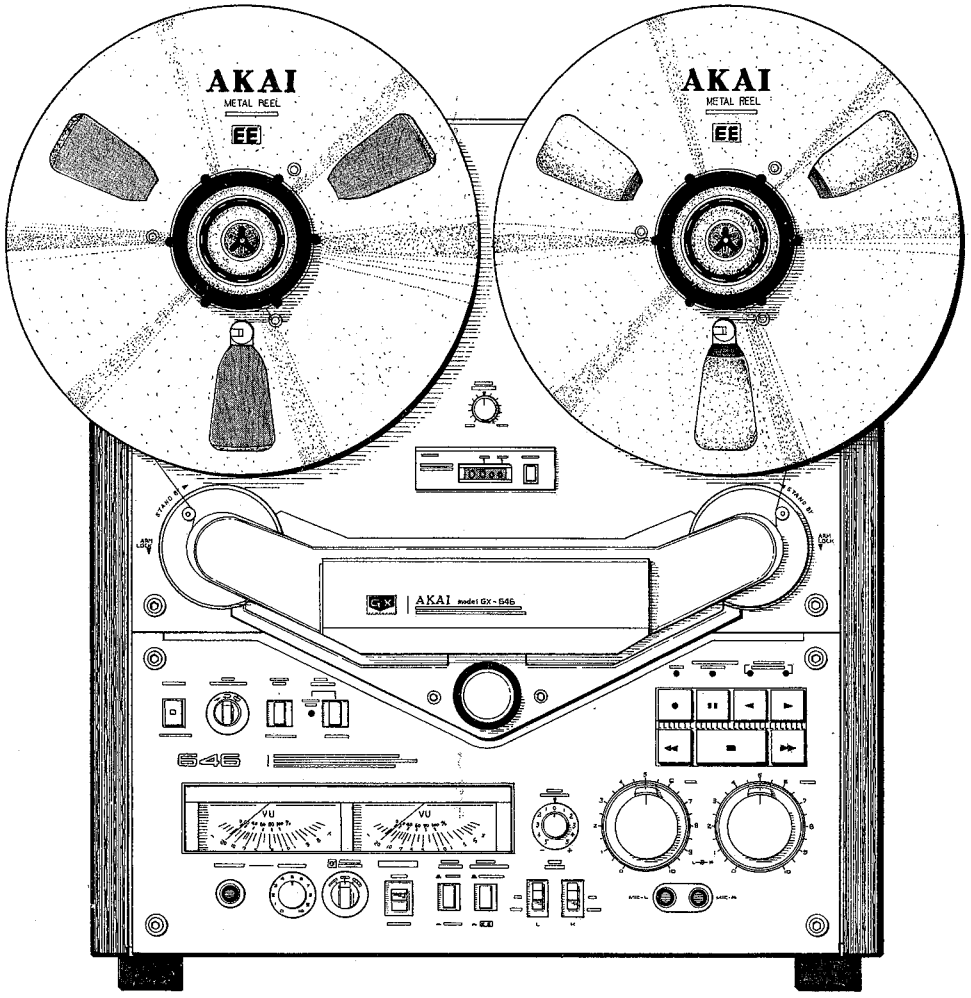
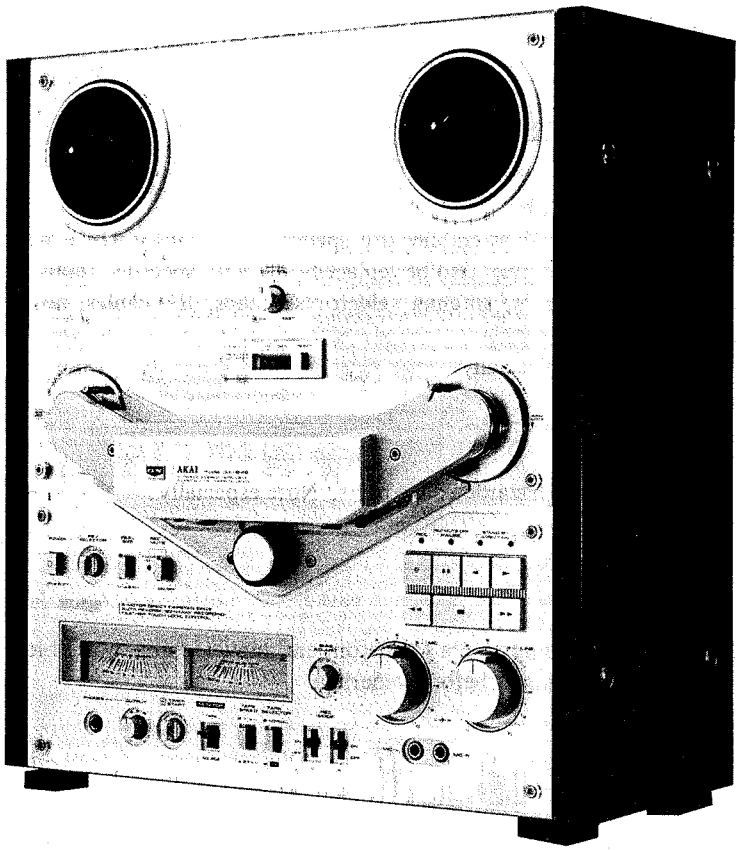
AKAI SERVICE MANUAL

GX-646



STEREO TAPE DECK

MODEL GX-646



STEREO TAPE DECK

MODEL GX-646

THIS MANUAL IS ALSO APPLICABLE TO BLACK PANEL MODELS

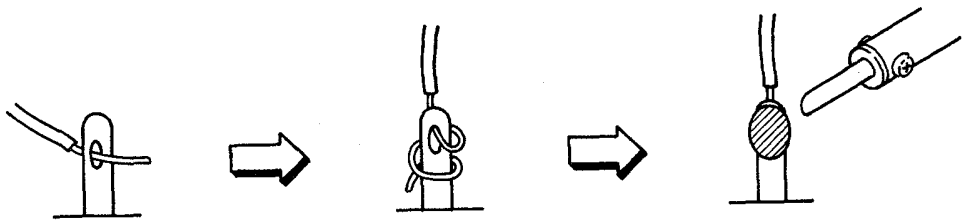
SECTION 1	SERVICE MANUAL	3
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SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for [C] or [A], specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks. line-in-out jacks etc.)

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SECTION 1

SERVICE MANUAL

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For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I . SPECIFICATIONS

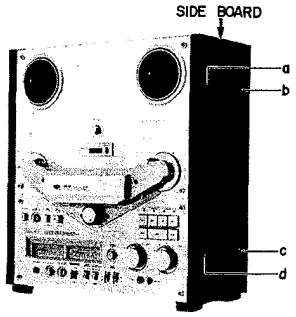
TRACK SYSTEM	4 Track 2 Channel Stereo System
REEL CAPACITY	Up to 10" reel
HEADS	GX head for Recording x 2 GX head for Playback x 2 Erase head x 2
MOTORS	AC Servo motor for capstan drive x 1 AC Eddy current motor for reel drive x 2
TAPE SPEED	19 cm/s ± 0.8% (7-1/2 ips.) 9.5 cm/s ± 1.0% (3-3/4 ips.)
WOW & FLUTTER	Less than 0.03% WRMS, 0.07% DIN 45500 at 19 cm/s Less than 0.04% WRMS, 0.09% DIN 45500 at 9.5 cm/s
TAPE WINDING TIME	75 sec. using 360 m (1,200 ft.) Tape
FREQUENCY RESPONSE	25 to 33,000 Hz ± 3 dB at 19 cm/s 25 to 26,000 Hz ± 3 dB (0 VU) 25 to 25,000 Hz ± 3 dB at 9.5 cm/s 25 to 15,000 Hz ± 3 dB (0 VU)
SIGNAL TO NOISE RATIO	Better than 65 dB at 19 cm/s DIN 45500
HARMONIC DISTORTION	Less than 0.4% at 19 cm/s
INPUT	MIC: 0.25 mV (input impedance 5.0 kohms) Required microphone impedance: 600 ohms Line: 70 mV (input impedance 100 kohms)
OUTPUT	Line: 0.775 V at 0 VU Required load impedance: more than 20 kohms Phone: 100 mV/8 ohms at 0 VU
DIN	Input: 2 mV (input impedance 10 kohms) Output: 0.3 V Required load impedance: more than 20 kohms
POWER REQUIREMENTS	100 V, 50/60 Hz for Japan 120 V, 60 Hz for USA & Canada 220 V, 50 Hz for Europe except UK 240 V, 50 Hz for UK & Australia 110 V/120 V/220 V/240 V, 50/60 Hz switchable for the other countries.
POWER CONSUMPTION	J 75 W C, A 120 W U 70 W
DIMENTIONS	440 (W) x 483 (H) x 256 (D) mm (17.3 x 19.0 x 10.1 inches)
WEIGHT	21 kg (46.4 lbs)

* For improvement purposes, specifications and design are subject to change without notice.

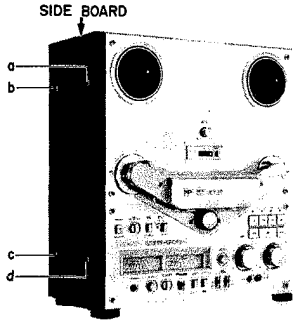
II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

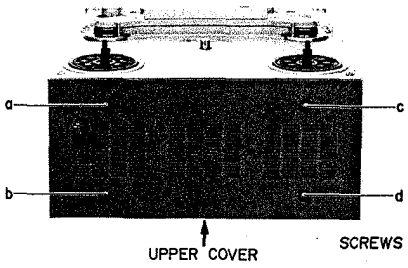
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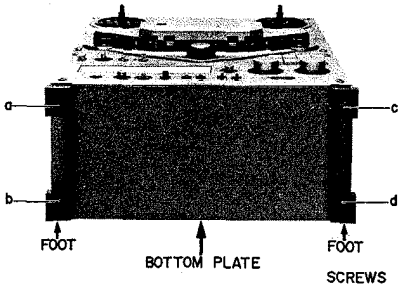
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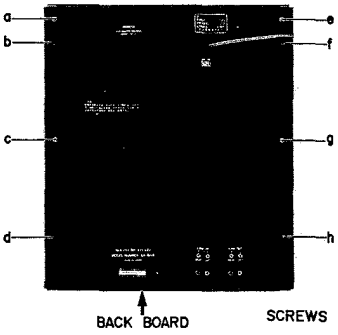
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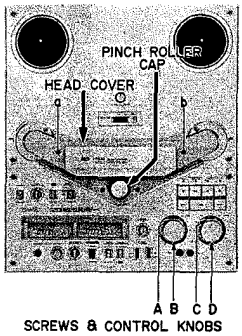
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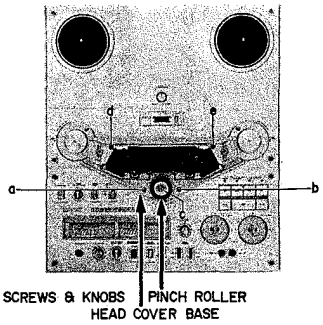
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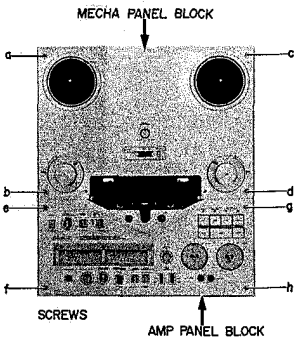
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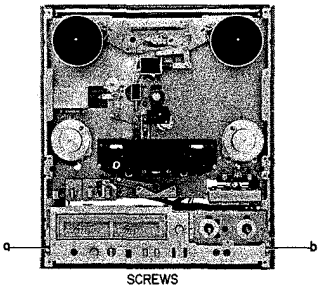
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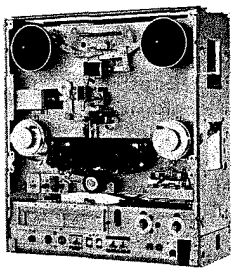
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III. CONTROLS

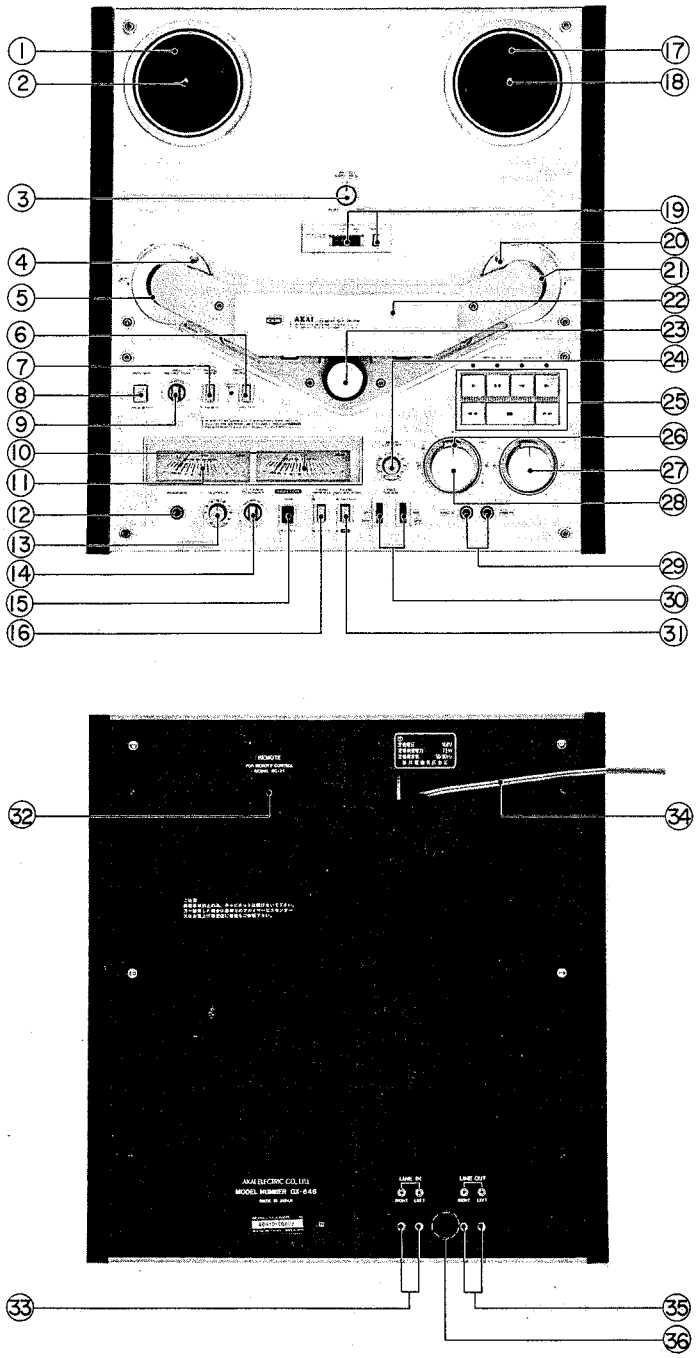


Fig. 1 Controls

1. SUPPLY REEL TABLE
2. BUILT-IN REEL RETAINER (Left)
3. PITCH CONTROL
4. LEFT TENSION ARM (SENSING PIN)
5. GUIDE ROLLER (Left)
6. RECORDING MUTE SWITCH
7. REEL SIZE SELECTOR
8. POWER SWITCH
9. REVERSE SELECTOR
10. VU METER (Right)
11. VU METER (Left)
12. HEADPHONE JACK
13. OUTPUT LEVEL CONTROL
14. TIMER START
15. MONITOR SWITCH
16. TAPE SPEED SELECTOR
17. TAKE-UP REEL TABLE
18. BUILT-IN REEL RETAINER (Right)
19. REAL TIME COUNTER and RESET BUTTON
20. RIGHT TENSION ARM (SENSING PIN)
21. GUIDE ROLLER (Right)
22. HEAD COVER
23. PINCH ROLLER
24. BIAS ADJUSTMENT VOLUME
25. OPERATING BUTTONS
26. MEMORY MARKER
27. LINE INPUT CONTROLS
28. MICROPHONE INPUT CONTROLS
29. MICROPHONE JACKS (Left/Light)
30. RECORDING MODE SWITCH
31. TAPE SELECTOR
32. REMOTE CONTROL JACK
33. LINE IN JACKS
34. AC CORD
35. LINE OUT JACKS
36. DIN JACK (Some models do not have this facility)

