

GX-286

SERVICE MANUAL

PARTS LIST

AKAI STEREO TAPE RECORDER

MODEL **GX-286**

ALSO APPLICABLE TO MODEL GX-286D, GX-286DB

STEREO TAPE RECORDER

MODEL GX-286

ALSO APPLICABLE TO MODEL GX-286D
AND GX-286DB STEREO TAPE DECKS

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SECTION 1

SERVICE MANUAL

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I. SPECIFICATIONS

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

TRACK SYSTEM	4-track 2-channel stereo, monaural system	
TAPE SPEED	7-1/2 ips. (19 cm/sec.) ±1% 3-3/4 ips. (9.5 cm/sec.) ±1.5%	
WOW AND FLUTTER	Less than 0.07% R.M.S. at 7-1/2 ips. Less than 0.09% R.M.S. at 3-3/4 ips. *Less than 0.10% at 7-1/2 ips. FWD *Less than 0.12% at 7-1/2 ips. REV *Less than 0.15% at 3-3/4 ips. FWD *Less than 0.18% at 3-3/4 ips. REV	
TOTAL WOW AND FLUTTER	*Less than 0.12% at 7-1/2 ips. FWD *Less than 0.18% at 3-3/4 ips. REV	
FREQUENCY RESPONSE	30 to 24,000 Hz ±3 dB at 7-1/2 ips. *30 to 22,000 Hz ±3 dB at 7-1/2 ips. *30 to 18,000 Hz ±3 dB at 3-3/4 ips. (SCOTCH #211 Tape, Low noise position, -20 VU recording)	
DISTORTION FACTOR	Less than 0.4%	
TOTAL DISTORTION FACTOR	*Less than 1.5% at 7-1/2 ips. *Less than 2% at 3-3/4 ips. (SCOTCH #211 Tape, 1,000 Hz "0" VU recording, playback)	
SIGNAL TO NOISE RATIO	Better than 58 dB (with Dolby Process: 66 dB at 5 kHz Models GX-286 and GX-286DB only) *Better than 50 dB	
TOTAL SIGNAL TO NOISE RATIO	*Better than 47 dB	
OUTPUTS	LINE OUTPUT	0.775V (0 ± 1 dB/0 ± 1.5 dB, FWD/REV) Using a 700 Hz "0" VU pre-recorded tape, output volume max.
	DIN OUTPUT	0.5V
INPUTS	MIC INPUT	More than 0.35 mV
	LINE INPUT	More than 90 mV
	DIN INPUT	More than 4 mV
RECORDING PLAYBACK LEVEL	0.775V (0 ± 1.5 dB) using a SCOTCH #211 Tape	
CROSS TALK	Better than 59 dB (stereo) Better than 67 dB (monaural) *Better than 40 dB (stereo) *Better than 55 dB (monaural) (1,000 Hz +3 VU recording)	
ERASE RATIO	Better than 70 dB	
RECORDING BIAS FREQUENCY	100 kHz ±5%	
BIAS LEAK	Better than -45 dB Better than -30 dB (GX-286D only)	
HIGH FREQUENCY DEVIATION	Within 3 dB, 8,000 Hz 3-3/4 ips. tape at 7-1/2 ips.	
RECORDING CAPACITY	90 min. stereo recording using a 1,800 ft. tape at 7-1/2 ips.	
F.FWD AND RWD TIME	125 sec.: F.FWD/115 sec.: RWD using a 1,800 ft. tape at 50 Hz.	
MOTORS	CAPSTAN MOTOR	2 speed A.C. servo control outer rotor motor Type: SCM2-24KJ 4 pole Revolutions: 615 r.p.m at 7-1/2 ips. (19 cm/sec.) 307.5 r.p.m at 3-3/4 ips. (9.5 cm, sec.)
	REEL MOTOR	Two 6-pole eddy current outer rotor motors Type: 24XO-MR Revolutions: 930 r.p.m. at 50 Hz 1,120 r.p.m. at 60 Hz
HEADS	ERASE HEAD	Type: E4-260 Gap: Double Gap Impedance: 210Ω ±10% at 100 kHz D.C. Resistance: 2Ω
	RECORDING HEAD	Type: R4-200 Gap: 4 microns Impedance: 1,870Ω at 100 kHz D.C. Resistance: 8Ω
	PLAYBACK HEAD	Type: P4-202 Gap: 1.7 ± 0.5 microns Impedance: 1,400Ω at 1 kHz D.C. Resistance: 268Ω

