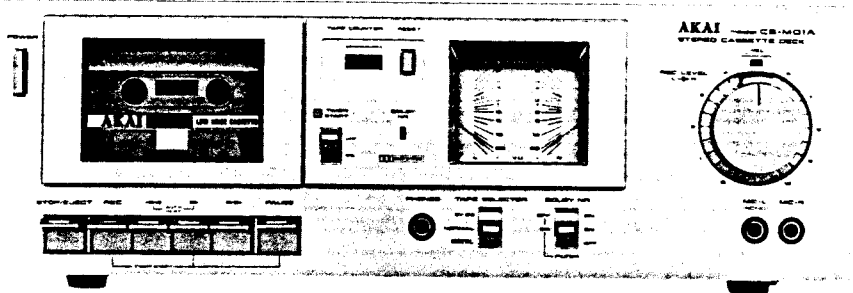


AKAI SERVICE MANUAL

CS-M01A



STEREO CASSETTE DECK

MODEL **CS-M01A**

THIS MANUAL MUST BE USED AS A SET TOGETHER WITH SEPARATELY PUBLISHED CS-M01 SERVICE MANUAL AND PARTS LIST.

I. TECHNICAL DATA

| | |
|-----------------------|--|
| 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 20 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 20 kohms |
| DIMENSIONS | 440 (W) \times 143 (H) \times 250 (D) mm (17.3 \times 5.6 \times 9.2") |
| WEIGHT | 5.0 kg (11.0 lbs) |
| POWER REQUIREMENTS | 100V, 50/60 Hz for Japan 120V, 60 Hz for USA and Canada 220V, 50 Hz for European countries except U.K. 240V, 50 Hz for U.K. and Australia 110/120/220/240V, switchable 50/60 Hz for other countries |
| POWER CONSUMPTION | U/T, CSA, AAL 10 W JPN 11 W |

* 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. AMPLIFIER ADJUSTMENT

* The letter "b" following an adjustment parts number indicates "RIGHT CHANNEL"

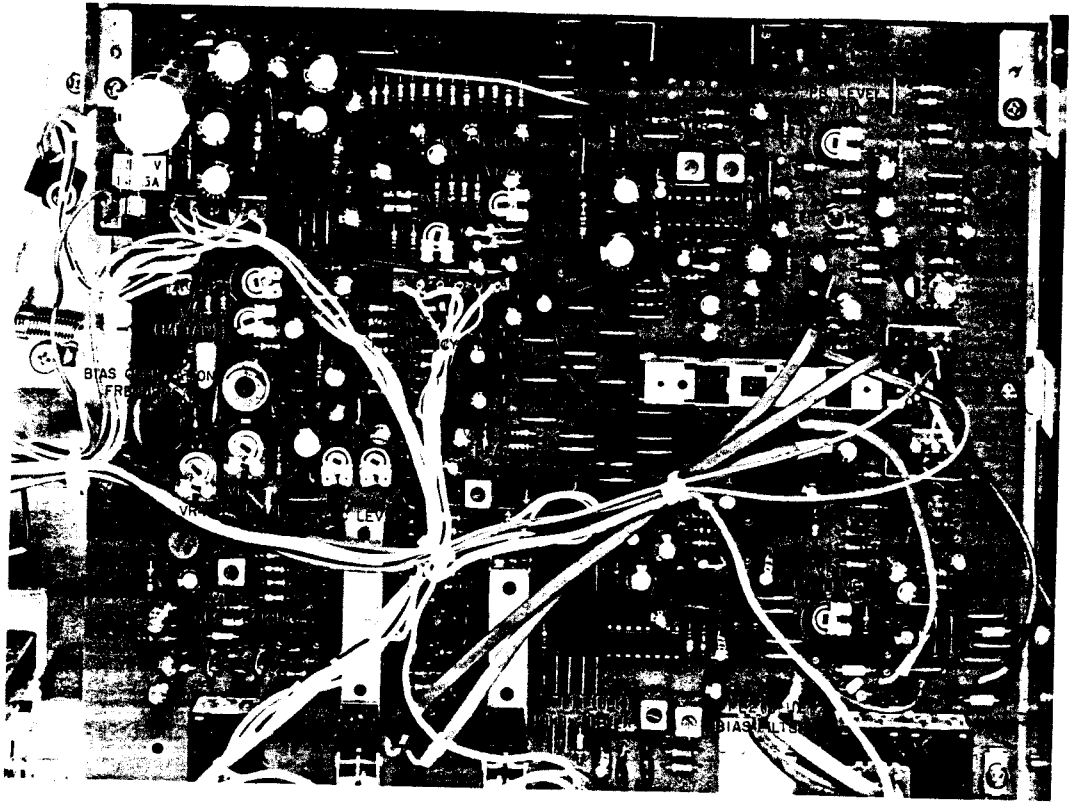


Fig. 1 Pre Amp P.C Board CE-5501A

| Step | Adjustment Item | Test Tape Supply Signal | Mode | Adjustment Point | Result | Remarks |
|------|--|---|--------|------------------|-----------------------------------|---|
| 1 | Playback Level | 333 Hz, 0 VU Test Tape | PB | VR 1 50 kB | -5.5 ± 0.5 dBm (410 mV) | |
| 2 | VU Meter Sensitivity | 1,000 Hz -5.5 dBm from oscillator | REC | VR 2 5 kB | 0 VU indication | |
| 3 | Bias Oscillation Frequency Adjustment | No signal input | REC | T1 | 100 kHz | |
| 4 | Rec Peaking Adjustment | 17 kHz -25.5 dB from oscillator | REC | VL 1 3.3 mH | AC Voltmeter indicates to maximum | Tape selector to Normal position. NOTES 6, 9. |
| 5 | Normal Position Frequency Response | Normal Blank tape 1,000 Hz, 10,000 Hz -25.5 dBm recording | REC/PB | VR 4 100 kB | 1,000 Hz to 10,000 Hz flat | |
| 6 | CrO ₂ Position Frequency Response | CrO ₂ Blank tape 1,000 Hz, 10,000 Hz -25.5 dBm recording | REC/PB | VR 5 200 kB | 1,000 Hz to 10,000 Hz flat | Set tape selector to CrO ₂ position. |

| Step | Adjustment Item | Test Tape Supply Signal | Mode | Adjustment Point | Result | Remarks |
|------|-----------------------------------|---|--------|------------------|--|--|
| 7 | Metal Position Frequency Response | Metal Blank tape 1,000 Hz, 10,000 Hz -25.5 dBm recording | REC/PB | VR 6 50 kB | 1,000 Hz to 10,000 Hz flat | Set tape selector to Metal position. |
| 8 | Recording Level | Normal Blank tape 1,000 Hz, -5.5 dBm recording | REC/PB | VR 3 30 kB | -5.5 ± 0.5 dBm | |
| 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 | Bias Filter | 100 kHz from oscillator | REC | FL 2 D07-003 | AC Voltmeter indicates to minimum | NOTE 9. |
| 11 | 19 kHz Filter Adjustment | 19 kHz from oscillator | REC | FL 1 D07-001 | AC Voltmeter indicates to minimum | Set Dolby NR SW. to ON, Filter ON Position. NOTE 8, 9. |

Chart-1

- NOTES:**
1. Input selector switch to LINE.
(The JPN, AAL Models 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 6, 7 and 9, set Tape Selector to NORMAL Position.
 4. Except for Step 11, 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 5 to 8 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.

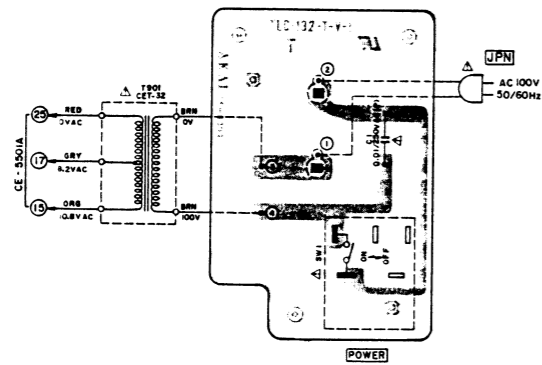
III. DC RESISTANCE OF VARIOUS HEADS

| Parts | Designation | DC Resistance |
|-------------|-------------|---------------|
| REC/PB Head | HN424652 | 220 ohms |
| Erase Head | HF213151 | 3.5 ohms |

Chart-2

VI. SCHEMATIC DIAGRAM

2. POWER SWITCH P.C BOARD (A) CE-5302 (JPN)



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

V. PARTS LIST

The composite parts of Model CS-M01A, except for those which have been changed as per the list below, are identical to those of Model CS-M01.

Therefore, when ordering parts for this tape deck, please utilize Model CS-M01 Parts List.

1. HEAD BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|----------|-----------|----------------------|---------------|
| 1-1 | BH327950 | Head Block CS-M01A | |
| 1-2 | HP321584 | REC/PB Head HN424652 | 37-2-32 |
| 1-3 | HE321585 | Erase Head HF213151 | 37-2-33 |

2. MECHA BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|----------|-----------|------------------------------|---------------|
| 2-1 | ZG312942 | Coil Spring T1-3.2/0.29-10.0 | |
| 2-2 | ZG319480 | Lock Cam Spring | CE-1088 |
| 2-3 | ZG324215 | Timer Spring (B) | CE-1089 |

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

| Symbol No. | Parts No. | Description | Schematic No. |
|------------|-----------|---|---------------|
| 3-1 | BA327957 | Pre Amp P.C Board Comp. CS-M01A (U/T, CEE, UK, SAA) | CE-5501A |
| 3-2 | BA327959 | Pre Amp P.C Board Comp. CS-M01A (JPN) | CE-5501A |
| 3-3 | BA327961 | Pre Amp P.C Board Comp. CS-M01A (CSA) | CE-5501A |
| 3-4 | BA327962 | Pre Amp P.C Board Comp. CS-M01A (AAL) | CE-5501A |
| 3-5 | EV315752 | Semi-Fixed/Vol. D8 Axial 200 kΩ (VR5) | 36-10-280 |
| 3-6 | EO325382 | OSC Coil 2325-088 (T1) | 23-4-59 |
| 3-7 | ER309120 | Dolby Filter D07-003 (FL2) | 53-1-143 |
| 3-8 | EO315758 | Trap Coil 100S-431 (FL3) | 23-1-331 |
| 3-9 | ER325381 | Fuse/R. 1/4WS 2.2 ohms (J) (FR3) | 35-14-23 |
| 3-10 | ER321251 | Carbon/R. F1/2 560 ohms (J) (R79) | 35-11-27 |
| 3-11 | EC311867 | Styrol/C. 390 PF (J) 50WV (C10) | 24-11-14 |
| 3-12 | EC327443 | Polypropylene/C. 0.0015μF (J) 630WV (C56) | 24-22-9 |
| 3-13 | EC316230 | Elect./C. (Vert.) 2200μF 35WV (C64) | 24-12-46 |

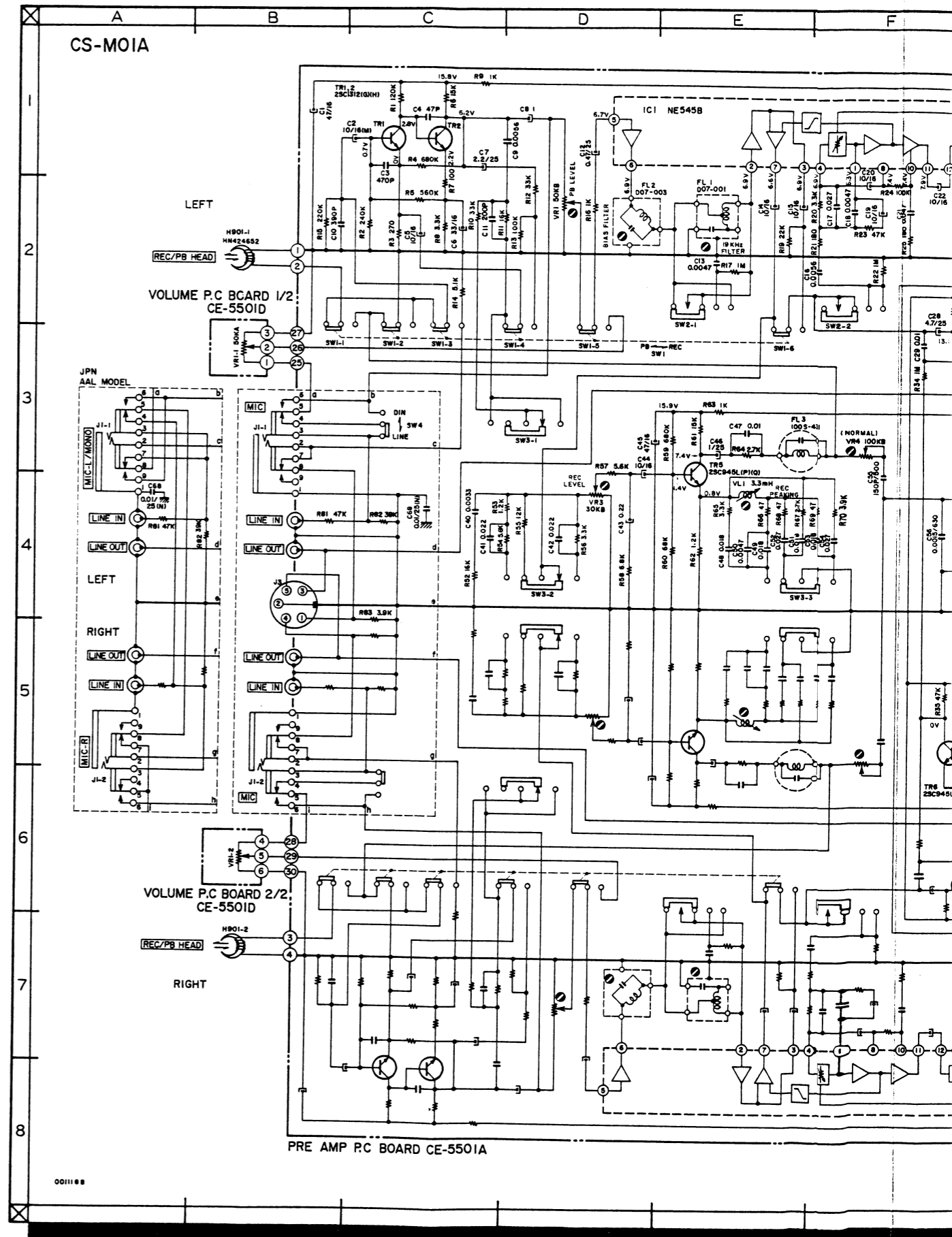
4. FRONT PANEL BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|----------|-----------|--|---------------|
| 4-1 | BD327953 | Front Panel Block CS-M01A (U/T, CEE, UK, SAA) | |
| 4-2 | BD327954 | Front Panel Block CS-M01A (JPN, AAL) | |
| 4-3 | BD327955 | Front Panel Block CS-M01A-BL (U/T, CEE, UK, SAA) | |
| 4-4 | BD327956 | Front Panel Block CS-M01A-BL (JPN, AAL) | |
| 4-5 | BD320047 | Lid Panel Assy CS-M02 | |
| 4-6 | BD320048 | Lid Panel Assy CS-M02-BL | |

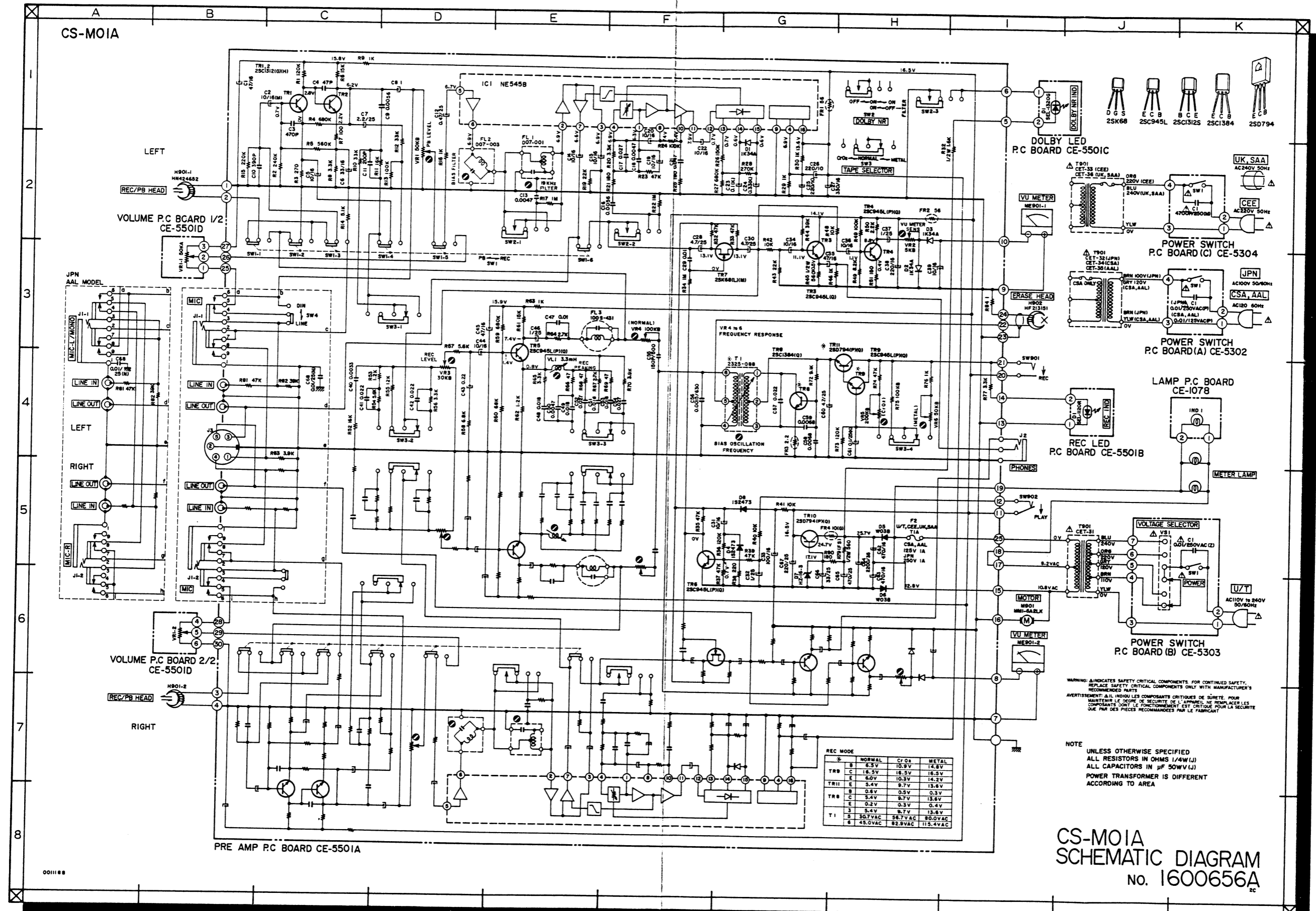
5. FINAL ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|----------|-----------|-------------------------------|---------------|
| 5-1 | SP325369 | Back Board (U-2) (U/T) | CE-6309, 6502 |
| 5-2 | SP325370 | Back Board (J-2) (JPN) | CE-6309, 6502 |
| 5-3 | SP325371 | Back Board (C-2) (CSA) | CE-6309, 6503 |
| 5-4 | SP325373 | Back Board (A-2) (AAL) | CE-6309, 6503 |
| 5-5 | SP325374 | Back Board (E-2) (CEE) | CE-6309, 6504 |
| 5-6 | SP325375 | Back Board (B, S-2) (UK, SAA) | CE-6309, 6504 |

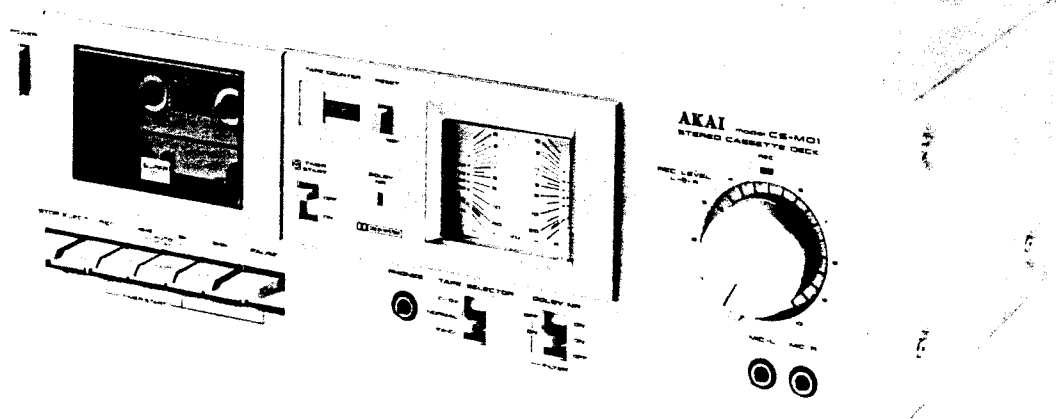
When ordering parts, please quote Parts Number, Description and Model Number.