IV. PRINCIPAL PARTS LOCATION

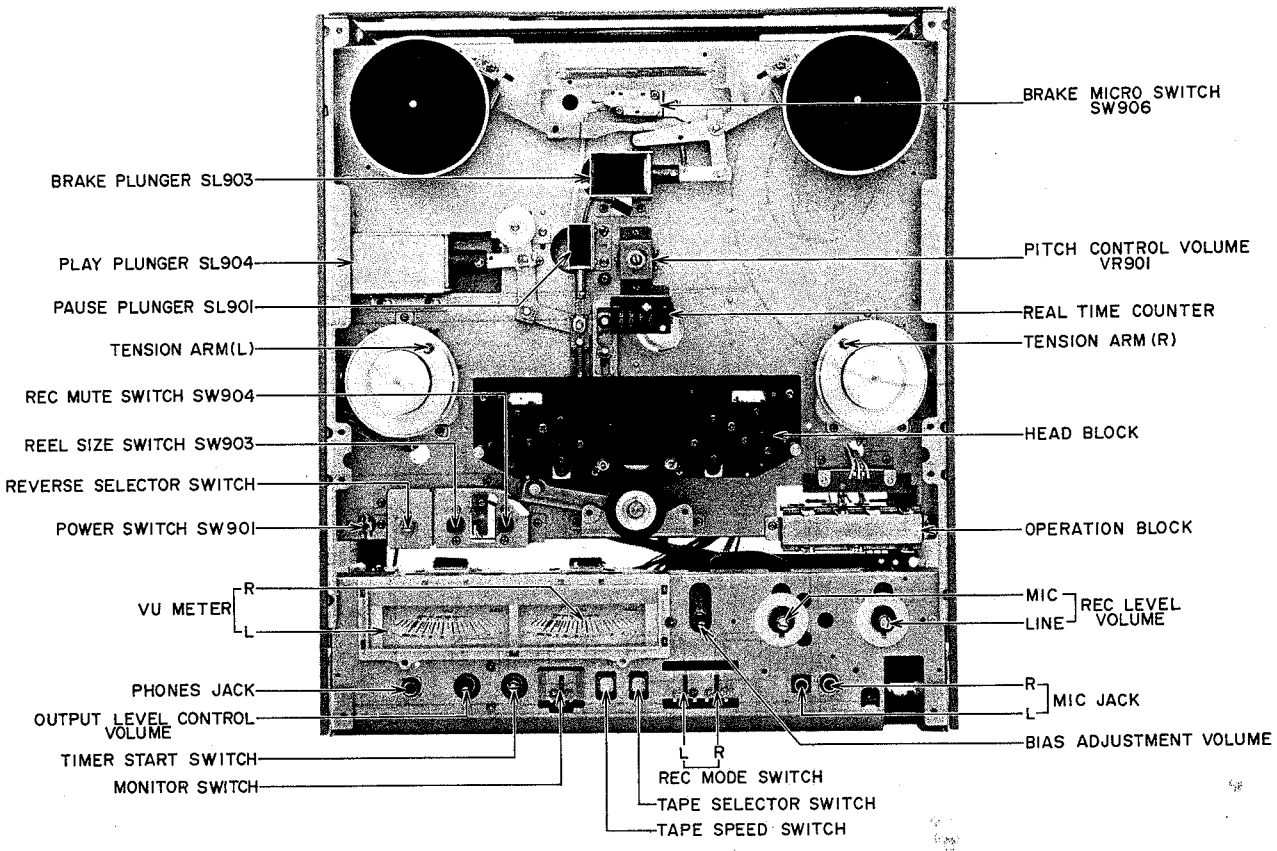


Fig. 2 Front View

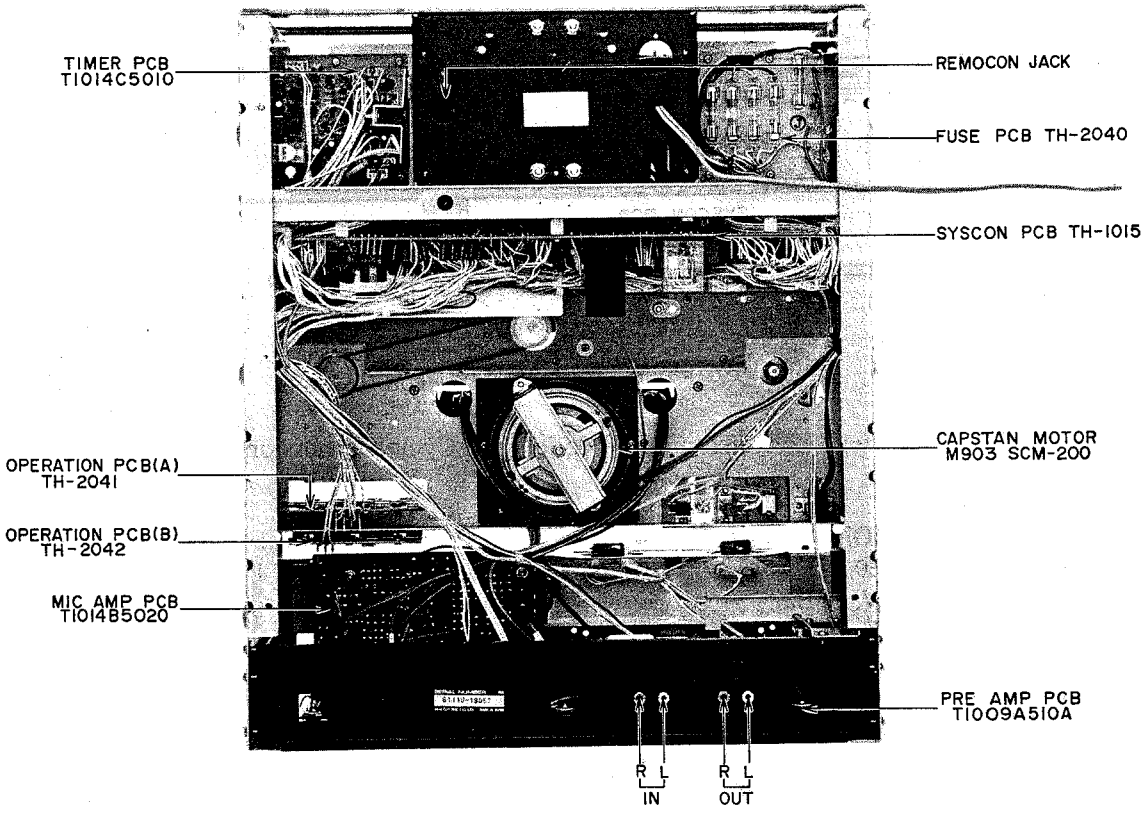


Fig. 3 Rear View

V. VOLTAGE AND CYCLE CONVERSION

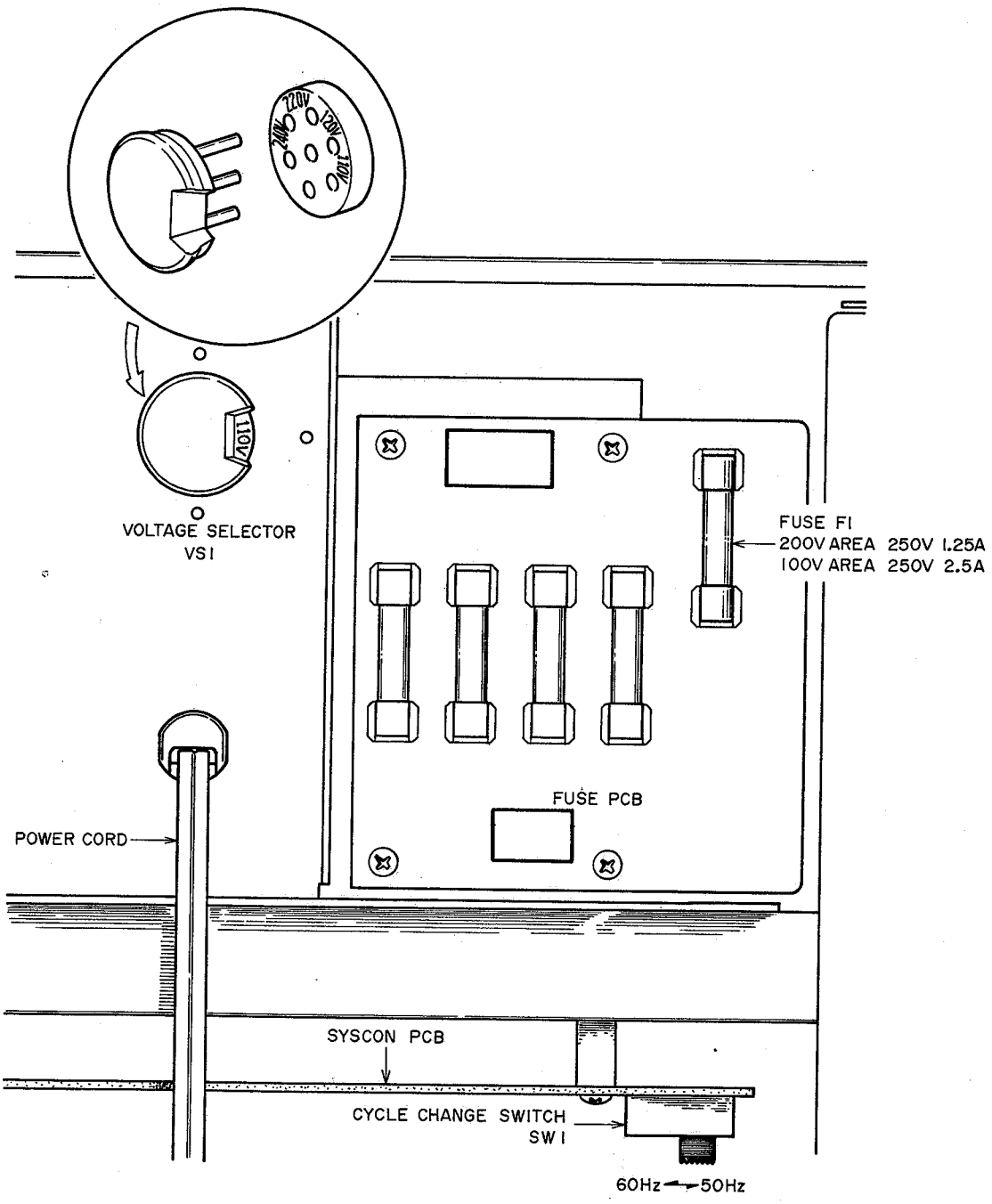


Fig. 4 Voltage Conversion (U/T Model) and Cycle Conversion (U/T, JPN Model)

1. VOLTAGE CONVERSION (Refer to Fig. 4)

1) JPN Model (100V, 50/60 Hz)
   CSA, AAL Model (120V, 60 Hz)
   CEE Model (220V, 50 Hz)
   UK, SAA Model (240V, 50 Hz)
   Voltage can not be switched.
2) U/T Model (110/120/220/240V, 50/60 Hz)
   Remove the back board and find out the voltage selector and Fuse P.C Board on the upper portion of the machine. Change the position of voltage selector plugs so that the voltage to be used coincides with the voltage shown through the opening of voltage selector plug.

   The rating of fuse (F1) differs depending on the voltage to be used. Change the fuse according to the specified rating shown below.

110/120 V Area	250 V 2.5 A
220/240 V Area	250 V 1.25 A

2. CYCLE CONVERSION (Refer to Fig. 4)

Cycle can be converted only in U/T, JPN Model.
Remove the back board and select the position of switch located in the recess at right portion of Syscon P.C Board to correspond to the frequency of power to be used. Move the switch to the right for 50 Hz and to the left for the 60 Hz.

VI. MECHANISM ADJUSTMENT

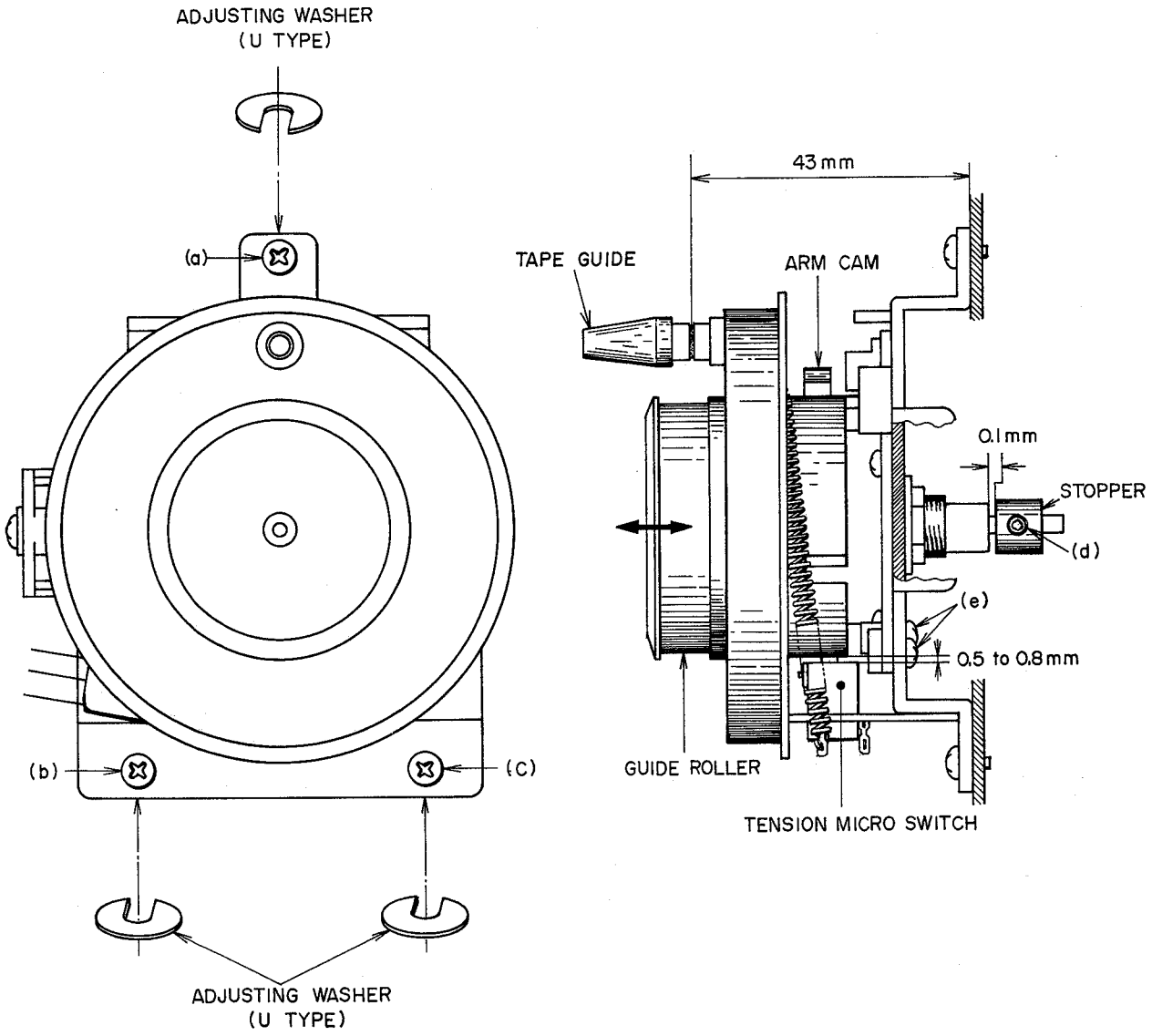


Fig. 5 Roller Block

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.

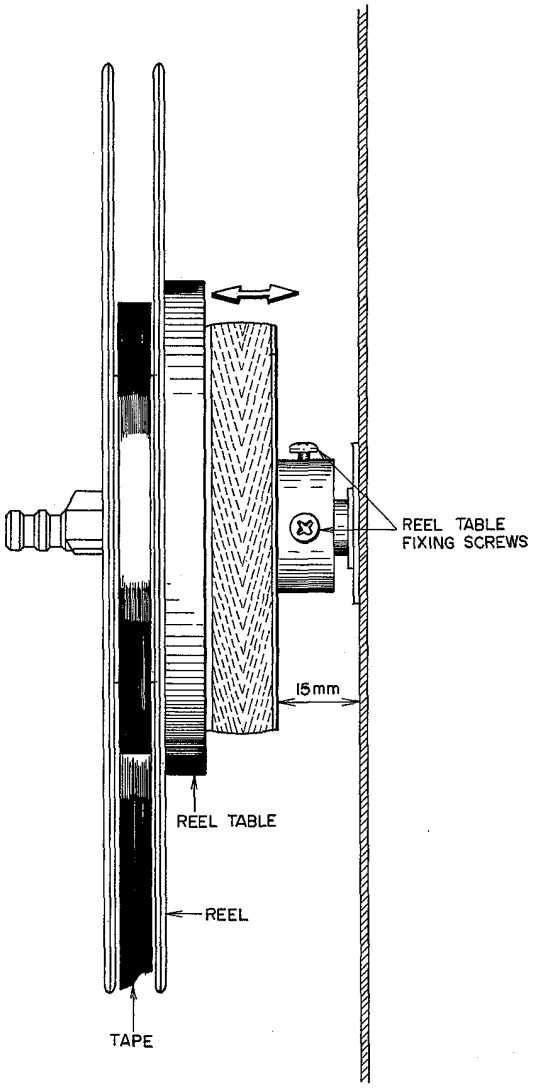


Fig. 6

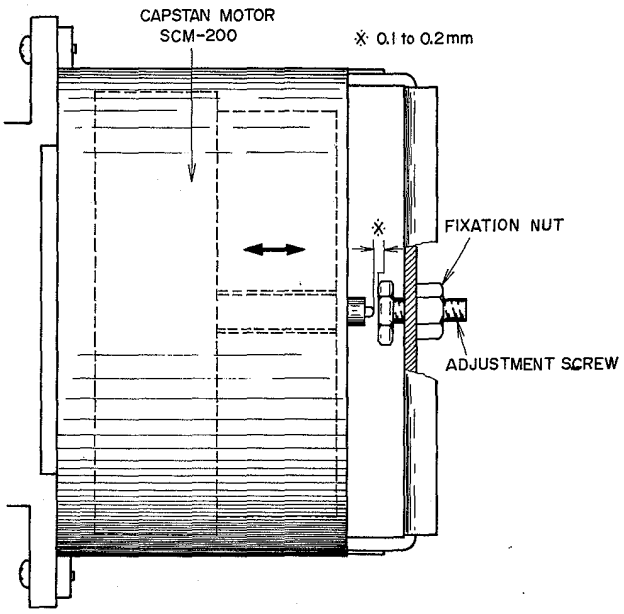


Fig. 7

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.

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.

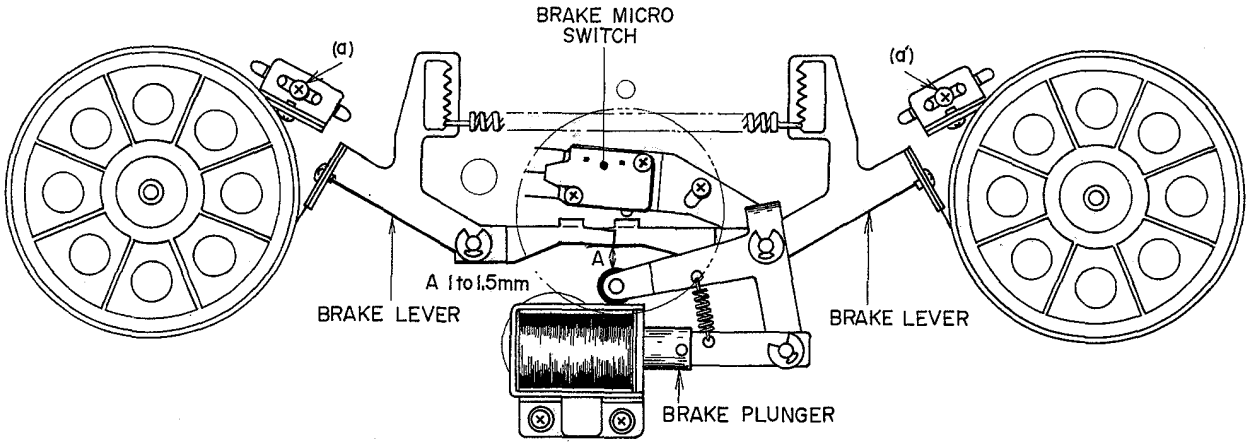


Fig. 8

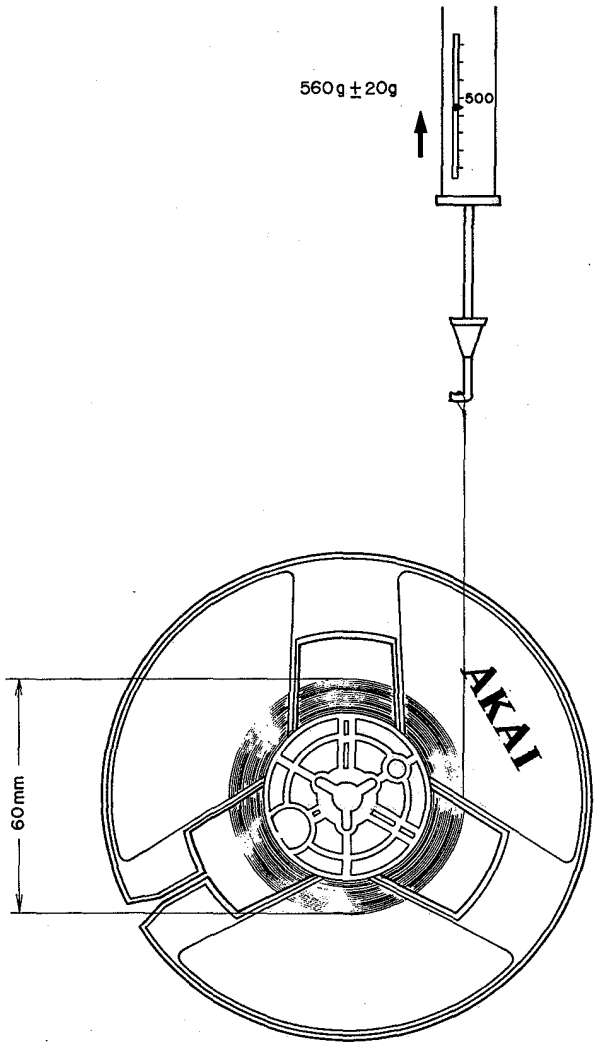


Fig. 9

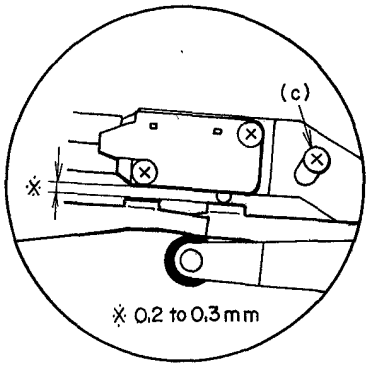


Fig. 10

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 tention of 560 ± 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.

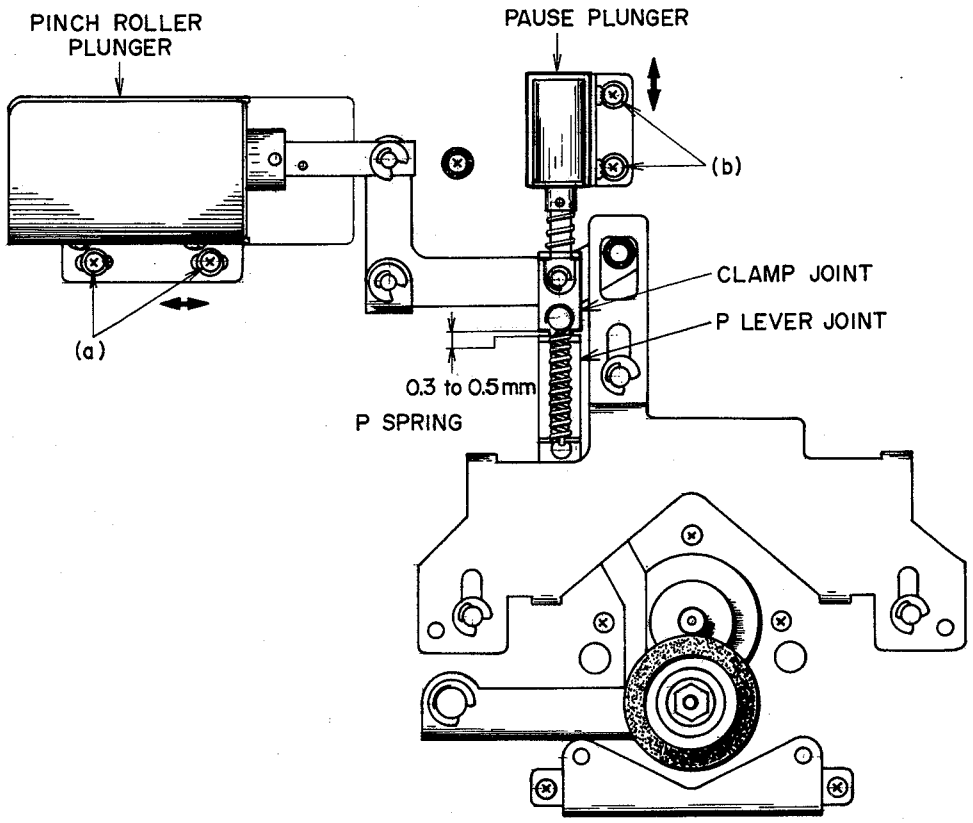


Fig. 11

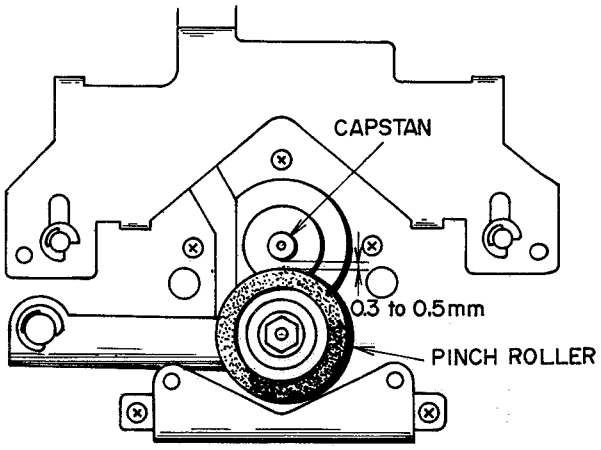


Fig. 12

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 kg ± 200 g at the moment the pinch roller touches the capstan and starts rolling.

It is reads otherwise, replace the P spring (See Fig. 12)

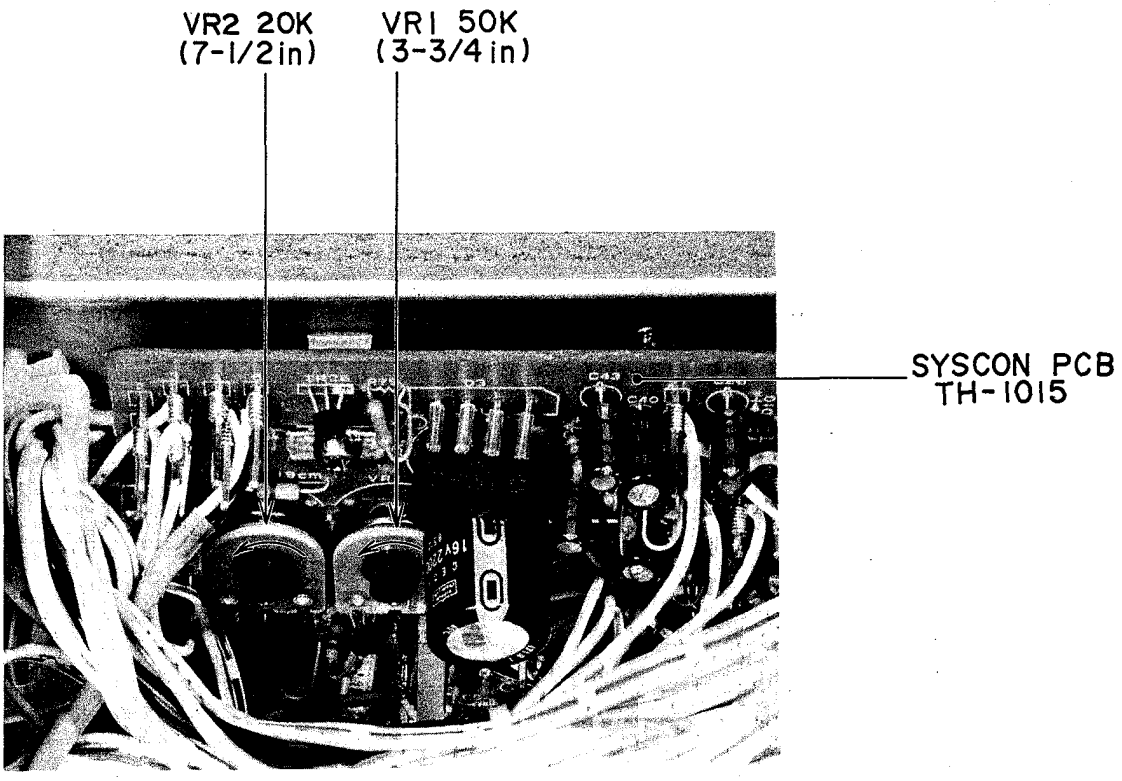


Fig. 13

10. TAPE SPEED ADJUSTMENT (Refer to Fig. 13)

Set the Tape Speed Switch to 7-1/2 ips. and playback the 1,000 Hz, 7-1/2 Test Tape. Connect a frequency counter to LINE OUT and adjust VR2 20 kB until the counter reads, 1,000 Hz ± 0.5%. Next, set the Tape Speed Switch to 3-3/4 ips. and adjust VR1 50 kB until the frequency counter reads 500 Hz ± 0.5%.