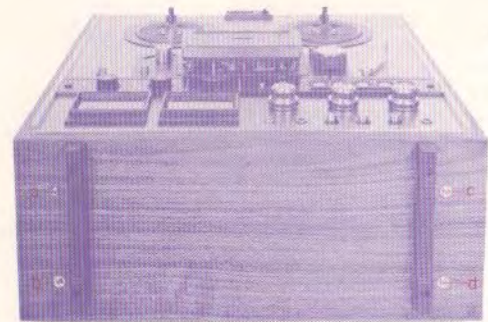
TRANSISTORS AND F.E.T.	2SA564(Q)(R) 1 2SC1312(G)(H) ... 18 2SC1098(K)(L) ... 1 2SA564(Q) 4 2SK30A(GR) 6	2SC1247A(V) 3 2SC945(P)(Q)(R) ..47 2SK30A(GR) 6 2SC458(C) 12	2SC783(O)(P) 1 2SD360(D1)(D2) ... 1 2SC1211(D)(E) 1 2SC458LG(C)(D) ..12
DIODES	1N34A 2 10D4 1 10D05 9 (Deck Type) 10D05 13(Recorder Type)	10D2 6 1S1588 63 YZ088A 2	1S1587 1 RD5A(M) 1 YZ088A 2
POWER SUPPLY	100 to 240V A.C. 50/60 Hz Universal models 220V A.C. 50 Hz CEE models 120V A.C. 60 Hz CSA models 100V A.C. 50/60 Hz JPN models		
POWER CONSUMPTION	90W		
DIMENSIONS	445(W) x 460(H) x 233(D) mm (17.5" x 18.1" x 9.2")		
WEIGHT	22.8 kg (50.2 lbs) GX-286 20.0 kg (44.0 lbs) GX-286D 20.6 kg(45.3 lbs) GX-286DB		

NOTE: Specifications subject to change without notice.

II. DISMANTLING UNIT

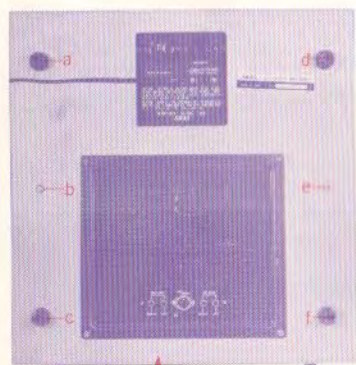
In case of trouble, etc. necessitating disassembly, please disassemble in the order shown in photographs. Reassemble in reverse order.

