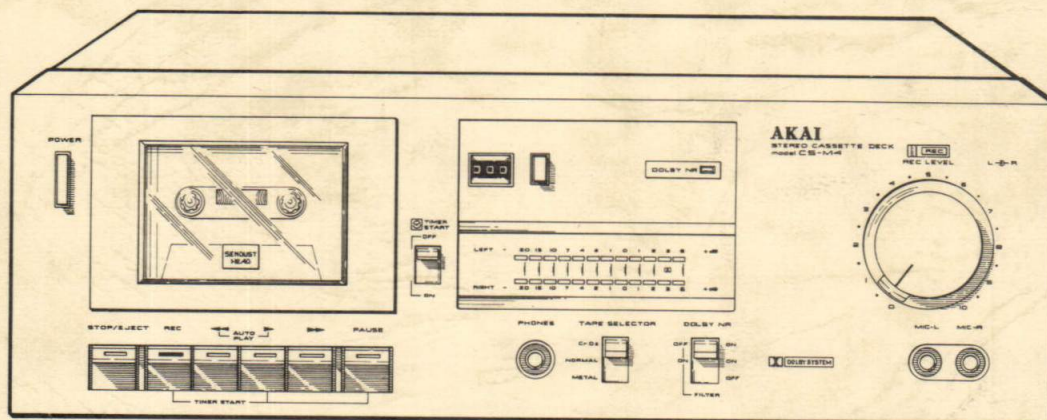
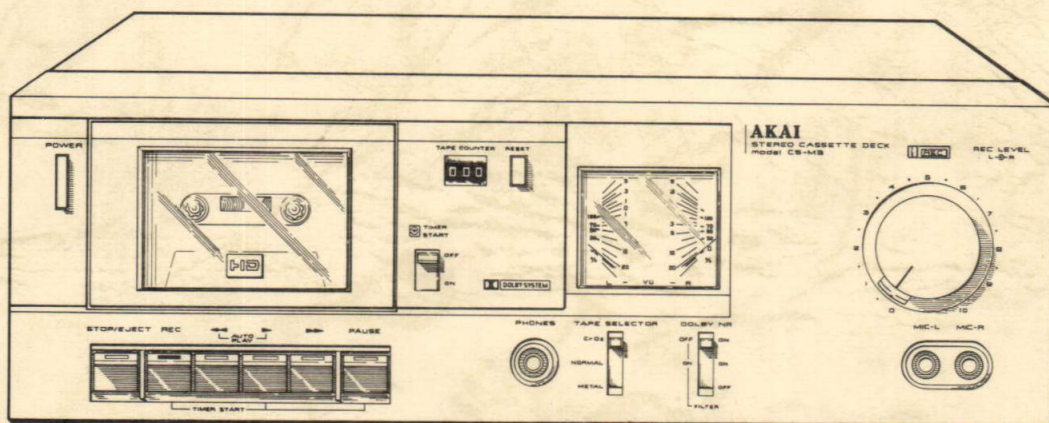


AKAI SERVICE MANUAL



STEREO CASSETTE DECK

MODEL **CS-M3**

MODEL **CS-M4**



CS-M3



CS-M4

STEREO CASSETTE DECK

MODEL **CS-M3**

MODEL **CS-M4**

THIS MODEL IS APPLICABLE TO BOTH SILVER AND BLACK PANEL MODEL

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SECTION 1

SERVICE MANUAL

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

I. TECHNICAL DATA

1. Model CS-M3

TRACK SYSTEM	4 Track 2 Channel Stereo System
TAPE	Philips Type Cassette
TAPE SPEED	4.76 cm/s $\pm$ 2.0% (1-7/8 ips. $\pm$ 2.0%)
HEADS	Erase head $\times$ 1 Sendust head for Recording/Playback $\times$ 1
MOTOR	Electronically speed controlled DC motor
WOW & FLUTTER	Less than 0.05% WRMS, 0.15% (DIN 45500)
TAPE WINDING TIME	90 sec. using a C-60 cassette tape
FREQUENCY RESPONSE	Normal: 30 to 15,000 Hz $\pm$ 3 dB (-20 VU) CrO ₂ : 30 to 16,000 Hz $\pm$ 3 dB (-20 VU) 30 to 8,000 Hz $\pm$ 3 dB (0 VU) Metal: 30 to 18,000 Hz $\pm$ 3 dB (-20 VU) 30 to 12,000 Hz $\pm$ 3 dB (0 VU)
SIGNAL TO NOISE RATIO	Normal: Better than 56 dB CrO ₂ : Better than 58 dB Metal: Better than 58 dB (Measured via tape with peak recording level) Dolby NR switch ON: Improves up to 10 dB above 5 kHz
HARMONIC DISTORTION	Normal: Less than 0.8% CrO ₂ : Less than 0.7% Metal: Less than 0.7%
INPUT	MIC: 0.25 mV (input impedance 5.0 kohms) Required microphone impedance: 600 ohms Line: 70 mV (input impedance 47 kohms)
OUTPUT	Line: 410 mV at 0 VU Required load Impedance: more than 30 kohms Phone: 45 mV/8 ohms at 0 VU
DIN	Input: 0.25 mV (input impedance 2.2 kohms) Output: 410 mV Required load impedance: more than 30 kohms
POWER CONSUMPTION	U/T, CSA, AAL . . . 13W
POWER REQUIREMENTS	120V, 60 Hz for USA and Canada 220V, 50 Hz for European countries except UK 240V, 50 Hz for UK and Australia 110/120/220/240V, switchable 50/60 Hz for other countries
DIMENSIONS	440(W) $\times$ 143(H) $\times$ 250(D) mm (17.3 $\times$ 5.6 $\times$ 9.8")
WEIGHT	5.0 kg (11.0 lbs)

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

* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories.

(Manufactured under license from Dolby Laboratories).

2. Model CS-M4

TRACK SYSTEM	4 Track 2 Channel Stereo System
TAPE	Philips Type Cassette
TAPE SPEED	4.76 cm/s $\pm$ 2.0% (1-7/8 ips. $\pm$ 2.0%)
HEADS	Erase head $\times$ 1 Sendust head for Recording/Playback $\times$ 1
MOTOR	Electronically speed controlled DC motor
WOW & FLUTTER	Less than 0.05% WRMS, 0.15% (DIN 45500)
TAPE WINDING TIME	90 sec. using a C-60 cassette tape
FREQUENCY RESPONSE	Normal: 30 to 15,000 Hz $\pm$ 3 dB (-20 VU) CrO ₂ : 30 to 16,000 Hz $\pm$ 3 dB (-20 VU) 30 to 8,000 Hz $\pm$ 3 dB (0 VU) Metal: 30 to 18,000 Hz $\pm$ 3 dB (-20 VU) 30 to 12,000 Hz $\pm$ 3 dB (0 VU)
SIGNAL TO NOISE RATIO	Normal: Better than 57 dB CrO ₂ : Better than 59 dB Metal: Better than 59 dB (Measured via tape with peak recording level) Dolby NR switch ON: Improves up to 10 dB above 5 kHz
HARMONIC DISTORTION	Normal: Less than 0.8% CrO ₂ : Less than 0.7% Metal: Less than 0.7%
INPUT	MIC: 0.25 mV (input impedance 5.0 kohms) Required microphone impedance: 600 ohms Line: 70 mV (input impedance 47 kohms)
OUTPUT	Line: 410 mV at 0 VU Required load Impedance: more than 30 kohms Phone: 45 mV/8 ohms at 0 VU
DIN	Input: 0.25 mV (input impedance 2.2 kohms) Output: 410 mV Required load impedance: more than 30 kohms
POWER CONSUMPTION	U/T, AAL, CSA . . . 15W
POWER REQUIREMENTS	120V, 60 Hz for USA and Canada 220V, 50 Hz for European countries except UK 240V, 50 Hz for UK and Australia 110/120/220/240V, 50/60 Hz internally switchable for other countries.
DIMENSIONS	440(W) $\times$ 143(H) $\times$ 250(D) mm (17.3 $\times$ 5.6 $\times$ 9.8")
WEIGHT	5.0 kg (11.0 lbs)

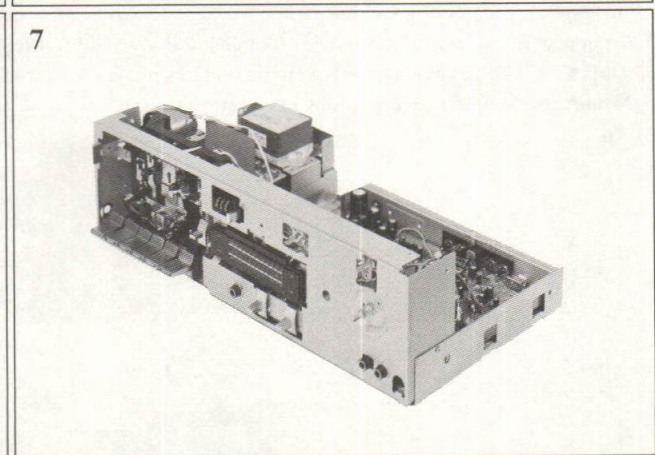
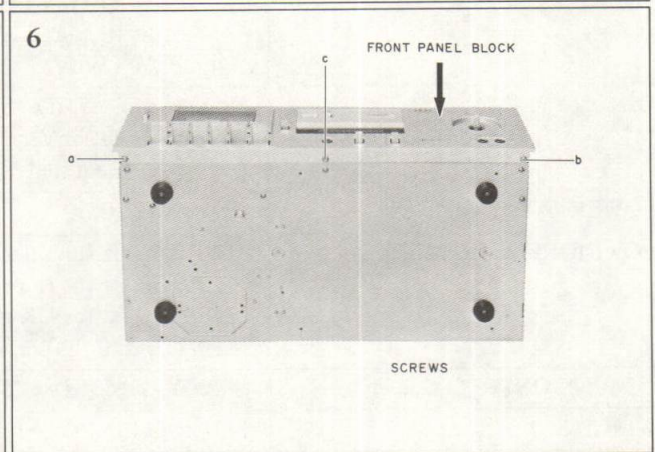
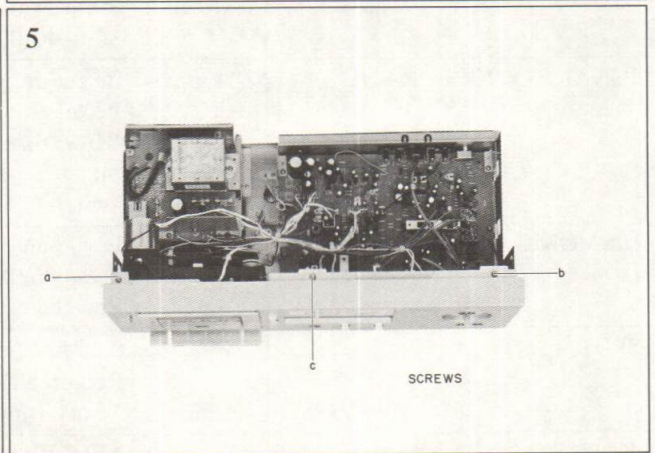
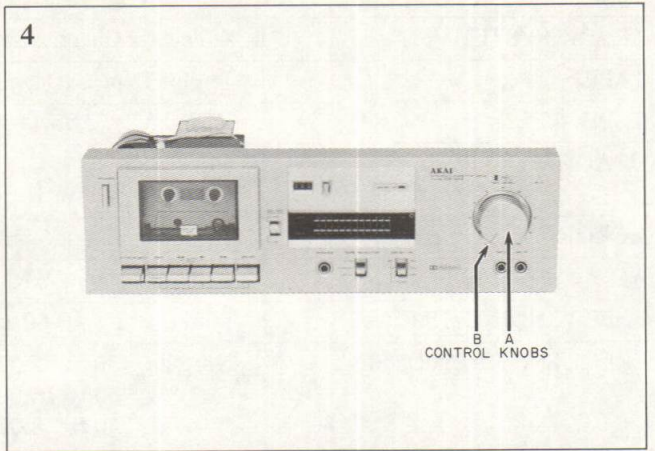
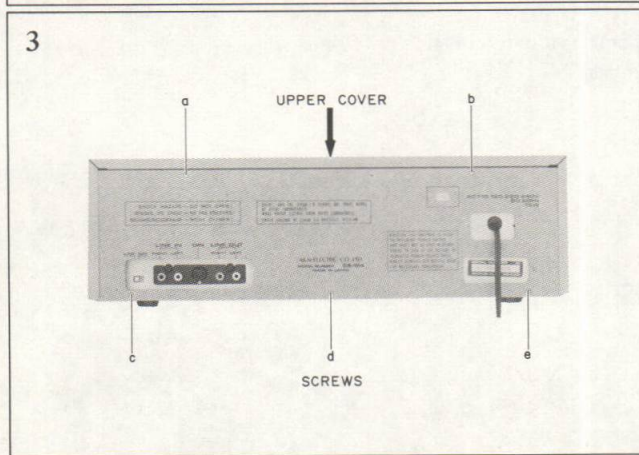
* For improvement purposes, specifications and design are subject to change without notice.

* "Dolby" and the Double D symbol are trademarks of Dolby Laboratories.

(Manufactured under license from Dolby Laboratories).

II. DISMANTLING OF UNIT

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



III. CONTROLS

1. Model CS-M3

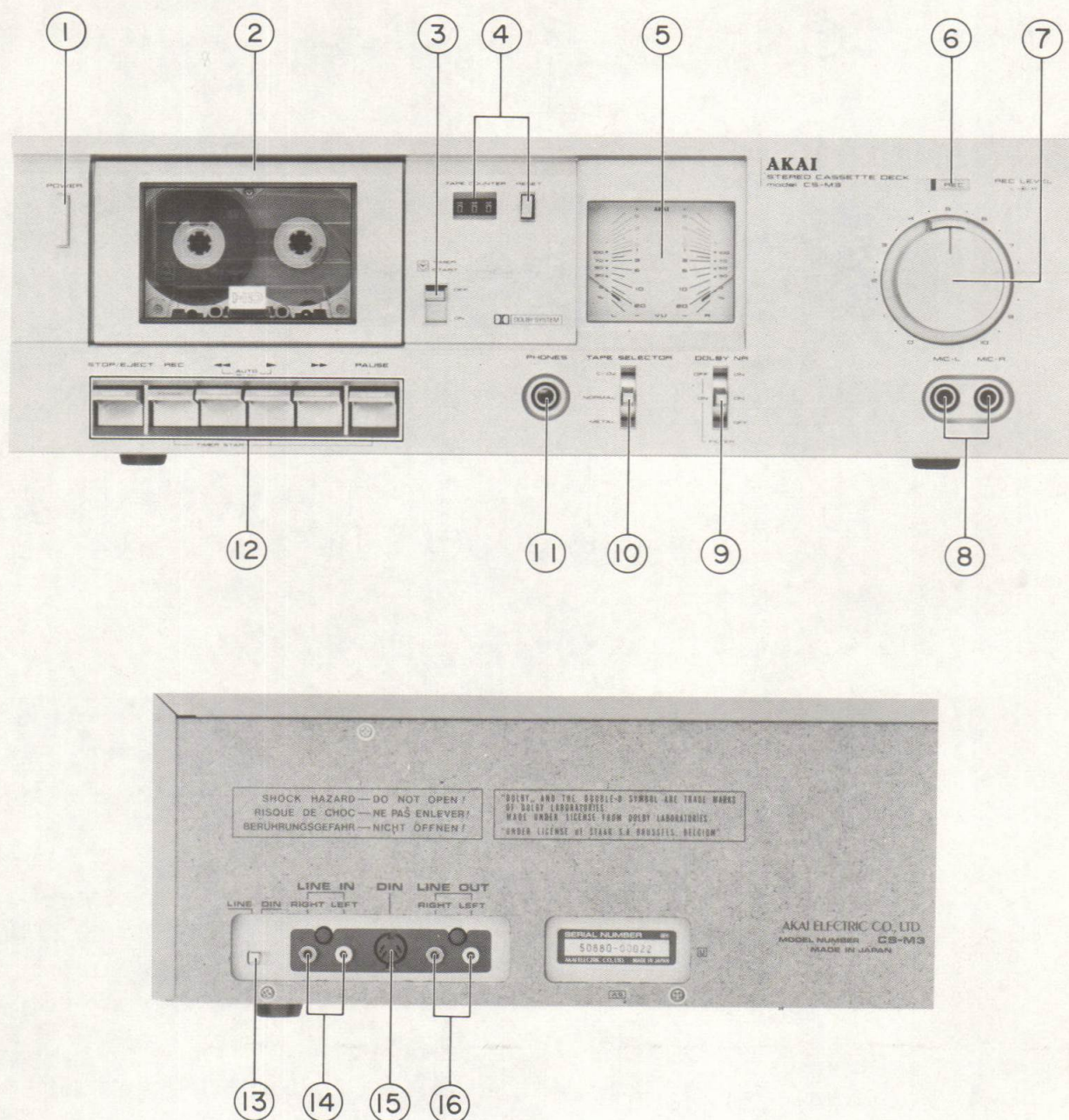


Fig. 1 Controls

- | | |
|---|---|
| 1. POWER SWITCH | 9. DOLBY NR and FILTER SWITCH |
| 2. CASSETTE RECEPTACLE | 10. TAPE SELECTOR |
| 3. TIMER START SWITCH | 11. HEADPHONE JACK (PHONES) |
| 4. TAPE COUNTER and RESET BUTTON | 12. OPERATING KEYS |
| 5. VU METERS | 13. LINE/DIN SELECTOR (Some models do not have this facility) |
| 6. RECORDING INDICATOR (REC) | 14. LINE IN JACKS (right and left) |
| 7. LEFT → RIGHT RECORDING LEVEL CONTROLS | 15. DIN JACK (Some models do not have this facility) |
| 8. MICROPHONE JACKS (MIC-L: left, MIC-R: right) | 16. LINE OUT JACKS (right and left) |

2. Model CS-M4

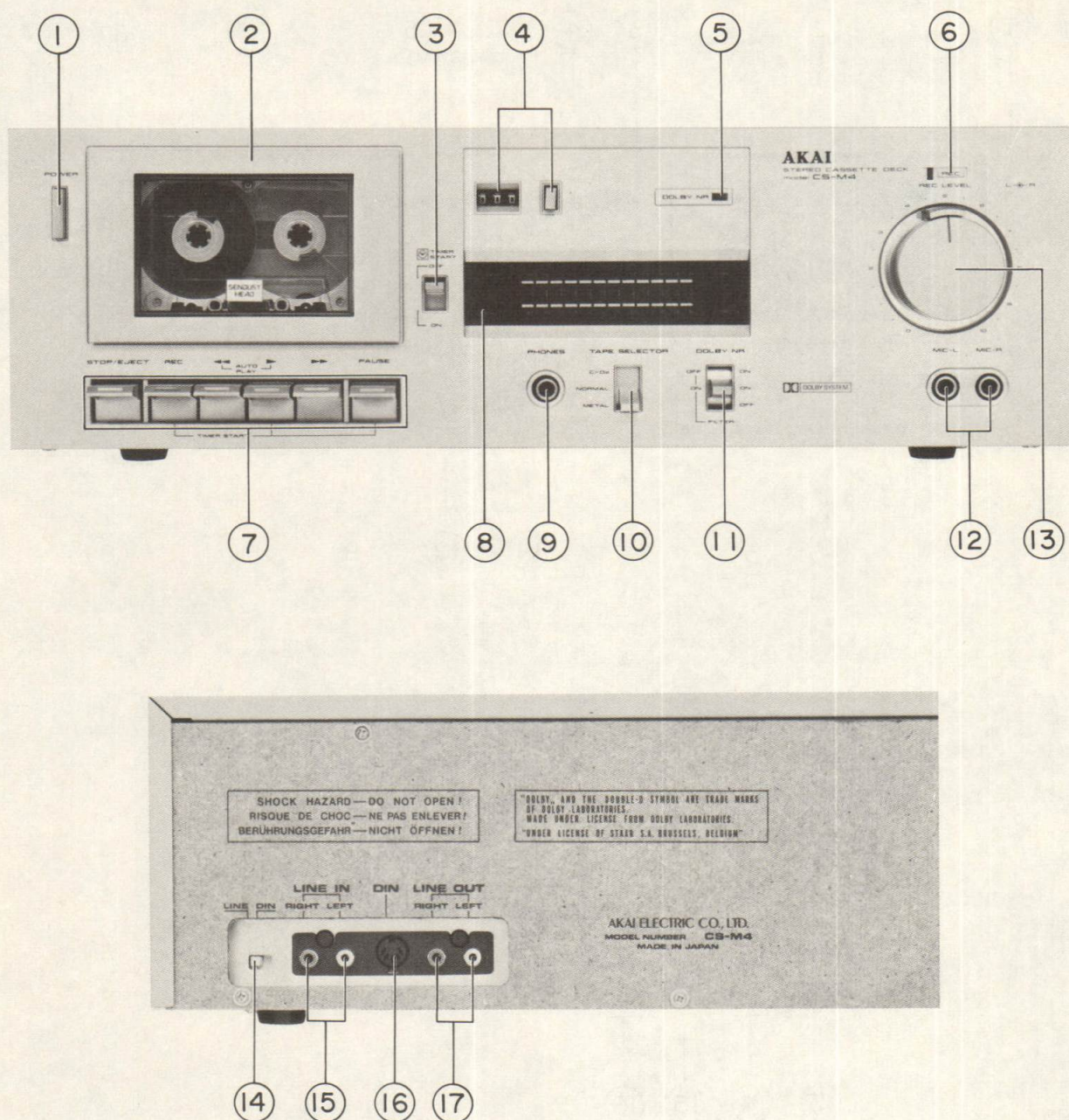


Fig. 2 Controls

- | | |
|----------------------------------|---|
| 1. POWER SWITCH | 10. TAPE SELECTOR |
| 2. CASSETTE RECEPTACLE | 11. DOLBY NR and FILTER SWITCH |
| 3. TIMER START SWITCH | 12. MICROPHONE JACKS (MIC-L: left, MIC-R: right) |
| 4. TAPE COUNTER and RESET BUTTON | 13. LEFT → RIGHT RECORDING LEVEL CONTROLS |
| 5. DOLBY NR INDICATOR | 14. LINE/DIN SELECTOR (Some models do not have this facility) |
| 6. RECORDING INDICATOR (REC) | 15. LINE IN JACKS (right and left) |
| 7. OPERATING KEYS | 16. DIN Jack (Some models do not have this facility) |
| 8. LED BAR METER | 17. LINE OUT JACKS (right and left) |
| 9. HEADPHONE JACK (PHONES) | |