VII. HEAD ADJUSTMENT

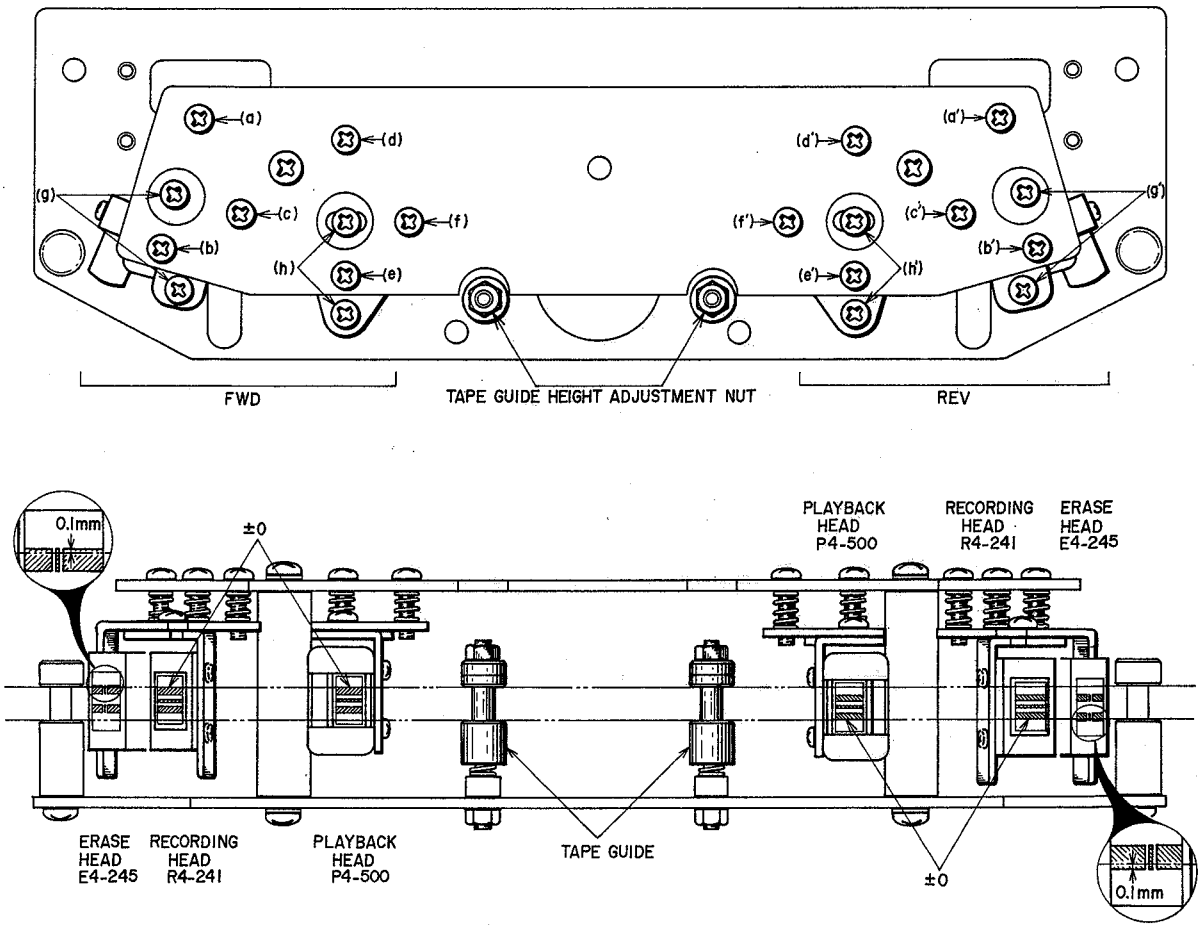


Fig. 14

STEP	ADJUSTMENT ITEM	TEST TAPE SUPPLY SIGNAL	MODE	ADJUSTMENT POINT	REMARKS
1	Tape Guide Height	Optional	FWD	Tape Guide Height Adjustment Nut	1) Adjust so that tape travels smoothly and does not twist. 2) Do not thread tape over tension arm.
2	FWD Recording Head Height	Optional	FWD	(a) (b)	Upper edges of Left Ch. head core and tape are the same height.
3	FWD Erase Head Height Confirmation	Optional	FWD		Upper edge of Left Ch. head core is 0.1 mm higher than upper edge of tape
4	FWD Playback Head Height	Optional	FWD	(d) (e)	Upper edges of Left Ch. head core and tape are the same height.
5	FWD Playback Head Azimuth Alignment	8,000 Hz 3-3/4 ips Test Tape	FWD	(f)	Maximum output, both channels.
6	FWD Playback Head Angle Alignment	8,000 Hz 3-3/4 ips Test Tape	FWD	(h)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.
7	FWD Recording Head Azimuth Alignment	Maxell UD 15,000 Hz –20 dBm	REC	(c)	Maximum output, both channels. See NOTE 6.
8	FWD Recording Head Angle Alignment	Maxell UD 15,000 Hz –20 dBm	REC	(g)	Adjust head gap surface so that there is no change in output level when tension is applied to the supply reel side.

Fig. 15

NOTES:
1. As perfect head adjustments are vital to tape deck performance, be sure that these adjustments are carried out properly.
2. Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
3. Use only new tape as level variation is likely to occur when using old tape.
4. Demagnetize heads with head demagnetizer before and after head adjustment.
5. Set tape speed to 7-1/2 ips.
6. Set Tape Selector Switch to NORMAL Position.
7. Adjustments outlined in Fig. 15 are only for FWD side heads. However, adjustments for REV side heads are exactly the same.

VIII. AMPLIFIER ADJUSTMENT

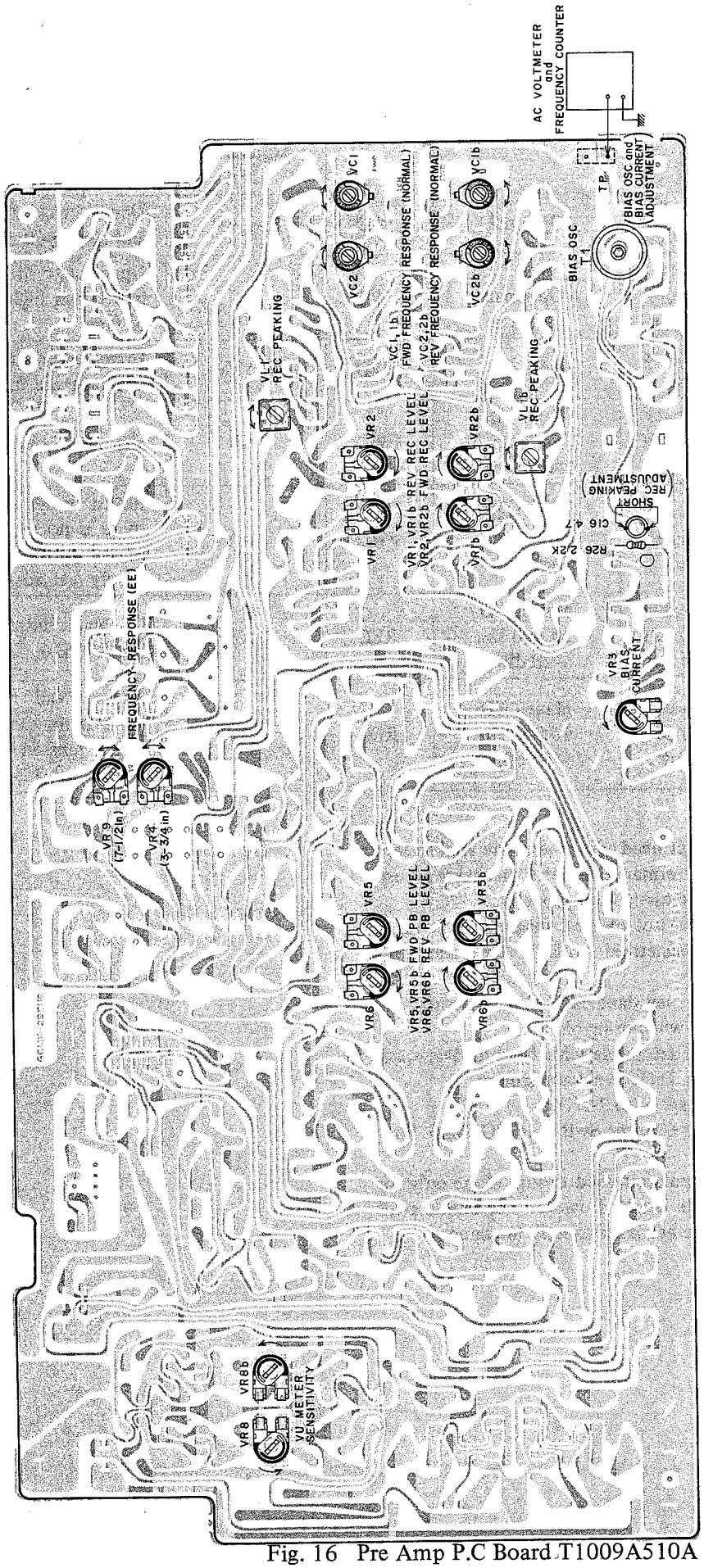


Fig. 16 Pre Amp P.C Board T1009A510A

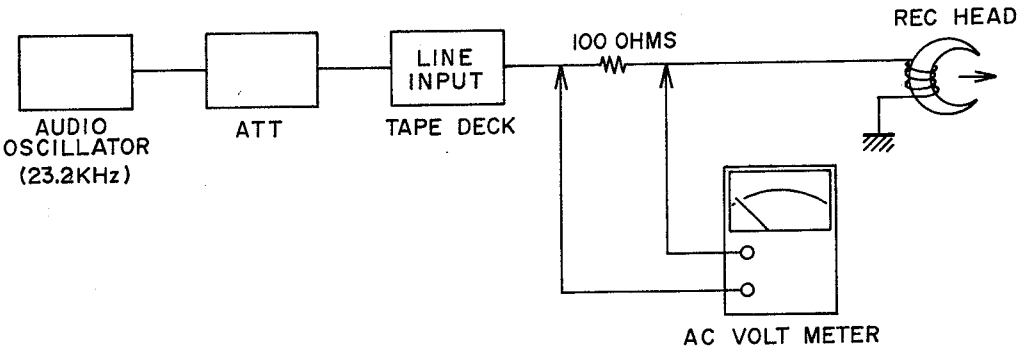


Fig. 17 Rec Peaking Adjustment Instrument Connection

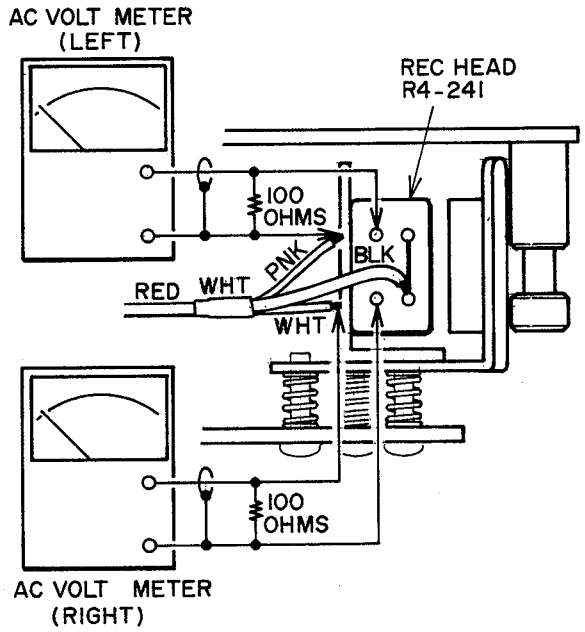


Fig. 18 Rec Peaking Adjustment

STEP	ADJUSTMENT ITEM	TEST TAPE SUPPLY SIGNAL	MODE	ADJUSTMENT POINT	RESULT	REMARKS
1	FWD Playback Level	700 Hz 7-1/2 ips. 0 VU Test Tape	FWD	VR5 50 kB	0 ± 0.5 dBm (0.775V)	
2	REV Playback Level	700 Hz 7-1/2 ips. 0 VU Test Tape	REV	VR6 50 kB	0 ± 0.5 dBm (0.775V)	
3	REC Peaking	23.2 kHz from an Oscillator	REC	VL1 1 mH	Maximum AC Voltmeter indication	Set TAPE SELECTOR to "NORMAL" Tape Speed 3-3/4 ips. See NOTE 6, 7, 9 and Figs. 16, 17, 18.
4	BIAS OSC		REC	T1	100 ± 0.5 kHz	Set TAPE SELECTOR to "NORMAL" Tape Speed 7-1/2 ips. Connect a Frequency Counter between TP and GND. Fig. 16.

STEP	ADJUSTMENT ITEM	TEST TAPE SUPPLY SIGNAL	MODE	ADJUSTMENT POINT	RESULT	REMARKS
5	BIAS Current		REC	VR3 20 kB	135.6 ± 0.5 mV	Set TAPE SELECTOR to "NORMAL" Tape Speed 7-1/2 ips. Connect a AC Voltmeter between TP and GND Fig. 16.
6	FWD Recording Level	NORMAL Blank Tape 1,000 Hz 0 dBm Recording	FWD/ REC	VR2 20 kB	0 ± 0.5 dBm (0.775 V)	
7	REV Recording Level	NORMAL Blank Tape 1,000 Hz 0 dBm Recording	REV/ REC	VR1 20 kB	0 ± 0.5 dBm (0.775 V)	
8	NORMAL Position FWD Frequency Response	NORMAL Blank Tape 1.5 kHz, 15 kHz –20 dBm Recording	FWD/ REC	VC1	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
9	NORMAL Position REV Frequency Response	NORMAL Blank Tape 1.5 kHz, 15 kHz –20 dBm Recording	REV/ REC	VC2	1.5 kHz, 15 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
10	EE Position Frequency Response (3-3/4 ips)	EE Blank Tape 1.5 kHz, 20 kHz –20 dBm recording	FWD, REV/ REC	VR4 10 kB	1.5 kHz, 20 kHz flat	Tape Speed 3-3/4 ips. Recheck Recording Level.
11	EE Position Frequency Response (7-1/2 ips)	EE Blank Tape 1.5 kHz, 25 kHz –20 dBm Recording	FWD, REV/ REC	VR9 30 kB	1.5 kHz, 25 kHz flat	Tape Speed 7-1/2 ips. Recheck Recording Level.
12	FWD Distortion Confirmation	1,000 Hz 0 dBm Recording	FWD/ REC		NORMAL: Less than 0.5% EE : Less than 0.4% See NOTE 8.	
13	REV Distortion Confirmation	1,000 Hz 0 dBm Recording	REV/ REC		NORMAL: Less than 0.5% EE : Less than 0.4% See NOTE 8.	
14	VU Meter Sensitivity (JPN)	1,000 Hz 0 dBm from an Oscillator	STOP	VR8 1 kB	0 VU indication	Set MONITOR Switch to "SOURCE"

NOTES:
1. Output Level Control should be at maximum.
2. Except for Steps 3, 8, 9 and 10, set Tape Speed to 7-1/2 ips.
3. Except for Steps 10 to 12 and 13, set Tape Selector Switch to NORMAL Position.
4. Set Bias Adjustment Volume to center position.
5. Use the following open measuring tapes:
   NORMAL Tape: Maxell UD
   EE Tape : Maxell XLII
   TDK SA
6. Stop Recording bias oscillator while making Rec Peaking adjustment (Refer to Fig. 16).
7. When 23.2 kHz indicates the peak, check and ensure that the AC Voltmeter show 16 dB of increase when 15 kHz of input is fed rather than when 1 kHz is fed.
8. If it does not comply with the specifications repeat Steps 6 to 10 and 11, and readjust.
9. Unless the core is moved intentionally this adjustment is not necessary.

IX. DC RESISTANCE OF VARIOUS COILS

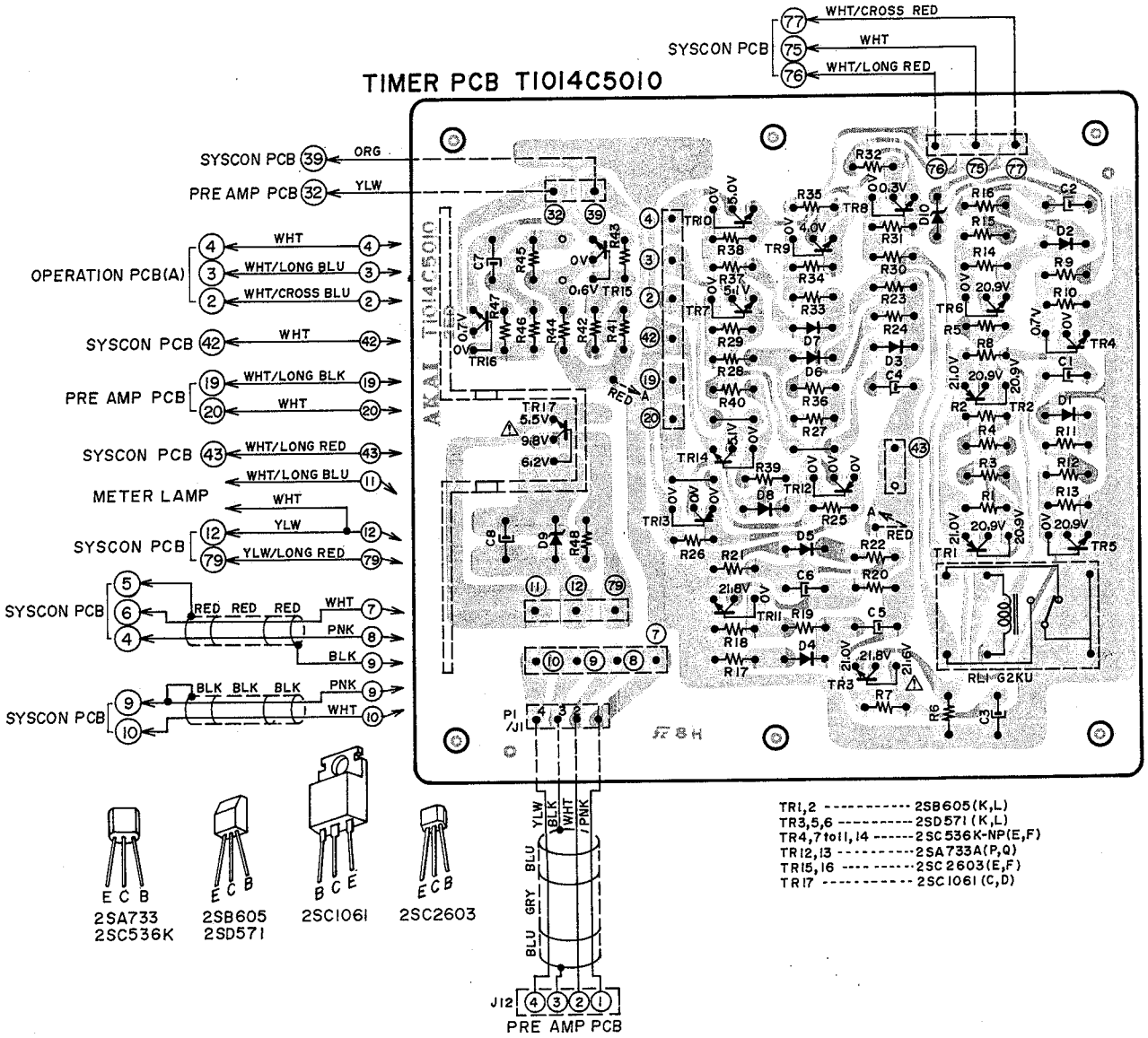
PART	DESIGNATION	DC RESISTANCE
Main Motor	SCM-200	Between BLU-RED: 110 ohms Between YLW-BRN: 170 ohms Pick-up Coil: 665 ohms
Reel Motor	24X0-TD	Between BLU-RED: 30 ohms Between YLW-BRN: 157 ohms
Pinch Roller Plunger	1664PLT1	600 ohms ± 10%
Brake Plunger	1240PLT1	600 ohms ± 10%
REV Plunger		
Pause Plunger	0730FLT2	600 ohms ± 10%
Relay	MY4-02-US-L	650 ohms ± 15%
Relay	FBR211BD024-M	1,280 ohms ± 10%
Relay	G2KU	1,000 ohms ± 10%
Relay	LAB2NS	1,750 ohms ± 10%
Erase Head	E4-245	3.1 ohms
Recording Head	R4-241	5.9 ohms
Playback Head	P4-500	407 ohms ± 5%

X. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C BOARD TITLE	P.C BOARD NUMBER
Pre Amp P.C Board	T1009A510A
VU Meter P.C Board	T1009A510B, C
Equalizer P.C Board	T1009D530A
Bias Adjustment P.C Board	T1009D530B
Remocon P.C Board	T1009D2420
Timer P.C Board	T1014C5010
Mic Amp P.C Board	T1014B5020
Syscon P.C Board	TH-1015
Fuse P.C Board	TH-2040
Operation P.C Board (A)	TH-2041
Operation P.C Board (B)	TH-2042
Direction P.C Board	TH-2043
Reverse P.C Board	TH-2044
Sensing P.C Board	TH-2045
Rec Mute P.C Board	TH-2046
Terminal P.C Board	NE-2230

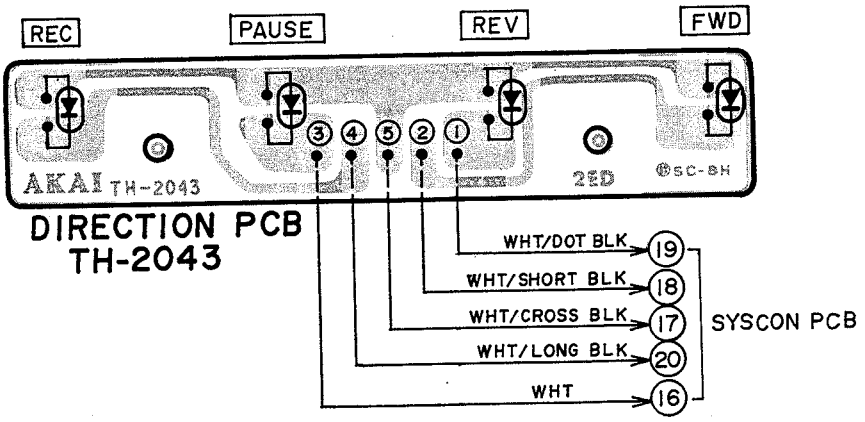
4) Timer P.C Board T1014C5010



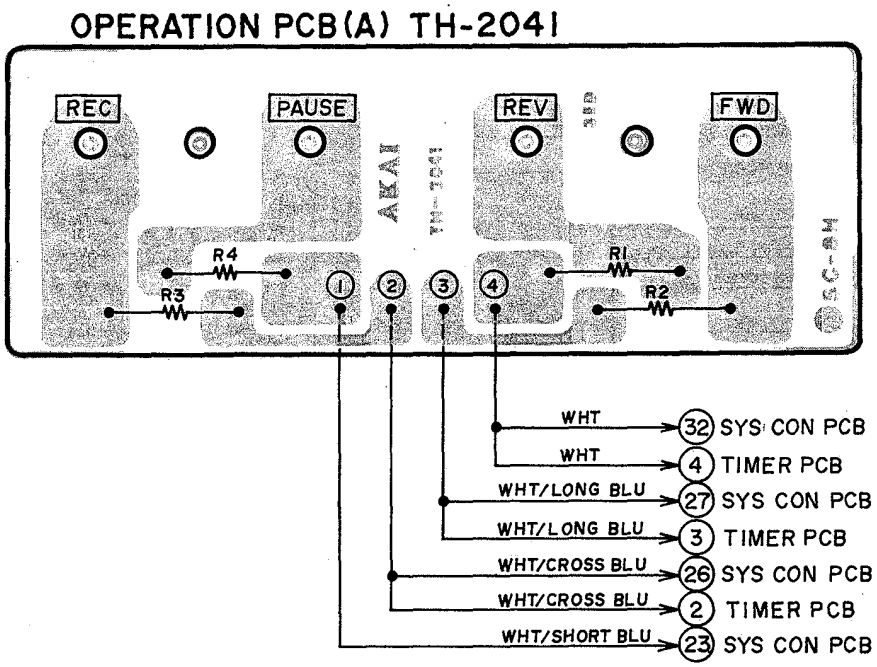
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

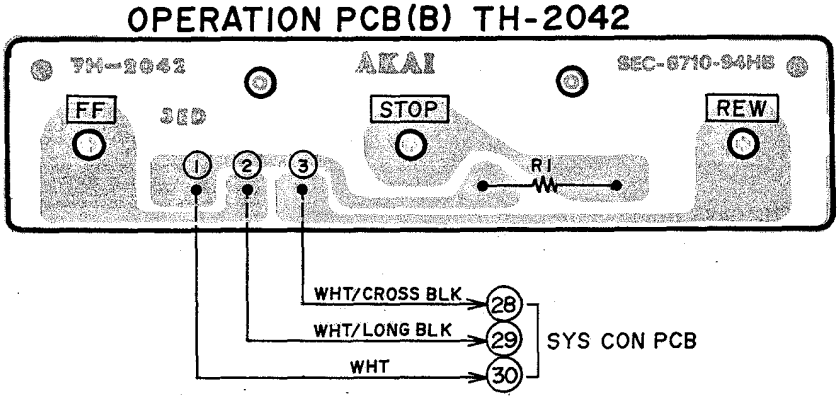
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

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

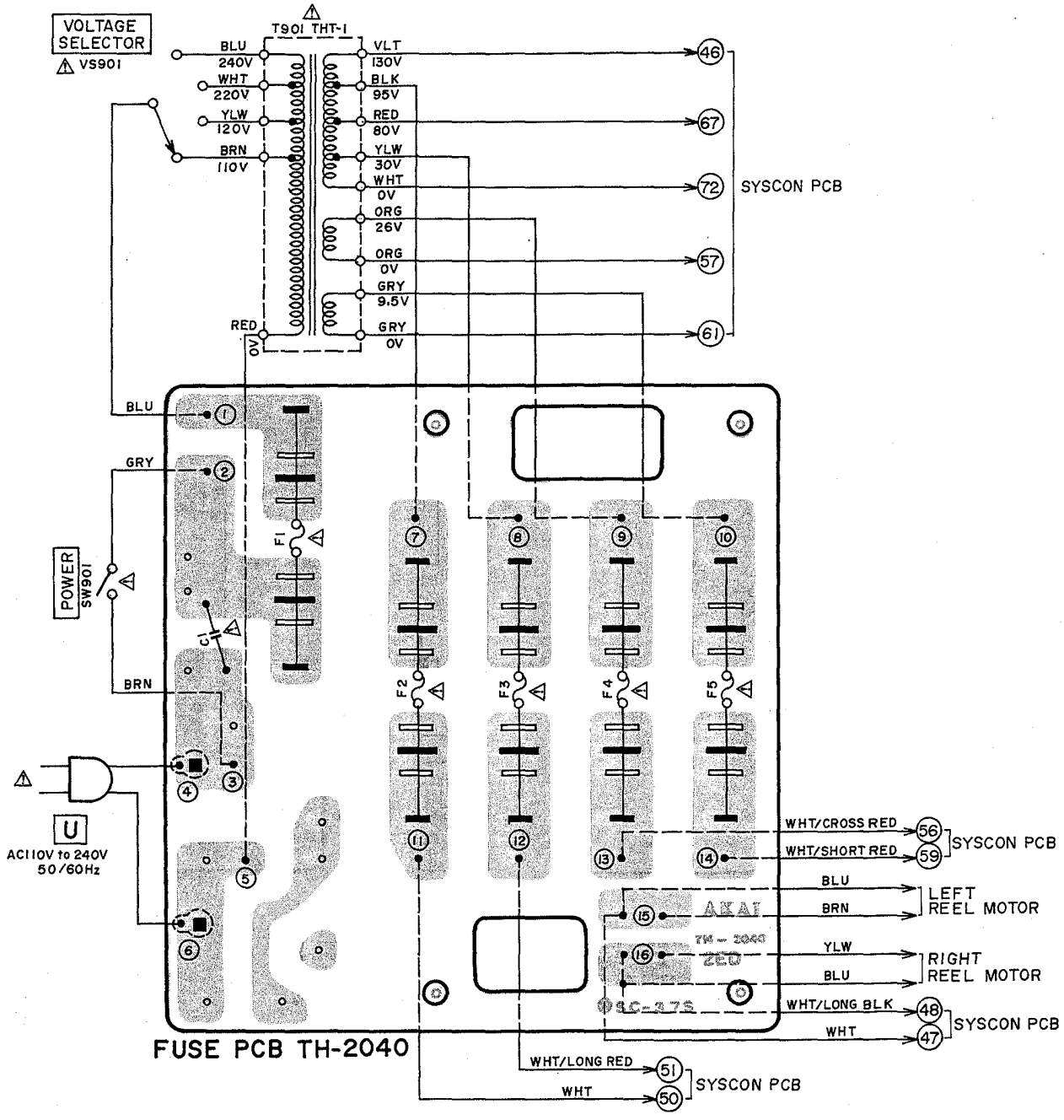


6) Operation P.C Board (A) TH-2041 (3ED) and Operation P.C Board (B) TH-2042 (3ED)



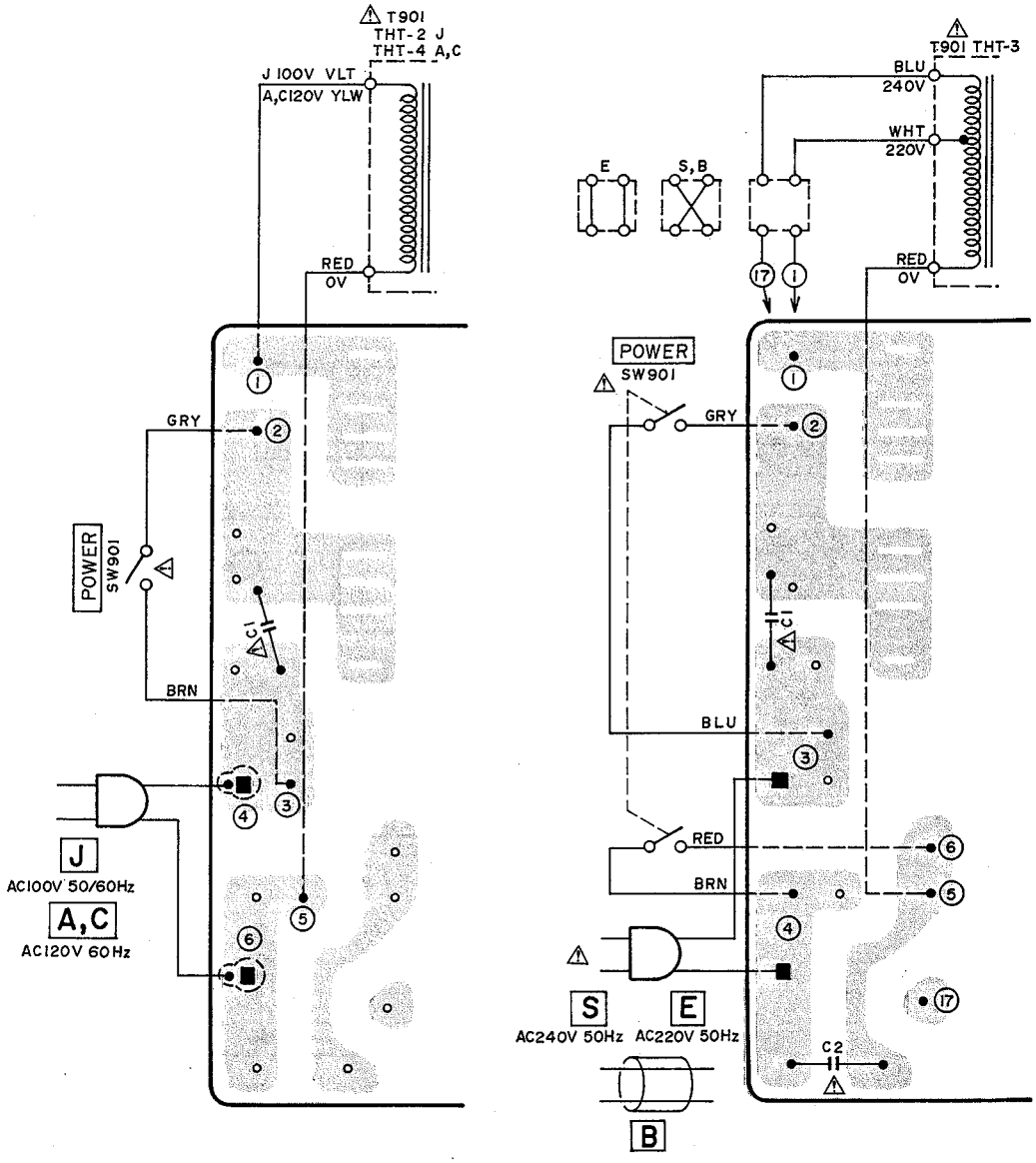


7) Fuse P.C Board TH-2040 (2ED)



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

AVERTISSEMENT: ⚠IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÈ. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES 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 DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES CONPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

SECTION 2

PARTS LIST

TABLE OF CONTENTS

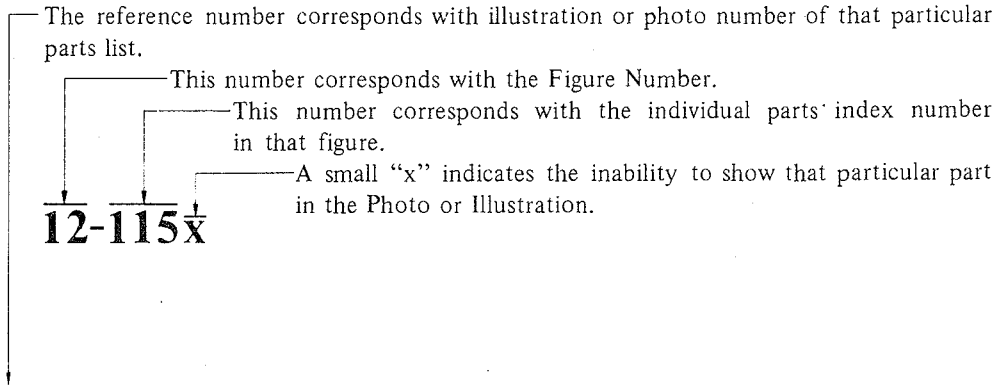
1. RECOMMENDED SPARE PARTS 35
2. HEAD BLOCK 36
3. MOTOR BLOCK 37
4. REEL TABLE BLOCK 38
5. ROLLER (L/R) BLOCK 39
6. POWER BLOCK 40
7. MECHA BLOCK 41
8. SYS. CON. P.C BOARD BLOCK 42
9. PRE AMP P.C BOARD BLOCK 43
10. TIMER P.C BOARD BLOCK 43
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12. ASSEMBLY BLOCK 44
13. FINAL ASSEMBLY BLOCK 45
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Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

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HOW TO USE THIS PARTS LIST

1. This parts list is compiled by various individual blocks based on assembly process.
2. When ordering parts, please describe parts number, serial number, and model number in detail.
3. How to read list.



Ref. No.	Parts No.	Description
		FLYWHEEL BLOCK #13
12-115x	800425	Flywheel Block Assy. Comp.
12-116	244506	Flywheel Only
12-117x	244754	Felt, Flywheel
12-118	251324	Main Metal Case
12-119	253080	Main Metal

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.
   It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).
8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.

CAUTION:

1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

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

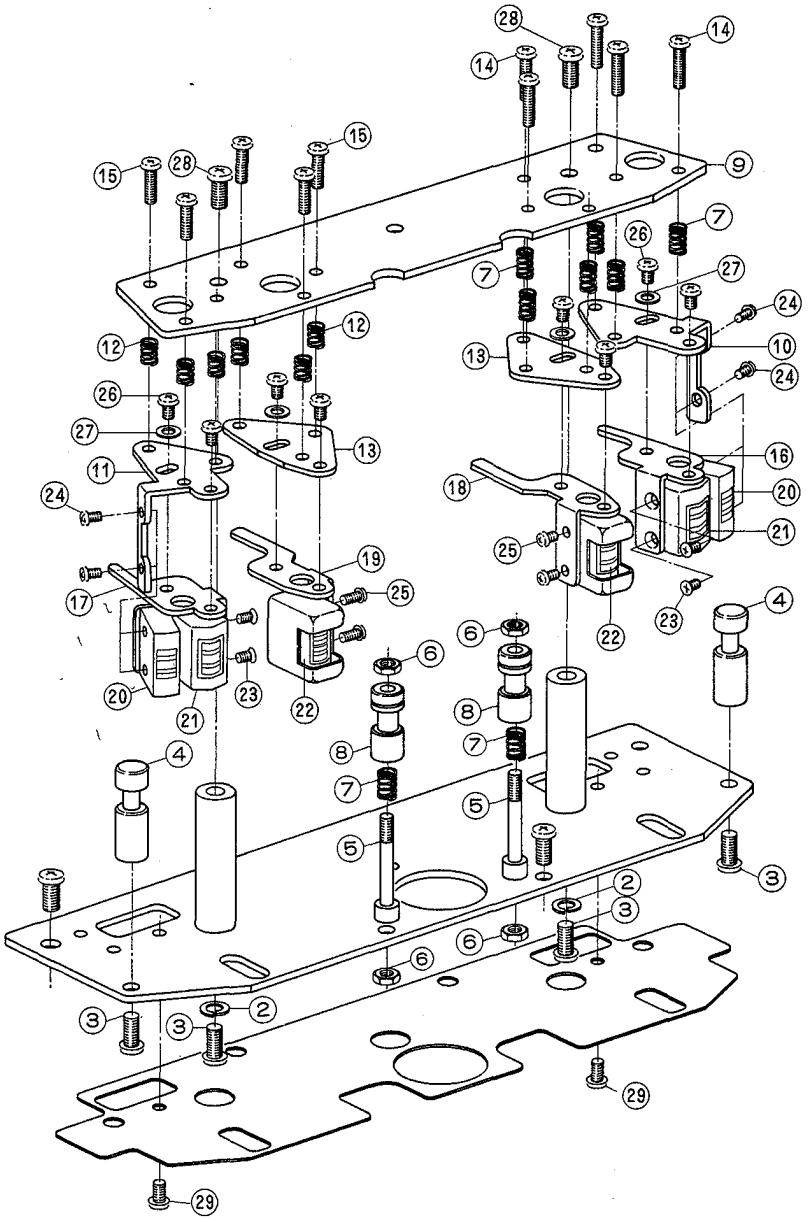
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

REF. NO.	PARTS NO.	DESCRIPTION
1-1	BHT1014A260A	HEAD BLK GX-646
1-2	BMM1101A010A	⚠ MOTOR SCM-200
1-3	BMM1202A010A	⚠ MOTOR 24XO-TD
1-4	BRT1005A110B	REEL TABLE BLK TE (TAKE-UP)
1-5	BT308918	⚠ TRANS POWER THT-1 (U)
1-6	BT308919	⚠ TRANS POWER THT-2 (J)
1-7	BT308920	⚠ TRANS POWER THT-3 (E,B,S,V)
1-8	BT308921	⚠ TRANS POWER THT-4 (C,A)
1-9	BZT1008A190A	ROLLER (L) BLK GX-635D
1-10	BZT1008A190B	ROLLER (L) BLK GX-635D-BL
1-11	BZT1008A220A	ROLLER (R) BLK GX-635D
1-12	BZT1008A220B	ROLLER (R) BLK GX-635D-BL
1-13	ED302091	D GERMA H OA91-LF SNP
1-14	ED308953	D GERMA H 1K34A-LH SNP
1-15	ED302098	D GERMA V OA91-FV F05
1-16	ED308952	D GERMA V 1K34A-LR F07
1-17	ED249377	D LED GL-3AR1 RED
1-18	ED303005	D LED GL-3HY1 YLW
1-19	ED283138	D LED GL-3PG1 GRN
1-20	ED318988	D LED SR505D RED
1-21	ED330319	D SILICON DBA10B 100/1.0A
1-22	ED301911	D SILICON H DS448
1-23	ED316143	D SILICON H 1S2473HS F10
1-24	ED200468	D SILICON V DS448 VB3
1-25	ED560913	D SILICON V 1S2473VE
1-26	ED326168	D SILICON 1D4B1 200/1.5A
1-27	ED224550	D SILICON 10D4 400/1.0A
1-28	ED310607	D ZENER H HZ18 2
1-29	ED332336	D ZENER H HZ20 3
1-30	ED313623	D ZENER H HZ22 3
1-31	ED309069	D ZENER H HZ6 B2
1-32	ED331197	D ZENER H HZ6 C1
1-33	ED510772	D ZENER H WZ-120
1-34	ED539976	D ZENER H WZ-130
1-35	EF300584	⚠ FUSE EAK T 250V 1A (E,B,S,V)
1-36	EF300591	⚠ FUSE EAWK T 250V 0.50A (E,B,S,V)
1-37	EF300592	⚠ FUSE EAWK T 250V 0.63A (E,B,S,V)
1-38	EF683313	⚠ FUSE SS2 250V 0.80A (C,A)
1-39	EF308923	⚠ FUSE SS2 250V 1.60A (C,A)
1-40	EF659698	⚠ FUSE SS2 250V 2A (C,A)
1-41	EF575932	⚠ FUSE TLC A 250V 0.80A (U, J)
1-42	EF310455	⚠ FUSE TLC A 250V 1.25A (U,J)
1-43	EF563681	⚠ FUSE TLC A 250V 1A (U,J)
1-44	EF562691	⚠ FUSE TLC A 250V 2.50A (U)
1-45	EF563703	⚠ FUSE TLC A 250V 2A (J)
1-46	EI304165	IC MB400M
1-47	EI305238	IC MB417M
1-48	EI304166	IC MB418M
1-49	EI308936	IC M54410P
1-50	EI213390	IC NJM4558D
1-51	EJ249467	⚠ PLUG VOLTAGE SELECTOR S-I7207 3P (U)
1-52	EJ262732	⚠ SOCKET SELECTOR S-I7223 U 7P (U)
1-53	EJ324276	DIN J TCS4680-01-111 P 8P
1-54	EM330374	METER VU D64A24L 0.260mA
1-55	EM330600	METER VU D64A27L 0.260mA (BL)
1-56	EO330990	COIL FIX 2 0358-042 510μH
1-57	EO331190	COIL OSC 1 2330-065 100kHz
1-58	EO315758	COIL TUN 1 100S-431 100kHz
1-59	EO319447	COIL TUN1 GYD-100K 100kHz
1-60	EO319495	COIL VARI1 GYD-102 1MHz
1-61	EP308949	⚠ RELAY POWER FBR211BD024-M 1TR 24V
1-62	EP300132	⚠ RELAY POWER MY4-02-US-L 4TR 24V
1-63	EP330363	⚠ SOLENOID 0730FLT2 29V
1-64	EP315918	⚠ SOLENOID 1240PLTI
1-65	EP316121	⚠ SOLENOID 1664PLTI
1-66	EP308973	RELAY LEAD LAB2NS 2NO 24V
1-67	EP330351	RELAY SIGNAL G2KU 1TR 24V
1-68	ER330272	R MF H F10 1/4W 3302F
1-69	ES 313622	⚠ SW PUSH JP-27 01-2 J (U,J)
1-70	ES309058	⚠ SW PUSH JP24 02-1 E (E,B,S,V)
1-71	ES309059	⚠ SW PUSH JP27 01-2 UC (C,A)
1-72	ES319464	SW LEVER 00420460 2-04-02S
1-73	ES319448	SW LEVER 00420461 2-04-02N
1-74	ES573478	SW MICRO K3 UC
1-75	ES308929	SW MICRO VV-S
1-76	ES308925	SW PUSH SUF12 2-02-02N
1-77	ES308914	SW PUSH SUF12 2-04-02N
1-78	ES306714	SW ROTARY SRU1023N 1-02-03N
1-79	ES306714	SW ROTARY SRU1023N 1-02-03N
1-80	ES324007	SW ROTARY SRU1023S 1-02-03S
1-81	ES301436	SW SLIDE CL206E 2-06-02S
1-82	ES301435	SW SLIDE CL210E 2-10-02S
1-83	ES309094	SW SLIDE SL13-6-6-2-2 2-02-02N (U,J)
1-84	ET554657	TR 2SA733A P,Q
1-85	ET522268	TR 2SA733A Q
1-86	ET666415	TR 2SB605 K,L
1-87	ET318237	TR 2SB764 E,F
1-88	ET200399	TR 2SB856 B,C
1-89	ET312497	TR 2SC1061 B,C YC40B
1-90	ET317919	TR 2SC1061 C,D
1-91	ET517263	TR 2SC1312R G,H
1-92	ET603257	TR 2SC1312S G,H
1-93	ET308954	TR 2SC1844 E,F
1-94	ET308937	TR 2SC2130 G,H
1-95	ET200505	TR 2SC2603 E,F
1-96	ET391768	TR 2SC458LG C,D
1-97	ET316171	TR 2SC536K-NP E,F
1-98	ET399846	TR 2SC945L Q
1-99	ET639437	TR 2SC945L Q,P
1-100	ET639437	TR 2SC945L Q,P
1-101	ET666404	TR 2SD571 K,L
1-102	ET307349	TR 2SD794 P,Q
1-103	ET328440	TR 2SD863-V8 E,F
1-104	EV316442	R S-FIX H D8 3P 102
1-105	EV315542	R S-FIX H D8 3P 103
1-106	EV315753	R S-FIX H D8 3P 203
1-107	EV322417	R S-FIX H D8 3P 303
1-108	EV315541	R S-FIX H D8 3P 503
1-109	EV309071	R S-FIX H V18K3-6 (4US) T3P 203
1-110	EV302718	R S-FIX H V18K3-6 (4US) T3P 503
1-111	EV308917	VR ROTARY 16L10XOM B102
1-112	EV332364	VR ROTARY 16P11XOY A503 A503
1-113	EV319316	VR ROTARY 16P20x2A B103
1-114	EV331189	VR ROTARY 16P20x2B B502
1-115	EO330991	C S-FIX H ECR-BC090M11 8.0-90
1-116	HEH1305A010A	HEAD E E4-245 O
1-117	HPH1005A010A	HEAD PB P4-500 O
1-118	HRH1101A010A	HEAD REC R4-241 O
1-119	MB308701	COUNTER BELT
1-120	MC305642	COUNTER MP-499-08
1-121	MC305652	COUNTER MP-499-09 (BL)
1-122	MPB424023	PINCH ROLLER PART KD
1-123	MTT1003A340A	BRAKE CLOTH ASSY GX-215D