VI. SCHEMATIC DIAGRAM



CS-MO1A



STEREO CASSETTE DECK

MODEL CS-M01

ALSO APPLICABLE TO BLACK PANEL MODEL

| | | |
|-----------|-------------------------|----|
| SECTION 1 | SERVICE MANUAL | 3 |
| SECTION 2 | PARTS LIST | 25 |
| SECTION 3 | SCHEMATIC DIAGRAM | 39 |

SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

| | | |
|-------|--|----|
| I. | TECHNICAL DATA | 4 |
| II. | DISMANTLING OF UNIT | 5 |
| III. | CONTROLS | 6 |
| IV. | PRINCIPAL PARTS LOCATION | 7 |
| V. | VOLTAGE AND CYCLE CONVERSION | 8 |
| | 1. VOLTAGE CONVERSION | 8 |
| | 2. CYCLE CONVERSION | 8 |
| VI. | TIMER START SWITCH OPERATION | 9 |
| VII. | AUTO STOP MECHANISM OPERATION | 10 |
| VIII. | MECHANISM ADJUSTMENT | 12 |
| IX. | HEAD ADJUSTMENT | 14 |
| X. | AMPLIFIER ADJUSTMENT | 15 |
| XI. | DC RESISTANCE OF HEADS | 18 |
| XII. | CLASSIFICATION OF VARIOUS P.C BOARDS | 18 |
| | 1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS | 18 |
| | 2. COMPOSITION OF VARIOUS P.C BOARDS | 19 |

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

I. TECHNICAL DATA

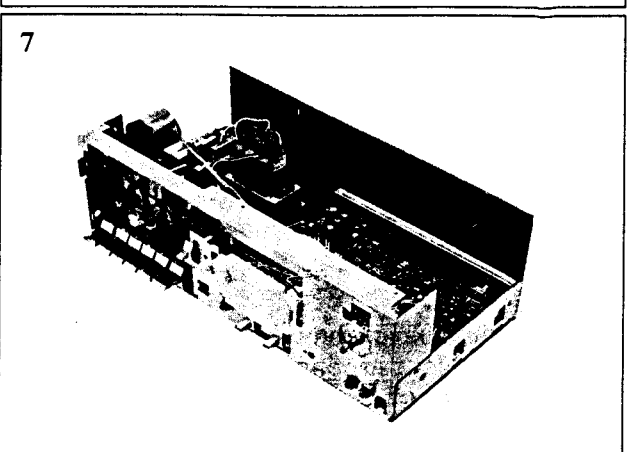
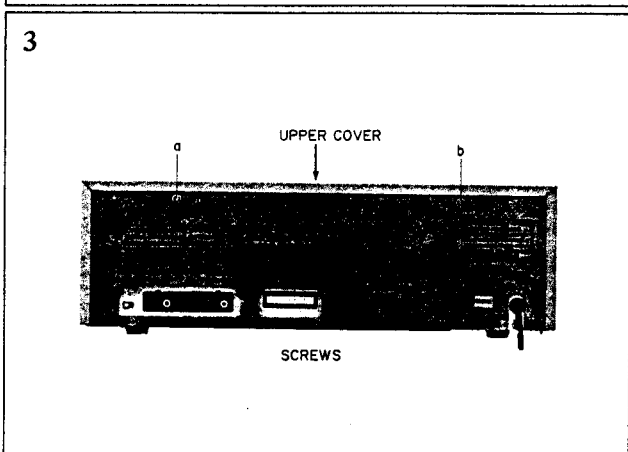
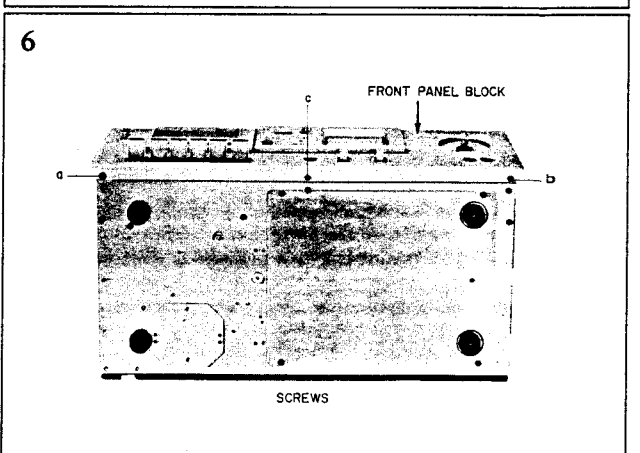
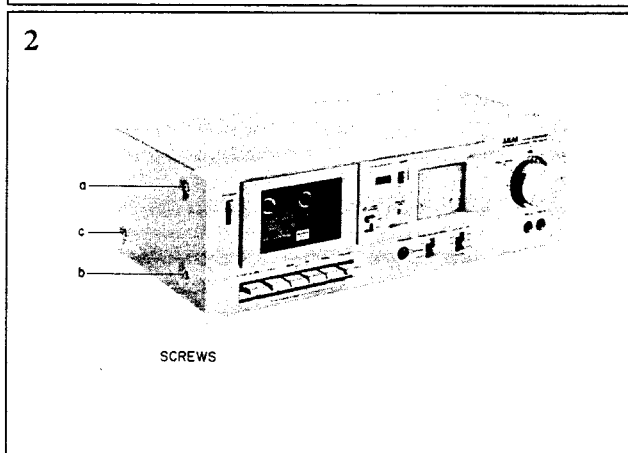
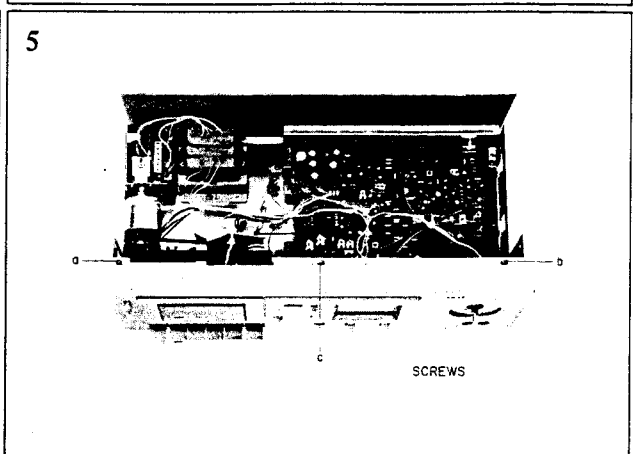
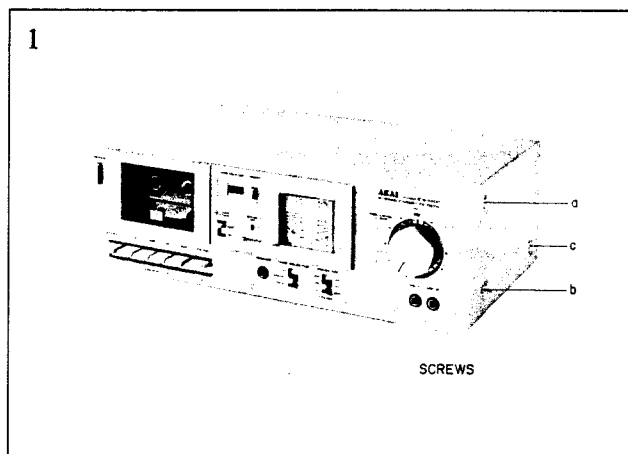
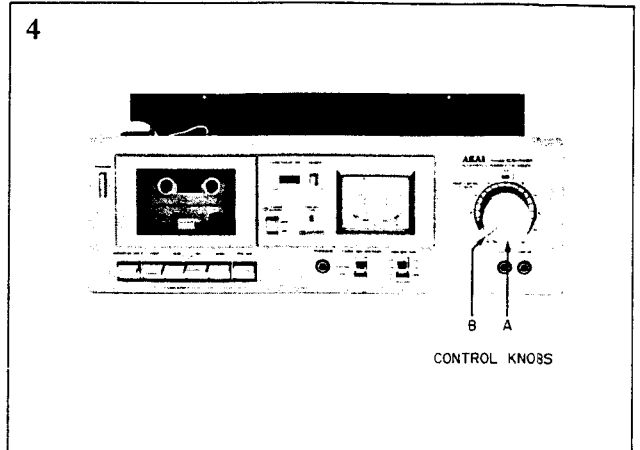
| | |
|-----------------------|---|
| TRACK SYSTEM | 4 track 2 channel stereo system |
| TAPE | Philips type cassette |
| TAPE SPEED | 4.76 cm/s \pm 2.0% (1-7/8 ips. \pm 2.0%) |
| HEADS | Erase head \times 1 Permalloy head for record/playback \times 1 |
| MOTOR | Electronically speed controlled DC motor \times 1 |
| 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 14,000 Hz \pm 3 dB (-20 VU) CrO ₂ : 30 to 16,000 Hz \pm 3 dB (-20 VU) FeCr: 30 to 17,000 Hz \pm 3 dB (-20 VU) |
| SIGNAL TO NOISE RATIO | Normal: Better than 55 dB CrO ₂ : Better than 57 dB FeCr: Better than 57 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% FeCr: Less than 0.7% |
| INPUT | MIC: 0.25 mV (input impedance 5 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 20 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 20 kohms) |
| 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) |
| POWER CONSUMPTION | U/T, CSA, AAL 10 W |
| POWER REQUIREMENTS | 120V 60 Hz for U.S.A. & Canada 220V 50 Hz for European countries except U.K. 240V 50 Hz for U.K. & Australia 110/120/220/240V switchable 50/60 Hz for other countries |

* For improvement purpose, 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

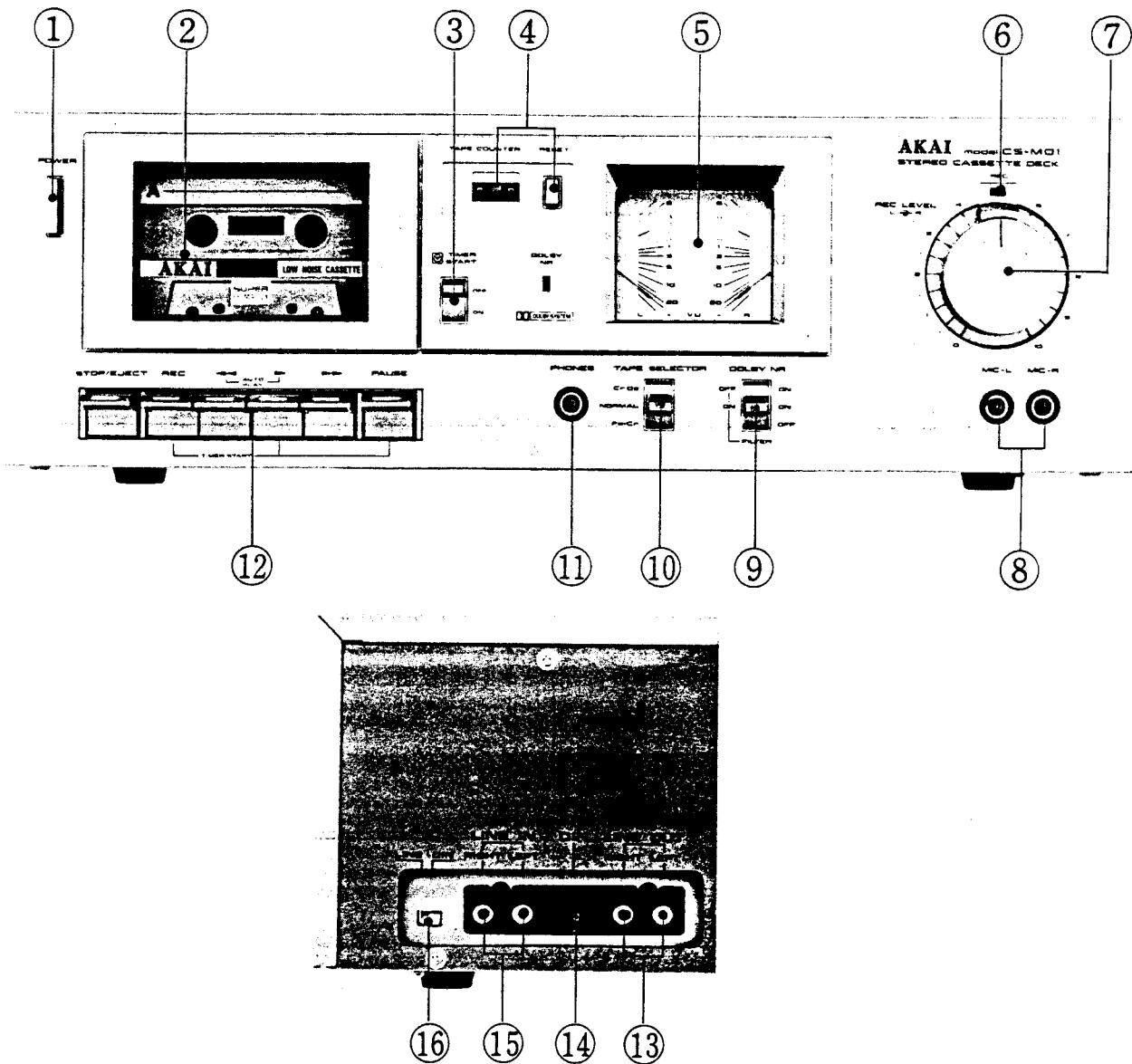


Fig. 1 Controls

- | | |
|--|--|
| 1. POWER SWITCH | 10. TAPE SELECTOR |
| 2. CASSETTE RECEPTACLE | 11. HEADPHONE JACK |
| 3. TIMER START SWITCH | 12. OPERATING KEYS |
| 4. INDEX COUNTER AND RESET BUTTON | 13. LINE OUTPUT JACKS (left and right) |
| 5. VU METERS | 14. DIN JACK (the AAL model does not have this facility) |
| 6. RECORDING INDICATOR LAMP | 15. LINE INPUT JACKS (left and right) |
| 7. LEFT → RIGHT RECORDING LEVEL CONTROLS | 16. INPUT SELECTOR SWITCH |
| 8. MICROPHONE JACKS (left and right) | (the AAL model does not have this facility) |
| 9. DOLBY NR SWITCH AND MPX FILTER | |