IV. PRINCIPAL PARTS LOCATION

1. Model CS-M3

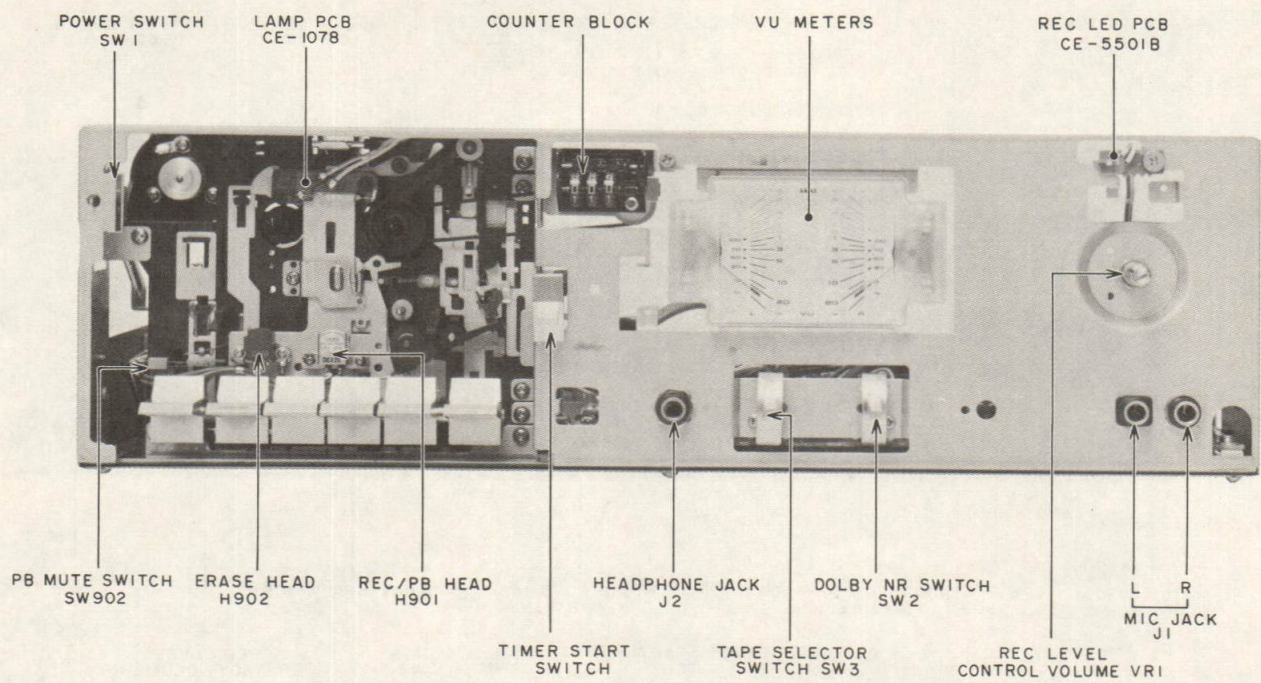


Fig. 3 Front View

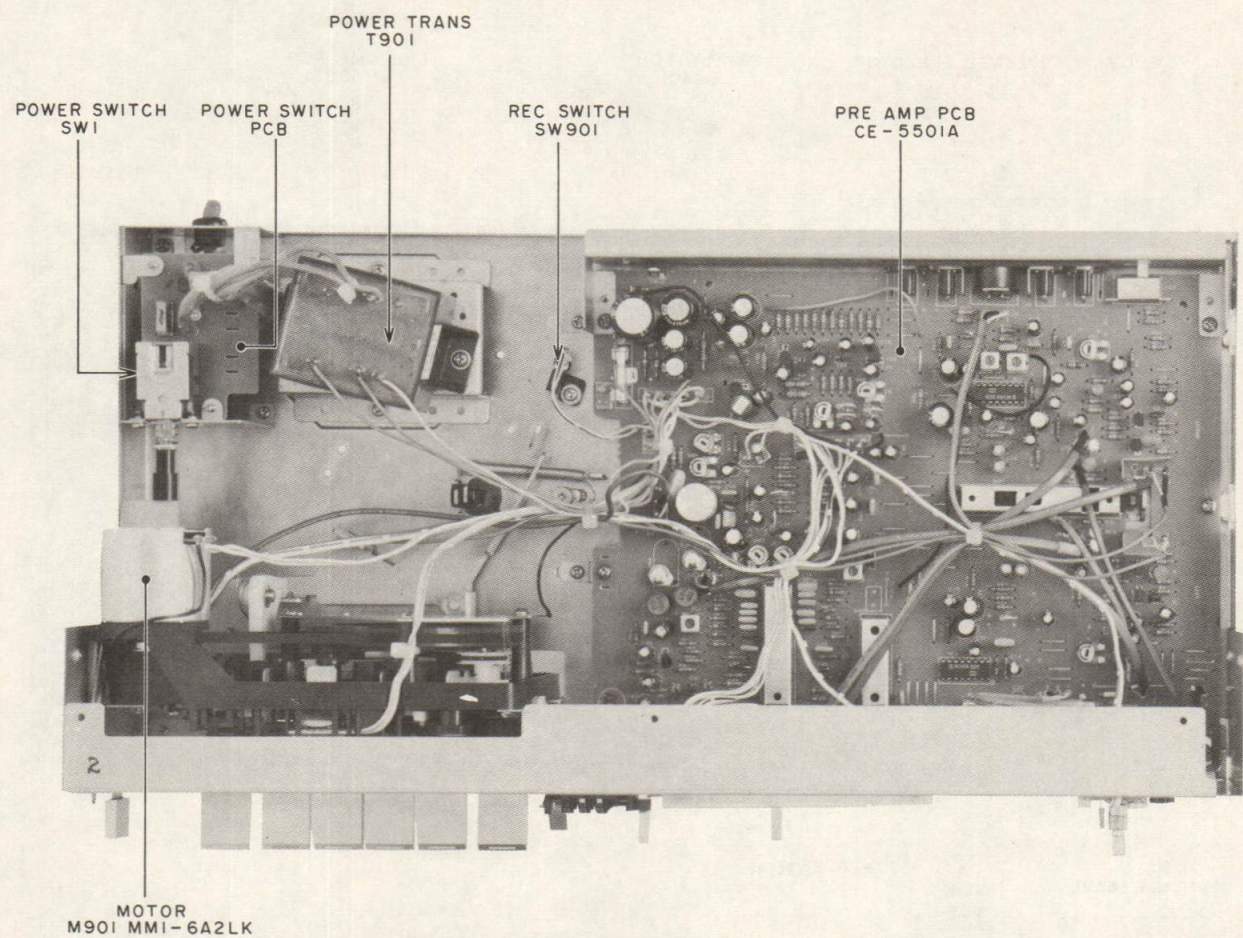


Fig. 4 Top View

2. Model CS-M4

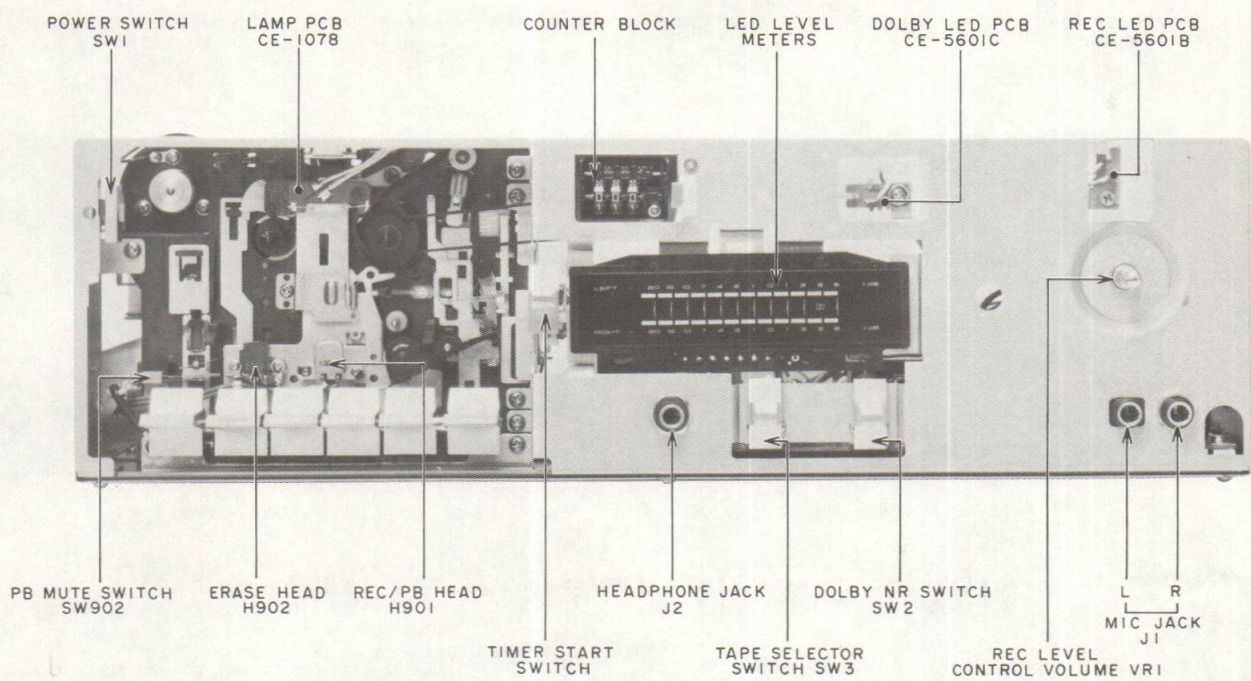


Fig. 5 Front View

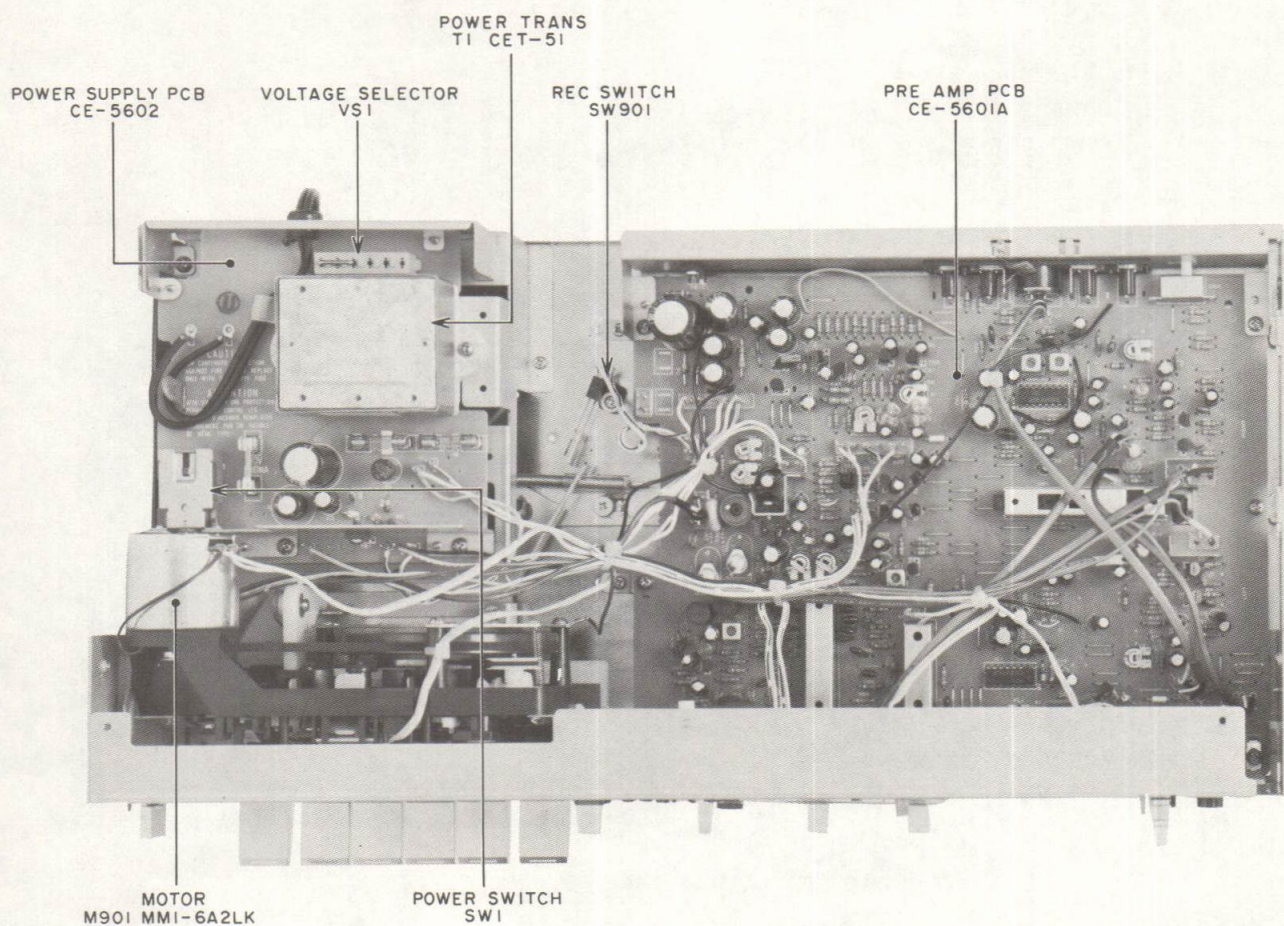
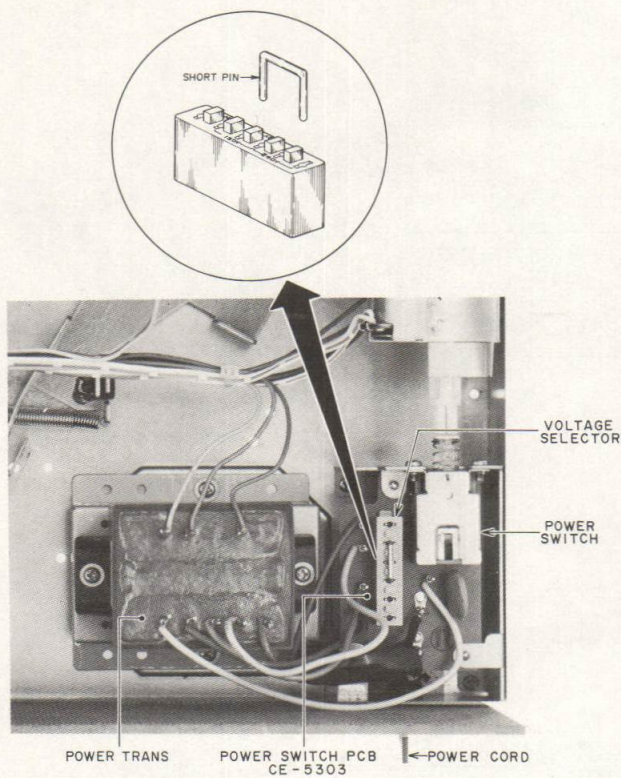
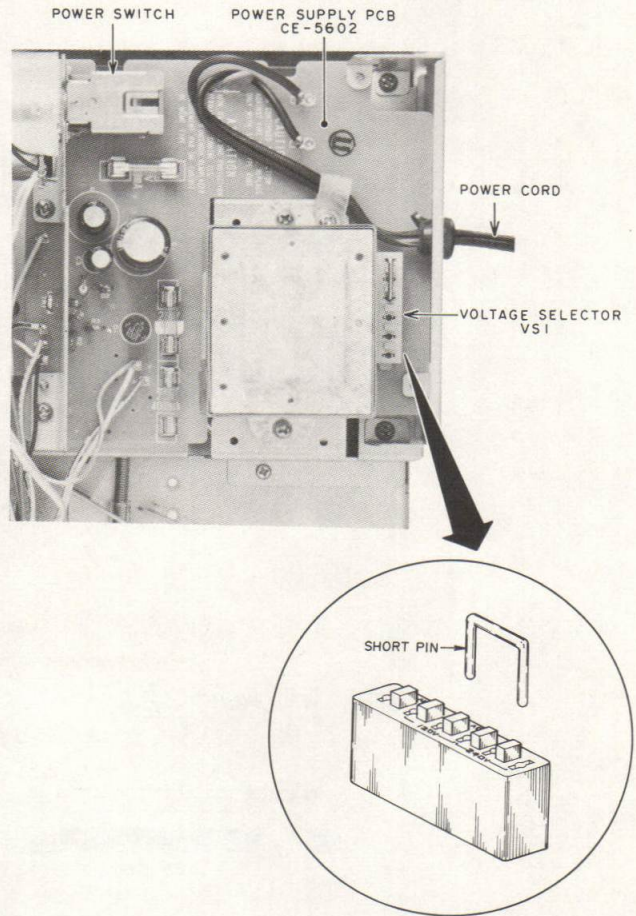


Fig. 6 Top View

V. VOLTAGE CONVERSION



(a) CS-M3



(b) CS-M4

Fig. 7 Voltage Conversion (U/T Model)

1. VOLTAGE CONVERSION

Models for Canada, Europe, USA, UK and Australia are not equipped with this facility. Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required. If voltage change is necessary, this can be accomplished as follows:

- 1) Disconnect power cord.
- 2) Loosen holding screws and remove upper cover.
- 3) Remove short pin plug from present holes and replace in correct holes. Follow the markings explicitly.

2. CYCLE CONVERSION

With DC motor, cycle conversion is not necessary.

VI. MECHANISM ADJUSTMENT

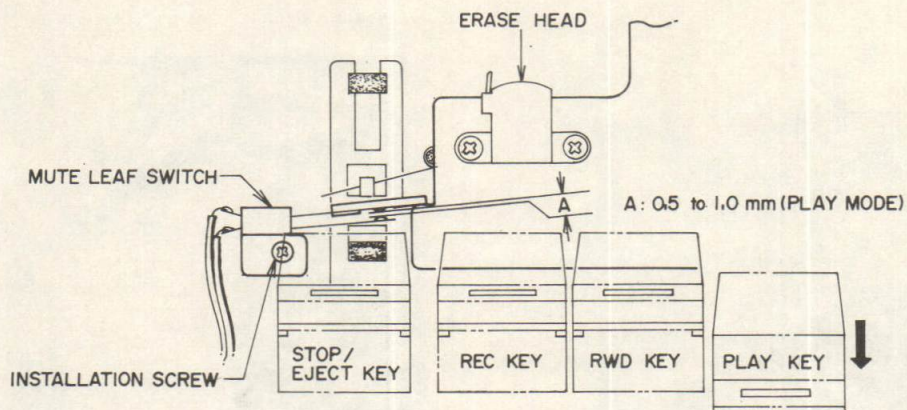


Fig. 8

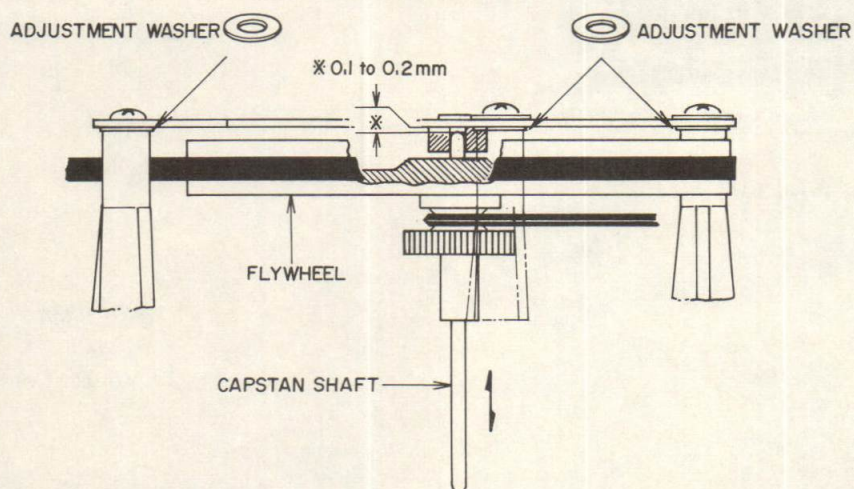


Fig. 9

1. MUTE LEAF SWITCH INSTALLATION POSITION ADJUSTMENT (Refer to Fig. 8)

When in the playback mode, the space A should be 0.5 to 1.0 mm as in Fig. 8. To adjust, turn the leaf switch installation screw.

Confirm the switch stays in the same position when the RWD and PLAY keys are depressed together.

2. FLYWHEEL LOOSE PLAY ADJUSTMENT (Refer to Fig. 9)

Insert the various washers in the three places between the prop and the flywheel hold plate and adjust to give 0.1 to 0.2 mm loose play when the flywheel is moved in the direction of the arrows.

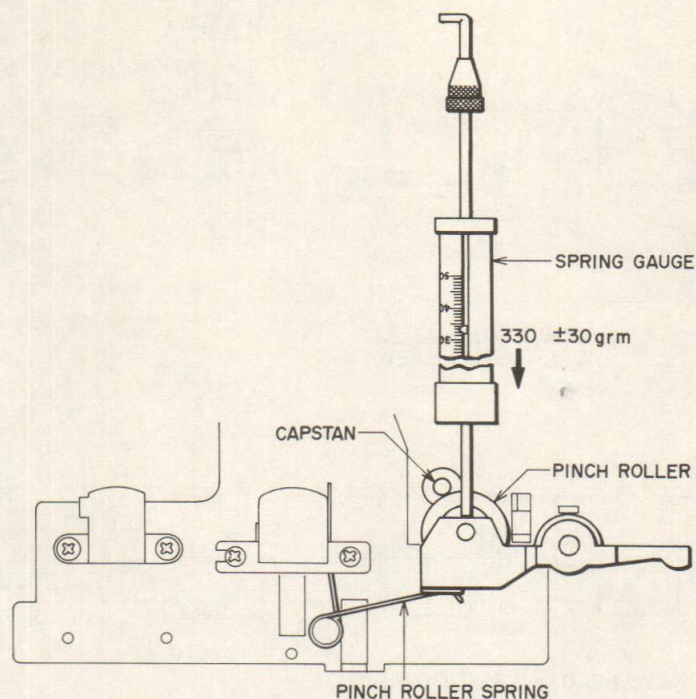


Fig. 10

3. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 10)

At playback mode, push the pinch roller with a spring gauge until the pinch roller separates from the capstan by about 1 mm to 2 mm and then gently return. Take a reading of the spring gauge indication at the moment the pinch roller touches the capstan and begins to rotate.

Specified Pinch Roller Pressure : 330 ± 30 gm

In case specified pressure cannot be attained, replace the pinch roller spring.

4. WINDING TORQUE MEASUREMENT IN EACH MODE

Insert cassette torque meter and measure in each mode. For fast forward and rewind measure at the end of the tape when the tape has stopped running. The specified torque is:

Playback : 35 to 60 g-cm

Fast Forward, Rewind : 80 to 120 g-cm

In case specified take-up torque cannot be attained.

Playback mode : Replace Take-up Reel Table Block.

Fast Forward or Rewind mode : Replace Middel Gear Block.

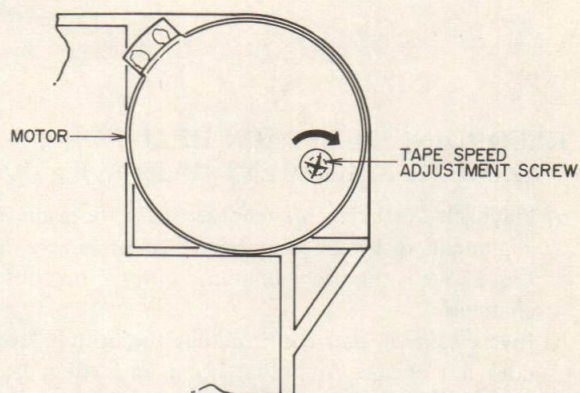


Fig. 11

5. TAPE SPEED ADJUSTMENT (Refer to Fig. 11)

Connect the frequency counter to the line output terminals.

Playback a 1,000 Hz pre-recorded test tape and adjust tape speed adjustment screw to obtain a tape speed of $1,000 \text{ Hz} \pm 1\%$.

VII. HEAD ADJUSTMENT

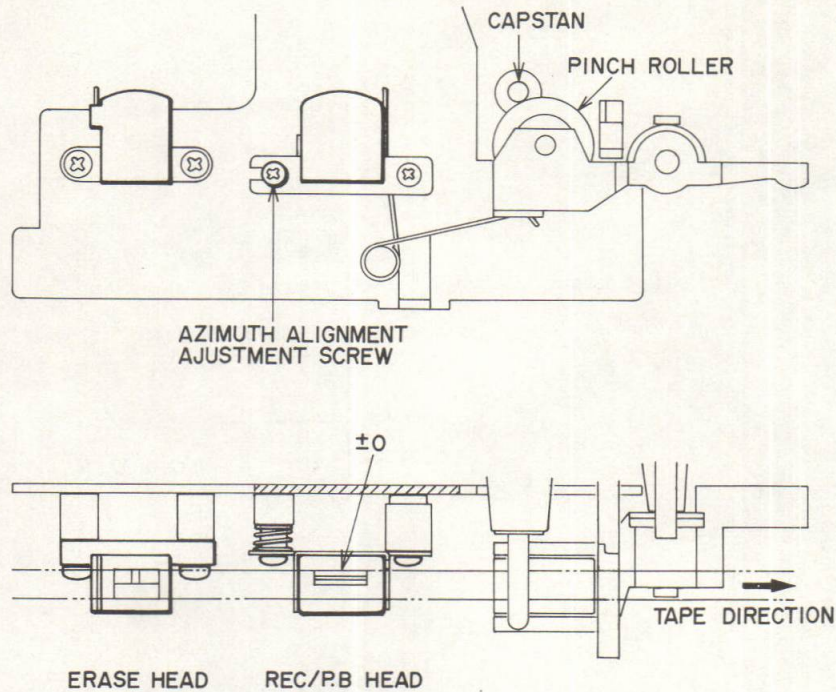


Fig. 12 Head Adjustment

1. RECORDING/PLAYBACK HEAD

AZIMUTH ALIGNMENT (Refer to Fig. 12)

- Playback a 10 kHz pre-recorded cassette azimuth alignment test tape and adjust screw shown in Fig. 12 to obtain maximum output on both channels.
- Invert cassette and confirm that the output level does not change from that obtained in Item 1-a) above. If the output level differs, adjust in the same way as in Item 1-a) above until both sides of the test tape display equal output.

- NOTES:**
- Be sure to clean the heads prior to head adjustment.
 - Be careful not to use a magnetized driver or other magnetized tools in the vicinity of the heads.
 - Be sure to demagnetize the heads with a Head Demagnetizer before and after head adjustment.

VIII. AMPLIFIER ADJUSTMENT

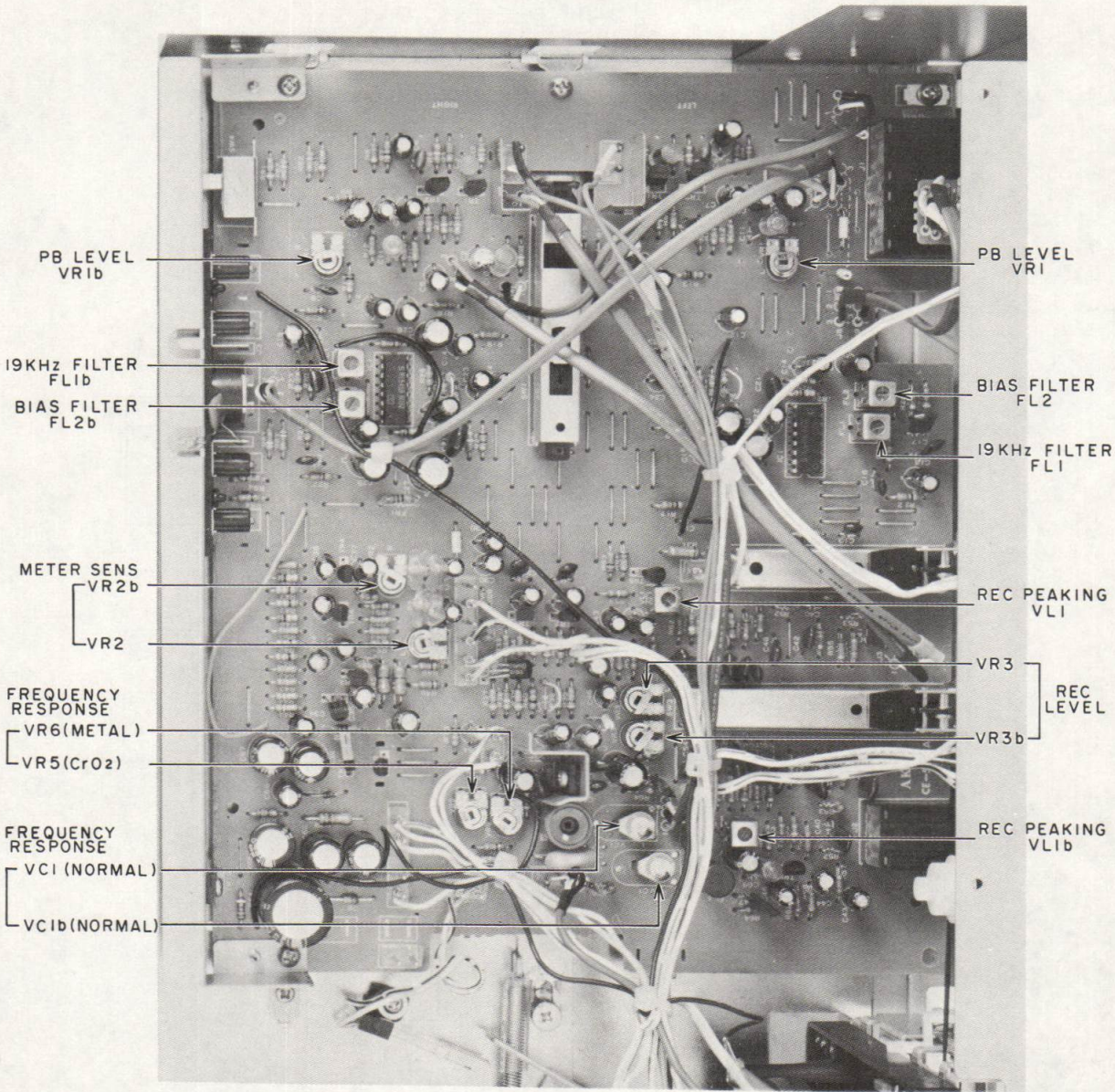


Fig. 13 Pre Amp P.C Board CS-M3 (CE-5501A)
CS-M4 (CE-5601A)

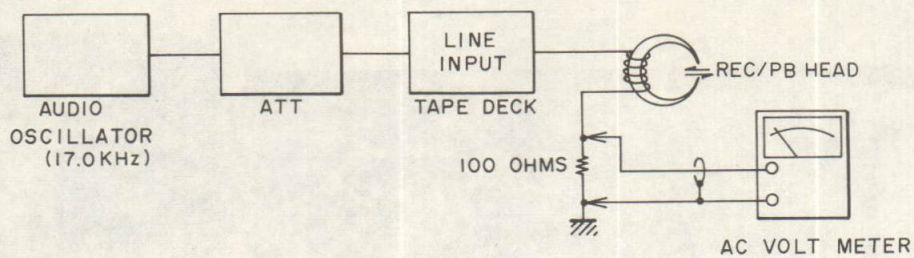


Fig. 14 Instrument Connection

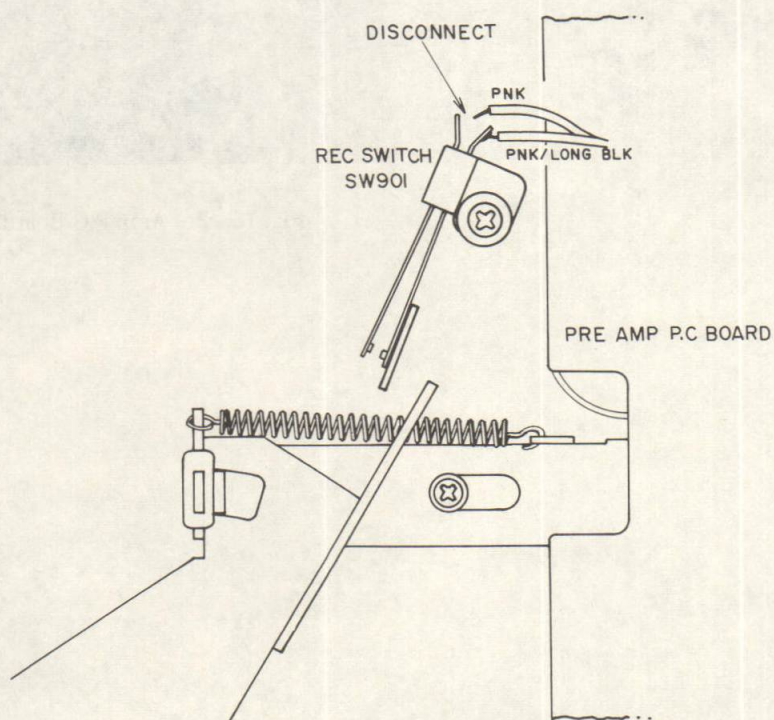
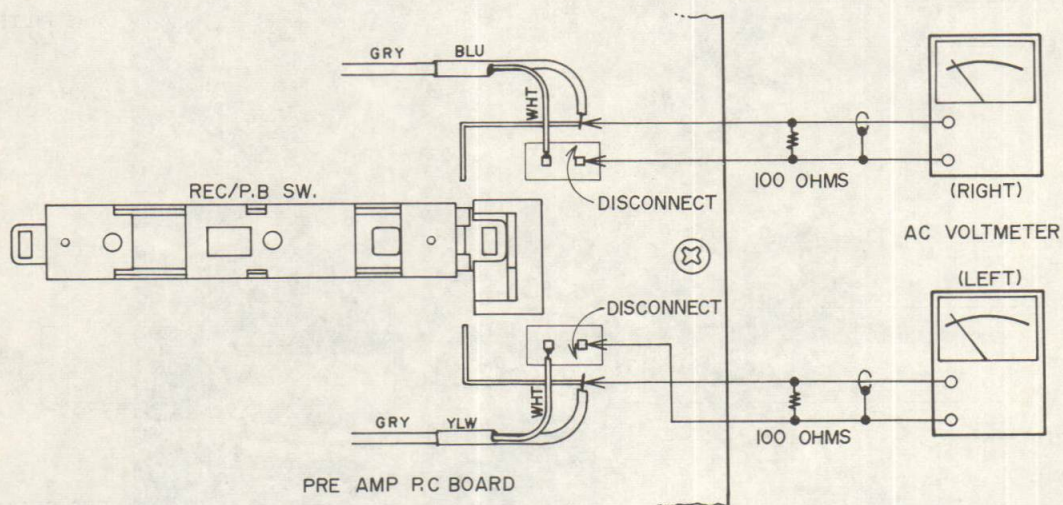


Fig. 15 Rec Peaking Adjustment

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	Playback Level	333 Hz, 0VU Test tape	PB	VR1 50 k Ω	-5.5 $\pm$ 0.5 dBm (410 mV)	
2	Meter Sensitivity	1,000 Hz -5.5 dBm from oscillator	REC	VR2 5 k Ω (CS-M3) 50 k Ω (CS-M4)	0VU indication	
3	REC Peaking Adjustment	17.0 kHz (CS-M3) 16.7 kHz (CS-M4) -25.5 dBm from oscillator	REC	VL1 (3.3 mH)	AC voltmeter indicates to maximum	Fig. 15 NOTE 6, 9
4	Normal Position Frequency Response	Normal Blank tape 1,000Hz, 10,000Hz -25.5 dBm recording	REC/PB	VC1 100P	1,000 Hz to 10,000 Hz flat	
5	CrO ₂ Position Frequency Response	CrO ₂ Blank tape 1,000Hz, 10,000Hz -25.5 dBm recording	REC/PB	VR5 200 k Ω	1,000 Hz to 10,000 Hz flat	Set tape selector to CrO ₂ Position
6	Metal Position Frequency Response	Metal Blank tape 1,000Hz, 10,000Hz -25.5 dBm recording	REC/PB	VR6 50 k Ω	1,000 Hz to 10,000 Hz flat	Set tape selector to Metal Position
7	Recording Level	Normal Blank tape 1,000Hz, -5.5 dBm recording	REC/PB	VR3 30 k Ω	-5.5 $\pm$ 0.5 dBm	
8	Bias Filter	No Signal	REC	FL2	AC Voltmeter indicates to minimum	REC volume to max Position. NOTE 9
9	Distortion Factor Confirmation	1,000 Hz -5.5 dBm recording	REC/PB		Normal < 0.8% CrO ₂ < 0.7% Metal < 0.7%	NOTE 7
10	19 kHz Filter Adjustment	19 kHz from oscillator	REC	FL1	AC Voltmeter indicates to minimum	Set Dolby NR SW to ON, Filter ON Position. NOTE 8, 9

- NOTES:**
1. Input selector switch to LINE. (The AAL Model do not have this facility.)
 2. Because each of these adjustments is vital to perfect Dolby NR circuit operation, ensure that they are carried out with as few errors as possible.
 3. Except for Step 5, 6 and 9, set Tape Selector to NORMAL Position.
 4. Except for Step 10, set Dolby NR switch to OFF Position.
 5. Use the following cassette measuring tapes:

Normal Tape	: Maxell	UD	C-60
CrO ₂ Tape	: TDK	SA	C-60
Metal Tape	: TDK	MA-C	C-60
 6. Stop the recording bias oscillator while making record peaking adjustment.
 7. If it does not comply with the specifications, repeat Steps 4 to 7 and readjust.
 8. Adjust the oscillator's frequency to give a frequency counter reading of 19.00 kHz.
 9. Unless the core is moved unintentionally this adjustment is not necessary.

IX. DC RESISTANCE OF VARIOUS COILS

Parts	Designation	DC Resistance	Utilizing Model
REC/PB Head	RP-244-DM-6210	280 ohms ± 20%	CS-M3
REC/PB Head	HN424660	220 ohms	CS-M4
Erase Head	HF213151	3.5 ohms	CS-M3, CS-M4

X. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

1) Model CS-M3

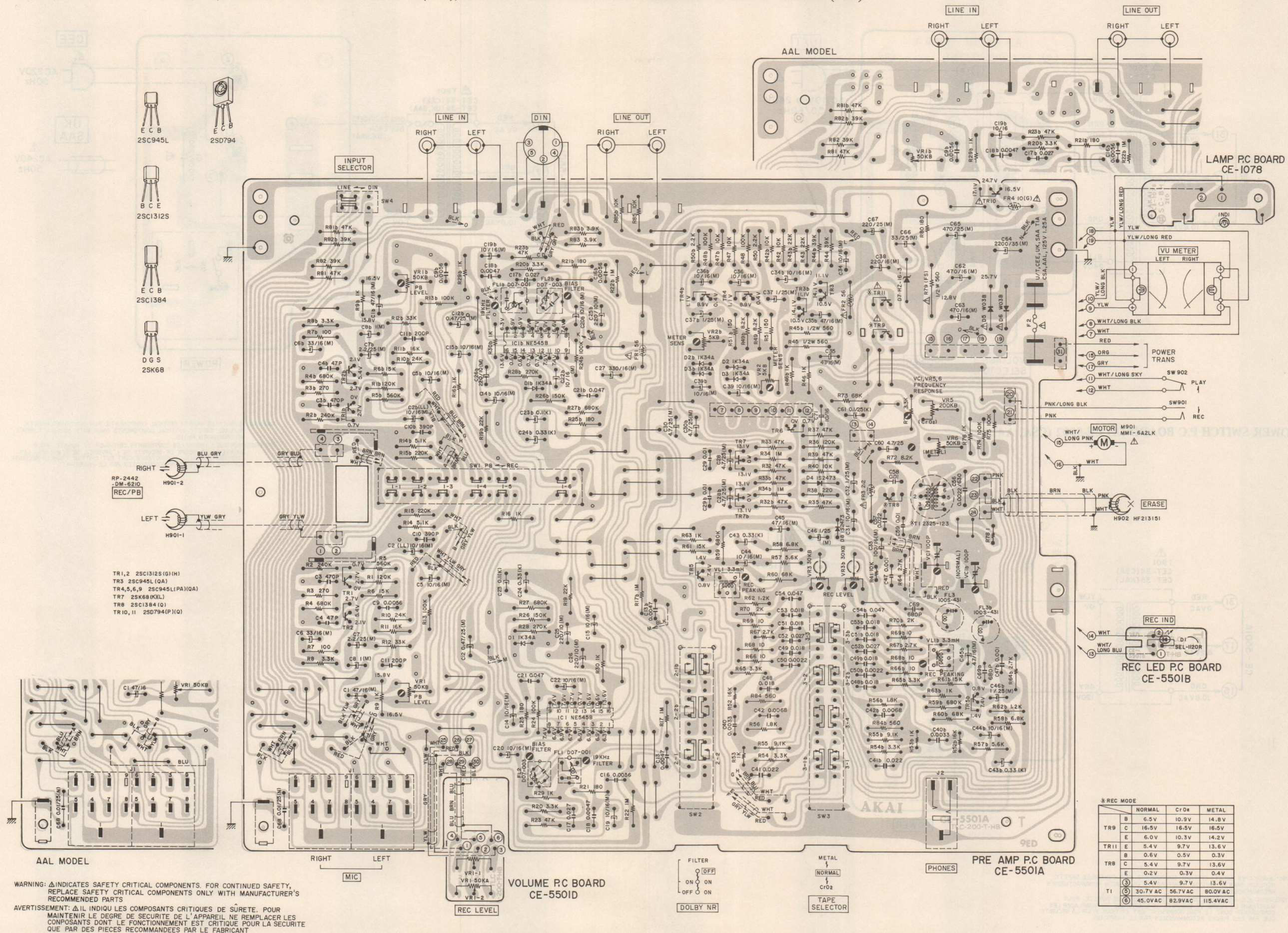
P.C Board Title	P.C Board Number	Remarks
Pre Amp P.C Board	CE-5501A	
Power Switch P.C Board (A)	CE-5302	CSA, AAL
Power Switch P.C Board (B)	CE-5303	U/T
Power Switch P.C Board (C)	CE-5304	CEE, UK, SAA
REC LED P.C Board	CE-5501B	
Volume P.C Board	CE-5501D	
Lamp P.C Board	CE-1078	

