SERVICE MANUAL

CS-732D

MODEL CS-732D

AKAI

ALSO APPLICABLE TO BLACK PANEL MODEL

STEREO CASSETTE DECK

MODEL CS-732D

SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

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 ±1% (1-7/8 ips ±1%)
WOW & FLUTTER	Less than 0.06% WRMS, 0.15% (DIN 45500)
FREQUENCY RESPONSE	35 to 13,000 Hz ±3 dB using LN tape 35 to 13,000 Hz ±3 dB using LH tape 35 to 14,000 Hz ±3 dB using CrO_2 (SA) tape 35 to 15,000 Hz ±3 dB using FeCr tape
DISTORTION (1,000 Hz 0 VU)	Less than 1.3% using LN tape Less than 1.3% using LH tape Less than 1.5% using CrO_2 (SA) tape Less than 1.5% using FeCr tape
SIGNAL TO NOISE RATIO	Better than 54 dB using LN tape Better than 54 dB using LH tape Better than 56 dB using CrO_2 (SA) tape Better than 56 dB using FeCr tape (measured via tape with peak recording level) Dolby N.R. switch ON: Improves up to 10 dB above 5 kHz
ERASE RATIO	Better than 65 dB
BIAS FREQUENCY	85 kHz
HEADS	(3): One recording/playback head, two erase heads
MOTOR	(1): Electronically speed controlled DC motor
FAST FORWARD AND REWIND TIME	90 sec. using a C-60 cassette tape
OUTPUT JACKS	Line (2): 410 mV (0 VU). Required load impedance; More than 20 kohms Phone (1): 100 mV/8 ohms
INPUT JACKS	Microphone (2): 0.25 mV (Input impedance 5.0 kohms). Required microphone impedance; 600 ohms Line (2): 70 mV (Input impedance 100 kohms)
DIN JACK	Input: 2.0 mV (Input impedance 10 kohms) Output: 410 mV. Required load impedance; More than 20 kohms
POWER REQUIREMENTS	100V, 50/60 Hz for Japan 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 the other countries
DIMENSIONS	440(W) x 160(H) x 290(D) mm, (17.3 x 6.3 x 11.4")
WEIGHT	8.0 kg (17.7 lbs)

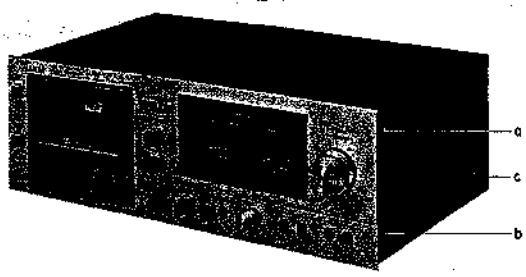
*** For improvement purposes, specifications and design are subject to change without notice.**

*** "Dolby" and the Double D symbol are trademarks of Dolby Laboratories (Manufactured under license from Dolby Laboratories).**

II. DISMANTLING OF UNIT

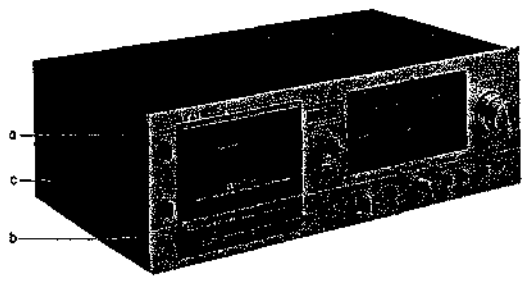
In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

1



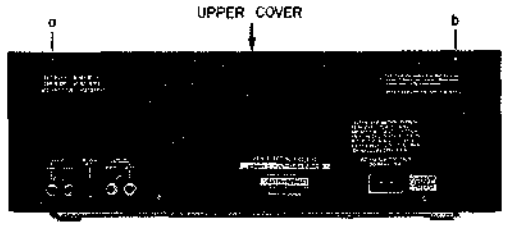
SCREWS

2



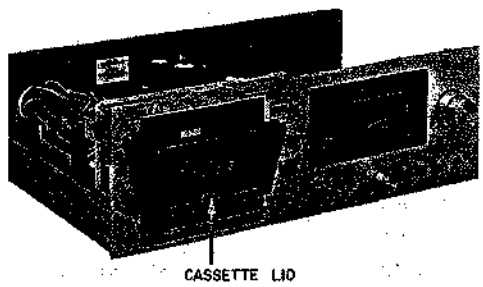
SCREWS

3



SCREWS

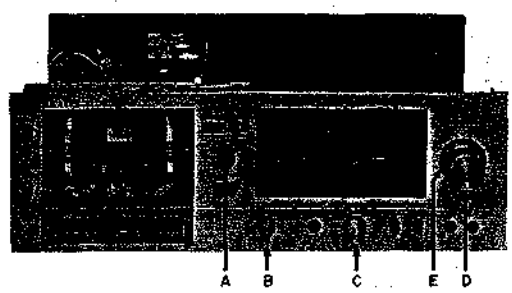
4



CASSETTE LID

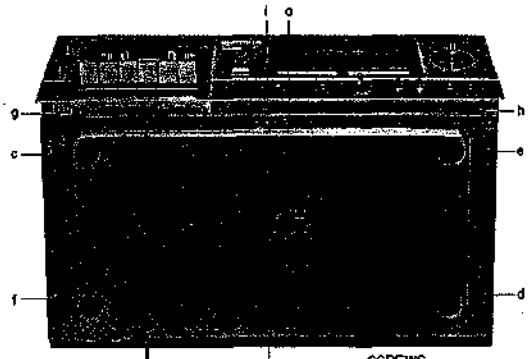
Pull toward you both lower ends of holder.

5



CONTROL KNOBS

6



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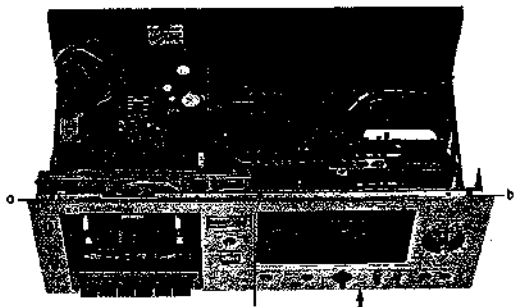

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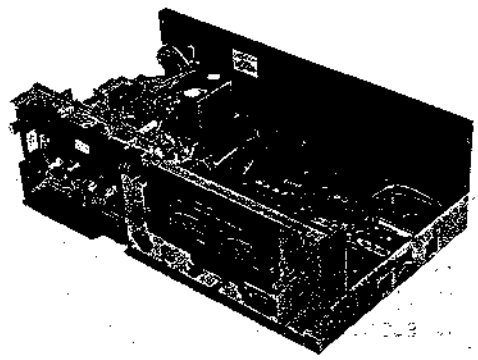
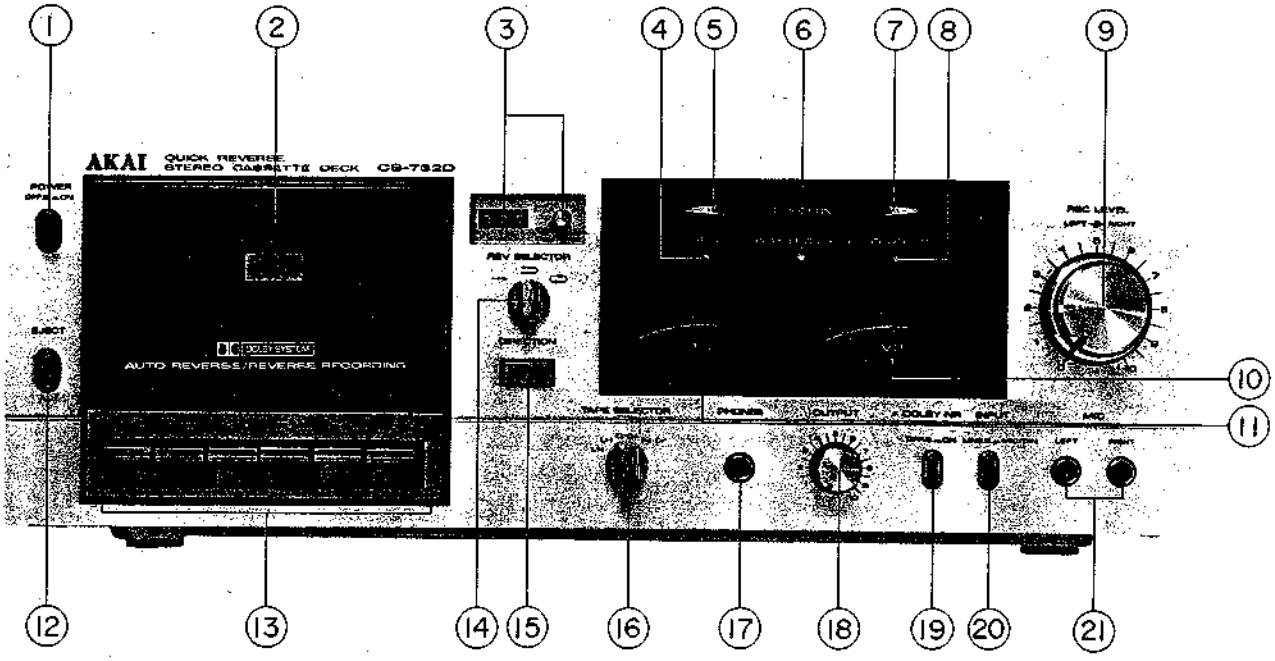


III. CONTROLS



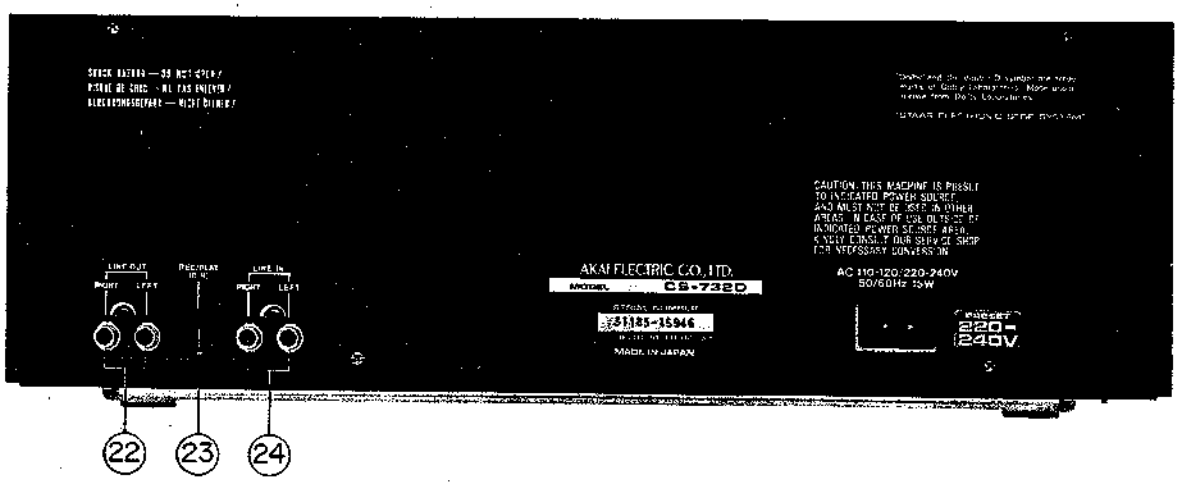


Fig. 1 Controls

1. POWER SWITCH
2. CASSETTE RECEPTACLE
3. INDEX COUNTER AND RESET BUTTON
4. RECORDING INDICATOR LAMP
5. REVERSE DIRECTION INDICATOR LAMP
6. PEAK LEVEL INDICATOR
7. FORWARD DIRECTION INDICATOR LAMP
8. DOLBY NR INDICATOR LAMP
9. LEFT → RIGHT RECORDING LEVEL CONTROLS
10. RIGHT VU METER
11. LEFT VU METER
12. EJECT BUTTON
13. MODE KEYS
14. REVERSE SELECTOR
15. DIRECTION SWITCH
16. TAPE SELECTOR SWITCH
17. HEADPHONE JACK
18. OUTPUT CONTROL
19. DOLBY NR SWITCH
20. INPUT SELECTOR SWITCH
21. MICROPHONE JACKS (Left and Right)
22. LINE INPUT JACKS (Left and Right)
23. DIN JACK
24. LINE OUTPUT JACKS (Left and Right)

IV. PRINCIPAL PARTS LOCATION

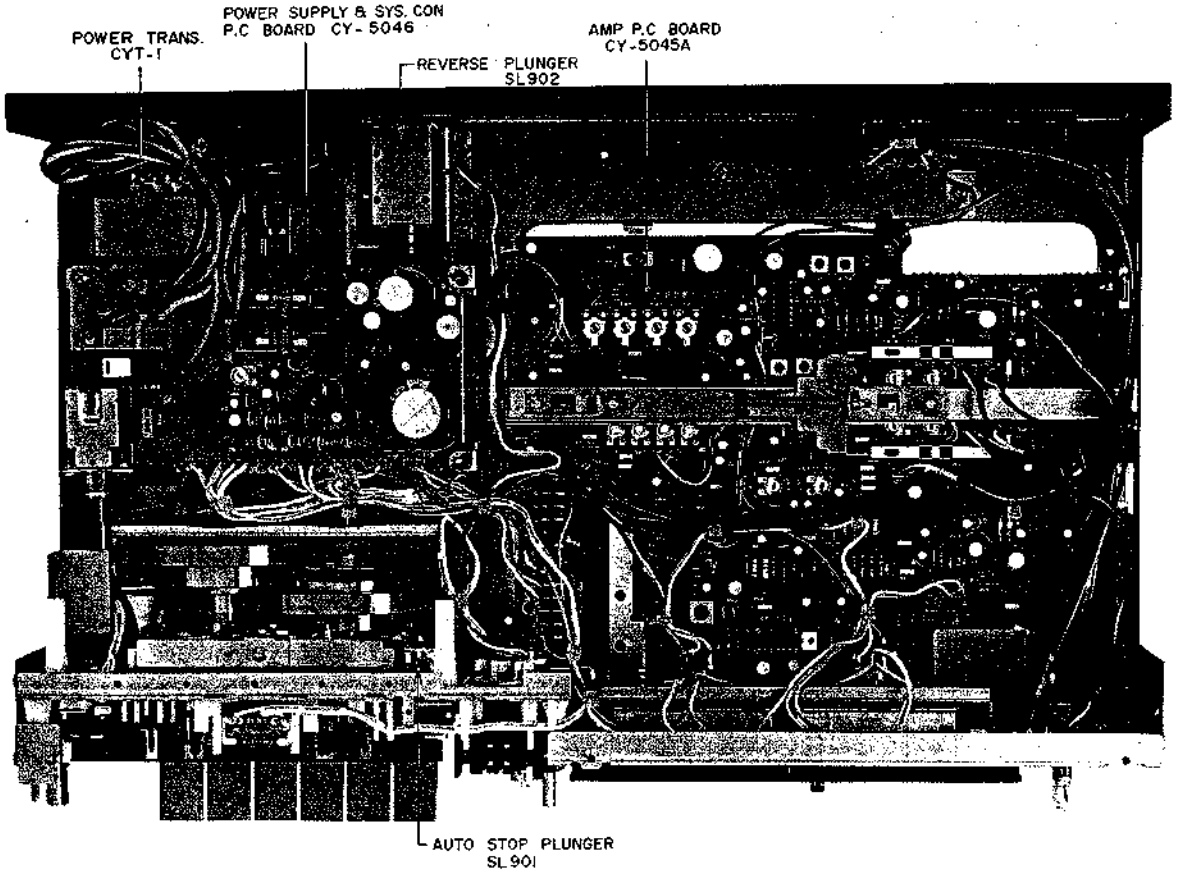


Fig. 2 Top View

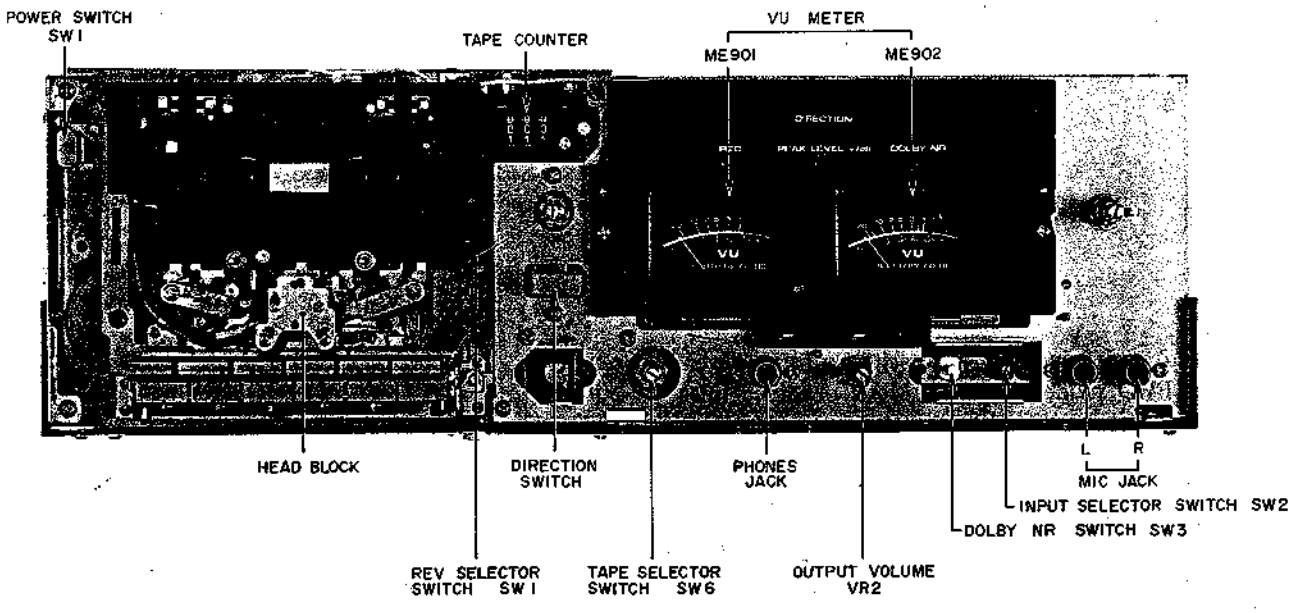


Fig. 3 Front View

V. INVERSION MECHANISM OPERATION

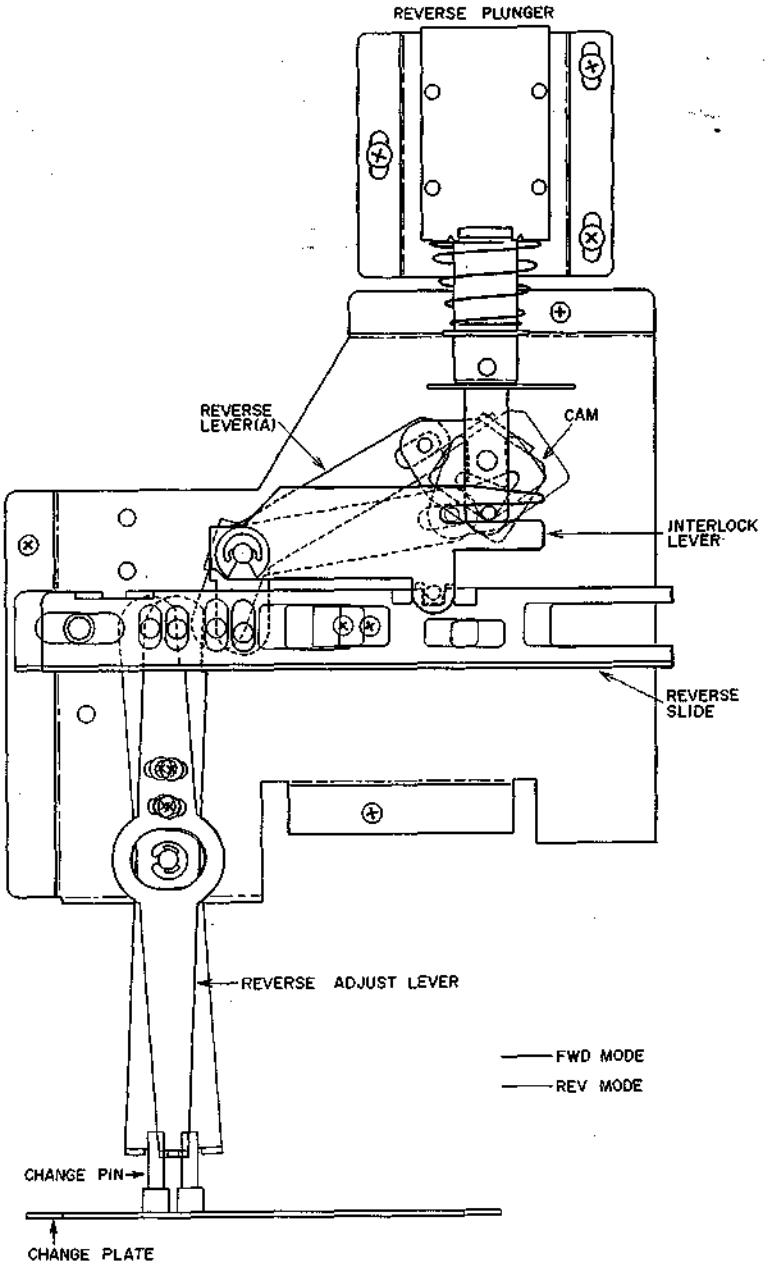


Fig. 4

1. Figures 4 and 5 indicate the position of each lever, etc. at FWD mode and REV Mode. The red lines show the changes positions when the Mode is switches to REV. The change from FWD to REV, or vice versa, is accomplished by depressing the Direction Switch or by the instantaneous movement of the reverse plunger when the leader tape is detected by the detector tape guide. (Refer to VI. Sys Con Operation: Explanation of the Reverse Plunger)
   The electrical system inverts by the reverse slide and the tape transport system inverts by the reverse adjust lever.