IV. PRINCIPAL PARTS LOCATION

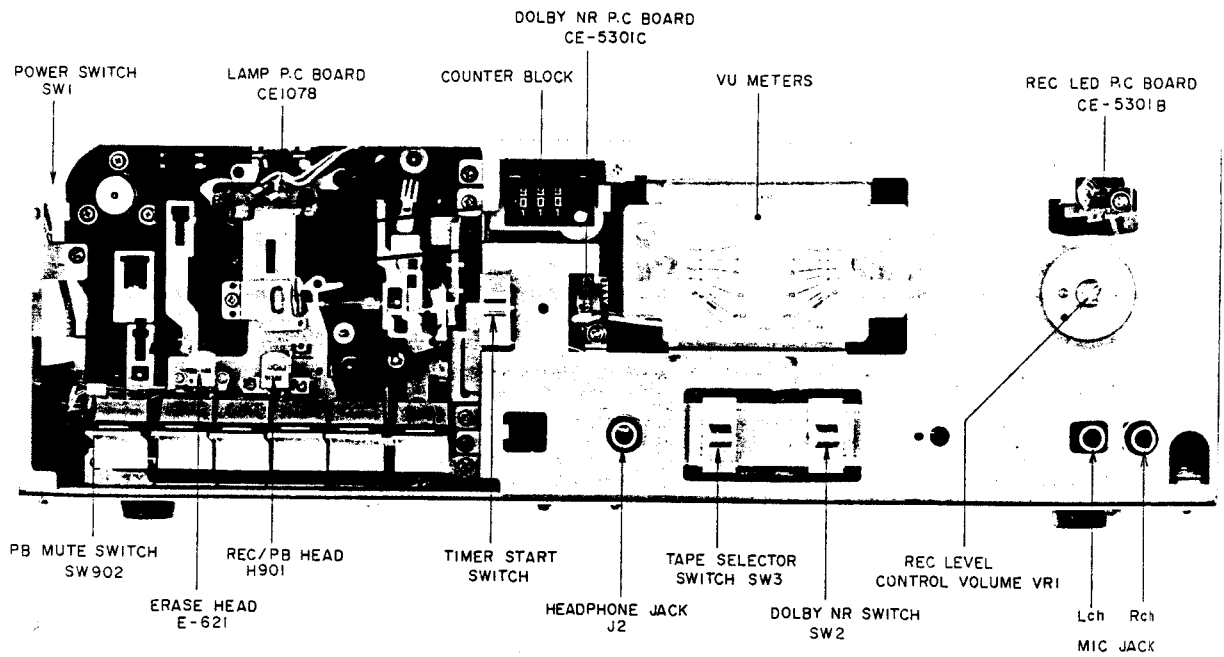


Fig. 2 Front View

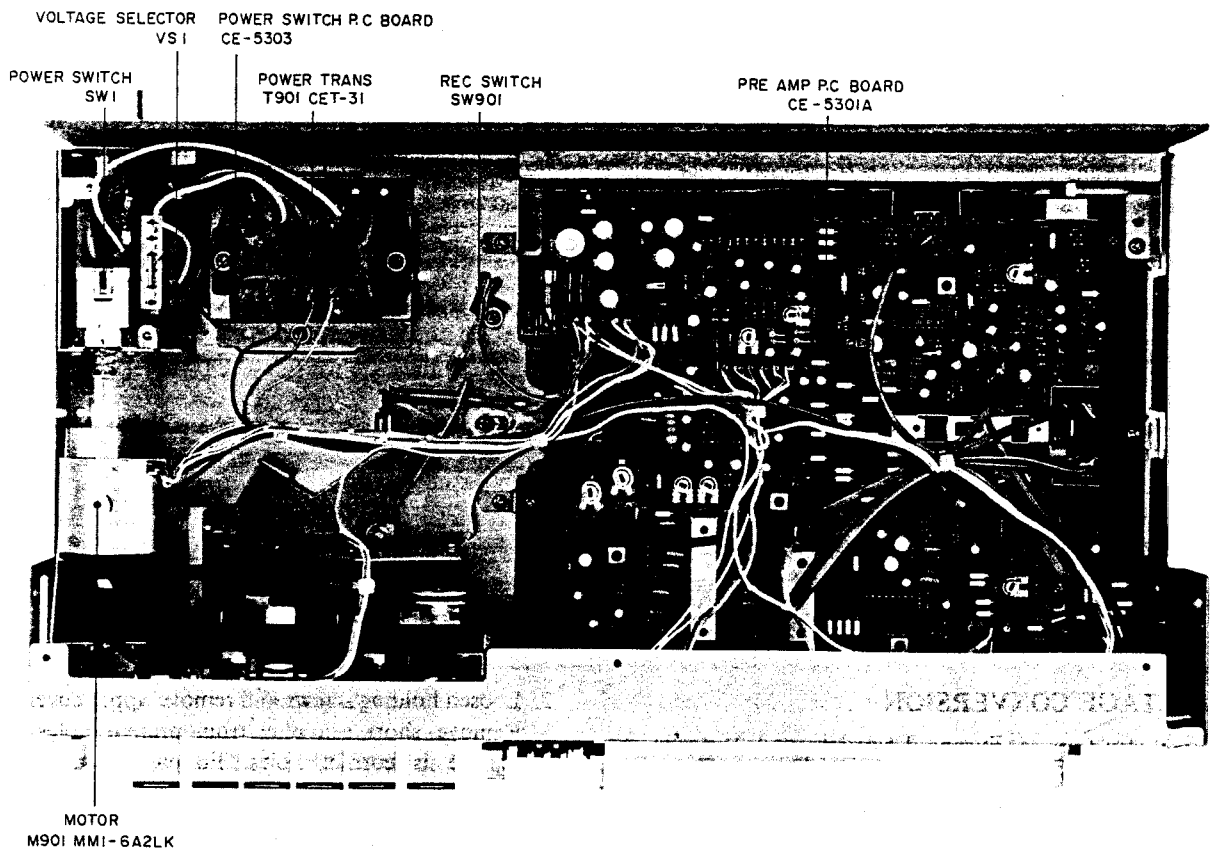


Fig. 3 Top View

V. VOLTAGE AND CYCLE CONVERSION

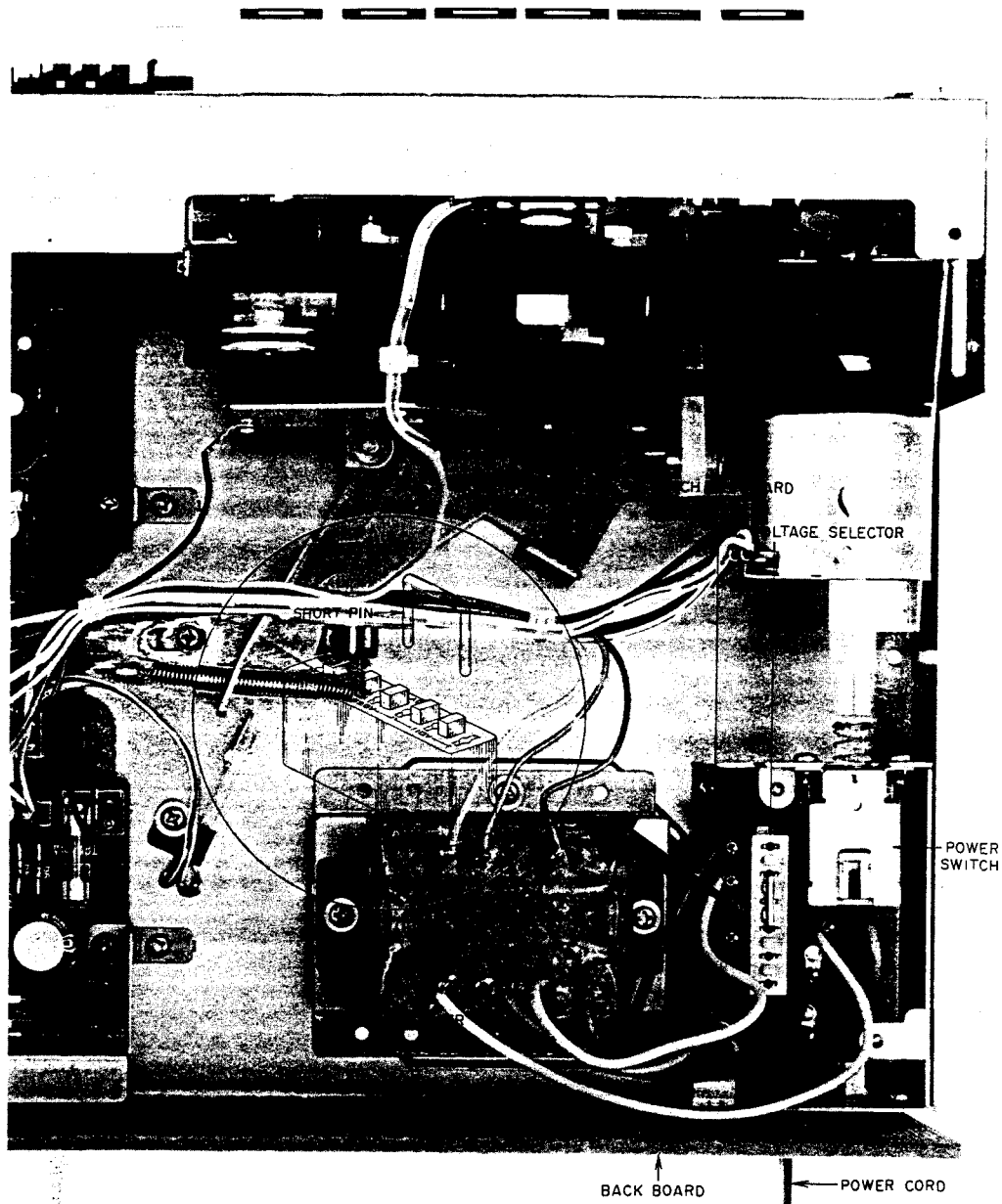


Fig. 4 Voltage Conversion (U/T Model)

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. TIMER START SWITCH OPERATION

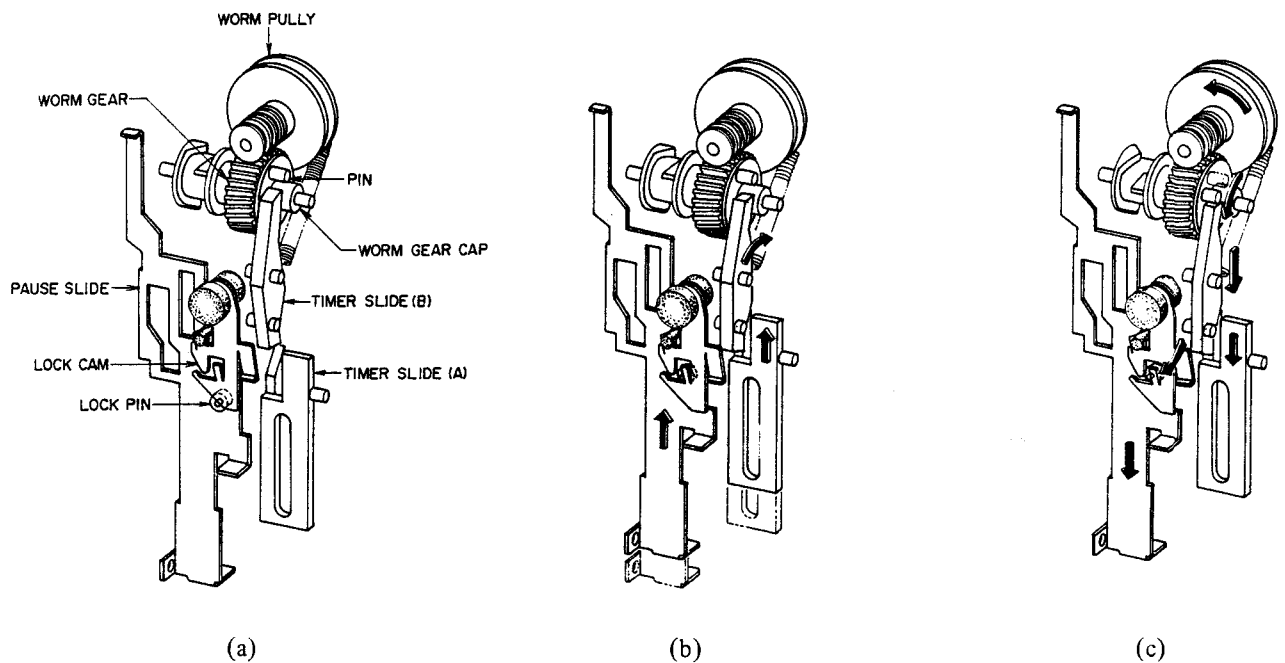


Fig. 5

The **TIMER START SWITCH** is designed to put the deck in the **REC** or **PLAY** modes by releasing the **PAUSE** key automatically (the **PAUSE**, **REC** and **PLAY** keys have already been depressed) when the power is turned on by the timer.

In the **PAUSE** mode, the **PAUSE SLIDE** is lifted up and fixed by attaching the **LOCK PIN** to the **LOCK CAM** so to release the **PAUSE** mode all you have to do is to detach the **LOCK PIN** from the **LOCK CAM**.

When put into the **PAUSE** mode, the **LOCK PIN** is attached to the **LOCK CAM** and the **PAUSE SLIDE** is locked. When the **TIMER START SWITCH** is put on **TIMER SLIDE (A)** moves upwards and as a result, **TIMER SLIDE (B)** moves upwards to the inside in the direction of the arrow and downwards to the outside. See Fig. 5 (b).

If the power switch is turned on here, the **WORM PULLEY** and the **WORM GEAR** revolve. The pin on the **WORM GEAR CAP** moves in the direction of the arrow **TIMER SLIDE (B)** is pushed down so the **LOCK CAM** is pushed upwards by this section. Then the **LOCK PIN** is detached, the **PAUSE SLIDE** lowers and the **PAUSE** key is released. The **TIMER START SWITCH** is also released because **TIMER SLIDE (A)** is pushed down by **TIMER SLIDE (B)**.

VII. AUTO STOP MECHANISM OPERATION

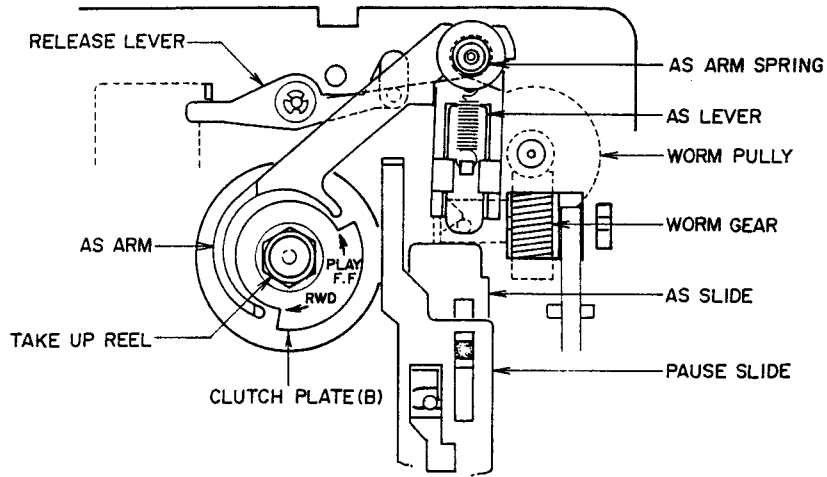


Fig. 6

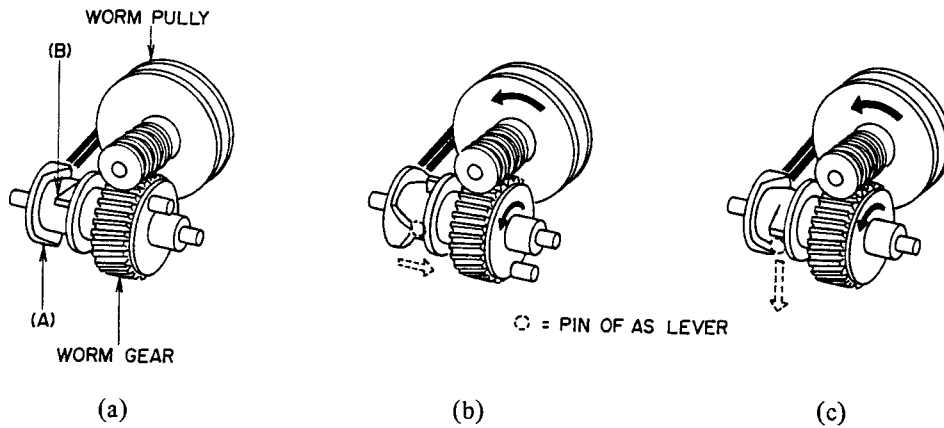


Fig. 7

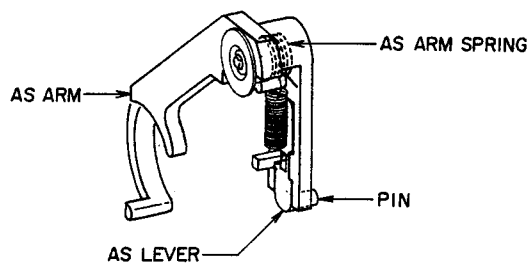




Fig. 8

AUTO STOP puts the deck into the STOP mode by releasing the keys when the end of the tape is reached in the PLAY, FF, RWD REC/PB modes.


1. HOW EACH PART OPERATES

- a. CLUTCH PLATE (B) (Fig. 6)


There is felt attached to this and friction force is generated (Shown by the arrow) and it seems as if it is pushing the AS ARM outwards.
- b. AS LEVER (Fig. 6, 8)


The pin attached to the rear of the AS LEVER enters the groove of the WORM GEAR. It touches against the  section A as the WORM GEAR revolves and moves to the left or right or is pushed down by  section B.
- c. RELEASE LEVER (Fig. 6)

Adds the same friction force to the AS ARM by pulling down the AS ARM Spring in the pause mode as when the reel revolves.

2. When put into the PLAY (FF, RWD) mode the fly-wheel revolves and the WORM pulley and WORM gear revolves. The reel revolves and the CLUTCH PLATE (B) goes to push the AS ARM outwards with the friction force so the pin at the rear of the AS LEVER receives this force to the left then it contacts the ridged section  A of the WORM GEAR and move to the left and right.

At the end of the tape, the reel stops revolving so the friction disappears. In the PLAY (FF, RWD) mode the RELEASE LEVER drops so friction is not added to the AS ARM from the AS ARM SPRING.

The Worm Lever continues to revolve and the AS LEVER pin is taken up to the top of the ridged  section where it then stops.

It is then pushed down by the WORM GEAR section B , and pushes down the AS SLIDE with the AS LEVER and releases the PLAY (FF, RWD) keys. When the PAUSE key is depressed from the PLAY mode the reel stops revolving and the force from the CLUTCH PLATE to the AS ARM stops. However the PAUSE SLIDE moves upwards and pushes up the RELEASE LEVER which had been held down so the same force is applied as to the AS ARM by the AS ARM SPRING so AUTO STOP does not operate.

