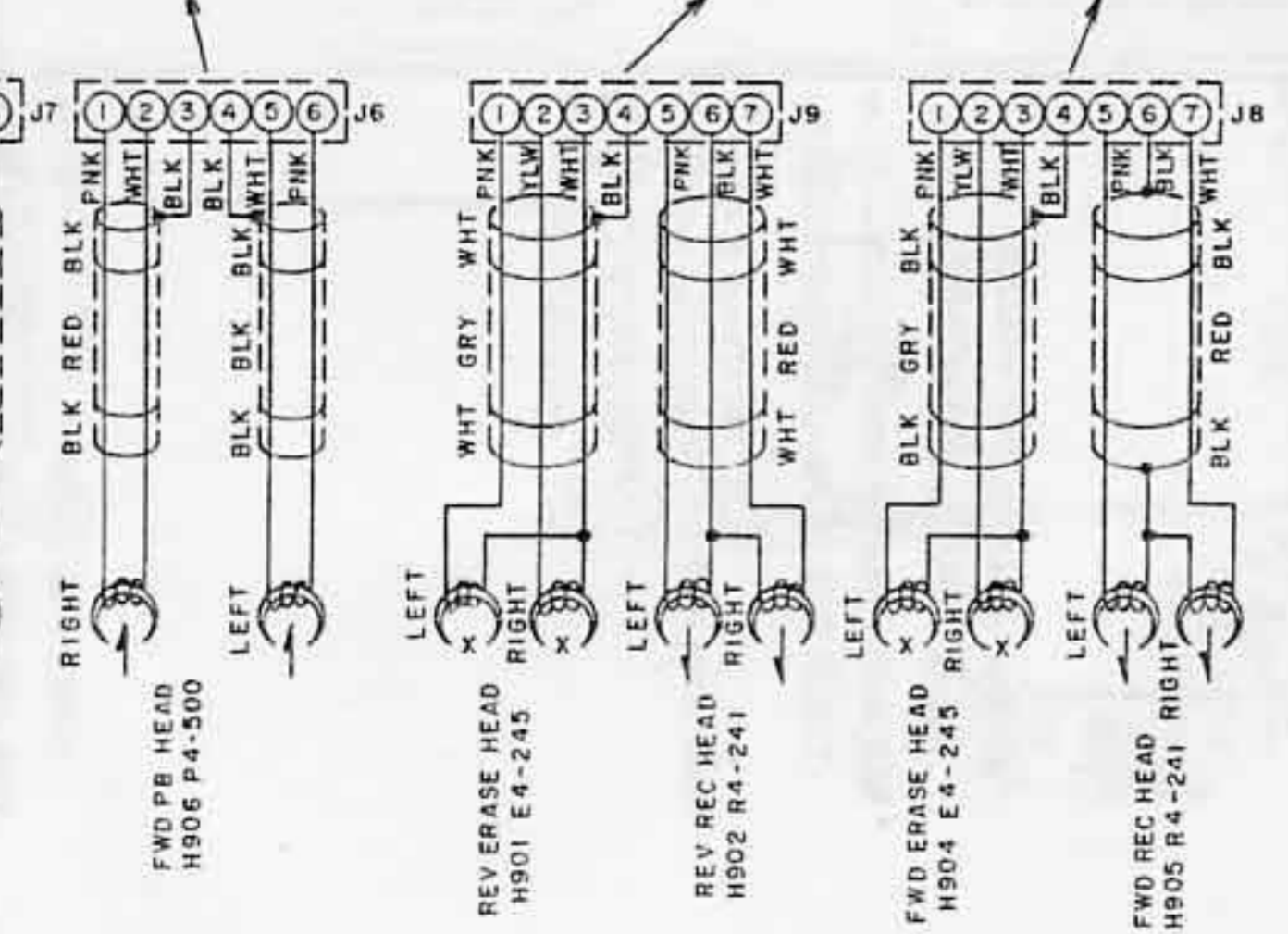


\* REC MODE

*		3-3/4 in		7-1/2 in	
		NORMAL	EE	NORMAL	EE
TR5	C	10.3V	12.7V	12.5V	16.7V
TR6	C	9.7V	12.2V	11.9V	16.2V
TR7	B	10.3V	12.7V	12.5V	16.7V
TR6,9	C	21.2V	21.2V	21.2V	21.2V
TR4	E	0.3V	0.3V	0.3V	0.4V
	B	0.2V	0.6V	0.2V	0.2V
TR26	C	0V	0V	0V	0V
	B	0.2V	0.2V	0.3V	0.6V
L3	11to3	0.6V	0.6V	0.6V	0.6V
	4to6	9.7V	12.1V	11.9V	16.1V
S		65.0VAC	83.4VAC	82.1VAC	112.7VAC

- LOCATION OF TRANSISTOR
- TR1 G2
  - TR2 (E, B, S ONLY)
  - TR3 E4
  - TR4 F2
  - TR5 E4
  - TR6 to 8 F4
  - TR9 G4
  - TR10, 11 D2
  - TR13, 14 C2
  - TR15, 16 A2
  - TR17, 18 A3
  - TR19 C2
  - TR20 B2
  - TR24, 25 E2
  - TR26 F2
  - TR1b G4
  - TR2b (E, B, S ONLY)
  - TR4b F4
  - TR10b, 11b D4
  - TR13b, 14b C4
  - TR15b, 16b C4
  - TR17b, 18b A4

## PRE AMP PCB T1009A510A



WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SÛRETÉ DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÛRETÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT