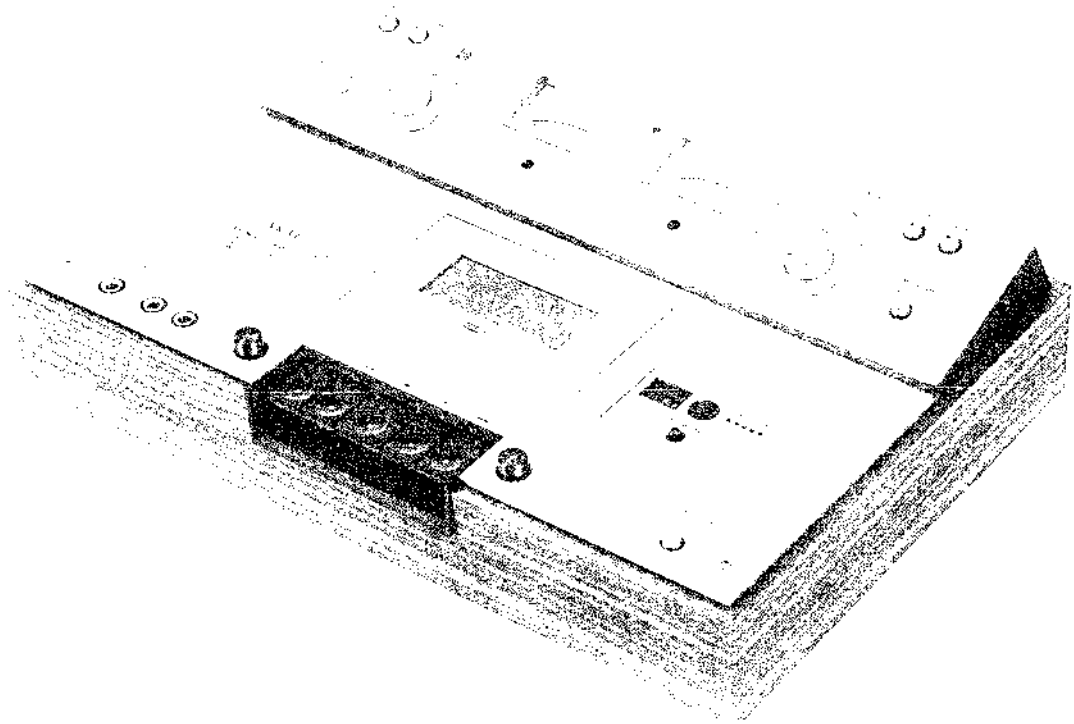
SERVICE MANUAL

PARTS LIST

MODEL GXC-325D

AKAI



STEREO CASSETTE DECK

MODEL GXC-325D

SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

For basic adjustments, measuring methods, and operating principles, refer to GENERAL OPERATING PRINCIPLES AND ADJUSTMENTS.

I. SPECIFICATIONS

An asterisk next to a figure indicates the minimum guaranteed performance.

TRACK SYSTEM		4 track, 2 channel stereo system
TAPE SPEED		1-7/8 ips (4.75 cm/sec) ±2%
WOW AND FLUTTER		Less than 0.055% WRMS *Less than 0.15% RMS
TOTAL WOW AND FLUTTER		Less than 0.17%
FREQUENCY RESPONSE	LOW NOISE TAPE	30 to 15,000 Hz ±3 dB *50 to 14,000 Hz ±4 dB
	CrO_2 TAPE	30 to 16,000 Hz ±3 dB *50 to 15,000 Hz ±4 dB
	Fe-Cr TAPE	30 to 19,000 Hz ±3 dB *50 to 17,000 Hz ±4 dB
DISTORTION FACTOR		Less than 1% at 1,000 Hz 0 VU recording
TOTAL DISTORTION FACTOR		
	LOW NOISE TAPE	*Less than 2%
	CrO_2 TAPE	*Less than 4%
	Fe-Cr TAPE	*Less than 3%
OUTPUT LEVEL		0 ±1 dBm
RECORDING PLAYBACK LEVEL		
	LOW NOISE TAPE	0 dBm ±2 dB, 1,000 Hz 0 VU recording
	CrO_2 TAPE	−0.5 dBm ±1.5 dB
SIGNAL TO NOISE RATIO		DOLBY OFF: Better than 51 dB *Better than 43 dB DOLBY ON: Better than 61 dB *Better than 47 dB
CROSS TALK		Better than 25 dB, 1,000 Hz +3 VU recording
ERASE RATIO		Better than 70 dB, 1,000 Hz +3 VU recording
RECORDING BIAS FREQUENCY		100 kHz *98 ±5 kHz
INPUT	MIC	More than 0.3 mV *More than 0.5 mV
	LINE	More than 70 mV *More than 90 mV
	DIN	More than 4 mV
BIAS LEAK		Less than −43 dBm DOLBY ON Less than −20 dBm DOLBY OFF
REAK LEVEL INDICATION		8.5 ±1 dBm
HEAD		
RECORDING/PLAYBACK COMB HEAD		4 track, 2 channel GX recording/playback comb head Type: PR4-1 Gap: REC 3.5 to 5.5 microns, PB 0.7 to 1.3 microns Impedance: REC 2,000 ohms ±20% at 100 kHz PB 1,000 ohms ±20% at 1,000 Hz DC Resistance: REC 22 ohms ±5% PB 250 ohms ±5%
	ERASE HEAD	2-track 1-channel Erase Head Type: E4-165 Gap: Double Gap Impednce: 190 ohms ±10% at 60 kHz DC Resistance: 2.5 ohms
MOTOR		AC Servo Control Motor Type: SCM-700
TRANSISTOR AND FET		2SA628(E)(F)(G) . . . 6 2SC1175(E)(F) . . . 2 2SA725(F)(G)(H) . . . 2 2SC131R(G)(H) . . . 10 2SA733(P)(Q)(R) . . . 1 2SC1312S(G)(H) . . . 6 2SC458LG(C)(D) . . . 2 2SC1647(E)(S)(U) . . . 6 2SC711(E)(F)(G)(H) . . . 20 2SC1683(P)(Q) . . . 1 2SK34(D) . . . 4 2SD360(D)(E) . . . 2
DIODE		1N60 . . . . 12 10D2 . . . 4 1N4001 . . . 4 WZ-085 . . . . 2 1S1588 . . . 22 ZW-192 . . . 1 1S2473VE . . . 4 DN-831 . . . 1
POWER REQUIREMENT		110 to 240V AC 50/60 Hz
POWER CONSUMPTION		30W
DIMENSIONS		440(W) x 145(H) x 300(D)mm (17.3" x 5.7" x 11.8")
WEIGHT		8.6 kg (18.9 lbs)

NOTE: Specifications subject to change without notice.

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TAPE SPEED		1-7/8 ips (4.75 cm/sec) ±2%
WOW AND FLUTTER		Less than 0.055% WRMS *Less than 0.15% RMS
TOTAL WOW AND FLUTTER		Less than 0.17%
FREQUENCY RESPONSE	LOW NOISE TAPE	30 to 15,000 Hz ±3 dB *50 to 14,000 Hz ±4 dB
	CrO_2 TAPE	30 to 16,000 Hz ±3 dB *50 to 15,000 Hz ±4 dB
	Fe-Cr TAPE	30 to 19,000 Hz ±3 dB *50 to 17,000 Hz ±4 dB
DISTORTION FACTOR		Less than 1% at 1,000 Hz 0 VU recording
TOTAL DISTORTION FACTOR		
	LOW NOISE TAPE	*Less than 2%
	CrO_2 TAPE	*Less than 4%
	Fe-Cr TAPE	*Less than 3%
OUTPUT LEVEL		0 ±1 dBm
RECORDING PLAYBACK LEVEL		
	LOW NOISE TAPE	0 dBm ±2 dB, 1,000 Hz 0 VU recording
	CrO_2 TAPE	-0.5 dBm ±1.5 dB
SIGNAL TO NOISE RATIO		DOLBY OFF: Better than 51 dB *Better than 43 dB
		DOLBY ON: Better than 61 dB *Better than 47 dB
CROSS TALK		Better than 25 dB, 1,000 Hz +3 VU recording
ERASE RATIO		Better than 70 dB, 1,000 Hz +3 VU recording
RECORDING BIAS FREQUENCY		100 kHz *98 ±5 kHz
INPUT	MIC	More than 0.3 mV *More than 0.5 mV
	LINE	More than 70 mV *More than 90 mV
	DIN	More than 4 mV
BIAS LEAK		Less than -43 dBm DOLBY ON Less than -20 dBm DOLBY OFF
REAK LEVEL INDICATION		8.5 ±1 dBm
HEAD		
RECORDING/PLAYBACK COMB HEAD		4 track, 2 channel GX recording/playback comb head Type: PR4-1 Gap: REC 3.5 to 5.5 microns, PB 0.7 to 1.3 microns Impedance: REC 2,000 ohms ±20% at 100 kHz PB 1,000 ohms ±20% at 1,000 Hz DC Resistance: REC 22 ohms ±5% PB 250 ohms ±5%
	ERASE HEAD	2-track 1-channel Erase Head Type: E4-165 Gap: Double Gap Impednce: 190 ohms ±10% at 60 kHz DC Resistance: 2.5 ohms
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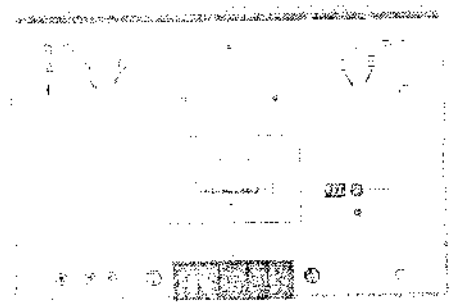
TRANSISTOR AND FET		2SA628(E)(F)(G) . . . 6 2SC1175(E)(F) . . . 2 2SA725(F)(G)(H) . . . 2 2SC131R(G)(H) . . . 10 2SA733(P)(Q)(R) . . . 1 2SC1312S(G)(H) . . . 6 2SC458LG(C)(D) . . . 2 2SC1647(E)(S)(U) . . . 6 2SC711(E)(F)(G)(H) . . . 20 2SC1683(P)(Q) . . . 1 2SK34(D) . . . 4 2SD360(D)(E) . . . 2
DIODE		1N60 . . . . 12 10D2 . . . 4 1N4001 . . . 4 WZ-085 . . . . 2 1S1588 . . . 22 ZW-192 . . . 1 1S2473VE . . . 4 DN-831 . . . 1
POWER REQUIREMENT		110 to 240V AC 50/60 Hz
POWER CONSUMPTION		30W
DIMENSIONS		440(W) x 145(H) x 300(D)mm (17.3" x 5.7" x 11.8")
WEIGHT		8.6 kg (18.9 lbs)

NOTE: Specifications subject to change without notice.

II. DISMANTLING OF UNIT

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

1



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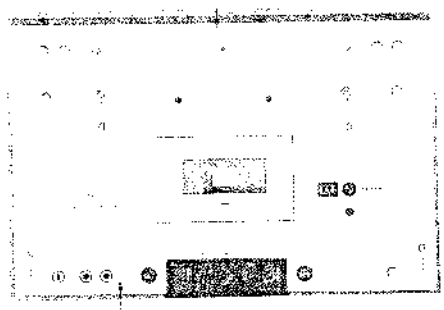

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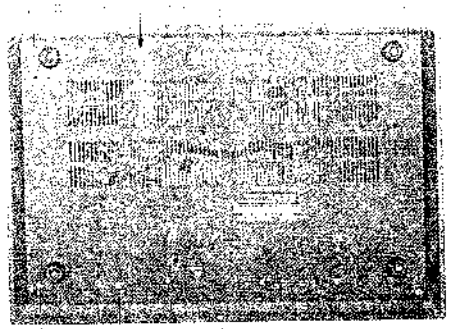

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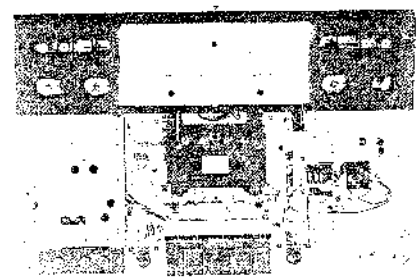

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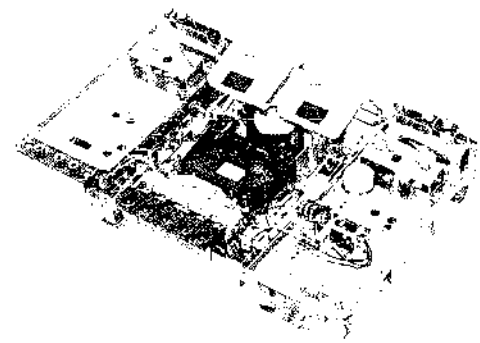
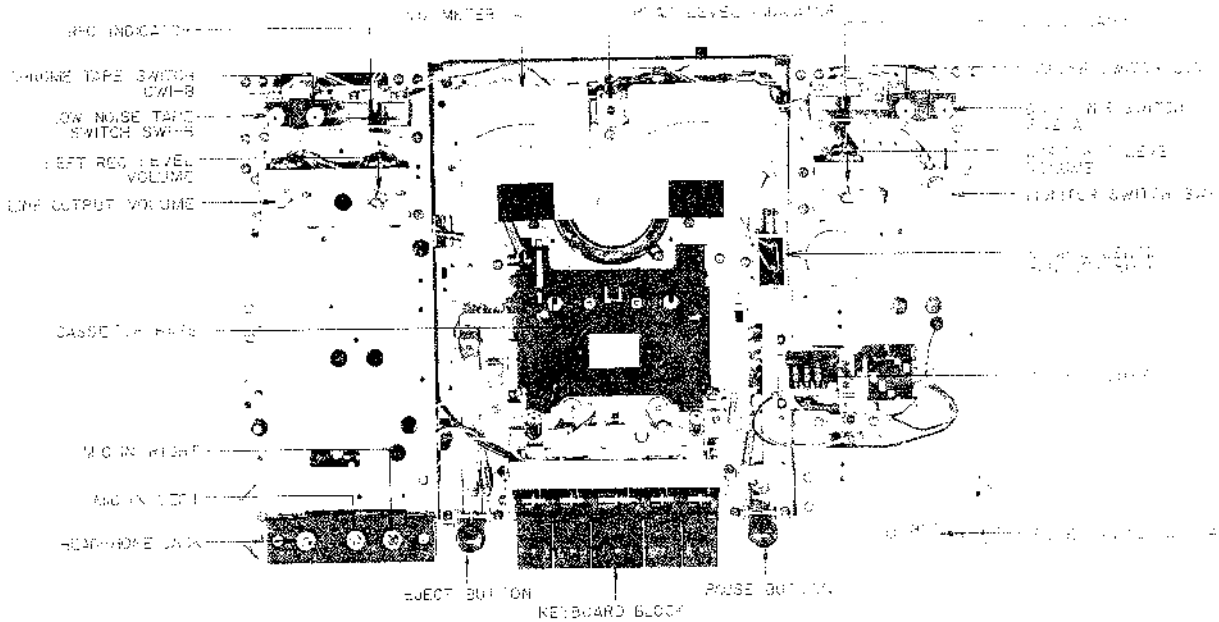
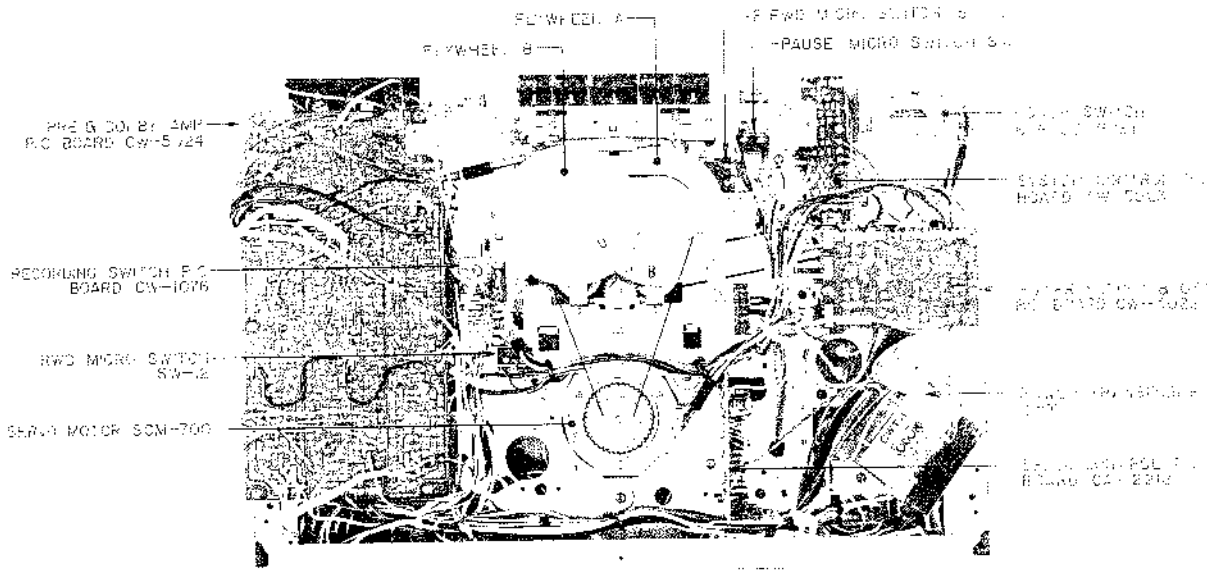