2) Model CS-M4

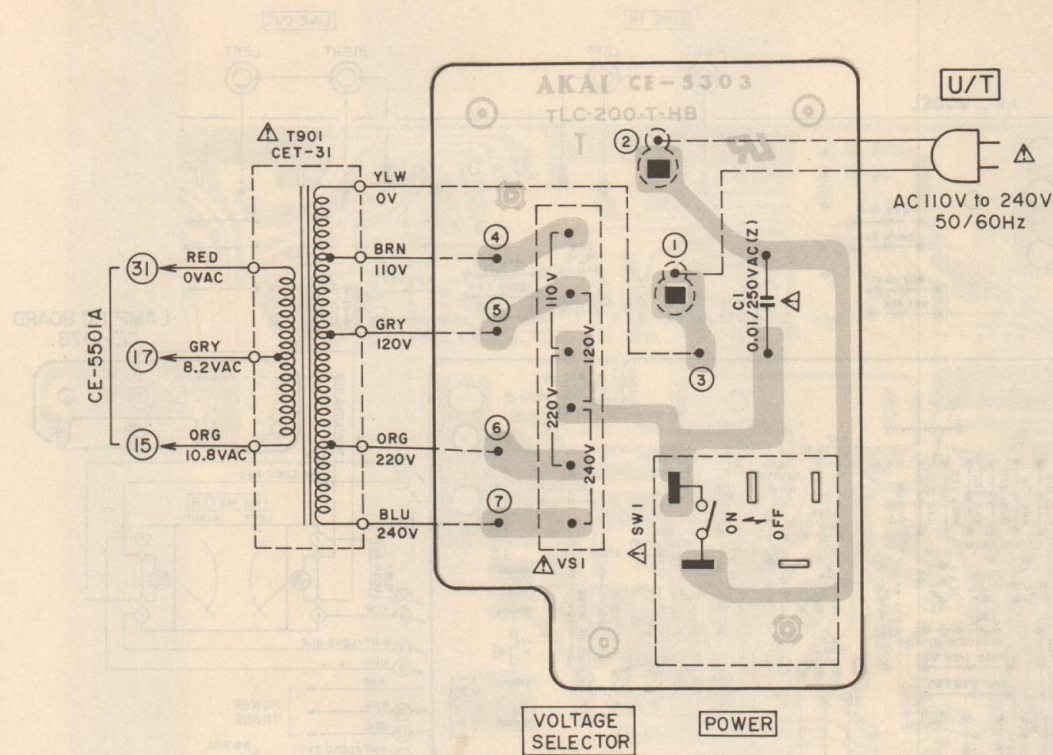
P.C Board Title	P.C Board Number	Remarks
Pre Amp P.C Board	CE-5601A	
REC LED P.C Board	CE-5601B	
Dolby LED P.C Board	CE-5601C	
Volume P.C Board	CE-5601D	
Power Supply P.C Board	CE-5602	U/T
Power Supply P.C Board	CE-5603	CEE, SAA, UK
Power Supply P.C Board	CE-5604	AAL, CSA
Lamp P.C Board	CE-1078	

2. Model CS-M3 COMPOSITION OF VARIOUS P.C BOARDS

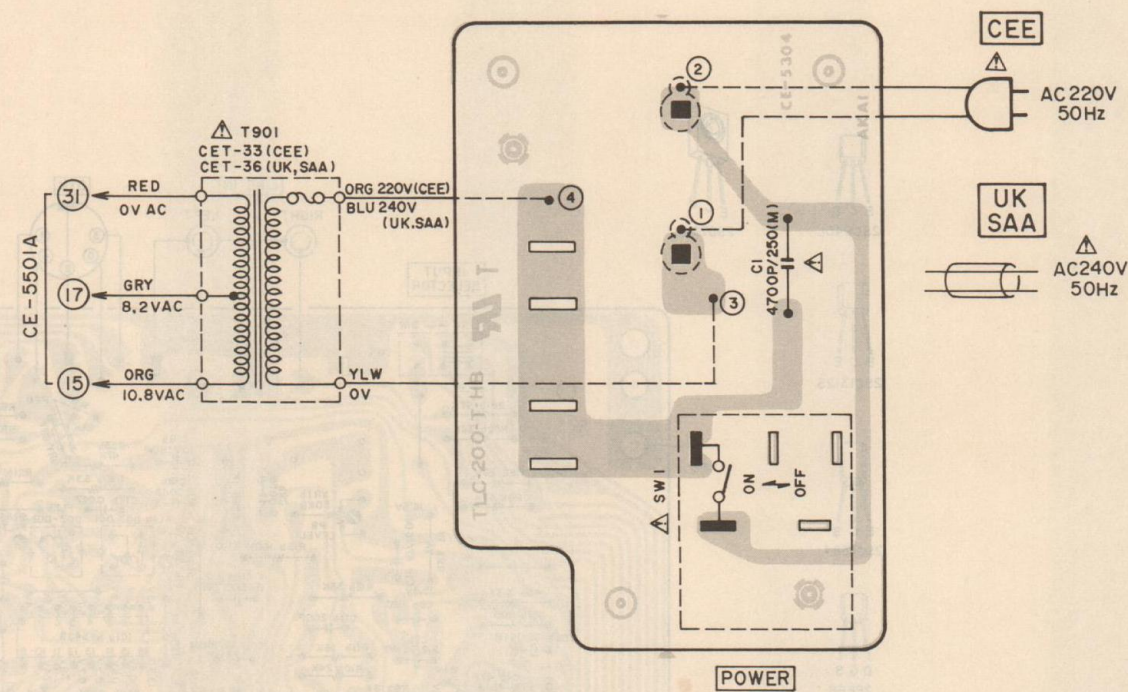
1) PRE AMP P.C BOARD CE-5501A (9ED), REC LED P.C BOARD CE-5501B (2ED), VOLUME P.C BOARD CE-5501 and LAMP P.C BOARD CE-1078 (2ED)



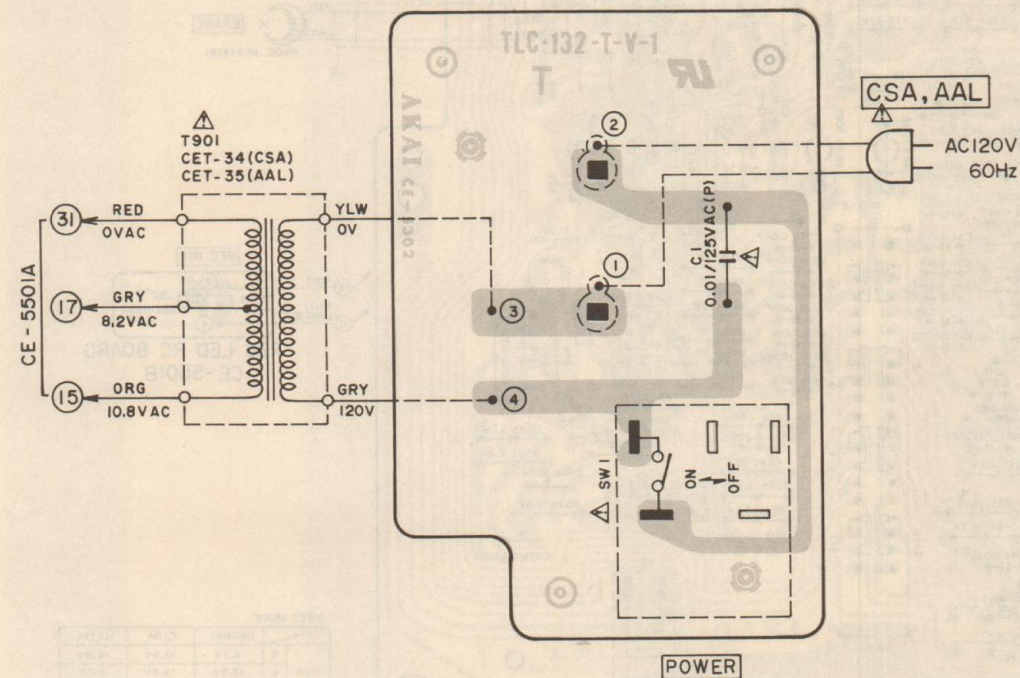
2) POWER SWITCH P.C BOARD (B) CE-5303 (U/T)



4) POWER SWITCH P.C BOARD (C) CE-5304 (CEE, UK, SAA)

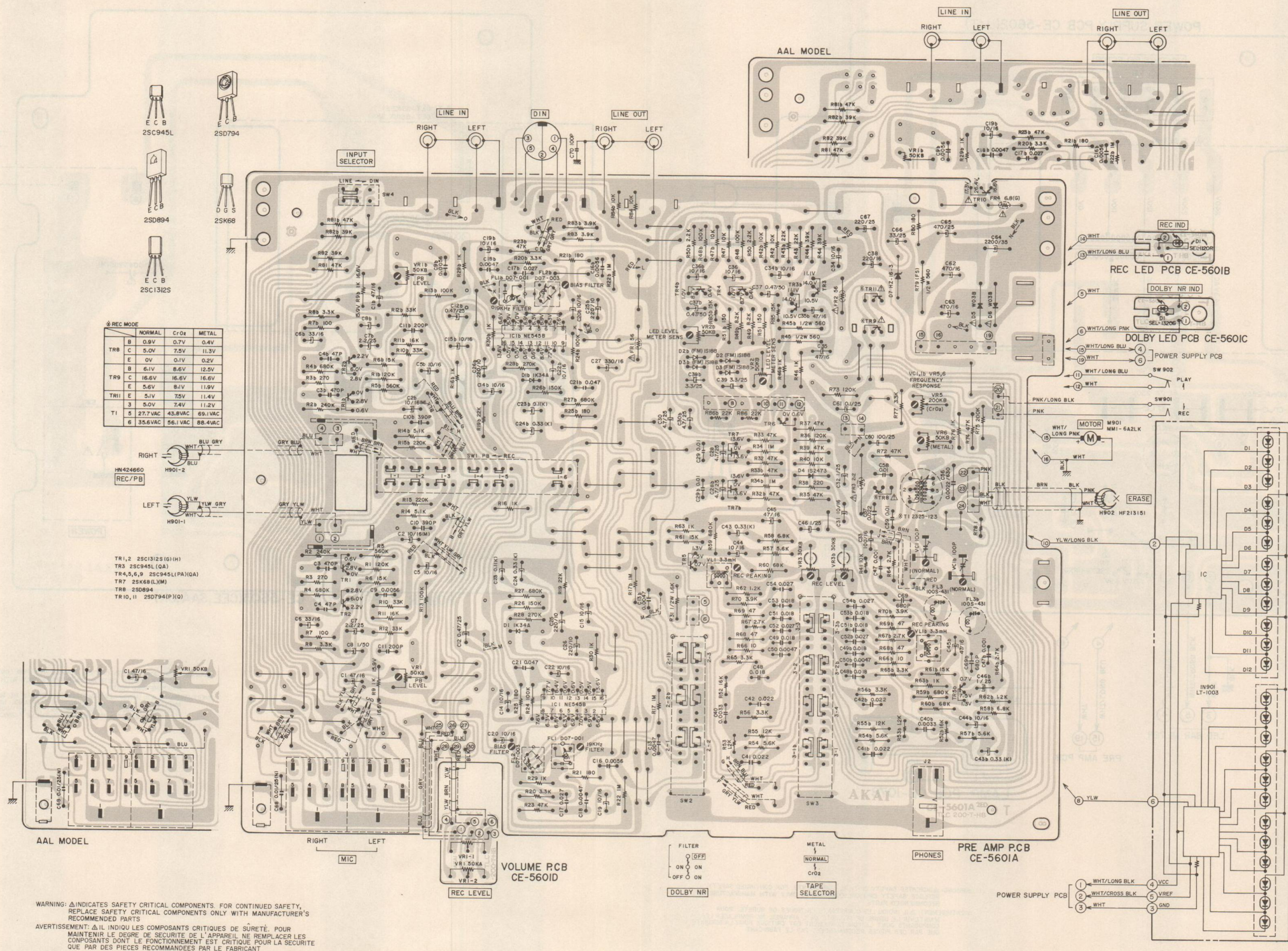


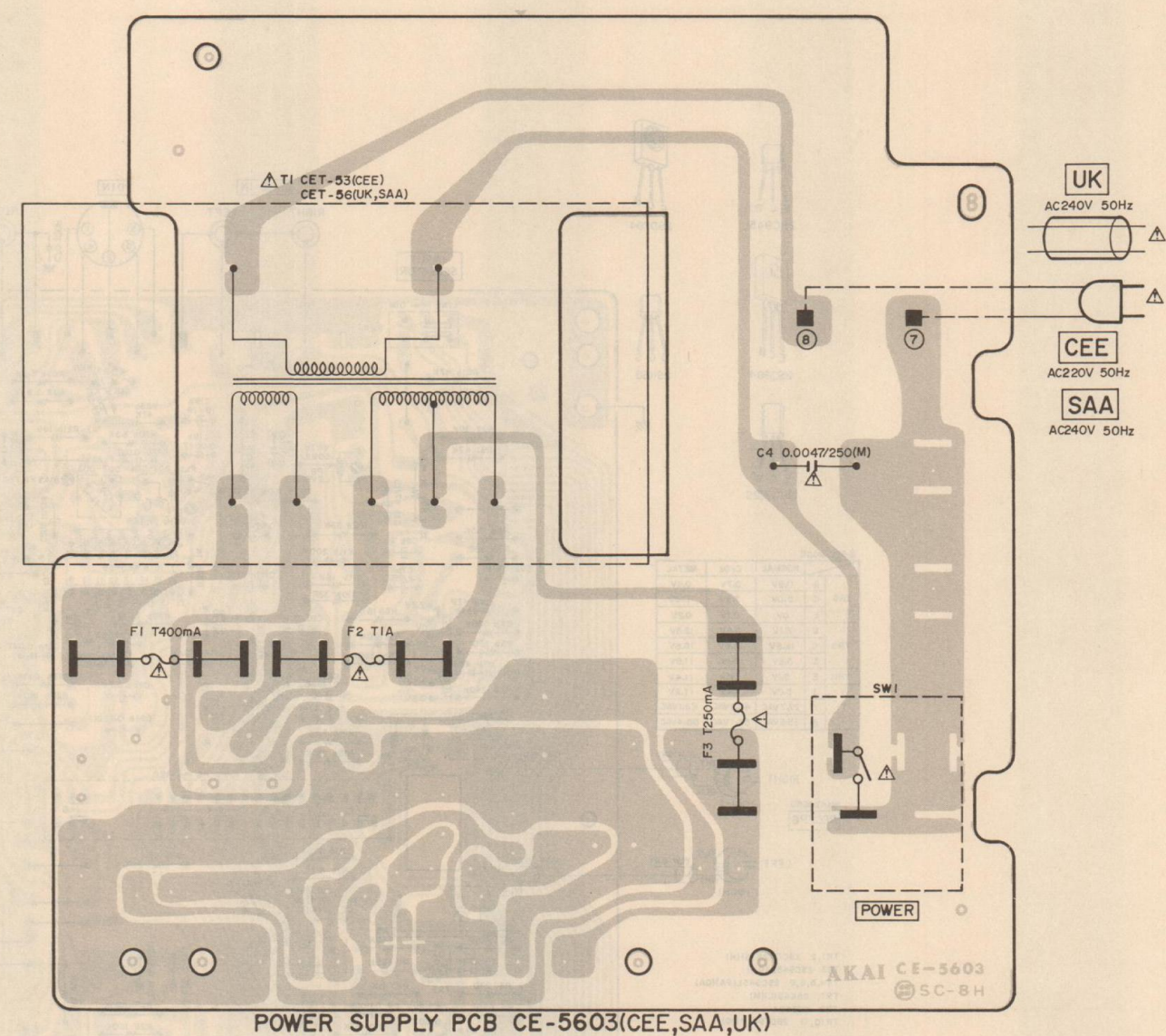
3) POWER SWITCH P.C BOARD (A) CE-5302 (CSA, AAL)



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.

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.





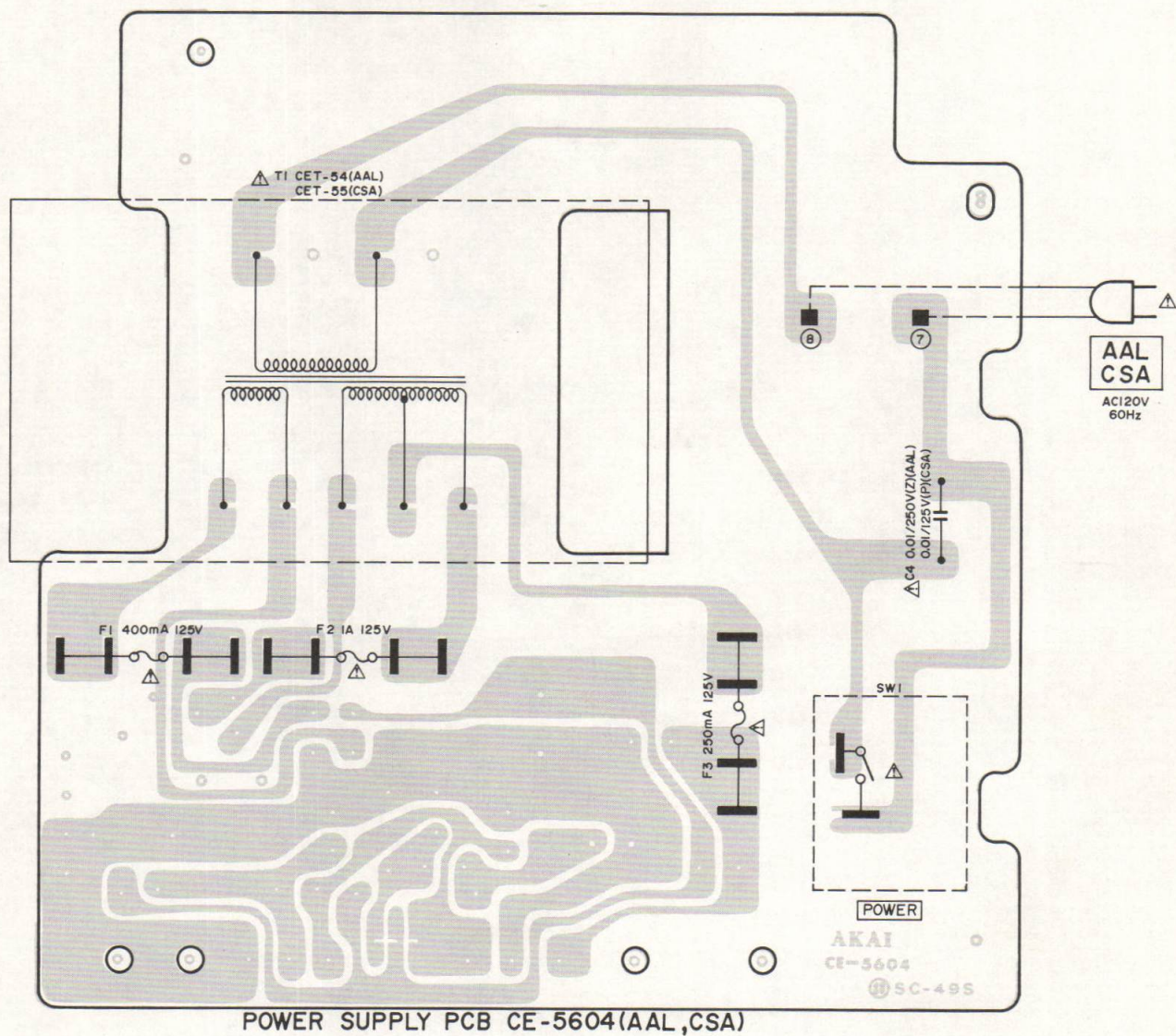
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

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

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

AVERTISSEMENT: ΔIL INDIQUE 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

4) POWER SUPPLY P.C BOARD CE-5604 (CSA, AAL) and LAMP P.C BOARD CE-1078 (2ED)



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

MEMO

MEMO

MEMO

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

The reference number corresponds with illustration or photo number of that particular parts list.

This number corresponds with the Figure Number.

This number corresponds with the individual parts index number in that figure.

A small "x" indicates the inability to show that particular part in the Photo or Illustration.

Schematic Diagram Number of individual manufactured part.
(not required for parts order)

Quantity of particular part required.

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	FLYWHEEL BLOCK #13			
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13	1
12-116	244506	Flywheel Only	RD-233	1
12-117x	244754	Felt, Flywheel	RD-275	1
12-118	251324	Main Metal Case	RD-236	1
12-119	253080	Main Metal	RD-237	1

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. Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
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 RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE 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.

AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body. Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

AC INLET SYSTEM CHART

CLASS I

Most of European countries

Denmark

U.K.

Australia differs according to wall socket

CLASS II

☐ This mark indicating double insulation will be attached to machine's rear panel

Most of the European countries

U.K.