1



SCREWS

2



CASE

3



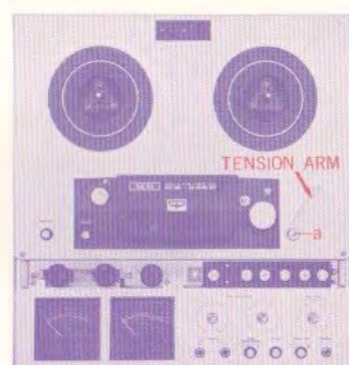
CONTROL PANEL

4



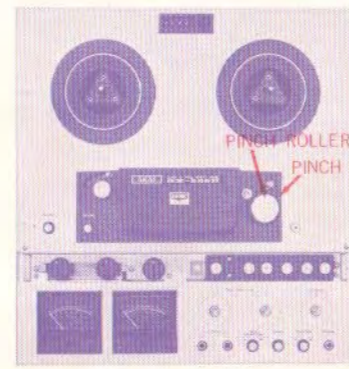
CONTROL KNOBS

5



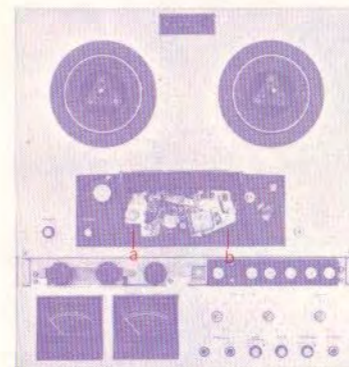
TENSION ARM

6



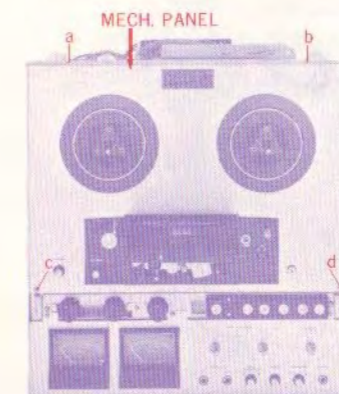
PINCH ROLLER CAP
PINCH ROLLER

7



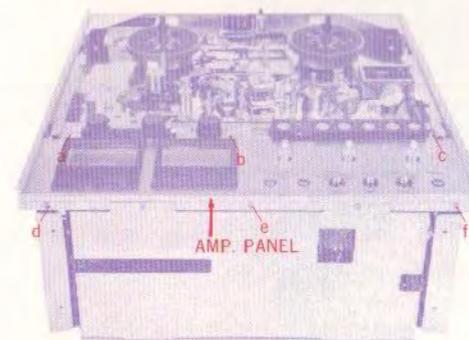
SCREWS

8