III. ARRANGEMENT OF PRINCIPAL PARTS





IV. MECHANISM ADJUSTMENT

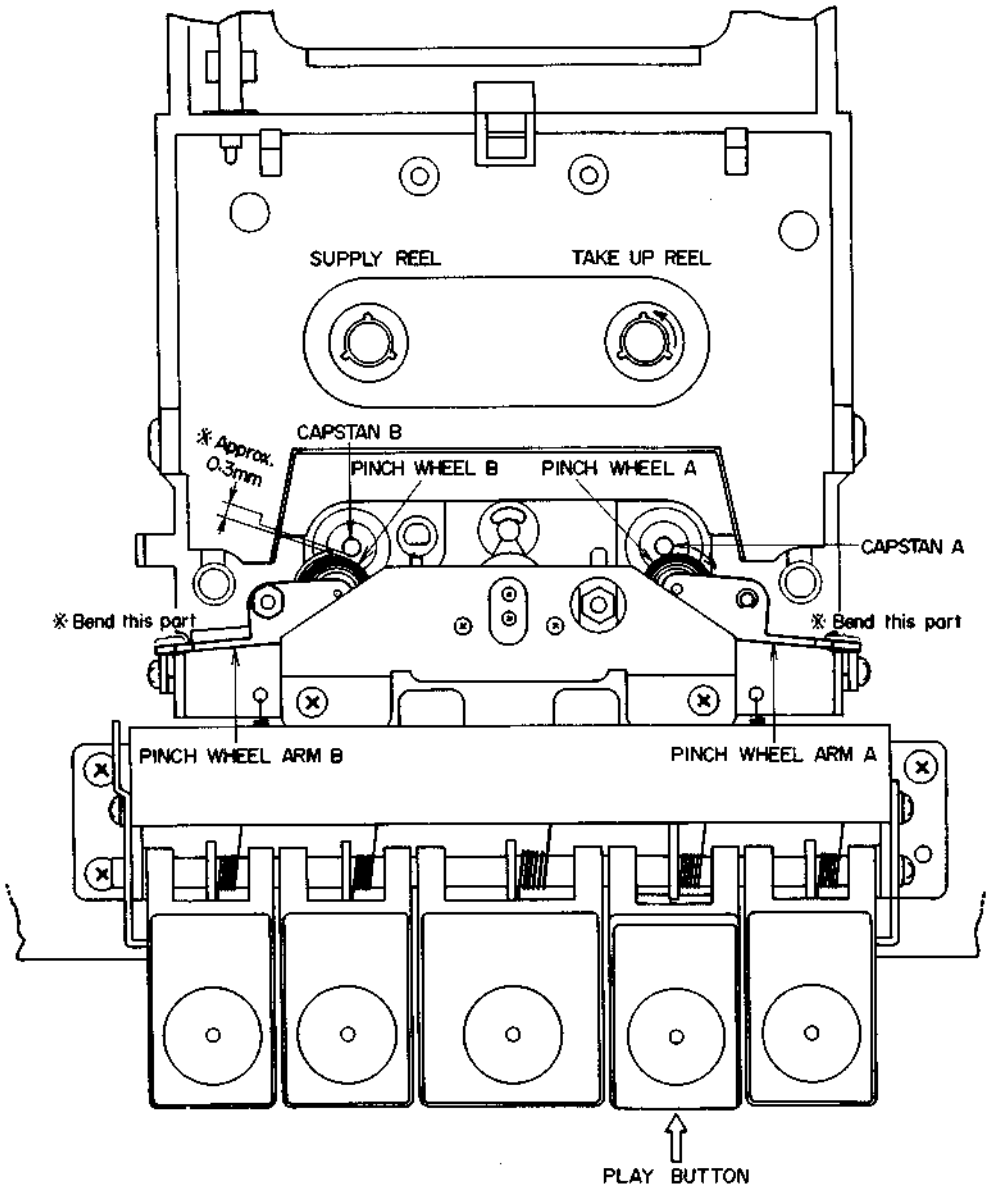


Fig. 1

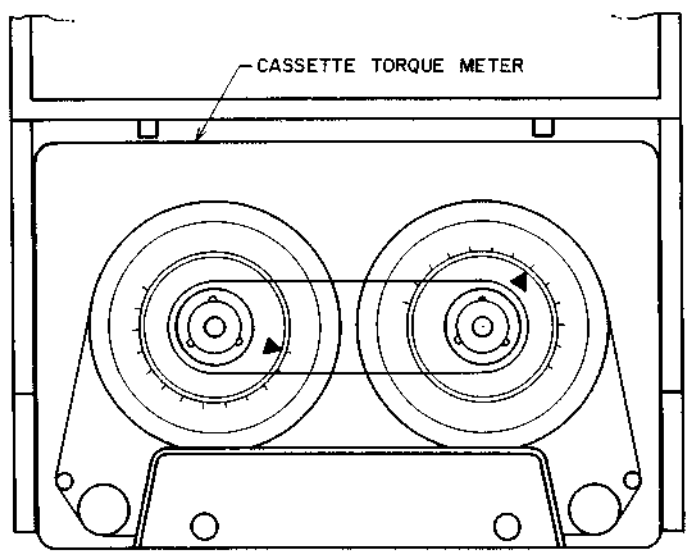


Fig. 2

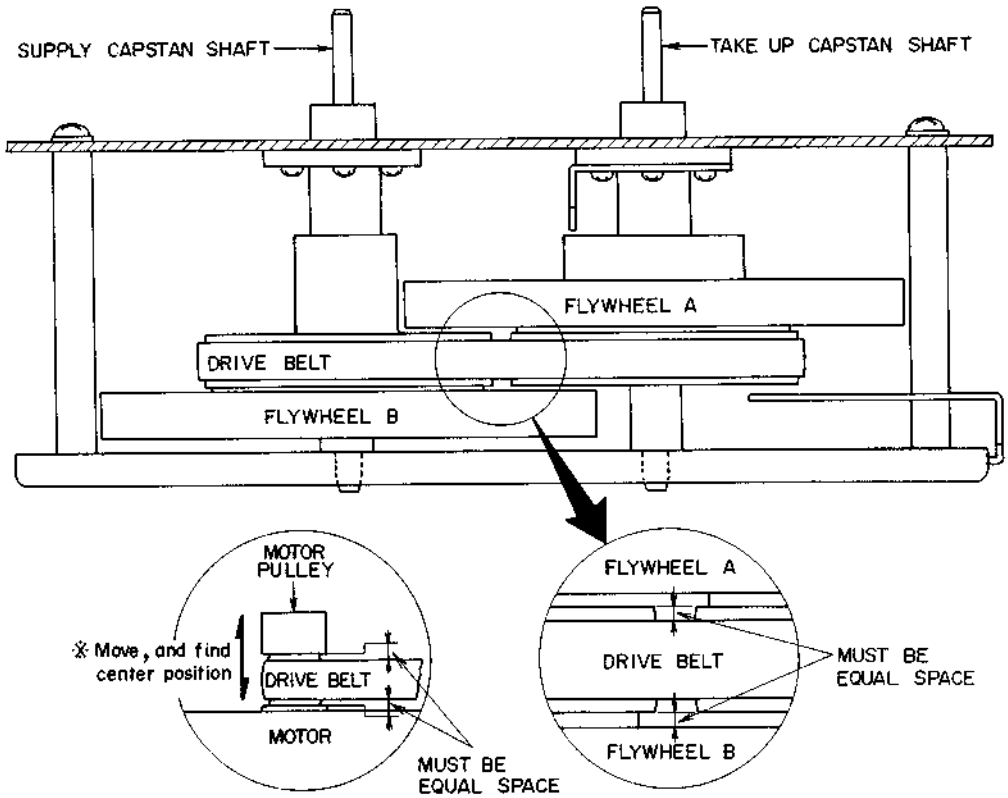


Fig. 3

1. PINCH WHEEL A, PINCH WHEEL B ROTATING ORDER ADJUSTMENT

(Refer to Fig. 1)

1) When the Play Button is gently depressed, first the take-up reel rotates. Next, Pinch Wheel A, and then Pinch Wheel B must rotate.
2) If necessary, adjust Pinch Wheel A, and Pinch Wheel B rotating order and timing by bending the extended parts of Pinch Wheel Arms A and B as shown in Fig. 1.
   Following adjustment, gently depress the Play Button and confirm that the clearance between Pinch Wheel B and Capstan B is approximately 0.3 mm.

2. TAKE-UP AND SUPPLY REEL TABLE TORQUE MEASUREMENT

As shown in Fig. 2, use a cassette torque meter and at play mode, measure the reel table torque of both reels during tape travel.
Specified torque:

Take-up reel table	:	50 ±10 grm/cm
Supply reel table	:	10 ±3 grm/cm

Because take-up and supply reel torque is determined by the clutch spring inside the reel table, if torque is not within specifications, replace reel table assembly.

3. REWIND AND FAST FORWARD TORQUE MEASUREMENT

Use a cassette torque meter and measure torque at the point at which the tape stops after stop mode is effected from Rewind and Fast Forward modes respectively. If necessary, adjust by changing winding clutch friction pressure. (Refer to Take-up Lever and Wind Lever Block in Parts List). Proper rewind and fast forward torque is about 70 grm/cm.

4. MOTOR PULLEY HEIGHT ADJUSTMENT AND FLYWHEEL REPLACEMENT

1) As shown in Fig. 3, the drive belt must run on the center of Flywheels A and B, and on the center of the motor pulley.
   This adjustment is made by changing the motor pulley height.
2) When replacing Flywheel A And Flywheel B, because it is necessary for the flywheels to match in order to obtain proper tape tension, one of the following combinations must be selected from the 4 types available.

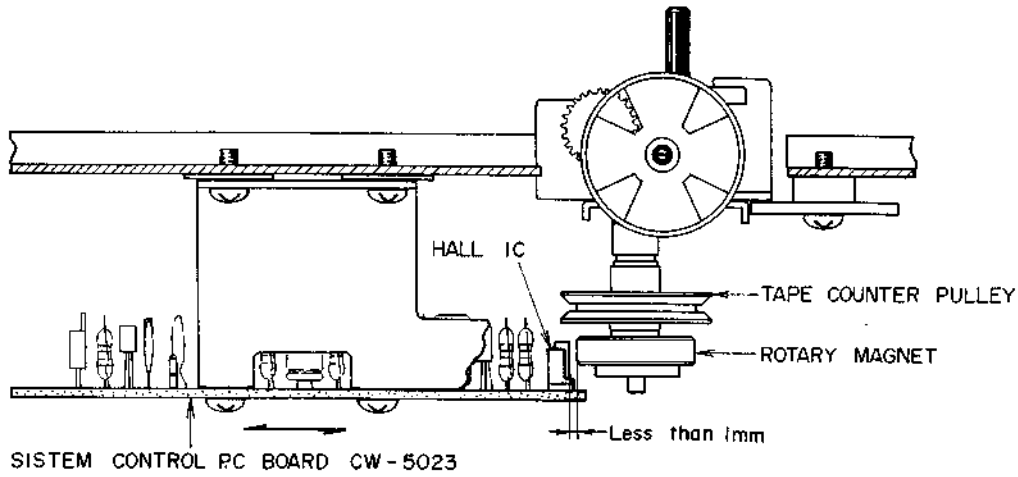


Fig. 4

Chart 1 Proper Flywheel A and Flywheel B combinations (Type stamped on flywheels)

COMB–1	COMB–2	COMB–3	COMB–4
A–A	B–B	C–C	D–D
A–B	B–C	C–D	
A–C	B–D		

5. CLEARANCE ADJUSTMENT BETWEEN HALL IC AND ROTARY MAGNET

This adjustment is necessary for the perfection of the Automatic Stop Function. If adjustment is necessary due to poor Automatic Stop Function or instability, proceed as follows:

1) As shown in Fig. 4, move System Control P.C Board as indicated by the arrow mark in the figure and adjust position so that the clearance between the Hall IC and rotary magnet is within 1 mm.
2) In case this clearance is over 1 mm, faulty Automatic Stop Function will occur.

6. TAPE SPEED ADJUSTMENT

Playback a 1,000 Hz pre-recorded test tape and adjust Servo Control P.C Board (CA-2218) semi-fixed resistor VR1 (3 kB) to obtain a tape speed of 1,000 Hz ±2%.

V. HEAD ADJUSTMENT

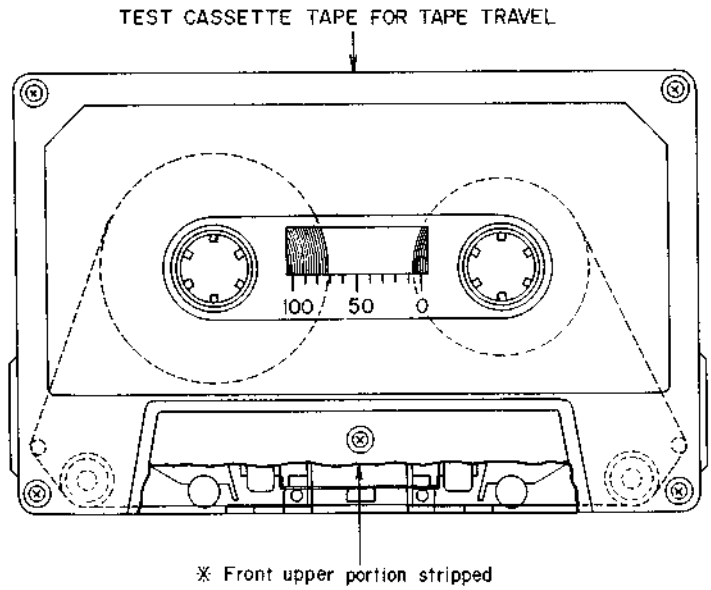


Fig. 5

1. TAPE GUIDE HEIGHT ADJUSTMENT

1) When using an ordinary cassette, the tape guides and heads, etc, are not visible. As shown in Fig. 5, use a cassette tape from which the upper part of the cassette case has been stripped off for easy visibility of the head area.
2) At playback mode, using the erase head tape guide as standard for height, as shown in Fig. 6, adjust the height adjustment nuts for proper Tape guide (1) and Tape Guide (2) height and so that the tape runs smoothly and does not catch on the tape guides.
3) After the tape guide height adjustments have been completed, gently depress the Play Button and set the deck to playback mode.
   At this time, confirm that the tape runs smoothly and does not contact the upper and lower edges of the tape guides. If the tape touches to the tape guides, repeat adjustment procedure outlined in Item 1-2) above.

2. HEIGHT ADJUSTMENT OF RECORDING/ PLAYBACK COMBINATION HEAD

1) Playback a 4-track, 1,000 Hz pre-recorded cassette head height adjustment test tape. Adjust head height with adjustment screws (A), (B) and (C), and obtain maximum output on both channels.
2) At the same time that head height adjustment is made, azimuth alignment is provisionally adjusted with adjustment screw (C).
3) Invert the 1,000 Hz cassette test tape. Playback and confirm that the line output level does not change. If the output level differs from that obtained in Item 2-1) above, repeat head height and azimuth alignment adjustments until both sides of the test tape displays equal output.

3. AZIMUTH ALIGNMENT ADJUSTMENT OF RECORDING/PLAYBACK COMBINATION HEAD

1) Playback a 10 kHz pre-recorded cassette azimuth alignment test tape and adjust screw (C) to obtain maximum output on both channels.
2) Invert the 10 kHz test tape. Playback and confirm that the output level does not change. If output differs from that obtained in Item 3-1) above, repeat Recording/Playback Combination Head Height and Azimuth Alignment Adjustments.
3) Supply a 10 kHz signal from an audio frequency oscillator to the line inputs and record at -20 VU on a blank tape.
4) Set Monitor Switch to TAPE position and adjust screw (C) shown in Fig. 6 to obtain maximum output on both channels.
5) The recording and playback heads are joined to form a single structure. Therefore, when making azimuth alignment adjustments, because both head cores move, repeat adjustments 3-1) through 3-4) above until optimum azimuth alignment of the two head cores are obtained.

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) Use only new tape as level variation is likely to occur when using old tape.
4) Be sure to demagnetize the heads with a Head Demagnetizer before and after head adjustment.
5) As perfect head height and azimuth alignment adjustments are vital to tape deck performance, be sure that these adjustments are carried out properly.