VIII. MECHANISM ADJUSTMENT

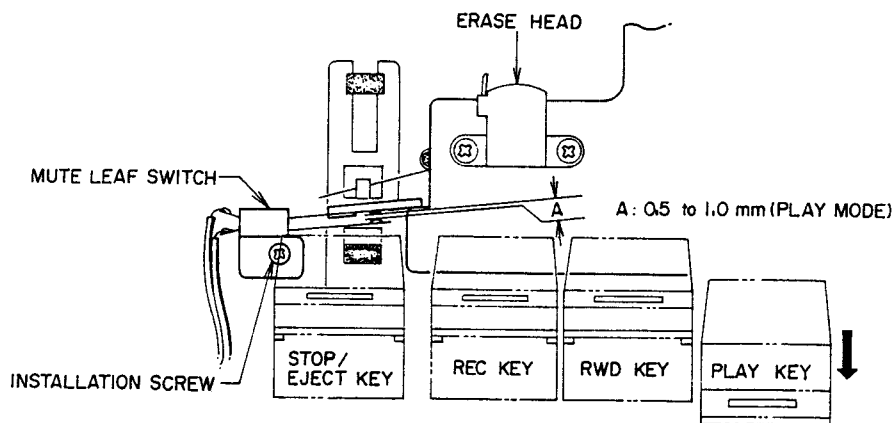


Fig. 9

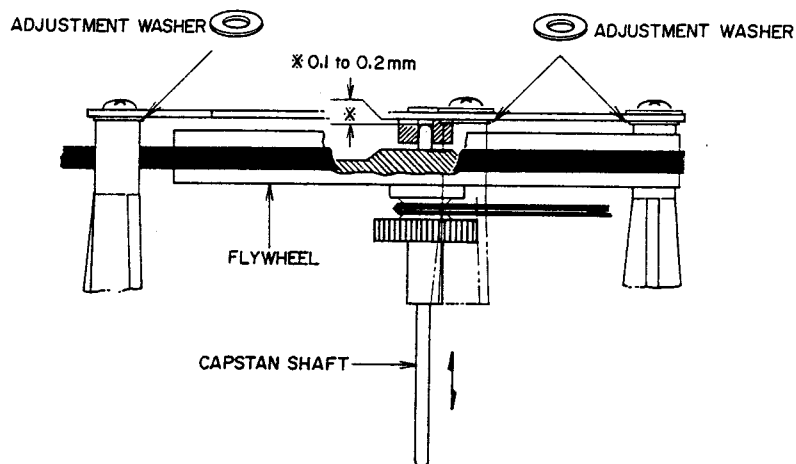


Fig. 10

1. MUTE LEAF SWITCH INSTALLATION POSITION ADJUSTMENT (Refer to Fig. 9)

When in the playback mode, the space A should be 0.5 to 1.0 mm as in Fig. 9. 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. 10)

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.

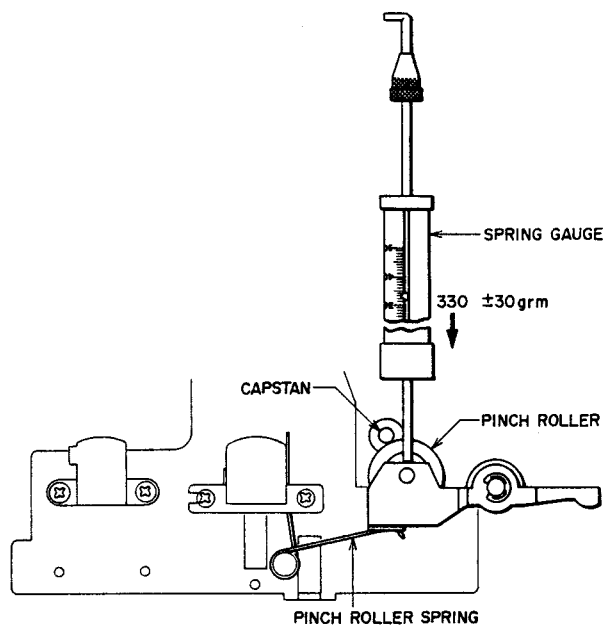


Fig. 11

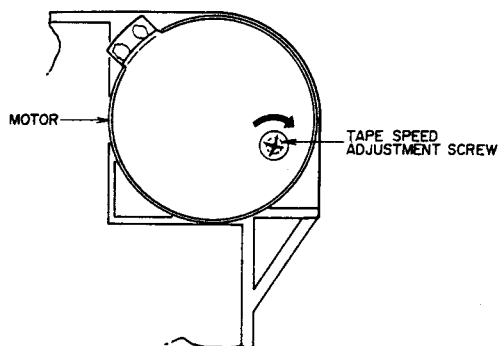


Fig. 12

3. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 11)

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 turning. 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 Middle Gear Block.

5. TAPE SPEED ADJUSTMENT (Refer to Fig. 12)

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 $1,000 \text{ Hz} \pm 1\%$.

IX. HEAD ADJUSTMENT

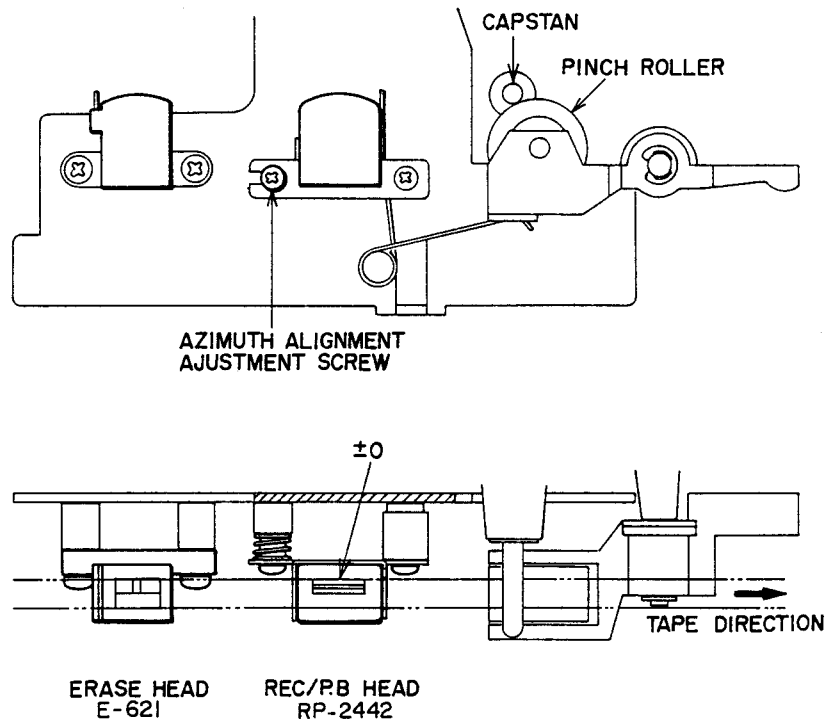


Fig. 13 Head Adjustment

1. RECORDING/PLAYBACK HEAD

AZIMUTH ALIGNMENT (Refer to Fig. 13)

- a) Playback a 10 kHz pre-recorded cassette azimuth alignment test tape and adjust screw shown in Fig. 13 to obtain maximum output on both channels.
- b) 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:

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

X. AMPLIFIER ADJUSTMENT

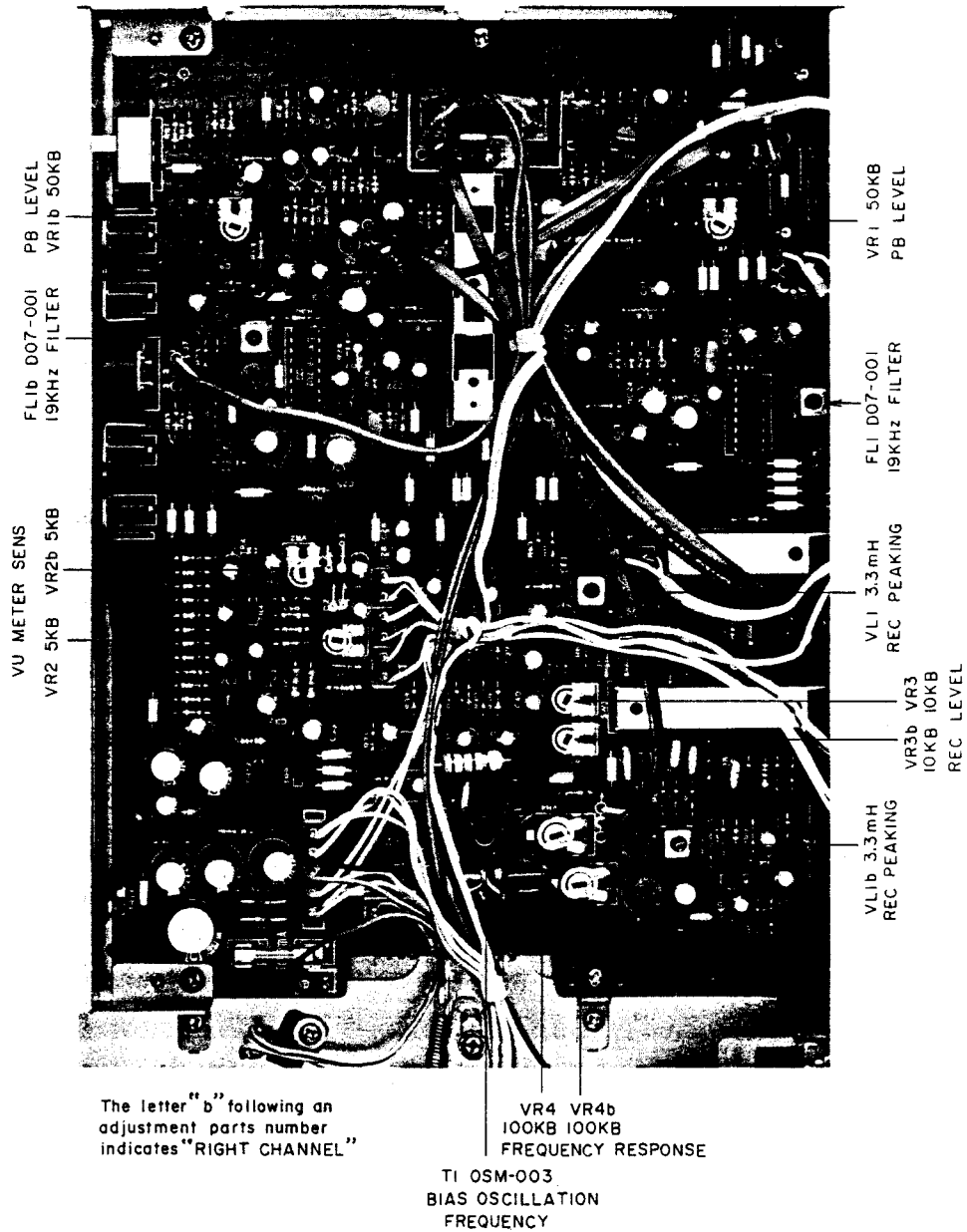


Fig. 14 Pre Amp P.C Board CE-5301A

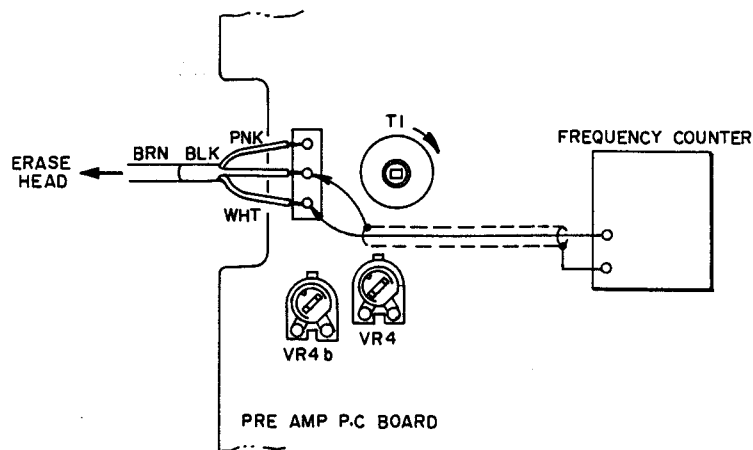


Fig. 15 Bias Oscillation Frequency Adjustment

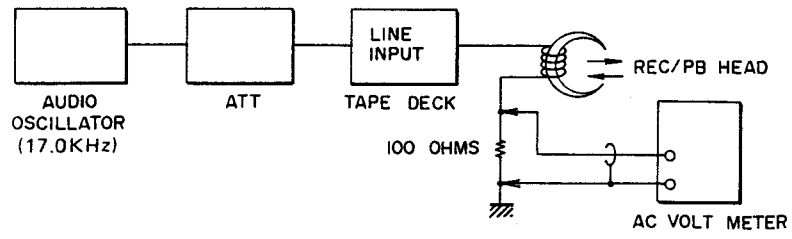


Fig. 16 Instrument Connection

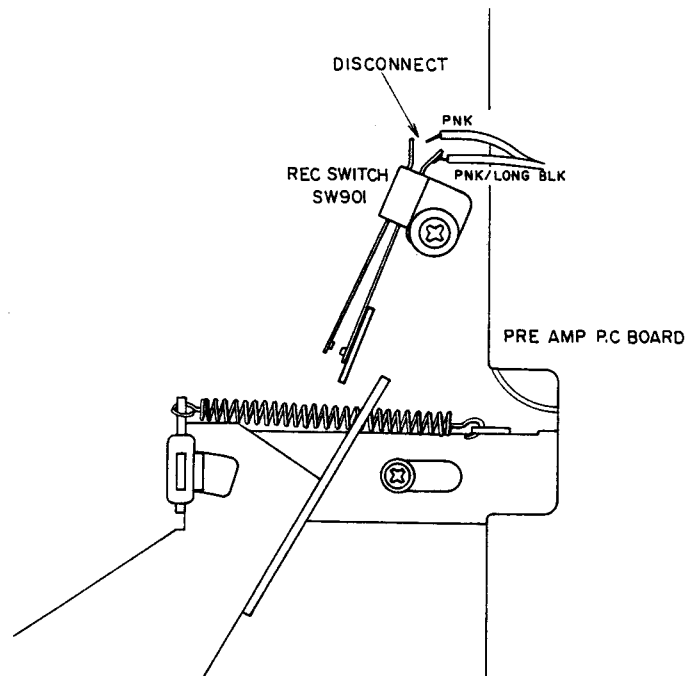
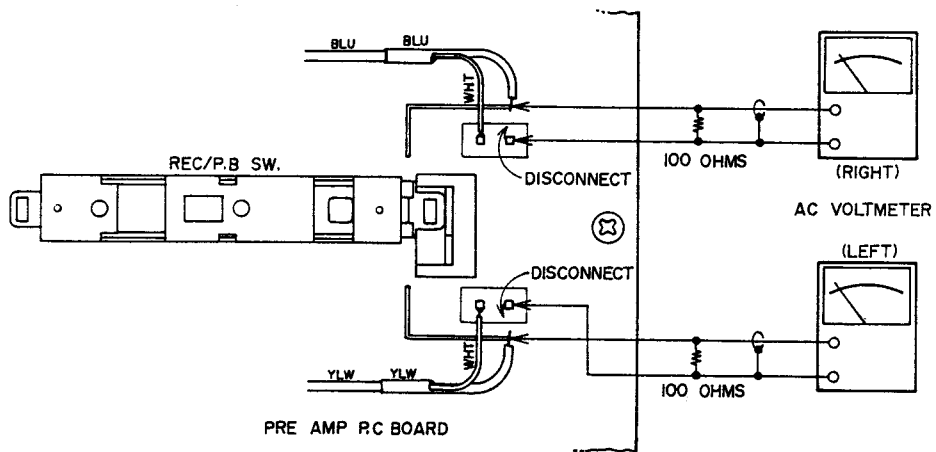


Fig. 17 Rec Peaking Adjustment

| Step | Adjustment Item | Test Tape Supply Signal | Mode | Adjustment Point | Result | Remarks |
|------|---|--|--------|------------------|---|---|
| 1 | Playback Level | 333 Hz, 0 VU Test Tape | PB | VR 1 50 kB | -5.5 ± 0.5 dBm (410 mV) | |
| 2 | VU Meter Sensitivity | 1,000 Hz -5.5 dBm from oscillator | REC | VR 2 5 kB | 0 VU indication | |
| 3 | Bias Oscillation Frequency Adjustment | No Signal input | REC | T1 | 85 kHz | See the Figs. 14, 15. |
| 4 | Rec Peaking adjustment | 17.0 kHz -25.5 dB from oscillator | REC | VL 1 3.3 mH | AC Voltmeter indicates to maximum | Tape selector to Normal. See the Figs. 14, 16, 17. NOTES 6, 10. |
| 5 | Normal Position Frequency Response | LN Blank tape 1,000 Hz, 10,000 Hz -25.5 dBm recording | REC/PB | VR4 100 kB | 1,000 Hz to 10,000 Hz flat | |
| 6 | CrO ₂ , FeCr Each position Frequency Response Confirmation | CrO ₂ , FeCr Blank tape 1,000 Hz, 10,000 Hz -25.5 dBm recording | REC/PB | | 1,000 Hz to 10,000 Hz flat | Set tape selector to CrO ₂ or FeCr Position NOTE 7. |
| 7 | Recording Level | LN Blank tape 1,000 Hz -5.5 dBm recording | REC/PB | VR 3 10 kB | -5.5 ± 0.5 dBm | Set the MIC Volume to minimum |
| 8 | Distortion Factor Confirmation | 1,000 Hz -5.5 dBm recording | REC/PB | | Normal < 0.8% CrO ₂ < 0.7% FeCr < 0.7% | NOTE 8. |
| 9 | 19 kHz Filter adjustment | 19 kHz from oscillator | REC | FL 1 D07-001 | AC Voltmeter indicates to minimum | Set Dolby NR Switch to ON, Filter ON position. NOTE 9, 10. |

Chart-1

- NOTES:**
- Input selector switch to LINE.
(The AAL Model do not have this facility.)
 - 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.
 - Except for Step 6 and 8, set Tape Selector to NORMAL Position.
 - Except for Step 9, set Dolby NR switch to OFF Position.
 - Use the following cassette measuring tapes:

| | | | |
|-----------------------|---|-----------|------|
| Normal Tape | : | Maxell UD | C-60 |
| CrO ₂ Tape | : | TDK SA | C-60 |
| FeCr Tape | : | SONY DUAD | C-60 |
 - Stop the recording bias oscillator while making record peaking adjustment (Refer to Fig. 17).
 - If a flat characteristic cannot be obtained from 1,000 Hz to 10,000 Hz at CrO₂ or FeCr positions, carry out adjustment step 5 once again.
 - If it does not comply with the specifications, repeat Steps 5 to 7 and readjust.
 - Adjust the oscillator's frequency to give a frequency counter reading of 19.00 kHz.
 - Unless the core is moved unintentionally this adjustment is not necessary.