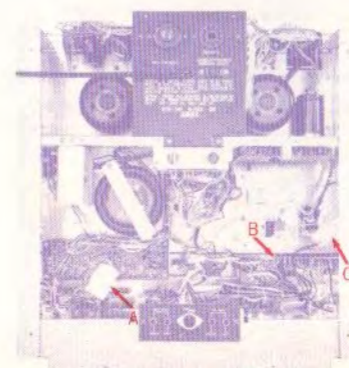
MECH. PANEL

9



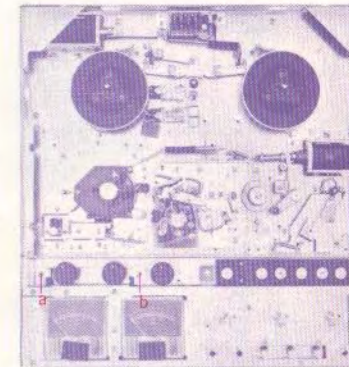
AMP. PANEL

10



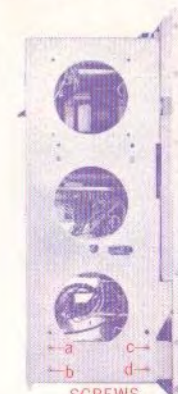
CONNECTION PLUGS

11



SCREWS

12



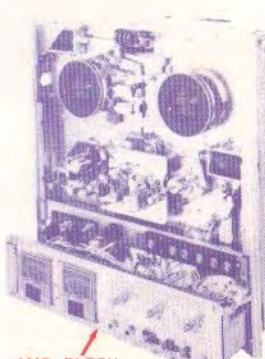
SCREWS

13



SCREWS

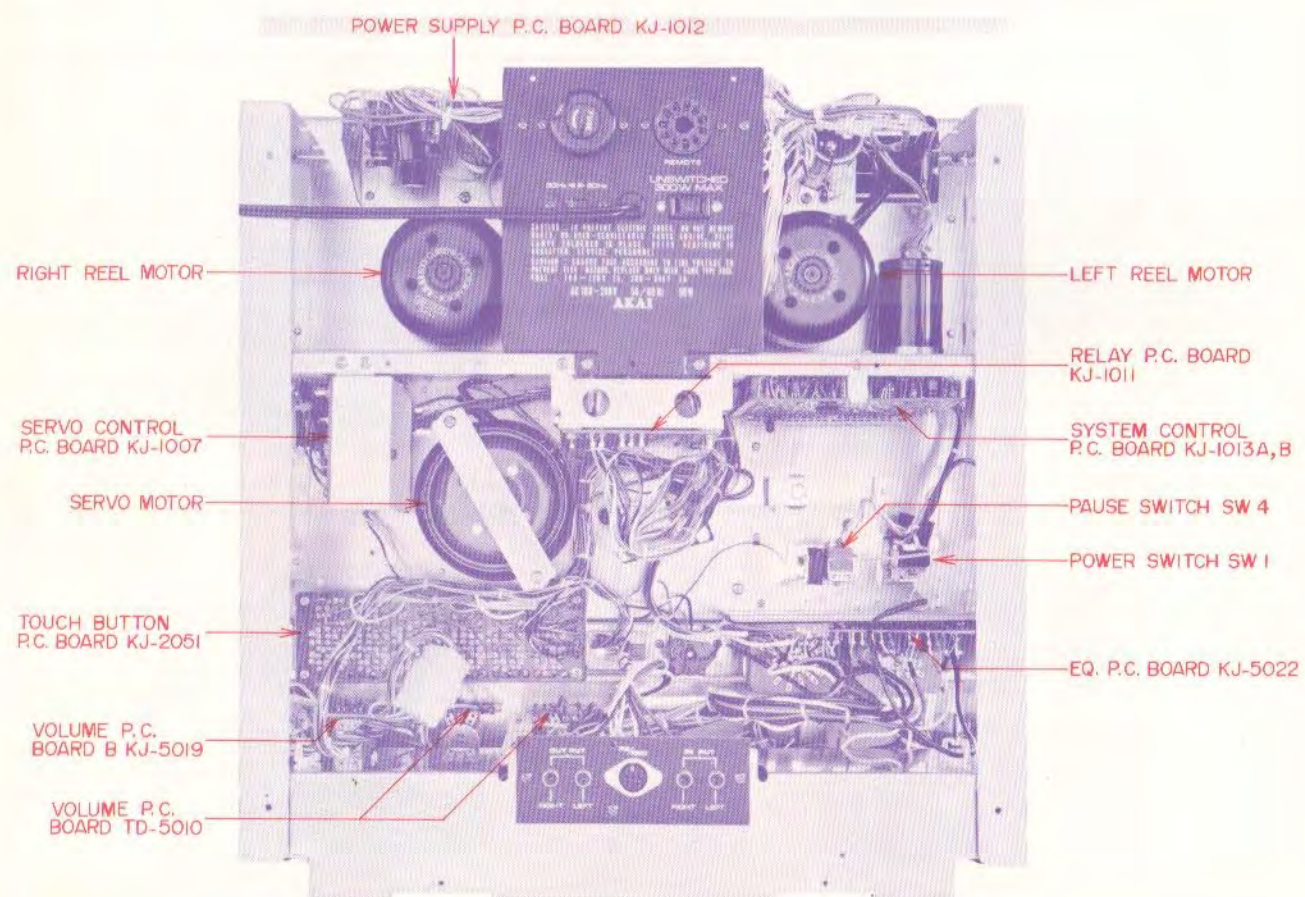
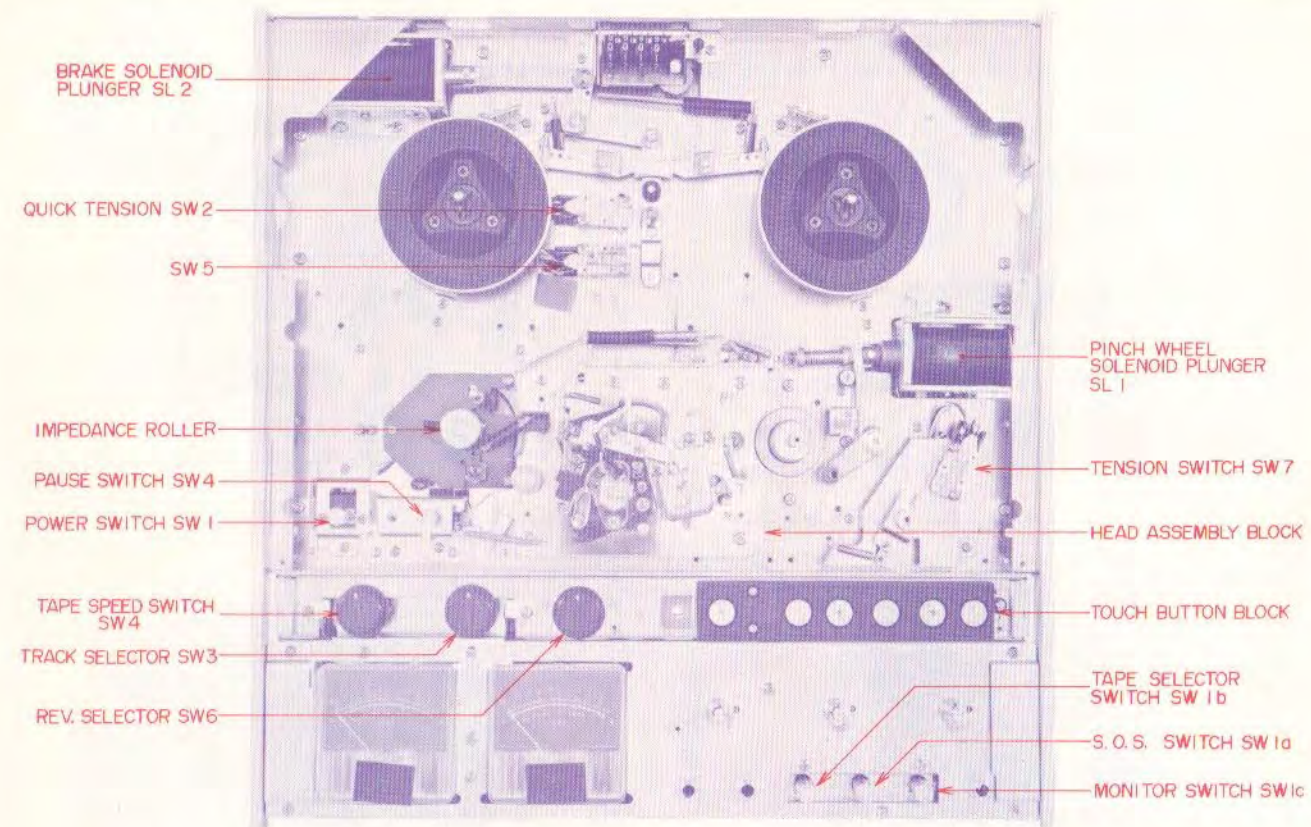
14