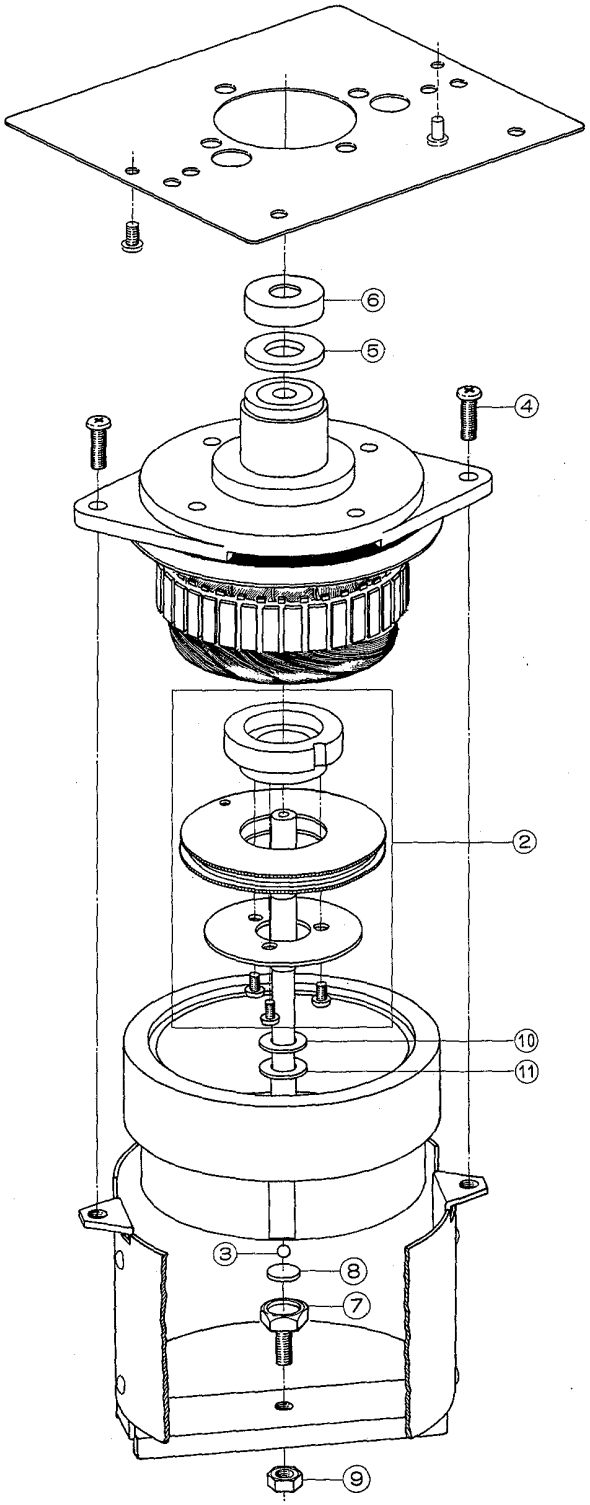
HEAD BLOCK



2. HEAD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BHT1014A260A	HEAD BLK GX-646
2-2	ZW273914	SW40
2-3	ZS413201	PAN40x08STL CMT
2-4	HZ528581	TAPE GUIDE (A)
2-5	MH578957	TAPE GUIDE PROP
2-6	ZW265522	N30BRS NI 3 2
2-7	ZG466312	ANGLE ADJUST SPRING (E)
2-8	HZ301777	TAPE GUIDE (C)
2-9	HZ308681	HEAD SUB CHASSIS
2-10	HB331113A	ER HEAD BASE (A)
2-11	HB331113B	ER HEAD BASE (B)
2-12	ZG540584	ANGLE ADJUST SPRING (G)
2-13	HZ308685	PB HEAD BASE
2-14	ZS608501	PAN30x12STL BNI
2-15	ZS417407	PAN30x10STL BNI
2-16	HA309409	ER HEAD ANGLE (A)
2-17	HA309410	ER HEAD ANGLE (B)
2-18	HA330924A	PB HEAD ANGLE (R)
2-19	HA330924B	PB HEAD ANGLE (L)
2-20	HEH1305A010A	HEAD E E4-245 O
2-21	HRH1101A010A	HEAD REC R4-241 O
2-22	HPH1005A010A	HEAD PB P4-500 O
2-23	ZS524812	CTS20x04STL CMT
2-24	ZS477876	PAN20x03STL CMT
2-25	ZS608095	PAN20x05STL CMT
2-26	ZS608477	PAN30x04STL BNI
2-27	ZW-309055	PW30x060x050STL BNI
2-28	ZS201778	PAN40x08STL BNI
2-29	ZS422076	PAN30x05STL CMT

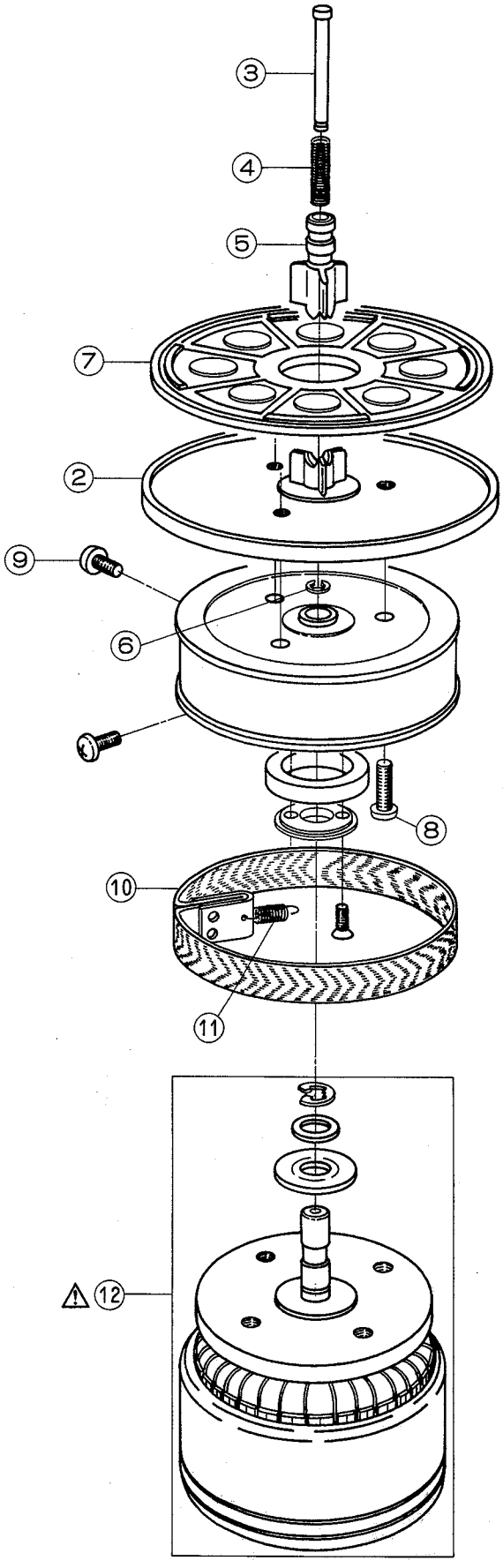
MOTOR BLOCK



3. MOTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
3-1x	BMM1101A010A	⚠ MOTOR SCM-200
3-2	BZM1101A040A	DETECTION GEAR BLK SCM-200
3-3	MV368886	BALL 300STL
3-4	ZS413201	PAN40x08STL CMT
3-5	ZW597622	FELT WASHER
3-6	SK597633	CAP
3-7	MZ585900	SHAFT SUPPORT
3-8	MZ597690	BALL HOLDER
3-9	ZW413278	N50STL CMT 1
3-10	ZW597543	THRUST WASHER
3-11	ZW605698	THRUST WASHER (B)

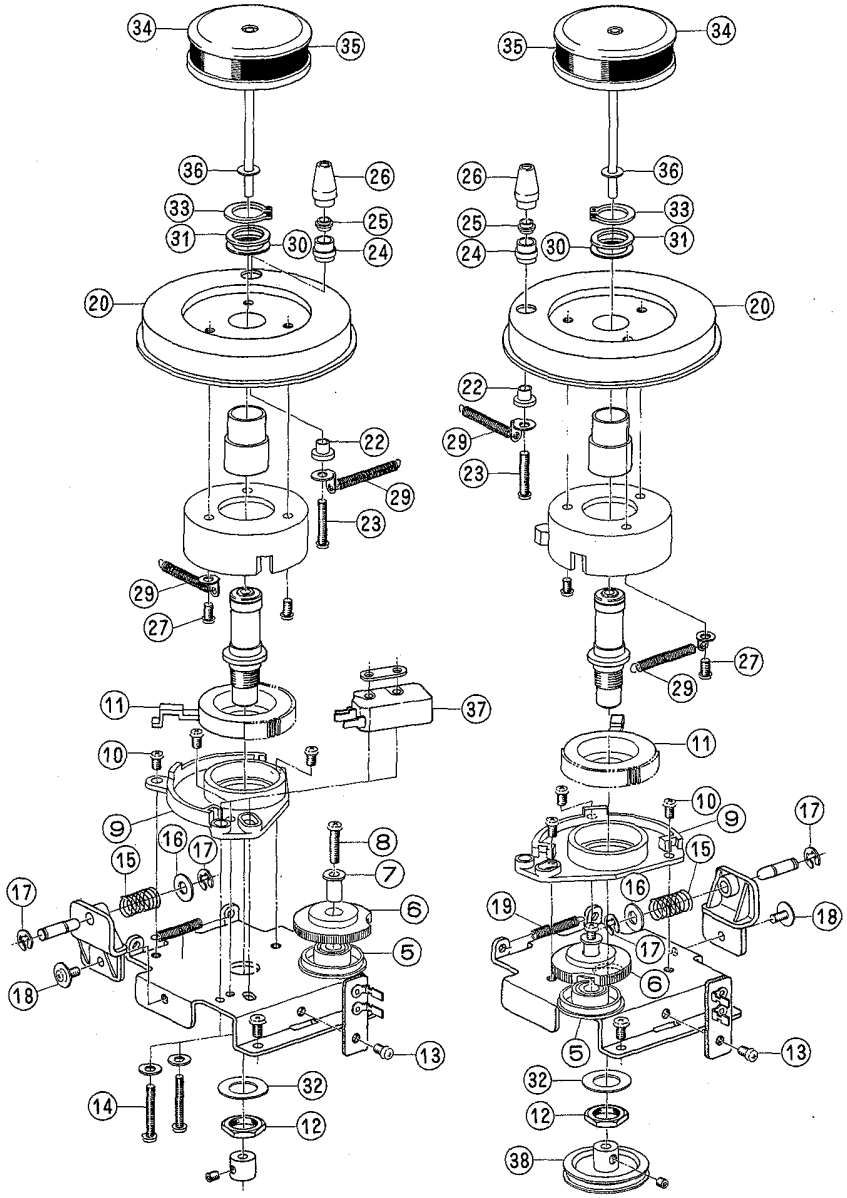
REEL TABLE BLOCK



4. REEL TABLE BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1x	BRT1005A110B	REEL TABLE BLK TE (TAKE-UP)
4-2	MT534666	REEL TABLE
4-3	MS342000	REEL SHAFT
4-4	ZG540617	CLAMPER SPRING
4-5	MT534677	REEL CLAMPER
4-6	ZW270088	RING E 190SUP CMT
4-7	MT534688	REEL TABLE RUBBER
4-8	ZS419670	PAN30x12STL CMT
4-9	ZS424056	PAN40x10STL CMT
4-10	MTT1003A340A	BRAKE CLOTH ASSY GX-215D
4-11	ZG317496	FELT TENSION SPRING
4-12	BMM1202A010A	⚠ MOTOR 24XO-TD

ROLLER (L/R) BLOCK

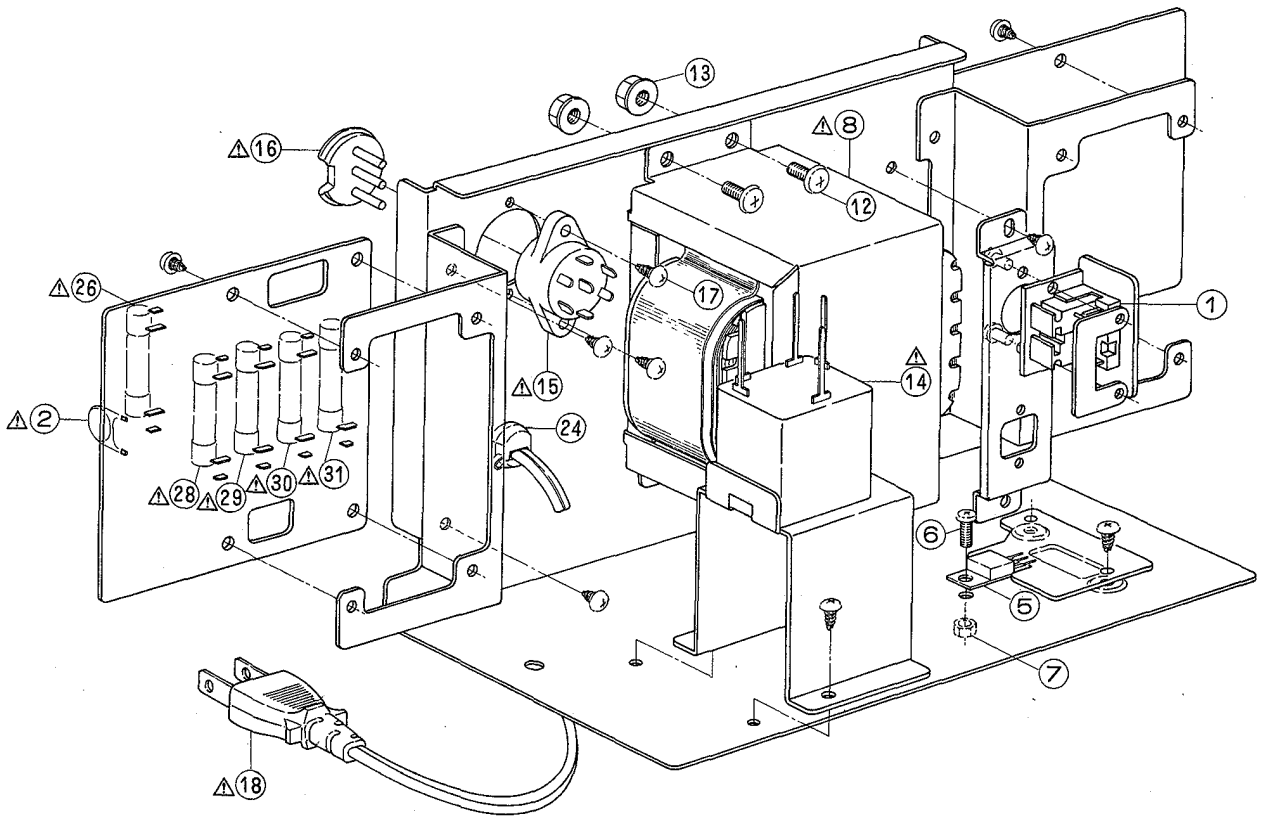


5. ROLLER (L/R) BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1x	BZT1008A190A	ROLLER (L) BLK GX-635D
5-2x	BZT1008A190B	ROLLER (L) BLK GX-635D-BL
5-3x	BZT1008A220A	ROLLER (R) BLK GX-635D
5-4x	BZT1008A220B	ROLLER (R) BLK GX-635D-BL
5-5	MZ315375	DAMPER GEAR BASE
5-6	MZ315374	DAMPER GEAR
5-7	MS315376	DAMPER SHAFT
5-8	ZS419670	PAN30x12STL CMT
5-9	SZ308717	ARM DAMPER BASE
5-10	ZS417216	PAN30x04STL CMT
5-11	MZ315373	ARM GEAR
5-12	ZW318099	NUT M9
5-13	ZS417216	PAN30x04STL CMT
5-14	ZS319473	BID26x18STL CMT
5-15	ZG308722	LOCK SPRING
5-16	ZW308930	PW42x090x025PBR
5-17	ZW270101	RING E300SUP CMT
5-18	ZS608321	PAN30x06STL CMT PW080
5-19	ZG567685	AZIMUTH SPRING (1)
5-20	MI308707	TENSION WHEEL

REF. NO.	PARTS NO.	DESCRIPTION
5-21x	MI315558	TENSION WHEEL (BL)
5-22	EZ308712	INSULATOR BUSH
5-23	ZS422965	PAN30x15STL CMT
5-24	HZ308710	TAPE GUIDE (B)
5-25	MZ535072	INSULATOR BUSH (A)
5-26	HZ308709	TAPE GUIDE (A)
5-27	ZS479474	PAN26x05STL CMT
5-28x	ZS572242	CTS26x06STL CMT
5-29	ZG312399	SP T1-3.2/0.2-31.5 T1-049
5-30	ZW313873	PW105x140x050NYL
5-31	ZW313872	PW105x140x013PSL
5-32	ZW330865	PW105x140x10PBR
5-33	ZW307294	RING C 930SUP PKR
5-34	MR308713	COUNTER ROLLER
5-35	MB308714	ROLLER BELT
5-36	ZW308928	PW24x070x020TFL
5-37	ES308929	SW MICRO VV-S
5-38	MR308715	ROLLER PULLEY