Australia differs according to wall socket

Picture 1
AC INLET to be installed on machines

Picture 2
AC (mains) cord

Parts List for AC (mains) Cord Set

Standard		Description	Type of AC Inlet	Parts No.
Class I	CEE	Cord Set CEE (3 cores)	3P	EW302993
	UK	Cord Set UK (3 cores)	3P	EW302994
	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
Class II	CEE	Cord Set CEE (2 cores)	2P	EW638144
	UK	Cord Set UK (2 cores)	2P	EW302995
	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

I. MODEL CS-M3

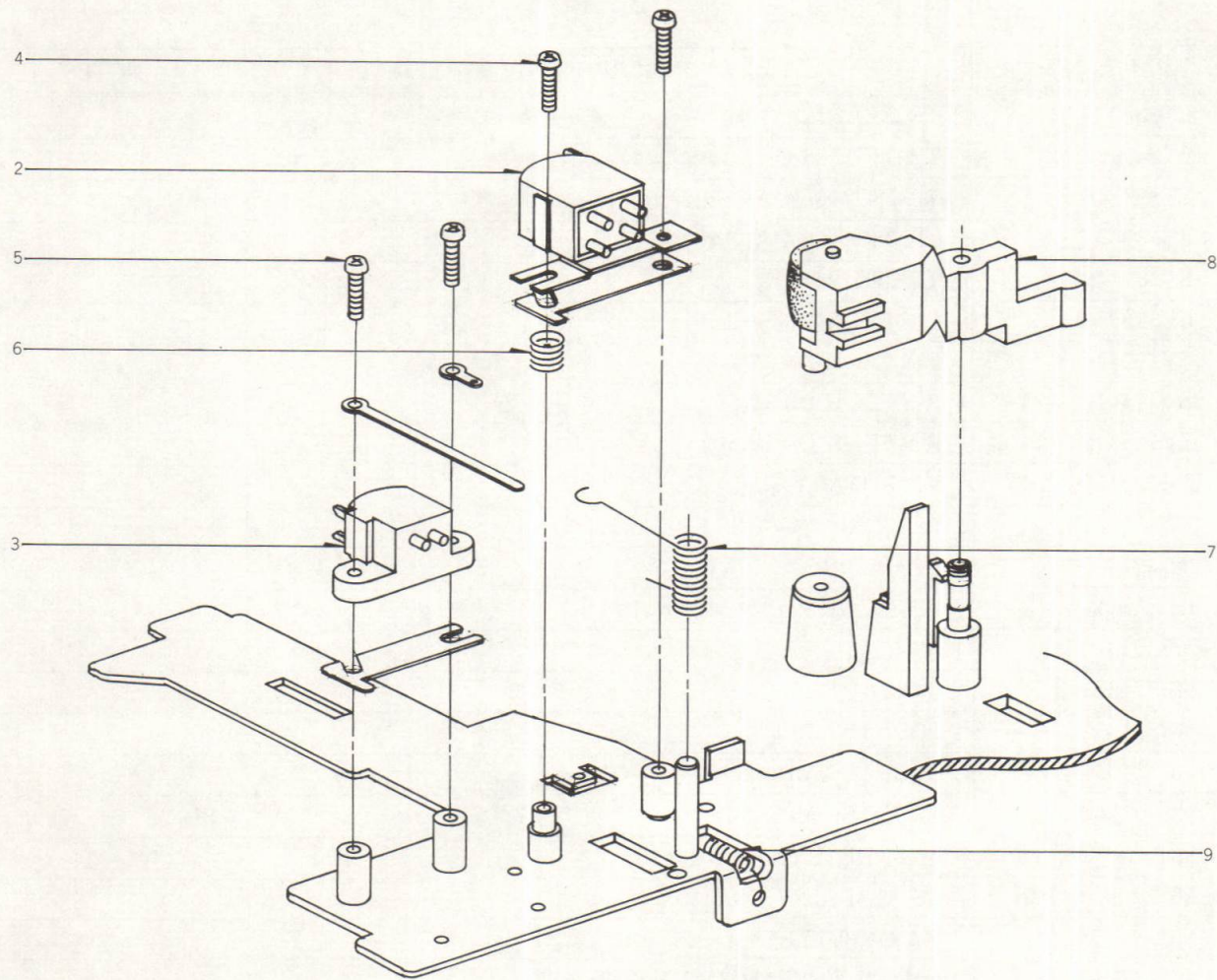
1. RECOMMENDED SPARE PARTS LIST

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.

PARTS NO.	DESCRIPTION	NOTES
BLT2001A140A	PINCH ROLLER BLK GX-M10	
BMT2020A110A	MOTOR BLK CS-M4	
BR321539	SUPPLY REEL TABLE BLK	
BR321540	TAKE-UP REEL TABLE BLK	
BT323939	△ TRANS POWER CET-31	U
BT323941	△ TRANS POWER CET-33	E
BT323942	△ TRANS POWER CET-34	C
BT324373	△ TRANS POWER CET-35	A
BT323944	△ TRANS POWER CET-36	B, S
BZ321546	MIDDLE GEAR BLK	
BZ321547	TAKE-UP IDLER BLK	
EC300034	C S-FIX H ECR-CA100H12 9.0-100	
ED308952	D GERMA V 1K34A-LR F07	
ED320469	D LED SEL1120R RED	
ED624903	D SILICON H 1S2473	
ED560913	D SILICON V 1S2473VE	
ED323979	D SILICON W03B F12 150/1.0A	
ED313846	D ZENER H HZ16 3	
EF623103	△ FUSE SEMKO T 250V 1A	U, E, B, S
EF309392	△ FUSE TSC 125V 1.25A	C, A
EI605013	IC NE545B	
EL323981	PL LEAD 8V 55MA	
EM323852	VU METER KL-270U-1 0.260MA	
EM323854	VU METER KL-270U-2 0.260MA	BL
EO328212	COIL OSC 1 2325-123 100KHZ	
EO315758	COIL TUN 1 100S-431 100KHZ	
EO310608	COIL VARI 1 FE001 3.3MH	
ER319455	△ R FUSE ERD2FC 1/4W 10G0G	
ER325381	△ R FUSE FR25SJ 1/4W 2R2J	
ER319510	△ R FUSE FR25SJ 1/4W 560J	
ER309119	FILTER DB D07-001 19KHZ	
ER309120	FILTER DB D07-003 100KHZ	
ES283173	SW LEAF BSW-31PLC 01-1 NC	
ES321274	SW LEVER 63349 2-06-03S	
ES315748	SW LEVER 83157 2-08-03S	
ES310839	SW PUSH SDG1P-E 01-1 E	
ES665875	SW PUSH SDG1P-J 01-1 UC	
ES283072	SW SLIDE SSC22LP 2-02-02N	
ES310591	SW SLIDE 122074 2-12-02W	
ET304169	TR FET 2SK68 L, M	

PARTS NO.	DESCRIPTION	NOTES
ET603257	TR 2SC1312S G, H	
ET241334	TR 2SC1384 Q	
ET399846	TR 2SC945L QA	
ET639437	TR 2SC945L QA, PA	
ET307349	TR 2SD794 P, Q	
EV315752	R S-FIX H D8 3P 204	
EV322416	R S-FIX H D8 3P 303	
EV315412	R S-FIX H D8 3P 502	
EV315413	R S-FIX H D8 3P 503	
EV202110	VR ROTARY 16P11x0S A503 A503	
EW201515	AC CORD 2 CORES KP-560, LTSA-2F S	
HE321585	HEAD E HF213151 C	
HP201806	HEAD R/P RP-2442-DM-6210 C	
MB321391	AS BELT	
MB321389	CAPSTAN BELT	
MB321392	COUNTER BELT	
MC321559	COUNTER MP390-384	
MC321560	COUNTER MP390-385	BL
MIB319709	FLYWHEEL PART GX-M10	
MLT2001A150A	AS ARM ASSY GX-M10	
MR321403	WARM PULLEY	
MZ283140	△ SOCKET SELECTER X-I7238 6P	U
TCB319724	WORM GEAR PART	

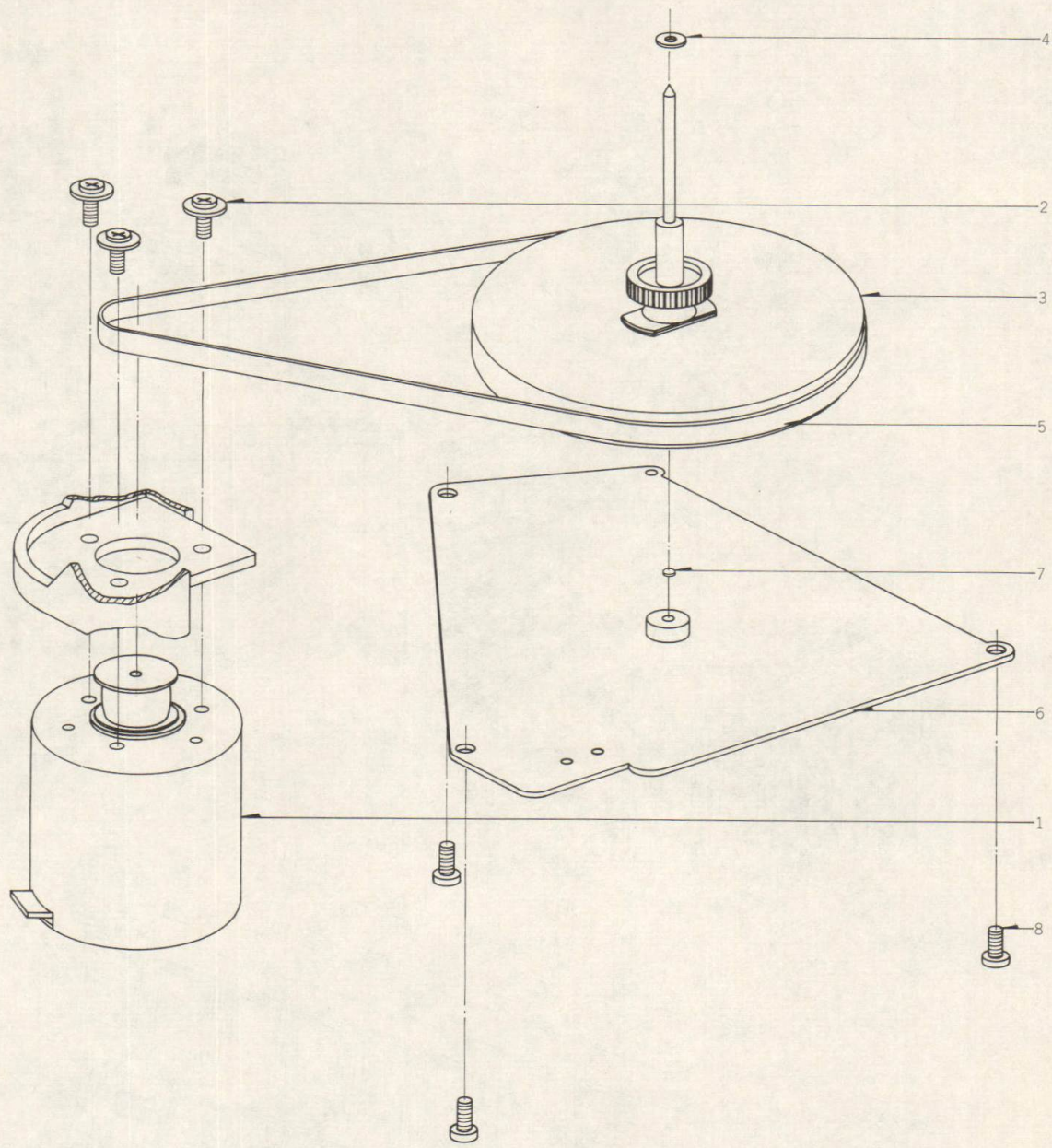
2. HEAD BLOCK



HEAD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BHT2001A120C	HEAD BLK CS-M3
2-2	HP201806	HEAD R/P RP-2442-DM-6210 C
2-3	HE321585	HEAD E HF213151 C
2-4	ZS608106	PAN20x06STL CMT
2-5	ZS419940	PAN23x06BRS NI3
2-6	ZG321459	AZIMUTH SPRING
2-7	ZG321358	PINCH SPRING (A)
2-8	BLT2001A140A	PINCH ROLLER BLK GX-M10
2-9	ZG300206	EJECT SPRING

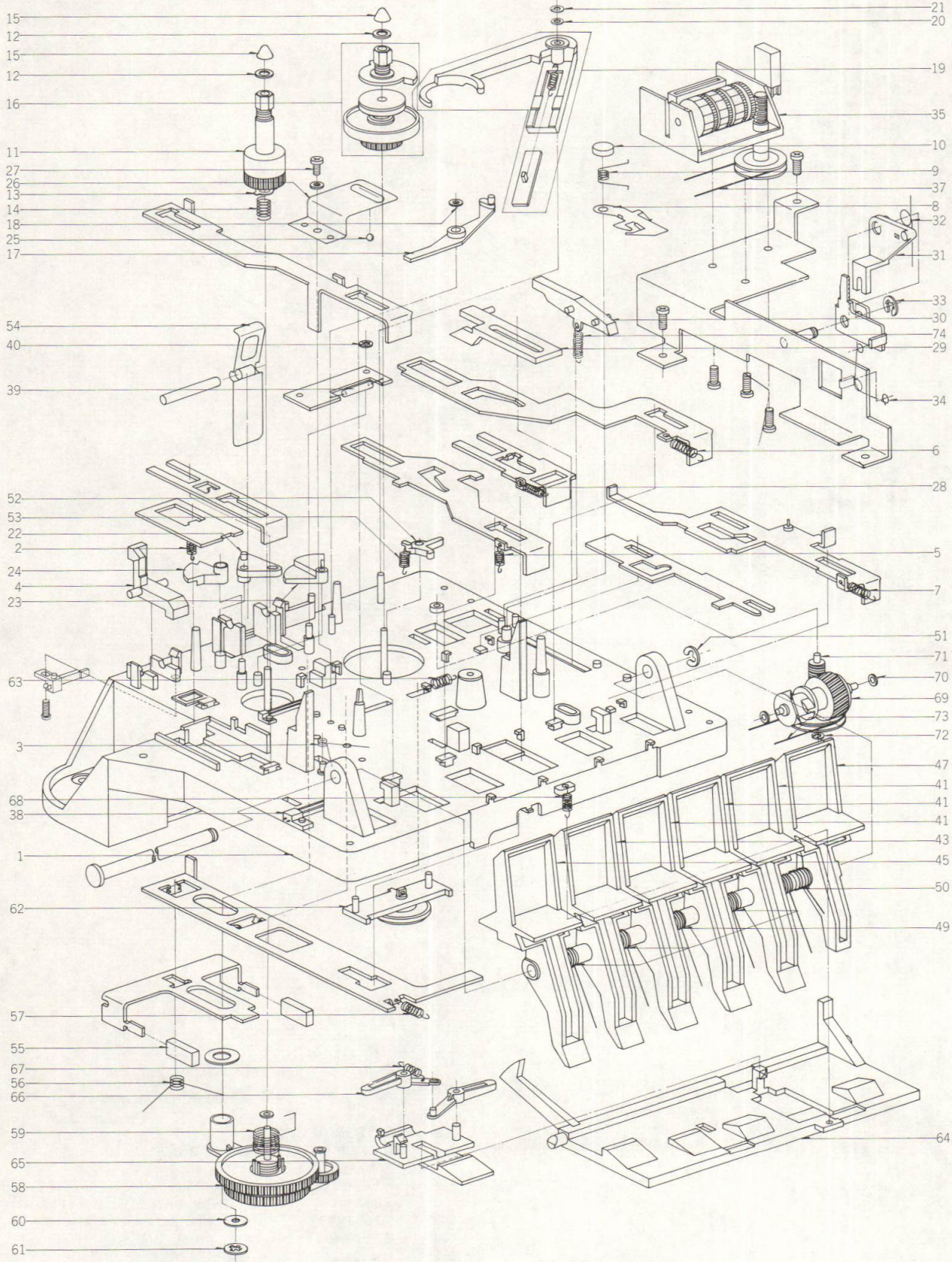
3. MOTOR BLOCK



MOTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
MOTOR BLOCK		
3-1	BMT2020A110A	MOTOR BLK CS-M4
MECHA BLOCK		
3-2	ZS323999	SCREW, PAN 2.6×4.5 W/FLANGE
3-3	MIB319709	FLYWHEEL PART GX-M10
3-4	ZW305492	PW23×060×050PSL
3-5	MB321389	CAPSTAN BELT
3-6	TCB319914	FLYWHEEL HOLD PLATE (A)
3-7	ZW321424	THRUST WASHER
3-8	ZS310984	PT BR30×08STL CMT

4. MECHA BLOCK



MECHA BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	TCB319723	CHASSIS PART GX-M10
4-2	ZG312926	SP T1-3.2/0.2-16.0 T1-043
4-3	ZG321373	STOP SPRING
4-4	ML321376	SAFTY LEVER (A)
4-5	ZG312942	SP T1-3.2/0.29-10.0 T1-058
4-6	ZG324329	SP T2-3.2/0.29-11.2 T2-059
4-7	ZG324330	PAUSE SPRING
4-8	MZ321396	LOCK CAM
4-9	ZG319480	LOCK CAM SPRING
4-10	TC282396	CAP
4-11	BR321539	SUPPLY REEL TABLE BLK
4-12	ZW381644	PW21x040x013PSL
4-13	ZW321393	BT WASHER
4-14	ZG321538	BT SPRING
4-15	MT305793	REEL CAP
4-16	BR321540	TAKE-UP REEL TABLE BLK
4-17	ML321404	RELEASE LEVER
4-18	ZW340648	RING CS190STL PKR
4-19	MLT2001A150A	AS ARM ASSY GX-M10
4-20	ZW305546	PW21x040x025PSL
4-21	ZW321437	PUSH WASHER
4-22	ML321381	RETURN LEVER (A)
4-23	ML321382	RETURN LEVER (B)
4-24	ML321378	SAFTY LEVER (B)
4-25	MV368886	BALL 300STL
4-26	ZG321384	HOLD SPRING
4-27	ZS322402	PLX PAN30x08STL CMT
4-28	ZG321535	PB SPRING
4-29	ML321406	TIMER SLIDE (A)
4-30	ML321407	TIMER SLIDE (B)
4-31	TC310922	TIMER ARM (B)
4-32	ZG324215	TIMER SPRING (B)
4-33	ZW270101	RING E300SUP CMT
4-34	ZG321411	TIMER SPRING
4-35	MC321559	COUNTER MP390-384
4-36x	MC321560	COUNTER MP390-385(BL)
4-37	MB321392	COUNTER BELT
4-38	ES283173	SW LEAF BSW-31PLC 01-1 NC
4-39	EL323981	PL LEAD 8V 55MA
4-40	ZW340648	RING CS190STL PKR
4-41	SK321362	KEY BOARD KNOB (A)
4-42x	SK321363	KEY BOARD KNOB (A-BL)
4-43	SK321364	KEY BOARD KNOB (D)
4-44x	SK321365	KEY BOARD KNOB (D-BL)
4-45	SK321367	KEY BOARD KNOB (B)
4-46x	SK321368	KEY BOARD KNOB (B-BL)
4-47	SK321369	KEY BOARD KNOB (C)
4-48x	SK321370	KEY BOARD KNOB (C-BL)
4-49	ZG321430	KEY BOARD SPRING (A)
4-50	ZG321431	KEY BOARD SPRING (B)
4-51	ZW270123	RING E400SUP CMT
4-52	TC321426	RELAY LEVER
4-53	ZG321544	RELAY LEVER SPRING
4-54	MZ321417	CASSETTE HOLDER
4-55	TC321415	BRAKE SHOE
4-56	ZG321416	BRAKE SPRING
4-57	ZG318228	SP T2-3.2/0.29-14 T2-061
4-58	BZ321546	MIDDLE GEAR BLK
4-59	ZG325100	GEAR RETURN SPRING
4-60	ZW460787	PW31x080x025PSL
4-61	ZW653163	RING CS280STL PKR
4-62	BZ321547	TAKE-UP IDLER BLK
4-63	ZG312920	SP T1-3.2/0.2-8.0 T1-037
4-64	MZ321418	KEY BOARD CAM
4-65	MZ321419	PB CAM
4-66	TC321420	CAM LEVER (A)
4-67	ZG321549	SP T2-3.2/0.2-10.0 T2-039
4-68	ZG321548	KEY BOARD CAM SPRING
4-69	TCB319724	WORM GEAR PART
4-70	ZW321317	PW21x040x050PSL
4-71	MR321403	WARM PULLEY
4-72	ZW321437	PUSH WASHER
4-73	MB321391	AS BELT
4-74	ZG324331	SP T2-3.2/0.2-12.5 T2-041