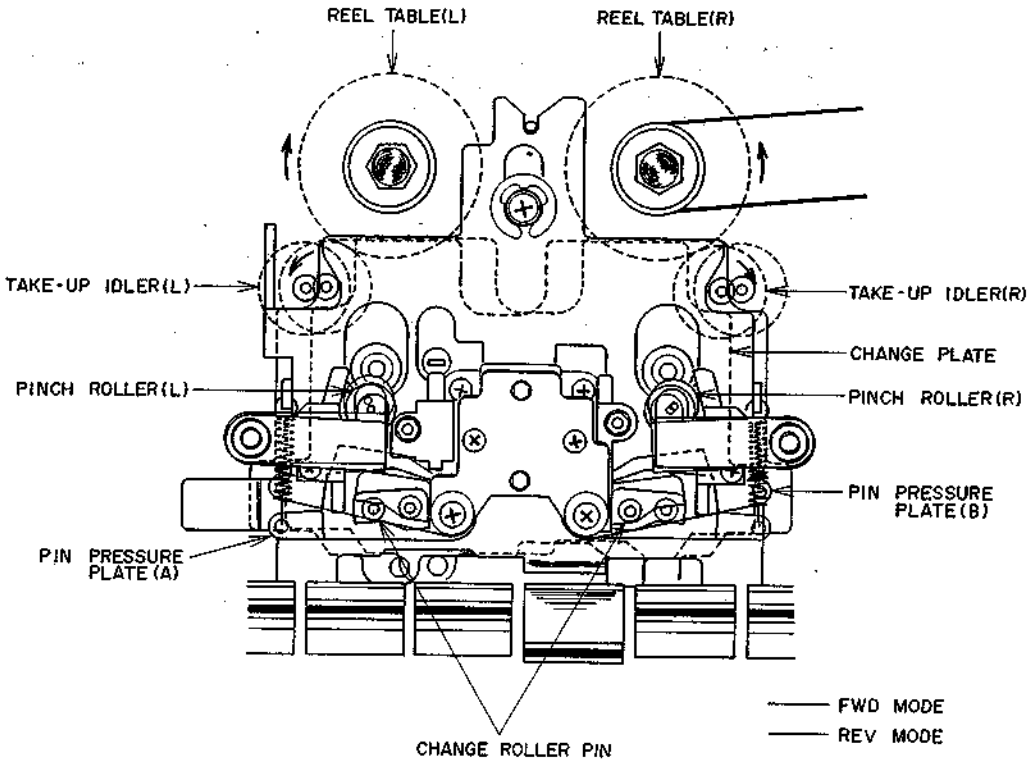


Fig. 5

2. Explanation of the FWD Mode Operation
   In the FWD Mode the Reverse Adjust Lever is on the left and, therefore, Change Plate on Fig. 5 is also on the left. Since the Take-up Idler(R) is in contact with the reel table(R), the rotation from the flywheel is transmitted to the reel table(R) and the tape is taken-up in the forward direction. The Change Roller Pin fixed on the Change Plate is also in the left hand position causing Pin Pressure Plate (A) and (B) to be as in Figure 5. Since the Pin Pressure Plate (B) is in a position unaffected by the Change Roller Pin, Pinch Roller(R) comes in contact with the capstan and the tape is sent in the FWD direction. The Pin Pressure Plate(A) is pressed down by the Change Roller Pin and, Therefore, Pinch Roller(L) is separated from the capstan.

3. In the REV Mode, the Change Plate moves to the right as shown by the red line in Fig. 4 and the situation becomes quite contrary to that in the FWD Mode. The Take-up Idler(R) is separated from the reel table(R) and Take-up Idler(L) goes in contact with the reel table(L) so that the tape is taken-up in the REV direction.
   At the same time, Pin Pressure Plate(A) and (B) shift as shown by the red lines in Fig. 4. This causes the Pinch Roller(R) to separate from the capstan and the Pinch Roller(L) to come in contact with the capstan so that the tape is sent in the REV direction.

4. The FWD ↔ REV changes in the tape transport system are as explained above. The REC/PB Head used in this model is a 4 track head with FWD and REV tracks making the shifting of the REC/PB Head unnecessary at inversion.

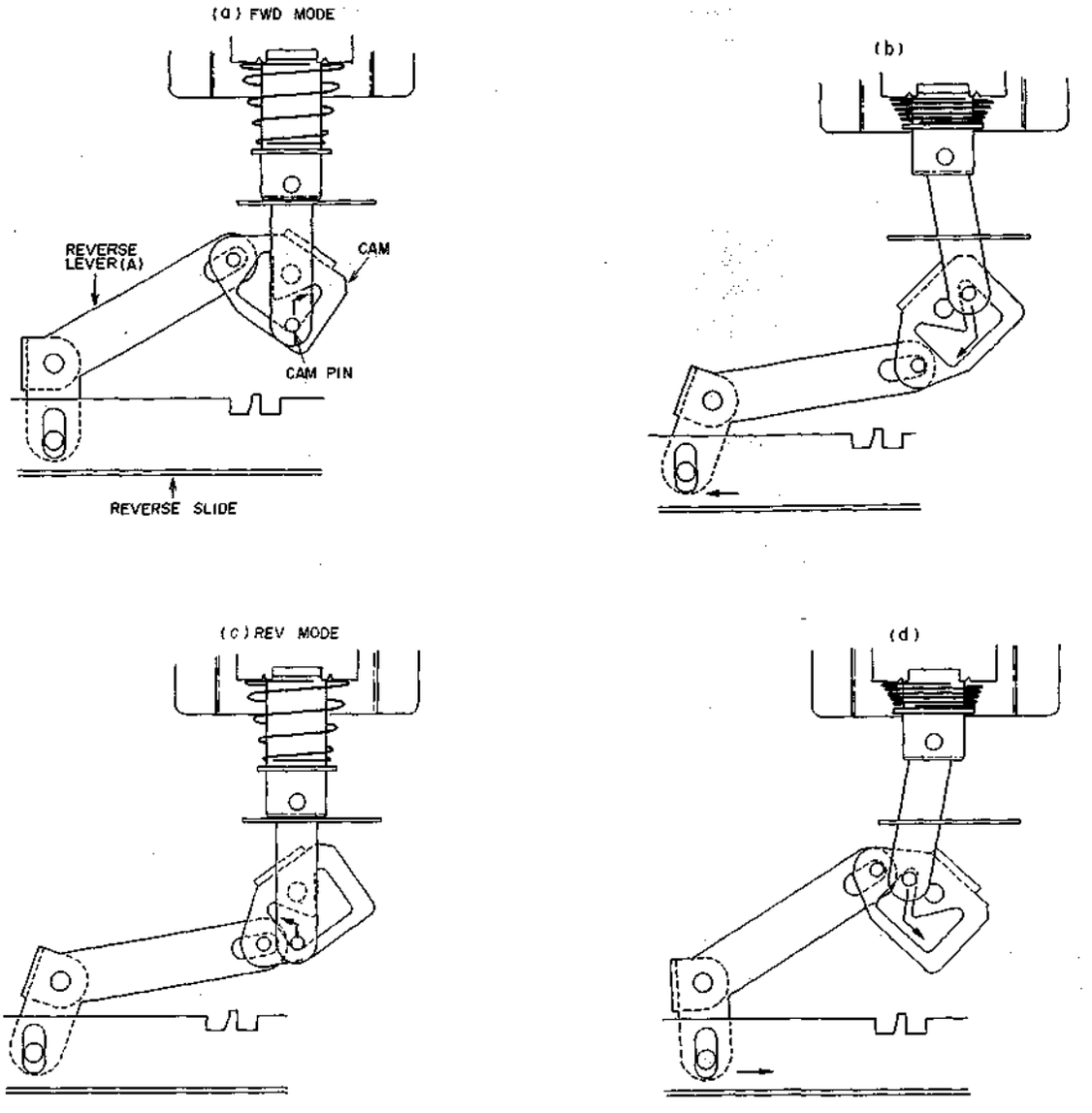
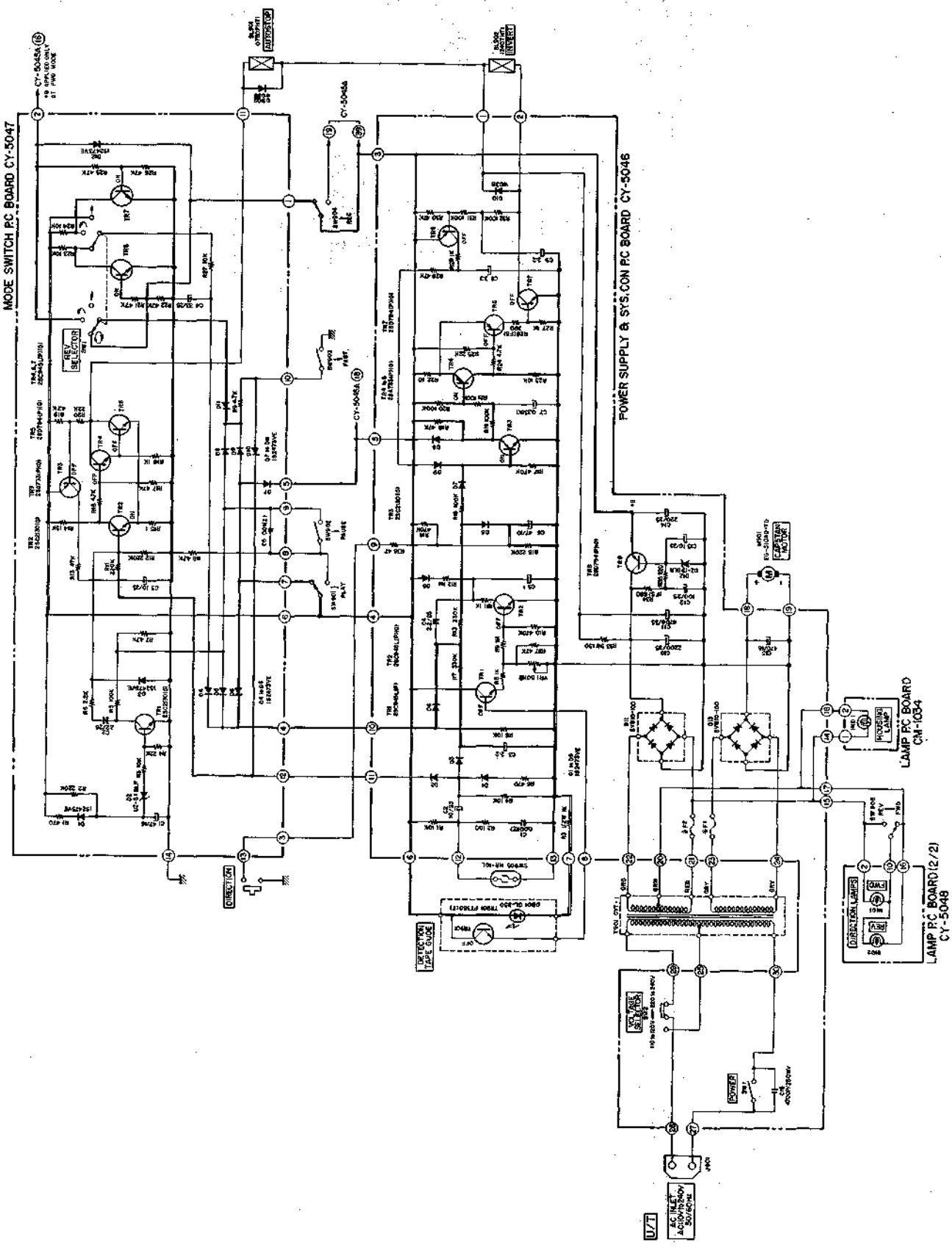


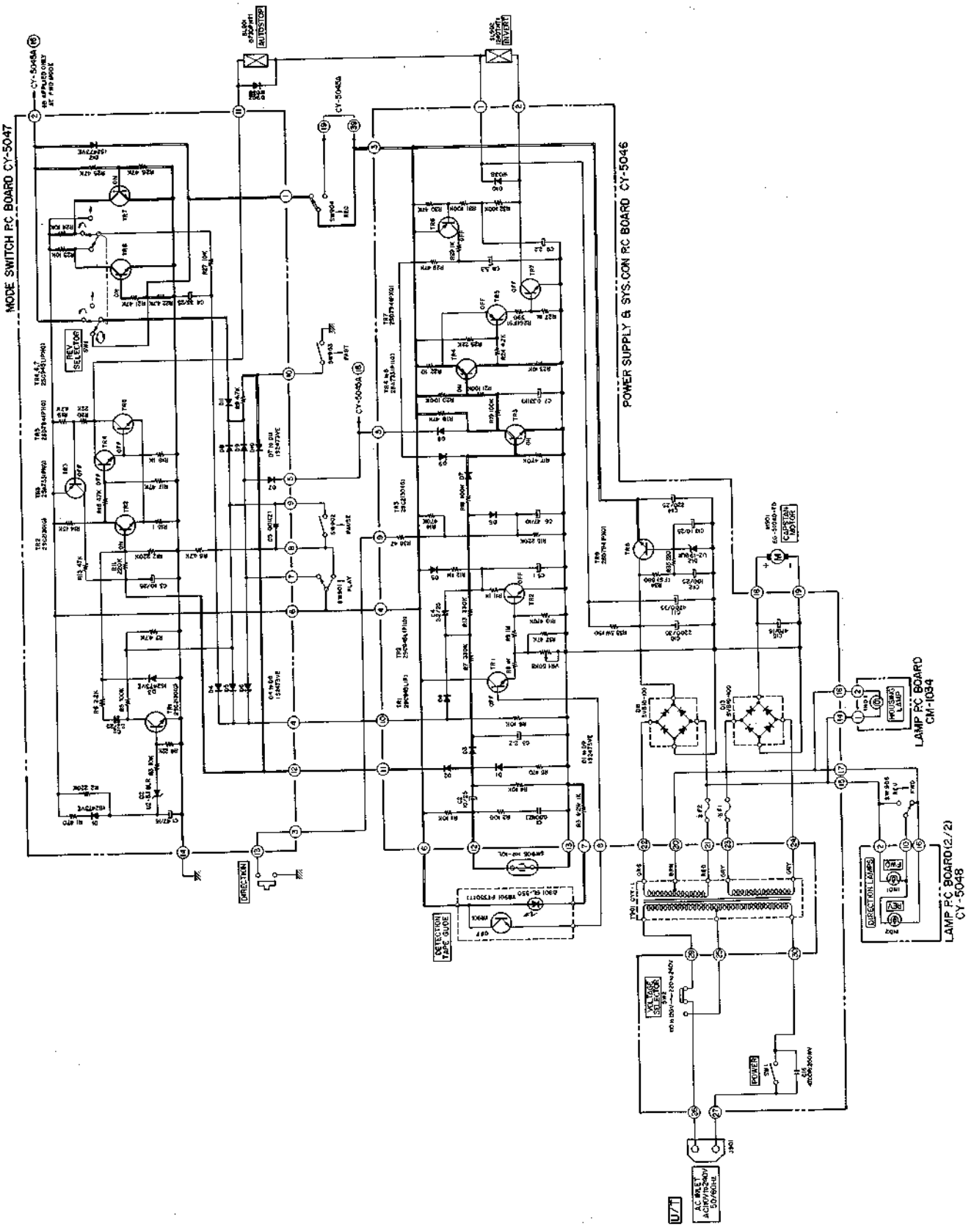
Fig. 6

5. Explanation of the instantaneous switching of the FWD and REV Modes by the use of the reverse plunger.
   1) The situation in the FWD Mode is shown in Fig. 6(a). When the Direction Switch is depressed to change into the REV Mode, the reverse plunger operates instantaneously and the cam pin moves along the cam groove in direction of the arrow(a). The reverse slide moves to the left (Refer to Fig. 6(b)) by the movement of the reverse lever (A). And since the Reverse Plunger operates on instantaneously by the Sys. Con. circuit, the situation is fixed at REV Mode (Fig. 6(c)) after the cam pin moves in the direction of the arrow (Fig. 6(b)).
   2) Next, to change from the REV Mode to the FWD Mode, depress the Direction Switch. Same operation as in 1) takes place: the moment the reverse plunger operates is as in Fig. 6(a), when the reverse plunger returns the situation is as in Fig. 6(a), and then the FWD Mode is fixed.
   These operations also take place when the detector tape guide detects the leader tape.