AMP. BLOCK

MECH. BLOCK

III. ARRANGEMENT OF PRINCIPAL PARTS



IV. MECHANISM ADJUSTMENT

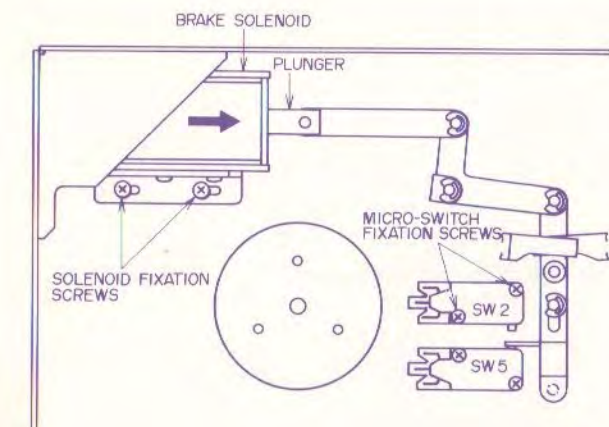


Fig. 1.

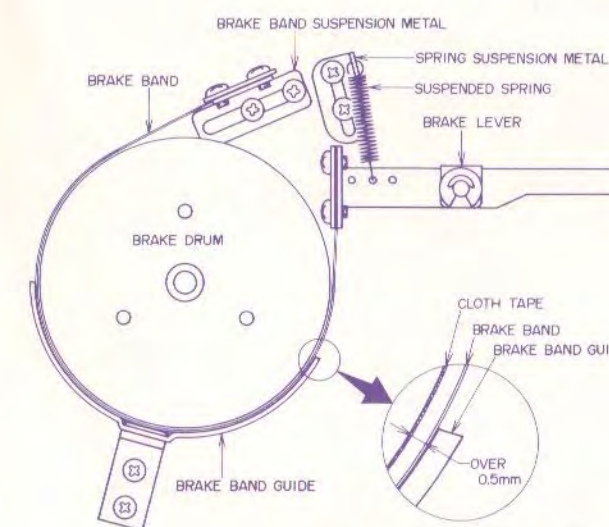


Fig. 2

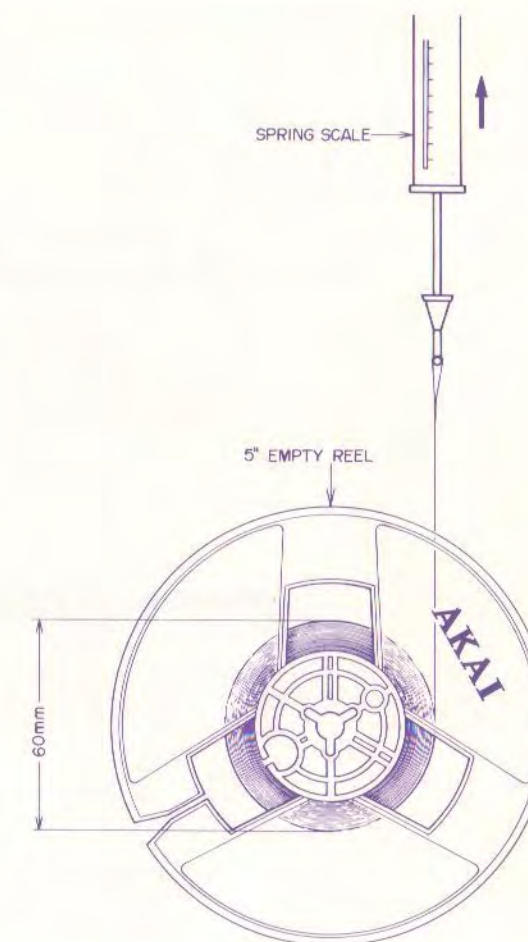


Fig. 3

1. BRAKE SOLENOID POSITION ADJUSTMENT (Refer to Fig. 1)

Loosen the Solenoid Fixation Screws and re-tighten at point at which the brake solenoid comes to the furthest inner position (direction indicated by arrow mark in figure).

2. MICRO SWITCH SW2 POSITION ADJUSTMENT (Refer to Fig. 1)

Loosen the Micro Switch Fixation Screws. Move Micro Switch and tighten Fixation Screws at position at which the Micro Switch is activated when the brake solenoid plunger operates.

Note: Confirm that the actuator does not contact the body of the micro switch.

3. BRAKE TENSION ADJUSTMENT (Refer to Figs. 2, 3)

- As shown in Fig. 3, use a 60 mm diameter tape wound on a 5" reel and measure brake tension with a spring scale. Ideal brake tension is 350 gr.
- Brake tension can be adjusted by changing the position of suspended spring and adjusting the position of spring suspension metal.

Note: Following brake tension adjustment, confirm that the difference in left/right brake tension is within 50 gr, and confirm that at all modes (except stop mode), the brake band completely separates from the cloth tape on the brake drum.

4. REEL TABLE HEIGHT ADJUSTMENT (Refer to Fig. 4)

Properly load a tape and move the reel table as indicated by the arrow mark in Fig. 4, position so that at F.FWD and RWD modes, the tape winds on the center of the reel. Tighten reel fixation screws to maintain optimum position.

Note: Tape should wind on center of reel regardless of type reel used.