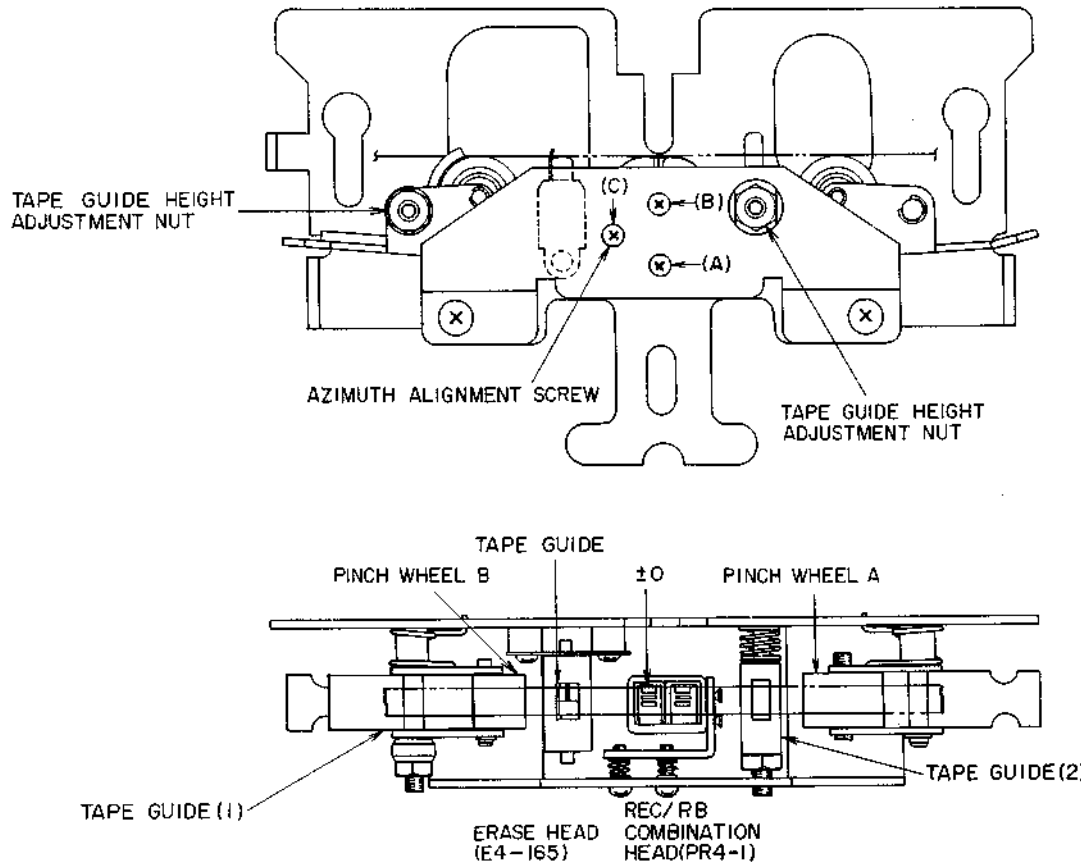


Fig. 6

VI. AMPLIFIER ADJUSTMENT

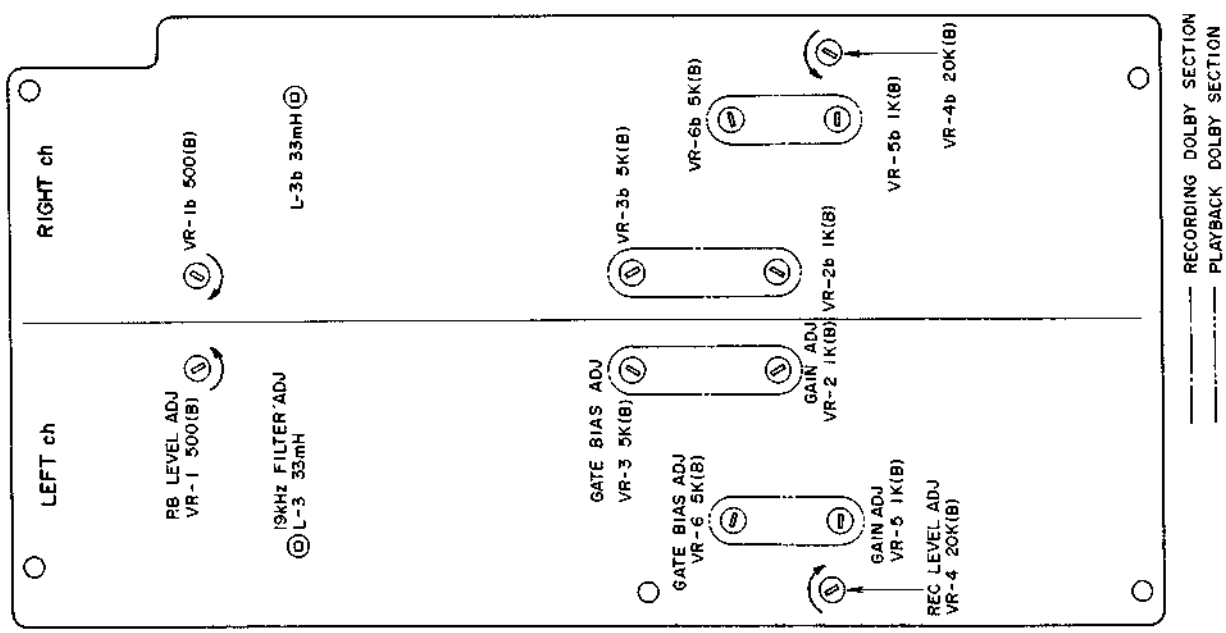


Fig. 7 PRE & DOLBY AMP P.C BOARD CW-5024

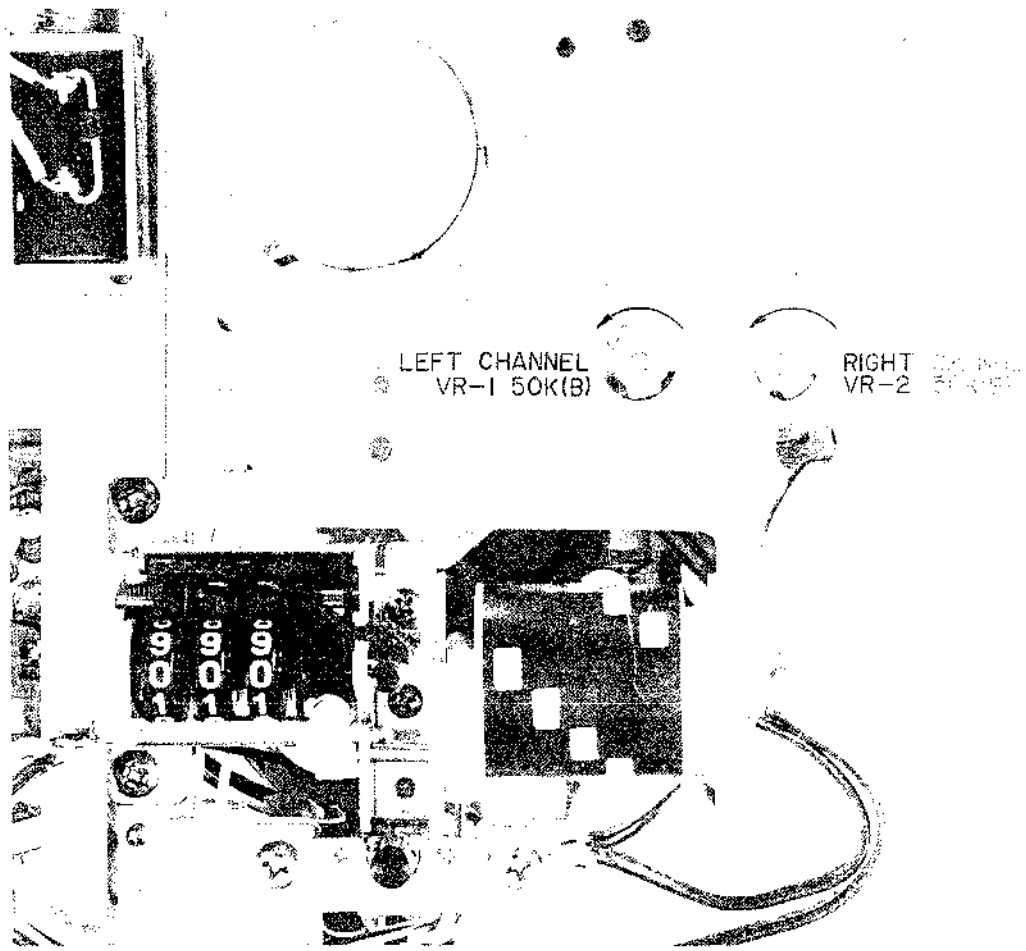


Fig. 8 RECORDING BIAS ADJUSTMENT

1. RECORDING/PLAYBACK AMPLIFIER ADJUSTMENT

Step	Adjustment Item	Test Tape Supply Signal	Mode	Adjustment Point	Result	Remarks
1	Playback Level Adjustment	333 Hz, 0 VU test tape	PLAY	VR-1 500B CW-5024	0 +1 dBm	
2	Recording Level Adjustment (Low Noise)	Low Noise blank tape 1,000 Hz, 0 VU recording	REC	VR-4 20 kB CW-5024	0 ±2 dBm	Set Monitor Switch to "TAPE"
3	Recording Level Adjustment (Chrome)	Chromium Dioxide tape (blank) 1,000 Hz, 0 VU recording	REC		-0.5 ±1.5 dBm	Set Monitor Switch to "TAPE"
4	Frequency Response Adjustment (Low Noise)	Low Noise tape (blank) 1,000 Hz to 10,000 Hz -20 VU recording	REC	VR-1 50 kB (left channel) VR-2 50 kB (right channel) CW-5022	Flat frequency response from 1,000 Hz to 10,000 Hz	
5	Recording Level confirmation (Low Noise)	Low Noise blank tape, 1,000 Hz, 0 VU recording	REC	VR-4 20 kB CW-5024	0 ±2 dB	

Low Noise Tape: AKAI C-60 LN

Chromium Dioxide Tape: AKAI C-60 CH

Chart 2

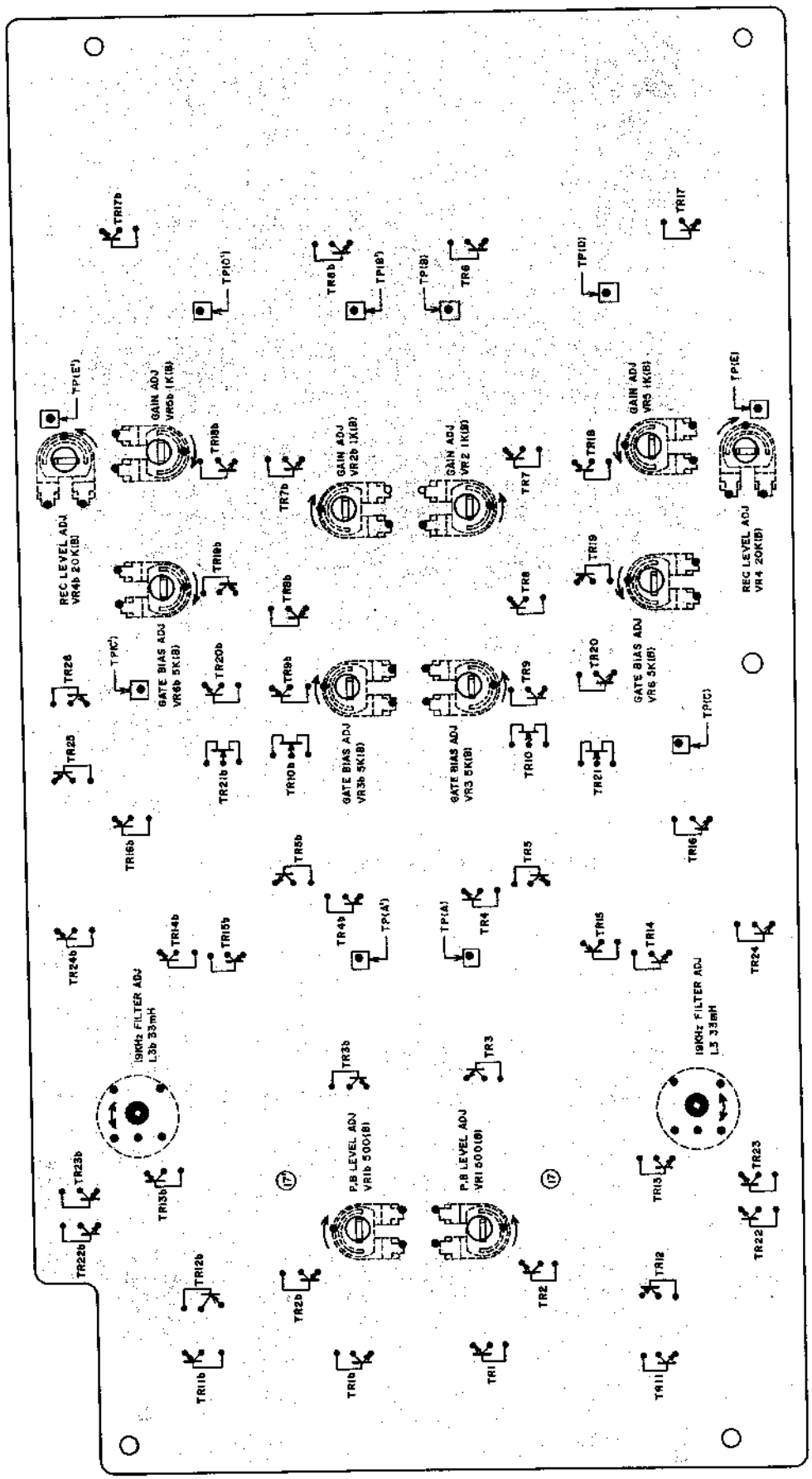


Fig. 9 PRE & DOLBY AMP P.C BOARD CW-5024

2. DOLBY NOISE REDUCTION AMPLIFIER ADJUSTMENT

1) Dolby Noise Reduction Adjustment Precautions:
   a. Be sure to adjust tape deck playback and recording level to conform to specifications with as little error as possible and adjust frequency response for optimum flatness characteristics.
   b. Because the establishment of the 5 kHz adjustment signal and level, etc. is vital to correct Dolby Noise Reduction circuit adjustment, use only calibrated measuring instruments.
   c. Level deviation must be within ±0.5 dB.
   d. Paint lock semi-fixed resistors following adjustment.
   e. After Dolby Noise Reduction circuit adjustments have been made, do not change recording and playback levels.

2) 19 kHz Filter Adjustment
   a. Set Monitor Switch to SOURCE and set Dolby Noise Reduction Switch to OFF.
   b. With Recording Level Control set to 12 o'clock position, supply a 19 kHz signal to the line input and obtain a 0 dBm line output level.
   c. Set Dolby Noise Reduction Switch to ON and adjust core of ferri-inductor L-3, 33 mH to obtain the lowest possible output level.

3) Recording Dolby Noise Reduction Amplifier Adjustment
   a. Set Monitor Switch to SOURCE and set Tape Selector Switch to LOW NOISE.
   b. Ground test points (C) and (D), and turn adjustment semi-fixed resistors VR-5 1 k(B) and VR-6 5 k(B) as far as they will go in the direction of the arrow marks in Fig. 9.
   c. With Recording Level Control set to 12 o'clock position, supply a 5 kHz signal to the line input and obtain a -28.5 dBm line output level.
   d. With the Dolby Noise Reduction Switch at ON position, read level at test point (E).
   e. Disconnect test point (C) from ground and increase (E) point voltage by 10 dB by adjusting semi-fixed resistor VR-5 1 k(B).
   f. Disconnect test point (D) from ground and decrease (E) point voltage by 2 dB by adjusting semifixed resistor VR-6 5 k(B).

4) Playback Dolby Noise Reduction Amplifier Adjustment
   a. Disconnect lead wire from one side of the automatic stop solenoid.
   b. Set Monitor Switch to TAPE and set Tape Selector Switch to LOW NOISE.
   c. Ground test points (A) and (B) and turn adjustment semi-fixed resistors VR-2 1 k(B) and VR-3 5 k(B) as far as they will go in the direction of the arrow mark in Fig. 9.
   d. Set deck to playback mode.
   e. Supply a 5 kHz signal to terminal (17) and obtain a -20.5 dBm line output level.
   f. Set the Dolby Noise Reduction Switch to ON.
   g. Disconnect test point (A) from ground, and adjust semi-fixed resistor VR-2 1 k(B) to obtain a -30.5 dBm line output level.
   h. Disconnect test point (B) from ground and adjust semi-fixed resistor VR-3 5 k(B) to obtain a -28.5 dBm line output level.

VII. DC RESISTANCE OF VARIOUS COILS

Part	Designation	DC Resistance
Oscillator Coil	OT-925	Between 1-3 0.6 ohm Between 4-6 1.8 ohm Between 7-9 6.7 ohm
AC Servo Control Motor	SCM-700	Between YLW-BLU 215 ohm Between YLW-RED 202 ohm Between RED-BLU 196 ohm Pick-up Coil 690 ohm
Headphone Output Transformer	S14-123S	Primary 282 ohm Secondary 2.5 ohm
Recording/Playback Combination Head	PR4-1	REC 22 ohm ±5% PB 250 ohm ±5%
Erase Head	E4-165	2.5 ohm
Automatic Stop Solenoid	0730TH71	15 ohm ±10%

NOTE: 1. The resistance values shown in this chart are average values.
2. Erase Head E4-165 is interchangeable with E4-160

Chart 3

VIII. CLASSIFICATIONS OF VARIOUS P.C BOARDS

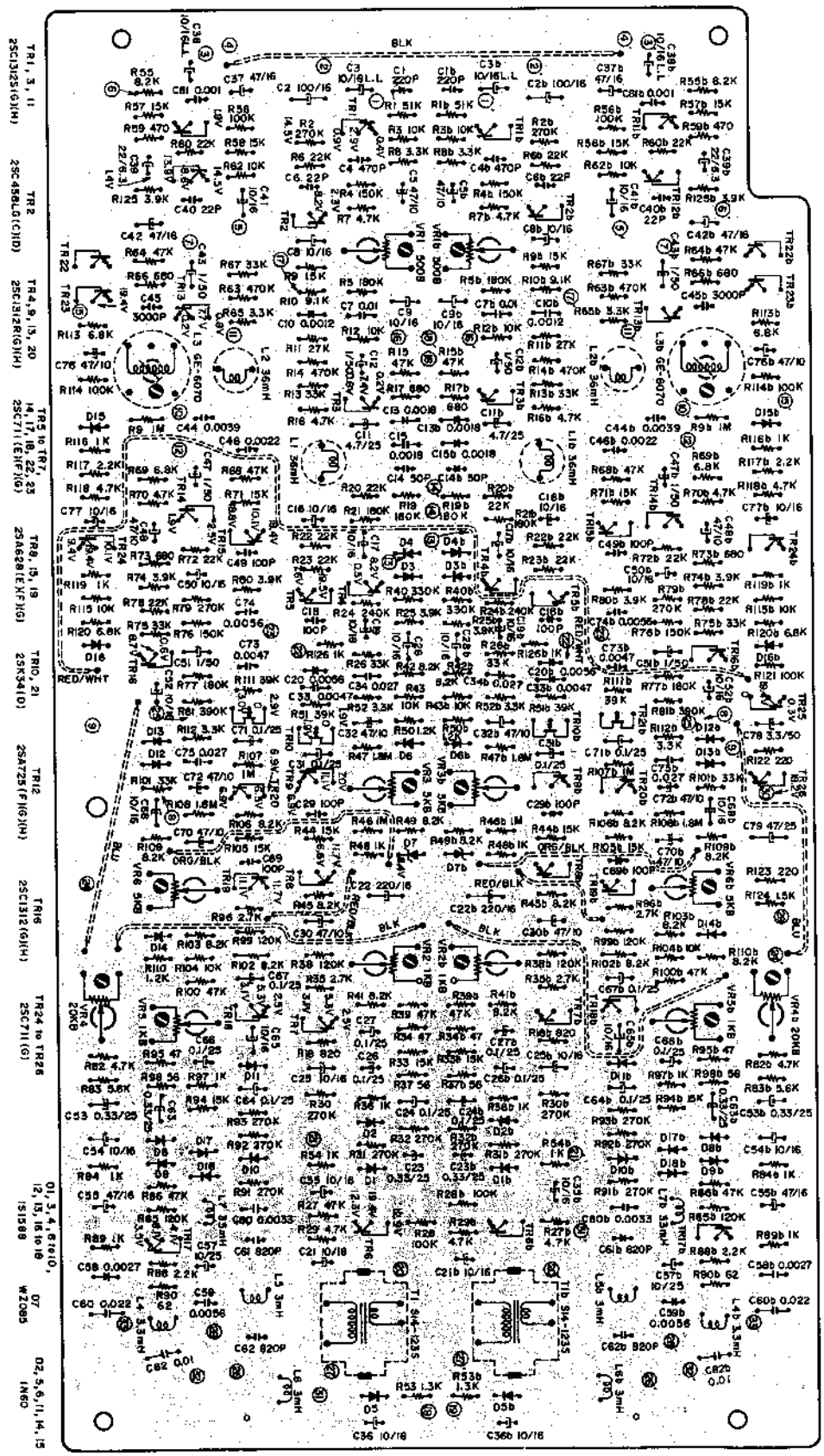
1. P.C BOARD INTERCHANGEABILITY CHART

P.C BOARD	Number of P.C Board
Pre Amp and Dolby Noise Reduction Amp P.C Board	CW-5024
Servo Control P.C Board	CA-2218
System Control P.C Board	CW-5023
Recording Switch P.C Board	CW-1076
Power Supply and Oscillator P.C Board	CW-5022
Peak Lamp P.C Board	CW-1061