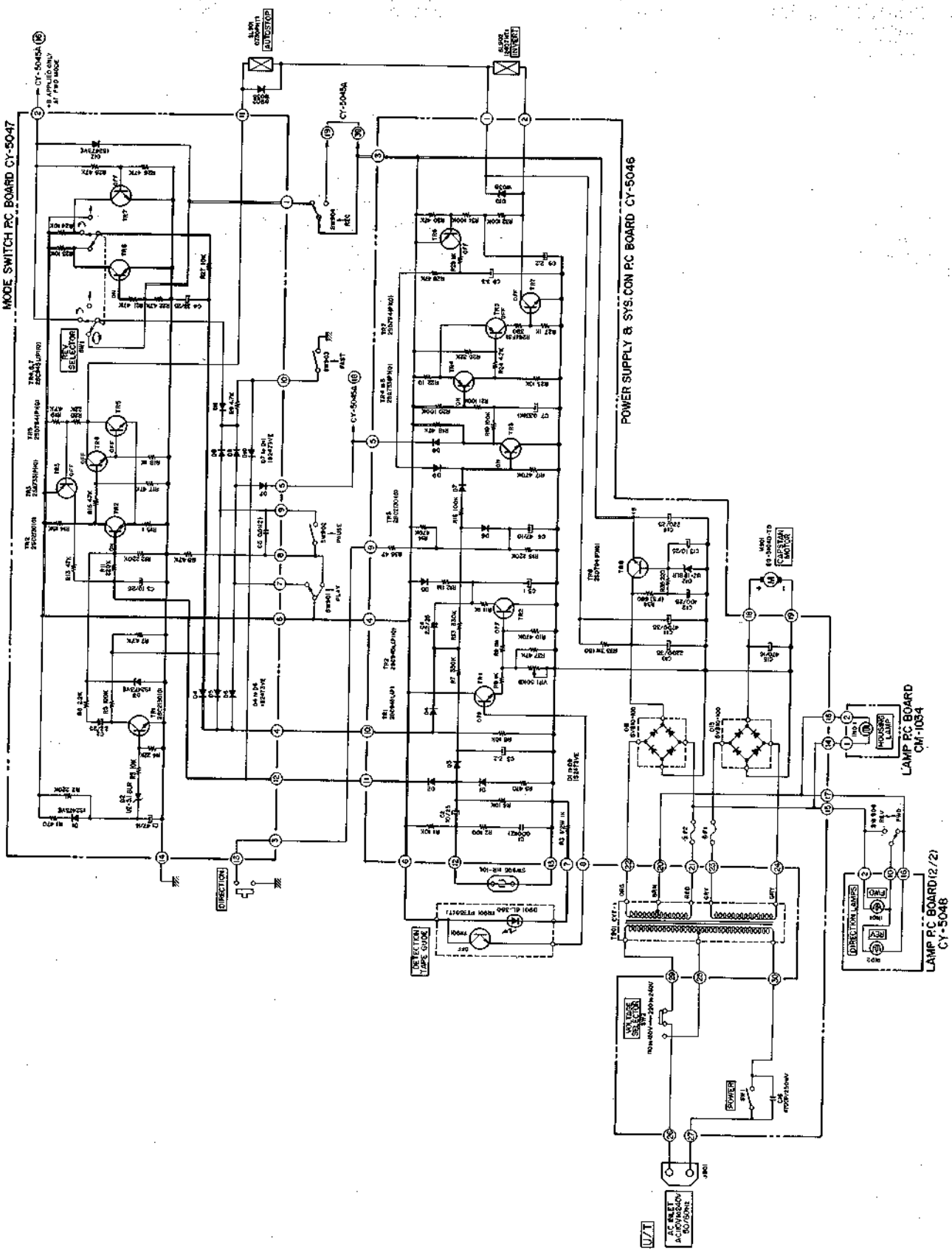
VI. SYS. CON. CIRCUIT OPERATION



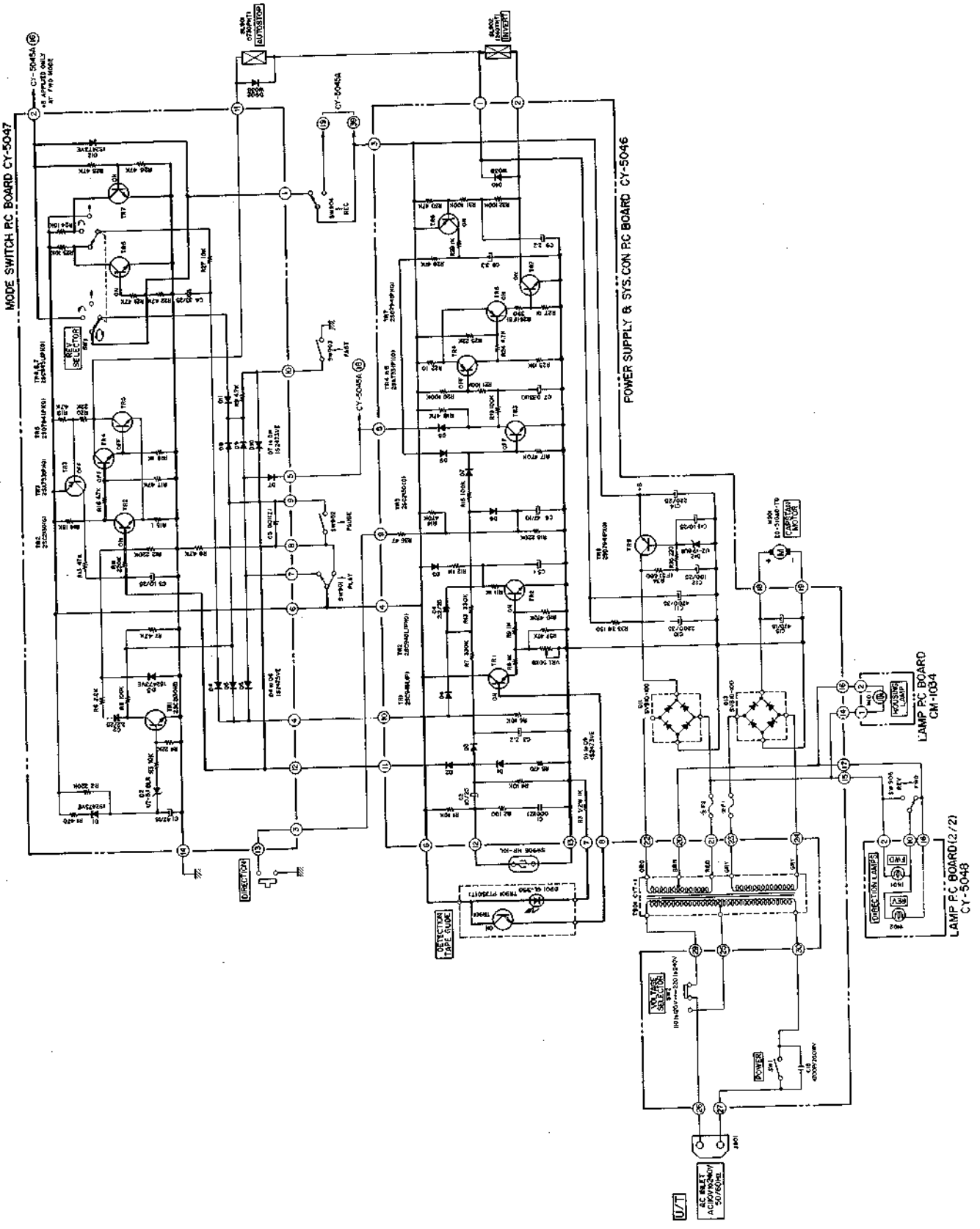
SCHEMATIC—1 STOP MODE



SCHEMATIC–2 ▭ POSITION FWD PLAY MODE



SCHEMATIC–3 ▭ POSITION REV PLAY MODE



SCHEMATIC–4 POSITION FWD → REV SWITCHING POINT

In this model, FWD ⇔ REV changes in the electrical and mechanical systems are made by one reverse plunger SL902. For this reason, there are two Sys. Con. Circuits: one controlling the reverse plunger by the condition of the tape transport and the position of the REV Selector Switch, and another, an automatic stop circuit for tape ending. Timer Start Circuit is also included in the JPN Model.

1. AUTOMATIC STOP CIRCUIT OPERATION

1) At Fast Forward, Rewind, PLAY with → position, REV PLAY with ⊃ position, and REV REC with ⊂ position; each mode is cancelled and the machine goes into a Stop Mode by the automatic stop plunger operation.
2) When the tape is being transported, the Reed Switch SW905 turns ON and OFF to generate pulse. This causes the bias to be supplied to the TR2 base through C2 → D2 → ⑪ → ⑫ → R11 and to turn ON TR2. When TR2 is ON, TR4 is not supplied with bias and, therefore, TR4 and TR5 are OFF stopping the current from flowing to the automatic stop plunger.
3) When the tape reaches the end in the modes listed in 1), the pulse from the SW905 stops. This causes the Mode Switch P.C Board's TR2 base potential to decrease and TR3 to be turned off.
   TR4 base potential thereby increases and turns ON, and Darlington connected TR5 also turns ON. The current flows to the automatic stop plunger SL901 and disengages the PLAY Key.
   Also, when TR5 turns ON, TR3 base current flows and increases TR2 base potential so that TR2 turns ON, and TR4 and TR5 turns OFF to inactivate the automatic stop plunger.
   Because TR5 turns off, TR3 also turns off. But since TR2 base is supplied with a base current from the +B line through D9 → R9 → D10 → R11 due to SW901 when the PLAY Key is disengaged, TR2 is kept ON. Thus, when the tape reaches the end, the automatic stop plunger is instantly put into operation to disengage the PLAY Key and put the machine into the Stop Mode.

2. INVERSION CIRCUIT OPERATION

1) In the Forward Mode only, when the REV Selector Switch is in ⊃ or ⊂ position, +B is applied to the terminal ② on the Mode Switch P.C Board from the Amp P.C Board. For this reason, Automatic Stop does not work because bias is supplied to the Automatic Stop Circuit TR2 base through D → R9 → D10 → R11.
2) When the tape is being transported, the infrared ray put out by the detector tape guide block D901 is blocked by the magnetic tape. The photo transistor TR901 is OFF during this time. The tape transport also causes the pulse from SW905 to be supplied to TR3 as base potential through Power Supply & Sys. Con. P.C Board C2 → D3 → R7 → R13 → R16 → D7. TR3 is therefore ON and, in turn, turns TR4 ON as TR4 base current flows. When TR4 is turned ON, TR5 emitter and base potentials become identical and TR5 turns OFF.
   Bias is not supplied to TR7 base and TR7 is also OFF. Reverse Plunger, therefore, do not function.
3) At the point where the magnetic tape ends and leader tape starts, the infrared ray from D901 is reflected off the cassette guide pin and photo transistor TR901 is turned ON. Base current flows to and turns ON TR1 and TR2. When TR2 is turned ON, the charge that has been charged to C4 discharges through R11 and TR2, and the base potential of TR3 is decreased. TR3 then turns OFF and TR4 also turns OFF. Once TR4 is turned OFF, TR5 base current flows and is turned ON. TR7 base also receives the base current through TR5 and turns ON. And finally, the current flows to the reverse plunger SL902 to invert from FWD to REV, or vice versa. When TR7 is turned ON, base current flows to TR6 and TR6 turns ON. After C8 is charged through R29, base bias is supplied to TR3 through R28 and D9 and TR3 turns ON. TR4-TR7 therefore inverts ON/OFF and no current flows to SL902 causing the reverse plunger to work only momentarily. Since even when TR6 is turned OFF, TR3 is kept ON during the charging time of C8, TR3 remains ON as the infrared ray from D901 is blocked by the magnetic tape, getting no signal from the detector tape guide block but a pulse signal from SW905.
4) In case the Direction Switch is depressed, TR3 base potential is decreased through D6 and D36 and TR3 turns OFF. Accordingly TR4 turns OFF, TR5-TR7 turn ON and current flows to SL902 to activate the operation momentarily as in 3).

3. TIMER START CIRCUIT OPERATION (JPN Model only)

Timer Start can be accomplished exclusively on the JPN model. The Pause Key is locked in a different way from other models using different type of lever, etc. When REC/PLAY and PAUSE, or PLAY and PAUSE are depressed, the Automatic Stop Plunger operates to disengage only the Pause Key at the moment the power is supplied.

When the power is supplied after the PLAY Key and the PAUSE Key are locked, bias is supplied to TR2 base from +B line, SW901 and SW902 through D8 → R9 → D10 → R11 and TR2 is turned ON.

At the same time, C1 is charged through R2. When C1 charged voltage increases and exceeds the D2 Zener voltage, current flows to the TR1 base through TR3 and TR1 turns ON. Consequently, since TR2 base potential decreases only while C2 is charged, TR2 is turned OFF and the automatic stop plunger operates. When the automatic stop plunger is activated, only the Pause Key is released and the tape is transported.

VII. MECHANISM ADJUSTMENT

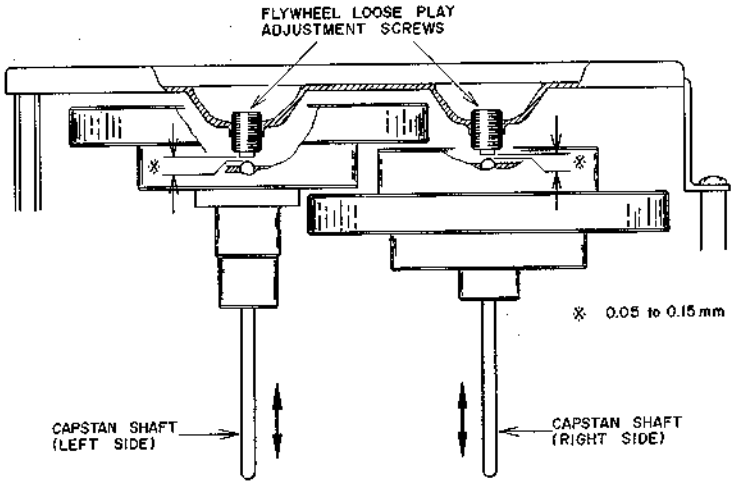


Fig. 7

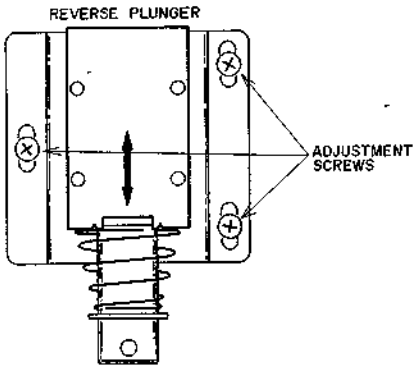


Fig. 8

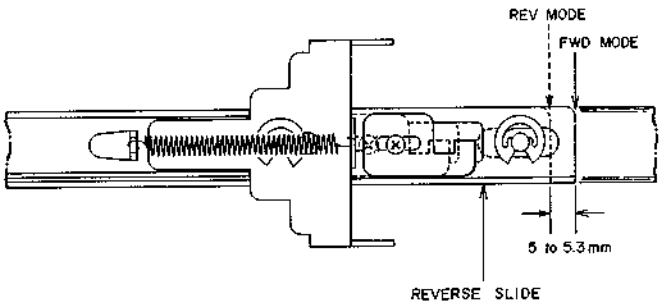


Fig. 9

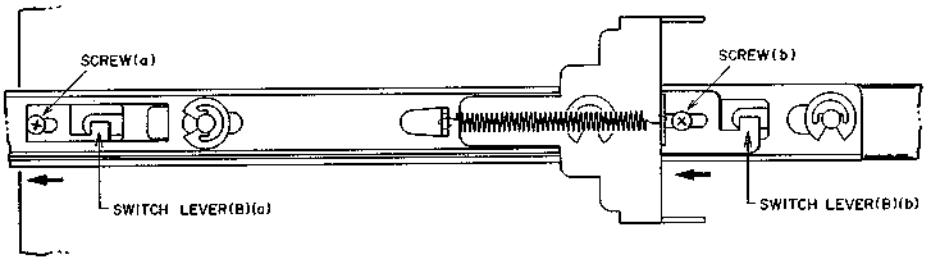


Fig. 10

1. FLYWHEEL LOOSE PLAY ADJUSTMENT (Refer to Fig. 7)

Adjust by turning flywheel loose play adjustment screws to obtain 0.05 to 0.15 mm of loose play when the capstan shaft is moved as indicated by the arrow mark.

2. REVERSE PLUNGER INSTALLATION POSITION ADJUSTMENT (Refer to Figs. 8, 9)

Adjust the position of the reverse plunger with the adjustment screws in Fig. 8 so that the working gap of the reverse slide is 5 to 5.3 mm when changing from FWD to REV.

3. REVERSE SWITCH WORKING POSITION ADJUSTMENT (Refer to Fig. 10)

Put into REV and loosen screws (a) and (b). Move the switch lever (B), (a), (b) fully to the left in the direction of the arrows and fix with the screws (a) and (b).

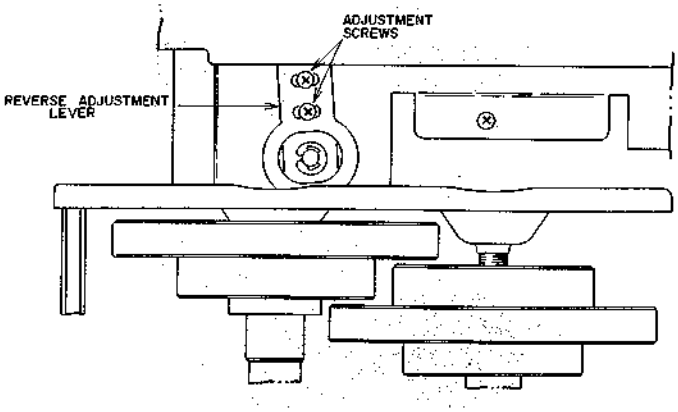


Fig. 11

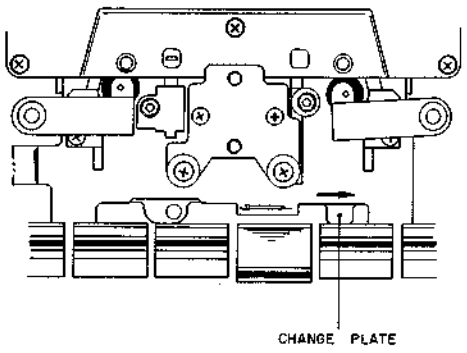


Fig. 12

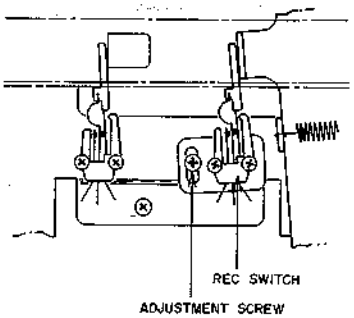


Fig. 13

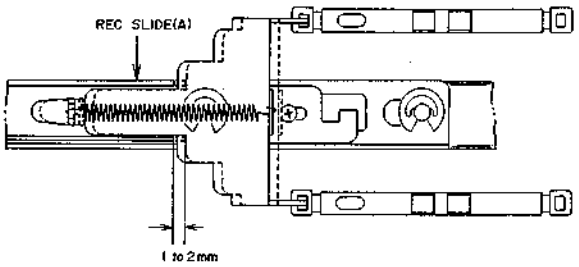


Fig. 14

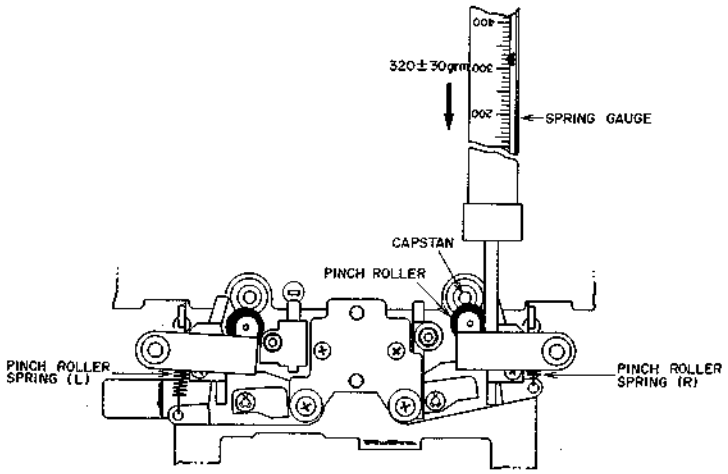


Fig. 15

4. REVERSE ADJUSTMENT LEVER INSTALLATION POSITION ADJUSTMENT (Refer to Figs. 11, 12)

Loosen Fig. 11's reverse adjustment lever's screws in the REV-PLAY mode. Move the change plate, which can be seen under the head block in Fig. 12 fully to the right in the direction of the diagram's arrows and fix the reverse adjustment lever's screws.

After adjustment check that the FWD-REV operation is working properly.

5. REC SWITCH INSTALLATION POSITION ADJUSTMENT (Refer to Figs. 13, 14)

Once REC has become STOP, adjust the adjustment screws so that the REC switch cuts while the REC slide (A) moves 1 to 2 mm.

6. PINCH ROLLER PRESSURE MEASUREMENT (Refer to Fig. 15)

Put in FWD PLAY mode and attach a 500g spring gauge to the right hand side pinch roller arm. Depress slowly until the pinch roller is 1 to 2 mm from the capstan then slowly return. The spring gauge value should be 320 ± 30g when the pinch roller is touched and rotates by the capstan.

If outside the specifications, replace the pinch roller spring. Measure the left hand pinch roller pressure in the same way in the REV PLAY mode. Because the auto-stop operates in the REV play mode when measuring rotate the right hand reel table with your finger.

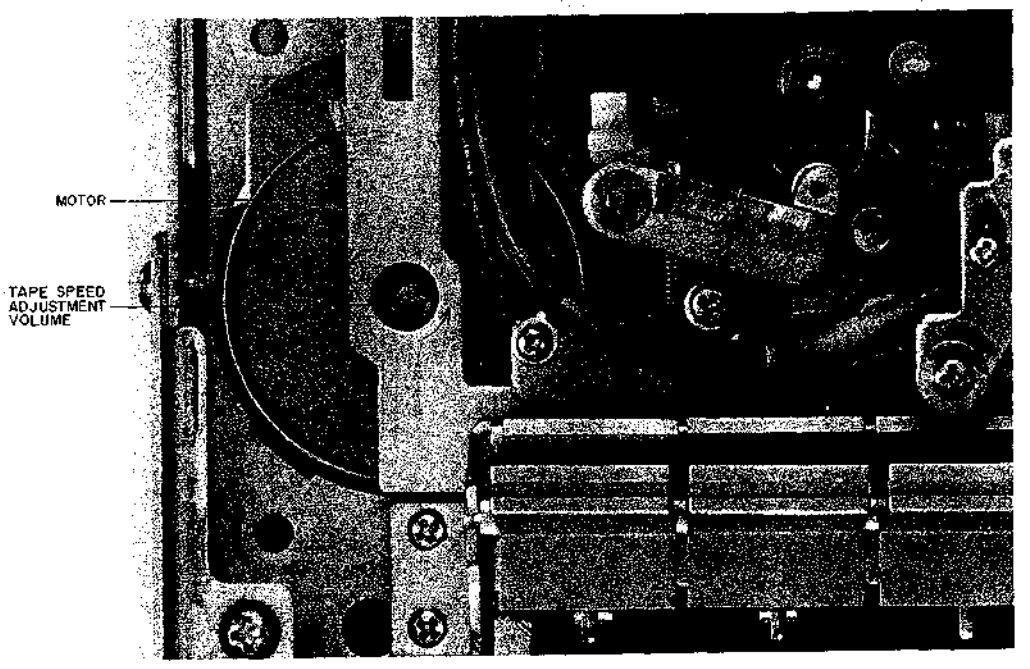


Fig. 16

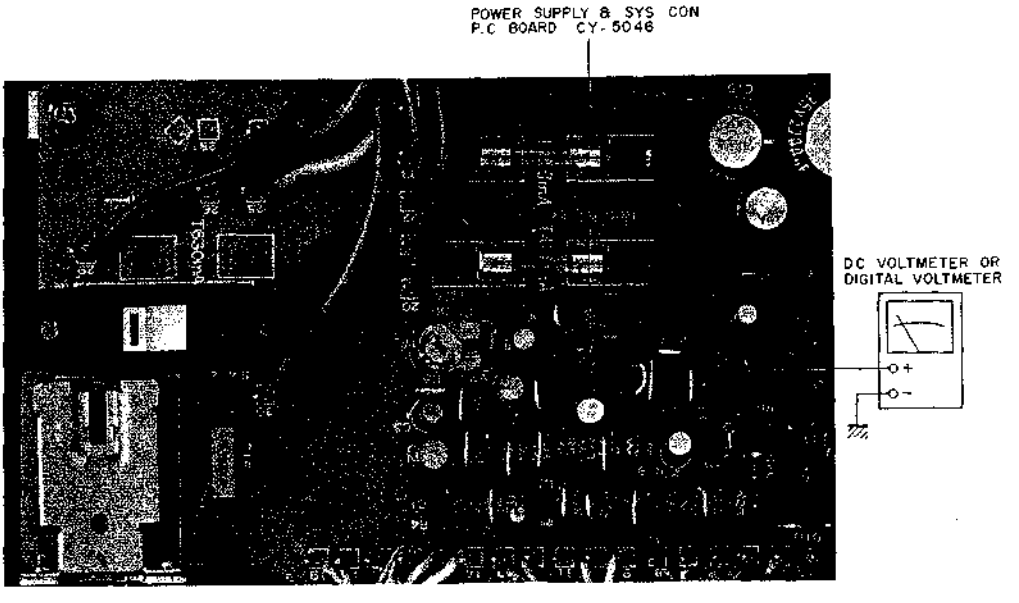


Fig. 17

7. TAPE SPEED ADJUSTMENT (Refer to Fig. 16)

Connect a frequency counter to line output terminals. Playback a 1,000 Hz pre-recorded test tape and adjust tape speed adjustment volume to obtain a tape speed of 1,000 Hz ±1%.