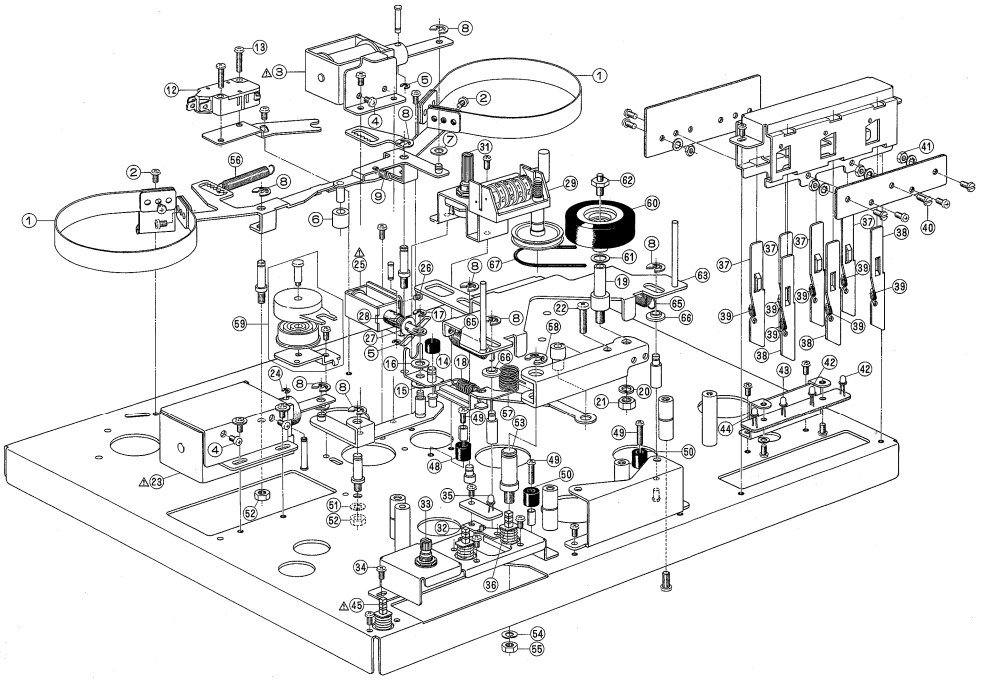
POWER BLOCK



6. POWER BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
		REMOCON P.C BOARD BLOCK
6-1	EJ324276	DIN J TCS4680-01-111 P 8P
		FUSE P.C BOARD BLOCK
6-2	EC320548	⚠ C CE V F 103Z 250AC (C1)(U,J)
6-3x	EC314688	⚠ C CE V FZ 103P 125AC (C1)(C,A)
6-4x	EC327382	⚠ C MP V 472M 250AC (C1,2) (E,B,S,V)
		POWER BLOCK
6-5	ET308947	TR 2SC2336B Q,R
6-6	ZS421806	PAN30x08STL CMT
6-7	ZW516993	N30STL CMT 1
6-8	BT308918	⚠ TRANS POWER THT-1 (U)
6-9x	BT308919	⚠ TRANS POWER THT-2 (J)
6-10x	BT308921	⚠ TRANS POWER THT-4 (C,A)
6-11x	BT308920	⚠ TRANS POWER THT-3 (E,B,S,V)
6-12	ZS435273	BID40x10STL CMT
6-13	ZW413267	N FRANGE 40STL CMT
6-14	EC316065	⚠ C MMY V HFV SPECIAL 250AC (C901)
6-15	EJ262732	⚠ SOCKET SELECTOR S-I7223 U 7P (VS901)(U)
6-16	EJ249467	⚠ PLUG VOLTAGE SELECTOR S-I7207 3P (U)
6-17	ZS463353	T2BR30x08STL BNI
6-18	EW306428	⚠ AC CORD 2 CORES KP-205A, VFF J (U)
6-19x	EW306427	⚠ AC CORD 2 CORES KP-211, VFF J (J)
6-20x	EW305691	⚠ AC CORD 2 CORES KP-8, SPT-1 UC (C,A)
6-21x	EW313882	⚠ AC CORD 2 CORES KP-419C, LTCE-2F E (E,V)
6-22x	EW313884	⚠ AC CORD 2 CORES GTBS-2F 24/0.20x2 B (B)
6-23x	EW201515	⚠ AC CORD 2 CORES KP-560, LTSA-2F S (S)
6-24	SZ631945	STRAIN RELIEF SR-4N-4 (U,J,C,A,E,S,V)
6-25x	EJ692908	STRAIN RELIEF SR-5N-4 (B)
6-26	EF562691	⚠ FUSE TLC A 250V 2.50A (F1)(U)
6-27x	EF310455	⚠ FUSE TLC A 250V 1.25A (F1)(U)
6-28	EF616555	⚠ FUSE TLC A 250V 1.60A (F2)(U)
6-29	EF575932	⚠ FUSE TLC A 250V 0.80A (F3)(U)
6-30	EF563681	⚠ FUSE TLC A 250V 1A (F4)(U)
6-31	EF575932	⚠ FUSE TLC A 250V 0.80A (F5)(U)
6-32x	EF563703	⚠ FUSE TLC A 250V 2A (F1)(J)
6-33x	EF616555	⚠ FUSE TLC A 250V 1.60A (F2)(J)
6-34x	EF575932	⚠ FUSE TLC A 250V 0.80A (F3)(J)
6-35x	EF563681	⚠ FUSE TLC A 250V 1A (F4)(J)
6-36x	EF575932	⚠ FUSE TLC A 250V 0.80A (F5)(J)
6-37x	EF659698	⚠ FUSE SS2 250V 2A (F1)(C,A)
6-38x	EF308923	⚠ FUSE SS2 250V 1.60A (F2)(C,A)
6-39x	EF683313	⚠ FUSE SS2 250V 0.80A (F3to5) (C,A)
6-40x	EF300592	⚠ FUSE EAWK T 250V 0.63A (F1) (E,B,S,V)
6-41x	EF300584	⚠ FUSE EAK T 250V 1A (F2) (E,B,S,V)
6-42x	EF300591	⚠ FUSE EAWK T 250V 0.50A (F3) (E,B,S,V)
6-43x	EF300584	⚠ FUSE EAK T 250V 1A (F4)(E,B,S,V)
6-44	EF300591	⚠ FUSE EAWK T 250V 0.50A (F5) (E,B,S,V)

MECHA BLOCK



7. MECHA BLOCK

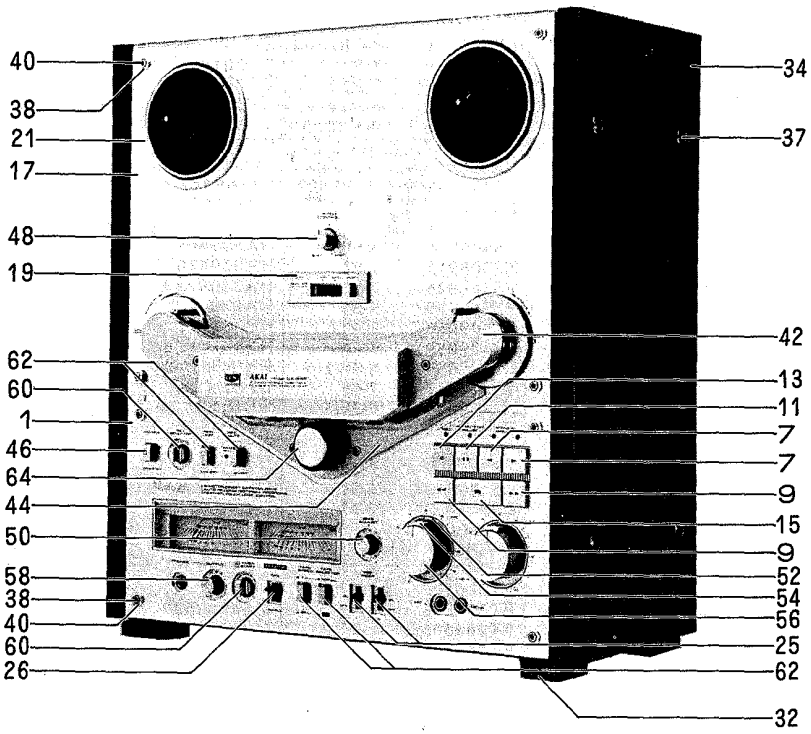
REF. NO.	PARTS NO.	DESCRIPTION
	BRAKE LEVER BLOCK	
7-1	MT314987	BRAKE BAND
7-2	ZS417216	PAN30x04STL CMT
	BRAKE PLUNGER BLOCK	
7-3	EP315918	⚠ SOLENOID 1240PLTI
7-4	ZS422076	PAN30x05STL CMT
7-5	ZW270088	RING E 190SUP CMT
7-6	MZ397181	LEVER CUSHION
7-7	ZW420682	PW42x090x050NYL
7-8	ZW290283	RING U 285SUP CMT
7-9	ZG580522	CLUTCH LEVER SPRING
7-10x	ZW616004	PW31x080x100STL CMT
7-11x	ZS323728	BID30x05STL CMT
	SWITCH PLATE BLOCK	
7-12	ES573478	SW MICRO K3 UC
7-13	ZS419670	PAN30x12STL CMT
	P PLUNGER LEVER BLOCK	
7-14	MB428343	KD STOPPER RUBBER
7-15	ZW405865	PW51x103x050NYL
7-16	ZW260043	PW61x100x020NYL
7-17	ZW270123	RING E400SUP CMT
7-18	ZG308728	P SPRING
7-19	MS527591	PINCH ROLLER SHAFT
7-20	ZW274026	SW50
7-21	ZW413278	N50STL CMT 1
7-22	ZS444262	BID40x18STL CMT
	PR PLUNGER BLOCK	
7-23	EP316121	⚠ SOLENOID 1664PLT1
7-24	ZW357164	RING E230SUP CMT
	PAUSE PLUNGER BLOCK	
7-25	EP330363	⚠ SOLENOID 0730FLT2 29V
7-26	ZS592378	PAN26x03STL CMT
7-27	ZW313593	PW51x103x050PBR
7-28	ZG308734	JOINT SPRING
	COUNTER BLOCK	
7-29	MC305642	COUNTER MP-499-08
7-30x	MC305652	COUNTER MP-499-09 (BL)
	VOLUME ASSY	
7-31	EV308917	VR ROTARY 16L10XOMB102
	SWITCH BLOCK	
7-32	ES308914	SW PUSH SUF12 2-04-02N
7-33	ES324007	SW ROTARY SRU1023S 1-02-03S
7-34	ZS422076	PAN30x05STL CMT
7-35	ED318988	D LED SR505D RED
7-36	ES308925	SW PUSH SUF12 2-02-02N
	OPERATION BLOCK	
7-37	ML308737	OPERATION PLATE (A)
7-38	ML308677	OPERATION PLATE (B)
7-39	ZG576314	FF IDLER SPRING
	OPERATION P.C BOARD (A) BLOCK	
7-40	ZG302720	-FLL30x06STL BNI
7-41	ZW273756	N30BRS 1
	LED P.C BOARD BLOCK	
7-42	ED283138	D LED GL-3PG1 GRN
7-43	ED303005	D LED GL-3HY1 YLW
7-44	ED249377	D LED GL-3AR1 RED
	POWER SWITCH ASSY	
7-45	ES313622	⚠ SW PUSH JP-27 01-2 J (U,J)
7-46x	ES309059	⚠ SW PUSH JP27 01-2 UC (C,A)
7-47x	ES309058	⚠ SW PUSH JP24 02-1 E (E,B,S,V)
	ASSEMBLY BLOCK	
7-48	MB606712	KJ STOPPER RUBBER
7-49	ZS419670	PAN30x12STL CMT
7-50	MB428343	KD STOPPER RUBBER
7-51	ZW273914	SW40
7-52	ZW413188	N40STL CMT 1
7-53	MS308695	PINCH ROLLER ARM SHAFT
7-54	ZW274026	SW50
7-55	ZW413278	N50STL CMT 1
7-56	ZG313078	SP T1-6.3/0.5-50.0 T1-190
7-57	ZG301340	PINCH ROLLER SPRING
7-58	ZW270156	RING E 600SUP CMT
7-59	BZT009A080A	PR DAMPER BL K GX-747
7-60	MPB424023	PINCH ROLLER PART KD
7-61	ZW376391	PW61x100x013PSL
7-62	ZS527681	PINCH ROLLER SET SCREW
7-63	MLB330939	SHIFTER SLIDE PART
7-64x	VT422673	BRAKE RUBBER BUSH
7-65	ZG317114	TENSION LEVER SPRING
7-66	ZW580173	GUIDE WASHER
7-67	MB308701	COUNTER BELT

8. SYS. CON. P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1	BATI014A130A	PC SYSCON BLK GX-646 (U) (U,J)
8-2	BATI014A130B	PC SYSCON BLK GX-646 (C) (C,A)
8-3	BATI014A130C	PC SYSCON BLK GX-646 (E) (E,B,S,V)
8-IC1	EI308936	IC M54410P
8-IC2,3	EI304165	IC MB400M
8-IC4	EI305238	IC MB417M
8-IC5	EI304166	IC MB418M
8-TR1	ET312497	⚠ TR 2SC1061 B,C YC40B
8-TR2	ET200505	TR 2SC2603 E,F
8-TR3	ET30734#	⚠ TR 2SD794 P,Q
8-TR4to8	ET200505	TR 2SC2603 E,F
8-TR9,10	ET554657	TR 2SA733A P,Q
8-TR11	ET200505	TR 2SC2603 E,F
8-TR12	ET554657	TR 2SA733A P,Q
8-TR14,15	ET200505	TR 2SC2603 E,F
8-TR16to19	ET308937	TR 2SC2130 G,H
8-TR20	ET522268	TR 2SA733A Q
8-TR21	ET399846	TR 2SC945L Q
8-TR22	ET308937	TR 2SC2130 G,H
8-TR23	ET200505	TR 2SC2603 E,F
8-TR24, 25	ET308937	TR 2SC2130 G,H
8-TR26to33	ET200505	TR 2SC2603 E,F
8-D1	ED330319	D SILICON DBA10B 100/1.0A
8-D2	ED313623	D ZENER H HZ22 3
8-D3	ED330319	⚠ D SILICON DBA10B 100/1.0A
8-D4	ED309069	D ZENER H HZ6 B2
8-D5	ED539976	D ZENER H WZ-130
8-D6	ED510772	D ZENER H WZ-120
8-D7,8	ED200468	D SILICON V DS448 VB3
8-D9	ED326168	⚠ D SILICON 1D4B1 200/1.5A
8-D13	ED302091	⚠ D GERMA H OA91-LF SNP
8-D14	ED302098	D GERMA V OA91-FV F05
8-D15	ED301911	D SILICON H DS448
8-D16	ED200468	D SILICON V DS448 VB3
8-D17	ED302098	D GERMA V OA91-FV F05
8-D18	ED301911	D SILICON H DS448
8-D19to22	ED200468	D SILICON V DS448 VB3
8-D24	ED301911	D SILICON H DS448
8-D26,27	ED200468	D SILICON V DS448 VB3
8-D28	ED302091	D GERMA H OA91-LF SNP
8-D29to32	ED200468	D SILICON V DS448 VB3
8-D33,34	ED302098	D GERMA V OA91-FV F05
8-D35	ED301911	D SILICON H DS448
8-D36to38	ED302098	D GERMA V OA91-FV F05
8-D39,40	ED560913	D SILICON V 1S2473VE
8-D41	ED200468	D SILICON V DS448 VB3
8-D42	ED302091	D GERMA H OA91-LF SNP
8-D43	ED200468	D SILICON V DS448 VB3
8-D44	ED302098	D GERMA V OA91-FV F05
8-D45	ED302091	D GERMA H OA91-LF SNP
8-D46	ED302098	D GERMA V OA91-FV F05
8-D47,48	ED200468	D SILICON V DS448 VB3
8-D49	ED306109	D SILICON W03B 100/1.0A
8-D50	ED326168	⚠ D SILICON 1D4B1 200/1.5A
8-D51,52	ED224550	D SILICON 10D4 400/1.0A
8-D53	ED200468	D SILICON V DS448 VB3
8-D54	ED224550	D SILICON 10D4 400/1.0A
8-D56	ED224550	D SILICON 10D4 400/1.0A
8-D57	ED200468	D SILICON V DS448 VB3
8-D60	ED200468	D SILICON V DS448 VB3
8-SW1	ES309094	SW SLIDE SL13-6-6-2-2 2-02-02N (U,J)
8-VR1	EV302718	R S-FIX H V18K3-6(4US) T3P 503
8-VR2	EV309071	R S-FIX H V18K3-6(4US) T3P 203
8-RL1to4	EP300132	⚠ RELAY POWER MY4-02-US-L 4TR 24V
8-RL5	EP308949	⚠ RELAY POWER FBR211BD024-M 1TR 24V
8-R28	ER330680	⚠ R CB H FS RDS 1/4W 331J
8-R29	ER330677	⚠ R CB H FS RDS 1/4W 181J
8-R110	ER309092	R OMF H 2W 821K
8-R111	ER315356	R CT P 20W 551K
8-R112	ER308955	R CT P 20W 360K
8-FR1	ER561216	⚠ R FUSE FRN50 200mA 1/4W 101K
8-C35to37	EC304708	C TT V D 470M 6.3DC
8-C39,40	EC313534	C EC V F05 NP 04D 100M 16DC
8-C44,45	EC308940	C EC V F05 NP 04D R47M 50DC
8-C46,47	EC308950	C TT V D 100M 6.3DC
8-C48	EC301912	C EC V SNP NM 471 160DC
8-C49	EC321297	C EC V CUT H 470M 100DC
8-C52	EC310366	C MMY V MEU 474M 150AC
8-C53	EC310374	C TT V D 101M 3.1DC
8-C101to124	EC201390	C MMY V MEU 104M 150AC (E,B,S,V)
8-C130,131	EC316194	C MMY V CUT CF921 474K 250DC
8-C132	EC321088	C MMY V CF921 473K 400DC
8-CR1to12	ER310373	⚠ SPARK QUENCHER NSK115 104C+121R 125AC

When ordering parts, please quote Parts Number, Description and Model Number.

FINAL ASSEMBLY BLOCK



13. FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	AMP PANEL BLOCK	
13-1	BDT1014A420A	AMP PANEL BLK GX-646 (U) (EXCEPT J)
13-2x	BDT1014A420B	AMP PANEL BLK GX-646 (J) (J)
13-3x	BDT1014A420C	AMP PANEL BLK GX-646-BL (U) (EXCEPT J)
13-4x	BDT1014A420D	AMP PANEL BLK GX-646-BL (J) (J)
13-5	SE315562	OPERATE ESCUTCHEON (BL)
13-6x	SE332776B	ESCUTCHEON KNOB (BL)
13-7	SBB601311	OPERATE BUTTON (F) PART
13-8x	SBB314002	OPERATE BUTTON (A-BL) PART
13-9	SBB601313	OPERATE BUTTON (G) PART
13-10x	SBB314004	OPERATE BUTTON (B-BL) PART
13-11	SBB601314	OPERATE BUTTON (H) PART
13-12x	SBB314005	OPERATE BUTTON (C-BL) PART
13-13	SBB601315	OPERATE BUTTON (I) PART
13-14x	SBB314006	OPERATE BUTTON (D-BL) PART
13-15	SBB601316	OPERATE BUTTON (J) PART
13-16x	SBB314003	OPERATE BUTTON (E-BL) PART
	MECHA PANEL BLOCK	
13-17	BDT1014A430A	MECHA PANEL BLK GX-646
13-18x	BDT1014A430B	MECHA PANEL BLK GX-646-BL
13-19	SE305035A	COUNTER ESCUTCHEON
13-20x	SE305035B	COUNTER ESCUTCHEON (BL)
13-21	SE315931	REEL TABLE ESCUTCHEON (2-C)
13-22x	SE315577	REEL TABLE ESCUTCHEON (2-D)
13-23x	ZW575730	N SPEED 30
	FINAL ASSEMBLY BLOCK	
13-24x	SA312529	RUBBER FOOT (A-2) PART
13-25	SK328684	KNOB LEVER (C)
13-26	ML328683	KNOB LEVER (B)
13-27x	SP304933A	UPPER COVER
13-28x	SP304933B	UPPER COVER (BL)
13-29x	ZS331181	BT BID30x08STL NI3
13-30	SP304928A	BOTTOM COVER
13-31x	SP304928B	BOTTOM COVER (BL)
13-32	SAB301411	SQUARE FOOT PART GX-215D
13-33x	ZS413234	PAN40x12STL CMT

REF. NO.	PARTS NO.	DESCRIPTION
13-34	SP308805	SIDE PLATE
13-35x	SP315587	SIDE PLATE (BL)
13-36x	SP305022	SIDE PLATE (B)
13-37	ZS318423	SCREW(B), W/SPOT FACING WASHER
13-38	ZS613901	PANEL SCREW
13-39x	ZS306435	PANEL SCREW (C)
13-40	TC331106A	PANEL WASHER
13-41	ZW331106B	PANEL WASHER (BL)
13-42	BCB604307	BASE HEAD COVER PART
13-43x	BCB604308	BASE HEAD COVER (BL) PART
13-44	SC332767A	BASE HEAD COVER
13-45x	SC332767B	BASE HEAD COVER (BL)
13-46	SB315828	BUTTON (B)
13-47x	SB315829	BUTTON (B-BL)
13-48	SK305027A	KNOB (B)
13-49x	SK305027B	KNOB (B)-BL
13-50	SK331108D	KNOB (A-4)
13-51x	SK331108B	KNOB (A-2)
13-52	SK332773A	KNOB MEMORY
13-53x	SK332773B	KNOB MEMORY (BL)
13-54	SK332770A	KNOB DOUBLE (LOWER)
13-55x	SK332770B	KNOB DOUBLE (LOWER)-BL
13-56	SK315822	DOUBLE KNOB (UPPER)
13-57x	SK315823	DOUBLE KNOB (UPPER-BL)
13-58	SK331108C	KNOB (A-3)
13-59x	SK331108A	KNOB (A-1)
13-60	SK331109F	KNOB (E)
13-61x	SK331109C	KNOB (C)
13-62	SK332775A	KNOB
13-63x	SK332775B	KNOB (BL)
13-64	SKB601364	PINCH ROLLER CAP (D) PART
13-65x	SKB601365	PINCH ROLLER CAP (E) PART
13-66x	SP331078F	BACK BOARD GX-646 (U)
13-67x	SP331078G	BACK BOARD GX-646 (J)
13-68x	SP331078H	BACK BOARD GX-646 (C,A)
13-69x	SP331078J	BACK BOARD GX-646 (E)
13-70x	SP331078K	BACK BOARD GX-646 (B,S)
13-71x	SP331078L	BACK BOARD GX-646 (V)
13-72x	ZS331568	T2BR30x10STL CMT C080