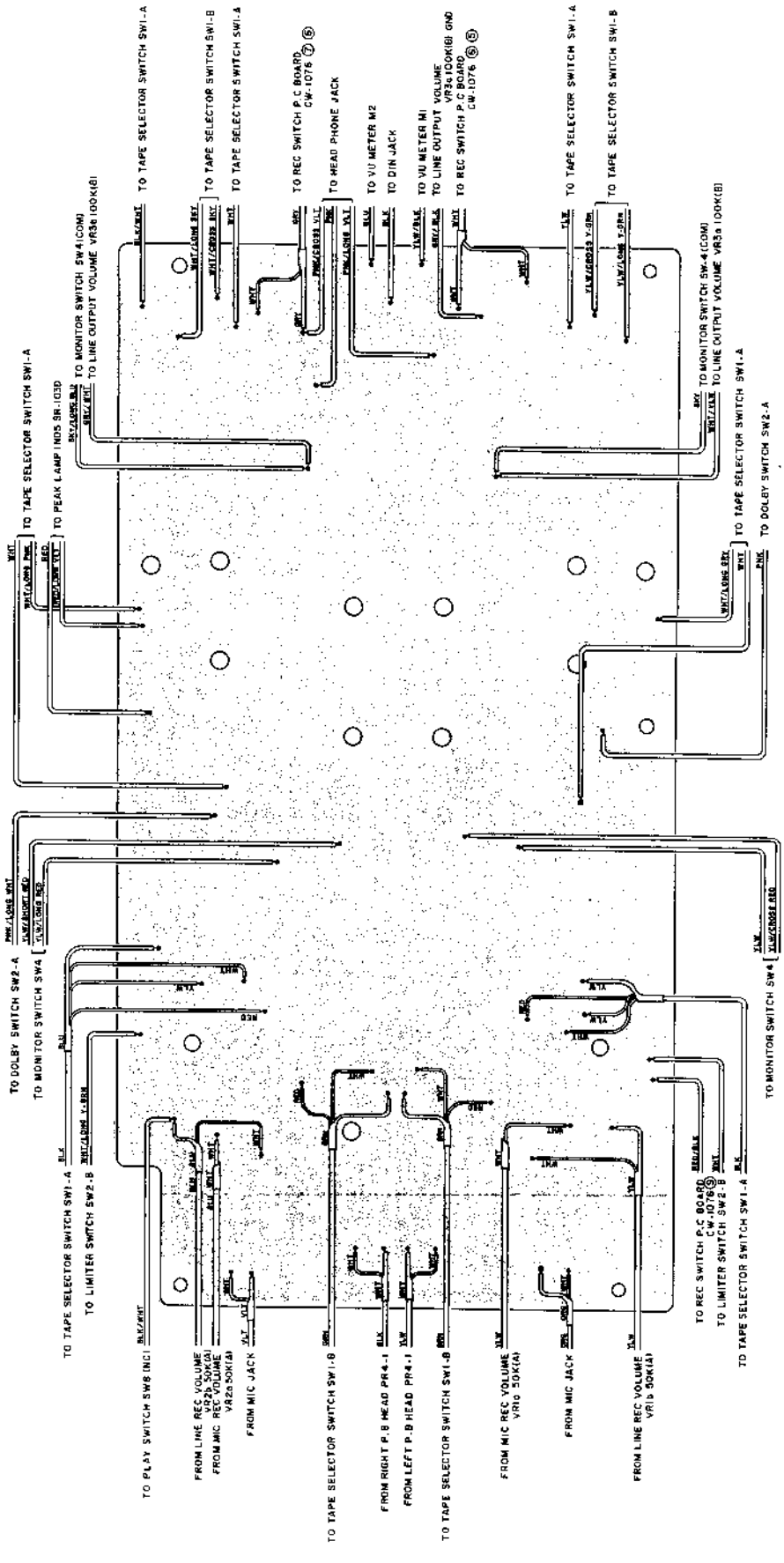
Chart 4

2. COMPOSITION OF VARIOUS P.C BOARDS

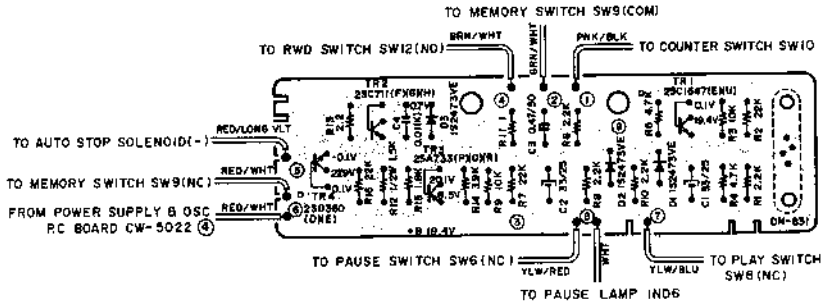
1) PRE AMP AND DOLBY NOISE HEDUCTION AMP P.C BOARD CW-5024



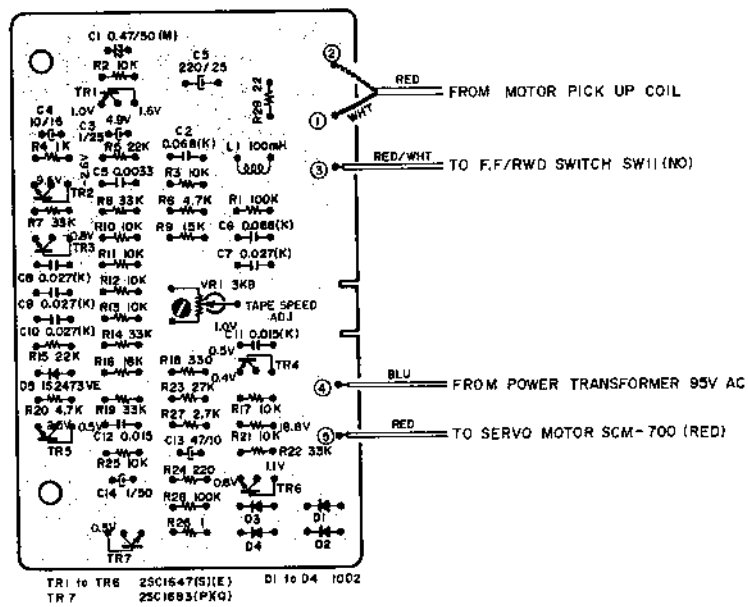
PRE AMP AND DOLBY NOISE REDUCTION AMP P.C BOARD CW-5024



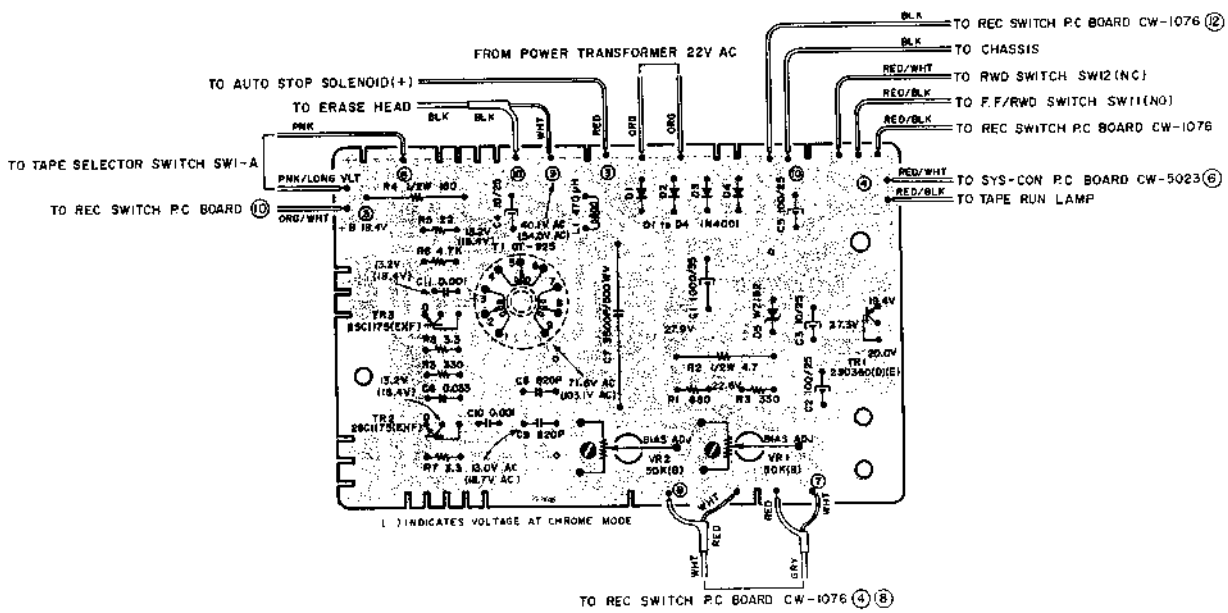
2) SYSTEM CONTROL P.C BOARD CW-5023



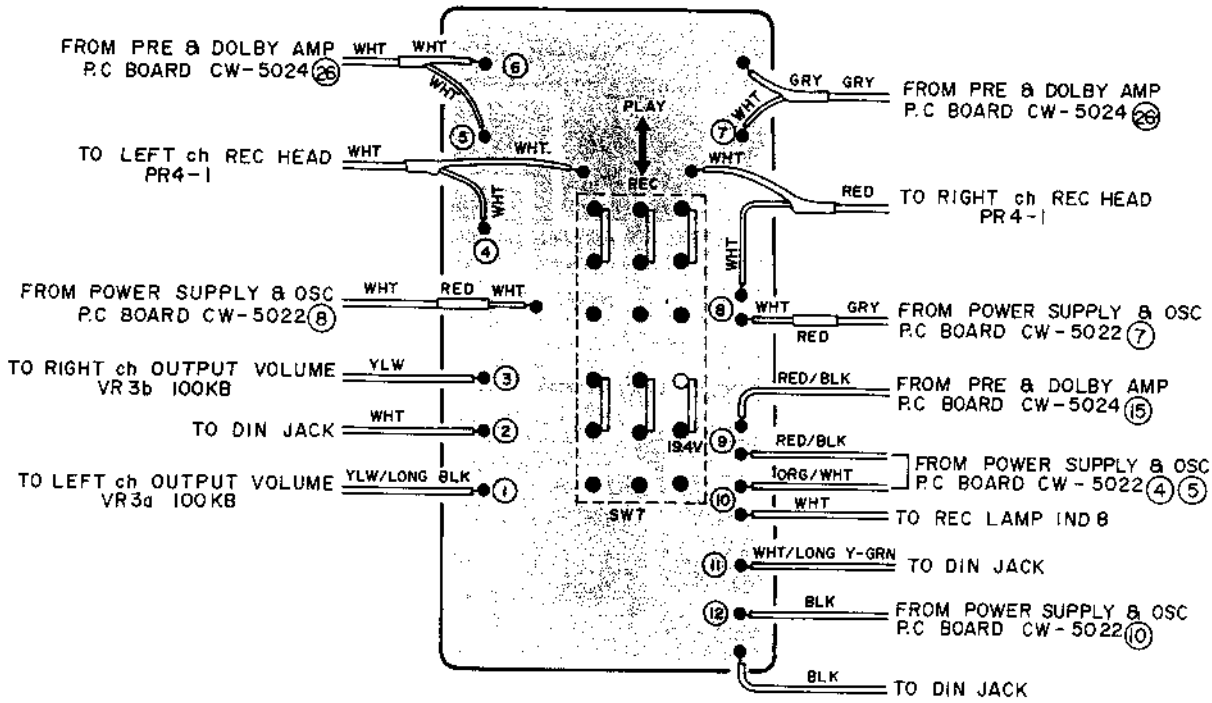
3) SERVO CONTROL P.C BOARD CA-2218



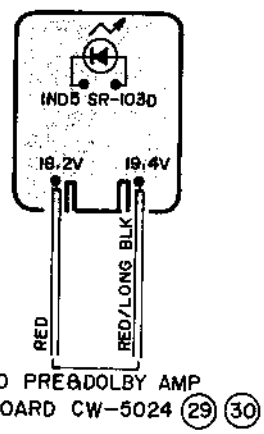
4) POWER SUPPLY AND OSCILLATOR P.C BOARD CW-5022



5) RECORDING SWITCH P.C BOARD CW-1076



6) PEAK LAMP P.C BOARD CW-1061



SECTION 2

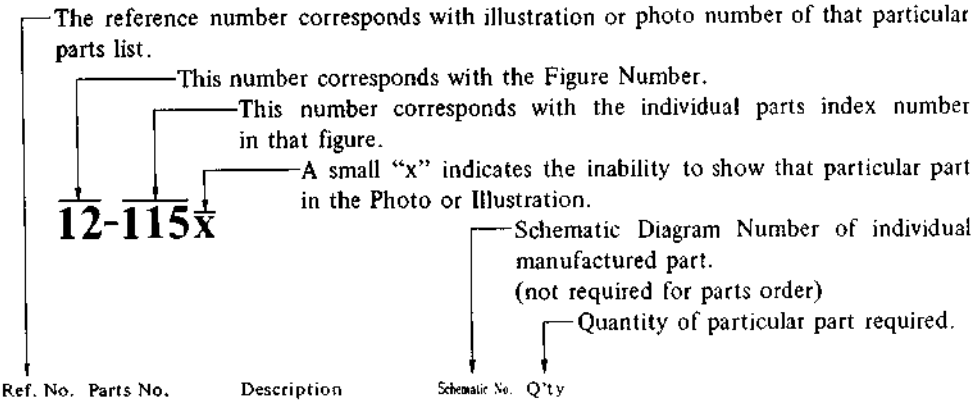
PARTS LIST

TABLE OF CONTENTS

Some of the parts in this parts list are only available as a complete assembly, and can not be supplied as individual 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.

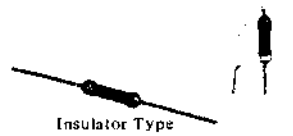
ELECTRICAL PARTS LIST TABLE

Because the indication of resistors and capacitors in the P. C. Board photos are being eliminated, please confirm parts name and shape by comparing them with the parts shown in this table.

1

Solid Resistor

2 Stopper Type



Insulator Type

Carbon Resistor

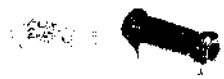
3

Metal Oxide Film Resistor

4

Cement Resistor

5



Wire-Wound Resistor

6

Thermister

7

Enamel Resistor

1

MP Capacitor (Tubular Type)

2

Plastic Capacitor

3

Mylar Capacitor

4

VFM (Hi-Q) Capacitor

5

Mylar Capacitor

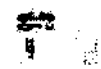
6

Tantalum Capacitor

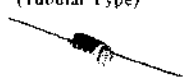
7

Oil Capacitor (Tubular Type)

8 Vertical Type



(Tubular Type)



Styrol Capacitor

9

Electrolytic Capacitor (Tubular Type)

10 Vertical Type

(Tubular Type)

Electrolytic Capacitor

11

Ceramic Capacitor

12

Metalized Mylar (Paper) Capacitor

13

Trimmer Condenser

VR

Semi-Fixed Volume

L

Ferri Inductor

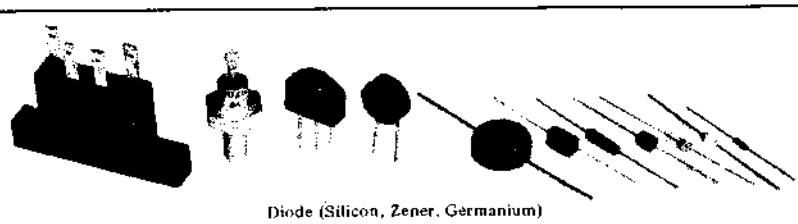
TR

Transistor

CR

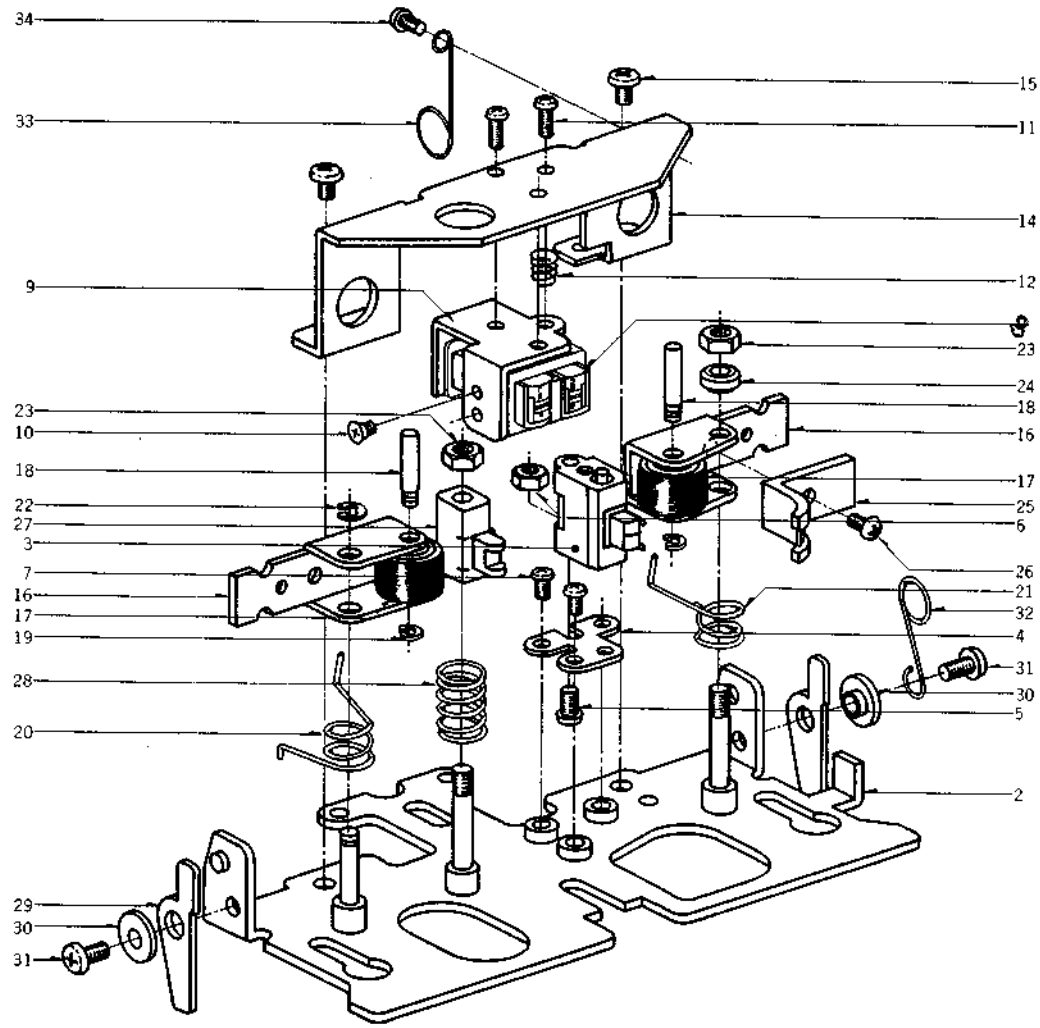
Spark Quencher

D



Diode (Silicon, Zener, Germanium)

1. ILLUSTRATION OF HEAD BLOCK



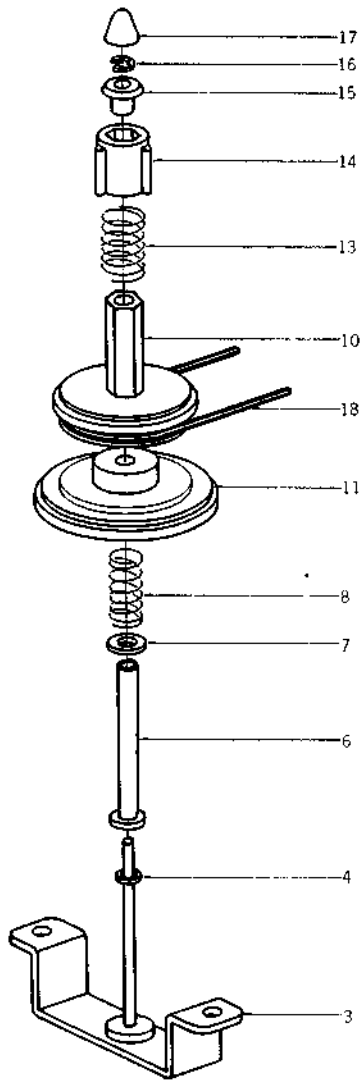
1) HEAD BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
1-1x	BH620886	Head Block Comp.	CW-2	1
1-2	HZ613956	Head Base, w/shaft	CW-0001	1
1-3	HE636963	ERASE HEAD E4-165	CW,CA2,CB	1
1-4	HZ567202	Erase Head Plate	CP-0029	1
1-5	ZS417161	Screw, pan head 2.3x4		1
1-6	ZW273688	Nut M2.3		1
1-7	ZS477876	Screw, pan head 2x3		3
1-8	HP620897	REC/PB HEAD (PR4-■2)	CW, CB	1
1-9	HA612573	Angle Plate	CW-0005	1
1-10	ZS537963	Screw, countersunk head 2x3		2
1-11	ZS499331	Screw, pan head 2.3x5		3
1-12	ZG639775	Angle Adjust Spring 2	CW-0040	3
1-13x	EA669510	PR4-1 Terminal P.C Board	CW-0045	1
1-14	HZ612584	Angle Retaining Plate	CW-0006	1
1-15	ZS432674	Screw, pan head 3x3		2
1-16	TC612617	Pinch Roller Arm	CW-0009	2
1-17	MP612628	Pinch Roller, w/metal	CW-0010	2
1-18	MS389981	Pinch Roller Shaft	CS-0011	2
1-19	ZW391397	'E' Ring 1.2M	6-1-9	2
1-20	ZG639371	Pinch Roller Spring (1)	CW-0039	1
1-21	ZG639382	Pinch Roller Spring (2)	CW-0039	1
1-22	ZW270088	'E' Ring 1.9M	6-1-9	1

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
1-23	ZW516993	Nut M3		2
1-24	TC614136	Collar	CW-0033	1
1-25	HZ612595	Tape Guide 1	CW-0007	1
1-26	ZS201407	Screw, pan head 2.3x3		2
1-27	HZ612606	Tape Guide 2	CW-0008	1
1-28	ZG365297	Clutch Spring B	RCC-1382	1
1-29	ML612562	Pause Lever H	CW-0004	2
1-30	HZ567077	Graduate Collar	CP-0009	2
1-31	ZS379350	ISO Screw, pan head 3x6		2
1-32	TC655841	Shield Retainer	CW-0043	1
1-33	TC626095	Hook	CW-0034	1
1-34	ZS417161	Screw, pan head 2.3x4		1

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

2. ILLUSTRATION OF REEL TABLE BLOCK

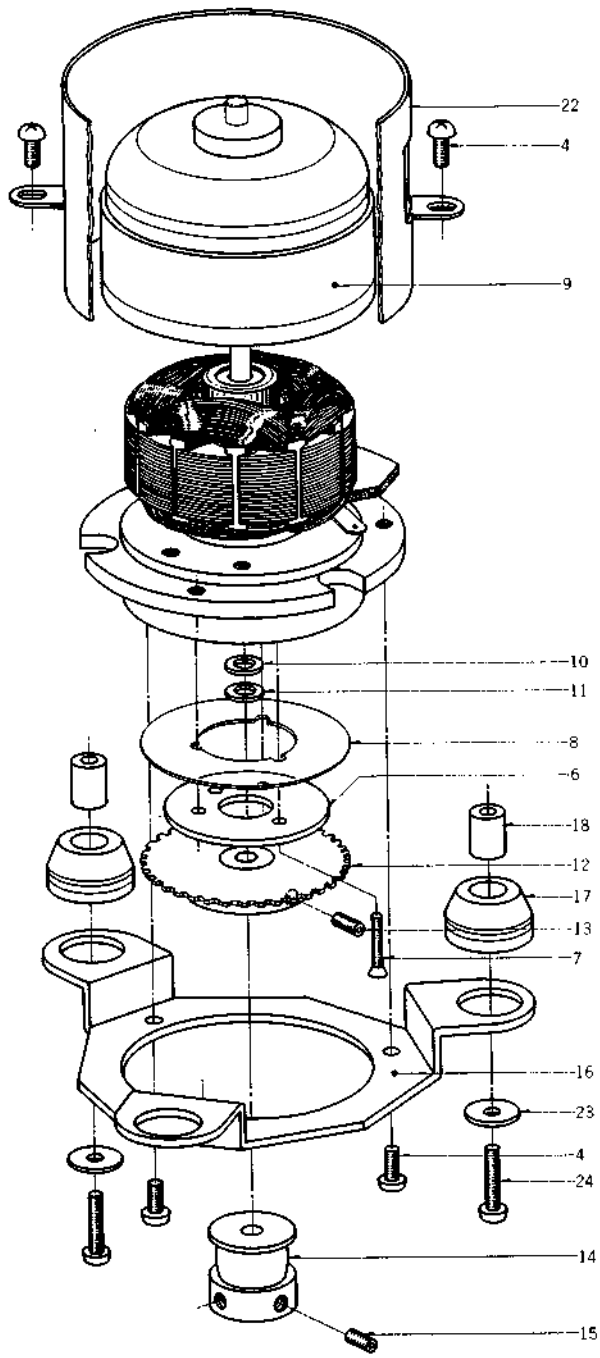


2) REEL TABLE BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
2-1x	BR620796	Supply Reel Table Block Comp.	CW1.2	1
2-2x	BR657123	Take-up Reel Table Block Comp.	CW1.2	1
2-3	MT578261	Reel Table Bracket, w/shaft	CP-1173	1
2-4	ZW364342	Washer (Polyslider) D1.7x3.2x0.25t		2
2-5x	ZW649877	Washer (Luminer) D3.2x8x0.12t		1
2-6	MS387573	Take-up Reel Table Shaft	CS-2007	1
2-7	ZW355307	Washer (BSP) D2.6x6.9x0.5t		1
2-8	ZG614812	Back Tension Spring (Supply)	CW-1066	1
2-9x	ZG387584	Clutch Spring (Take-up)	CS-2008	1
2-10	MR387606	Take-up Reel Table Pulley Comp.	CS-2009B	1
2-11	MT387630	Take-up Reel Table Comp.	CS-2012B	1
2-12x	MZ648573	Reel Felt	CW-2017	1
2-13	ZG385075	Reel Table Spring	CS-2014	1
2-14	MT370361	C Type Reel Table Blade	RCC-1345	1
2-15	MT397641	Take-up Reel Table Bush	CS-2015	1
2-16	ZW270088	'E' Ring 1.9M	6-1-9	1
2-17	MT394200	Take-up Reel Cap	CS-2105	1
2-18	MB613258	Counter Belt	CW-1045	1