8. DETECTION TAPE GUIDE SENSITIVITY ADJUSTMENT (Refer to Fig. 17)

First, remove the tape from the test tape in the white pack and make a tapeless cassette pack.

Insert and put into PLAY mode and adjust VR1 50 kB so that the voltage is 6.6V between the earth and the lead wire of the R9 (1M ohms) on the power supply and Sys. Con P.C Board.

VIII. HEAD ADJUSTMENT

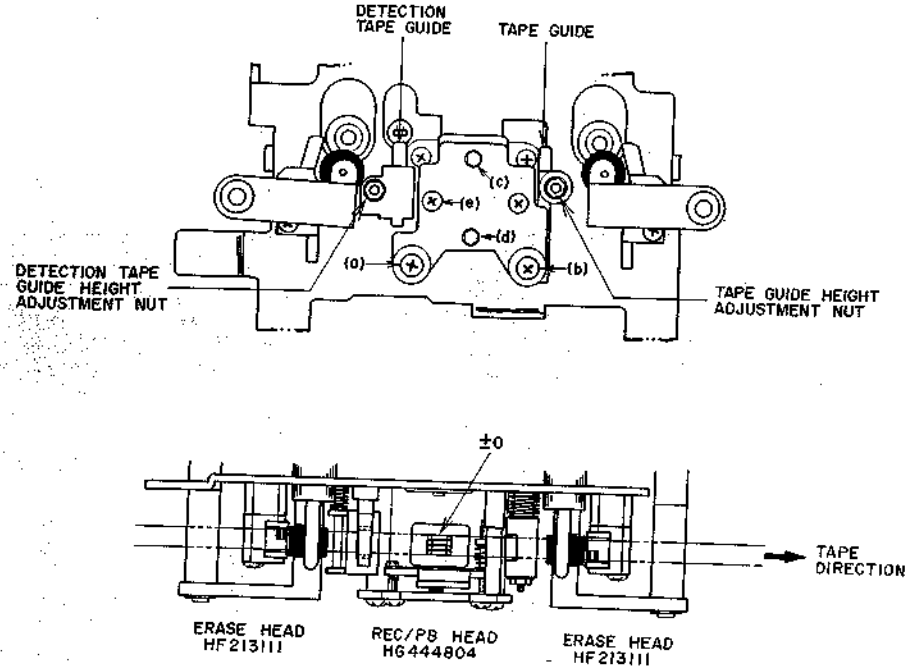


Fig. 18

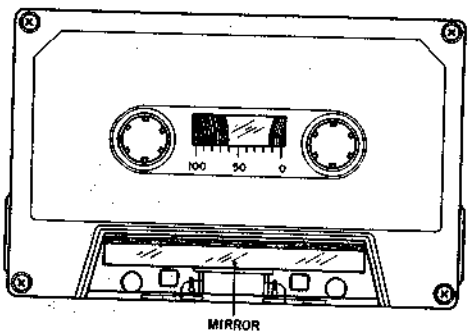


Fig. 19

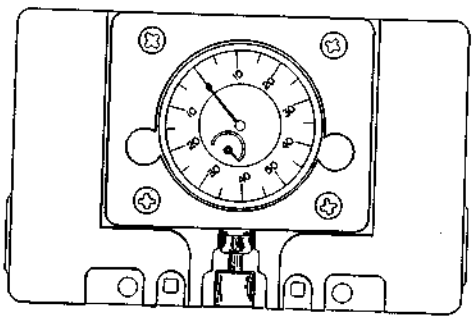


Fig. 20

1. TAPE GUIDE HEIGHT ADJUSTMENT (Refer to Figs. 18, 19)

1) When using an ordinary cassette, the tape guides and heads, etc. are not visible. As shown in Fig. 19 use a cassette tape from which part of the cassette case has been cut out and a mirror installed for easy visibility of the head area when making tape guide height adjustment.
2) At FWD-PLAY mode, adjust tape guide height with tape guide height adjustment nut so that the tape runs smoothly and does not catch on the tape guide.
3) At REV-PLAY mode, adjust detection tape guide height with detection tape guide height adjustment nut so that the tape runs smoothly and does not catch on the detection tape guide.

2. REC/PB HEAD PROJECTION ADJUSTMENT (Refer to Figs. 18, 20)

Set the Akai head projection gauge (Fig. 20) and adjust (a), (b) screws so that it reads 3.15 ±0.15 mm in the PLAY mode.

3. REC/PB HEAD HEIGHT ADJUSTMENT (Refer to Fig. 18)

Playback a 4 track 1,000 Hz test tape and adjust the screws (c) and (d) so that the output from both channels is at maximum in the FWD-PLAY and REV-PLAY modes.

4. REC/PB HEAD AZIMUTH ALIGHMENT (Refer to Fig. 18)

Playback a 10 kHz test tape and adjust screw (e) so that the output from both channels is at maximum in FWD-PLAY and REV-PLAY modes and the AC voltmeter reading does not waver.

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.
4. When a mirror installed cassette test tape as shown in Fig. 19 is required, it can be ordered from AKAI Electric Co.

IX. AMPLIFIER ADJUSTMENT

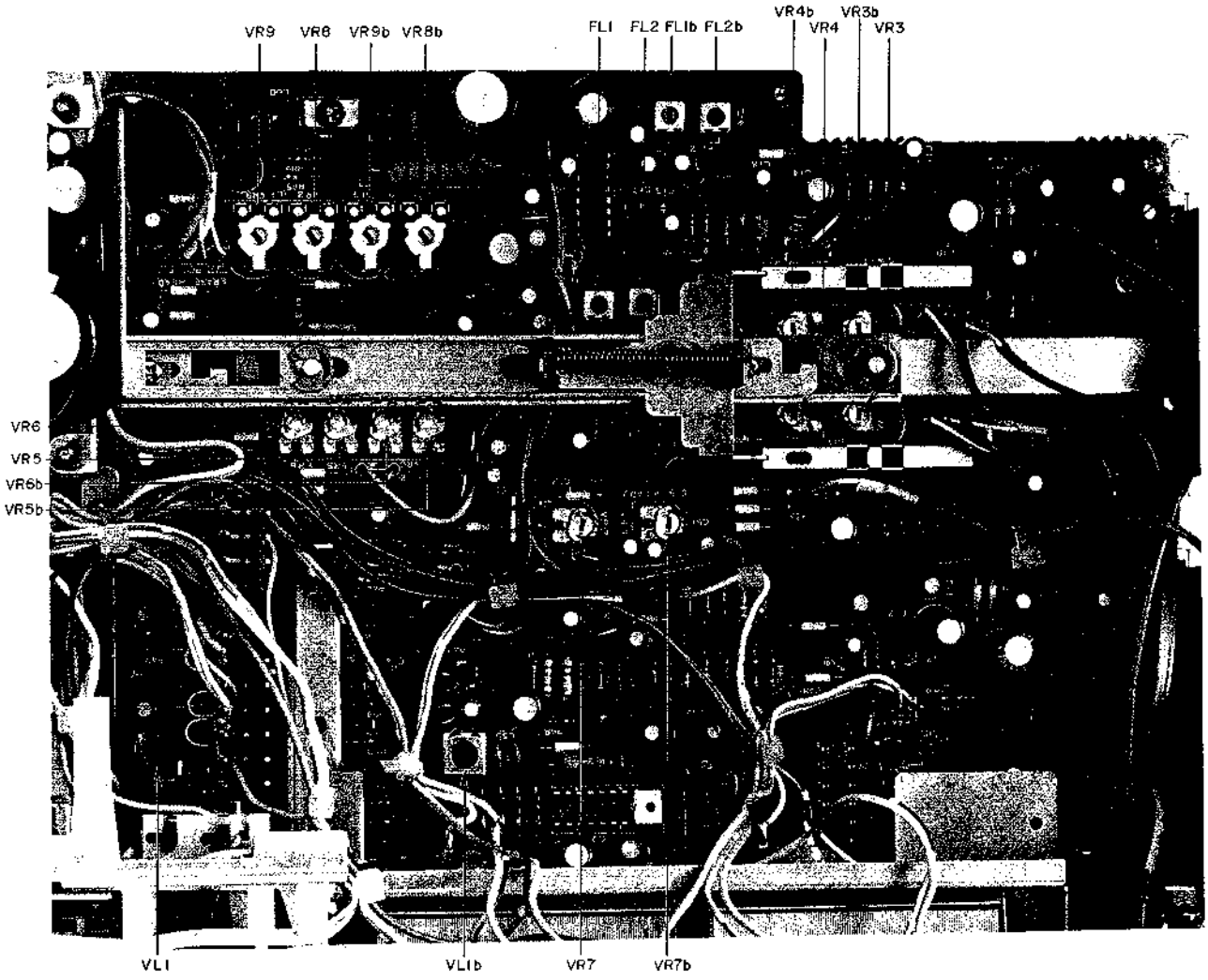


Fig. 21 Amp P.C Board CY-5045A

VR3	50 kB	FWD Playback Level Adjustment
VR4	50 kB	REV Playback Level Adjustment
VR7	5 kB	VU Meter Sensitivity Adjustment
VL1	33Y-740	Rec Peaking Adjustment
VR8	200 kB	FWD Frequency Response
VR9	200 kB	REV Frequency Response
VR5	20 kB	FWD Recording Level
VR6	20 kB	REV Recording Level
FL1	D07-002	Bias Filter Adjustment
FL2	D07-001	19 kHz Filter Adjustment

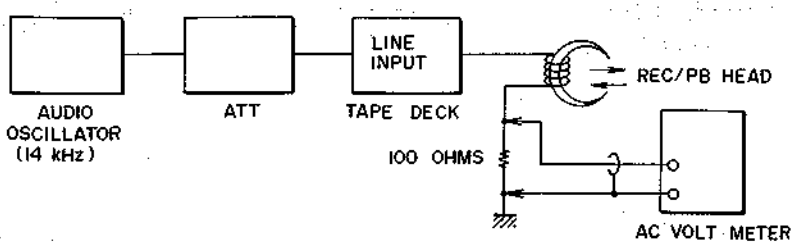


Fig. 22 Instruments Connection

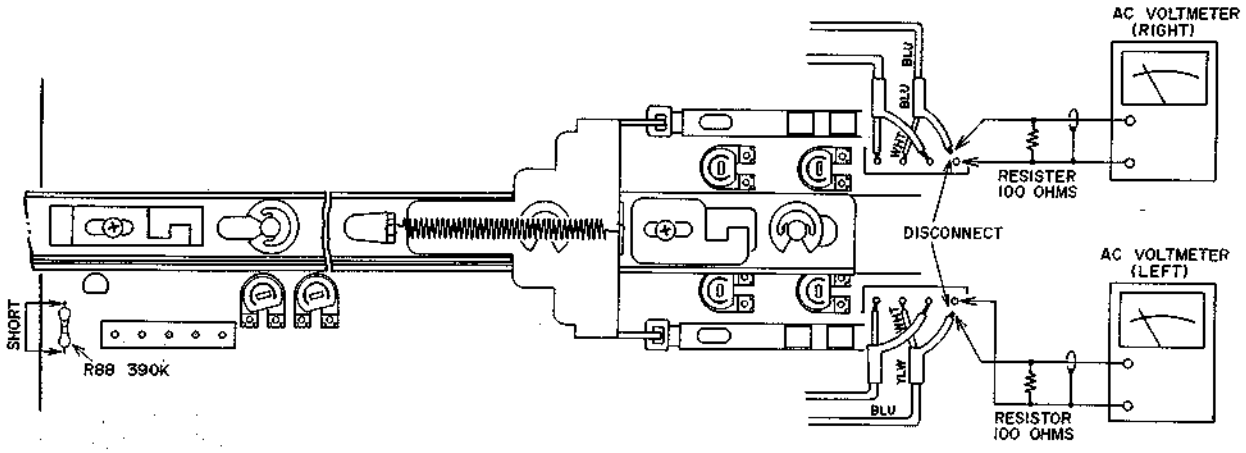


Fig. 23

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	FWD Playback Level	333 Hz 0 VU Test Tape	FWD	VR3 50 kB	−5.5±0.5 dBm (410 mV)	
2	REV Playback Level	333 Hz 0 VU Test Tape	REV	VR4 50 kB	−5.5±0.5 dBm (410 mV)	
3	VU Meter Sensitivity	333 Hz 0 VU Test Tape	FWD	VR7 5 kB	0 VU indication	
4	Rec Peaking	14 kHz from an oscillator	FWD-REC	VL1 33Y-740	Maximum AC Voltmeter indication	Refer to NOTES 7, 9 and Figs. 22, 23.
5	FWD Frequency Response	Low Noise Blank Tape, 1,000 Hz, 10,000 Hz −22.5 dBm recording	FWD-REC/ PLAY	VR8 200 kB	1,000 Hz to 10,000 Hz flat response	

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
6	REV Frequency Response	Low Noise Blank Tape, 1,000 Hz, 10,000 Hz, −22.5 dBm recording	REV-REC/PLAY	VR9 200 kB	1,000 Hz to 10,000 Hz flat response	
7	FWD Recording Level	Low Noise Blank Tape, 1,000 Hz, −5.5 dBm recording	FWD-REC/PLAY	VR5 20 kB	−5.5±0.5 dBm (410 mV)	
8	REV Recording Level	Low Noise Blank Tape, 1,000 Hz, −5.5 dBm recording	REV-REC/PLAY	VR6 20 kB	−5.5±0.5 dBm (410 mV)	
9	FWD Distortion Factor Confirmation	Low Noise Blank Tape, 1,000 Hz, −5.5 dBm recording	FWD-REC/PLAY		Less than 1.3%	Refer to NOTE 8.
10	REV Distortion Factor Confirmation	Low Noise Blank Tape 1,000 Hz, −5.5 dBm recording	REV-REC/PLAY		Less than 1.3%	Refer to NOTE 8.
11	Bias Filter	No Signal Input	REC	FL1 D07-002	Minimum AC Voltmeter indication	INPUT SELECTOR to MIC Position. TAPE SELECTOR to CrO_2 Position.
12	19 kHz Filter	19.00 kHz from an oscillator	REC	FL2 D07-001	Minimum AC Voltmeter Indication	DOLBY NR Switch to ON. Refer to NOTES 9, 10.

Chart-1

NOTES:
1. Output Level Control should be at maximum.
2. Because each of these adjustments is vital to perfect Dolby N.R. circuit operation, ensure that they are carried out with as little error as possible.
3. Except for Step 11, set Tape Selector Switch to Low Noise position.
4. Except for step 11, set Input Selector Switch to Line position.
5. Except for Step 12, set Dolby N.R. Switch to OFF position.
6. Use the following cassette measuring tape:
   - LN tape: Fuji FL C-60
   - LH Tape: Maxell UD C-60
   - CrO_2 Tape: TDK SA C-60
   - Fe-Cr Tape: SONY Duad C-60
7. Stop recording bias oscillator while making Rec Peaking Adjustment (Refer to Figs. 22, 23).
8. If it does not comply with the specifications, repeat Steps 5 to 8 and re-adjust.
9. Unless the core is moved intentionally this adjustment is not necessary.
10. Adjust the oscillators frequency to give a frequency counter reading of 19.00 kHz.

X. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Recording/Playback Head	HG444804	300 ohms
Erase Head	HF213111	2.9 ohms
Reverse Plunger Solenoid	1240THTI	14 ohms ±10%
Pause Plunger Solenoid	0730PHTI	15 ohms ±10%

Chart-2

XI. CLASSIFICATION OF VARIOUS P.C BOARDS

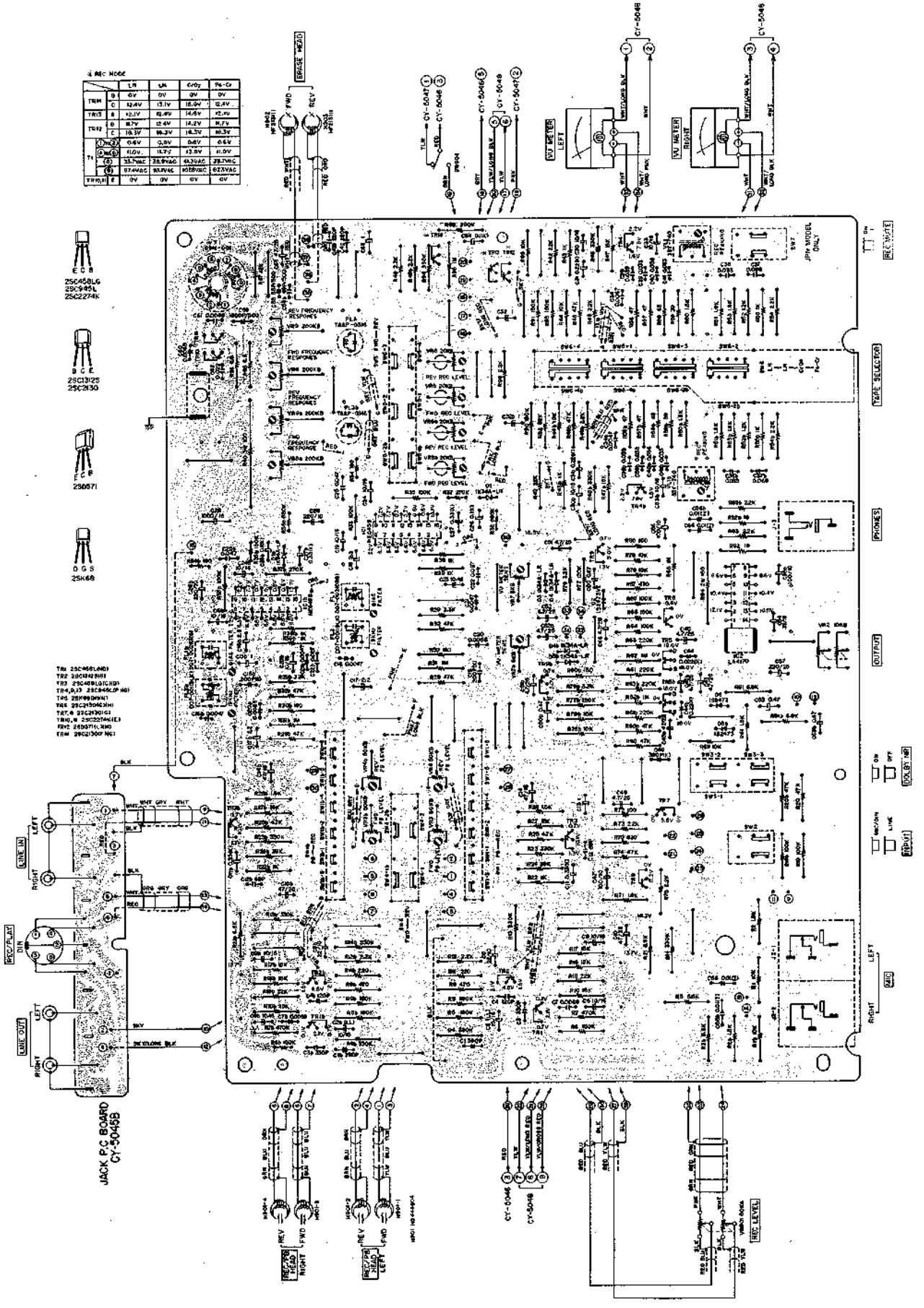
1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

P.C Board	Number of P.C Board
Amp P.C Board	CY-5045A
Jack P.C Board	CY-5045B
Power Supply & Sys. Con P.C Board	CY-5046
Mode Switch P.C Board	CY-5047
Lamp P.C Board	CY-5048
Lamp P.C Board	CM-1034