XI. DC RESISTANCE OF HEADS

| Parts | Designation | DC Resistance |
|-------------|-------------|--------------------|
| REC/PB Head | RP-2442 | 260 ohms \pm 20% |
| Erase Head | E-621 | 5 ohms \pm 20% |

Chart-2

XII. CLASSIFICATION OF VARIOUS P.C BOARDS

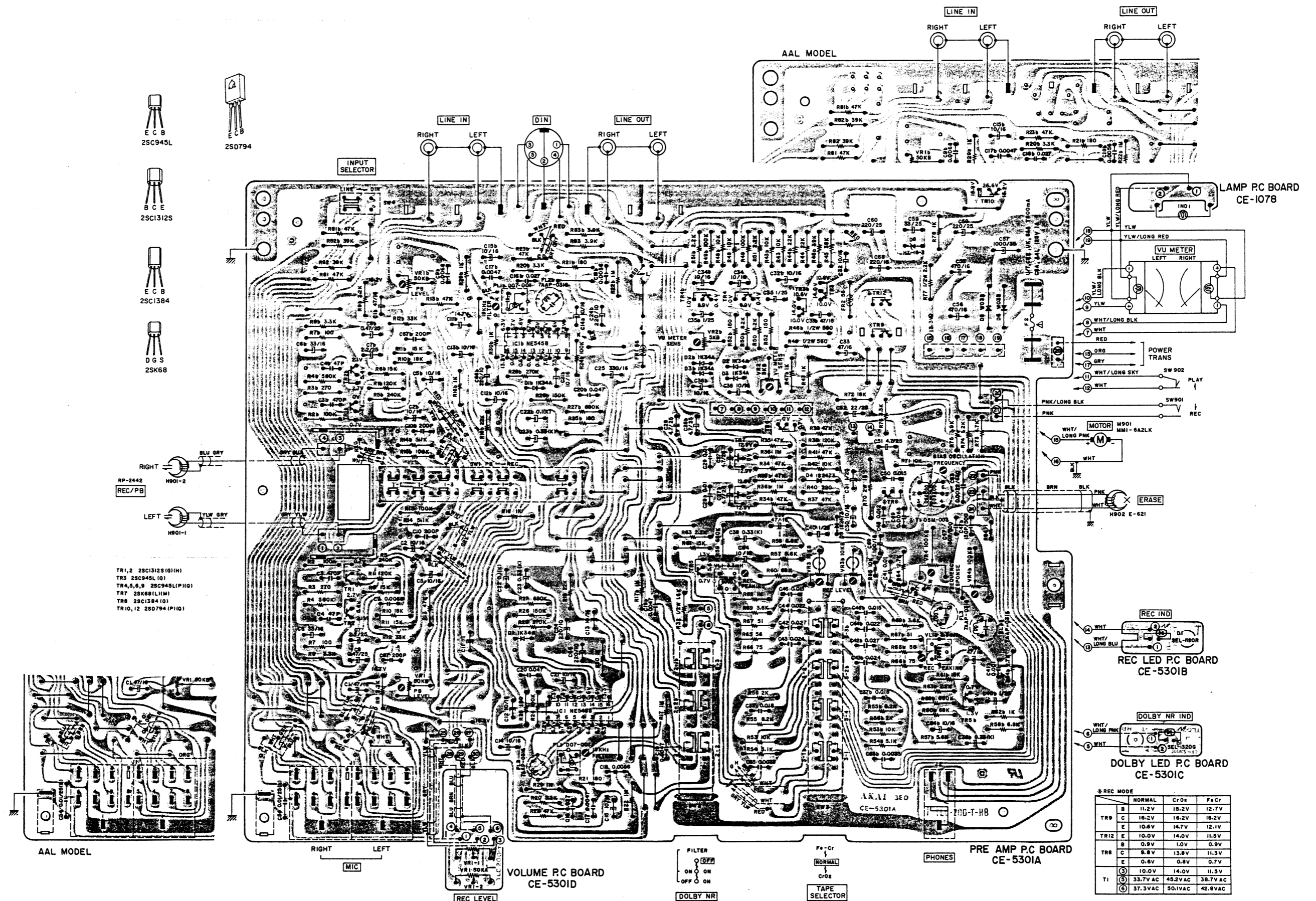
1. P.C BOARD TITLES AND IDENTIFICATION P.C BOARDS

| P.C Board Title | P.C Board Number |
|----------------------------|------------------|
| Pre Amp P.C Board | CE-5301A |
| Power Switch P.C Board (A) | CE-5302 |
| Power Switch P.C Board (B) | CE-5303 |
| Power Switch P.C Board (C) | CE-5304 |
| REC LED P.C Board | CE-5301B |
| Dolby LED P.C Board | CE-5301C |
| Volume P.C Board | CE-5301D |
| Lamp P.C Board | CE-1078 |

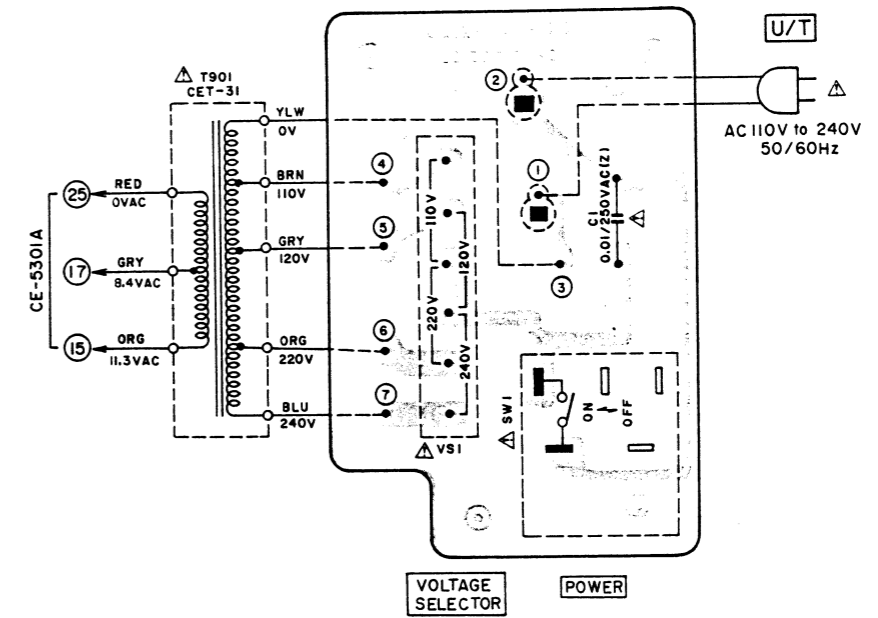
Chart-3

2. COMPOSITION OF VARIOUS P.C BOARDS

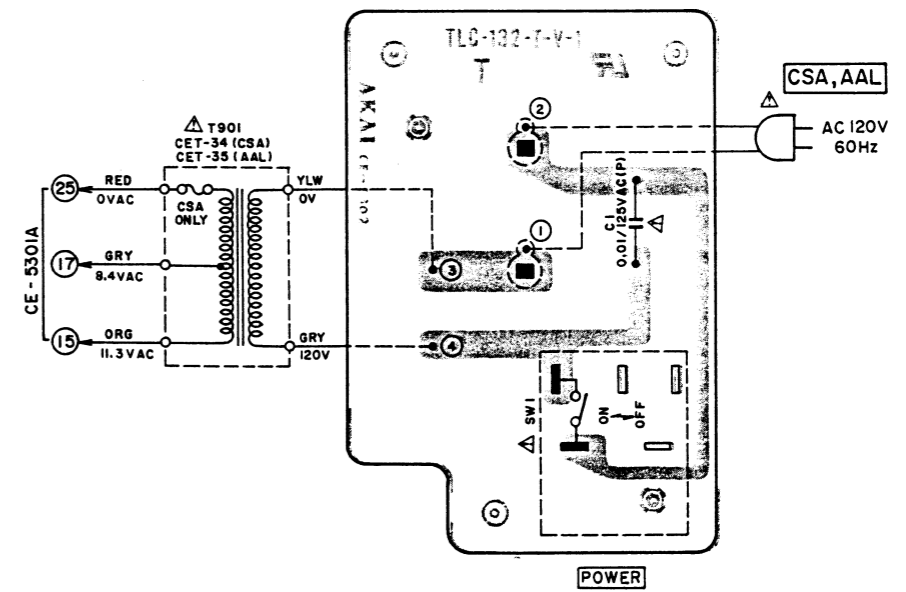
1) PRE AMP P.C BOARD CE-5301A (3ED), REC LED P.C BOARD CE-5301B DOLBY LED P.C BOARD CE-5301C, VOLUME P.C BOARD CE-5301D and LAMP P.C BOARD CE-1078



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

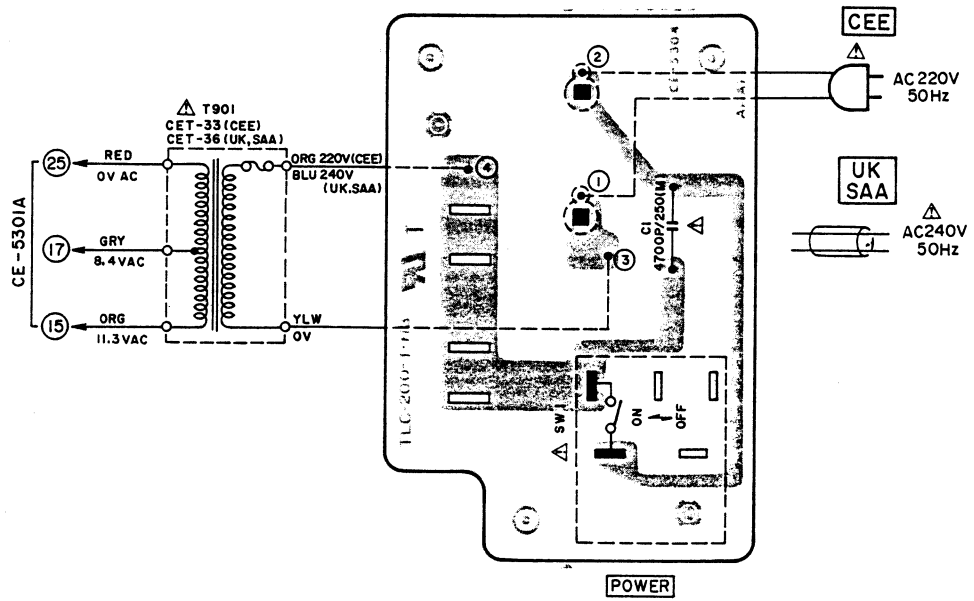


3) POWER SWITCH P.C BOARD (A) CE-5302 (CSA, AAL)



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

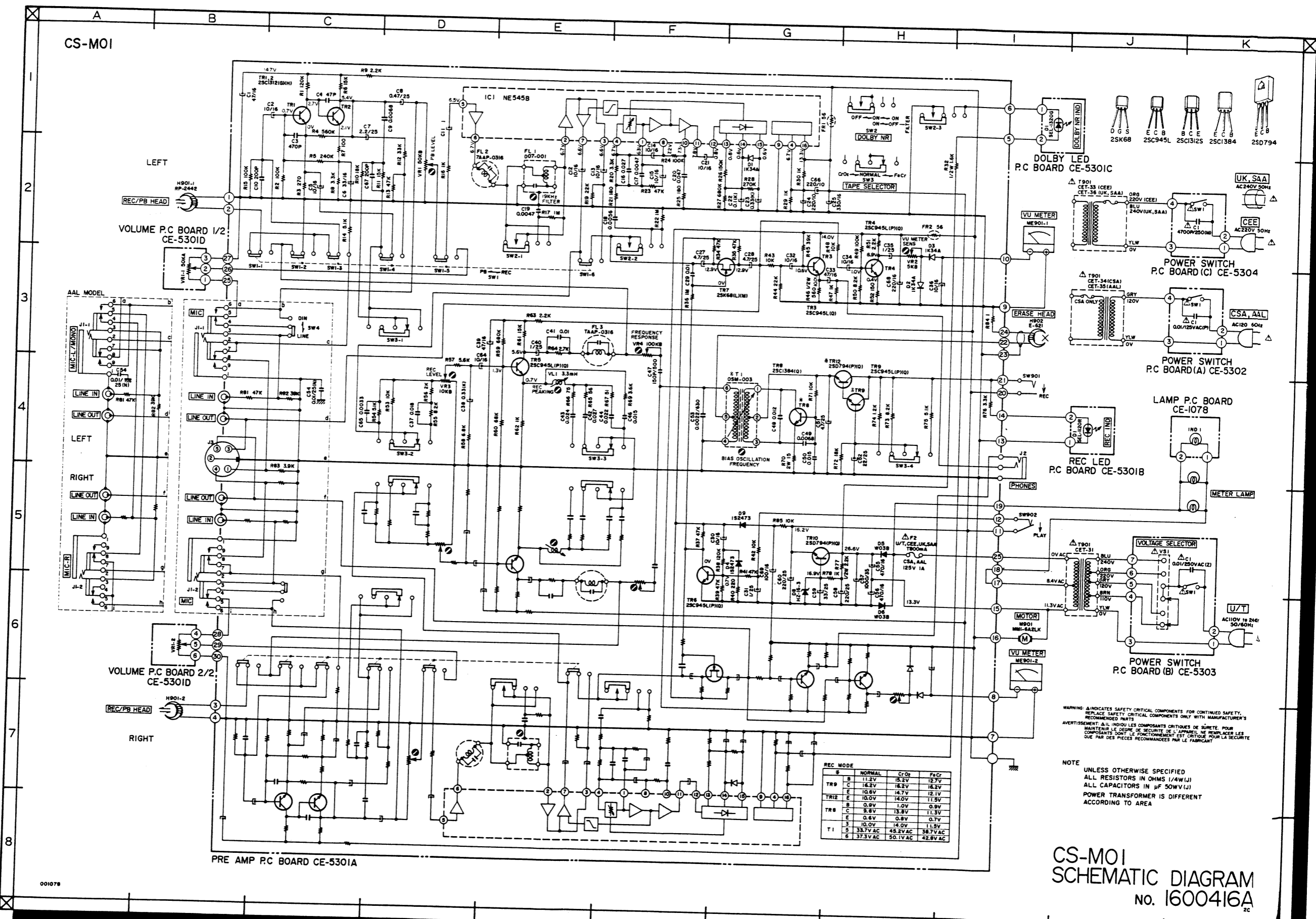
4) POWER SWITCH P.C BOARD (C) CE-5304 (CEE, UK, SAA)



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



| REC MODE | NORMAL | CrO2 | FeCr |
|----------|----------|----------|----------|
| B | 11.2V | 15.2V | 12.7V |
| TR9 | 14.2V | 18.2V | 15.7V |
| E | 10.0V | 14.0V | 11.5V |
| TR12 | 10.0V | 14.0V | 11.5V |
| B | 0.9V | 1.0V | 0.9V |
| C | 3.8V | 3.8V | 11.3V |
| E | 0.6V | 0.8V | 0.7V |
| 3 | 10.0V | 14.0V | 11.5V |
| 5 | 33.7V AC | 48.2V AC | 38.7V AC |
| 6 | 37.3V AC | 50.1V AC | 42.8V AC |

WARNING: INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: ILL INDIQUE LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL, NE REMPLACEZ LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

NOTE
 UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN OHMS (1/4W/J)
 ALL CAPACITORS IN PF (50WV/J)
 POWER TRANSFORMER IS DIFFERENT
 ACCORDING TO AREA

CS-M01
 SCHEMATIC DIAGRAM
 No. 1600416A

SECTION 2

PARTS LIST

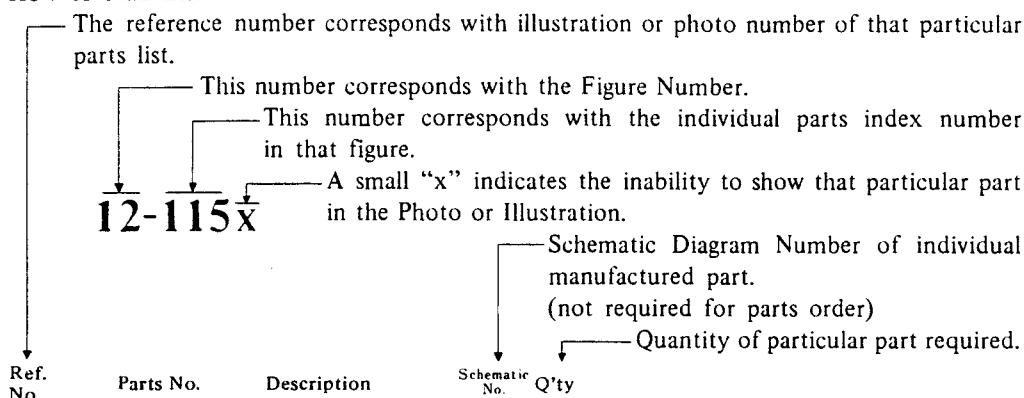
TABLE OF CONTENTS

| | |
|---|----|
| 1. RECOMMENDED SPARE PARTS LIST | 28 |
| 2. HEAD BLOCK | 30 |
| 3. MECHA BLOCK (1) | 31 |
| 4. MECHA BLOCK (2) | 32 |
| 5. PRE AMP P.C BOARD (CE-5301A) BLOCK | 34 |
| 6. ASSEMBLY BLOCK | 35 |
| 7. FINAL ASSEMBLY BLOCK | 36 |
| INDEX. | 37 |

Resistor and Capacitor which is not listed in this parts list, please refer to COMMON LIST FOR SERVICE PARTS.

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 | 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.