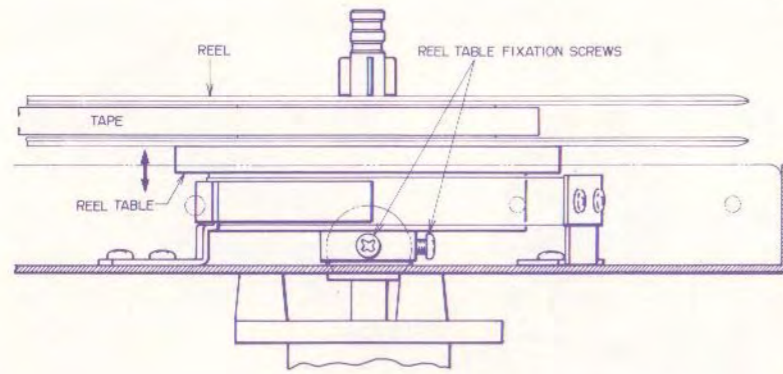


Fig. 4

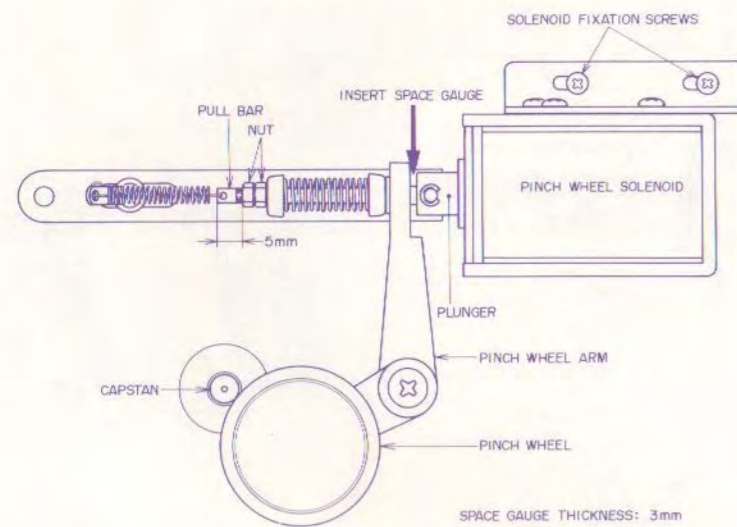


Fig. 5

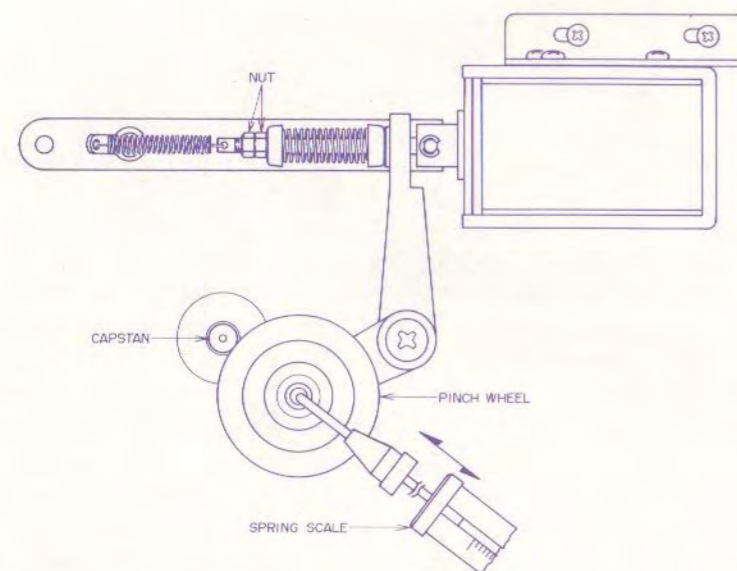


Fig. 6

5. PINCH WHEEL SOLENOID POSITION ADJUSTMENT (Refer to Fig. 5)

- 1) Set nut so that the screw part of the pull bar protrudes from the nut by 5 mm.
- 2) Insert a space gauge between the plunger and the pinch wheel arm (a minus driver etc. can also be used) and fix solenoid at position at which pinch wheel contacts the capstan.

6. PINCH WHEEL PRESSURE ADJUSTMENT (Refer to Fig. 6)

Measure pinch wheel pressure with a spring scale as shown in Fig. 6. Pull pinch wheel with spring scale and gently return. Adjust pinch wheel pressure adjustment nut to obtain a 1.35 kgr-cm spring scale indication as the pinch wheel touches the capstan when being returned.

Note: The pinch wheel pressure at this time must definitely not exceed 1.4 kgr-cm.

V. HEAD ADJUSTMENT

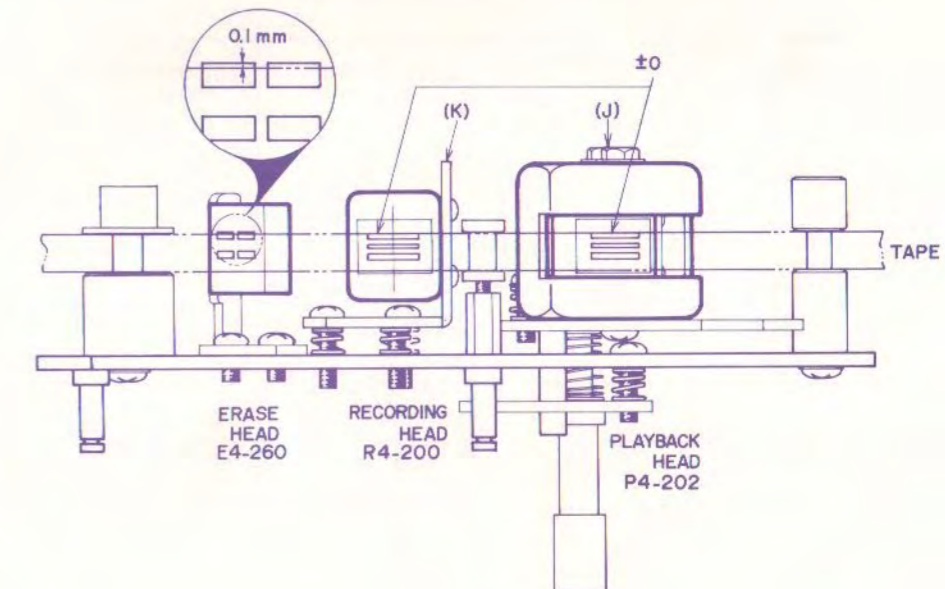
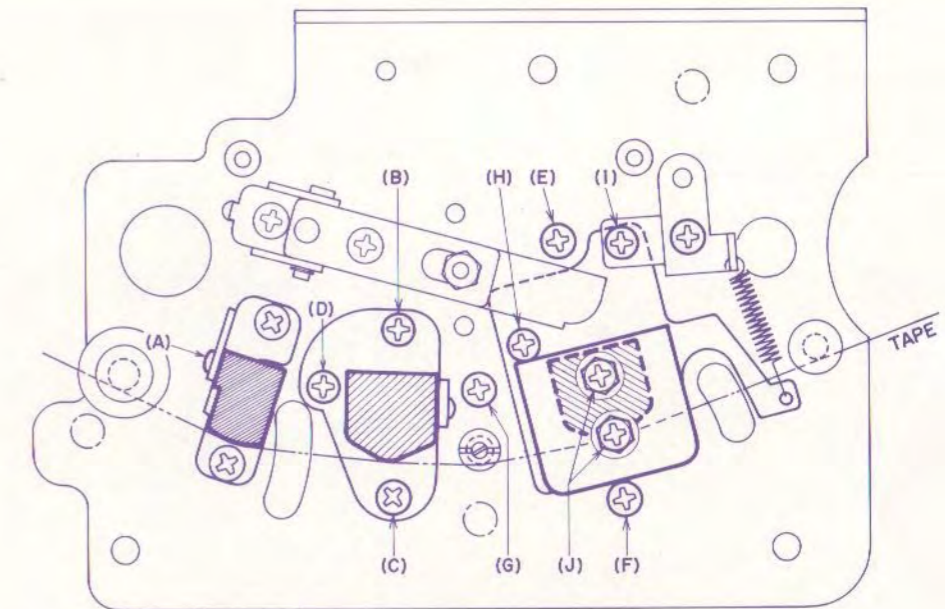