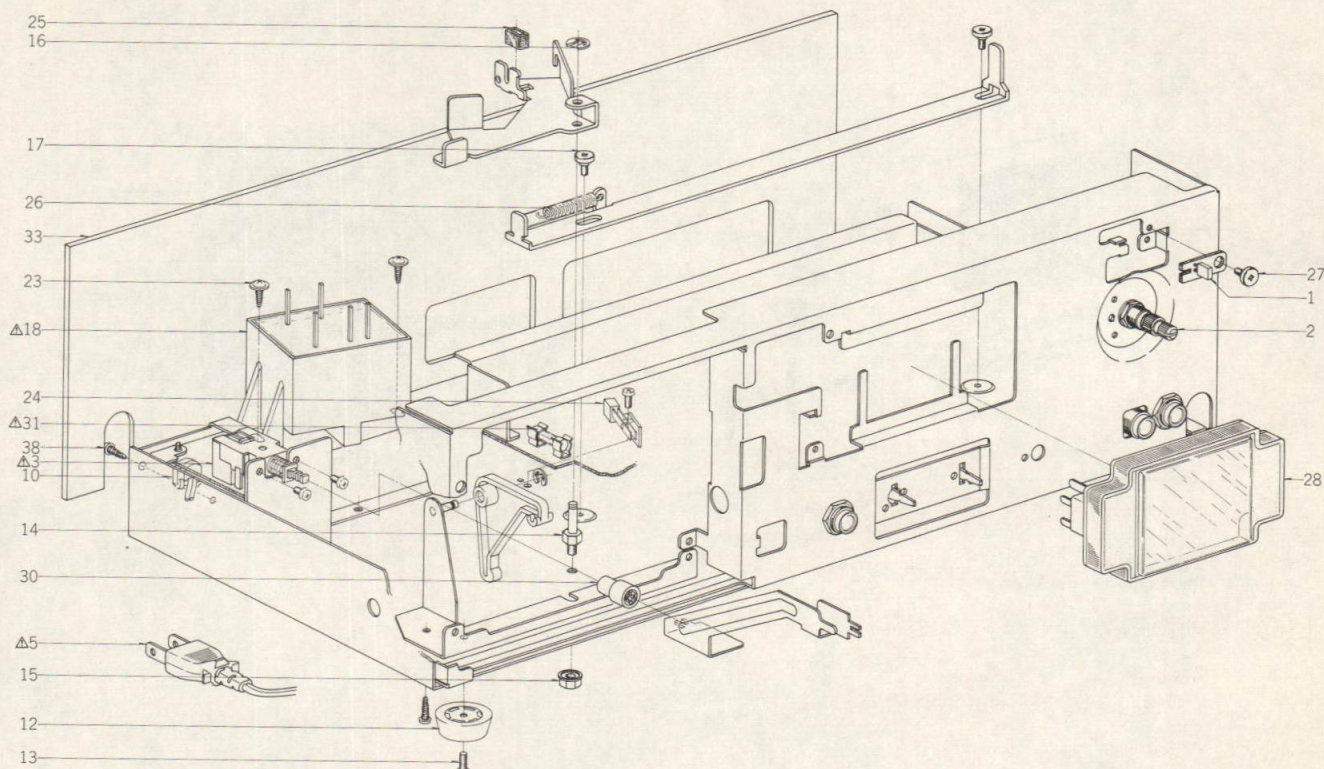
5. PRE AMP P.C BOARD (CE-5501A) BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1	BAT2019A050A	PRE AMP P.C BLK CS-M3(U) (U, E, B, S)
5-2	BAT2019A050B	PRE AMP P.C BLK CS-M3(C)
5-3	BAT2019A050C	PRE AMP P.C BLK CS-M3(A)
5-IC1	EI605013	IC NE545B
5-TR1,2	ET603257	TR 2SC1312S G, H
5-TR3	ET399846	TR 2SC945L QA
5-TR4to6	ET639437	TR 2SC945L QA, PA
5-TR7	ET304169	TR FET 2SK68 L, M
5-TR8	ET241334	TR 2SC1384 Q
5-TR9	ET639437	△ TR 2SC945L QA, PA
5-TR10,11	ET307349	△ TR 2SD794 P, Q
5-D1to3	ED308952	D GERMA V 1K34A-LR F07
5-D4	ED624903	D SILICON H 1S2473
5-D5,6	ED323979	△ D SILICON W03B F12 150/1.0A
5-D7	ED313846	D ZENER H HZ16 3
5-D8	ED560913	D SILICON V 1S2473VE
5-J1	EJ321328	PHONE J HLJ0345-010 2x3P
5-J2	EJ316156	PHONE 3P HLJ0315-020 6.3
5-J3	EJ308985	JACK PLATE DIN, PIN JACK 4P (EXCEPT A)
5-J3	EJ308986	PIN J 1784P1782 P 4P (A)
5-SW1	ES310591	SW SLIDE 122074 2-12-02W
5-SW2	ES321274	SW LEVER 63349 2-06-03S
5-SW3	ES315748	SW LEVER 83157 2-08-03S
5-SW4	ES283072	SW SLIDE SSC22LP 2-02-02N (EXCEPT A)
5-VR1	EV315413	R S-FIX H D8 3P 503
5-VR2	EV315412	R S-FIX H D8 3P 502
5-VR3	EV322416	R S-FIX H D8 3P 303
5-VR5	EV315752	R S-FIX H D8 3P 204
5-VR6	EV315413	R S-FIX H D8 3P 503
5-VL1	EO310608	COIL VARI 1 FE001 3.3MH
5-T1	EO328212	COIL OCS 1 2325-123 100KHZ
5-FL1	ER309119	FILTER DB D07-001 19KHZ
5-FL2	ER309120	FILTER DB D07-003 100KHZ
5-FL3	EO315758	COIL TUN 1 100S-431 100KHZ
5-VC1	EC300034	C S-FIX H ECR-CA100H12 9.0-100
5-FR1,2	ER319510	△ R FUSE FR25SJ 1/4W 560J
5-FR3	ER325381	△ R FUSE FR25SJ 1/4W 2R2J
5-FR4	ER319455	△ R FUSE ERD2FC 1/4W 10G0G
5-R79	ER321251	R CB H SNP FS RDS 1/2W 561J
5-C3	EC306987	C STY V F05 500 471J 50DC
5-C10	EC311867	C STAY V F05 500 391J 50DC
5-C11	EC565830	C STY V 201J 50DC
5-C56	EC321349	C PP V F10 PFH 222J 630DC
5-C61	EC313826	C SA V F05 R10K 25DC
5-C64	EC316230	C EC V CUT H 222M 35DC
5-C69	EC306419	C STY V F05 500 681J 50DC
5-4	ZW263946	RV NYL40x050

6. POWER SWITCH P.C BOARD (A)/(B)/(C) (CE-5302/5303/5304) BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-VS1	MZ283140	△ SOCKET SELECTER X-17238 6P (U)
6-C1	EC320548	△ C CE V F 103Z 250AC (U)
6-C1	EC314688	△ C CE V FZ 103P 125AC (C)
6-C1	EC327382	△ C MP V 472M 250AC(E,B,S)

7. ASSEMBLY BLOCK



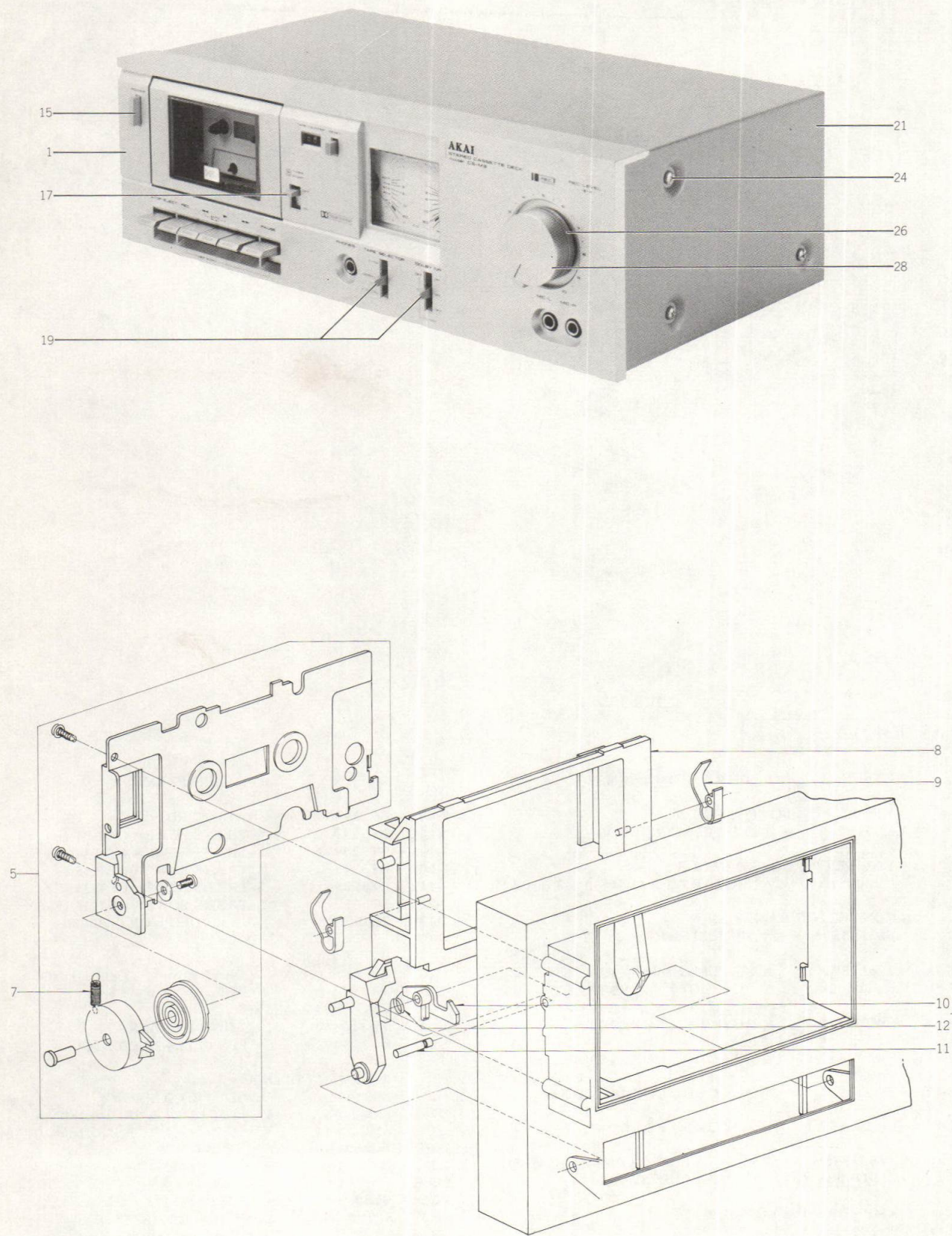
ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
REC LED P.C BOARD ASSY		
7-1	ED320469	D LED SEL1120R RED
VOLUME P.C BOARD BLOCK		
7-2	EV202110	VR ROTARY 16P11X0S A503 A503
CONNECTOR BASE BLOCK		
7-3	ES310839	Δ SW PUSH SDG1P-E 01-1 E (U, E, B, S)
7-4x	ES665875	Δ SW PUSH SDG1P-J 01-1 UC (C, A)
7-5	EW306428	Δ AC CORD 2 CORES KP-205A, VFF UCJ (U)
7-6x	EW305691	Δ AC CORD 2 CORES KP-8, SPT-1 UC (C, A)
7-7x	EW313882	Δ AC CORD 2 CORES KP-419C, LTCE-2F E
7-8x	EW313884	Δ AC CORD 2 CORES GTBS-2F 24/0.20x2 B
7-9x	EW201515	Δ AC CORD 2 CORES KP-560, LTSA-2F S
7-10	EZ631945	STRAIN RELIEF SR-4N-4 (U, C, A, S)
7-11x	EJ692908	STRAIN RELIEF SR-5N-4 (B)
AMP CHASSIS BLOCK		
7-12	SA202118	FOOT
7-13	ZS306463	ST PAN30x08STL CMT C
7-14	MH282587	REC LEVER PROP
7-15	ZW413267	N FRANGE 40STL CMT
7-16	ZW290283	RING U 285SUP CMT

REF. NO.	PARTS NO.	DESCRIPTION
7-17	ZS329460	GRADUATED SCREW
7-18	BT323939	Δ TRANS POWER CET-31 (U)
7-19x	BT323942	Δ TRANS POWER CET-34 (C)
7-20x	BT324373	Δ TRANS POWER CET-35 (A)
7-21x	BT323941	Δ TRANS POWER CET-33 (E)
7-22x	BT323944	Δ TRANS POWER CET-36 (B, S)
7-23	ZS497878	T2BR30x10STL CMT PW080
REC SW ASSY		
7-24	ES301747	SW LEAF BSW-1FTX-2 01-1 NO
REC LEVER ASSY		
7-25	MB510164	CUSHION RUBBER
7-26	ZG313048	SP T1-5.0/0.55-35.5 T1-161
ASSEMBLY BLOCK		
7-27	ZS329460	GRADUATED SCREW
7-28	EM323852	VU METER KL-270U-1 0.260MA
7-29x	EM323854	VU METER KL-270U-2 0.260MA (BL)
7-30	TC289484	SW. JOINT
7-31	EF623103	Δ FUSE SEMKO T 250V 1,00A (U, E, B, S)
7-32x	EF309392	Δ FUSE TSC 125V 1.25A (C, A)
7-33	SP202111	BACK BOARD CS-M3 (U)
7-34x	SP202113	BACK BOARD CS-M3 (C)
7-35x	SP202114	BACK BOARD CS-M3 (A)
7-36x	SP202115	BACK BOARD CS-M3 (E)
7-37x	SP202117	BACK BOARD CS-M3 (B, S)
7-38	ZS497878	T2BR 30x10STL CMT PW080

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

8. FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
8-1	SP202128A	FRONT PANEL CS-M3(EXCEPT A)
8-2x	SP202128B	FRONT PANEL CS-M3(MONO) (A)
8-3x	SP202128C	FRONT PANEL CS-M3-BL (EXCEPT A)
8-4x	SP202128D	FRONT PANEL CS-M3-BL (MONO) (A)
8-5	TCT2001A240A	DECORATION PLATE ASSY CS-M01
8-6x	TCT2001A240B	DECORATION PLATE ASSY CS-M01-BL
8-7	ZG328123	DAMPER SPRING
8-8	TC321486	LID FRAME
8-9	ZG321487	MOLD SPRING
8-10	TC321488	LOCK PLATE
8-11	MH323830	LOCK PROP
8-12	ZG321490	LOCK SPRING
8-13	BDT2019A100A	LID PANEL BLK CS-M3
8-14x	BDT2019A100B	LID PANEL BLK CS-M3-BL
8-15	SB315697	BUTTON (B)
8-16x	SB315698	BUTTON (B-BL)
8-17	SK321492	TIMER LEVER KNOB
8-18x	SK321493	TIMER LEVER KNOB (BL)
8-19	SK202120A	LEVER KNOB
8-20x	SK202120B	LEVER KNOB (BL)
8-21	BC323832	UPPER COVER (C) (EXCEPT A)
8-22x	BC323833	UPPER COVER (C-BL)
8-23x	BC321508	UPPER COVER (B) (A)
8-24	ZS315878	XST BID40x08STL NI3
8-25x	ZS310588	XST BID40x08STL BNI (A, BL)
8-26	SK321506	DOUBLE KNOB (LOWER)
8-27x	SK321507	DOUBLE KNOB (LOWER-BL)
8-28	SK323822	DOUBLE KNOB (UPPER)
8-29x	SK323823	DOUBLE KNOB (UPPER-BL)
8-30x	ZW305013	RV POP32

II. MODEL CS-M4

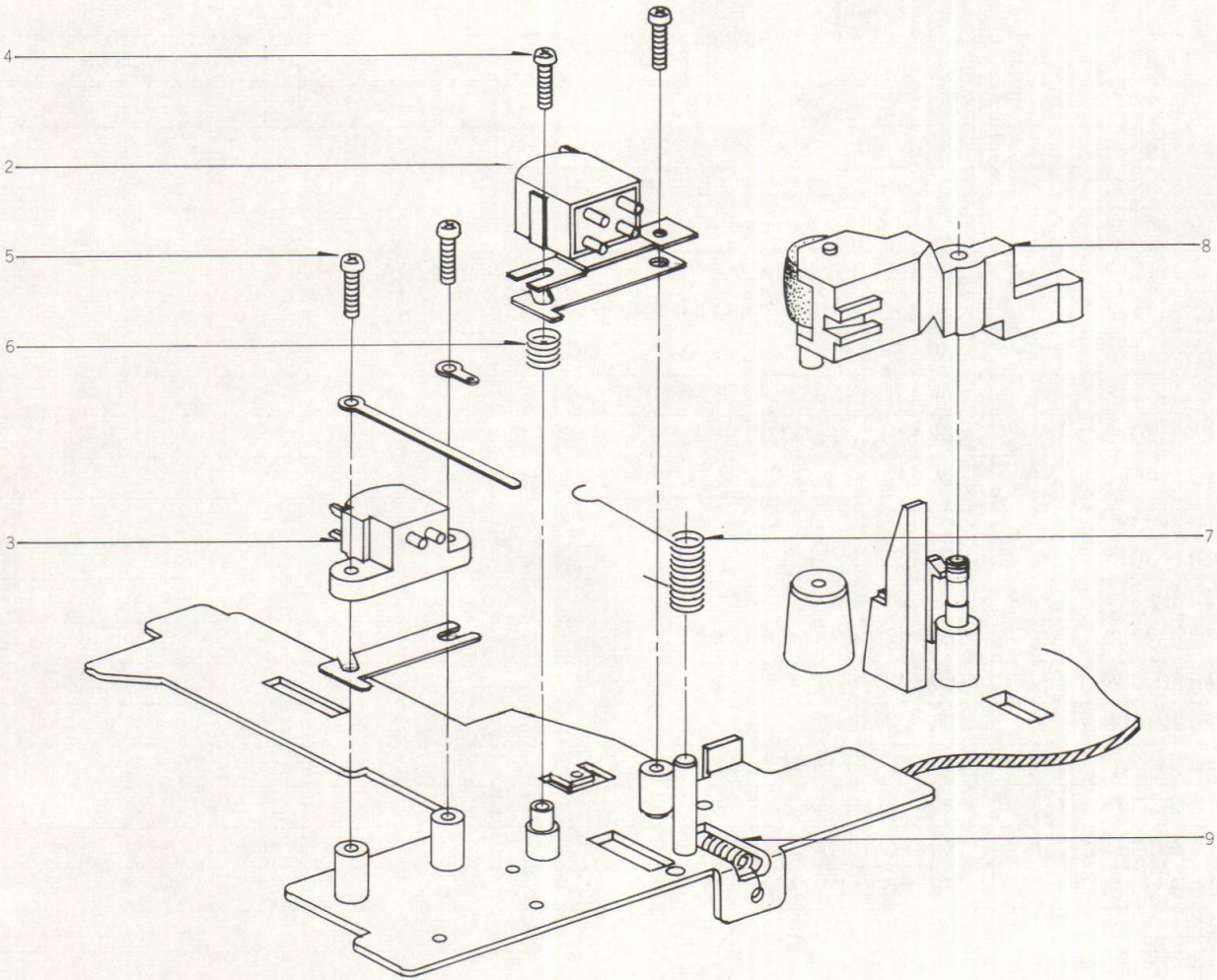
1. RECOMMENDED SPARE PARTS LIST

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.

PARTS NO.	DESCRIPTION	NOTES
BLT2001A140A	PINCH ROLLER BLK GX-M10	
BMT2020A110A	MOTOR BLK CS-M4	
BR321539	SUPPLY REEL TABLE BLK	
BR321540	TAKE-UP REEL TABLE BLK	
BT329498	△ TRANS POWER CET-51	U
BT329499	△ TRANS POWER CET-53	E
BT329500	△ TRANS POWER CET-54	A
BT329501	△ TRANS POWER CET-55	C
BT329502	△ TRANS POWER CET-56	B, S
BZ321546	MIDDLE GEAR BLK	
BZ321547	TAKE-UP IDLER BLK	
EC300034	C S-FIX H ECR-CA100H12 9.0-100	
ED562397	D GERMA H 1S188FM1	
ED308952	D GERMA V 1K34A-LR F07	
ED320469	D LED SEL1120R RED	
ED325330	D LED SEL1320G GRN	
ED624903	D SILICON H 1S2473	
ED315960	D SILICON WL02 200/1.0A	
ED323979	D SILICON W03B F12 150/1.0A	
ED324014	D ZENER H HZ11 B1	
ED313846	D ZENER H HZ16 3	
EF300586	△ FUSE EAWK T 250V 0.25A	E, B, S
EF668474	△ FUSE SEMKO T 250V 0.40A	E, B, S
EF623103	△ FUSE SEMKO T 250V 1A	E, B, S
EF321323	△ FUSE TSC A 250V 0.25A	U
EF309389	△ FUSE TSC A 250V 0.40A	U
EF309387	△ FUSE TSC A 250V 1A	U
EF315334	△ FUSE TSC 125V 0.25A	C, A
EF308848	△ FUSE TSC 125V 0.40A	C, A
EF310229	△ FUSE TSC 125V 1A	C, A
EI605013	IC NE545B	
EL323981	PL LEAD 8V 55MA	
EM329497	IND LE LT-1003 GRAPH	
EO328212	COIL OCS 1 2325-123 100KHZ	
EO315758	COIL TUN 1 100S-431 100KHZ	
EO310608	COIL VARI 1 FE001 3.3MH	
ER309119	FILTER DB D07-001 19KHZ	
ER309120	FILTER DB D07-003 100KHZ	
ER307565	R FUSE ERD2FC 1/4W 6R80G	
ER325381	R FUSE FR25SJ 1/4W 2R2J	

PARTS NO.	DESCRIPTION	NOTES
ER319510	R FUSE FR25SJ 1/4W 560J	
ES310839	△ SW PUSH SDG1P-E 01-1 E	U, E, B, S
ES655806	△ SW PUSH SDG1P-J 01-1 C	C
ES665875	△ SW PUSH SDG1P-J 01-1 UC	A
ES301747	SW LEAF BSW-1FTX-2 01-1 NO	
ES283173	SW LEAF BSW-31PLC 01-1 NC	
ES321274	SW LEVER 63349 2-06-03S	
ES315748	SW LEVER 83157 2-08-03S	
ES283072	SW SLIDE SSC22LP 2-02-02N	
ES310591	SW SLIDE 122074 2-12-02W	
ET304169	TR FET 2SK68 L, M	
ET603257	TR 2SC1312S G, H	
ET399846	TR 2SC945L QA	
ET639437	TR 2SC945L QA, PA	
ET307349	TR 2SD794 P, Q	
ET201580	TR 2SD894	
EV315752	R S-FIX H D8 3P 204	
EV322416	R S-FIX H D8 3P 303	
EV315413	R S-FIX H D8 3P 503	
EV325331	VR ROTARY 16P11×0Q A503 A503	
HE321585	HEAD E HF213151 C	
HP307411	HEAD R/P HN424660 C	
MB321391	AS BELT	
MB321389	CAPSTAN BELT	
MB321392	COUNTER BELT	
MC329503	COUNTER MP390-457	
MC329504	COUNTER MP390-458 (BL)	
MIB319709	FLYWHEEL PART GX-M10	
MLT2001A150A	AS ARM ASSY GX-M10	
MR321403	WARM PULLEY	
MZ283140	△ SOCKET SELECTER X-I7238 6P	U
TCB319724	WORM GEAR PART	