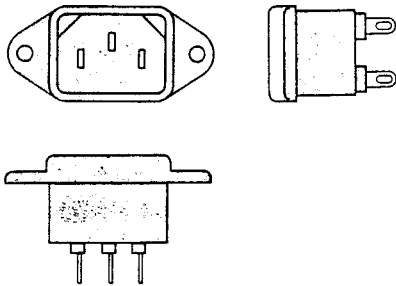
AVERTISSEMENT: **△** IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

AC INLET SYSTEM

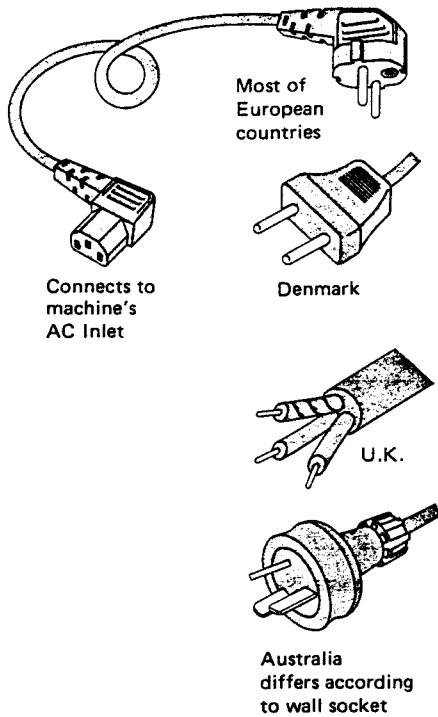
This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body. 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



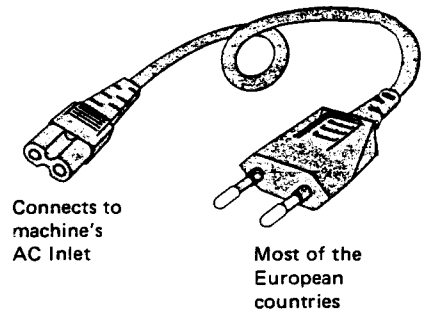
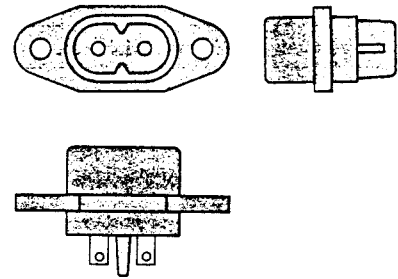
Picture 1
AC INLET
to be
installed
on machines



Picture 2
AC (mains)
cord

CLASS II

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



Parts List for AC (mains) Cord Set

| Standard | | Description | Type of AC Inlet | PartsNo. |
|----------|------|-------------------------|------------------|----------|
| Class I | CEE | Cord Set CEE (3 cores) | 3P | EW302993 |
| | BEAB | Cord Set BEAB (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 | EW63144 |
| | BEAB | Cord Set BEAB (2 cores) | 2P | EW302995 |
| | SAA | Cord Set SAA (2 cores) | 2P | EW302991 |
| | U/T | Cord Set U/T (2 cores) | 2P | EW302899 |

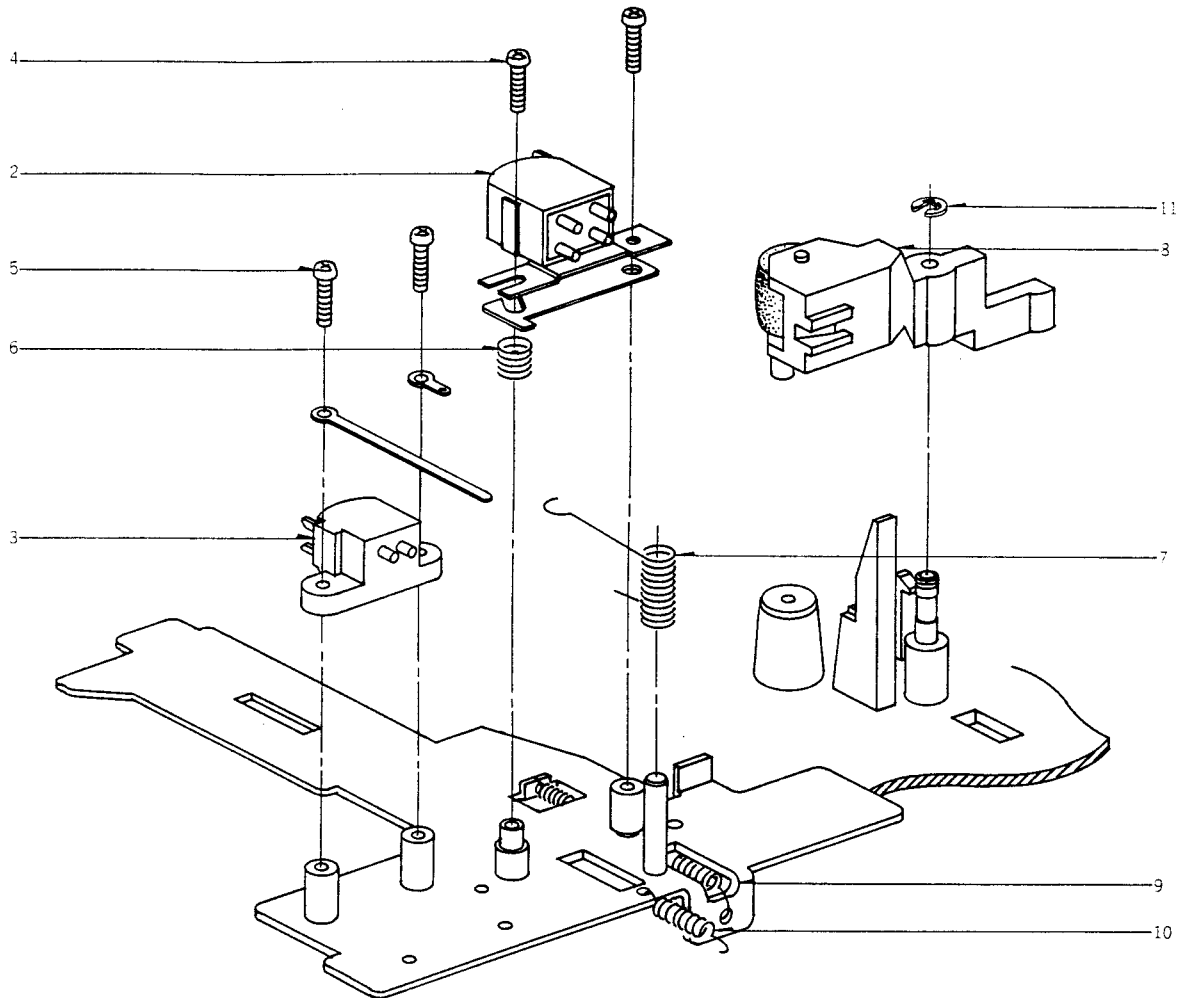
1. RECOMMENDED SPARE PARTS LIST

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 |
|-----------|--------------------------------------|-------------------|
| BA323894 | Pre Amp P.C Board Comp. CS-M01 (JPN) | |
| BA323893 | Pre Amp P.C Board Comp. CS-M01 (U/T) | U/T, CEE, UK, SAA |
| BA320995 | Pre Amp P.C Board Comp. CS-M01 (AAL) | |
| BA320996 | Pre Amp P.C Board Comp. CS-M01 (CSA) | |
| BH323920 | Head BLK CS-M01 | |
| BL319692 | Pinch Roller BLK GX-M10 | |
| BM319691 | Motor BLK GX-M10 | |
| BR321539 | Supply Reel Table BLK | |
| BR321540 | Take-up Reel Table BLK | |
| BT323939 | △ Power Trans. CET-31 | U/T |
| BT323940 | △ Power Trans. CET-32 | JPN |
| BT323941 | △ Power Trans. CET-33 | CEE |
| BT323942 | △ Power Trans. CET-34 | CSA |
| BT324373 | △ Power Trans. CET-35 | AAL |
| BT323944 | △ Power Trans. CET-36 | UK, SAA |
| ED308952 | Germanium Diode 1K34A-LR | |
| ED320469 | LED SEL-1120R | |
| ED325330 | LED SEL-1320G | |
| ED323979 | Silicon Diode W03B | |
| ED624903 | Silicon Diode 1S2473 | |
| ED560913 | Silicon Diode 1S2473 VE | |
| ED313846 | Zener Diode HZ16-3 | |
| EF310229 | △ Fuse 1A 125V | CSA, AAL |
| EF309387 | △ Fuse 1A 250V | JPN |
| EF623103 | △ Fuse (Semko T) 1AT | U/T, CEE, UK, SAA |
| EI605013 | IC NE545B | |
| EJ308985 | DIN, Pin Jack 4P | Ext. JPN, AAL |
| EJ316156 | Head Phone Jack HLJ0315-01-020 | |
| EJ321328 | Jack HLJ0345-01-010 | |
| EJ308986 | Pin Jack 4P | JPN, AAL |
| EL323981 | Lamp (Fuse Type) 8V 55MA | |
| EM323852 | VU Meter KL-270U-1 | |
| EM323854 | VU Meter KL-270U-2 | BL |
| E0310608 | Ferri Inductor FE-001 3.3MH | |
| E0325354 | OSC Coil OSM-003 | |
| E0310875 | Trap Coil 7AAP-0316 | |
| ER309119 | Dolby Filter D07-001 | |
| ER319455 | Fuse/R. F 1/4W 10 ohms (G) | |
| ER319510 | Fuse/R. 1/4W 56 ohms (J) | |
| ES315159 | △ Push SW. SDG1P (JPN) | JPN |

| Parts No. | Description | Notes |
|-----------|--|-------------------|
| ES310839 | △ Push SW. SDG1P-E 5A/80A 250V | U/T, CEE, UK, SAA |
| ES301747 | Leaf SW. BSW-1F TX-2 | |
| ES283173 | Leaf SW. BUW-31PLC | |
| ES321274 | Lever SW. 63349 | |
| ES315748 | Lever SW. 83157 | |
| ES283072 | Slide SW. SSC22LP | |
| ES310591 | Slide SW. 122074 | |
| ET304169 | FET 2SK68 (L) (M) | |
| ET603257 | Transistor 2SC1312S (G) (H) | |
| ET241334 | Transistor 2SC1384 (Q) | |
| ET399846 | Transistor 2SC945L (Q) | |
| ET639437 | Transistor 2SC945L (Q) (P) | |
| ET307349 | Transistor 2SD794 (P) (Q) | |
| EV325331 | Double-Axial 2-Throw/vol. DM80R 50kA×2 | |
| EV314968 | Semi-Fixed/Vol. D10 Axial 100kB | |
| EV315412 | Semi-Fixed/Vol. D8 Axial 5kB | |
| EV315413 | Semi-Fixed/Vol. D8 Axial 50kB | |
| EV315416 | Semi-Fixed/Vol. D8 Axial 10kB | |
| EW306427 | △ AC Cord (JPN) | |
| EW306428 | △ AC Cord (U/T) | |
| EW313884 | △ AC Cord BASEC | UK |
| EW305691 | △ AC Cord CUL | CSA, AAL |
| EW313882 | △ AC Cord EC | CEE |
| EW313883 | △ AC Cord SAA | SAA |
| HE323856 | Erase Head E-621 | |
| HP323857 | REC/PB Head RP-2442 | |
| MB321391 | AS Belt | |
| MB321389 | Capstan Belt | |
| MB296458 | Counter Belt | |
| MC321559 | Counter MP390-384 | |
| MC321560 | Counter MP390-385 | BL |
| MI319709 | Flywheel Part GX-M10 | |
| ML319693 | AS Arm Assy | |

2. HEAD BLOCK

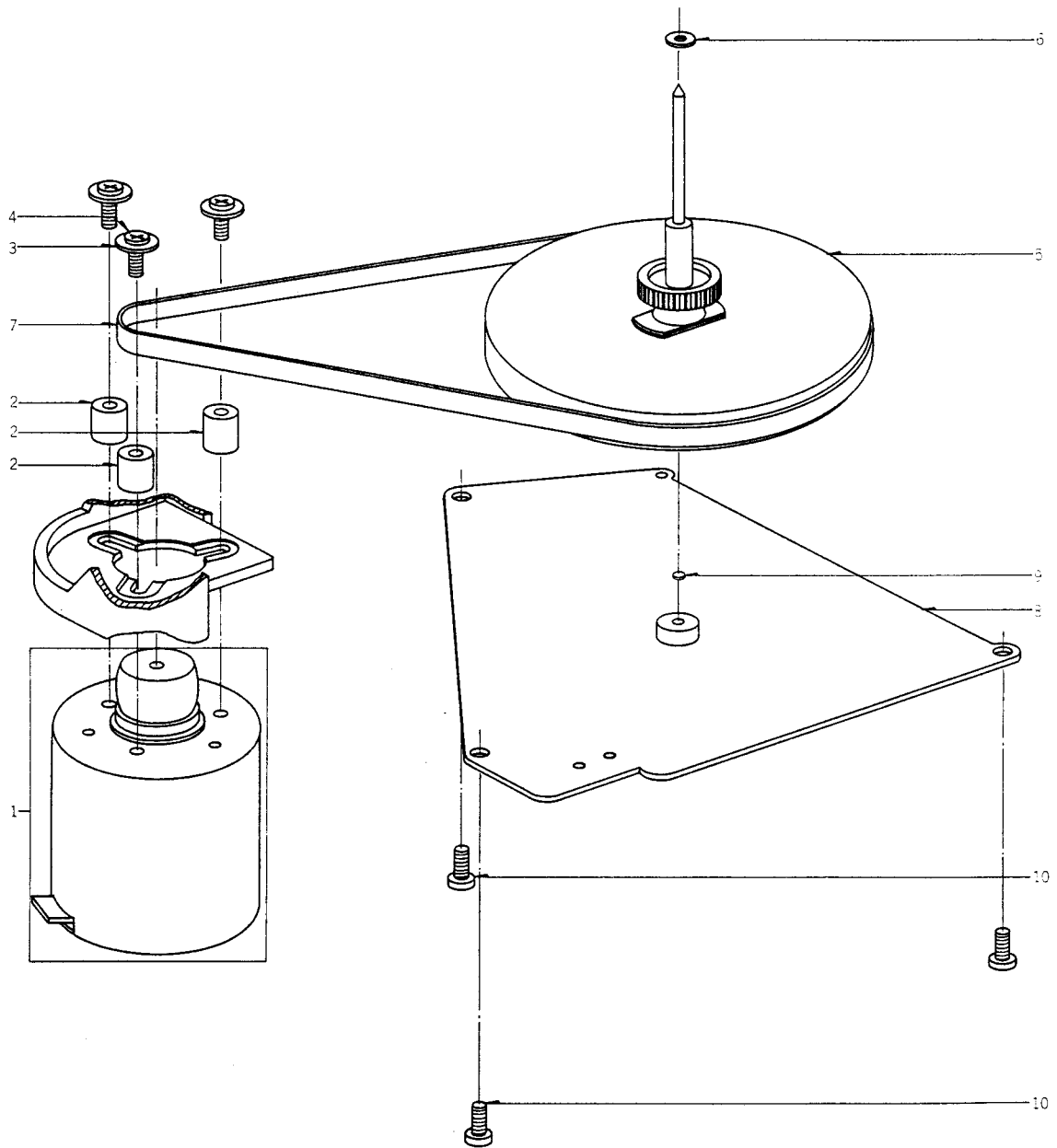


HEAD BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|---------------------------|-----------|-------------------------|---------------|
| HEAD BLOCK | | | |
| 2-1x | BH323920 | Head BLK CS-M01 | |
| 2-2 | HP323857 | REC/PB Head RP-2442 | 37-2-34 |
| 2-3 | HE323856 | Erase Head E-621 | 37-2-35 |
| 2-4 | ZS608106 | Screw, Pan 2x6 | |
| 2-5 | ZS419940 | Screw, Pan 2.3x6 | |
| 2-6 | ZG321459 | Azimuth Spring | CE-0011 |
| 2-7 | ZG321358 | Pinch Spring (A) | CE-0006 |
| PINCH ROLLER BLOCK | | | |
| 2-8 | BL319692 | Pinch Roller BLK GX-M10 | CE-1202 |
| MECHA BLOCK | | | |
| 2-9 | ZG300206 | Eject Spring | CM-1053 |
| 2-10 | ZG321535 | PB Spring | CE-1083 |
| 2-11 | ZW357164 | 'E' Ring 2.3M | 6-1-9 |

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

3. MECHA BLOCK (1)

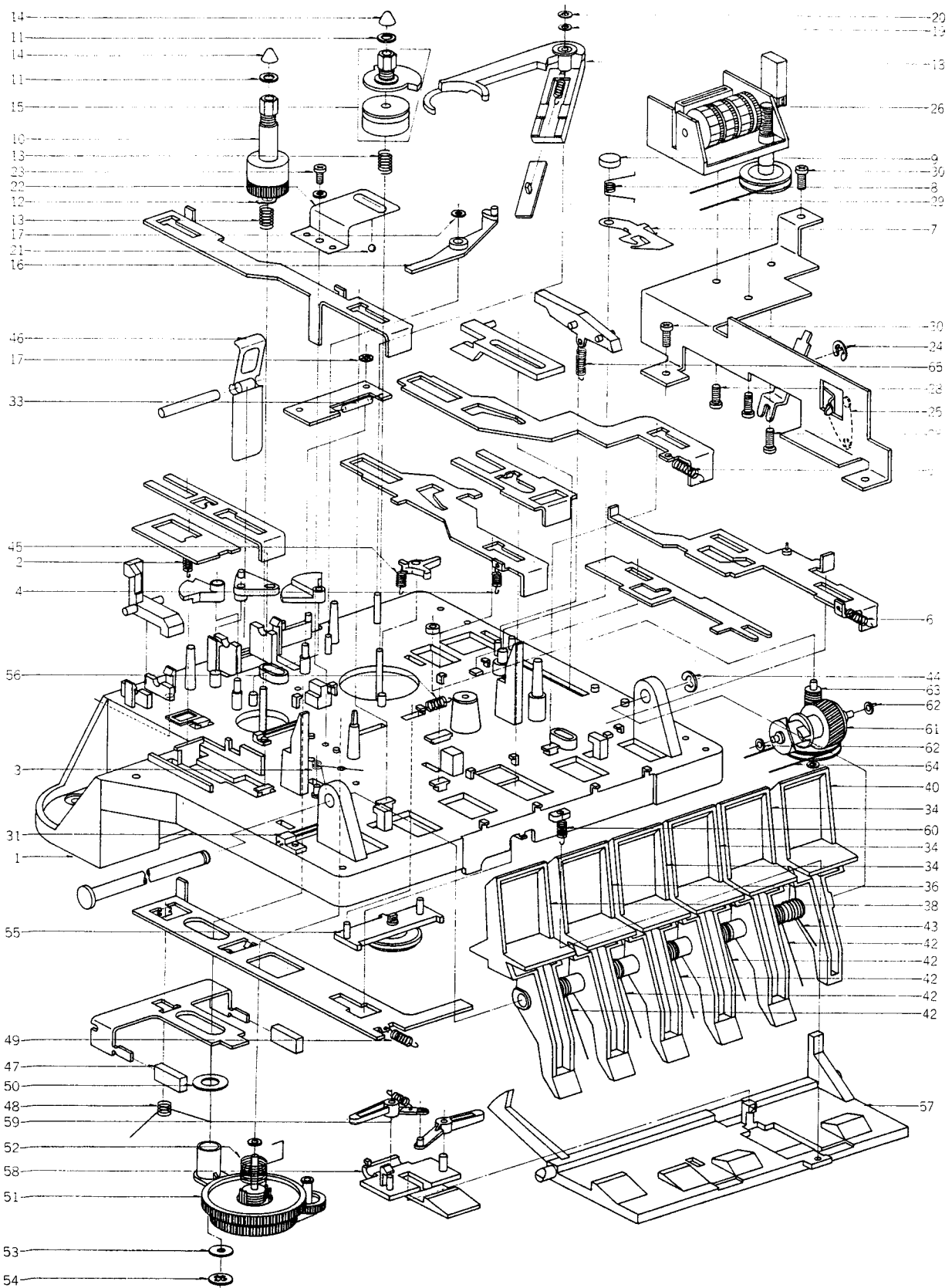


MECHA BLOCK (1)

| Ref. No. | Parts No. | Description | Schematic No. |
|--------------------|-----------|--|---------------|
| MOTOR BLOCK | | | |
| 3-1 | BM319691 | Motor BLK GX-M10 | CE-7201 |
| MECHA BLOCK | | | |
| 3-2 | MB326135 | Motor Bush | CE-7002 |
| 3-3 | ZW550642 | Washer (SPC) D3.1×8×0.5t | |
| 3-4 | ZS479474 | Screw, Pan 2.6×5 | |
| 3-5 | MI319709 | Flywheel Part GX-M10 | CE-1025 |
| 3-6 | ZW269335 | Washer (Nylon) D2.3×6×0.3t | |
| 3-7 | MB321389 | Capstan Belt | CE-1027 |
| 3-8 | TC319914 | Flywheel Hold Plate (A) Part CS-M02 | CE-1061 |
| 3-9 | ZW321424 | Thrust Washer | CE-1063 |
| 3-10 | ZS310984 | P-Tight Screw, BR 3×8 | 7-1-80 |