INDEX

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
BAT1014A130A	8-1	ED302091	8-D28	ER309092	8-R110	EV331189	11-VR1	SE315931	13-21
BAT1014A130B	8-2	ED302091	8-D42	ER310373	8-CR1to12	EV332364	11-VR1,2	SE332771A	12-11
BAT1014A130C	8-3	ED302091	8-D45	ER315356	8-R111	EW201515	6-23x	SE332771B	12-12x
BAT1014A300A	10-1	ED302098	8-D14	ER330677	8-R29	EW305691	6-20x	SE332776B	13-6x
BAT1014A350A	9-1	ED302098	8-D17	ER330680	8-R28	EW306427	6-19x	SKB601364	13-64
BAT1014A350B	9-2	ED302098	8-D33,34	ER331188	9-FR2, 3	EW306428	6-18	SKB601365	13-65x
BAT1014A350C	9-3	ED302098	8-D36to38	ER331562	9-R7	EW313882	6-21x	SK305027A	13-48
BAT1014A400A	11-1	ED302098	8-D44	ER561216	8-FR1	EW313884	6-22x	SK305027B	13-49x
BAT1014A400B	11-2	ED302098	8-D46	ES301435	9-SW1	EZ308712	5-22	SK315822	13-56
BCB604307	13-42	ED303005	7-43	ES301436	9-SW7	EO330991	9-VC1,2	SK315823	13-57x
BCB604308	13-43x	ED306109	8-D49	ES306714	9-SW6	HA309409	2-16	SK328684	13-25
BDT1014A420A	13-1	ED308952	10-D11	ES308914	7-32	HA309410	2-17	SK331108A	13-59x
BDT1014A420B	13-2x	ED308953	9-D4,5	ES308925	7-36	HA330924A	2-18	SK331108B	13-51x
BDT1014A420C	13-3x	ED309069	8-D4	ES308929	5-37	HA330924B	2-19	SK331108C	13-58
BDT1014A420D	13-4x	ED310607	10-D10	ES309058	7-47x	HB331113A	2-10	SK331108D	13-50
BDT1014A430A	13-17	ED313623	8-D2	ES309059	7-46x	HB331113B	2-11	SK331109C	13-61x
BDT1014A430B	13-18x	ED316143	9-D7,8	ES309094	8-SW1	HEH1305A010A	2-20	SK331109F	13-60
BHT1014A260A	2-1x	ED316143	9-D12	ES313622	7-45	HPH1005A010A	2-22	SK332770A	13-54
BMM1101A010A	3-1x	ED318988	7-35	ES319448	9-SW5	HRH1101A010A	2-21	SK332770B	13-55x
BMM1202A010A	4-12	ED326168	8-D9	ES319464	9-SW3,4	HZ301777	2-8	SK332773A	13-52
BRT1005A110B	4-1x	ED326168	8-D50	ES324007	7-33	HZ308681	2-9	SK332773B	13-53x
BT308918	6-8	ED330319	8-D1	ES330372	9-SW2	HZ308685	2-13	SK332775A	13-62
BT308919	6-9x	ED330319	8-D3	ES573478	7-12	HZ308709	5-26	SK332775B	13-63x
BT308920	6-11x	ED331197	10-D9	ET200399	9-TR6	HZ308710	5-24	SK597633	3-6
BT308921	6-10x	ED332336	9-D16	ET200505	8-TR2	HZ528581	2-4	SP304928A	13-30
BZM1101A040A	3-2	ED510772	8-D6	ET200505	8-TR4to8	MB308701	7-67	SP304928B	13-31x
BZT1008A190A	5-1x	ED539976	8-D5	ET200505	8-TR11	MB308714	5-35	SP304933A	13-27x
BZT1008A190B	5-2x	ED560913	8-D39,40	ET200505	8-TR14,15	MB428343	7-14	SP304933B	13-28x
BZT1008A220A	5-3x	ED560913	10-D1to8	ET200505	8-TR23	MB428343	7-50	SP305022	13-36x
BZT1008A220B	5-4x	EF300584	6-41x	ET200505	8-TR26to33	MB606712	7-48	SP308805	13-34
BZT1009A080A	7-59	EF300584	6-43x	ET200505	10-TR15,16	MB606712	12-2	SP315587	13-35x
EC201390	8-C101to124	EF300591	6-42x	ET307349	8-TR3	MC305642	7-29	SP331078F	13-66x
EC301912	8-C48	EF300591	6-44	ET308937	8-TR16to19	MC305652	7-30x	SP331078G	13-67x
EC304708	8-C35to37	EF300592	6-40x	ET308937	8-TR22	MH578957	2-5	SP331078H	13-68x
EC308940	8-C44,45	EF308923	6-38x	ET308937	8-TR24,25	MI308707	5-20	SP331078J	13-69x
EC308950	8-C46,47	EF310455	6-27x	ET308947	6-5	MI315558	5-21x	SP331078K	13-70x
EC310366	8-C52	EF562691	6-26	ET308954	9-TR2	MLB330939	7-63	SP331078L	13-71x
EC310374	8-C53	EF563681	6-30	ET308954	9-TR10	ML308677	7-38	SZ308717	5-9
EC310440	9-C24	EF563681	6-35x	ET308954	11-TR1	ML308737	7-37	SZ631945	6-24
EC312012	11-C1	EF563703	6-32x	ET308954	11-TR3	ML328683	13-26	TC331106A	13-40
EC313534	8-C39,40	EF575932	6-29	ET312497	8-TR1	MPB424023	7-60	VT422673	7-64x
EC314688	6-3x	EF575932	6-31	ET316171	10-TR4	MR308713	5-34	ZG301340	7-57
EC314990	9-C29,30	EF575932	6-34x	ET316171	10-TR7to11	MR308715	5-38	ZG308722	5-15
EC314995	9-C55	EF575932	6-36x	ET316171	10-TR14	MS308695	7-53	ZG308728	7-18
EC314995	11-C3	EF616555	6-28	ET317919	10-TR17	MS315376	5-7	ZG308734	7-28
EC316065	6-14	EF616555	6-33x	ET318237	9-TR18	MS342000	4-3	ZG312399	5-29
EC316194	8-C130,131	EF659698	6-37x	ET318237	9-TR24	MS527591	7-19	ZG313004	12-5
EC317918	11-C6	EF683313	6-39x	ET328440	9-TR3	MTT1003A340A	4-10	ZG313078	7-56
EC320548	6-2	EI213390	9-IC1	ET328440	9-TR8,9	MT314987	7-1	ZG317114	7-65
EC321088	8-C132	EI304165	8-IC2,3	ET328440	9-TR17	MT534666	4-2	ZG317496	4-11
EC321297	8-C49	EI304166	8-IC5	ET391768	9-TR13	MT534677	4-5	ZG331069	12-3
EC325380	9-C20	EI305238	8-IC4	ET399846	8-TR21	MT534688	4-7	ZG466312	2-7
EC327382	6-4x	EI308936	8-IC1	ET517263	9-TR7	MV368886	3-3	ZG540584	2-12
EC474671	11-C4	EJ249467	6-16	ET517263	9-TR15	MZ315373	5-11	ZG540617	4-4
ED200468	8-D7,8	EJ262732	6-15	ET517263	9-TR25	MZ315374	5-6	ZG567685	5-19
ED200468	8-D16	EJ308985	9-J1	ET522268	8-TR20	MZ315375	5-5	ZG576314	7-39
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ED200468	8-D53	EM330374	12-9	ET639437	9-TR4,5	SBB314002	13-8x	ZS323728	7-11x
ED200468	8-D57	EM330600	12-10x	ET639437	9-TR14	SBB314003	13-16x	ZS325495	12-4
ED200468	8-D60	EO315758	9-FL1	ET639437	9-TR16	SBB314004	13-10x	ZS331181	13-29x
ED224550	8-D51,52	EO319447	9-FL2	ET639437	9-TR19,20	SBB314005	13-12x	ZS331566	12-8
ED224550	8-D54	EO319447	11-FL1	ET639437	9-TR26	SBB314006	13-14x	ZS331568	13-72x
ED224550	8-D56	EO319495	9-VL1	ET639437	11-TR4,5	SBB601311	13-7	ZS413201	2-3
ED249377	7-44	EO330990	9-L1,2	ET666404	10-TR3	SBB601313	13-9	ZS413201	3-4
ED283138	7-42	EO331190	9-T1	ET666404	10-TR5,6	SBB601314	13-11	ZS413234	13-33x
ED301911	8-D15	EP300132	8-RL1to4	ET666415	10-TR1,2	SBB601315	13-13	ZS417216	5-10
ED301911	8-D18	EP308949	8-RL5	EV302718	8-VR1	SBB601316	13-15	ZS417216	5-13
ED301911	8-D24	EP308973	9-RL1,2	EV308917	7-31	SB315828	13-46	ZS417216	7-2
ED301911	8-D35	EP315918	7-3	EV309071	8-VR2	SB315829	13-47x	ZS417407	2-15
ED301911	9-D1to3	EP315918	12-1	EV315541	9-VR5,6	SC332767A	13-44	ZS419670	4-8
ED301911	9-D6	EP316121	7-23	EV315542	9-VR4	SC332767B	13-45x	ZS419670	5-8
ED301911	9-D9	EP330351	10-RL1	EV315753	9-VR1to3	SE305035A	13-19	ZS419670	7-13
ED301911	9-D14,15	EP330363	7-25	EV316442	9-VR8	SE305035B	13-20x	ZS419670	7-49
ED301911	9-D18to21	ER308898	9-FR1	EV319316	9-VR7	SE315562	13-5	ZS421806	6-6
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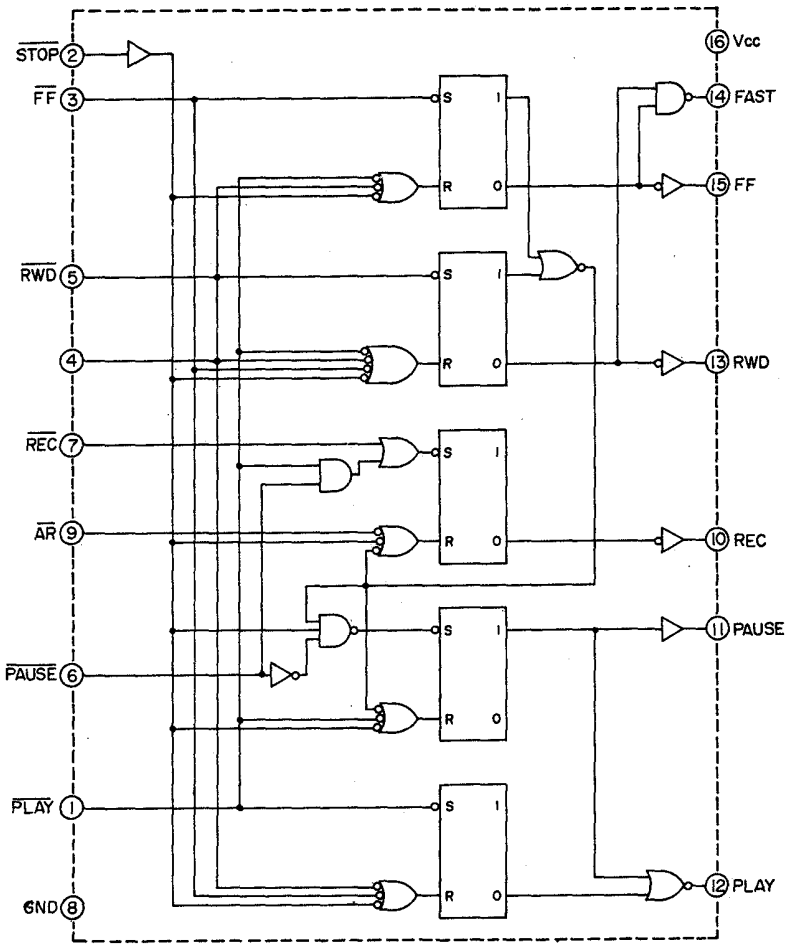
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ZS572242	5-28x								
ZS592378	7-26								
ZS608095	2-25								
ZS608321	5-18								
ZS608477	2-26								
ZS608501	2-14								
ZS613901	13-38								
ZW260043	7-16								
ZW265522	2-6								
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ZW270101	5-17								
ZW270123	7-17								
ZW270156	7-58								
ZW273756	7-41								
ZW273914	2-2								
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ZW307294	5-33								
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SECTION 3

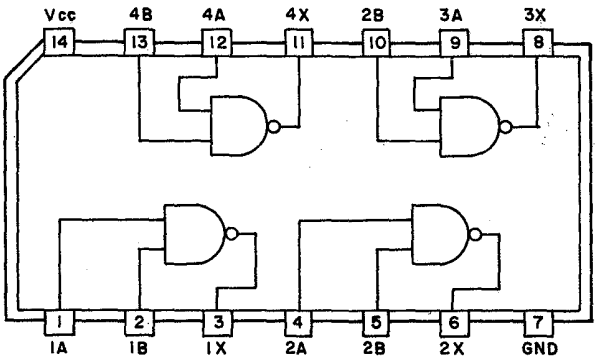
SCHEMATIC DIAGRAM

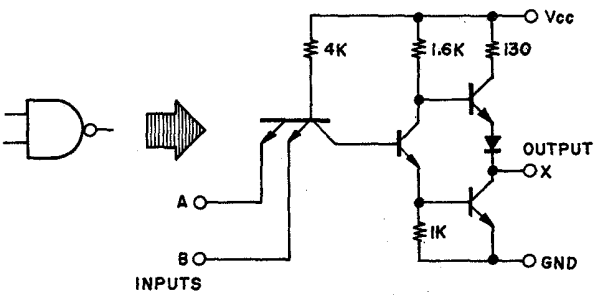
1. SCHEMATIC DIAGRAM OF ICs
2. GX-646 No. 2-1 1622442A POWER & SYSCON SCHEMATIC DIAGRAM
3. GX-646 No. 2-2 1622443A AMP SCHEMATIC DIAGRAM

M54410P

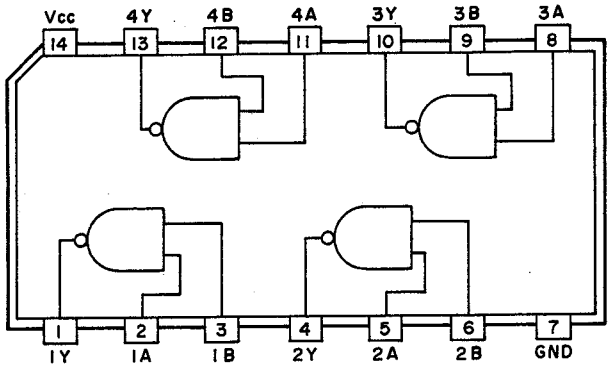


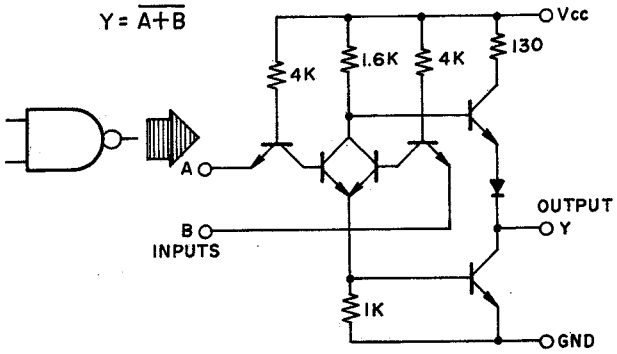
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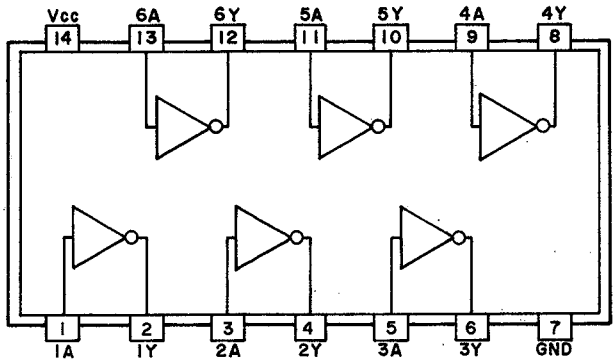


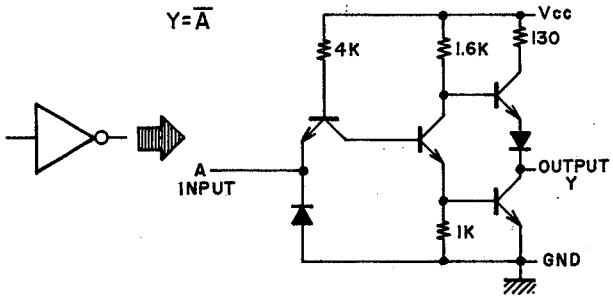
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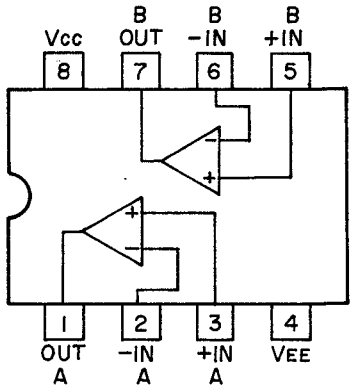


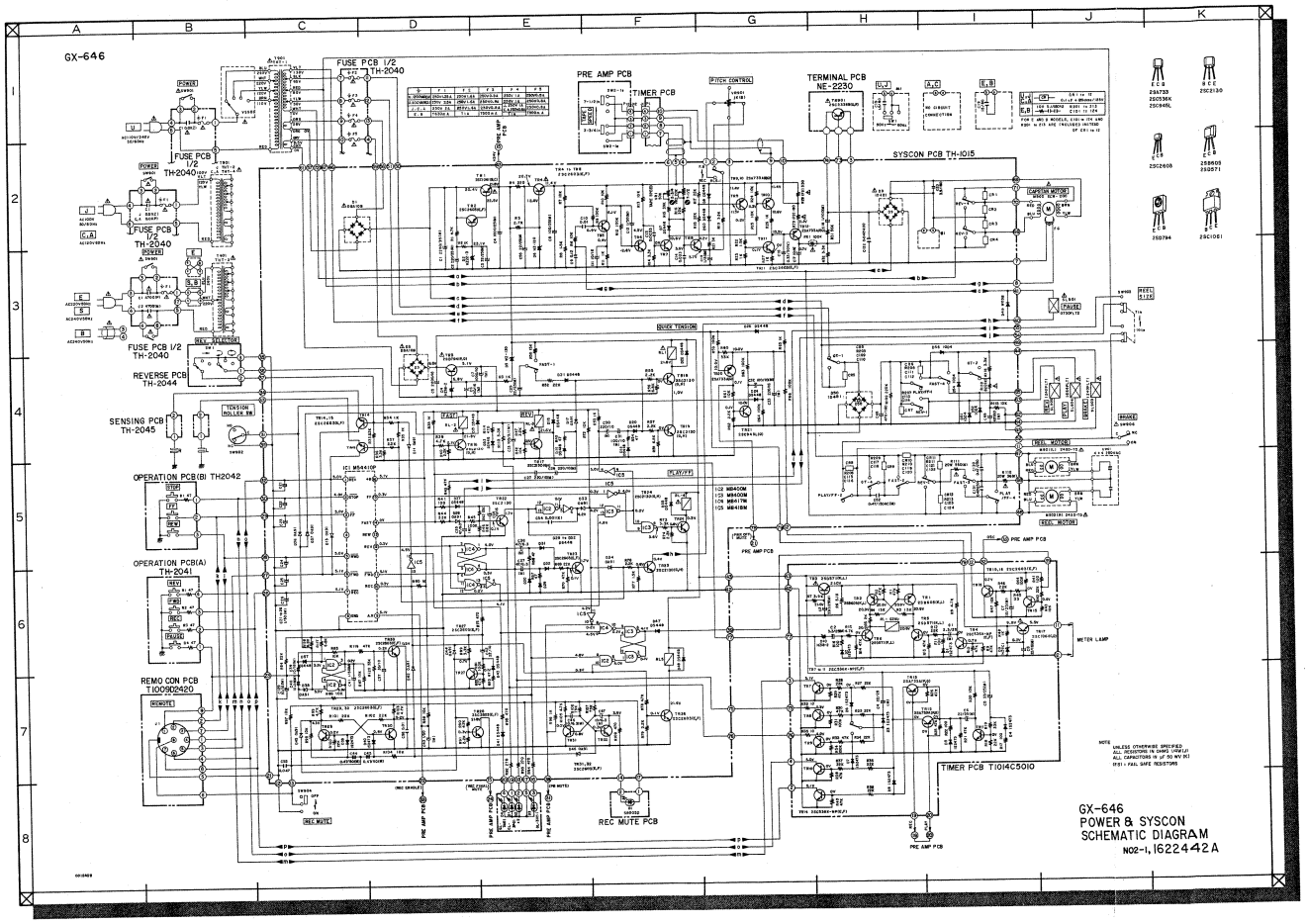
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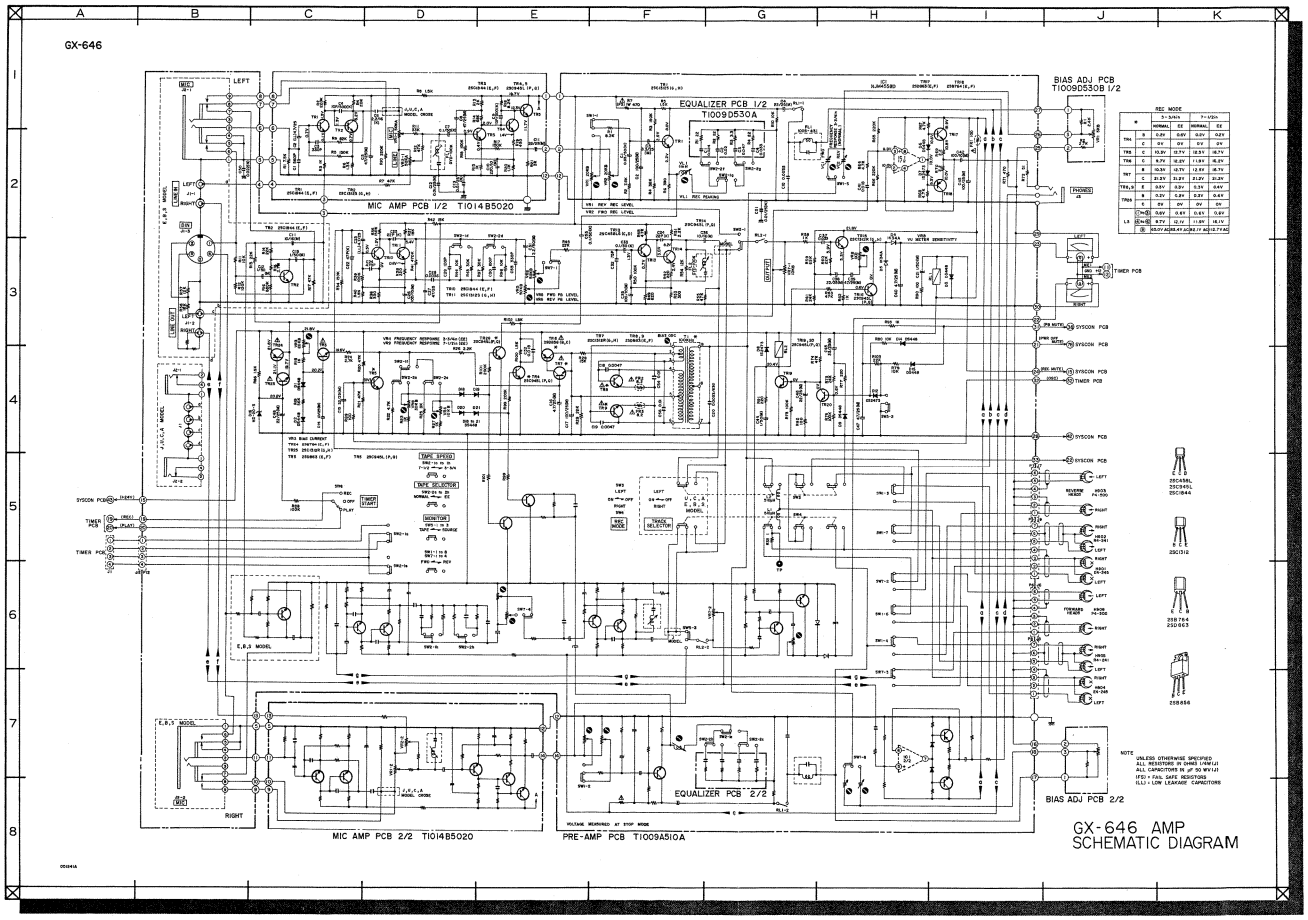