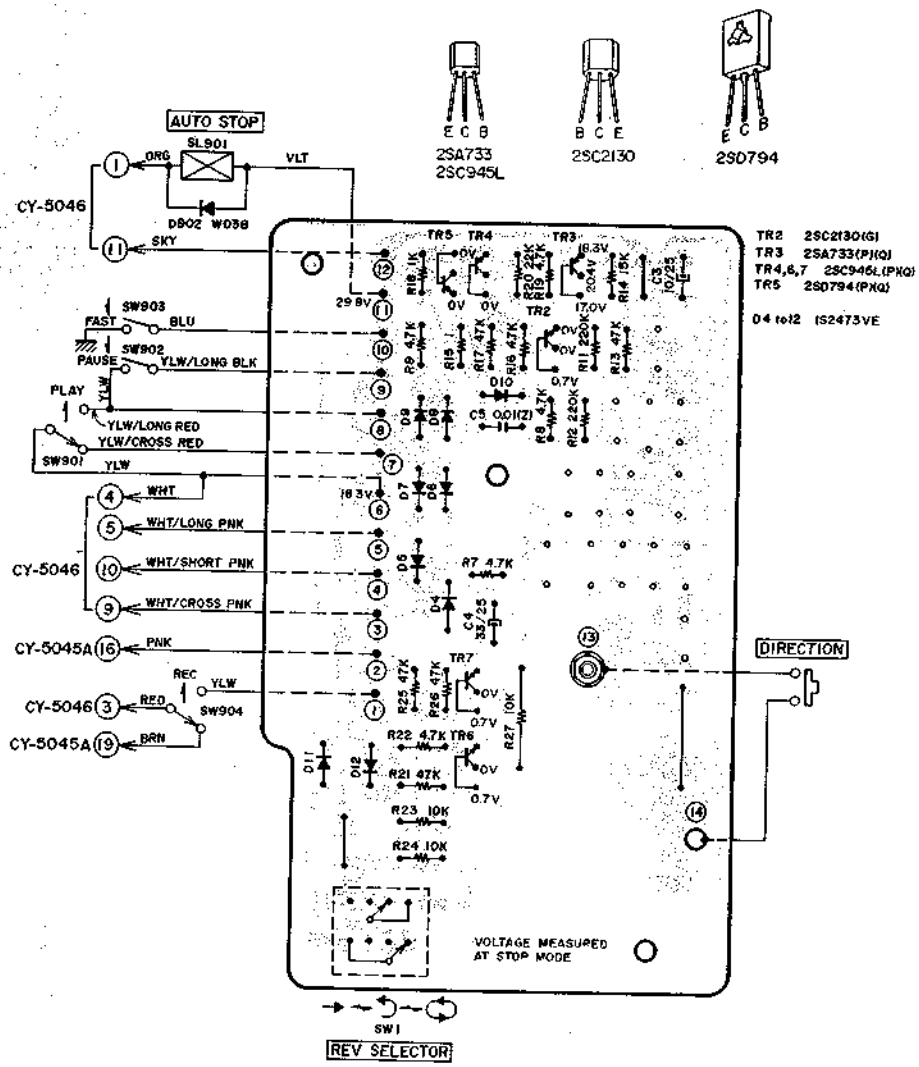
Chart-3

2. COMPOSITION OF VARIOUS P.C BOARDS

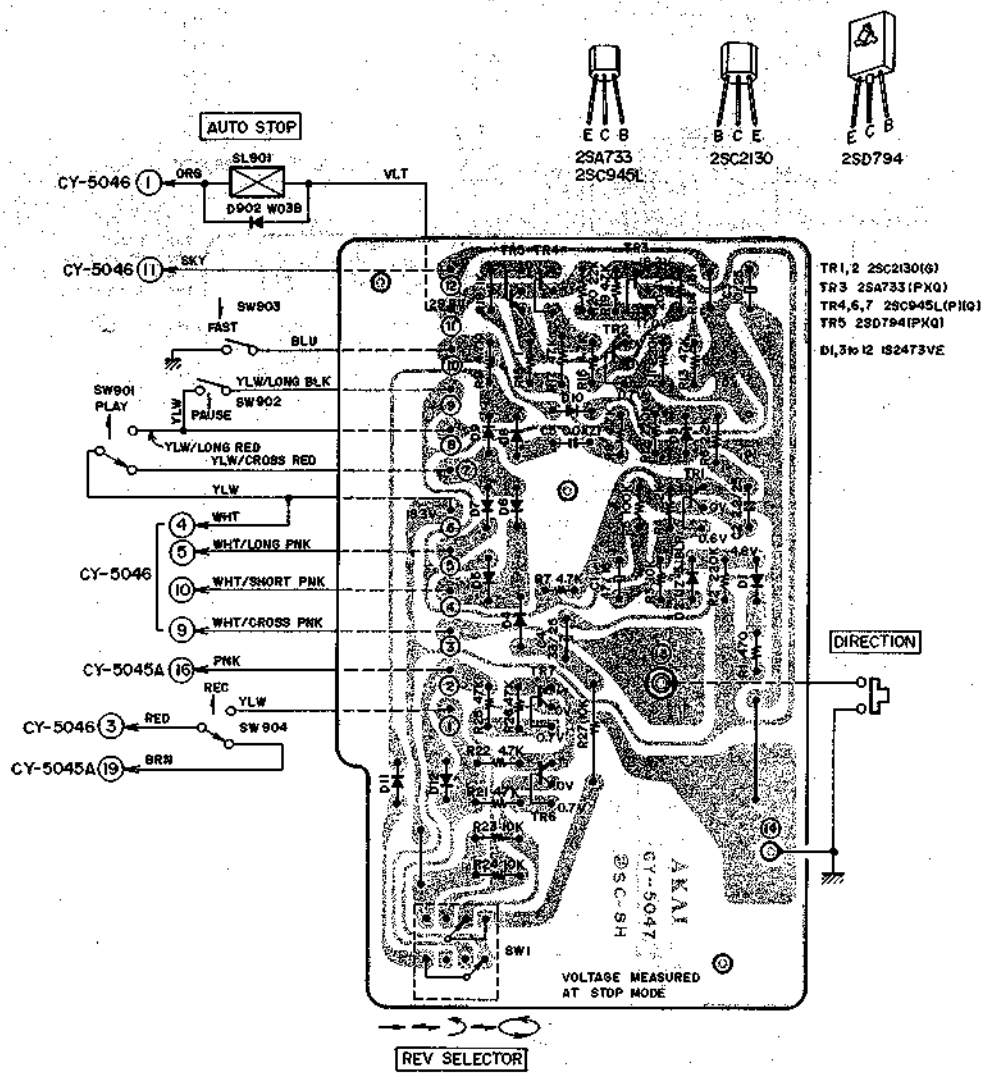
1) AMP P.C BOARD CY-5045A (2ED) and JACK P.C BOARD CY-5045B



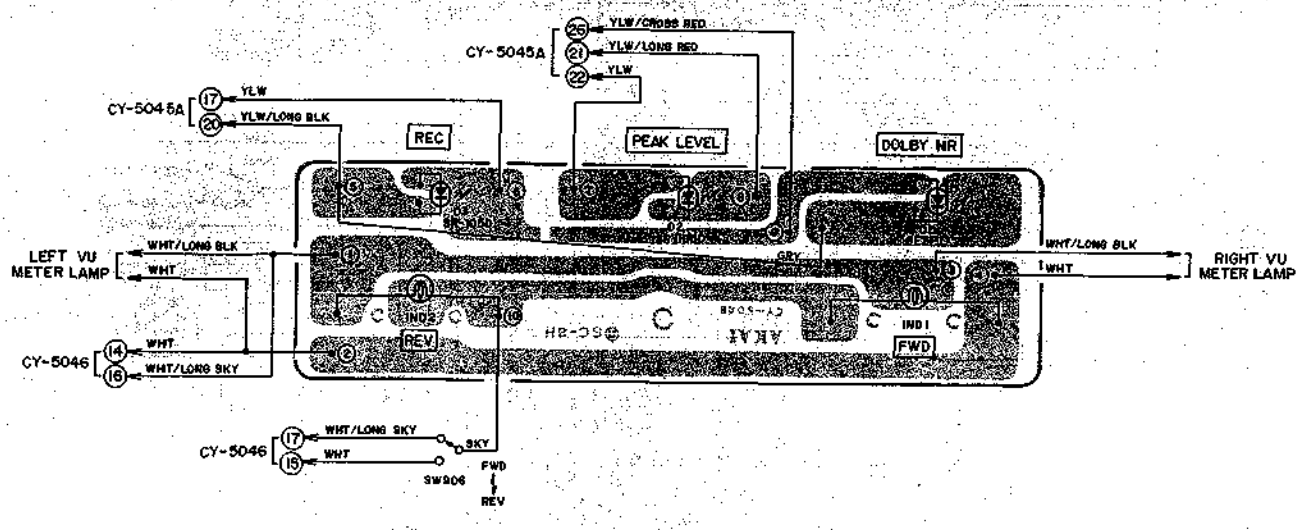
2) MODE SWITCH P.C BOARD CY-5047 (Except JPN Model)



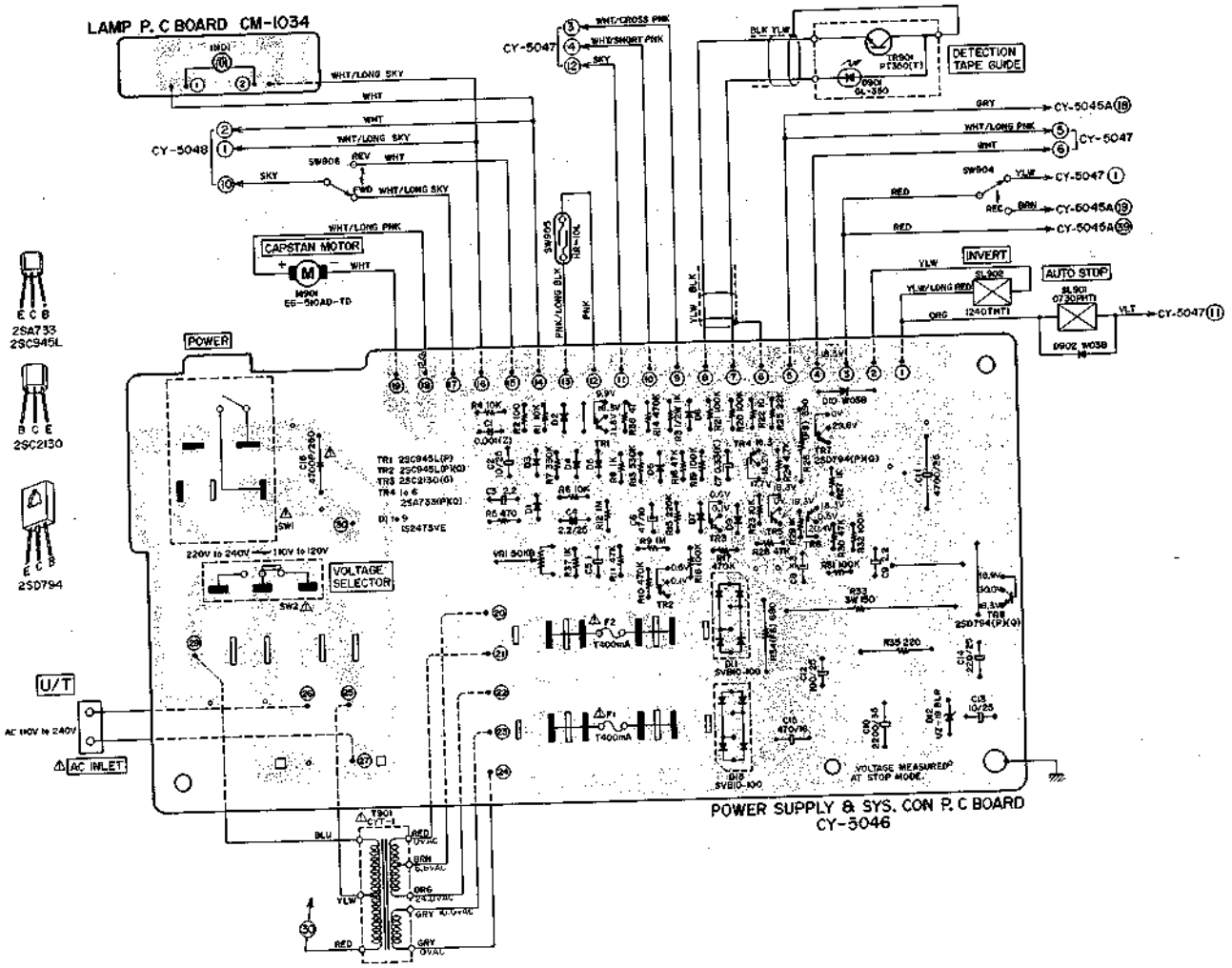
3) MODE SWITCH P.C BOARD CY-5047 (JPN Model)

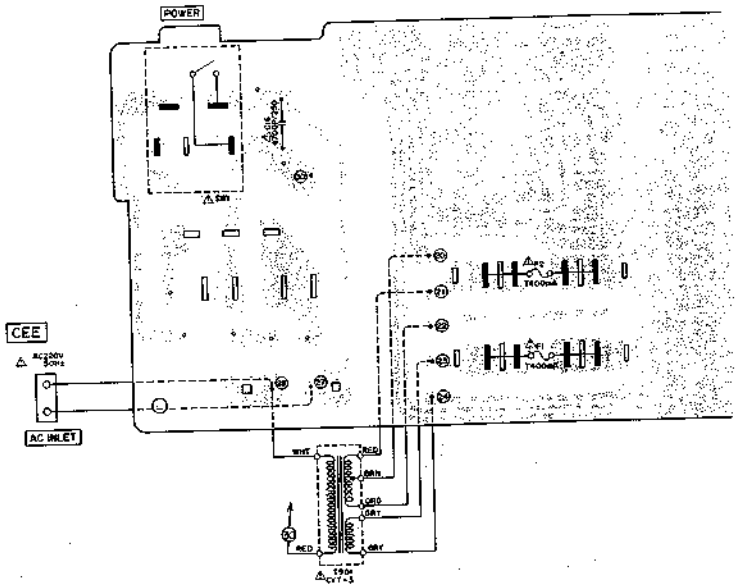


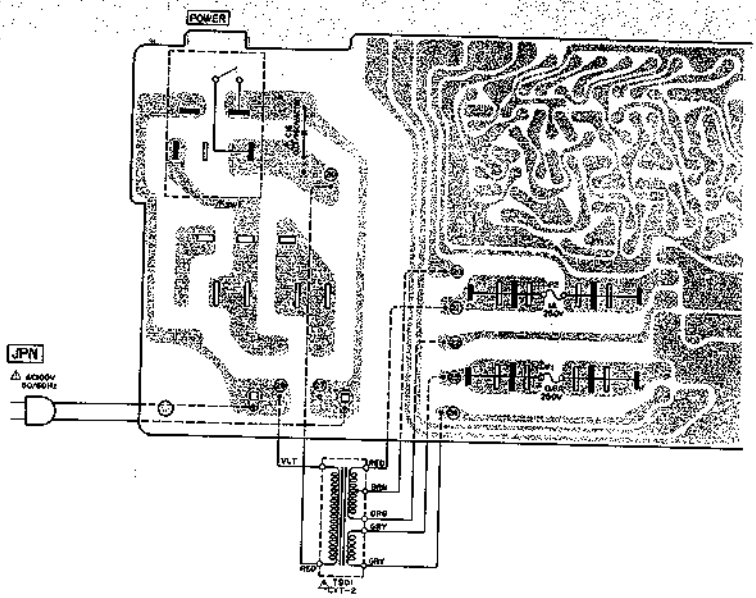
4) LAMP P.C BOARD CY-5048

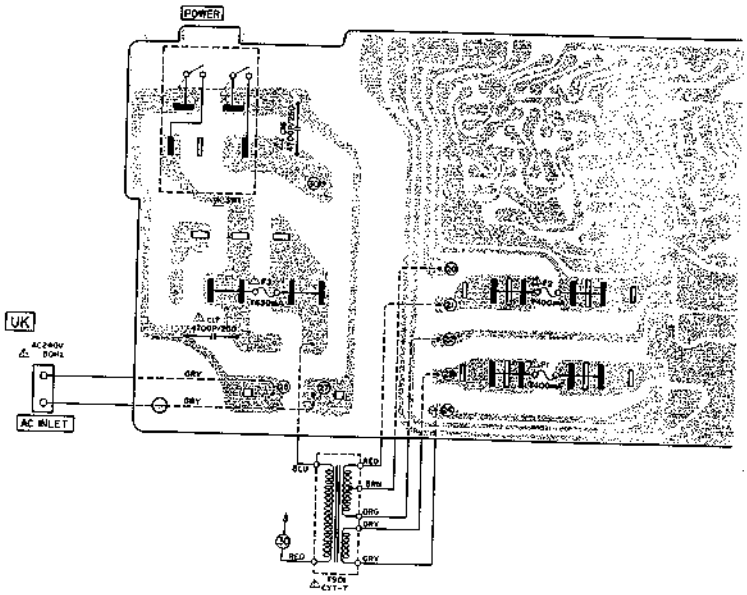


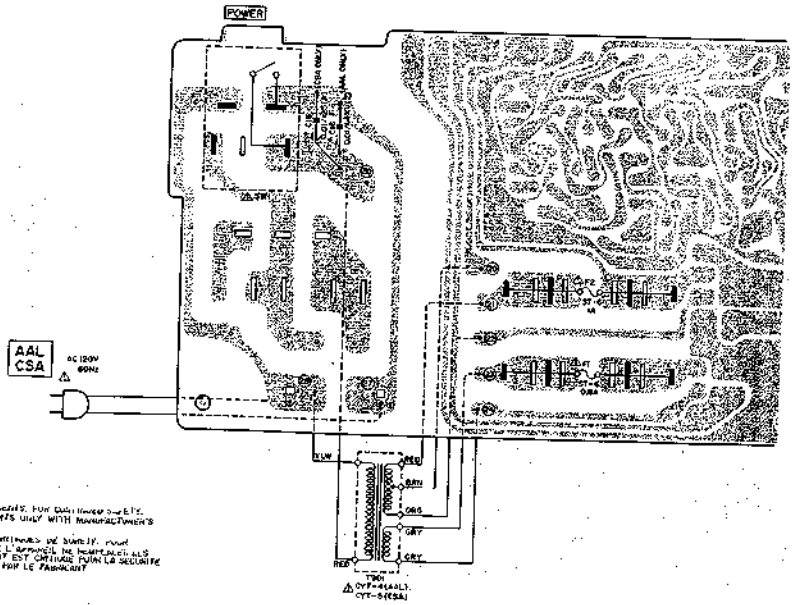
5) POWER SUPPLY & SYS CON P.C BOARD CY-5046 and LAMP P.C BOARD CM-1034






POWER
JPN
AC240V
50/60Hz
VLT
RED
BRN
ORG
GRY
GRY
RED
T50L
CYT-2


POWER
UK
AC240V
50Hz
AC INLET
GRY
GRY
BLU
RED
BRN
ORG
GRY
GRY
RED
T50L
CYT-1


POWER
AAL
CSA
AC120V
60Hz
BLW
RED
BRN
ORG
GRY
GRY
RED
T50H
CYT-2(AAL)
CYT-3(CSA)

SECTION 2

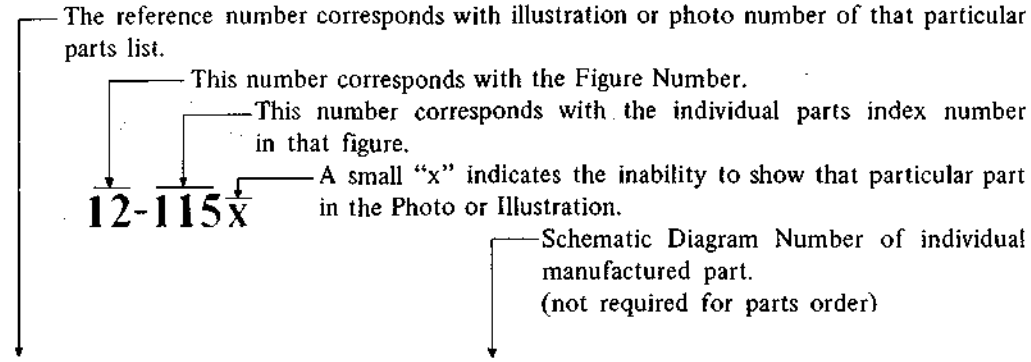
PARTS LIST

TABLE OF CONTENTS

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.
		FLYWHEEL BLOCK #13	
12-115x	800425	Flywheel Block Assy. Comp.	RDG #13
12-116	244506	Flywheel Only	RD-233
12-117x	244754	Felt, Flywheel	RD-275
12-118	251324	Main Metal Case	RD-236
12-119	253080	Main Metal	RD-237

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

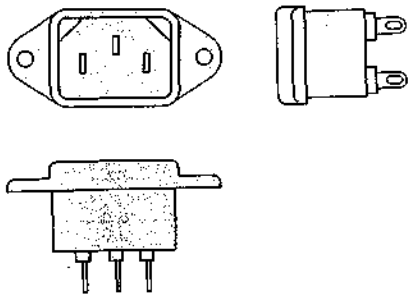
This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.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

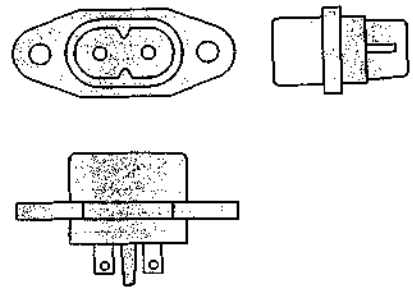
CLASS I

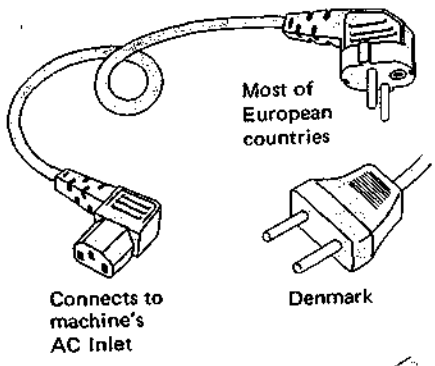
CLASS II

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

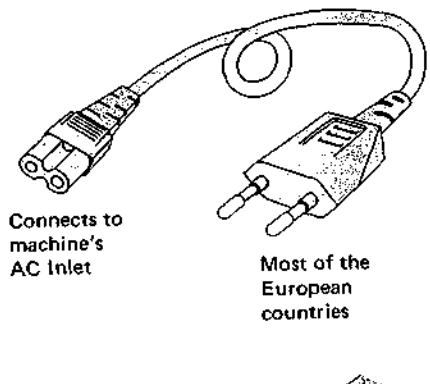


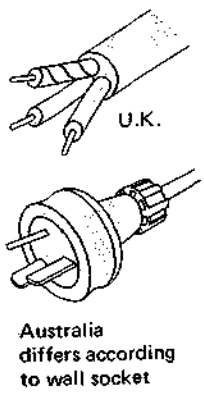
Picture 1
AC INLET to be installed on machines