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

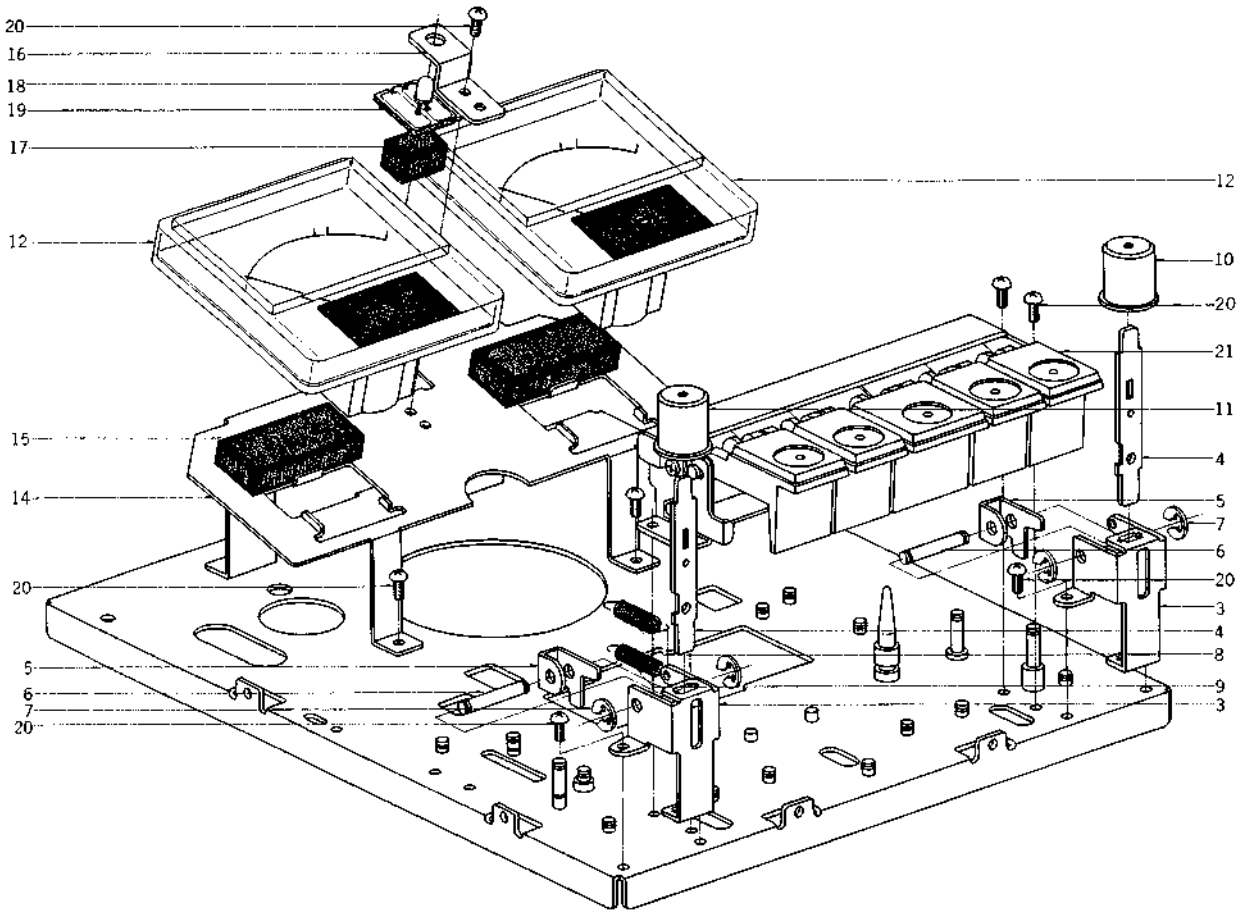
3. ILLUSTRATION OF MOTOR BLOCK



3) MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1x	BM620785	Motor Block (SCM-700) Comp.	CW1,2,CA2 CB	1
3-2x	BM649620	Motor Block (SCM-700) Comp. (CSA)	CW1,2,CA2 CB	1
3-3	EA655222	Reed Terminal P.C Board	CW-7028	1
3-4	ZS379350	ISO Screw, pan head 3x6		5
3-5	TC614463	Detector Gear 1	CW-7006	1
3-6	EZ614452	Coil Bobbin Retaining Plate	CW-7005	1
3-7	ZS537974	Screw, countersunk head 2x12		3
3-8	EZ655852	Terminal Insulater Mylar	CW-7025	1
3-9	MZ614485	Rotor, w/shaft	CW-7009	1
3-10	ZW396415	Thrust Washer A, CS	CS-7029	5
3-11	ZW396426	Thrust Washer B, CS	CS-7029	2
3-12	TC614430	Detector Gear 2, w/retainer	CW-7003	1
3-13	ZS356804	Set Screw, hexagon socket 3x4 (cup/p.)		2
3-14	MR613945	Motor Pulley	CW-7002	1
3-15	ZS356815	Set Screw, hexagon socket 3x6 (cup/p.)		2
3-16	TC613934	Motor Bracket	CW-7001	1
3-17	TC384164	Rubber Cushion Bush	24XO-717	3
3-18	TC469563	Rubber Cushion Sleeve, CG	CG-7010	3
3-19x	ZW621360	Washer D3.4x7.8x1.5t (CSA)		4
3-20x	TC645794	Insulator Fiber (CSA)	CW-7021	1
3-21x	ZS421806	Screw, pan head 3x8 (CSA)		2
3-22	TC613282	Motor Shield	CW-1048	1
3-23	ZW563218	Washer (Bake) D3.2x10x1t		3
3-24	ZS447805	Tapping Screw #2 3x12(BR)		3

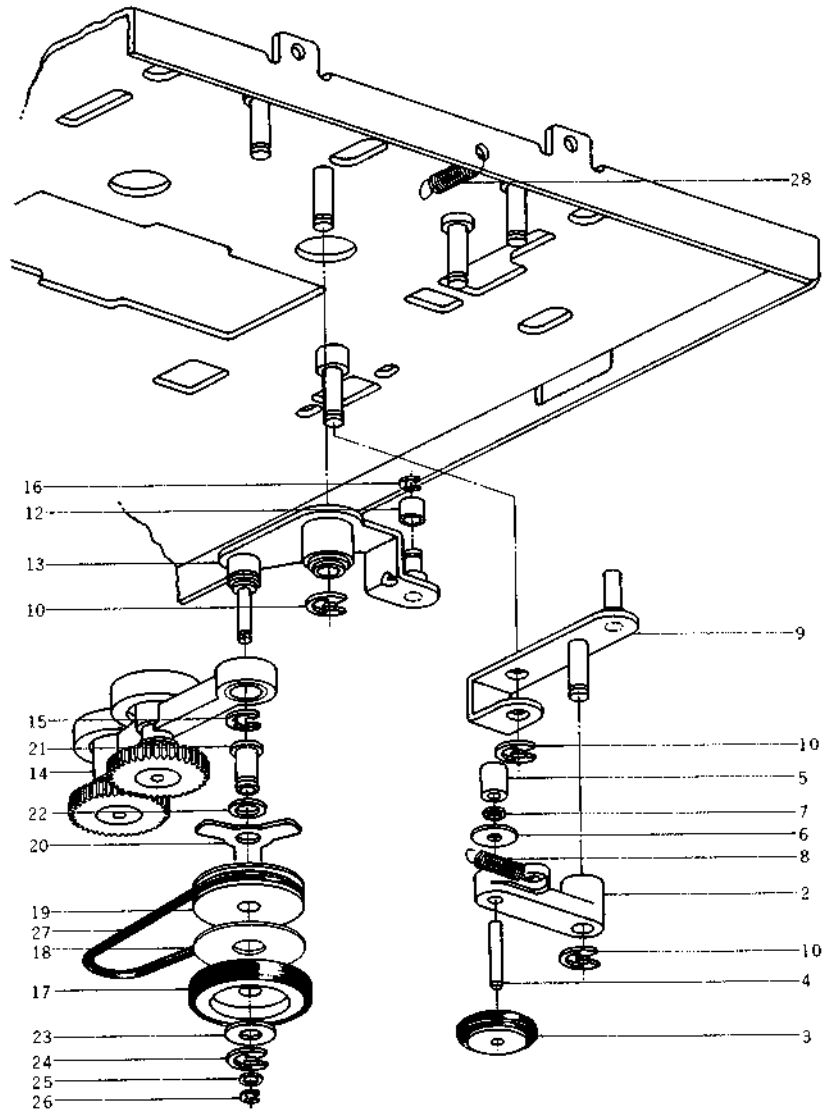
4. ILLUSTRATION OF OPERATION BUTTON BLOCK



4) OPERATION BUTTON BLOCK

Ref. No.	Parts No.	Description	Schematic No	Q'ty
4-1x	BZ620842	Operation Button Block Comp. (Eject)	CW1.2	1
4-2x	BK658653	Operation Button Block Comp. (Pause)	CW1.2	1
4-3	TC613473	Pause Holder	CW-2012	1
4-4	SB457413	Operation Button A	CG-2006	1
4-5	ML457424	Button Lever	CG-2005	1
4-6	MS613484	Pause Shaft	CW-2013	1
4-7	ZW290283	'U' Ring 2.85M	6-1-1	2
4-8	ZG224796	New Spring D (Pause)	MH-142	1
4-9	ZG227452	Spring D (Pause)	900-118	1
4-10	SB613495	Push Button A (Eject)	CW-2014	1
4-11	SB613506	Push Button B (Pause)	CW-2014	1
4-12	EM620468	VU Meter KL-250B-38	46-1-97	2
4-13	SE615374	Meter Mask A	CH-5035	2
4-14	TC614002	Meter Table	CW-1053	1
4-15	SZ650935	VU Mat	CG-5820	2
4-16	TC613326	Peak Lamp Table	CW-1054	1
4-17	TC613776	Lamp Mat	CW-5026	1
4-18	ED522887	Luminous Diode SL-103	45-15-2	1
4-19	EA614158	Peak Lamp P.C Board	CW-1061	1
4-20	ZS325495	Tapping Screw #2 3x6		6
4-21	BK620583	Keyboard SW. 25-5-151	CW-3003	1

5. ILLUSTRATION OF TAKE-UP LEVER/WIND LEVER BLOCK



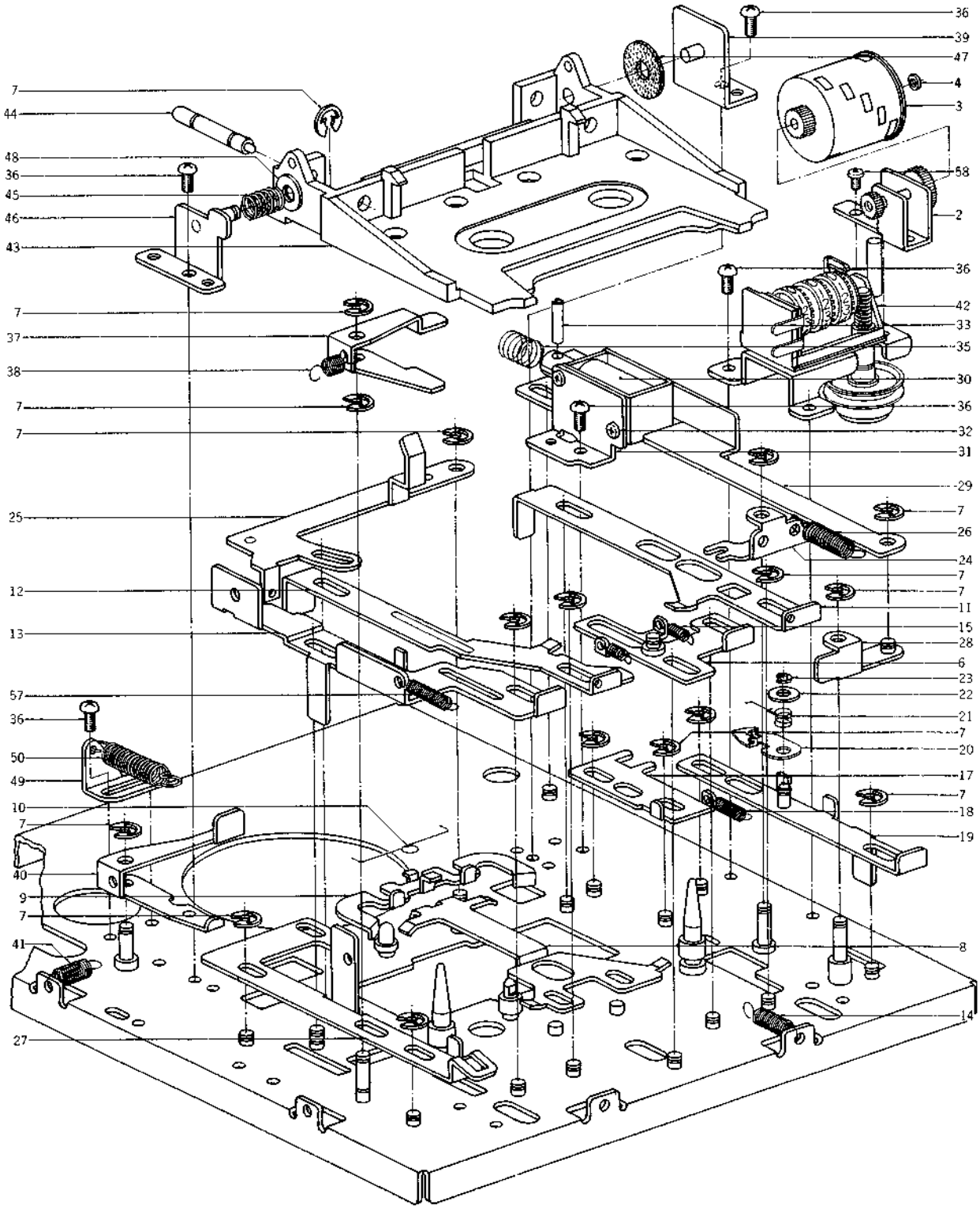
5) TAKE-UP LEVER/WIND LEVER BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		TAKE-UP LEVER BLOCK		
5-1x	BL620818	Take-up Lever Block Comp.	CW1.2	1
5-2	ML613440	Take-up Lever, w/metal	CW-2006	1
5-3	MI613451	Take-up Wheel, w/ring	CW-2007	1
5-4	MS613372	Take-up Wheel Shaft	CW-1062	1
5-5	MR456761	Take-up Pulley	CG-1032	1
5-6	ZW530504	Oil Cut Washer	CG-1102	1
5-7	ZW474581	Washer (Teflon) D2.05x3.5x0.2t		1
5-8	ZG469315	Take-up Lever Spring	CG-1091	1
5-9	ML612922	Idler Lever, w/prop	CW-1032	1
5-10	ZW290283	'U' Ring 2.85M	6-1-1	1
		WIND LEVER BLOCK		
5-11x	BL620820	Wind Lever Block Comp.	CW1.2	1
5-12	MR647122	Roller	CW-1086	1
5-13	ML612718	Wind Lever 1, w/shaft	CW-1011	1
5-14	BZ620831	Wind Gear Block Comp.	CW1.2	1
5-15	ZW270123	'E' Ring 4M	6-1-9	1
5-16	ZW270088	'E' Ring 1.9M	6-1-9	1
5-17	MI638032	Wind Wheel 1-C	CP-1126	1

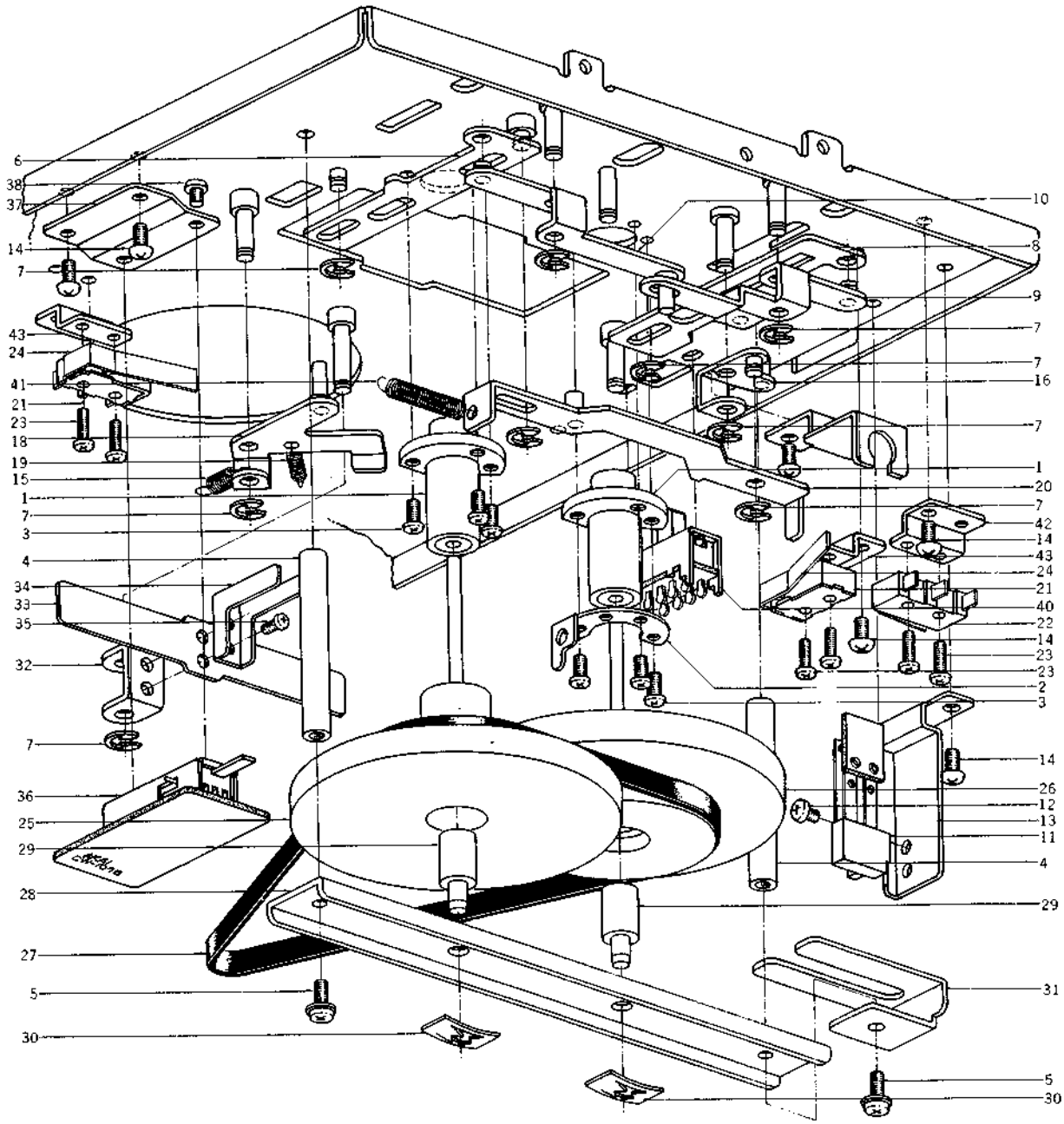
Ref. No.	Parts No.	Description	Schematic No.	Q'ty
5-18	MT632733	Clutch Felt	CW-1078	1
5-19	MI566561	Wind Wheel 2	CP-1127	1
5-20	ZG626264	Clutch Spring	CW-1073	1
5-21	TC461878	Wheel Collar	CG-2026	1
5-22	ZW620548	Washer D4.1x7.1x0.3t		1
5-23	ZW620550	Washer D4.1x11x0.3t		1
5-24	ZW290283	'U' Ring 2.85M	6-1-1	1
5-25	ZW474581	Washer (Teflon) D2.05x3.5x0.2t		1
5-26	ZW356657	'E' Ring 1.5M	6-1-9	1
5-27	MB613260	Wind Belt	CW-1046	1
5-28	ZG626275	Wind Lever Spring	CW-1071	1