NJM4558D




GX-646
FUSE PCB 1/2 TH-2040
PRE AMP PCB
TIMER PCB
TERMINAL PCB NE-2230
SYSCON PCB TH-1015
REVERSE PCB TH-2044
SENSING PCB TH-2045
OPERATION PCB(B) TH2042
OPERATION PCB(A) TH-2041
REMO CON PCB T10090420
REC MUTE PCB
TIMER PCB T10146501O
METER LAMP
GX-646
POWER & SYSCON
SCHEMATIC DIAGRAM
NO2-1, 1622442A


GX-646
MIC AMP PCB 1/2 TI014B5020
EQUALIZER PCB 1/2
TI009D530A
BIAS ADJ PCB
TI009D530B 1/2
MIC AMP PCB 2/2 TI014B5020
PRE-AMP PCB TI009A510A
EQUALIZER PCB 2/2
BIAS ADJ PCB 2/2
GX-646 AMP
SCHEMATIC DIAGRAM

9. PRE AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
9-1	BAT1014A350A	PC PRE AMP BLK GX-646 (U) (U,C,A)
9-2	BAT1014A350B	PC PRE AMP BLK GX-646 (J)
9-3	BAT1014A350C	PC PRE AMP BLK GX-646 (E) (E,B,S,V)
9-IC1	EI213390	IC NJM4558D
9-TR1	ET603257	TR 2SC1312S G,H
9-TR2	ET308954	TR 2SC1844 E,F
9-TR3	ET328440	TR 2SD863-V8 E,F
9-TR4,5	ET639437	TR 2SC945L Q,P
9-TR6	ET200399	TR 2SB856 B,C
9-TR7	ET517263	TR 2SC1312R G,H
9-TR8,9	ET328440	TR 2SD863-V8 E,F
9-TR10	ET308954	TR 2SC1844 E,F
9-TR11	ET603257	TR 2SC1312S G,H
9-TR13	ET391768	TR 2SC458LG C,D
9-TR14	ET639437	TR 2SC945L Q,P
9-TR15	ET517263	TR 2SC1312R G,H
9-TR16	ET639437	TR 2SC945L Q,P
9-TR17	ET328440	TR 2SD863-V8 E,F
9-TR18	ET318237	TR 2SB764 E,F
9-TR19,20	ET639437	TR 2SC945L Q,P
9-TR24	ET318237	TR 2SB764 E,F
9-TR25	ET517263	TR 2SC1312R G,H
9-TR26	ET639437	TR 2SC945L Q,P
9-D1to3	ED301911	D SILICON H DS448
9-D4,5	ED308953	D GERMA H 1K34A-LH SNP
9-D6	ED301911	D SILICON H DS448
9-D7,8	ED316143	D SILICON H 1S2473HS F10
9-D9	ED301911	D SILICON H DS448
9-D12	ED316143	D SILICON H 1S2473HS F10
9-D14,15	ED301911	D SILICON H DS448
9-D16	ED332336	D ZENER H HZ20 3
9-D18 to 21	ED301911	D SILICON H DS448
9-J1	EJ308986	PIN J 1784P1782 P 4P (U,C,A,J)
9-J1	EJ308985	JACK PLATE DIN, PIN JACK 4P (E,B,S,V)
9-J2	EJ331184	PHONE J HLJ0345-100 2x2P (U,C,A,J)
9-J2	EJ321328	PHONE J HLJ0345-010 2x3P (E,B,S,V)
9-J3	EJ330545	PHONE J 3P HLJ0315-020 6.3
9-SW1	ES301435	SW SLIDE CL210E 2-10-02S
9-SW2	ES330372	SW PUSH SUE24 2-THROW
9-SW3,4	ES319464	SW LEVER 00420460 2-04-02S
9-SW5	ES319448	SW LEVER 00420461 2-04-02N
9-SW6	ES306714	SW ROTARY SRU1023N 1-02-03N
9-SW7	ES301436	SW SLIDE CL206E 2-06-02S
9-VR1to3	EV315753	R S-FIX H D8 3P 203
9-VR4	EV315542	R S-FIX H D8 3P 103
9-VR5,6	EV315541	R S-FIX H D8 3P 503
9-VR7	EV319316	VR ROTARY 16P20x2A B103
9-VR8	EV316442	R S-FIX H D8 3P 102
9-VR9	EV322417	R S-FIX H D8 3P 303
9-VL1	EO319495	COIL VARI1 GYD-102 1MHz
9-RL1,2	EP308973	RELAY LEAD LAB2NS 2NO 24V
9-FL1	EO315758	COIL TUN 1 100S-431 100kHz
9-FL2	EO319447	COIL TUN 1 GYD-100K 100kHz
9-T1	EO331190	COIL OSC 1 2330-065 100kHz
9-L1,2	EO330990	COIL FIX 2 0358-042 510μH
9-VC1,2	EO330991	C S-FIX H ECR-BC090M11 8.0-90
9-R7	ER331562	⚠ R OMF H SNP FS 1W 471J
9-FR1	ER308898	⚠ R FUSE FR25J 1/4W 101J
9-FR2,3	ER331188	⚠ R FUSE ERD2FC F10 1/4W 8R2J
9-C20	EC325380	C PP V F10 PFH 332J 630DC
9-C24	EC310440	C STY V F05 CQF09 471J 50DC
9-C29,30	EC314990	C STY V SNP CQFS 101J 50DC
9-C55	EC314995	C STY V SNP CQFS 331J 50DC

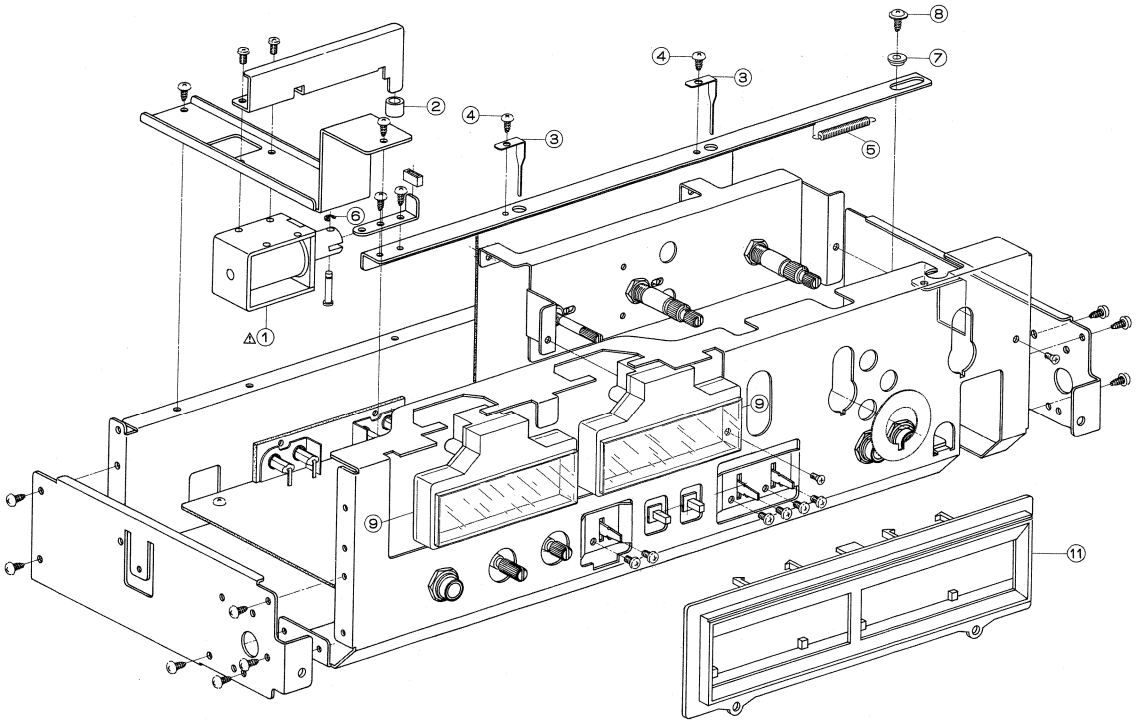
10. TIMER P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
10-1	BAT1014A300A	PC TIMER BLK GX-646
10-TR1,2	ET666415	TR 2SB605 K,L
10-TR3	ET666404	TR 2SD571 K,L
10-TR4	ET316171	TR 2SC536K-NP E,F
10-TR5,6	ET666404	TR 2SD571 K,L
10-TR7to11	ET316171	TR 2SC536K-NP E,F
10-TR12,13	ET5544657	TR 2SA733A P,Q
10-TR14	ET316171	TR 2SC536K-NP E,F
10-TR15,16	ET200505	TR 2SC2603 E,F
10-TR17	ET317919	⚠ TR 2SC1061 C,D
10-D1to8	ED560913	D SILICON V 1S2473VE
10-D9	ED331197	D ZENER H HZ6 C1
10-D10	ED310607	D ZENER H HZ18 2
10-D11	ED308952	D GERMA V 1K34A-LR F07
10-RL1	EP330351	RELAY SIGNAL G2KU 1TR 24V

11. MIC AMP P.C BOARD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
11-1	BAT1014A400A	PC MIC AMP BLK GX-646 (U) (U,J,C,A)
11-2	BAT1014A400B	PC MIC AMP BLK GX-646 (E) (E,B,S,V)
11-TR1	ET308954	TR 2SC1844 E,F
11-TR2	ET603257	TR 2SC1312S G,H
11-TR3	ET308954	TR 2SC1844 E,F
11-TR4,5	ET639437	TR 2SC945L Q,P
11-VR1,2	EV332364	VR ROTARY 16P11XOY A503 A503
11-FL1	EO319447	COIL TUN1 GYD-100K 100kHz
11-C1	EC312012	C STY V F05 CQF09 561J 50DC
11-C3	EC314995	C STY V SNP CQFS 331J 50DC
11-C4	EC474671	C MC V FM 100K 500DC
11-C6	EC317918	C TT V D 2R2K 16DC
11-VR1	EV331189	VR ROTARY 16P20x2B B502

ASSEMBLY BLOCK



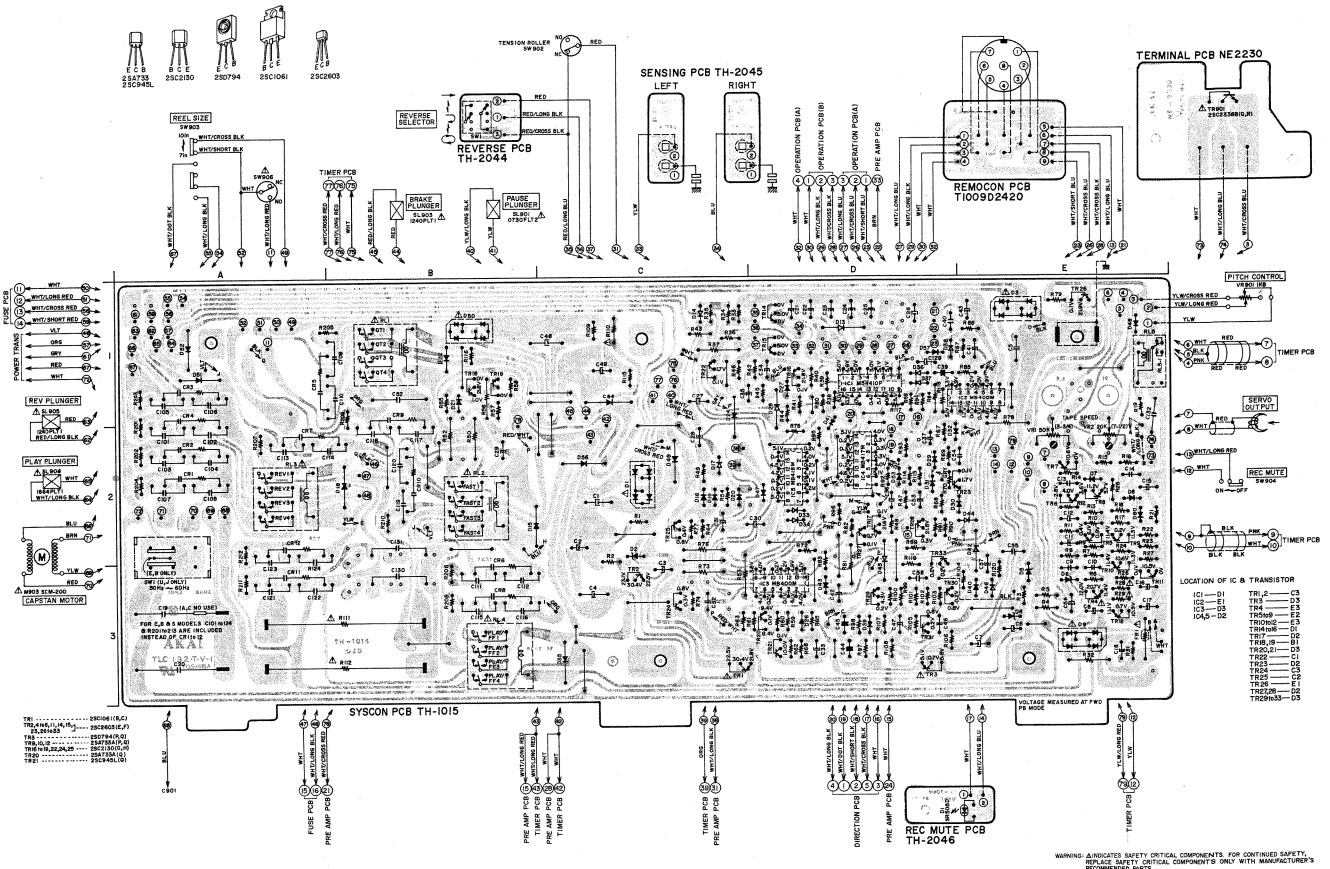
12. ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
	REVERSE PLUNGER BLOCK	
12-1	EP315918	⚠ SOLENOID 1240PLTI
12-2	MB606712	KJ STOPPER RUBBER
	REVERSE ARM BLOCK	
12-3	ZG331069	SP REVERSE
12-4	ZS325495	T2BR30x06STL CMT
12-5	ZG313004	SP T1-4.0/0.4-35.5 T1-118

REF. NO.	PARTS NO.	DESCRIPTION
	ASSEMBLY BLOCK	
12-6	ZW270088	RING E 190SUP CMT
12-7	ZW625241	GRADUATED WASHER
12-8	ZS331566	PAN30x08STL CMT CUP
12-9	EM330374	METER VU D64A24L 0.2 60mA
12-10x	EM330600	METER VU D64A27L 0.2 60mA (BL)
12-11	SE332771A	ESCUTCHEON VU
12-12x	SE332771B	ESCUTCHEON VU (BL)

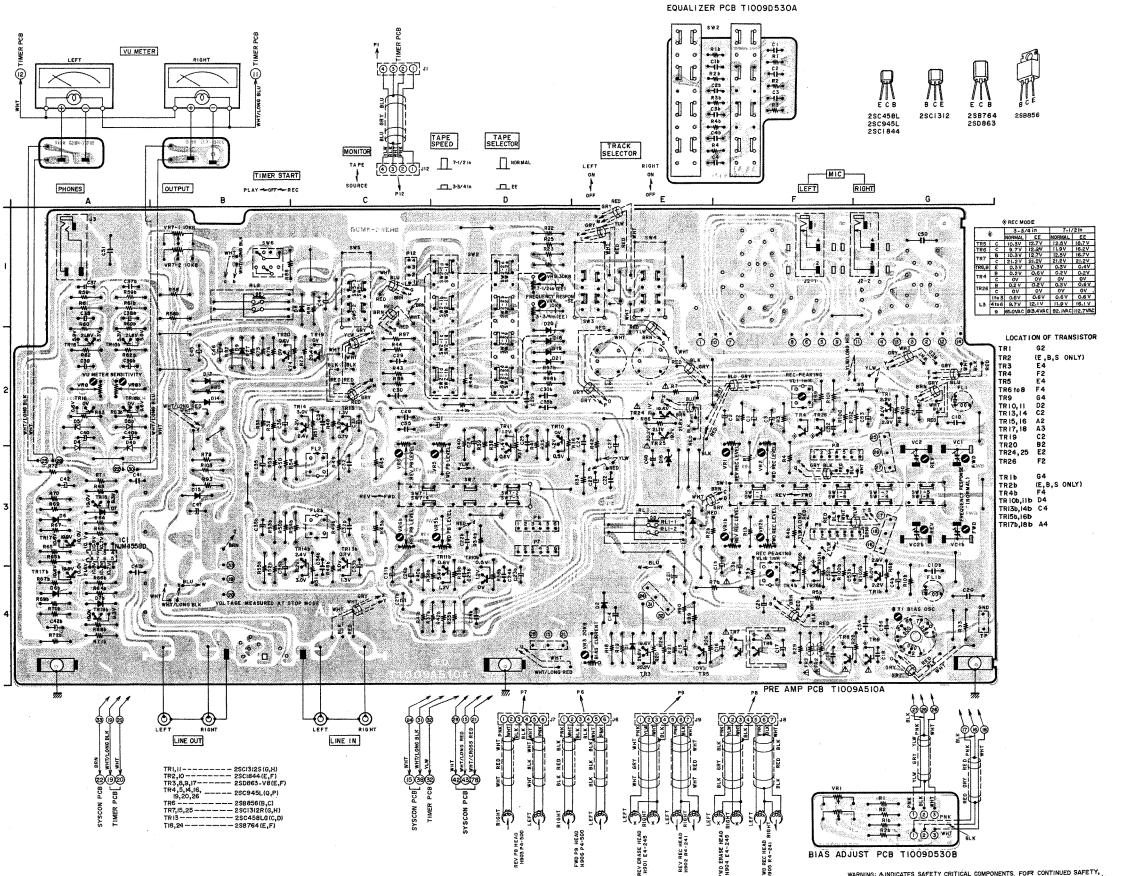
2. COMPOSITION OF VARIOUS P.C BOARDS

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, Remocon P.C Board T1009D2420 and Terminal P.C Board NE2230

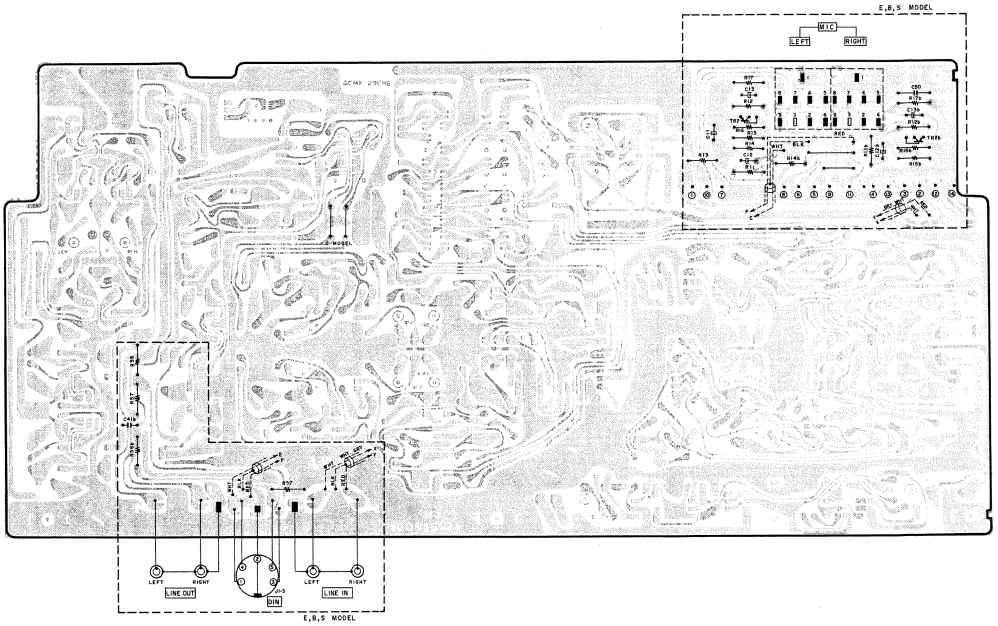


WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
AVERTISSEMENT: ⚠ IL INDIQU LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE DEGRÉ DE SECURITÉ DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT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

2) Pre Amp P.C Board T1009A510A (2ED), VU Meter P.C Board T1009A510B, C, Equalizer P.C Board T1009D530A and Bias Adjustment P.C Board T1009D530B



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 SÉCURITÉ DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÉCURITÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT


E,B,S MODEL
MIC
LEFT
RIGHT
LEFT
RIGHT
LINE OUT
DIN
LEFT
RIGHT
LINE IN
E,B,S MODEL

3) Mic Amp P.C Board T1014B5020