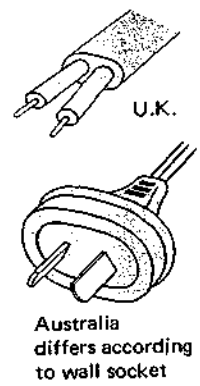




Picture 2
AC (mains) cord







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
	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	EW638144
	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

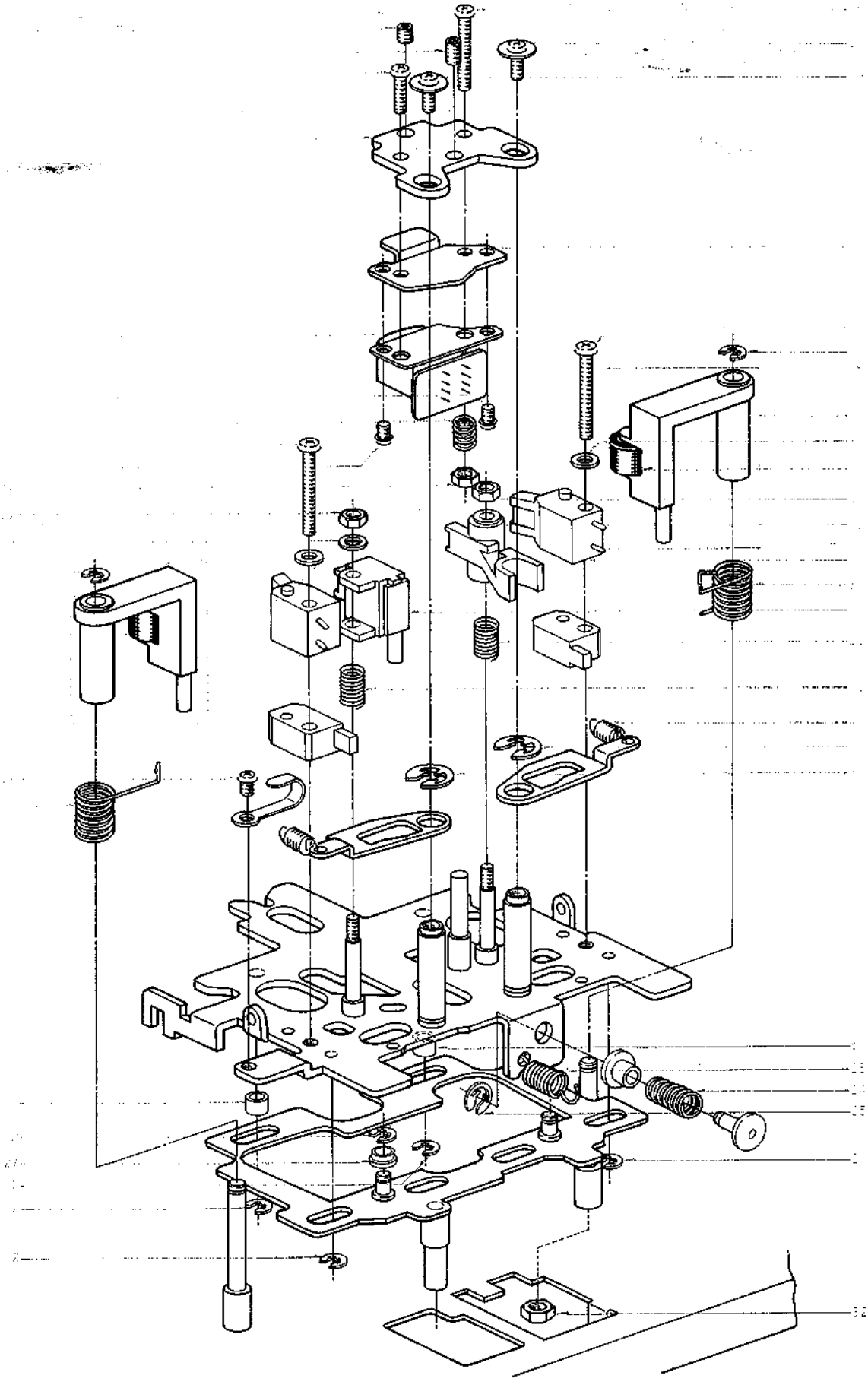
1. RECOMMENDED SPARE PARTS LIST

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	Note
BA311237	Amp P.C Board Comp. CS-7320	
BA311238	Amp P.C Board Comp. CS-732D-J	JPN
BA311262	Mode SW. P.C Board Comp. CS-732D	
BA311263	Mode SW. P.C Board Comp. CS-732D-J	JPN
BA311245	Power & Sys. Con P.C Board Comp. CS-732D (AAL)	AAL
BA311247	Power & Sys. Con P.C Board Comp. CS-732D (BEAB)	UK
BA311246	Power & Sys. Con P.C Board Comp. CS-732D (CEE)	CEE
BA311244	Power & Sys. Con P.C Board Comp. CS-732D (CSA)	CSA
BA311242	Power & Sys. Con P.C Board Comp. CS-732D (U/T)	U/T
BA311243	Power & Sys. Con P.C Board Comp. CS-732D-J	JPN
BF311338	Flywheel (A) Part CS-732D	
BF311337	Flywheel (B) Part CS-732D	
BH311277	Head Base Block Comp. CS-732D	
BK311280	Keyboard Block Comp. CS-732D	
BK311281	Keyboard Block Comp. CS-732D-BL	BL
BK314692	Key Board Block Comp. CS-732D-J	JPN
BL311278	Pinch Roller (L) Block Comp. CS-732D	
BL311279	Pinch Roller (R) Block Comp. CS-732D	
BL310898	Wind Arm Part	
BM311273	Motor Block Comp. CS-732D	
BR310896	Reel Table Part (L)	
BR310897	Reel Table Part (R)	
BT310883	⚠ Power Trans. CYT-1	U/T
BT310884	⚠ Power Trans. CYT-2	JPN
BT310886	⚠ Power Trans. CYT-4	AAL
BT310890	⚠ Power Trans. CYT-5	CSA
BT310885	Power Trans. CYT-3	CEE
BT310887	Power Trans. CYT-7	UK
ED308952	Germanium Diode (Stop. Type) 1K34A-LR	
ED283138	LED GL-3PG1	
ED698826	LED SR-105D	
ED308945	Silicon Diode SVB10-100	
ED306109	Silicon Diode W03B	
ED560913	Silicon Diode 1S2473 VE	
ED310541	Zener Diode (Vert. Type) UZ-198LR	
ED310682	Zener Diode (Vert. Type) UZ-5.1BLR	
EI605013	IC NE545B	
EI306141	IC LA4170	
EL301541	Lamp (Lead Type) 8V 55 MA	
EM305208	VU Meter D34A94R	

Parts No.	Description	Note
EP300424	Plunger 0730PHTI	
EP310336	Plunger 1240THTI	
ES310839	⚠ Push Sw. SDG-1P	U/T, CEE SW1
ES315159	⚠ Push Sw. SDG1P (JPN)	JPN SW1
ES655806	⚠ Push Sw. SDG-1P	CSA SW1
ES665875	⚠ Push Sw. SDG-1P U/L	AAL SW1
ES665807	⚠ Push Sw. SDG-5P 5A/80A 250V	UK SW1
ES305632	Push Sw. SUF-12	SW7
ES651745	Reed Sw. HR-10L	SW905
ES310836	Rotary Slide Sw. SRU-1023S	SW1
ES310829	Rotary Slide Sw. SRZ-V084S	SW6
ES310827	Slide Sw. CL204E	SW4
ES310828	Slide Sw. CL206E	SW5
ES311333	Slide Sw. TSS-012171	SW2
ES310825	Slide Sw. 62186	SW1
ES310826	2 throw Push Sw. SUF24	SW2, 3
ET301464	FET 2SK68 (M) (N)	
ET554657	Transistor 2SA733 (P) (Q)	
ET663243	Transistor 2SC1312S (G)	
ET311868	Transistor 2SC2130 (F) (G)	
ET310832	Transistor 2SC2130 (G)	
ET308937	Transistor 2SC2130 (G) (H)	
ET310833	Transistor 2SC2274K (E)	
ET391768	Transistor 2SC458LG (C) (D)	
ET352146	Transistor 2SC458LG (D)	
ET639437	Transistor 2SC945L (Q) (P)	
ET655356	Transistor 2SD571 (L) (M)	
ET307349	Transistor 2SD794 (P) (Q)	
HE310338	ERASE HEAD HF213111	
HP310339	REC/PB Head HG444804	
MB310715	Capstan Belt	
MB310716	Counter Belt	
MC310892	Counter Part MP-390-325	
MC310893	Counter Part MP-390-325 (BL)	
MC314786	Counter Part MP-390-325B	
MI310894	Take-up Idler (L) Part	
MI310895	Take-up Idler (R) Part	

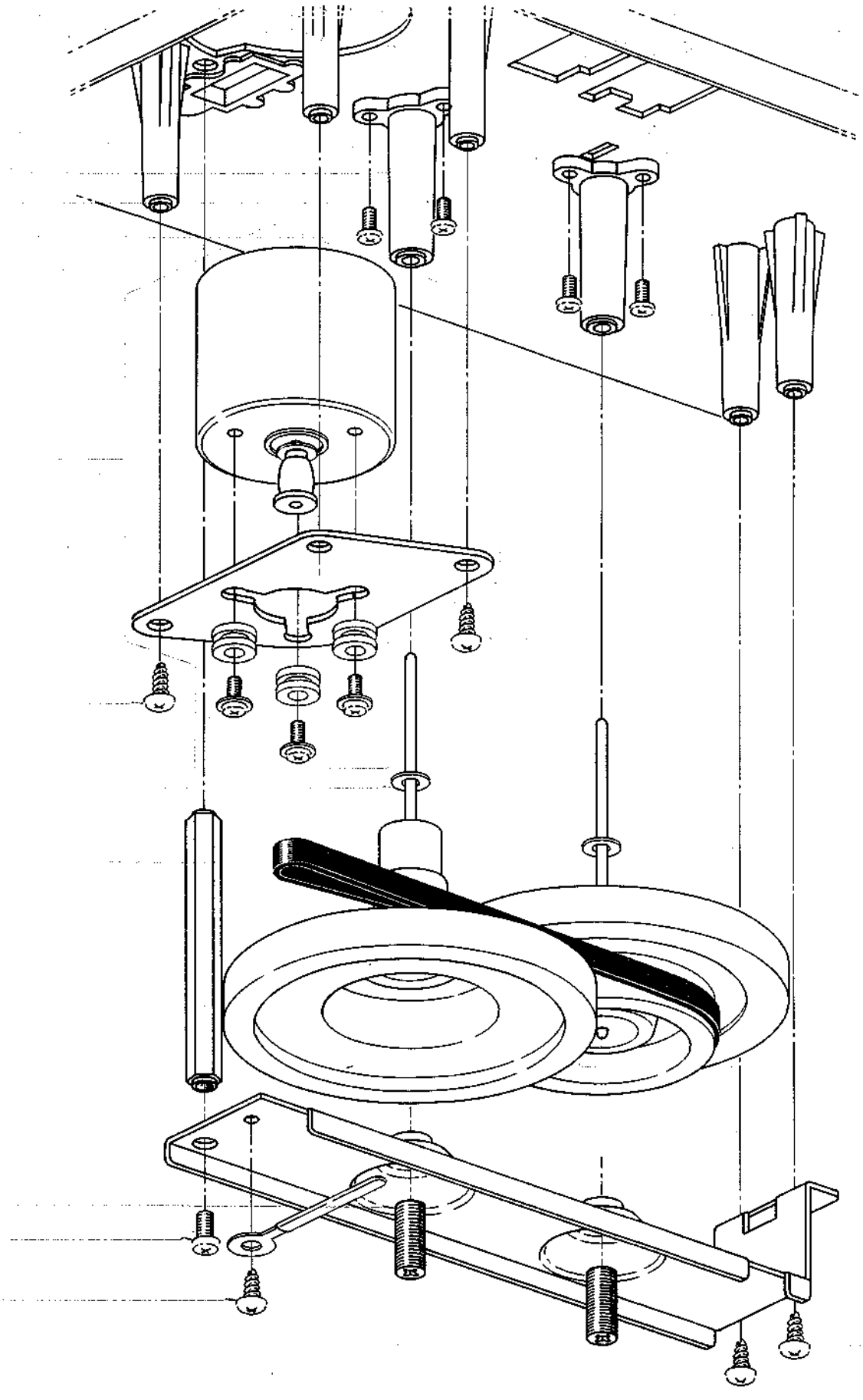
2. ILLUSTRATION OF HEAD BASE BLOCK



2) HEAD BASE BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	HEAD BASE BLOCK		
2-1x	BH311277	Head Base Block Comp. CS-732D	
2-2	ZW270088	'E' Ring 1.9M	6-1-9
2-3	ZW270123	'E' Ring 4M	6-1-9
2-4	ZG310668	Pinch Roller Spring	CY-0019
2-5	MR310663	Roller	CY-0014
2-6	HE310338	ERASE HEAD HF213111	37-2-15
2-7	ZS308931	Screw, 2.6x18 (Pan)	
2-8	ZW313891	Washer D2.7x4.8x1t	
2-9	HZ310654	Head Hanger	CY-0005
2-10	HA310653	PB Head Angle	CY-0004
2-11	ZS434160	Set Screw, Hexagon Socket 3x3 (Cup/P.)	
2-12	ZS433001	Set Screw, Hexagon Socket 3x5 (Cup/P.)	
2-13	ZG465636	Angle Adjust Spring	CG-0029
2-14	ZS487091	Screw, Pan Head 2.3x8	
2-15	ZS670004	Screw, Pan Head 2.3x16	
2-16	ZW273688	Nut M2.3, #1	
2-17	HP310339	REC/PB Head HG444804	37-2-14
2-18	ZS477876	Screw, Pan Head 2x3	
2-19	ZS296482	Screw, Pan Head 2.6x6 PW	
2-20	BZ311452	Detection Tape Guide Block Comp. CS-732D	CY-0024
2-21	ZG387584	Clutch Spring	CS-2008
2-22	ZW609311	Nut M2, #1	
2-23	HZ310666	Tape Guide	CY-0017
2-24	ZG310674	Clamp Spring	CY-0026
2-25	SZ301996	'C' Ring (2)	
2-26	ZS201407	Screw, Pan Head 2.3x3	
2-27	MR310667	Change Plate Roller	CY-0018
2-28	ZG516418	Eject Spring	CG-1238
	PINCH ROLLER (L), (R) BLOCK		
2-29	BL311278	Pinch Roller (L) Block Comp. CS-732D	
2-30	BL311279	Pinch Roller (R) Block Comp. CS-732D	
2-31	BL313549	Pinch Roller Part CS-732D	
2-32	ZW516993	Nut M3, #1	
2-33x	ZW260010	Washer IPBP) D6.1x10x0.1t	
2-34x	ZW270134	'E' Ring 5M	6-1-9
2-35	ZG310694	Pinch Roller Return Spring (A)	CY-1019
2-36	ZG310695	Pinch Roller Return Spring (B)	CY-1019

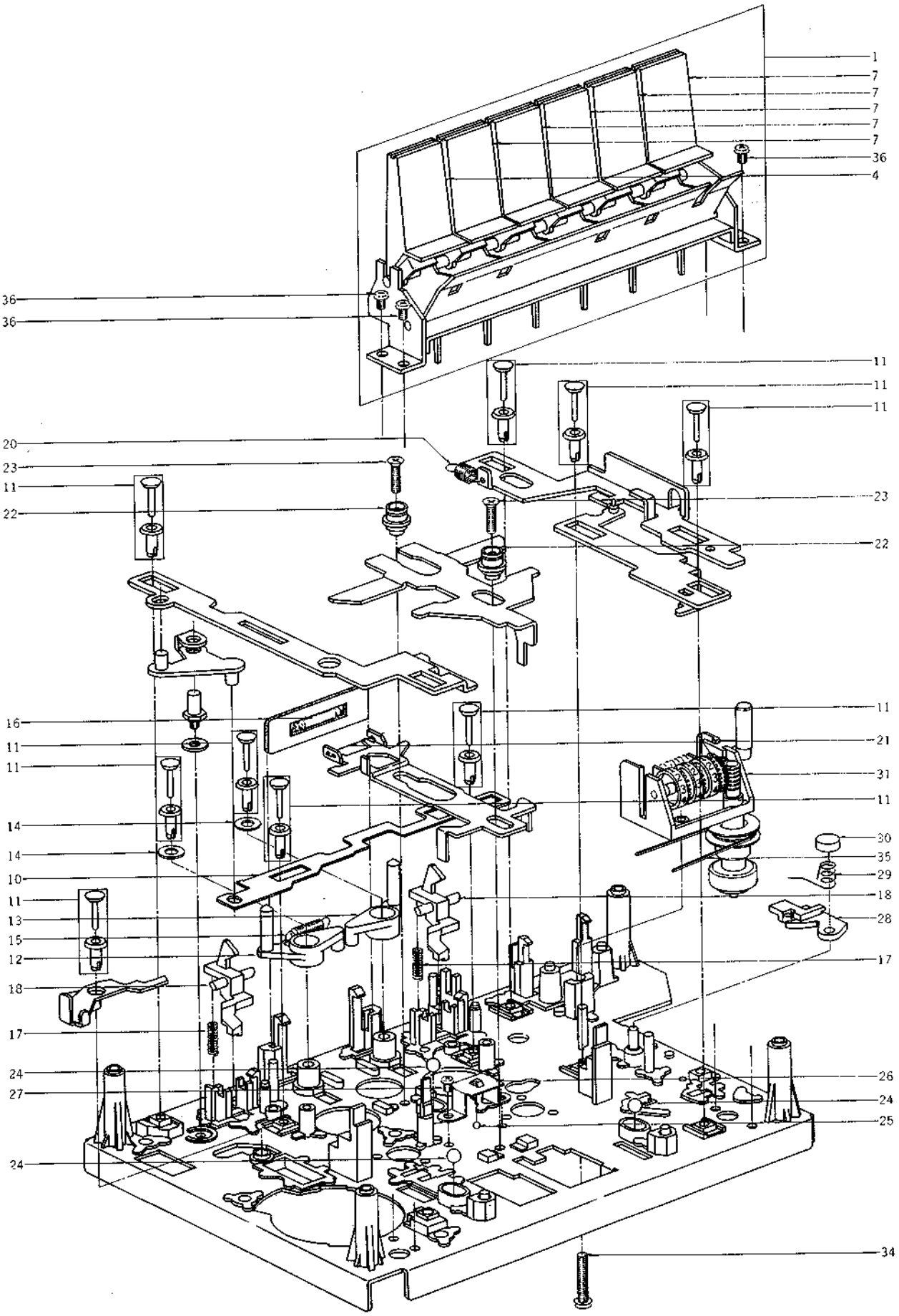
3. ILLUSTRATION OF MOTOR BLOCK



3) MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.
		MOTOR BLOCK	
3-1	BM311273	Motor Block Comp. CS-732D	
		MECHA FRAME BLOCK	
3-2	ZS379350	Screw, Pan Head 3×6	
3-3	ZS325495	Tapping Screw #2, 3×6 (BR)	
3-4	MV309146	Main Case	CY-1042
3-5	ZS479474	Screw, Pan Head 2.6×5	
3-6	ZS447840	Tapping Screw #2, 3×8 (BR)	
3-7	BF311338	Flywheel (A) Part CS-732D	CY-1038
3-8	BF311337	Flywheel (B) Part CS-732D	CY-1039
3-9	ZW309295	Thrust Washer (Nylon)	CY-1037
3-10	MB310715	Capstan Belt	CY-1040
3-11	ZG302318	Holder Screw	CI-1258