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

6. ILLUSTRATION OF MECH FRAME (1) BLOCK



7. ILLUSTRATION OF MECH FRAME (2) BLOCK



6) MECH FRAME (1) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	TAPE RUN BLOCK			
6-1x	BZ592773	Tape Run Block Comp.	CH,CW1.2	1
6-2	MZ598948	Tape Run Comp.	CH-1060	1
6-3	MZ596024	Tape Run Drum	CH-1011	1
6-4	ZW595697	Washer	CH-1051	1
6-5x	SE595708	Tape Run Mask	CH-1052	1
	MECH FRAME BLOCK			
6-6	TC613170	Play Slide, w/pin	CW-1037	1
6-7	ZW290283	'U' Ring 2.85M	6-1-1	31
6-8	TC613236	Brake Slide	CW-1043	1
6-9	MT568034	Brake Shoe	CP-1022	1
6-10	ZG653332	Brake Spring B	CG-1040	1
6-11	TC612865	F.F Slide	CW-1026	1
6-12	TC612876	RWD Slide	CW-1027	1
6-13	TC612854	REC Slide	CW-1026	1
6-14	ZG369112	Head Base Return Spring	RCC-1035	1
6-15	ZG614687	Head Base Spring	CW-1065	2
6-16x	ZW322525	Washer (PBP) D4.1x7x0.2t		1
6-17	TC612786	SW. Slide	CW-1018	1
6-18	ZG392826	REC Lever B Return Spring	CS-1147	1
6-19	TC613192	Pause Slide 3, w/shaft	CW-1039	1
6-20	TC515575	SW Lock Cam B, w/shaft	CG-2301	1
6-21	ZG514440	Button Lock Spring B	CG-2303	1
6-22	ZW515586	Washer (SPC-1) D3x8x0.5t		1
6-23	ZW270088	'E' Ring 1.9M	6-1-9	1
6-24	ML613181	Pause Lever 3	CW-1038	1
6-25	TC613214	Cassette Retaining Plate	CW-1041	1
6-26	ZG577923	REC Spring 1	CP-1172	1
6-27	TC613203	Eject Slide	CW-1040	1
6-28	ML612933	Cancellation Lever 2	CW-1033	1
6-29	ML626692	Cancellation Lever	CW-1206	1
6-30	EP494425	Plunger Solenoid 0730THT1	44-1-48	1
6-31	MZ596340	Plunger Base	CH-1042	1
6-32	ZS592378	Screw, pan head 2.6x3		2
6-33	MH620572	Spring Pin SPP 2.5x12		1
6-34x	ED494583	Silicon Diode 10D05	45-2-42	1
6-35	ZG494403	Return Spring	CG-1204	1
6-36	ZS325495	Tapping Screw #2 3x6		16
6-37	ML612843	Eject Prevention Lever	CW-1024	1
6-38	ZG580252	Rock Plate A Spring	TD-2015	1
6-39	TC613361	Cassette Base Plate, w/pin	CW-1059	1
6-40	TC612955	REC Detector Plate	CW-1035	1
6-41	ZG385323	Eject Safety Spring	CS-1025	1
6-42	MC621156	Counter SMP-390-35	9-1-37	1
6-43	TC613991	Cassette Base	CW-1051	1
6-44	MH457255	REC Safety Pin	CG-1075	1
6-45	ZG478708	REC Cramp Spring	CG-1094	1
6-46	TC612832	Cassette Table Bracket B, w/pin	CW-1023	1
6-47	TC613315	Friction Felt	CW-1052	1
6-48	ZW620627	Washer D4.2x11x0.8t		1
6-49	MZ397080	Spring Rack	KD-1010	1
6-50	ZG614698	Cassette Base Return Spring	CW-1063	1
6-51x	EC669058	IC P.C Board	CW-1094	1
6-52x	ZS201407	Screw, pan head 2.3x3		2
6-53x	EI620640	IC DN-831	45-8-118	1
6-54x	TC613541	IC Retainer	CW-5002	1
6-55x	EZ638965	Cord Support	2-7-50	3
6-56x	EJ510333	Wire Clip 220-JD481610-0104 (Nylon)	2-7-17	2
6-57	ZG227452	Spring D	900-118	1
6-58	ZS417161	Screw, pan head 2.3x4		2

7) MECH FRAME (2) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
7-1	MV614575	Capstan Metal Case, w/metal	CW-1067	2
7-2	TC568214	Take-up Spring Hanger A	CP-1040	1
7-3	ZS590804	Screw, pan head 2.3x6		6
7-4	MH613383	Flywheel Prop	CW-1064	2
7-5	ZS369900	Screw, pan head 3x8, w/washer		4
7-6	TC612966	Pause Slide 1	CW-1036	1
7-7	ZW290283	'U' Ring 2.85M	6-1-1	11
7-8	TC612944	Pause Slide 2, w/pin	CW-1034	1
7-9	ML612797	Pause Lever 1, w/pin	CW-1019	1
7-10	ML612808	Pause Lever 2, w/pin	CW-1020	1
7-11	ES630494	Leaf SW. BSW-53	25-10-22	1
7-12	ZS417216	Screw, pan head 3x4		1
7-13	EZ639077	Leaf SW. Table	CW-1090	1
7-14	ZS325495	Tapping Screw #2 3x6		8
7-15	ZG387832	Take-up Spring	CS-2034	1
7-16	ML610525	REC Prevention Lever 1-B, w/pin	CP-1125	1
7-17	TC632406	Clip Table	CW-1212	1
7-18	MT612821	Reel Brake, w/pin	CW-1022	1
7-19	ZG651251	Reel Brake Spring	CW-1087	1
7-20	TC612911	Wind Slide, w/pin	CW-1031	1
7-21	ES389700	Micro SW. SS-5	25-1-19	2
7-22	ES494188	Micro SW. SS-5GL-13	25-1-25	1
7-23	ZS487091	Screw, pan head 2.3x8		6
7-24	MZ605283	SW. Actuator	CW-1060	2
7-25	MI612764	Flywheel A, w/shaft	CW-1016	1
7-26	MI612775	Flywheel B, w/shaft	CW-1017	1
7-27	MH613271	Capstan Belt D=111x6x0.8	CW-1047	1
7-28	TC612898	Flywheel Supporting Plate	CW-1029	1
7-29	TC566662	Flywheel Holder	CP-1142	2
7-30	ZW245981	Push Nut D4		2
7-31	MZ638796	Belt Stopper	CW-1079	1
7-32	MZ595675	Wind Plate	CH-1049	1
7-33	ZG460484	Wind Plate Spring	CG-1083	1
7-34	ZG612900	wind Spring	CW-1030	1
7-35	ZS499331	Screw, pan head 2.3x5		2
7-36	ES648382	Push SW. UEG-63G	25-5-180	1
7-37	TC613225	SW. Bracket	CW-1042	1
7-38	ZS592378	Screw, pan head 2.6x3		2
7-39x	EA627480	REC SW. P.C Board	CW-1076	1
7-40	ES620605	Slide SW. SSB04223	25-3-107	1
7-41	ZS417161	Screw, pan head 2.3x4		2
7-42	ZG653995	Wind Slide Spring	CW-1091	1
7-43	MZ613247	SW. Table	CW-1044	3

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

8. P.C BOARDS

(1) PRE AMP P.C BOARD (CW-5024) BLOCK

Symbol No.	Parts No.	Description	Q'ty
(1)-1x	BA661386	Pre Amp P.C Board Comp. (CW-5024)	1
(1)-TR1	ET603257	Transistor 2SC1312S(G)(H)	2
(1)-TR2	ET391768	Transistor 2SC458LG(C)(D)	2
(1)-TR3	ET603257	Transistor 2SC1312S(G)(H)	2
(1)-TR4	ET517263	Transistor 2SC1312(G)(H)	2
(1)-TR5, 6, 7	ET520841	Transistor 2SC711(E)(F)(G)	6
(1)-TR8	ET619738	Transistor 2SA628(E)(F)(G)	2
(1)-TR9	ET517263	Transistor 2SC1312(G)(H)	2
(1)-TR10	ET603270	FET Transistor 2SK34(D)	2
(1)-TR11	ET603257	Transistor 2SC1312S(G)(H)	2
(1)-TR12	ET620381	Transistor 2SA725(F)(G)(H)	2
(1)-TR13	ET517263	Transistor 2SC1312(G)(H)	2
(1)-TR14	ET520841	Transistor 2SC711(E)(F)(G)	2
(1)-TR15	ET619738	Transistor 2SA628(E)(F)(G)	2
(1)-TR16	ET517263	Transistor 2SC1312(G)(H)	2
(1)-TR17	ET380834	Transistor 2SC711(E)	2
(1)-TR18	ET520841	Transistor 2SC711(E)(F)(G)	2
(1)-TR19	ET619738	Transistor 2SA628(E)(F)(G)	2
(1)-TR20	ET517263	Transistor 2SC1312(G)(H)	2
(1)-TR21	ET603270	FET Transistor 2SK34(D)	2
(1)-TR22, 23	ET520841	Transistor 2SC711(E)(F)(G)	4
(1)-TR24 to 26	ET399870	Transistor 2SC711(G)	2
(1)-D1	ED557447	Silicon Diode 1S1588	2
(1)-D2	ED619784	Germanium Diode 1N60	2
(1)-D3, 4	ED557447	Silicon Diode 1S1588	4
(1)-D5, 6	ED619784	Germanium Diode 1N60	4
(1)-D7	ED491130	Zener Diode WZ-085	2
(1)-D8 to 10	ED557447	Silicon Diode 1S1588	6
(1)-D11	ED619784	Germanium Diode 1N60	2
(1)-D12, 13	ED557447	Silicon Diode 1S1588	4
(1)-D14, 15	ED619784	Germanium Diode 1N60	4
(1)-D16 to 18	ED557447	Silicon Diode 1S1588	6
(1)-VR1	EV523620	Semi-fixed/Vol. V8K4-1 500ΩB	2
(1)-VR2	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	2
(1)-VR3	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	2
(1)-VR4	EV522797	Semi-fixed/Vol. V8K4-1 20kB	2
(1)-VR5	EV478686	Semi-fixed/Vol. V8K4-1 1 kB	2
(1)-VR6	EV464207	Semi-fixed/Vol. V8K4-1 5 kB	2
(1)-L1, 2	EO496350	Inductor 146LY 36MH(J)	4
(1)-L3	EO496361	Inductor 6070GE 23MH(J)	2
(1)-L4	EO243988	Ferri Inductor FL7H 3.3MH(J)	2
(1)-L5, 6	EO308395	Ferri Inductor FL7H 3MH(J)	4
(1)-L7	EO368403	Ferri Inductor FL9H 33MH(J)	2
(1)-T1	BT620392	Headphone Trans. S14-1235	2
		Capacitor, Vertical Type	
(1)-C1	EC513955	Styrol 220PF(J) 50WV	2
(1)-C2	EC220127	Elect 100μF 16WV	2
(1)-C3	EC432810	Elect 10μF 16WV NL	2
(1)-C4	EC516767	Styrol 470PF(K) 50WV	2
(1)-C5	EC493637	Elect 47μF 10WV	2
(1)-C6	EC392332	VFM 82PF(J) 50WV	2
(1)-C7	EC250841	Mylar 0.01μF(J) 50WV	2
(1)-C8, 9	EC320051	Elect 10μF 16WV	4
(1)-C10	EC557381	Mylar 0.0012μF(K) 50WV	2
(1)-C11	EC450527	Elect 4.7μF 25WV	2
(1)-C12	EC313108	Elect 1μF 50WV	2
(1)-C13	EC362068	Mylar 0.0018μF(K) 50WV	2
(1)-C14	EC467133	VFM 68PF(J) 50WV	2
(1)-C15	EC362068	Mylar 0.0018μF(K) 50WV	2
(1)-C16, 17	EC320051	Elect 10μF 16 WV	4
(1)-C18	EC290531	VFM 100PF(K) 50WV	2
(1)-C19	EC320051	Elect 10μF 16WV	2
(1)-C20	EC329883	Mylar 0.0056μF(J) 50WV	2
(1)-C21	EC320051	Elect 10μF 16WV	2
(1)-C22	EC321208	Elect 220μF 16WV	2
(1)-C23	EC604102	Solid Aluminum 0.33μF(K) 25WV	2
(1)-C24	EC523282	Solid Aluminium 0.1μF(M) 25WV	2
(1)-C25	EC320051	Elect 10μF 16 WV	2
(1)-C26, 27	EC523282	Solid Aluminum 0.1μF(M) 25WV	4
(1)-C28	EC320051	Elect 10μF 16WV	2
(1)-C29	EC290531	VFM 100PF(K) 50WV	2
(1)-C30	EC493637	Elect 47μF 10WV	2
(1)-C31	EC523282	Solid Aluminum 0.1μF(M) 25WV	2
(1)-C32	EC493637	Elect 47μF 10WV	2
(1)-C33	EC337500	Mylar 0.0047μF(J) 50WV	2
(1)-C34	EC329861	Mylar 0.027μF(J) 50WV	2
(1)-C35, 36	EC320051	Elect 10μF 16WV	4
(1)-C37	EC320040	Elect 47μF 16WV	2
(1)-C38	EC432810	Elect 10μF 16WV NL	2
(1)-C39	EC432786	Elect 22μF 6.3WV NL	2
(1)-C40	EC556525	FM 22PF(K) 500WV	2
(1)-C41	EC320051	Elect 10μF 16WV	2
(1)-C42	EC320040	Elect 47μF 16WV	2
(1)-C43	EC313108	Elect 1μF 50WV	2
(1)-C44	EC379787	Mylar 0.0039μF(J) 50WV	2
(1)-C45	EC495865	Styrol 3000PF(J) 50WV	2
(1)-C46	EC250683	Mylar 0.0022μF(J) 50WV	2
(1)-C47	EC313108	Elect 1μF 50WV	2
(1)-C48	EC493637	Elect 47μF 10WV	2
(1)-C49	EC290531	VFM 100PF(K) 50WV	2
(1)-C50	EC320051	Elect 10μF 16WV	2
(1)-C51	EC313108	Elect 1μF 50WV	2
(1)-C52	EC320051	Elect 10μF 16WV	2
(1)-C53	EC604102	Solid Aluminum 0.33μF(K) 25WV	2
(1)-C54	EC320051	Elect 10μF 16WV	2
(1)-C55	EC320040	Elect 47μF 16WV	2
(1)-C57	EC220994	Elect 10μF 25WV	2
(1)-C58	EC379765	Mylar 0.0027μF(J) 50WV	2
(1)-C59	EC329883	Mylar 0.0056μF(J) 50WV	2
(1)-C60	EC368335	Mylar 0.022μF(J) 50WV	2
(1)-C61, 62	EC412593	Styrol 820PF(J) 50WV	4
(1)-C63	EC604102	Solid Aluminum 0.33μF(K) 25WV	2
(1)-C64	EC523282	Solid Aluminum 0.1μF(M) 25WV	2
(1)-C65	EC320051	Elect 10μF 16WV	2
(1)-C66, 67	EC523282	Solid Aluminum 0.1μF(M) 25WV	4
(1)-C68	EC320051	Elect 10μF 16WV	2
(1)-C69	EC290531	VFM 100PF(K) 50WV	2
(1)-C70	EC493637	Elect 47μF 10WV	2
(1)-C71	EC523282	Solid Aluminum 0.1μF(M) 25WV	2
(1)-C72	EC493637	Elect 47μF 10WV	2
(1)-C73	EC337500	Mylar 0.0047μF(J) 50WV	2
(1)-C74	EC329883	Mylar 0.0056μF(J) 50WV	2
(1)-C75	EC329861	Mylar 0.027μF(J) 50WV	2
(1)-C76	EC493637	Elect 37μF 10WV	2
(1)-C77	EC320051	Elect 10μF 16WV	2
(1)-C78	EC539943	Elect 3.3μF 50WV	1
(1)-C79	EC220678	Elect 47μF 25WV	1
(1)-C80	EC391004	Mylar 0.0033μF(J) 50WV	2
(1)-C81	EC250604	Mylar 0.001μF(K) 50WV	2
(1)-C82	EC250841	Mylar 0.01μF(J) 50WV	2

Carbon Resistor Omitted

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

(2) SYS. CON P.C BOARD (CW-5023) BLOCK

Symbol No.	Parts No.	Description	Q'ty
(2)-1x	BA620965	Sys. Con P.C Board Comp. (CW-5023)	1
(2)-TR1	ET619762	Transistor 2SC1647(E)(U)	1
(2)-TR2	ET621268	Transistor 2SC711(F)(G)(H)	1
(2)-TR3	ET539122	Transistor 2SA733(P)(Q)(R)	1
(2)-TR4	ET517375	Transistor 2SD360(D)(E)	1
(2)-D1 to 3	ED560913	Silicon Diode 1S2473 VE	3
		Capacitor, Vertical Type	
(2)-C1, 2	EC220612	Elect 33μF 25WV	2
(2)-C3	EC487157	NP 0.47μF(M) 50WV	1
(2)-C4	EC250885	Mylar 0.01μF(K) 50WV	1