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

4. MECHA BLOCK (2)



MECHA BLOCK (2)

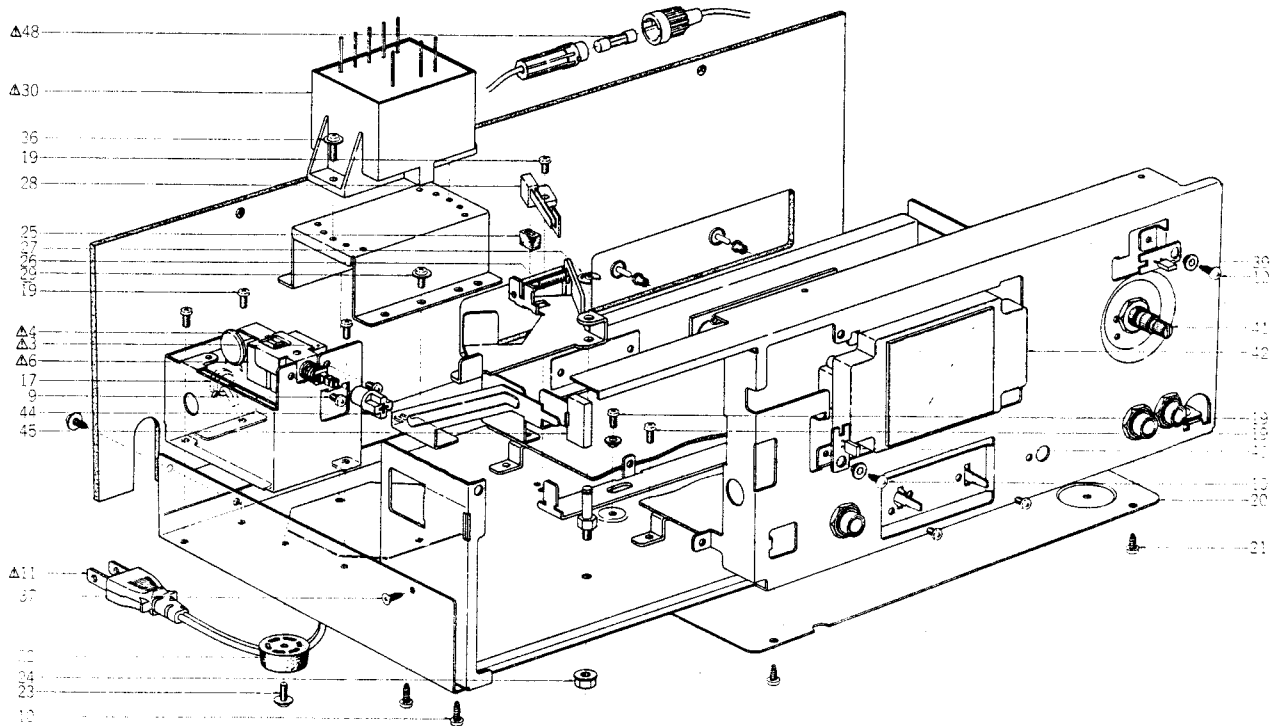
| Ref. No. | Parts No. | Description | Schematic No. |
|----------|-----------|-----------------------------------|---------------|
| 4-1 | TC319723 | Chassis Part GX-M10 | CE-1001 |
| 4-2 | ZG312926 | Coil Spring T1-3.2/0.2-16.0 | |
| 4-3 | ZG321373 | Stop Spring | CE-1007 |
| 4-4 | ZG312943 | Coil Spring T1-3.2/0.29-11.2 | |
| 4-5 | ZG324329 | Coil Spring T2-3.2/0.29-11.2 | |
| 4-6 | ZG324330 | Pause Spring | CE-1085 |
| 4-7 | MZ321396 | Lock Cam | CE-1034 |
| 4-8 | ZG514440 | Button Lock Spring (B) | CG-2303 |
| 4-9 | TC282396 | Cap | CN-1055 |
| 4-10 | BR321539 | Supply Reel Table BLK | 9-3-60 |
| 4-11 | ZW381644 | Washer (Polyslider) D2.1x4x0.13t | |
| 4-12 | ZW321393 | BT Washer | CE-1030 |
| 4-13 | ZG321538 | BT Spring | CE-1081 |
| 4-14 | MT305793 | Reel Cap | CF-2039 |
| 4-15 | BR321540 | Take-up Reel Table BLK | 9-3-61 |
| 4-16 | ML321404 | Release Lever | CE-1043 |
| 4-17 | ZW340648 | Clip (CS Type) CSTW-2 | 6-1-14 |
| 4-18 | ML319693 | AS Arm Assy | CE-1203 |
| 4-19 | ZW305546 | Washer (Polyslider) D2.1x4x0.25t | |
| 4-20 | ZW321437 | Push Washer | CE-1077 |
| 4-21 | MV368886 | Steel Ball D3 | |
| 4-22 | ZG321384 | Hold Spring | CE-1021 |
| 4-23 | ZS310343 | Special Tapping Screw, Pan 3x6 | 7-1-70 |
| 4-24 | ZW270101 | 'E' Ring 3M | 6-1-9 |
| 4-25 | ZG321411 | Timer Spring | CE-1050 |
| 4-26 | MC321559 | Counter MP390-384 | 9-1-86 |
| 4-27x | MC321560 | Counter MP390-385 (BL) | 9-1-87 |
| 4-28 | ZS200384 | Screw, Countersunk 3x6 | |
| 4-29 | MB296458 | Counter Belt | CM-1023 |
| 4-30 | ZS310984 | P-Tight Screw, BR 3x8 | 7-1-80 |
| 4-31 | ES283173 | Leaf SW. BUW-31PLC | 25-10-26 |
| 4-32x | ZS321320 | B-Tight Screw, Pan 2x6 | |
| 4-33 | EL323981 | Lamp (Fuse Type) 8V 55mA | 28-2-88 |
| 4-34 | SK321362 | Key Board Knob (A) | CE-1002 |
| 4-35x | SK321363 | Key Board Knob (A-BL) | CE-1002 |
| 4-36 | SK321364 | Key Board Knob (D) | CE-1002 |
| 4-37x | SK321365 | Key Board Knob (D-BL) | CE-1002 |
| 4-38 | SK321367 | Key Board Knob (B) | CE-1003 |
| 4-39x | SK321368 | Key Board Knob (B-BL) | CE-1003 |
| 4-40 | SK321369 | Key Board Knob (C) | CE-1004 |
| 4-41x | SK321370 | Key Board Knob (C-BL) | CE-1004 |
| 4-42 | ZG321430 | Key Board Spring (A) | CE-1069 |
| 4-43 | ZG321431 | Key Board Spring (B) | CE-1070 |
| 4-44 | ZW270123 | 'E' Ring 4M | 6-1-9 |
| 4-45 | ZG321544 | Relay Lever Spring | CE-1082 |
| 4-46 | MZ321417 | Cassette Holder | CE-1055 |
| 4-47 | TC321415 | Brake Shoe | CE-1053 |
| 4-48 | ZG321416 | Brake Spring | CE-1054 |
| 4-49 | ZG318228 | Coil Spring T2-3.2/0.29-14 | |
| 4-50 | ZW319376 | Washer (Polyslider) D6.2x13x0.25t | |
| 4-51 | BZ321546 | Middle Gear BLK | 9-3-62 |
| 4-52 | ZG325100 | Gear Return Spring | CE-1087 |
| 4-53 | ZW460787 | Washer (Polyslider) D3.1x8x0.25t | |
| 4-54 | ZW653163 | Retaining Ring CS Type 3 | 6-1-14 |
| 4-55 | BZ321547 | Take-up Idler BLK | 9-3-63 |
| 4-56 | ZG312920 | Coil Spring T1-3.2/0.2-8.0 | |
| 4-57 | MZ321418 | Key Board Cam | CE-1056 |
| 4-58 | MZ321419 | PB Cam | CE-1057 |
| 4-59 | ZG321549 | Coil Spring T2-3.2/0.2-10.0 | |
| 4-60 | ZG321548 | Key Board Cam Spring | CE-1084 |
| 4-61 | TC319724 | Worm Gear Part GX-M10 | CE-1039 |
| 4-62 | ZW321317 | Washer (Polyslider) D2.1x4x0.5t | |
| 4-63 | MR321403 | Warm Pulley | CE-1042 |
| 4-64 | MB321391 | AS Belt | CE-1028 |
| 4-65 | ZG324331 | Coil Spring T2-3.2/0.2-12.5 | |

5. PRE AMP P.C BOARD (CE-5301A) BLOCK

| Symbol No. | Parts No. | Description | Schematic No. |
|------------|-----------|--|---------------|
| 5-1 | BA323893 | Pre Amp P.C Board Comp. CS-M01 (U/T) (U/T, CEE, UK, SAA) | CE-5301A |
| 5-2 | BA323894 | Pre Amp P.C Board Comp. CS-M01 (JPN) | CE-5301A |
| 5-3 | BA320996 | Pre Amp P.C Board Comp. CS-M01 (CSA) | CE-5301A |
| 5-4 | BA320995 | Pre Amp P.C Board Comp. CS-M01 (AAL) | CE-5301A |
| 5-IC1 | EI605013 | IC NE545B | 45-8-117 |
| 5-TR1,2 | ET603257 | Transistor 2SC1312S(G)(H) | 45-1-182 |
| 5-TR3 | ET399846 | Transistor 2SC945L(Q) | 45-1-85 |
| 5-TR4to6 | ET639437 | Transistor 2SC945L(Q)(P) | 45-1-85 |
| 5-TR7 | ET304169 | FET 2SK68(L)(M) | 45-12-14 |
| 5-TR8 | ET241334 | Transistor 2SC1384(Q) | 45-1-173 |
| 5-TR9 | ET639437 | Transistor 2SC945L(Q)(P) | 45-1-85 |
| 5-TR10 | ET307349 | Transistor 2SD794(P)(Q) | 45-1-334 |
| 5-TR12 | ET307349 | Transistor 2SD794(P)(Q) | 45-1-334 |
| 5-D1to3 | ED308952 | Germanium Diode 1K34-LR | 45-3-47 |
| 5-D4 | ED624903 | Silicon Diode 1S2473 | 45-3-28 |
| 5-D5,6 | ED323979 | Silicon Diode W03B | 45-2-95 |
| 5-D8 | ED313846 | Zener Diode HZ16-3 | 45-6-80 |
| 5-D9 | ED560913 | Silicon Diode 1S2473 VE | 45-3-23 |
| 5-SW1 | ES310591 | Slide SW. 122074 | 25-3-164 |
| 5-SW2 | ES321274 | Lever SW. 63349 | 25-12-65 |
| 5-SW3 | ES315748 | Lever SW. 83157 | 25-12-62 |
| 5-SW4 | ES283072 | Slide SW. SSC22LP (U/T, CEE, UK, CSA) | 25-3-131 |
| 5-VR1 | EV315413 | Semi-Fixed/Vol. D8 Axial 50k Ω | 36-10-280 |
| 5-VR2 | EV315412 | Semi-Fixed/Vol. D8 Axial 5k Ω | 36-10-280 |
| 5-VR3 | EV315416 | Semi-Fixed/Vol. D8 Axial 10k Ω | 36-10-280 |
| 5-VR4 | EV314968 | Semi-Fixed/Vol. D10 100k Ω | 36-10-281 |
| 5-VL1 | EO310608 | Ferri Inductor FE-001 3.3MH | 23-1-304 |
| 5-T1 | EO325354 | OSC Coil OSM-003 | 23-4-58 |
| 5-FL1 | ER309119 | Dolby Filter D07-001 | 53-1-143 |
| 5-FL2,3 | EO310875 | Trap Coil 7AAP-0316 | 23-1-296 |
| 5-J1 | EJ321328 | Jack HLJ0345-01-010 | 31-2-110 |
| 5-J2 | EJ316156 | Head Phone Jack HLJ0315-01-020 | 31-2-106 |
| 5-J3 | EJ308985 | DIN, Pin Jack 4P (Ext. JPN, AAL) | 31-5-144 |
| 5-J3 | EJ308986 | Pin Jack 4P (JPN, AAL) | 31-5-145 |
| 5-FR1,2 | ER319510 | Fuse/R. 1/4W 56 ohms(J) | 35-14-23 |
| 5-FR3 | ER319455 | Fuse/R. F 1/4W 10 ohms(G) | 35-14-31 |
| 5-R70 | ER325353 | Metal Oxide Film/R. 2W 15 ohms(J) | 35-11-22 |
| 5-C3 | EC306987 | Styrol/C. 470PF(J) 50WV | 24-11-14 |
| 5-C10 | EC309416 | Styrol/C. 200PF(J) 50WV | 24-11-14 |
| 5-C53 | EC321349 | Polypropylene/C. 0.0022 μ F(J) 630WV | 24-22-9 |
| 5-C67 | EC565830 | Styrol/C. (Vert.) 200PF(J) 50WV | 24-11-3 |
| 5-5 | ZW263946 | Nylon Rivet 4x5 | 2-7-57 |
| 5-6 | ZS421806 | Screw, Pan 3x8 | |
| 5-7 | ZW273756 | Nut, #1 M3 | |

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

6. ASSEMBLY BLOCK

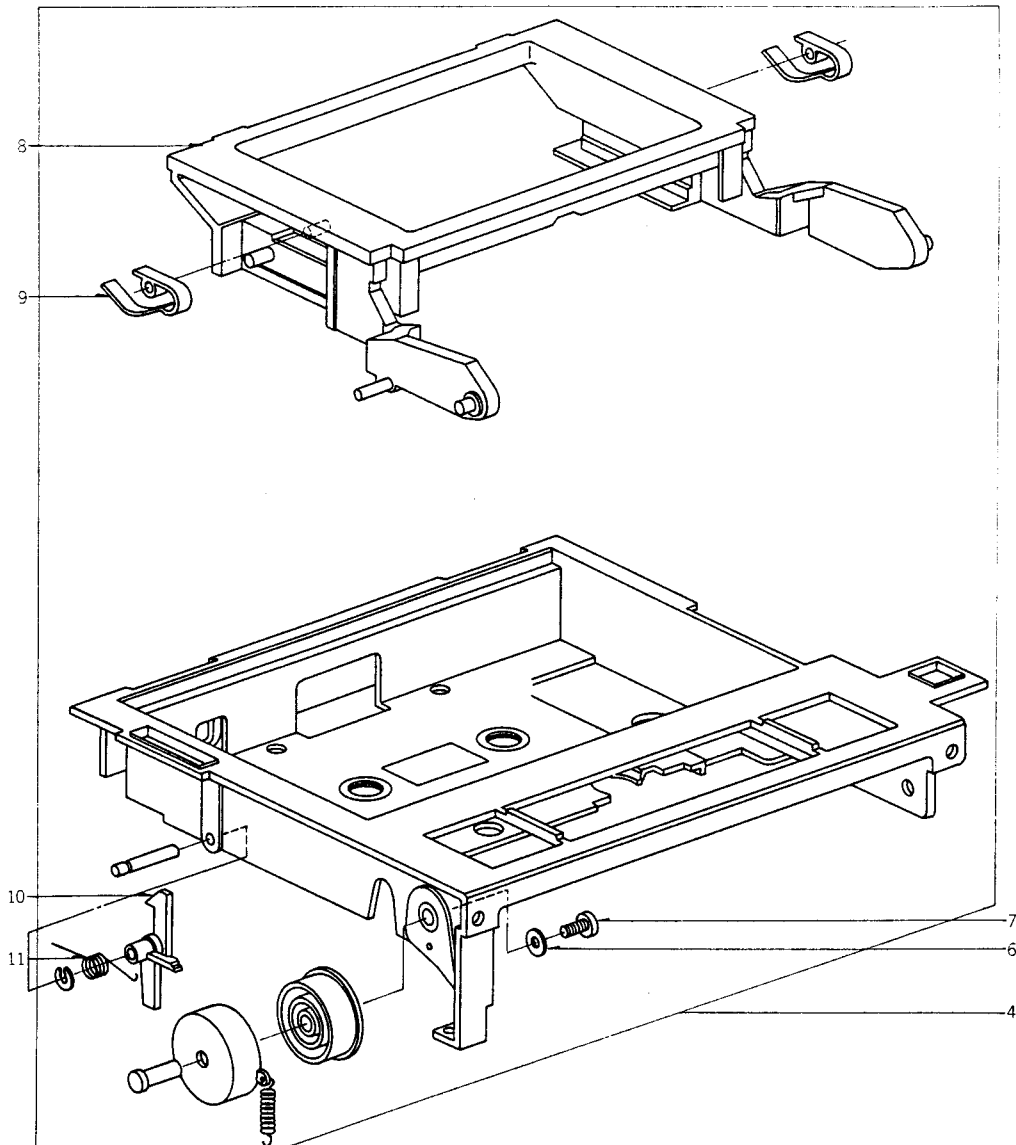
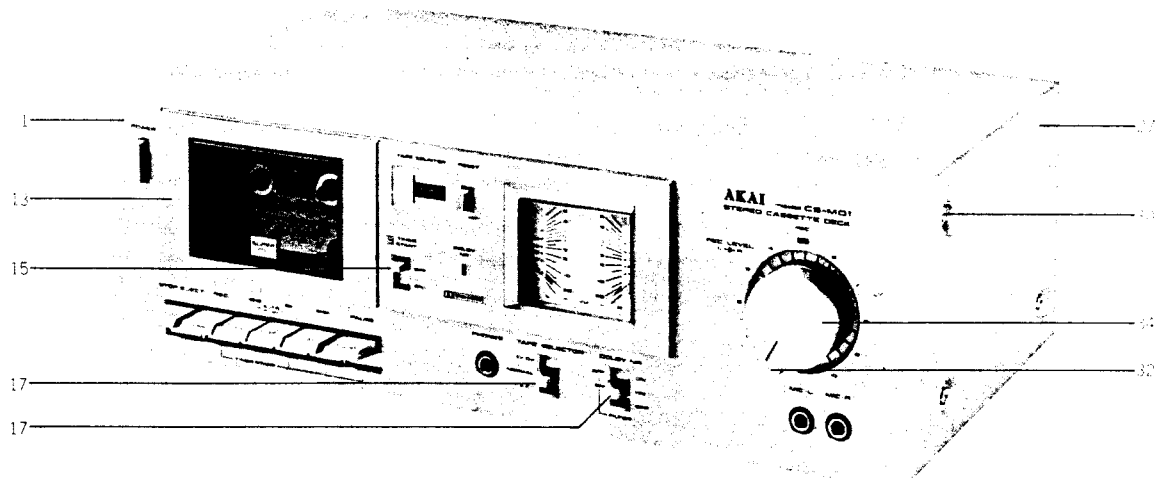


ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. | Ref. No. | Parts No. | Description | Schematic No. |
|--------------------------------------|-----------|---|---------------|-----------------------|-----------|---|---------------|
| POWER SW. P.C BOARD (A) BLOCK | | | | | | | |
| 6-1x | EC321302 | △ Ceramic/C. E 0.01μF(Z) 250VAC (JPN) | 24-5-90 | 6-21 | ZS325495 | Tapping Screw, #2 BR 3x6 | |
| 6-2x | EC314688 | △ Ceramic/C. DE7150 FZ 0.01μF(P) 125W (CSA, AAL) | 24-5-87 | 6-22 | SA306240 | Rubber Foot (B) | LE-6740 |
| POWER SW. P.C BOARD (B) BLOCK | | | | | | | |
| 6-3 | MZ283140 | △ Voltage Changer 12M-60031 (U/T) | 40-2-13 | 6-23 | ZS306463 | S-Tight Screw, Pan 3x8 w/Flange | |
| 6-4 | EC321302 | △ Ceramic/C. E 0.01μF(Z) 250VAC (U/T) | 24-5-90 | 6-24 | ZW413267 | Flange Nut M4 | |
| POWER SW. P.C BOARD (C) BLOCK | | | | | | | |
| 6-5x | EC301320 | △ MP/C. 4700PF(M) 250WV (CEE, UK, SAA) | 24-9-122 | 6-25 | MB510164 | Cushion Rubber | CG-7306 |
| CONNECTOR BASE BLOCK | | | | | | | |
| 6-6 | ES310839 | △ Push SW. SDG1P-E 5A/80A 250V (U/T, CEE, UK, SAA) | 25-5-310 | 6-26 | ZG313048 | Coil Spring T1-5.0/0.55-35.5 | |
| 6-7x | ES315159 | △ Push SW. SDG1P (JPN) | 25-5-330 | 6-27 | ZW290283 | 'U' Ring 2.85M | 6-1-1 |
| 6-8x | ES665875 | △ Push SW. SDG1P-J TV-3 UL/CSA (CSA, AAL) | 25-5-199 | 6-28 | ES301747 | Leaf SW. BSW-1 F TX-2 | 25-10-30 |
| 6-9 | ZS422076 | Screw, Pan 3x5 | | 6-29 | ZS313490 | S-Tight Screw, Pan 3x6 w/Washer | |
| 6-10 | ZS447840 | Tapping Screw, #2 BR 3x8 | | 6-30 | BT323939 | △ Power Trans. CET-31 (U/T) | 38-4-804 |
| 6-11 | EW306428 | △ AC Cord (U/T) | 26-3-64 | 6-31x | BT323940 | △ Power Trans. CET-32 (JPN) | 38-4-805 |
| 6-12x | EW306427 | △ AC Cord (JPN) | 26-3-63 | 6-32x | BT323942 | △ Power Trans. CET-34 (CSA) | 38-4-807 |
| 6-13x | EW305691 | △ AC Cord CUL (CSA, AAL) | 26-3-65 | 6-33x | BT324373 | △ Power Trans. CET-35 (AAL) | 38-4-848 |
| 6-14x | EW313882 | △ AC Cord EC (CEE) | 26-3-66 | 6-34x | BT323941 | △ Power Trans. CET-33 (CEE) | 38-4-806 |
| 6-15x | EW313884 | △ AC Cord BASEC (UK) | 26-3-67 | 6-35x | BT323944 | △ Power Trans. CET-36 (UK, SAA) | 38-4-808 |
| 6-16x | EW313883 | △ AC Cord SAA (SAA) | 26-3-69 | 6-36 | ZS323946 | S-Tight Screw, Pan 3x10 W=8 | |
| 6-17 | EZ631945 | Strain Relief SR-4N-4 (Ext. UK) | 2-7-49 | ASSEMBLY BLOCK | | | |
| 6-18x | EJ692908 | Strain Relief SR-5N-4 (UK) | 2-7-60 | 6-37 | ZS200676 | Tapping Screw, #2 Countersunk 3x6 | |
| AMP CHASSIS BLOCK | | | | | | | |
| 6-19 | ZS306021 | S-Tight Screw, Pan 3x6 | | 6-38x | ZS310984 | P-Tight Screw, BR 3x8 | 7-1-80 |
| 6-20 | SP321464 | Bottom Plate | CE-5013 | 6-39 | ED320469 | LED SEL-1120R | 45-15-45 |
| | | | | 6-40 | ED325330 | LED SEL-1320G | 45-15-46 |
| | | | | 6-41 | EV325331 | Double-Axial 2-Throw/Vol. DM80R 50kAx2 | 36-18-22 |
| | | | | 6-42 | EM323852 | VU Meter KL-270U-1 | 46-1-237 |
| | | | | 6-43x | EM323854 | VU Meter KL-270U-2 (BL) | 46-1-238 |
| | | | | 6-44 | ML321550 | Joint | CE-6205 |
| | | | | 6-45 | SB316498 | Button (B) | CU-6009 |
| | | | | 6-46x | SB316499 | Button (B-BL) | CU-6009 |
| | | | | 6-47x | EF309387 | △ Fuse 1A 250V (JPN) | 39-1-64 |
| | | | | 6-48 | EF623103 | △ Fuse (Semko T) 1AT (U/T, CEE, UK, SAA) | 39-1-53 |
| | | | | 6-49x | EF310229 | △ Fuse 1A 125V (CSA, AAL) | 39-1-65 |

When ordering parts, please describe Parts Number, Description, and Model Number in detail.

7. FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

| Ref. No. | Parts No. | Description | Schematic No. |
|-----------------------------|-----------|--|------------------|
| FRONT PANEL BLOCK | | | |
| 7-1 | BD323921 | Front Panel BLK CS-M01 (U/T) | |
| 7-2x | BD323922 | Front Panel BLK CS-M01 (JPN) (JPN, AAL) | |
| 7-3x | BD323923 | Front Panel BLK CS-M01-BL | |
| 7-4 | TC323926 | Decoration Plate Assy CS-M01 | CE-6315 |
| 7-5x | TC323927 | Decoration Plate Assy CS-M01-BL | CE-6315 |
| 7-6 | ZW550697 | Washer (SPC) D2.9x7.4x0.5t | |
| 7-7 | ZS608220 | Screw, Pan 2.6x6 | |
| 7-8 | TC321486 | LID Frame | CE-6010 |
| 7-9 | ZG321487 | Mold Spring | CE-6011 |
| 7-10 | TC321488 | Lock Plate | CE-6013 |
| 7-11 | ZG321490 | Lock Spring | CE-6015 |
| 7-12x | ZS322402 | Special Tapping Screw, Pan 3x8 | 7-1-70 |
| 7-13 | BD323924 | LID Panel Assy CS-M01 | |
| 7-14x | BD323925 | LID Panel Assy CS-M01-BL | |
| FINAL ASSEMBLY BLOCK | | | |
| 7-15 | SK321492 | Timer Lever Knob | CE-6017 |
| 7-16x | SK321493 | Timer Lever Knob (BL) | CE-6017 |
| 7-17 | SK321500 | Lever Knob (A) | CE-6025 |
| 7-18x | SK321501 | Lever Knob (A-BL) | CE-6025 |
| 7-19x | ZS498273 | Tapping Screw #2, BR 3x8 W=8 | |
| 7-20x | SP323828 | Back Board (U/T) | CE-6309,6310 |
| 7-21x | SP323824 | Back Board (JPN) | CE-6309,6310 |
| 7-22x | SP323825 | Back Board (CSA) | CE-6309,6311 |
| 7-23x | SP323829 | Back Board (A) (AAL) | CE-6309,6311 |
| 7-24x | SP323826 | Back Board (CEE) | CE-6309,6312 |
| 7-25x | SP323827 | Back Board (UK, SAA) | CE-6309,6312 |
| 7-26x | ZS225134 | Tapping Screw, #2 Pan 3x10 W=8 | |
| 7-27 | BC323832 | Upper Cover (C) | CE-6314 |
| 7-28x | BC321508 | Upper Cover (B) (AAL) | CE-6029 |
| 7-29x | BC323833 | Upper Cover (C-BL) | CE-6314 |
| 7-30 | ZS315878 | S-Tight Screw, Bind 4x8 | |
| 7-31x | ZS310588 | S-Tight Screw, Bind 4x8 (Black) | |
| 7-32 | SK321506 | Double Knob (Lower) | CE-6028 |
| 7-33x | SK321507 | Double Knob (Lower-BL) | CE-6028 |
| 7-34 | SK323822 | Double Knob (Upper) | CE-6307 |
| 7-35x | SK323823 | Double Knob (Upper-BL) | CE-6307 |

INDEX

| Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. | Parts No. | Ref. No. & Symbol No. |
|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| BA320995 | 5-4 | EV325331 | 6-41 | ZG321535 | 2-10 | | | | |
| BA320996 | 5-3 | EW305691 | 6-13x | ZG321538 | 4-13 | | | | |
| BA323893 | 5-1 | EW306427 | 6-12x | ZG321544 | 4-45 | | | | |
| BA323894 | 5-2 | EW306428 | 6-11 | ZG321548 | 4-60 | | | | |
| BC321508 | 7-28x | EW313882 | 6-14x | ZG321549 | 4-59 | | | | |
| BC323832 | 7-27 | EW313883 | 6-16x | ZG324329 | 4-5 | | | | |
| BC323833 | 7-29x | EW313884 | 6-15x | ZG324330 | 4-6 | | | | |
| BD323921 | 7-1 | EZ631945 | 6-17 | ZG324331 | 4-65 | | | | |
| BD323922 | 7-2x | HE323856 | 2-3 | ZG325100 | 4-52 | | | | |
| BD323923 | 7-3x | HP323857 | 2-2 | ZG514440 | 4-8 | | | | |
| BD323924 | 7-13 | MB296458 | 4-29 | ZS200384 | 4-28 | | | | |
| BD323925 | 7-14x | MB321389 | 3-7 | ZS200676 | 6-37 | | | | |
| BH323920 | 2-1x | MB321391 | 4-64 | ZS225134 | 7-26x | | | | |
| BL319692 | 2-8 | MB326135 | 3-2 | ZS306021 | 6-19 | | | | |
| BM319691 | 3-1 | MB510164 | 6-25 | ZS306463 | 6-23 | | | | |
| BR321539 | 4-10 | MC321559 | 4-26 | ZS310343 | 4-23 | | | | |
| BR321540 | 4-15 | MC321560 | 4-27x | ZS310588 | 7-31x | | | | |
| BT323939 | 6-30 | MI319709 | 3-5 | ZS310984 | 3-10 | | | | |
| BT323940 | 6-31x | ML319693 | 4-18 | ZS310984 | 4-30 | | | | |
| BT323941 | 6-34x | ML321404 | 4-16 | ZS310984 | 6-38x | | | | |
| BT323942 | 6-32x | ML321550 | 6-44 | ZS313490 | 6-29 | | | | |
| BT323944 | 6-35x | MR321403 | 4-63 | ZS315878 | 7-30 | | | | |
| BT324373 | 6-33x | MT305793 | 4-14 | ZS321320 | 4-32x | | | | |
| BZ321546 | 4-51 | MV368886 | 4-21 | ZS322402 | 7-12x | | | | |
| BZ321547 | 4-55 | MZ283140 | 6-3 | ZS323946 | 6-36 | | | | |
| EC301320 | 6-5x | MZ321396 | 4-7 | ZS325495 | 6-21 | | | | |
| EC306987 | 5-C3 | MZ321417 | 4-46 | ZS419940 | 2-5 | | | | |
| EC309416 | 5-C10 | MZ321418 | 4-57 | ZS421806 | 5-6 | | | | |
| EC314688 | 6-2x | MZ321419 | 4-58 | ZS422076 | 6-9 | | | | |
| EC321302 | 6-1x | SA306240 | 6-22 | ZS447840 | 6-10 | | | | |
| EC321302 | 6-4 | SB316498 | 6-45 | ZS479474 | 3-4 | | | | |
| EC321349 | 5-C53 | SB316499 | 6-46x | ZS498273 | 7-19x | | | | |
| EC565830 | 5-C67 | SK321362 | 4-34 | ZS608106 | 2-4 | | | | |
| ED308952 | 5-D1to3 | SK321363 | 4-35x | ZS608220 | 7-7 | | | | |
| ED313846 | 5-D8 | SK321364 | 4-36 | ZW263946 | 5-5 | | | | |
| ED320469 | 6-39 | SK321365 | 4-37x | ZW269335 | 3-6 | | | | |
| ED323979 | 5-D5,6 | SK321367 | 4-38 | ZW270101 | 4-24 | | | | |
| ED325330 | 6-40 | SK321368 | 4-39x | ZW270123 | 4-44 | | | | |
| ED560913 | 5-D9 | SK321369 | 4-40 | ZW273756 | 5-7 | | | | |
| ED624903 | 5-D4 | SK321370 | 4-41x | ZW290283 | 6-27 | | | | |
| EF309387 | 6-47x | SK321492 | 7-15 | ZW305546 | 4-19 | | | | |
| EF310229 | 6-49x | SK321493 | 7-16x | ZW319376 | 4-50 | | | | |
| EF623103 | 6-48 | SK321500 | 7-17 | ZW321317 | 4-62 | | | | |
| EI605013 | 5-IC1 | SK321501 | 7-18x | ZW321393 | 4-12 | | | | |
| EJ308985 | 5-J3 | SK321506 | 7-32 | ZW321424 | 3-9 | | | | |
| EJ308986 | 5-J3 | SK321507 | 7-33x | ZW321437 | 4-20 | | | | |
| EJ316156 | 5-J2 | SK323822 | 7-34 | ZW340648 | 4-17 | | | | |
| EJ321328 | 5-J1 | SK323823 | 7-35x | ZW357164 | 2-11 | | | | |
| EJ692908 | 6-18x | SP321464 | 6-20 | ZW381644 | 4-11 | | | | |
| EL323981 | 4-33 | SP323824 | 7-21x | ZW413267 | 6-24 | | | | |
| EM323852 | 6-42 | SP323825 | 7-22x | ZW460787 | 4-53 | | | | |
| EM323854 | 6-43x | SP323826 | 7-24x | ZW550642 | 3-3 | | | | |
| EO310608 | 5-VL1 | SP323827 | 7-25x | ZW550697 | 7-6 | | | | |
| EO310875 | 5-FL2,3 | SP323828 | 7-20x | ZW653163 | 4-54 | | | | |
| EO325354 | 5-T1 | SP323829 | 7-23x | | | | | | |
| ER309119 | 5-FL1 | TC282396 | 4-9 | | | | | | |
| ER319455 | 5-FR3 | TC319723 | 4-1 | | | | | | |
| ER319510 | 5-FR1,2 | TC319724 | 4-61 | | | | | | |
| ER325353 | 5-R70 | TC319914 | 3-8 | | | | | | |
| ES283072 | 5-SW4 | TC321415 | 4-47 | | | | | | |
| ES283173 | 4-31 | TC321486 | 7-8 | | | | | | |
| ES301747 | 6-28 | TC321488 | 7-10 | | | | | | |
| ES310591 | 5-SW1 | TC323926 | 7-4 | | | | | | |
| ES310839 | 6-6 | TC323927 | 7-5x | | | | | | |
| ES315159 | 6-7x | ZG300206 | 2-9 | | | | | | |
| ES315748 | 5-SW3 | ZG312920 | 4-56 | | | | | | |
| ES321274 | 5-SW2 | ZG312926 | 4-2 | | | | | | |
| ES665875 | 6-8x | ZG312943 | 4-4 | | | | | | |
| ET241334 | 5-TR8 | ZG313048 | 6-26 | | | | | | |
| ET304169 | 5-TR7 | ZG318228 | 4-49 | | | | | | |
| ET307349 | 5-TR10 | ZG321358 | 2-7 | | | | | | |
| ET307349 | 5-TR12 | ZG321373 | 4-3 | | | | | | |
| ET399846 | 5-TR3 | ZG321384 | 4-22 | | | | | | |
| ET603257 | 5-TR1,2 | ZG321411 | 4-25 | | | | | | |
| ET639437 | 5-TR4to6 | ZG321416 | 4-48 | | | | | | |
| ET639437 | 5-TR9 | ZG321430 | 4-42 | | | | | | |
| EV314968 | 5-VR4 | ZG321431 | 4-43 | | | | | | |
| EV315412 | 5-VR2 | ZG321459 | 2-6 | | | | | | |
| EV315413 | 5-VR1 | ZG321487 | 7-9 | | | | | | |
| EV315416 | 5-VR3 | ZG321490 | 7-11 | | | | | | |

SECTION 3

SCHEMATIC DIAGRAM

1. SCHEMATIC DIAGRAM OF IC
2. CS-M01 NO. 1600416A SCHEMATIC DIAGRAM

NE545B