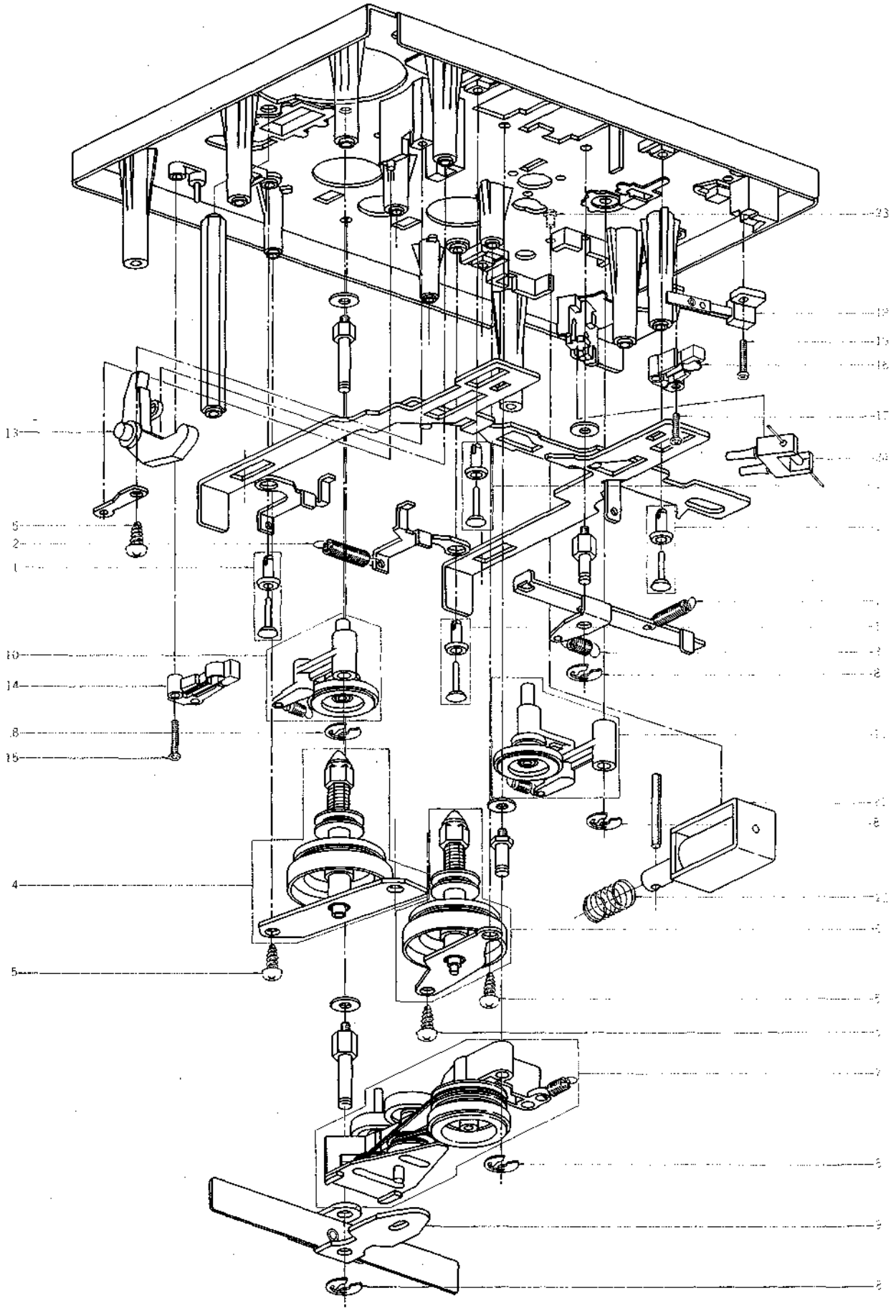
4. ILLUSTRATION OF MECHA FRAME BLOCK (1)



4) MECHA FRAME BLOCK (1)

Ref. No.	Parts No.	Description	Schematic No.
4-1	BK311290	Keyboard Block Comp. CS-732D	
4-2x	BK314692	Keyboard Block Comp. CS-732D-J (JPN)	
4-3x	BK311281	Keyboard Block Comp. CS-732D-B (BL)	
4-4	SK310822	Keyboard Knob (A)	9-3-8
4-5x	SK315235	Keyboard Knob (A) (JPN)	9-3-20
4-6x	SK310820	Keyboard Knob (C) (BL)	9-3-9
4-7	SK310821	Keyboard Knob (B)	9-3-8
4-8x	SK315236	Keyboard Knob (B) (JPN)	9-3-20
4-9x	SK310673	Keyboard Knob (D) (BL)	9-3-9
4-10	ML310677	ANTI-REC Slide	CY-1004
4-11	ZW295907	Nylon Rivet CM-1	2-7-59
4-12	ML286176	Cassette Support (1)	CM-1020
4-13	TC286165	Cassette Support (2)	CM-1021
4-14	ZW460787	Washer(Polyslider) D3.1×8×0.25t	
4-15	ZG394378	Return Spring	CS-2106
4-16	EL301541	Lamp (Lead Type) 8V 55 MA	28-2-65
4-17	ZG315237	REC Safety Spring	CY-1050
4-18	HZ310688	REC Detection Piece	CY-1013
4-19x	ZW290283	'U' Ring 2.85M (JPN)	6-1-1
4-20	ZG313892	Selector Spring	CY-1049
4-21	ZG289934	Cassette Support Spring	CM-1032
4-22	TC310696	Play Guide	CY-1020
4-23	ZS310344	Screw, Countersunk Head 2.6×10	
4-24	MV592356	Steel Ball D5	
4-25	MV357208	Steel Ball D2	
4-26	ZG310687	Head Spring	CY-1012
4-27	ZS592378	Screw, Pan Head 2.6×3	
4-28	TC289675	Lock Cam	CM-1041
4-29	ZG289822	Lock Cam Spring	CM-1030
4-30	TC282396	Cap	CN-1055
4-31	MC310892	Counter Part MP-390-325	9-1-64
4-32x	MC314786	Counter Part MP-390-325B (JPN)	9-1-71
4-33x	MC310893	Counter Part MP-390-325 (BL)	9-1-65
4-34	ZS593201	Screw, Pan Head 3×16	
4-35	MB310716	Counter Belt	CY-1041
4-36	ZS432843	Screw, Pan Head 2.6×4	

5. ILLUSTRATION OF MECHA FRAME BLOCK (2)



5) MECHA FRAME BLOCK (2)

Ref. No.	Parts No.	Description	Schematic No.
5-1	ZW295907	Nylon Rivet CM-1	2-7-59
5-2	ZG232121	Tension Lever Spring	MH-143
5-3	ZG580252	Rock Plate A Spring	TD-2015
5-4	BR310896	Reel Table Part (L)	9-3-5
5-5	ZS447840	Tapping Screw #2, 3×8 (BR)	
5-6	BR310897	Reel Table Part (R)	9-3-6
5-7	BL310898	Wind Arm Part	9-3-7
5-8	ZW290283	'U' Ring 2.85M	6-1-1
5-9	ML311339	Neutral Lever Part CS-732D	CY-1026
5-10	MI310894	Take-up Idler (L) Part	13-2-44
5-11	MI310895	Take-up Idler (R) Part	13-2-45
5-12	ZG359638	FF Idler Wheel (A) Spring	PX-146
5-13	ML310706	REC Lever	CY-1029
5-14	ES295773	Skeleton SW. MSW-S201U	25-1-43
5-15	ZS306126	Screw, Pan Head 2×12	
5-16	ES310347	Skeleton SW. MSW-S101U	25-1-53
5-17	ZS310337	Screw, Pan Head 2×8	
5-18	ES310348	Leaf SW. BSW-31CA0	25-10-35
5-19	ZS313856	Screw, Binding Head 2×12	
5-20	EP300424	Plunger 0730PHTI	44-1-88
5-21x	ED306109	Silicon Diode W03B	45-2-78
5-22	ZG310717	Plunger Spring	CY-1043
5-23	ZS592378	Screw, Pan Head 2.6×3	
5-24	ES651745	Reel SW. HR-10L	25-11-2

6. P.C BOARDS

(1) AMP P.C BOARD BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(1)-1	BA311237	Amp P.C Board Comp. CS-732D	
(1)-2	BA311238	Amp P.C Board Comp. CS-732D-J (JPN)	
(1)-IC1	EI605013	IC NE545B	45-8-117
(1)-IC2	EI306141	IC LA4170	45-8-305
(1)-TR1	ET352146	Transistor 2SC458LG(D)	45-1-29
(1)-TR2	ET663243	Transistor 2SC1312S(G)	45-1-182
(1)-TR3	ET391768	Transistor 2SC458LG(C)(D)	45-1-29
(1)-TR4	ET639437	Transistor 2SC945L(Q) (P)	45-1-85
(1)-TR5	ET301464	FET 2SK68(M)(N)	45-12-14
(1)-TR6	ET308937	Transistor 2SC2130(G)(H)	45-1-317
(1)-TR7,8	ET310832	Transistor 2SC2130(G)	45-1-317
(1)-TR9	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR10,11	ET310833	Transistor 2SC2274K(E)	45-1-335
(1)-TR12	ET655356	Transistor 2SD571(L)(M)	45-1-218
(1)-TR13	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(1)-TR14	ET311868	Transistor 2SC2130(F)(G)	45-1-317
(1)-D1	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D2	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-D3,4	ED308952	Germanium Diode (Stop. Type) 1K34A-LR	45-3-47
(1)-D5	ED560913	Silicon Diode 1S2473 VE	45-3-23
(1)-VR2	EV301437	Single Axial throw Vol. GM70R-715 B10KX2	36-22-28
(1)-VR3,4	EV305636	Semi-fixed/Vol. D8 Axial Type 50 kB	36-10-273
(1)-VR5,6	EV522797	Semi-fixed/Vol. D8 Axial Type 20 kB	36-10-273
(1)-VR7	EV305635	Semi-fixed/Vol. D8 Axial Type 5 kB	36-10-273
(1)-VR8,9	EV648527	Semi-fixed/Vol. D10 Axial Type 200kB	36-10-274
(1)-T1	EO310831	OSC Coil OSM-001	23-4-48
(1)-FL1	ER309361	Dolby Filter D07-002	53-1-143
(1)-FL2	ER309119	Dolby Filter D07-001	53-1-143
(1)-FL3	EO310875	Trap Coil 7AAP-0316	23-1-296
(1)-VL1	EO692741	Ferri Inductor 33Y-740	23-1-254
(1)-J1	EJ305738	4P Pin Jack	31-5-140
(1)-J2	EJ305739	Mic Jack JU2	31-2-89
(1)-J3	EJ305629	Headphone Jack JL3A	31-2-90
(1)-SW1	ES310825	Slide SW. 62186	25-3-152
(1)-SW2,3	ES310826	2 throw Push SW. SUF24	25-5-295
(1)-SW4	ES310827	Slide SW. CL204E	25-3-153
(1)-SW5	ES310828	Slide SW. CL206E	25-3-154
(1)-SW6	ES310829	Rotary Slide SW. SRZ-V084S	25-6-155
(1)-SW7	ES305632	Push SW. SUF-12 (JPN)	25-5-278
(1)-R37	ER306639	Metal Oxide Film/R. (Homing Type) 3W 100 ohms (J)	35-11-23
(1)-R84	ER306961	Metal Oxide Film/R. (Homing Type) 2W 150 ohms (J)	35-11-22
(1)-C1	EC311867	Styrol/C. (Homing Type) 390PF (J) 50WV	24-11-14
(1)-C3	EC306988	Styrol/C. (Homing Type) 330PF (J) 50WV	24-11-14
(1)-C15	EC305677	Styrol/C. (Homing Type) 200PF (K) 50WV	24-11-14
(1)-C42	EC306980	Styrol/C. 220PF(J) 50WV	24-11-14
(1)-C48	EC310599	Styrol/C. (Homing Type) 390PF (K) 50WV	24-11-14
(1)-C59	EC310835	Styrol/C. (Homing Type) 1600PF (J) 500WV	24-11-16
(1)-3	ZS422076	Screw, Pan Head 3x5	

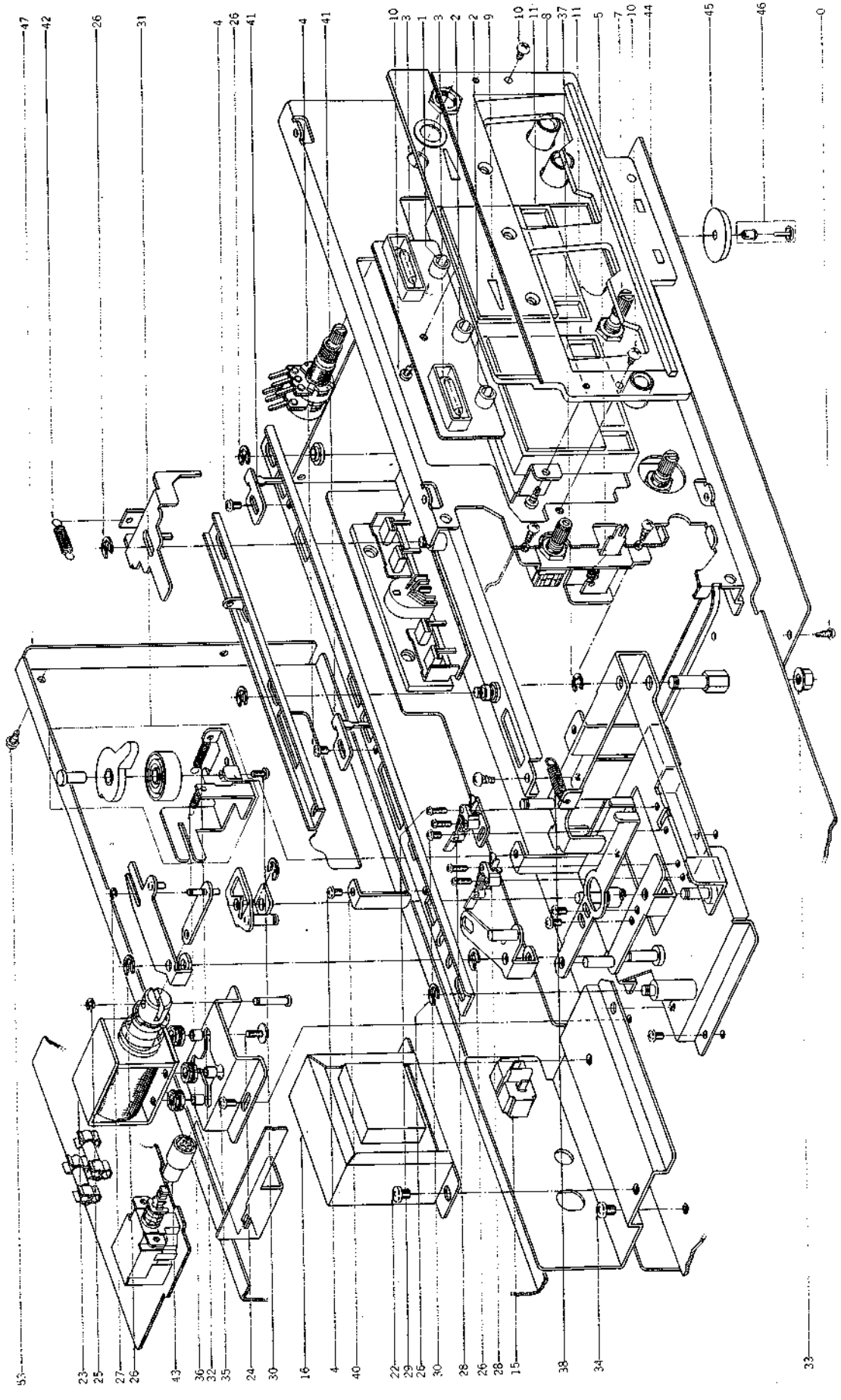
(2) POWER & SYS. CON P.C BOARD BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(2)-1	BA311242	Power & Sys. Con P.C Board Comp. CS-732D (U/T)	
(2)-2	BA311243	Power & Sys. Con P.C Board Comp. CS-732D-J	
(2)-3	BA311244	Power & Sys. Con P.C Board Comp. CS-732D (CSA)	
(2)-4	BA311245	Power & Sys. Con P.C Board Comp. CS-732D (AAL)	
(2)-5	BA311246	Power & Sys. Con P.C Board Comp. CS-732D (CEE)	
(2)-6	BA311247	Power & Sys. Con P.C Board Comp. CS-732D (BEAB)	
(2)-TR1	ET638504	Transistor 2SC945L(P)	45-1-85
(2)-TR2	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(2)-TR3	ET310832	Transistor 2SC2130(G)	45-1-317
(2)-TR4to6	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(2)-TR7	ET307349	Transistor 2SD794(P)(Q)	45-1-334
(2)-TR8	ET307349	Transistor 2SD794(P)(Q)	45-1-334
(2)-D1to9	ED560913	Silicon Diode 1S2473 VE	45-3-23
(2)-D10	ED306109	Silicon Diode W03B	45-2-78
(2)-D11	ED308945	Silicon Diode SVB10-100	45-2-82
(2)-D12	ED310541	Zener Diode (Vert. Type) UZ-19BLR	45-6-85
(2)-D13	ED308945	Silicon Diode SVB10-100	45-2-82
(2)-VR1	EV305636	Semi-fixed/Vol. D8 Axial Type 50 kB	36-10-273
(2)-SW1	ES310839	⚠ Push SW. SDG-1P (U/T, CEE)	25-5-310
(2)-SW1	ES315159	⚠ Push SW. SDG1P(JPN)	25-5-330
(2)-SW1	ES655806	⚠ Push SW. SDG1P(CSA)	25-5-187
(2)-SW1	ES665875	⚠ Push SW. SDG-1P U/L (AAL)	25-5-199
(2)-SW1	ES665807	⚠ Push SW. SDG-5P 5A/80A 250V (UK)	25-5-182
(2)-SW2	ES311333	⚠ Slide SW. TSS-012171 (U/T)	25-3-118
(2)-R26	ER310842	Carbon/R.(Homing Type) F 1/4W 390 ohms (J)	35-11-25
(2)-R33	ER310844	Metal Oxide Film/R. (Homing Type) 3W 150 ohms (J)	35-11-23
(2)-R34	ER310843	Carbon/R.(Homing Type) F 1/4W 680 ohms (J)	35-11-25
(2)-C4	EC310845	NP/C. (Homing Type) 2.2μF (M) 25WV	24-17-31
(2)-C10	EC295997	Elect./C. (Vert. Type) 2200μF 35WV	24-12-9
(2)-C11	EC310846	Elect./C. (Vert. Type) 4700μF (M) 35WV	24-12-37
(2)-C16	EC301320	⚠ MP/C. 4700PF (M) 250WV	24-9-122
(2)-C16	EC310542	⚠ Polypro. Film/C. 0.01μF (M) 160VAC	24-22-2
(2)-C16	EC294118	⚠ Ceramic/C. DPN6600 YM 0.01μF (P) 125WV	24-5-70
(2)-C16	EC551160	⚠ Ceramic/C. DB821 NA 0.01μF(Z) 1.4KWV	24-5-55
(2)-C17	EC301320	⚠ MP/C. 4700PF (M) 250WV	24-9-122
(2)-7	ZS421806	Screw, Pan Head 3x8	
(2)-8	ZS379350	Screw, Pan Head 3x6	
(2)-9	ZS558101	Screw, Pan Head 3x6 (w/washer)	

(3) MODE SW. P.C BOARD BLOCK

Symbol No.	Parts No.	Description	Schematic No.
(3)-1	BA311262	Mode SW. P.C Board Comp. CS-732D	
(3)-2	BA311263	Mode SW. P.C Board Comp. CS-732D-J	
(3)-TR1,2	ET310832	Transistor 2SC2130(G) (JPN)	45-1-115
(3)-TR3	ET554657	Transistor 2SA733(P)(Q)	45-1-124
(3)-TR4	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(3)-TR5	ET307349	Transistor 2SD794(P)(Q)	45-1-334
(3)-TR6,7	ET639437	Transistor 2SC945L(Q)(P)	45-1-85
(3)-D1	ED560913	Silicon Diode 1S2473 VE (JPN)	45-3-23
(3)-D2	ED310682	Zener Diode (Vert. Type) UZ-5.1BLR (JPN)	45-6-85
(3)-D3toD12	ED560913	Silicon Diode 1S2473 VE (JPN)	45-3-23
(3)-SW1	ES310836	Rotary Slide SW. SRU-1023S	25-6-156
(3)-C2	EC310845	NP/C. (Homing Type) 2.2μF (M) 25WV (JPN)	24-17-31
(3)-3	ZS302720	Screw, Flat Head 3x6 (Black)	
(3)-4	ZW516611	Nut M3	