Carbon Resistor Omitted

(3) SERVO P.C BOARD (CA-2218) BLOCK

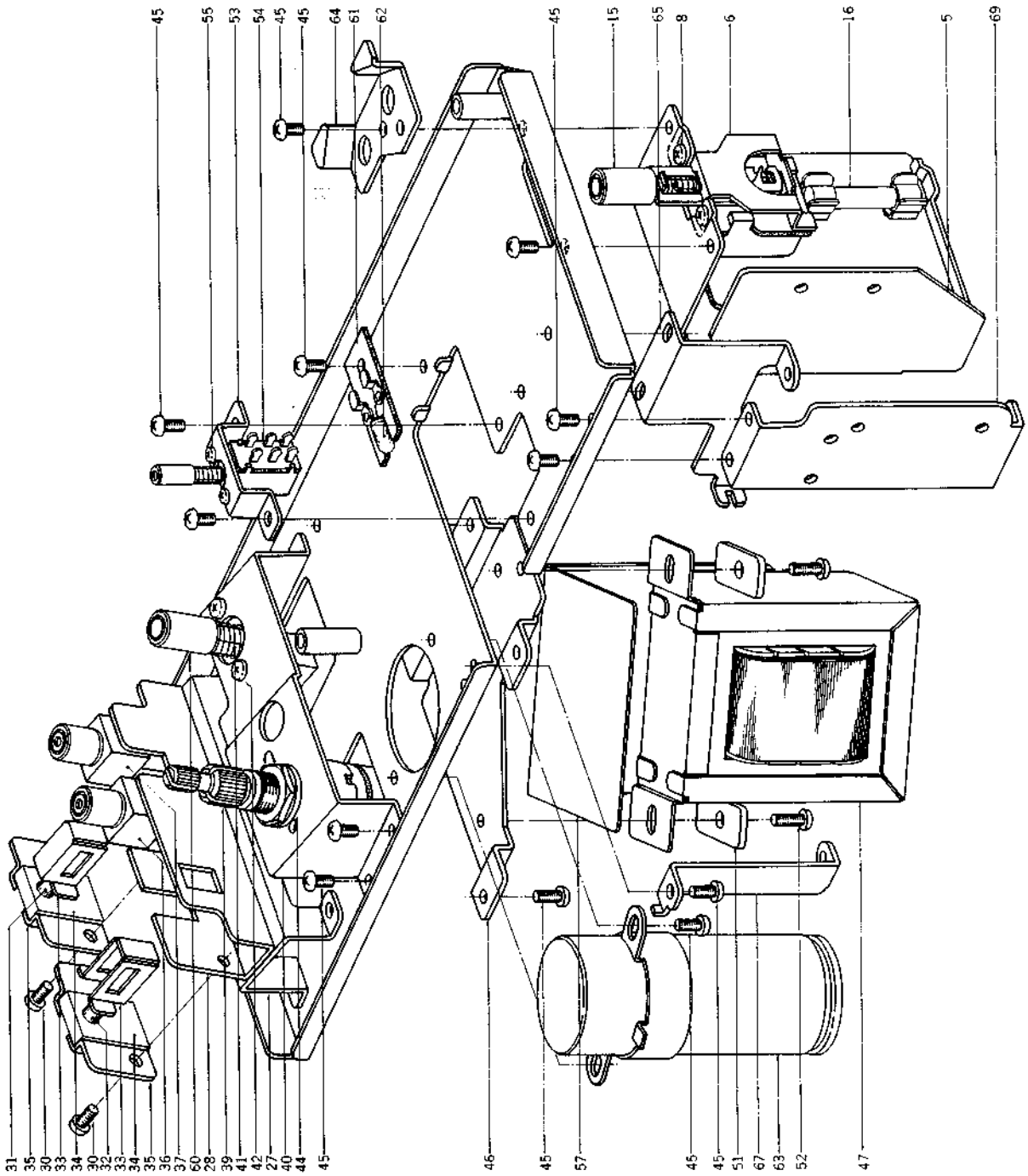
Symbol No.	Parts No.	Description	Q'ty
(3)-1x	BA661252	Servo P.C Board Com p. (CA-2218)	1
(3)-TR1 to 6	ET592424	Transistor 2SC1647(S)(E)	6
(3)-TR7	ET621775	Transistor T1P-47	1
(3)-D1 to 4	ED224548	Silicon Diode 10D2	4
(3)-D5	ED560913	Silicon Diode 1S2473 VE	1
(3)-L1	EO538391	Ferri Inductor FL11H 100μH(J)	1
(3)-VR1	EV620493	Semi-fixed/Vol. V8K4-1 B3K	1
(3)-2	EZ659867	Heat-sink Plate	1
(3)-3	ZS421806	Screw, pan head 3x8	1
(3)-4	ZW273756	Nut M3	1
(3)-5	ZS558101	Screw, pan head 3x6 w/washer	2
		Capacitor, Vertical Type	
(3)-C1	EC487157	NP 0.47μF(M) 50WV	1
(3)-C2	EC313323	Mylar 0.068μF(K) 50WV	1
(3)-C3	EC313108	Elect 1μF 50WV	1
(3)-C4	EC320051	Elect 10μF 16WV	1
(3)-C5	EC250582	Mylar 0.0033μF(K) 50WV	1
(3)-C6	EC313323	Mylar 0.068μF(K) 50WV	1
(3)-C7 to 10	EC251122	Mylar 0.027μF(K) 50WV	4
(3)-C11, 12	EC250997	Mylar 0.015μF(K) 50WV	2
(3)-C13	EC493637	Elect 47μF 10WV	1
(3)-C14	EC522617	Elect 1μF 100WV	1
(3)-C15	EC313121	Elect 220μF 25WV	1

Carbon Resistor Omitted

(4) POWER SUPPLY P.C BOARD (CW-5022) BLOCK

Symbol No.	Parts No.	Description	Q'ty
(4)-1x	BA661331	Power Supply P.C Baord Comp. (CW-5022)	1
(4)-TR1	ET517375	Transistor 2SD360(D)(E)	1
(4)-TR2, 3	ET511694	Transistor 2SC1211(D) (E)	2
(4)-D1 to 4	ED511097	Silicon Diode 1N4001	4
(4)-D5	ED498150	Zener Diode WZ-192	1
(4)-L1	EO464668	Ferri Inductor FL9H 470μH(K)	1
(4)-VR1, 2	EV650891	Semi-fixed/Vol. V10K8-4-2 B50K	2
(4)-T1	EO620482	OSC Coil QT-925	1
(4)-2	ZS421806	Screw, pan head 3x8	1
(4)-3	ZW273756	Nut M3	1
(4)-4	EZ627625	Heat-sink B	1
(4)-5	ZS558101	Screw, pan head 3x6 w/washer	2
		Capacitor, Vertical Type	
(4)-C1	EC432652	Elect 1000μF 35WV	1
(4)-C2	EC220151	Elect 100μF 25WV	2
(4)-C3, 4	EC220994	Elect 10μF 25WV	2
(4)-C5	EC220151	Elect 100μF 25WV	2
(4)-C6	EC423595	Mylar 0.033μF(M) 50WV	1
(4)-C7	EC383400	Plastic Film 5600PF(J) 500WV	1
(4)-C8, 9	EC649800	Styrol 820PF(J) 50WV	2
(4)-C10, 11	EC250604	Mylar 0.001μF(K) 50WV	2

9. ILLUSTRATION OF AMP ASSEMBLY (1) BLOCK



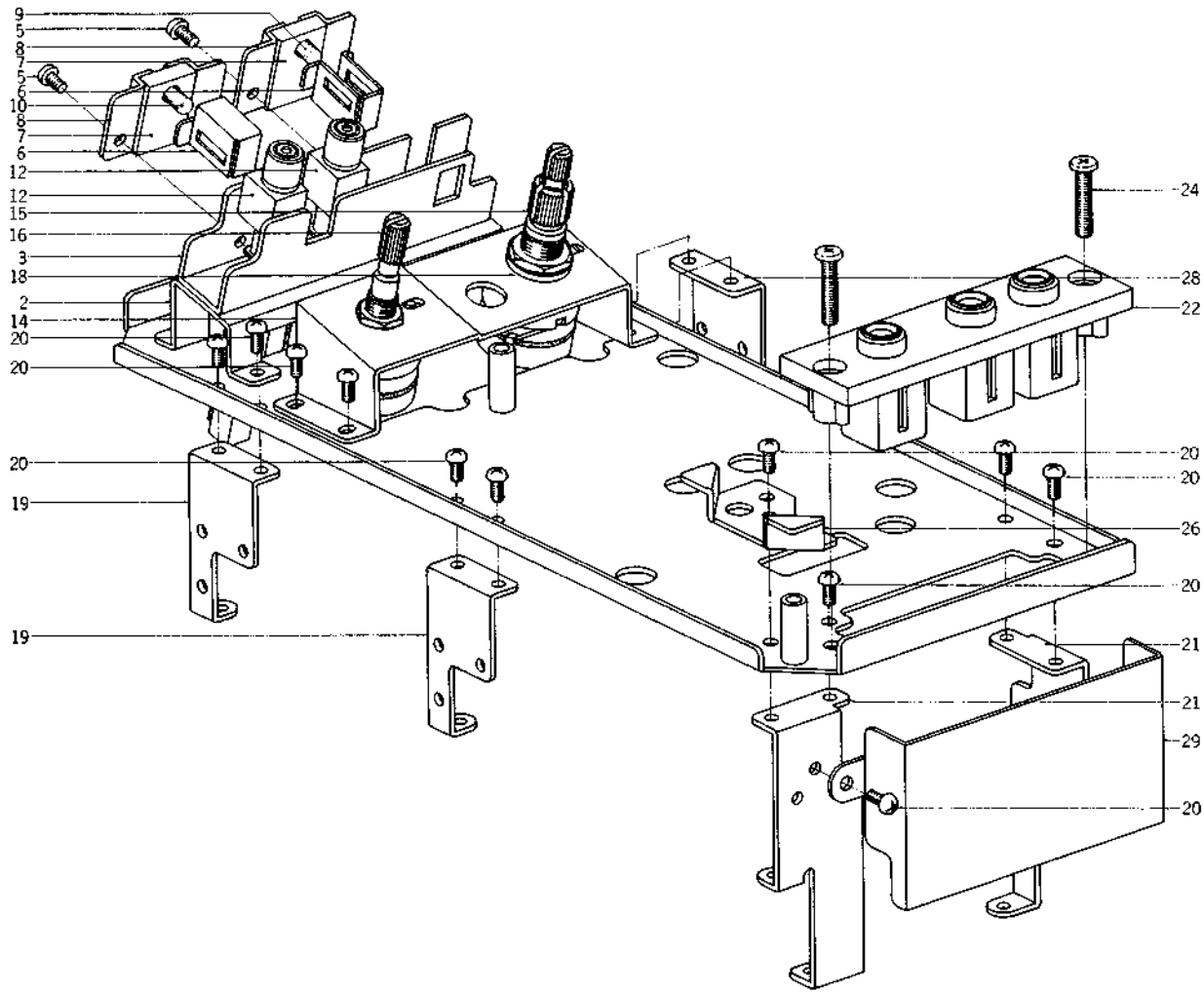
9) AMP ASSEMBLY (1) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	SW. BOX BLOCK			
9-1x	BS621077	SW. Box Block Comp.	CW	1
9-2x	BS621088	SW. Box Block Comp. (CEE)	CW	1
9-3x	BS621090	SW. Box Block Comp. (CSA)	CW	1
9-4x	BS621101	SW. Box Block Comp.(JPN)	CW	1
9-5	EZ614902	Power Supply SW. Table	CW-5028	1
9-6	ES469541	Push SW. TV-3 JB52	25-5-60	1
9-7x	ES621178	Push SW. S-J4162 (CEE)	25-5-145	1
9-8	ZS422076	Screw, pan head 3x5		2
9-9x	EC551160	Ceramic/C. NB821 YZ 0.01μF(Z) 1.4 kWV	24-5-55	1
9-10x	EA612178	Fuse P.C Board A	CH-5311	1
9-11x	EA614788	Fuse P.C Board B (CEE)	CH-5318	1
9-12x	EJ621415	Fuse Clip (CEE)	40-1-57	6
9-13x	EJ618805	Lug (w/calking)	32-1-56	6
9-14x	EJ514822	Fuse Holder, P.C Board S-N5051	40-1-28	2
9-15	SK631304	Push Button Knob I	91-5051	1
9-16	EF563681	Fuse 1A 250V	39-1-50	1
9-17x	EF593706	Fuse 500MAT (CEE)	39-1-53	1
9-18x	EF668474	Puse (SEMKO T TYPE) 400MAT (CEE)	39-1-53	1
9-19x	EF668485	Fuse (SEMKO T TYPE) 250MAT (CEE)	39-1-53	1
9-20x	EF456333	Fuse ST-4 2A (CSA)	39-1-28	1
9-21x	EF460146	Fuse ST-4 (CSA)	39-1-28	1
9-22x	EF277424	Fuse ST-4 0.8A (CSA)	39-1-28	1
9-23x	EF563703	Fuse 2A 250V (JPN)	39-1-50	1
9-24x	EF575965	Fuse 0.4A 250V (JPN)	39-1-50	1
9-25x	EF575932	Fuse 0.8A 250V (JPN)	39-1-50	1
	SW. TABLE R BLOCK			
9-26x	BS620987	SW. Table R Block Comp.	CW2	1
9-27	TC613664	SW. Bracket A	CW-5013	1
9-28	TC613653	Lamp Retaining Plate	CW-5012	1
9-29x	ES620537	Push SW. 2FT-0015FF1320	25-5-155	1
9-30	ZS422076	Screw, pan head 3x5		6
9-31	EL593662	Cord Lamp 5.5V 60MA (220MMx2)	28-2-37	1
9-32	EL621461	Lamp 24V 35 MA (300MMx2)	28-2-42	1
9-33	SE580983	Lam p Mask	TD-5021	2
9-34	EZ580994	Lamp Holder	TD-5022	2
9-35	EZ581005	Lamp Holder Retainer	TD-5023	2
9-36	SB613743	Push Button Comp. A	CW-5021	1
9-37	SB613754	Push Button Comp. B	CW-5021	1
	VOLUM E PLATE R BLOCK			
9-38x	BZ620976	Volume Plate R Block Comp.	CW2	1
9-39	EV480565	Double/Vol. DJ10A 50KAx2	36-3-41	1
9-40	TC613607	Volume Plate 2	CW-5006	1
9-41	ES551171	Push SW. 1FS-2U-12	25-5-86	1
9-42	ZS422076	Screw, pan head 3x5		2
9-43x	ER345712	Carbon/R. RD1/4 22k(J) (Insu. Type)	35-9-5	1
9-44	ZW665425	Volume Washer	CW-5047	1

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	AMP CHASSIS R BLOCK			
9-45	ZS325495	Tapping Screw #2 3x6		20
9-46	TC613563	Power Trans. Table	CW-5004	1
9-47	BT620515	Power Trans. CWT-1	38-4-313	1
9-48x	BT620425	Power Trnas. CWT-4 (CEE)	38-4-343	1
9-49x	BT620414	Power Trans. CWT-3 (CSA)	38-4-342	1
9-50x	BT638166	Power Trans. CWT-11(JPN)	38-4-341	1
9-51	EZ486617	Trans. Reinforcement Plate B	I.F-5222	2
9-52	ZS516205	Tapping Screw #2 3x8 (BR) w/washer		2
9-53	TC613552	Memory Retaining Plate	CW-5003	1
9-54	ES619053	Push SW. SPJ-10114B	25-5-144	1
9-55	ZS460440	Screw, pan head 2x4		2
9-56	SB613618	Memory Button	CW-5007	1
9-57	EZ669093	Trans. Shield	CW-5048	1
9-58x	MZ569687	Shield Retainer	EG-5063	1
9-59x	MH626771	Panel Prop B	CW-5217	2
9-60	SK634410	Push Button Knob J	91-5051	1
9-61	TC612112	Lamp Plate (1)	CH-5302	1
9-62	EL603268	Lamp 24V 35MA (Reed Type)	28-2-39	1
9-63	EC620526	MP/C. 6μF 150WV AC (Lug Type Uni/D.)	24-9-90	1
9-64	SZ632417	Case Retainer	CW-5221	1
9-65	TC613574	Sys. Con Retaining Plate	CW-5005	1
9-66	ZW562476	Earth Lug M3		1
9-67	TC626580	Pre Card Angle A	CW-5204	1
9-68	EJ510333	Wire Clip 220-JD481610-0104 (Nylon)	2-7-17	1
9-69	TC484042	Retaining Foot A	CT-1001	1

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

10. ILLUSTRATION OF AMP ASSEMBLY (2) BLOCK

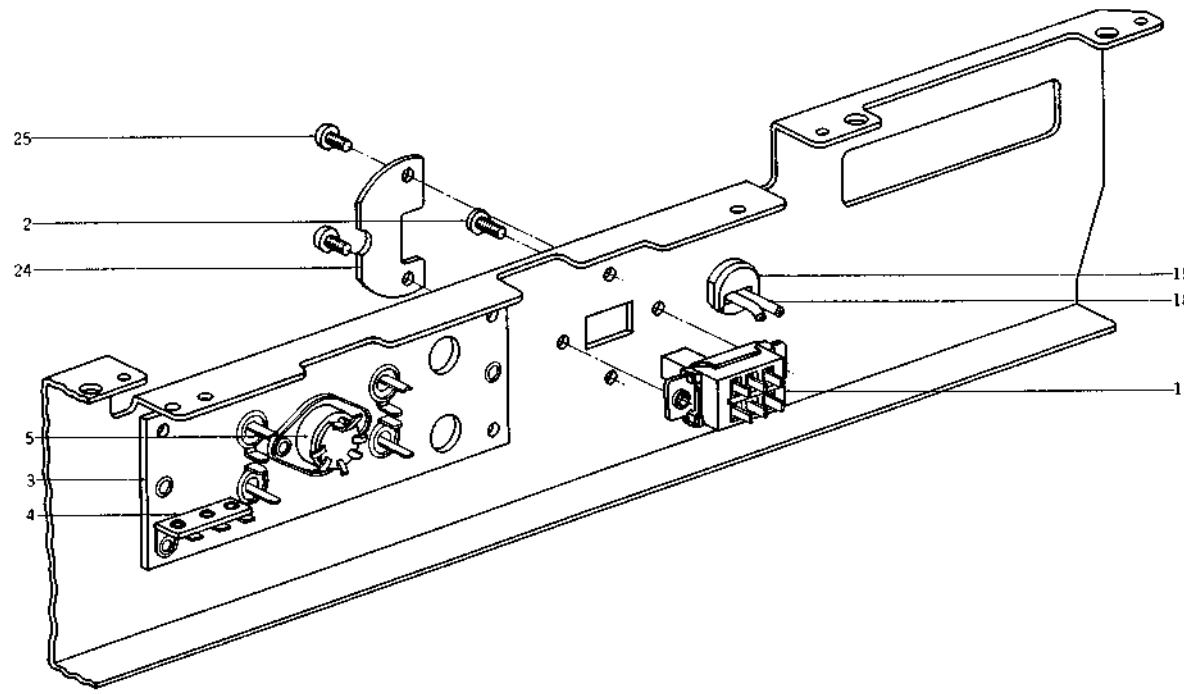


10) AMP ASSEMBLY (2) BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
		SW. TABLE L BLOCK		
10-1x	BS661397	SW. Table L Block Comp.	CW2	1
10-2	TC613675	SW. Bracket B	CW-5013	1
10-3	TC626376	Lamp Mt. Plate B	CW-5012	1
10-4x	ES620346	Push SW. CWS-1 2FT-0008FF1310	25-5-149	1
10-5	ZS422076	Screw, pan head 3x5		6
10-6	SE580983	Lamp Mask	TD-5021	2
10-7	EZ580994	Lamp Holder	TD-5022	2
10-8	EZ581005	Lamp Holder Retainer	TD-5023	2
10-9	EL621461	Lamp 24V 35MA (300MMx2)	28-2-42	1
10-10	EL593662	Cord Lamp 5.5V 60MA (220MMx2)	28-2-37	1
10-11x	EC311793	Mylar 0.012μF(J) 50WV	24-1-1	1
10-12	SB613765	Push Button Comp. C	CW-5021	2
		VOLUME PLATE L BLOCK		
10-13x	BZ621000	Volume Plate L Block Comp.	CW2	1
10-14	TC613642	Volume Plate	CW-5011	1
10-15	EV480565	Double/Vol. DJ10A 50KAx2	36-3-41	1
10-16	EV620335	Co-axial 2-throw Vol. GJ60A B10Kx2	36-1-37	1
10-17x	ER345712	Carbon/R. RD1/4 22k(J) (Insu. Type)	35-9-5	1
10-18	ZW665425	Volume Washer	CW-5047	1
		AMP CHASSIS L BLOCK		
10-19	EZ614823	P.C Board Retaining Foot B	CW-5010	2
10-20	ZS325495	Tapping Screw #2 3x6		6
10-21	TC613620	Retianing Foot	CW-5009	2
10-22	EJ555794	Jack, 3-throw S-G0911	31-2-43	1
10-23	ZW559135	Tapping Screw #2 4x18 (Pan)		2
10-24	SK634410	Push Button Knob J	91-5051	3
10-25x	TR549022	Pause Lamp Cover	EG-5060	1
10-26	SZ632417	Case Retianer	CW-5221	1
10-27x	EJ510333	Wire Clip 220-JD481610-0104(Nylon)	2-7-17	2
10-28	TC TC613631	P.C Board Retaining Foot A	CW-5010	1
10-29	EZ626286	Mic Jack Shield	CW-5034	1