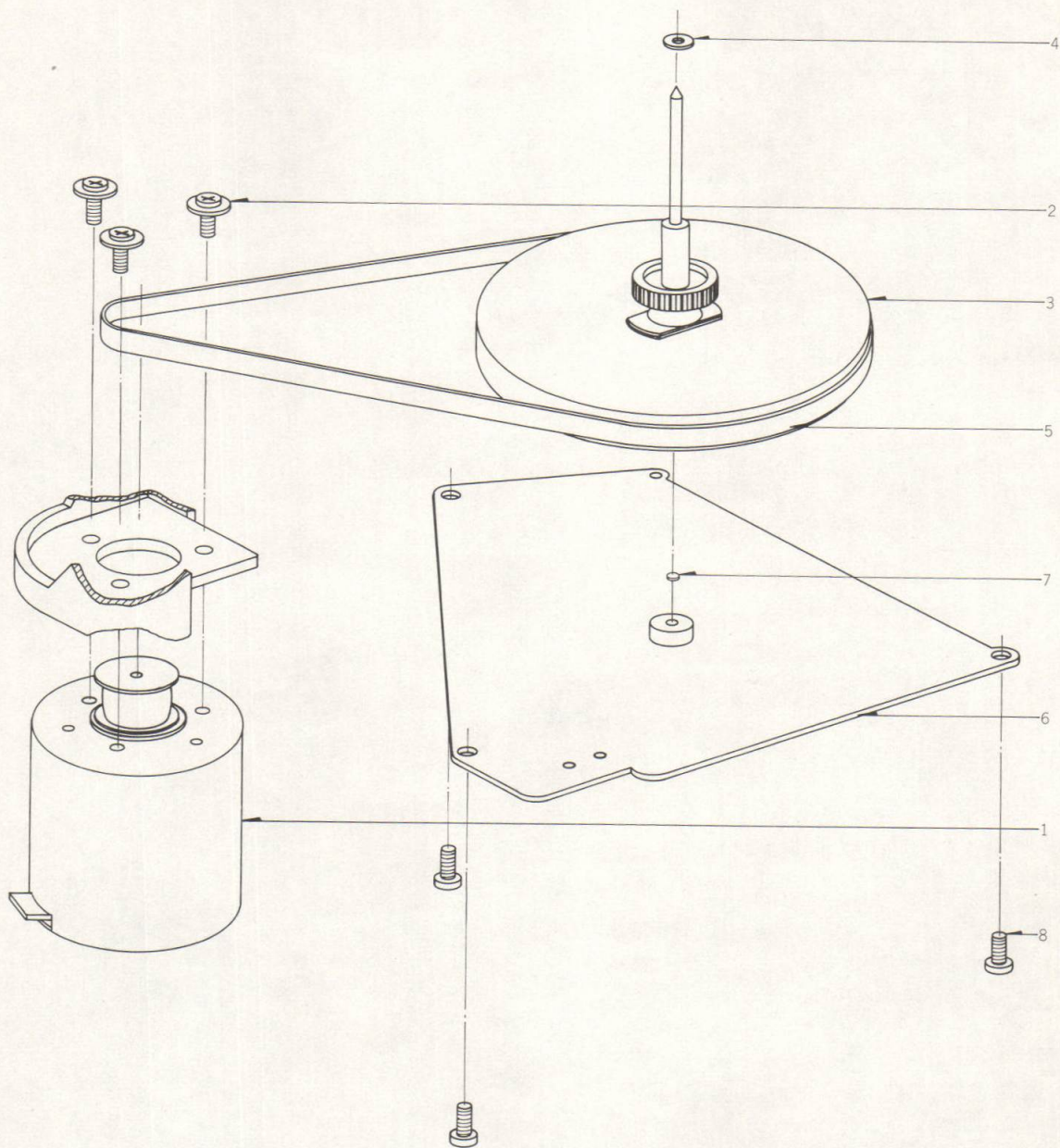
2. HEAD BLOCK



HEAD BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
2-1x	BHT2001A120B	HEAD BLK CS-M01A
2-2	HP307411	HEAD R/P HN424660 C
2-3	HE321585	HEAD E HF213151 C
2-4	ZS608106	PAN20x06STL CMT
2-5	ZS419940	PAN23x06BRS NI3
2-6	ZG321459	AZIMUTH SPRING
2-7	ZG321358	PINCH SPRING (A)
2-8	BLT2001A140A	PINCH ROLLER BLK GX-M10
2-9	ZG300206	EJECT SPRING

3. MOTOR BLOCK

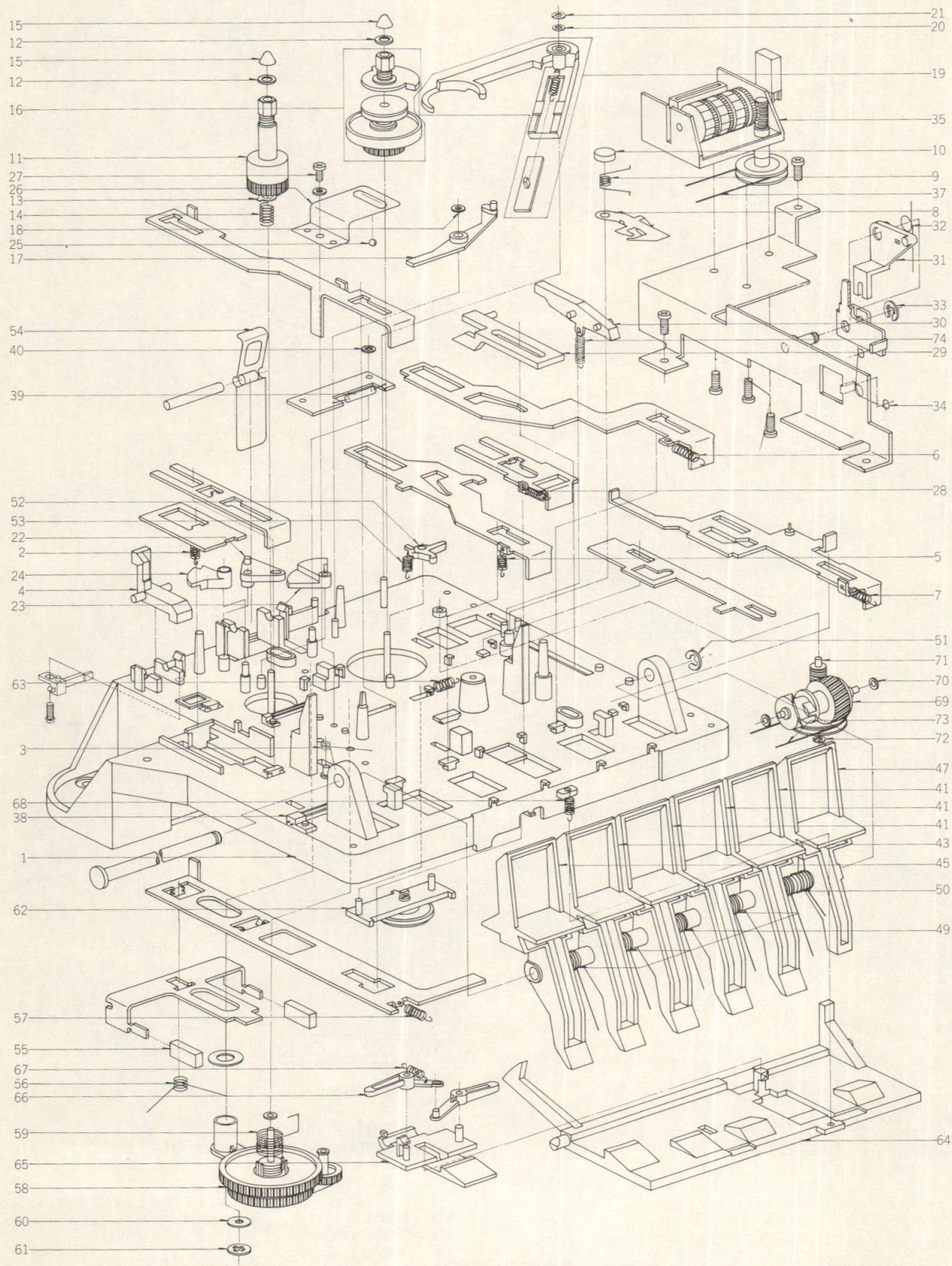


MOTOR BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
MOTOR BLOCK		
3-1	BMT2020A110A	MOTOR BLK CS-M4
MECHA BLOCK		
3-2	ZS323999	SCREW, PAN 2.6x4.5 W/FRANGE
3-3	MIB319709	FLYWHEEL PART GX-M10
3-4	ZW305492	PW23x060x050PSL
3-5	MB321389	CAPSTAN BELT
3-6	TCB319914	FLYWHEEL HOLD PLATE (A)
3-7	ZW321424	THRUST WASHER
3-8	ZS310984	PT BR30x08STL CMT

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

4. MECHA BLOCK



MECHA BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
4-1	TCB319723	CHASSIS PART GX-M10
4-2	ZG312926	SP T1-3.2/0.2-16.0 T1-043
4-3	ZG321373	STOP SPRING
4-4	ML321376	SAFTY LEVER (A)
4-5	ZG312942	SP T1-3.2/0.29-10.0 T1-058
4-6	ZG324329	SP T2-3.2/0.29-11.2 T2-059
4-7	ZG324330	PAUSE SPRING
4-8	MZ321396	LOCK CAM
4-9	ZG319480	LOCK CAM SPRING
4-10	TC282396	CAP
4-11	BR321539	SUPPLY REEL TABLE BLK
4-12	ZW381644	PW21x040x013PSL
4-13	ZW321393	BT WASHER
4-14	ZG321538	BT SPRING
4-15	MT305793	REEL CAP
4-16	BR321540	TAKE-UP REEL TABLE BLK
4-17	ML321404	RELEASE LEVER
4-18	ZW340648	RING CS190STL PKR
4-19	MLT2001A150A	AS ARM ASSY GX-M10
4-20	ZW305546	PW21x040x025PSL
4-21	ZW321437	PUSH WASHER
4-22	ML321381	RETURN LEVER (A)
4-23	ML321382	RETURN LEVER (B)
4-24	ML321378	SAFTY LEVER (B)
4-25	MV368886	BALL 300STL
4-26	ZG321384	HOLD SPRING
4-27	ZS322402	PLX PAN30x08STL CMT
4-28	ZG321535	PB SPRING
4-29	ML321406	TIMER SLIDE (A)
4-30	ML321407	TIMER SLIDE (B)
4-31	TC310922	TIMER ARM (B)
4-32	ZG324215	TIMER SPRING (B)
4-33	ZW270101	RING E300SUP CMT
4-34	ZG321411	TIMER SPRING
4-35	MC329503	COUNTER MP390-457
4-36x	MC329504	COUNTER MP390-458 (BL)
4-37	MB321392	COUNTER BELT
4-38	ES283173	SW LEAF BSW-31PLC 01-1 NC
4-39	EL323981	PL LEAD 8V 55MA
4-40	ZW340648	RING CS190STL PKR
4-41	SK321362	KEY BOARD KNOB (A)
4-42x	SK321363	KEY BOARD KNOB (A-BL)
4-43	SK321364	KEY BOARD KNOB (D)
4-44x	SK321365	KEY BOARD KNOB (D-BL)
4-45	SK321367	KEY BOARD KNOB (B)
4-46x	SK321368	KEY BOARD KNOB (B-BL)
4-47	SK321369	KEY BOARD KNOB (C)
4-48x	SK321370	KEY BOARD KNOB (C-BL)
4-49	ZG321430	KEY BOARD SPRING (A)
4-50	ZG321431	KEY BOARD SPRING (B)
4-51	ZW270123	RING E400SUP CMT
4-52	TC321426	RELAY LEVER
4-53	ZG321544	RELAY LEVER SPRING
4-54	MZ321417	CASSETTE HOLDER
4-55	TC321415	BRAKE SHOE
4-56	ZG321416	BRAKE SPRING
4-57	ZG318228	SP T2-3.2/0.29-14 T2-061
4-58	BZ321546	MIDDLE GEAR BLK
4-59	ZG325100	GEAR RETURN SPRING
4-60	ZW460787	PW31x025PSL
4-61	ZW653163	RING CS280STL PKR
4-62	BZ321547	TAKE-UP IDLER BLK
4-63	ZG312920	SP T1-3.2/0.2-8.0 T1-037
4-64	MZ321418	KEY BOARD CAM
4-65	MZ321419	PB CAM
4-66	TC321420	CAM LEVER (A)
4-67	ZG321549	SP T2-3.2/0.2-10.0 T2-039
4-68	ZG321548	KEY BOARD CAM SPRING
4-69	TCB319724	WORM GEAR PART
4-70	ZW321317	PW21x040x050PSL
4-71	MR321403	WARM PULLEY
4-72	ZW321437	PUSH WASHER
4-73	MB321391	AS BELT
4-74	ZG324331	SP T2-3.2/0.2-12.5 T2-041

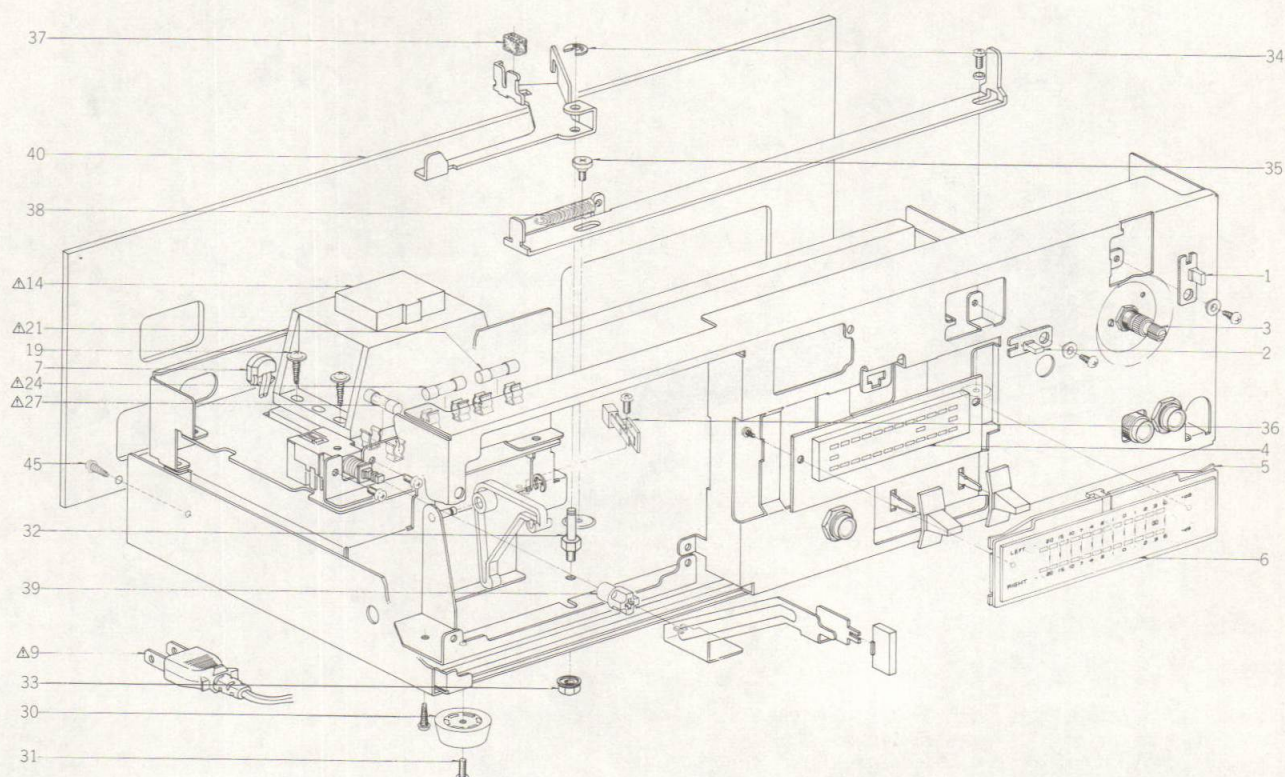
5. PRE AMP P.C BOARD (CE-5601A) BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
5-1	BAT2020A040A	PRE AMP P.C BLK CS-M4(U) (EXCEPT A)
5-2	BAT2020A040B	PRE AMP P.C BLK CS-M4(C)(A)
5-IC1	E1605013	IC NE545B
5-TR1,2	ET603257	TR 2SC1312S G,H
5-TR3	ET399846	TR 2SC945L QA
5-TR4to6	ET639437	TR 2SC945L QA, PA
5-TR7	ET304169	TR FET 2SK68 L, M
5-TR8	ET201580	TR 2SD894
5-TR9	ET639437	△ TR 2SC945L QA, PA
5-TR10,11	ET307349	△ TR 2SD794 P,Q
5-D1	ED308952	D GERMA V 1K34A-LR F07
5-D2,3	ED562397	D GERMA H 1S188FM1
5-D4	ED624903	D SILICON H 1S2473
5-D5,6	ED323979	△ D SILICON W03B F12 150/1.0A
5-D7	ED313846	D ZENER H HZ16 3
5-J1	EJ321328	PHONE J HLJ0345-010 2×3P
5-J2	EJ316156	PHONE J 3P HLJ0315-020 6.3
5-J3	EJ308985	JACK PLATE DIN, PIN JACK 4P (EXCEPT A)
5-J3	EJ308985	JACK PLATE DIN, PIN JACK 4P (A)
5-SW1	ES310591	SW SLIDE 122074 2-12-02W
5-SW2	ES321274	SW LEVER 63349 2-06-03S
5-SW3	ES315748	SW LEVER 83157 2-08-03S
5-SW4	ES283072	SW SLIDE SSC22LP 2-02-02N (EXCEPT A)
5-VR1,2	EV315413	R S-FIX H D8 3P 503
5-VR3	EV322416	R S-FIX H D8 3P 303
5-VR5	EV315752	R S-FIX H D8 3P 204
5-VR6	EV315413	R S-FIX H D8 3P 503
5-VL1	EO310608	COIL VARI 1 FE0001 3.3MH
5-T1	EO328212	COIL OSC 1 2325-123 100KHZ
5-FL1	ER309119	FILTR DB D07-001 19KHZ
5-FL2	ER309120	FILTER DB D07-003 100KHZ
5-FL3	EO315758	COIL TUN 1 100S-431 100KHZ
5-VC1	EC300034	C S-FIX H ECR-CA100H12 9.0-100
5-FR1,2	ER319510	△ R FUSE FR25SJ 1/4W 560J
5-FR3	ER325381	△ R FUSE FR25SJ 1/4W 2R2J
5-FR4	ER307565	△ R FUSE ERD2FC 1/4W 6R80G
5-R79	ER321251	△ R CB H SNP FS RDS 1/2W 561J
5-C3	EC306987	C STY V F05 500 471J 50DC
5-C10	EC311867	C STY V F05 500 391J 50DC
5-C11	EC565830	C STY V 201J 50DC
5-C56	EC321349	C PP V F10 PFH 222J 630DC
5-C61	EC313826	C SA V F05 R10K 25DC
5-C64	EC316230	C EC V CUT H 222M 35DC
5-C69	EC306419	C STY V F05 500 681J 50DC
5-3	ZW263946	RV NYL40×050

6. POWER SUPPLY P.C BOARD (CE-5602/5603/5604) BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
6-TR1	ET307349	△ TR 2SD794 P, Q
6-D1	ED315960	△ D SILICON WL02 200/1.0A
6-D2	ED324014	D ZENER H HZ11 B1
6-VS1	MZ283140	△ SOCKET SELECTOR X-17238 6P (U)
6-SW1	ES310839	△ SW PUSH SDG1P-E 01-1 E (U, E, B, S)
6-SW1	ES655806	△ SW PUSH SDG1P-J 01-1 C
6-SW1	ES665875	△ SW PUSH SDG1P-J 01-1 UC
6-C1	EC316184	C EC V CUT H 102M 25DC
6-C4	EC320548	△ C CE V F 103Z 250AC (U,A)
6-C4	EC314688	△ C CE V FZ 103P 125AC (C)
6-C4	EC327382	△ C MP V 472M 250AC (E,B,S)

7. ASSEMBLY BLOCK



ASSEMBLY BLOCK

REF. NO.	PARTS NO.	DESCRIPTION
REC LED P.C BOARD BLOCK		
7-1	ED320469	D LED SEL1120R RED
DOLBY P.C BOARD BLOCK		
7-2	ED325330	D LED SEL1320G GRN
VOLUME P.C BOARD BLOCK		
7-3	EV325331	VR ROTARY 16P11X0Q A503 A503
LED METER BLOCK		
7-4	EM329497	IND LE LT-1003 GRAPH
7-5	SZ329521	METER HOLDER
7-6	SZ329519	METER WINDOW
POWER SUPPLY BLOCK		
7-7	EZ631945	STRAIN RELIEF SR-4N-4(EXCEPT B)
7-8x	EJ692908	STRAIN RELIEF SR-5N-4 (B)
7-9	EW306428	Δ AC CORD 2 CORES KP-205A, VFF UCJ (U)
7-10x	EW305691	Δ AC CORD 2 CORES KP-8, SPT-1 UC (C, A)
7-11x	EW201796	Δ AC CORD 2 CORES KP-419C, LTCE-2F E
7-12x	EW313884	Δ AC CORD 2 CORES GTBS-2F 24/0.20×2 B
7-13x	EW201515	Δ AC CORD 2 CORES KP-560, LTSA-2F S
7-14	BT329498	Δ TRANS POWER CET-51 (U)
7-15x	BT329501	Δ TRANS POWER CET-55 (C)
7-16x	BT329500	Δ TRANS POWER CET-54 (A)
7-17x	BT329499	Δ TRANS POWER CET-53 (E)
7-18x	BT329502	Δ TRANS POWER CET-56 (B, S)
7-19	ZS321279	T2BR30×18STL CMT (U, C, A)