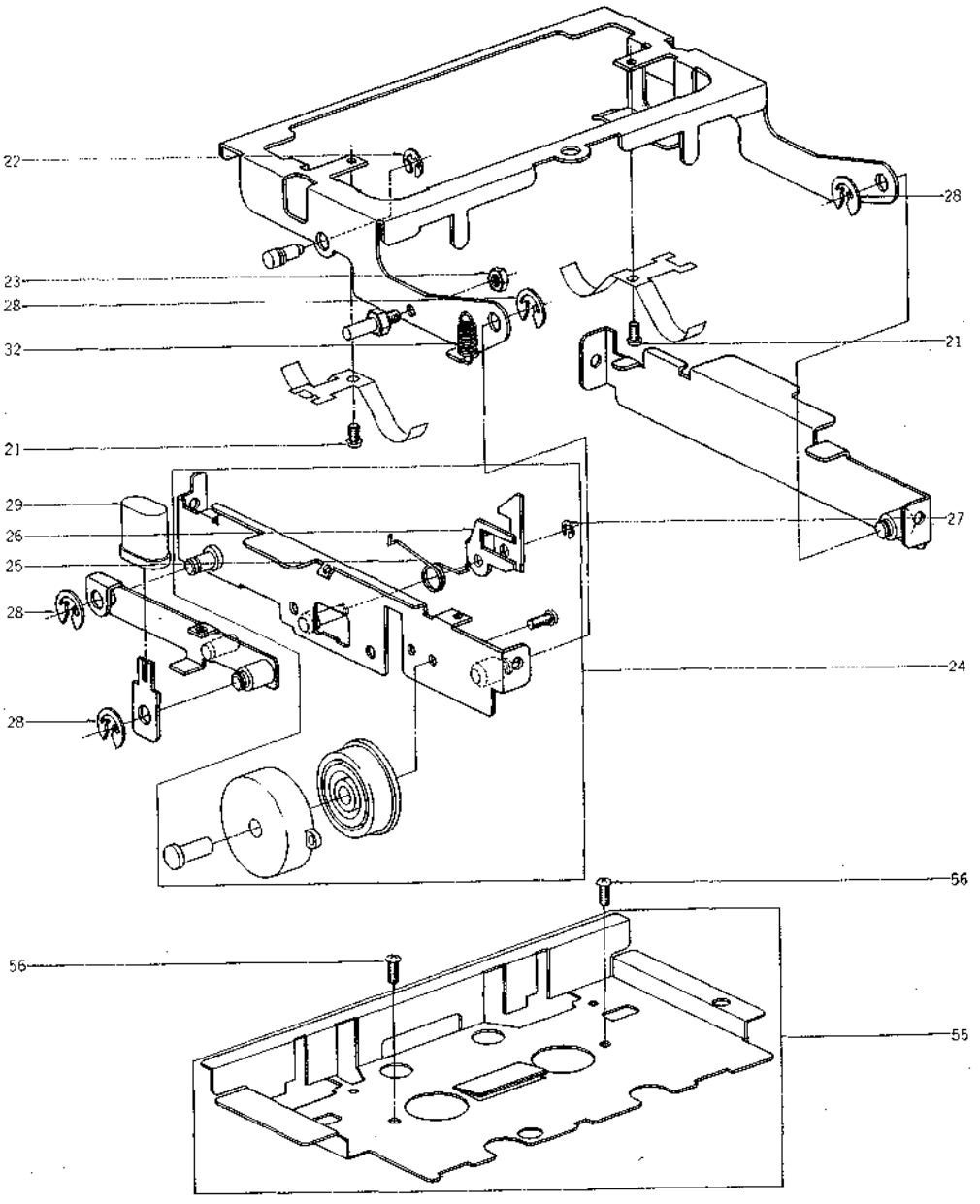
7. ILLUSTRATION OF AMP CHASSIS BLOCK



7) AMP CHASSIS BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	LAMP P.C BOARD		
7-1	ED283138	LED GL-3PG1	45-15-15
7-2	ED698826	LED SR-105D	45-15-16
7-3	EL301541	Lamp (Lead Type) 8V 55 MA	28-2-65
	MODE SW. BLOCK		
7-4	ZS422076	Screw, Pan Head 3×5	
7-5	ZG456120	Setting Lever Spring	CS-1187
	FRONT CHASSIS BLOCK		
7-6	ZS325495	Tapping Screw #2, 3×6 (BR)	
7-7	EV309418	Double Axial 2 throw Vol. DM20R A50KX2	36-18-11
7-8	SE310777	Meter Escutcheon	CY-6010,6011
7-9	TC310796	Direction Plate	CY-6031
7-10	ZS447840	Tapping Screw #2, 3×8 (BR)	
7-11	EM305208	VU Meter D34A94R	46-1-177
	POWER TRANS. BASE BLOCK		
7-12x	EW306427	⚠ AC Cord (JPN)	26-3-63
7-13x	EW305691	⚠ AC Cord CUL (CSA, AAL)	26-3-65
7-14x	EZ631945	⚠ Strain Relief SR-4N-4 (JPN, CSA, AAL)	2-7-49
7-15	EJ301513	⚠ 2P Inlet (U/T, CEE, UK)	31-1-200
7-16	BT310883	⚠ Power Trans. CYT-1 (U/T)	38-4-634
7-17x	BT310884	⚠ Power Trans. CYT-2 (JPN)	38-4-635
7-18x	BT310890	⚠ Power Trans. CYT-5 (CSA)	38-4-645
7-19x	BT310886	⚠ Power Trans. CYT-4 (AAL)	38-4-637
7-20x	BT310885	⚠ Power Trans. CYT-3 (CEE)	38-4-636
7-21x	BT310887	⚠ Power Trans. CYT-7 (UK)	38-4-640
7-22	ZS301398	S-tight Screw, 4×8 (Bind)	
	PLUNGER BLOCK		
7-23	EP310336	Plunger 1240THTI	44-1-103
7-24	ZS608332	Screw, Pan Head 3×8, w/washer	
7-25	ZW270088	'E' Ring 1.9M	6-1-9
	REVERSE SW. BASE BLOCK		
7-26	ZW290283	'U' Ring 2.85M	6-1-1
7-27	ZW270101	'E' Ring 3M	6-1-9
7-28	ES295784	Skeleton SW. MSW-S202U	25-1-42
7-29	ZS484918	Screw, Pan Head 2×8	
7-30	ZS479474	Screw, Pan Head 2.6×5	
7-31	TC311236	Oil Clutch Assy CS-732D	CY-5049
7-32	ZG542204	Spring A	CZ-1010
7-33	ZW413267	Flange Nut M4	
7-34	ZS313796	S-right Screw 4×6 (Bind)	
7-35	ZS300506	S-tight Screw 3×5 (Pan)	
7-36	ZG310760	Cam Spring	CY-5043
7-37	ZW270123	'E' Ring 4M	6-1-9
7-38	ZG310768	REC Spring	CY-5050
7-39x	ZW263946	Nylon Rivet 4×5	2-7-57
7-40	ML310731	SW. Lever (A)	CY-5014
7-41	ML310732	SW. Lever (B)	CY-5015
7-42	ZG389992	Head Base Return Spring	CS-0020
7-43	TC289484	SW. Joint	CM-6015
	FINAL ASSEMBLY BLOCK		
7-44	SP313806	Bottom Plate (B)	CY-5051
7-45	SA313811	Rubber Foot	CY-6046
7-46	ZW231030	Nylon Rivet (FNRP) 3×4.5 (Black)	2-7-54
7-47	SP310815	Rear Panel (U-2) (C/T)	CN-6324/CY-6035
7-48x	SP310810	Rear Panel (J-2) (JPN)	CN-6324/CY-6033
7-49x	SP310812	Rear Panel (C-2) (CEE)	CN-6324/CY-6034
7-50x	SP310811	Rear Panel (A-2) (CSA)	CN-6324/CY-6033
7-51x	SP310813	Rear Panel (E-2) (CEE)	CN-6324/CY-6034
7-52x	SP310816	Rear Panel (B-2) (UK)	CN-6324/CY-6035
7-53	ZS447761	Tapping Screw #2, 3×6 (BR) (Black)	
7-54x	EF668474	⚠ Fuse (SEMKO T-type) 400MAT	39-1-53
7-55x	EF668474	⚠ Fuse (SEMKO T-type) 400MAT	39-1-53
7-56x	EF575932	⚠ Fuse 0.8A 250V	39-1-50
7-57x	EF563681	⚠ Fuse 1A 250V	39-1-50
7-58x	EF310146	⚠ Fuse ST-6 0.8A	39-1-63
7-59x	EF277402	⚠ Fuse ST-6 1A	39-1-63
7-60x	EF668474	⚠ Fuse (SEMKO T-type) 400MAT	39-1-53
7-61x	EF668474	⚠ Fuse (SEMKO T-type) 400MAT	39-1-53
7-62x	EF601942	⚠ Fuse (SEMKO T-type) 630MAT (UK)	39-1-53
7-63x	EW306152	⚠ AC Cord Set U/T-type 2(U/T)	26-3-71

8. ILLUSTRATION & PHOTO OF FINAL ASSEMBLY BLOCK



8) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
		FRONT PANEL BLOCK	
8-1	BD311283	Front Panel Block Comp. CS-732D (U/T, CSA, AAL, CEE, UK)	
8-2x	BD311284	Front Panel Block Comp. CS-732D-J (JPN)	
8-3x	BD311285	Front Panel Block Comp. CS-732D-BL (BL)	
8-4	SE310781	Counter Escutcheon	CY-6016
8-5	SE310780	Direction Escutcheon	CY-6015
8-6	SE308529	Button Escutcheon (A)	CY-6013
8-7	SE309648	Button Escutcheon	CY-6014
8-8	SE306143	Button Escutcheon (A)	CN-6308
8-9	SZ310778	Meter Cover	CY-6012
8-10x	SE305651	Button Escutcheon (B)	CN-6352
8-11x	SE310782	Counter Escutcheon (BL)	CY-6016
8-12x	SE306144	Button Escutcheon (A-BL)	CN-6308
8-13	SE310775	Keyboard Escutcheon	CY-6008,6009
8-14x	SE310776	Keyboard Escutcheon (BL)	CY-6008,6009
8-15x	ZS666336	Tapping Screw #2, 3×8 (Pan)	
8-16x	ZG305657	Button Spring	CN-6310
8-17	SK305653	Push Button (A) (U/T, CSA, AAL, CEE, UK)	CN-6309
8-18x	SK314617	Push Button (E) (JPN)	CN-6309
8-19x	SK305656	Push Button (D) (BL)	CN-6309
8-20x	ZG282690	Set Spring	CN-6009
8-21	ZS201407	Screw, Pan Head 2.3×3	
8-22	ZW270101	'E' Ring 3M	6-1-9
8-23	ZW516611	Nut M3	
8-24	TC311289	Eject Damper Assy CS-732D	CY-6038
8-25	ZG310803	Lock Spring	CY-6044
8-26	MZ310790	Lock Plate	CY-6026
8-27	ZW270088	'E' Ring 1.9M	6-1-9
8-28	ZW290283	'U' Ring 2.85M	6-1-1
8-29	SK305674	Power SW. Cap	CN-6338
8-30x	SK314618	Power SW. Cap (B) (JPN)	CN-6338
8-31x	SK306130	Power SW. Cap (BL)	CN-6338
8-32	ZG310804	Eject Spring	CY-6045
8-33x	ZS422076	Screw, Pan Head 3×5	
8-34	SZ310774	Lid Cover	CY-6007
8-35x	ZW302909	Nylon Rivet(FNPR) 3×3.5(Black)	2-7-54
		FINAL ASSEMBLY BLOCK	
8-36	BC305744	Upper Cover (A)	CN-6323
8-37x	BC305743	Upper Cover (B) (AAL)	CN-6323
8-38	ZS310588	S-right Screw 4×8 (Bind)(Black)	
8-39x	ZS447761	Tapping Screw #2, 3×6 (BR) (Black)	
8-40	SK310808	Direction Knob	CY-6018
8-41x	SK314700	Direction Knob (B) (JPN)	CY-6018
8-42x	SK310809	Direction Knob (BL)	CY-6018
8-43	SK305671	Selector Knob	CN-6337
8-44x	SK314701	Selector Knob (JPN)	CY-6047
8-45x	SK305672	Selector Knob (BL)	CN-6337
8-46	SK311310	Single Knob Part CS-732D	CY-6017
8-47x	SK314689	Single Knob (B) Part CS-732D-J	CY-6048
8-48x	SK311311	Single Knob (BL) Part CS-732D-BL	CY-6017
8-49	SK311312	Double Knob (Upper) Part CS-732D	CY-6019
8-50x	SK314690	Double Knob (Upper-B) Part CS-732D-J	CY-6049
8-51x	SK311313	Double Knob (Upper-BL) Part CS-732D-BL	CY-6019
8-52	SK311314	Double Knob (Lower) Part CS-732D	CY-6020
8-53x	SK314691	Double Knob (Lower-B) Part CS-732D-J	CY-6050
8-54x	SK311315	Double Knob (Lower-BL) Part CS-732D-BL	CY-6020
8-55	TC311282	Decoration Plate Assy CS-732D	
8-56	ZS265307	Tapping Screw #2, 2.3×6 (Truss)	

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

9. LIST OF INTERCHANGEABLE SEMICONDUCTOS

If, while servicing, the original parts cannot be obtained, the interchangeable parts listed below can be substituted.

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SA733 (P) (Q)	ET554657	CY-5046 CY-5047		
2SC458LG (D) 2SC458LG (C) (D)	ET352146 ET391768	CY-5045A	2SC1844 (E) (F)	ET308954
2SC945L (Q)	ET399846	CY-5046	2SC711 (E)	ET380834
2SC945L (P) (Q)	ET639437	CY-5045A CY-5046 CY-5047	2SC711 (E) (F)	ET640721
2SC1312S (G)	ET663243	CY-5045A		
2SC2130 (G)	ET310832	CY-5045A CY-5046 CY-5047	2SC711 (G)	ET399870
2SC2130 (G) (H)	ET308937	CY-5045A	2SC711 (G) (H) 2SC1312S (G) (H)	ET563905 ET603257
2SC2130 (F) (G)	ET311868	CY-5045A	2SC711 (G) (H)	ET398777
2SC2274K (E)	ET310833	CY-5045A	2SC1211 (E)	ET520266
2SD571 (L) (M)	ET655356	CY-5045A	2SC1384 (R) (S)	ET300632
2SD794 (P) (Q)	ET307349	CY-5046		
2SK68 (M) (N)	ET301464	CY-5045A	2SK117 (GR)	ET303697
1S2473VE	ED560913	CY-5045A CY-5046	1S1588	ED557447
1K34A-LR	ED308952	CY-5045A	1N34A	ED219464
SVB10-100	ED308945	CY-5046	SIQB10 SIQB20	ED284095 ED249581
W03B	ED306109	CY-5046	10D05	ED494583
UZ-5.1BLR	ED310682	CY-5046		
UZ-19BLR	ED310541	CY-5046		
SR-105D	ED698826	CY-5048		
GL-3PGI	ED283138	CY-5048		

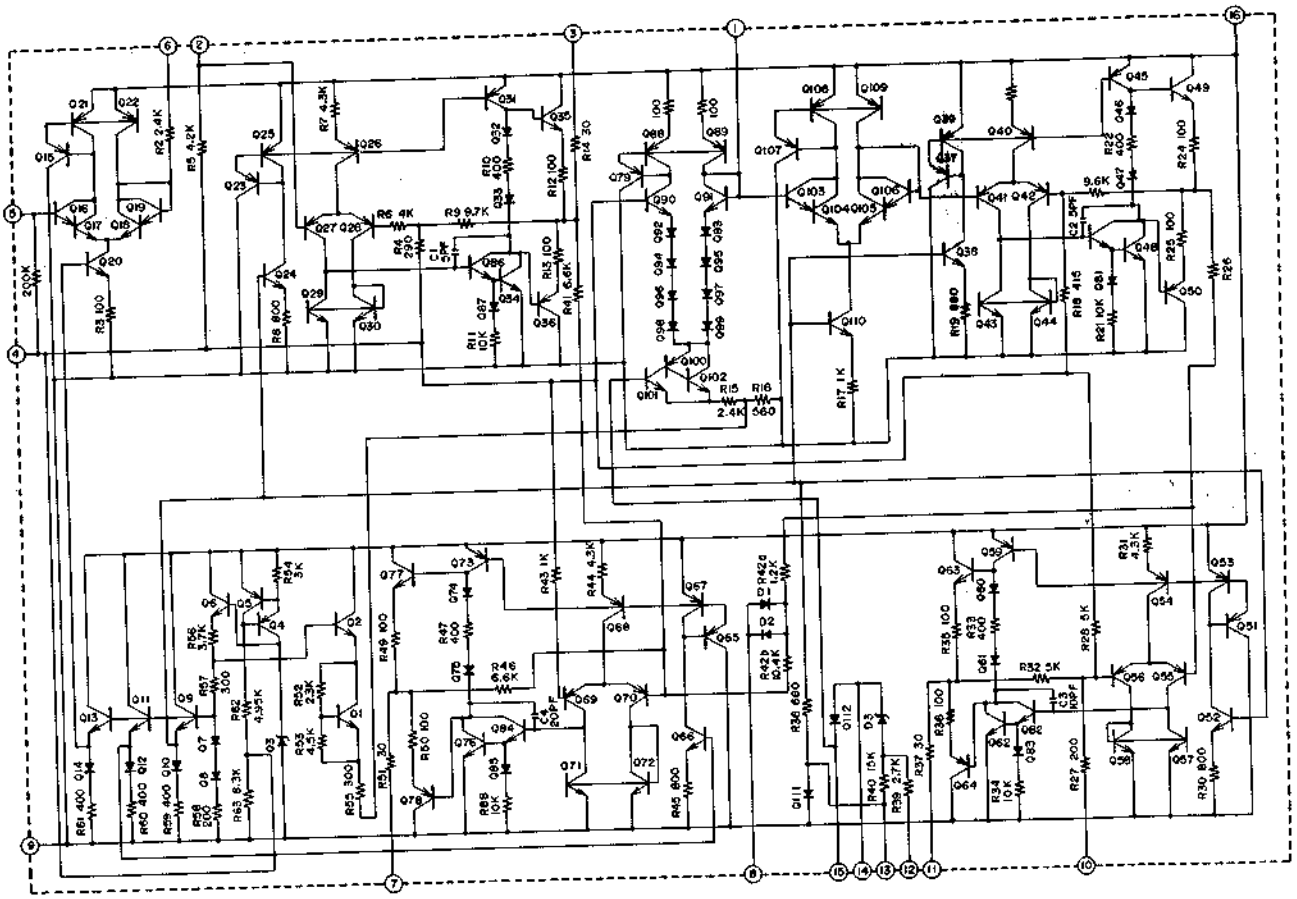
INDEX

SECTION 3

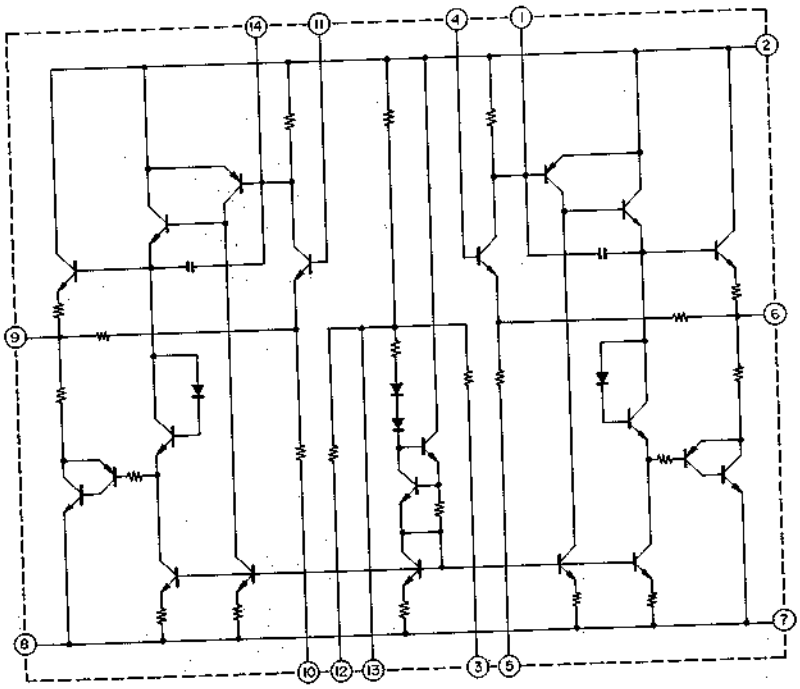
SCHEMATIC DIAGRAM

1. CS-732D NO. 2-1 1580450A POWER SUPPLY & SYS. CON SCHEMATIC DIAGRAM
2. CS-732D NO. 2-2 1580451A AMP SCHEMATIC DIAGRAM

NE545B



LA4170



CS-732D

MODE SWITCH P.C BOARD CY-5047

POWER SUPPLY & SYS.CON P.C BOARD CY-5046

LAMP P.C BOARD(2/2) CY-5048

LAMP P.C BOARD CM-1034

CS-732D
POWER SUPPLY &
SYS.CON
SCHEMATIC DIAGRAM
NO.2-1 1580450A

S	F1	F2	F3
U/T	T400mA	T400mA	
JPN	0.8A 250V	1A 250V	
CSA, AAL	ST-5 08A	ST-5 1A	
CEE	T400mA	T400mA	
UK	T400mA	T400mA	T630mA

NOTE
1. UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50WV(M)
2.(FS)= FAIL SAFE RESISTORS
3.(⊣⊢)MARK INDICATES NON POLAR CAPACITORS
4 POWER TRANSFORMER IS DIFFERENT ACCORDING TO AREA

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 SURETÉ. POUR MAINTENIR LE DEGRÉ DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT

001012C

CS-732D

2×2SC945

LEFT

RIGHT

TAPE SELECTOR

INPUT SELECTOR

DOLBY NR

IC1 NE545B

IC1b NE5458

IC2 LA4170

VU METER

ERASE HEADS

LAMP P.C BOARD (1/2) PY-5048

JACK P.C BOARD CY-5045B

AMP P.C BOARD CY-5045A

CY-5046 (3)

CY-5048(2/2) (2)

CY-5048(2/2) (16)

CY-5047 (1)

CY-5046 (3)

CY-5046 (5)

CY-5047 (2)

CY-5048(2/2) (2)

CY-5048(2/2) (16)

* REC MODE

		LN	LH	CrO2	Fe-Cr
TR14	B	0V	0V	0V	0V
	C	12.4V	13.1V	15.0V	12.4V
TR13	B	12.1V	12.9V	14.6V	12.1V
TR12	B	11.7V	12.4V	14.2V	11.7V
	C	18.3V	18.3V	18.3V	18.3V
T1	1 to 3	0.6V	0.6V	0.6V	0.6V
	4 to 6	14.0V	11.7V	13.5V	11.0V
	8	33.7V AC	35.9V AC	41.3V AC	33.7V AC
	9	87.4V AC	93.1V AC	107.8V AC	87.3V AC
TRIG.I/F	E	0V	0V	0V	0V

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50WV (J)
(LL)=LOW LEAKAGE CAPACITOR

2SK68 (D G S)

2SD571 (E C B)

2SC458LG, 2SC945L, 2SC2274K (E C B)

2SC1312S, 2SC2130 (B C E)

CS-732D AMP
SCHEMATIC DIAGRAM
NO.2-2 1580451A