Fig. 7

NOTES:

- 1). As perfect head adjustments are vital in attaining top tape deck performance, please be sure that these adjustments are properly carried out.
- 2) Be careful not to use a magnetized screw driver or other magnetized tools in the vicinity of the heads.
- 3) Use only new tape as level variation is likely to occur when using old tape.
- 4) Demagnetize heads with a Head Demagnetizer before and after head adjustment.

VI. AMPLIFIER ADJUSTMENTS

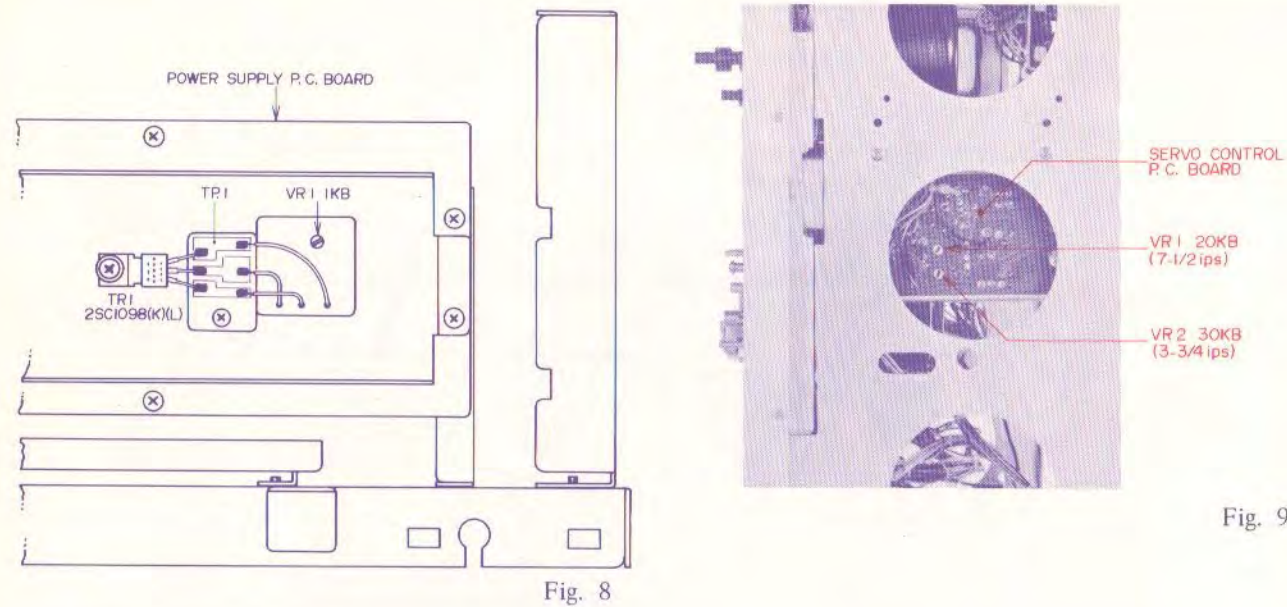


Fig. 9

(Refer to Fig. 7)