REF. NO.	PARTS NO.	DESCRIPTION
7-20x	ZS308513	T2BR30×12STL CMT PW080 (E, B, S)
7-21	EF309389	Δ FUSE TSC A 250V 0.40A (U)
7-22x	EF308848	Δ FUSE TSC 125V 0.40A (C, A)
7-23x	EF668474	Δ FUSE SEMKO T 250V 0.40A (E, B, S)
7-24	EF309387	Δ FUSE TSC A 250V 1A (U)
7-25x	EF310229	Δ FUSE TSC 125V 1A (C, A)
7-26x	EF623103	Δ FUSE SEMKO T 250V 1A (E, B, S)
7-27	EF321323	Δ FUSE TSC A 250V 0.25A (U)
7-28x	EF315334	Δ FUSE TSC 125V 0.25A (C, A)
7-29x	EF300586	Δ FUSE EAWK T 250V 0.25A (E, B, S)

AMP CHASSIS BLOCK

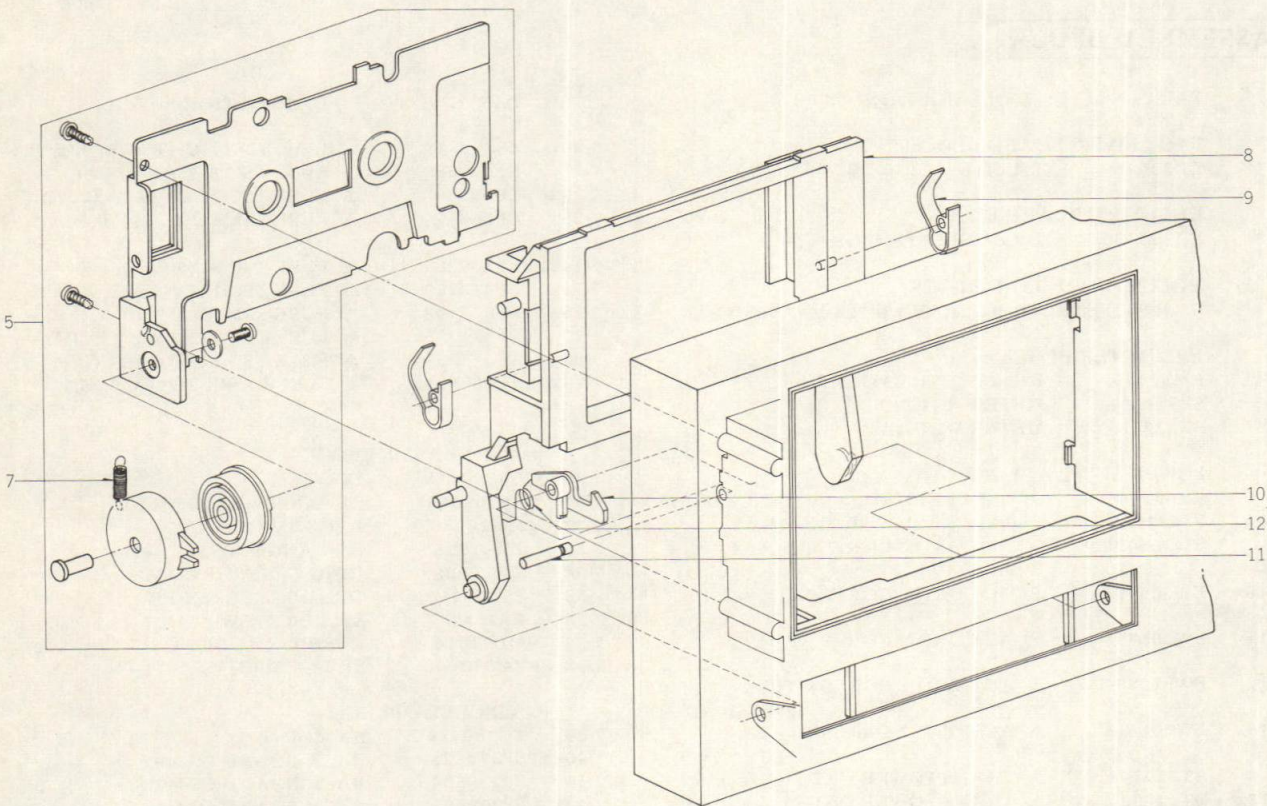
7-30	SA202118	FOOT
7-31	ZS306463	ST PAN30×08STL CMT C
7-32	MH282587	REC LEVER PROP
7-33	ZW413267	N FLANGE 40STL CMT
7-34	ZW290283	RING U 285SUP CMT
7-35	ZS329460	GRADUATED SCREW
7-36	ES301747	SW LEAF BSW-1FTX-2 01-1 NO
7-37	MB510164	CUSHION RUBBER
7-38	ZG313048	SP T1-5.0/0.55-35.5 T1-161

ASSEMBLY BLOCK

7-39	TC289484	SW. JOINT
7-40	SP329533	BACK BOARD CS-M4 (U)
7-41x	SP329534	BACK BOARD CS-M4 (C)
7-42x	SP329535	BACK BOARD CS-M4 (A)
7-43x	SP329536	BACK BOARD CS-M4 (E)
7-44x	SP329537	BACK BOARD CS-M4 (B, S)
7-45	ZS497878	T2BR30×10STL CMT PW080

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

8. FINAL ASSEMBLY



FINAL ASSEMBLY

REF. NO.	PARTS NO.	DESCRIPTION
8-1	BDT2020A170A	FRONT PANEL BLK CS-M4 (U) (EXCEPT A)
8-2x	BDT2020A170B	FRONT PANEL BLK CS-M4 (A)
8-3x	EDT2020A170C	FRONT PANEL BLK CS-M4-BL(U) (EXCEPT A)
8-4x	BDT2929A170D	FRONT PANEL BLK CS-M4-BL(A)
8-5	TCT2001A240A	DECORATION PLATE ASSY CS-M01
8-6x	TCT2001A240B	DECORATION PLATE ASSY CS-M01-BL
8-7	ZG328123	DAMPER SPRING
8-8	TC321486	LID FRAME
8-9	ZG321487	MOLD SPRING
8-10	TC321488	LOCK PLATE
8-11	MH323830	LOCK PROP
8-12	ZG321490	LOCK SPRING
8-13	BDT2020A180A	LID PANEL BLK CS-M4
8-14x	BDT2020A180B	LID PANEL BLK CS-M4-BL
8-15	SB316498	BUTTON (B)
8-16x	SB316499	BUTTON (B-BL)
8-17	SK321492	TIMER LEVER KNOB
8-18x	SK321493	TIMER LEVER KNOB (BL)
8-19	SK321500	LEVER KNOB (A)
8-20x	SK321501	LEVER KNOB (A-BL)
8-21	BC323832	UPPER COVER (C) (EXCEPT A)
8-22x	BC323833	UPPER COVER (C-BL)
8-23x	BC321508	UPPER COVER (B) (A)
8-24	ZS315878	XST BID40x08STL NI3
8-25x	ZS310588	XST BID40x08STL BNI (A, BL)
8-26	SK321506	DOUBLE KNOB (LOWER)
8-27x	SK321507	DOUBLE KNOB (LOWER-BL)
8-28	SK323822	DOUBLE KNOB (UPPER)
8-29x	SK323823	DOUBLE KNOB (UPPER-BL)
8-30x	ZW305013	PV POP32 (A)

INDEX

1. MODEL CS-M3

PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.	PARTS NO.	REF. NO.
BAT2019A050A	5-1	EW306428	7-5	ZG321373	4-3		
BAT2019A050B	5-2	EW313882	7-7x	ZG321384	4-26		
BAT2019A050C	5-3	EW313884	7-8x	ZG321411	4-34		
BC321508	8-23x	EZ631945	7-10	ZG321416	4-56		
BC323832	8-21	HE321585	2-3	ZG321430	4-49		
BC323833	8-22x	HP201806	2-2	ZG321431	4-50		
BDT2019A100A	8-13	MB321389	3-5	ZG321459	2-6		
BDT2019A100B	8-14x	MB321391	4-73	ZG321487	8-9		
BHT2001A120C	2-1x	MB321392	4-37	ZG321490	8-12		
BLT2001A140A	2-8	MB510164	7-25	ZG321535	4-28		
BMT2020A110A	3-1	MC321559	4-35	ZG321538	4-14		
BR321539	4-11	MC321560	4-36x	ZG321544	4-53		
BR321540	4-16	MH282587	7-14	ZG321548	4-68		
BT323939	7-18	MIB323830	8-11	ZG321549	4-67		
BT323941	7-21x	MLB319709	3-3	ZG324215	4-32		
BT323942	7-19x	MLT2001A150A	4-19	ZG324329	4-6		
BT323944	7-22x	ML321376	4-4	ZG324330	4-7		
BT324373	7-20x	ML321378	4-24	ZG324331	4-74		
BZ321546	4-58	ML321381	4-22	ZG325100	4-59		
BZ321547	4-62	ML321382	4-23	ZG328123	8-7		
EC300034	5-VC1	ML321404	4-17	ZS306463	7-13		
EC306419	5-C69	ML321406	4-29	ZS310588	8-25x		
EC306987	5-C3	ML321407	4-30	ZS310984	3-8		
EC311867	5-C10	MR321403	4-71	ZS315878	8-24		
EC313826	5-C61	MT305793	4-15	ZS322402	4-27		
EC314688	6-C1	MV368886	4-25	ZS323999	3-2		
EC316230	5-C64	MZ283140	6-VS1	ZS329460	7-17		
EC320548	6-C1	MZ321396	4-8	ZS329460	7-27		
EC321349	5-C56	MZ321417	4-54	ZS419940	2-5		
EC327382	6-C1	MZ321418	4-64	ZS497878	7-23		
EC565830	5-C11	MZ321419	4-65	ZS497878	7-38		
ED308952	5-D1to3	SA202118	7-12	ZS608106	2-4		
ED313846	5-D7	SB315697	8-15	ZW263946	5-4		
ED320469	7-1	SB315698	8-16x	ZW270101	4-33		
ED323979	5-D5,6	SK202120A	8-19	ZW270123	4-51		
ED560913	5-D8	SK202120B	8-20x	ZW290283	7-16		
ED624903	5-D4	SK321362	4-41	ZW305013	8-30x		
EF309392	7-32x	SK321363	4-42x	ZW305492	3-4		
EF623103	7-31	SK321364	4-43	ZW305546	4-20		
EI605013	5-IC1	SK321365	4-44x	ZW321317	4-70		
EJ308985	5-J3	SK321367	4-45	ZW321393	4-13		
EJ308986	5-J3	SK321368	4-46x	ZW321424	3-7		
EJ316156	5-J2	SK321369	4-47	ZW321437	4-21		
EJ321328	5-J1	SK321370	4-48x	ZW321437	4-72		
EJ692908	7-11x	SK321492	8-17	ZW340648	4-18		
EL323981	4-39	SK321493	8-18x	ZW340648	4-40		
EM323852	7-28	SK321506	8-26	ZW381644	4-12		
EM323854	7-29x	SK321507	8-27x	ZW413267	7-15		
EO3010608	5-VL1	SK323822	8-28	ZW460787	4-60		
EO315758	5-FL3	SK323823	8-29x	ZW653163	4-61		
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ER309119	5-FL1	SP202113	7-34x				
ER309120	5-FL2	SP202114	7-35x				
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ER319510	5-FR1,2	SP202117	7-37x				
ER321251	5-R79	SP202128A	8-1				
ER325381	5-FR3	SP202128B	8-2x				
ES283072	5-SW4	SP202128C	8-3x				
ES283173	4-38	SP202128D	8-4x				
ES301747	7-24	TCB319723	4-1				
ES310591	5-SW1	TCB319724	4-69				
ES310839	7-3	TCB319914	3-6				
ES315748	5-SW3	TCT2001A240A	8-5				
ES321274	5-SW2	TCT2001A240B	8-6x				
ES665875	7-4x	TC282396	4-10				
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ET399846	5-TR3	TC321420	4-66				
ET603257	5-TR1,2	TC321426	4-52				
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ET639437	5-TR9	TC321488	8-10				
EV202110	7-2	ZG300206	2-9				
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EV315752	5-VR5	ZG313048	7-26				
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EW201515	7-9x	ZG319480	4-9				
EW305691	7-6x	ZG321358	2-7				

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2. MODEL CS-M4

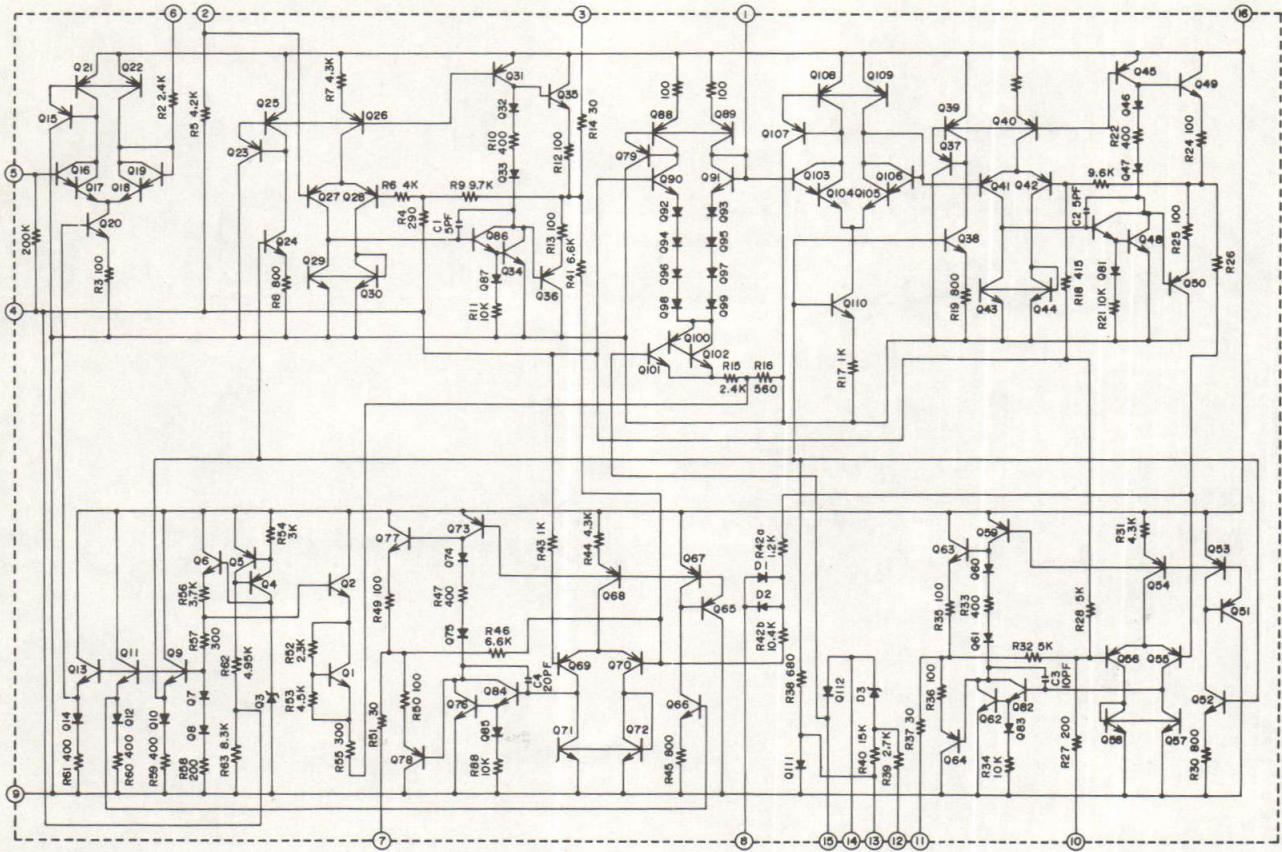
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BAT2020A040B	5-2	ET307349	5-TR10,11	TC321426	4-52		
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BC323832	8-21	ET399846	5-TR3	TC321488	8-10		
BC323833	8-22x	ET603257	5-TR1,2	ZG300206	2-9		
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BDT2020A170C	8-3x	EV315413	5-VR1,2	ZG312942	4-5		
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ER309119	5-FL1	SP329534	7-41x				
ER309120	5-FL2	SP329535	7-42x				
ER319510	5-FR1,2	SP329536	7-43x				
ER321251	5-R79	SP329537	7-44x				
ER325381	5-FR3	SZ329519	7-6				
ES283072	5-SW4	SZ329521	7-5				
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ES310839	6-SW1	TCT2001A240A	8-5				
ES315748	5-SW3	TCT2001A240B	8-6x				
ES321274	5-SW2	TC282396	4-10				
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SECTION 3

SCHEMATIC DIAGRAM

1. SCHEMATIC DIAGRAM OF ICs
2. CS-M3 NO. 1602234B SCHEMATIC DIAGRAM
3. CS-M4 NO. 1620260A SCHEMATIC DIAGRAM

NE545B



AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan

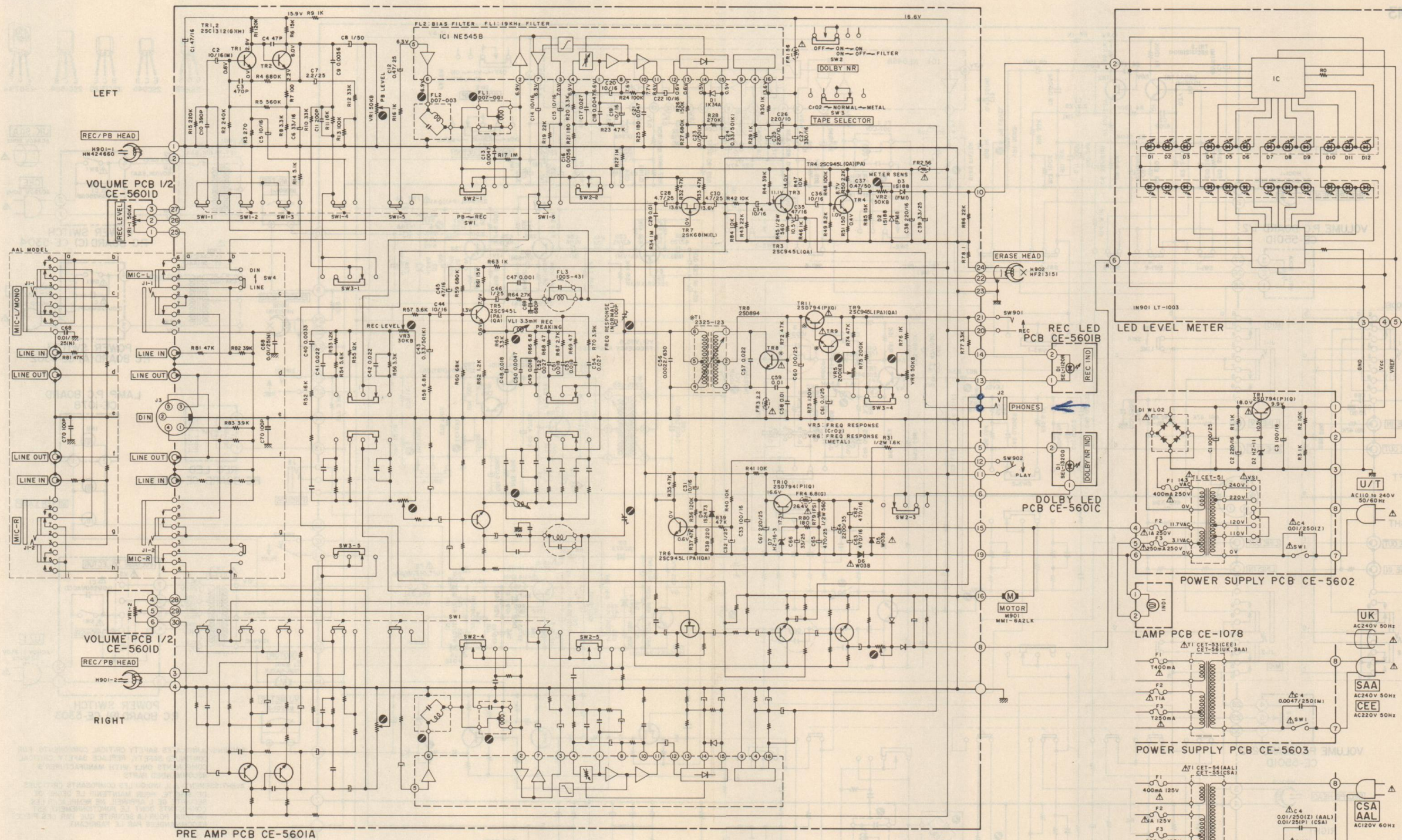
TEL: Tokyo (742) 5111 CABLE: HIFIAKAI TOKYO TELEX: J26261

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CS-M4



REC MODE				
※		NORMAL	CrO ₂	METAL
TR 8	B	0.9V	0.7V	0.4V
	C	5.0V	7.5V	11.3V
	E	0 V	0.1V	0.2V
TR 9	B	6.1V	8.6V	12.5V
	C	16.6V	16.6V	16.6V
TR 11	E	5.6V	8.1V	11.9V
	E	5.1V	7.5V	11.4V
T 1	3	5.0V	7.4V	11.2V
	5	27.7VAC	43.8VAC	69.1VAC
	6	35.6VAC	56.1VAC	88.4VAC

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

AVERTISSEMENT: ΔΙΛ 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

NOTE

UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μ F 50WV(J)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA
(FS)=FAIL SAFE RESISTORS

CS-M4
SCHEMATIC DIAGRAM
NO. 1620260A