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

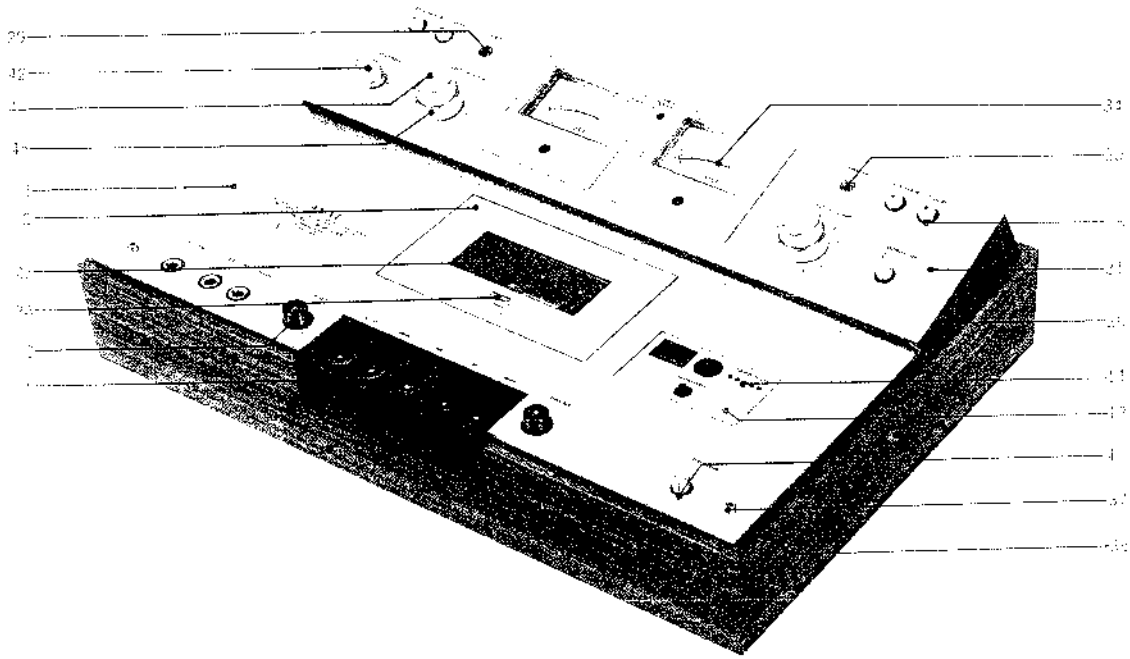
11. ILLUSTRATION OF REAR CHASSIS BLOCK



11) REAR CHASSIS BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
11-1	ES479485	Slide SW. S-1	25-3-66	1
11-2	ZS593177	Screw, truss head 3x8		2
11-3	EJ620357	Jack Plate J-4 CW	31-5-119	1
11-4	EJ654827	Lug Plate VB3L1	33-4-13	1
11-5	EJ558246	Din Jack 5P	31-1-99	1
11-6x	ER440921	Carbon/R. RD1/4 27k(J) (Insu. Type)	35-9-5	2
11-7x	ER213715	Carbon/R. RD1/4 100k(J) (Insu. Type)	35-9-5	2
11-8x	ER315213	Carbon/R. RD1/4 8.2k(J) (Insu. Type)	35-9-5	2
11-9x	ER345712	Carbon/R. RD1/4 22k(J) (Insu. Type)	35-9-5	2
11-10x	ZW411895	Hollow Rivet 3x5	7-6-6	4
11-11x	SM614046	Jack Name Plate C-1	CW-5017	1
11-12x	SM614125	Jack Name Plate D2 (CEE)	CW-5017	1
11-13x	SM614711	Rear Name Plate C (CSA)	CW-5017	1
11-14x	SM614722	Jack Name Plate D-3 (JPN)	CW-5017	1
11-15	EZ382263	Strain Relief SR-4K-4	2-7-12	1
11-16x	EZ246936	Strain Relief SR-6W (3 core)	2-7-8	1
11-17x	EJ631945	Strain Relief SR-4N-4 (CEE)	2-7-49	1
11-18	EW374894	AC Cord U/L 3M	26-3-19	1
11-19x	EW315448	Australia Cord (3 core)	26-3-11	1
11-20x	EW524845	AC Cord 2.5M (JPN)	26-3-31	1
11-21x	EW516600	AC Cord VM-0065 (CEE)	26-3-28	1
11-22x	ZW273881	Earth Lug M4 (CEE)		1
11-23x	ZS325495	Tapping Screw #2 3x6 (CEE)		1
11-24	TC613697	Volt Indication Plate	CW-5018	1
11-25	ZS447761	Tapping Screw #2 3x6 (BR) (Black)		2

12. PHOTO OF FINAL ASSEMBLY BLOCK



12) FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
	FRONT PANEL BLOCK			
12-1x	BZ620717	Front Panel Block Comp.	CW2	1
12-2	SP614193	Front Panel	CW-6001	1
12-3	SE613866	Button Escutcheon C	CW-6016	2
12-4	SE613888	Button Escutcheon A	CW-6021	1
12-5	SE614204	Front Panel Escutcheon	CW-6002	1
12-6x	TC614057	Lid Cover Table, w/spring	CW-6005	1
12-7x	TC646266	Left Shaft Table B	CW-6009	1
12-8x	ZS608275	Screw, pan head 3x5, w/washer		3
12-9x	TC613811	Shaft Table (Left), w/pin	CW-6009	1
12-10x	TC613800	Shaft Table (Right), w/shaft	CW-6009	1
12-11x	MB495123	Buffer Rubber	CC-6304	2
12-12x	ZG613822	Cover Return Spring A	CW-6011	1
12-13	SP613787	Counter Panel	CW-6006	1
12-14	SE586855	Tape Run Lens	CH-6010	1
12-15x	TC614362	Counter Panel Table	CW-5004	1
12-16x	MZ613844	Stopper	CW-6012	1
12-17x	ZW290283	'U' Ring 2.85M	6-1-1	1
12-18x	ZG664683	Lock Stopper Spring	CW-6044	1
12-19x	SE613912	Mask A	CW-6032	2
12-20x	SE613923	Mask B	CW-6032	2
12-21x	SE606420	Meter Mask	CW-5029	1
12-22	SP613855	Lid Cover Panel	CW-6014	1
12-23	TC614068	Case Lid	CW-6013	1
12-24	SM518310	Name Plate (GX) B	CG-6411	1
	VU PANEL BLOCK			
12-25x	SP620763	VU Panel Block Comp.	CW2	1
12-26	TC614081	VU Panel Table	CW-6017	1
12-27x	EZ632395	Lamp Shield	CW-6029	1
12-28	SE613888	Button Escutcheon A (Black)	CW-6021	5
12-29	SE612055	Lamp Lens A (Red)	CW-6314	1
12-30	SE612077	Lamp Lens B (Orange)	CW-6314	1
12-31	SP614215	VU Panel	CW-6018	1
12-32x	TC613877	Panel Retainer	CW-6022	2
12-33x	ZS325495	Tapping Screw =2.3x6		11
	ASSEMBLY BLOCK			
12-34	EM620368	VU Meter CW KL-250B 38 (Yellow)	46-1-97	2
12-35x	SE615374	Meter Mask A	CW-5025	2
12-36x	ZW613590	Panel Nut	CW-6030	2
12-37	ZS613901	Panel Screw	CW-6031	1
12-38	SZ614103	Wood Frame	CW-6023	1
12-39x	SE614070	Jack Plate Escutcheon	CW-6024	1
12-40x	SP614114	Rear Cover	CW-6025	1
12-41x	ZS523664	Tapping Screw =2.3x10 (BR)		4
12-42	SK639022	Single Knob D	CW-5210	1
12-43x	EZ626286	Mic Jack Shield	CW-5034	1
12-44	SK631078	Double Knob (Upper), w/bush	MY-6206	2
12-45	SK631067	Double Knob (Lower), w/bush	MY-6207	2
12-46x	SM614294	Rear Name Plate GXC-325D	CG-6510	1

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

13. LIST OF INTERCHANGEABLE SEMICONDUCTORS

Original Parts			Interchangeable Parts	
Description	Parts No.	Utilizing P.C Board	Description	Parts No.
2SA628(E)(F)(G)	ET619738	CW-5024	2SA733(P)(Q)(R)	ET539122
			2SA640(E)(F)	ET623790
2SA725(F)(G)(H)	ET620381	CW-5024	2SA640-1(P)(Q)(R)	ET621281
2SA733(P)(Q)(R)	ET539122	CW-5023	2SA628(E)(F)(G)	ET619738
2SC458LG(C)(D)	ET391768	CW-5024	2SC1312(G)(H)	ET517263
			2SC693U(F)	ET315472
2SC711(G)	ET399870	CW-5024	2SC1647(E)	ET649945
			2SC945L(K)(P)	ET635220
2SC711(E)(F)(G)	ET520841	CW-5024	2SC536(E)(F)(G)	ET621235
			2SC1647(R)(S)(E)(U)	ET621270
2SC711(F)(G)(H)	ET621268	CW-5023	2SC1647(S)(E)(U)	ET601312
2SC1175(E)(F)	ET622080	CW-5022	2SC1211(D)(E)	ET511694
2SC1312R(G)(H)	ET517263	CW-5024	2SC458LG(C)(D)	ET391768
			2SC1648(E)(U)(S)	ET601323
2SC1312S(G)(H)	ET603257	CW-5024	2SC693U(F)	ET315472
			2SC458LG(C)(D)	ET391768
2SC1647(E)(U)	ET619762	CW-5023	2SC711(F)(G)	ET624914
2SC1647(S)(E)	ET592424	CA-2218		
2SC1683(P)(Q)	ET635826	CA-2218	TIP47	ET621775
			TIP48	ET621786
2SD360(D)(E)	ET517375	CW-5022	2SC1096(K)(L)	ET471025
		CW-5023	2SD325(D)(E)	ET631855
2SK34(D)	ET603270	CW-5024	2SK30A GR	ET491051
1S2473VE	ED560913	CW-5023	WG599	ED514721
		CA-2218	WG713	ED515790
1N4001	ED511097	CW-5022	10D05	ED494583
1S1588	ED557447	CW-5024	1S2473VE	ED560913
			WG599	ED514721
1N60	ED428264	CW-5024	1S188AM	ED562386
			1N34A	ED219464
10D2	ED224548	CA-2218	1N4004	ED570273
			10D4	ED224550
WZ085	ED491130	CW-5024	RD6A(M)	ED468303
WZ192	ED498150	CW-5022	DN-831	EI620640

INDEX

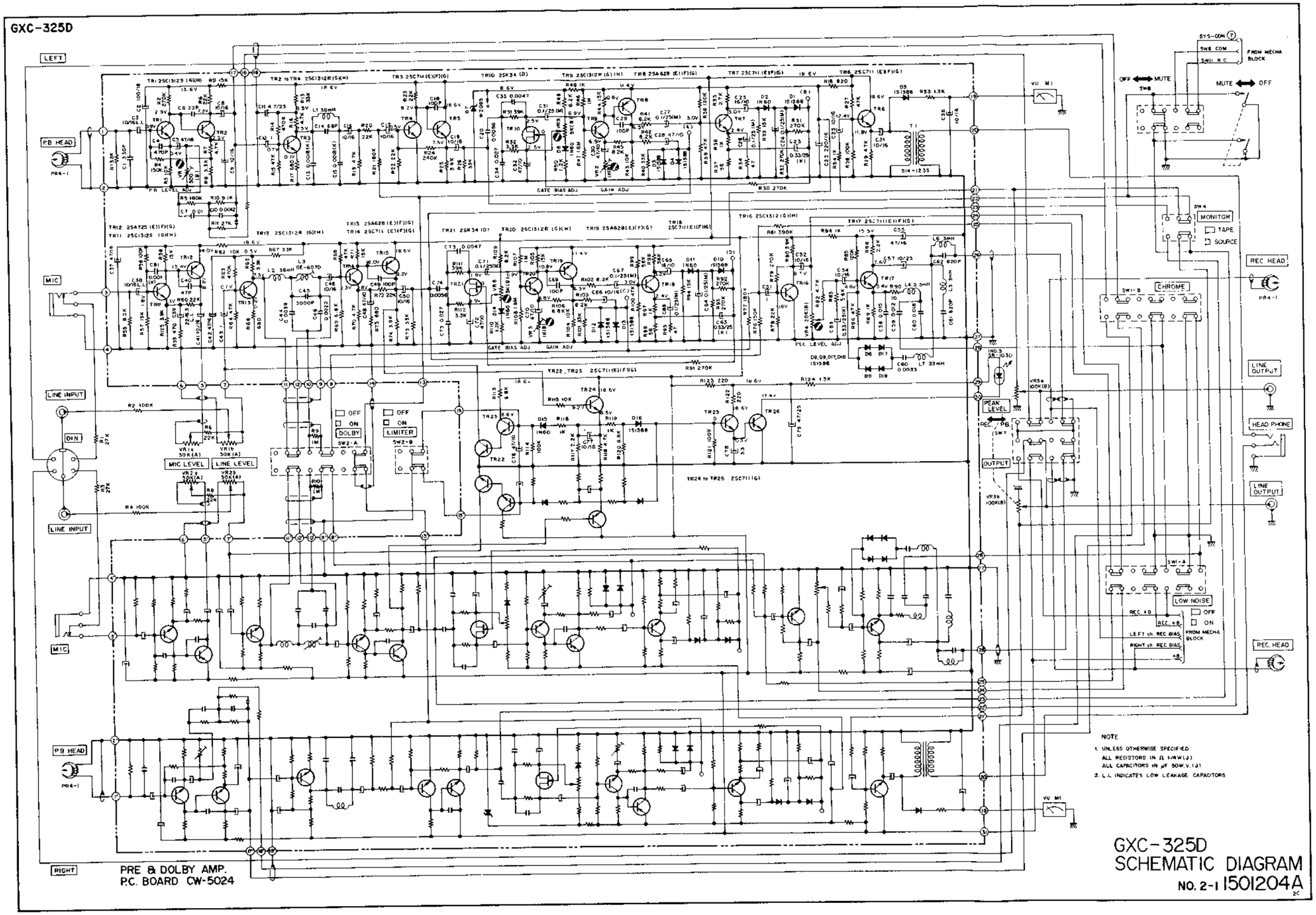
INDEX

SECTION 3

SCHEMATIC DIAGRAM

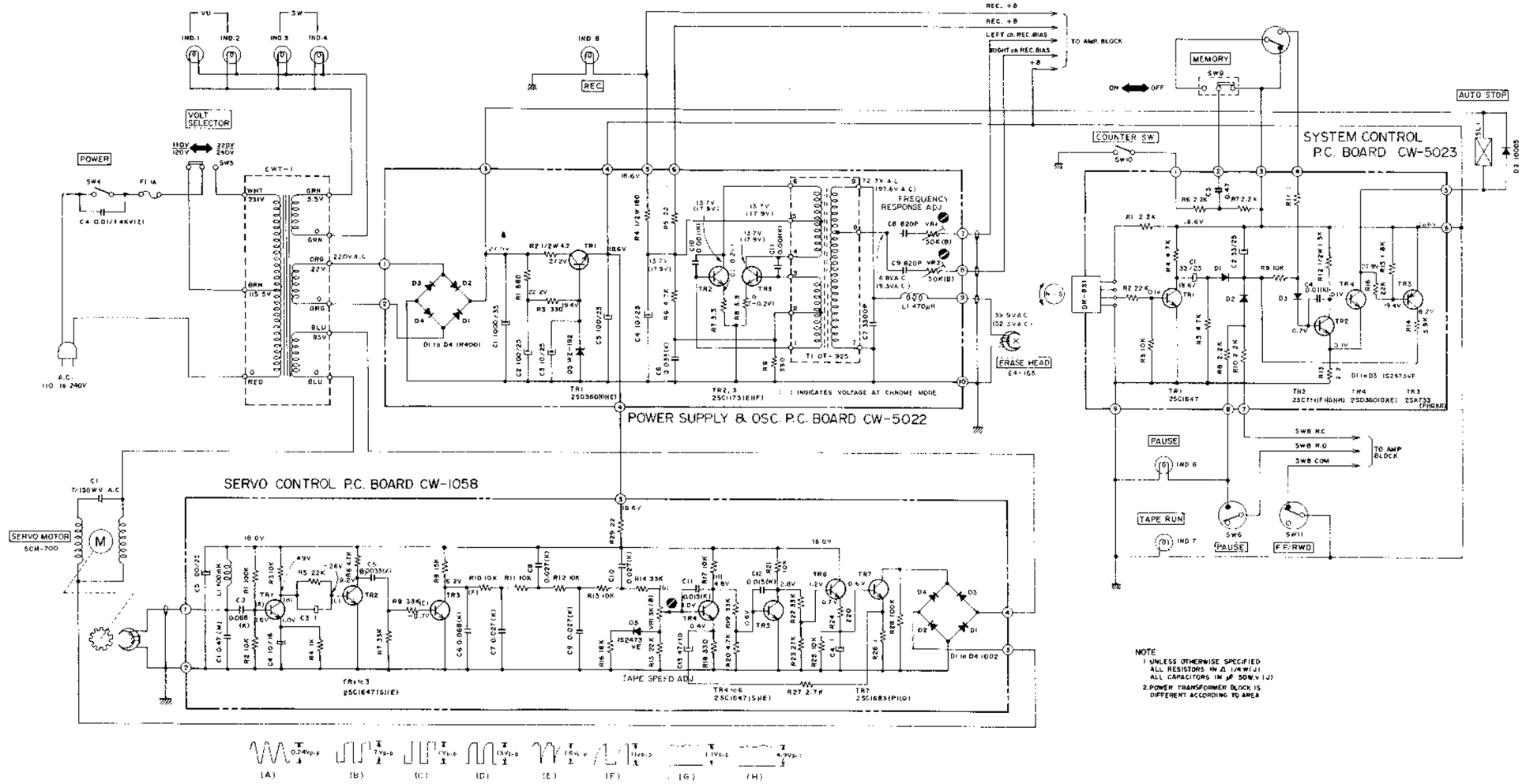
1. GXC-325D SCHEMATIC DIAGRAM

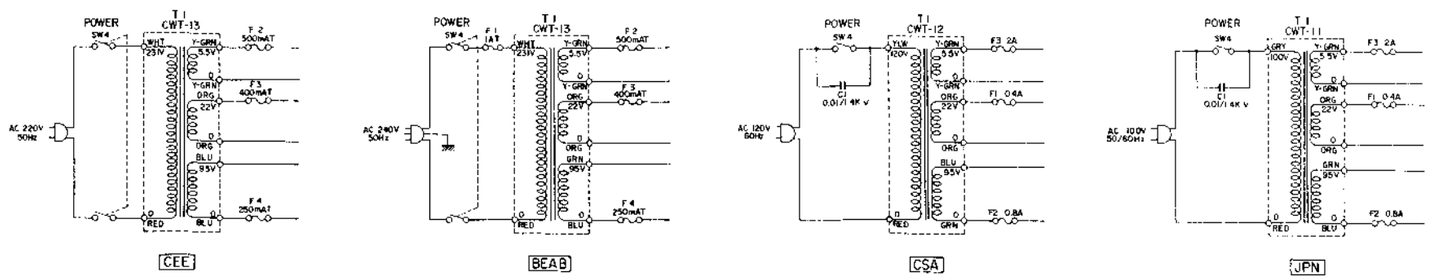
GXC-325D



GXC-325D
SCHEMATIC DIAGRAM
NO. 2-1 1501204A
2C

GXC-325D





NOTE
1. UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN Ω 1/4W(J)
ALL CAPACITORS IN μF 50WV(J)
2. POWER TRANSFORMER BLOCK IS DIFFERENT ACCORDING TO AREA

GXC-325D
SCHEMATIC DIAGRAM
NO. 2-2 1501205A