Adjustment Item	Test Tape, Supply Signal	Measuring Instrument Connections	Mode	Tape Speed	Adjustment Point	Remarks
ERASE HEAD HEIGHT	Optional		FWD	Optional	(A)	Upper edge of Ch. 1 head core is 0.1 mm higher than the upper edge of the tape.
RECORDING HEAD HEIGHT	Optional		FWD	Optional	(B)(C)(D)	Upper edge of Ch. 1 head core and upper edge of tape is the same height.
PLAYBACK HEAD HEIGHT	Optional		FWD	Optional	(I)	Upper edge of Ch. 1 head core and upper edge of tape is same height.
PLAYBACK HEAD HEIGHT	Optional		REV	Optional	(H)	Lower edge of Ch. 1 head core and lower edge of tape is same height.
PLAYBACK HEAD AZIMUTH ALIGNMENT	8,000 Hz. 3-3/4 ips. test tape	High Sensitivity V.T.V.M. to Line Output terminals	FWD	7-1/2 ips.	(G)	Maximum output, both channels.
PLAYBACK HEAD TAPE CONTACT	8,000 Hz. 3-3/4 ips. test tape	High Sensitivity V.T.V.M. to Line Output terminals	FWD	7-1/2 ips.	(J)	Move playback head surface (head gap) to left and right and adjust so that there is no change in playback level when tension is applied to supply reel table.
RECORDING HEAD AZIMUTH ALIGNMENT	Scotch #211 tape 15,000 Hz -20 dBm	Audio Frequency Oscillator to Line Input and High Sensitivity V.T.V.M. to Line Output terminals	REC	7-1/2 ips.	(D)	Maximum Output, both channels.
RECORDING HEAD AZIMUTH ALIGNMENT	Scotch #211 tape 15,000 Hz -20 dBm	Audio Frequency Oscillator to Line Input and High Sensitivity V.T.V.M. to Line Output terminals	REC.	7-1/2 ips.	(K)	Move recording head surface (head gap) to left and right and adjust so that there is no change in line output level when tension is applied to the supply reel table.

Chart 1

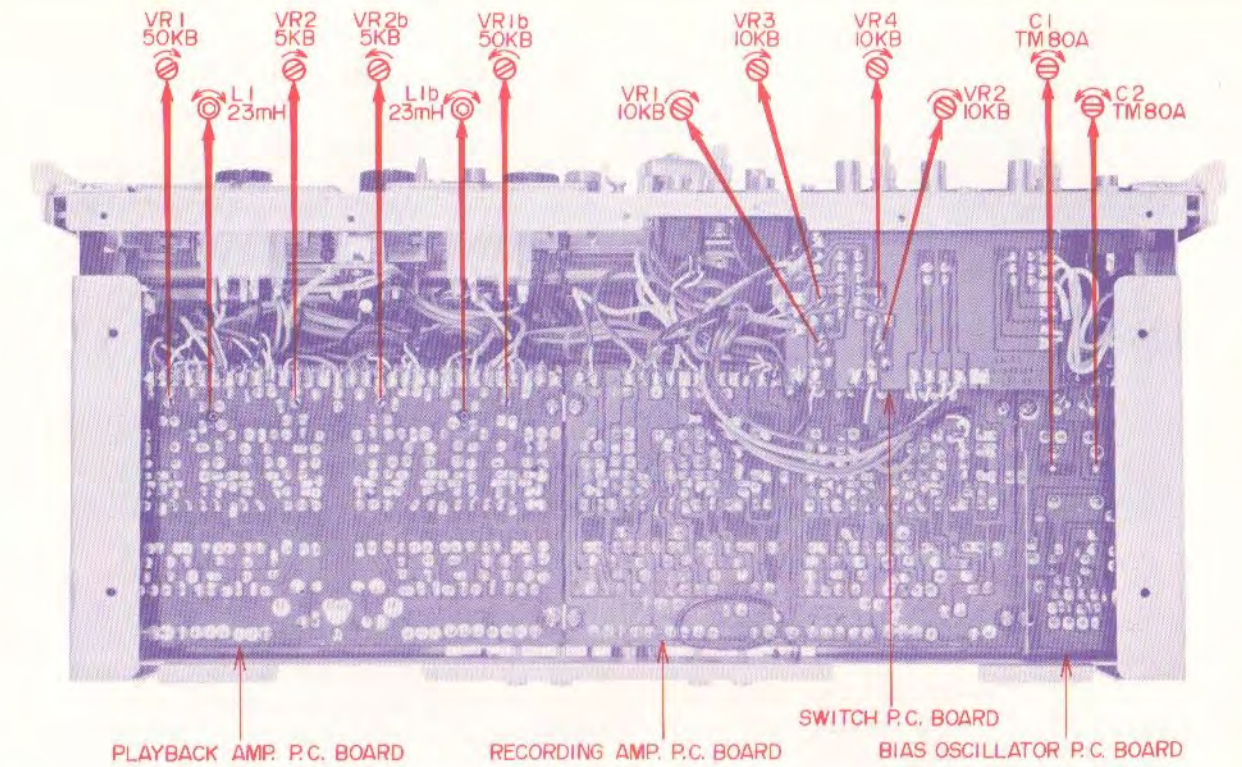


Fig. 10

Adjustment Item	Test Tape Supply Signal	Measuring Instrument Connections	Mode	Tape Speed	Adjustment Point	Result	Ref. Diagram	Remarks
POWER SUPPLY P.C. BOARD VOLTAGE ADJUSTMENT		V.T.V.M. or tester between TP1 and Ground			VR1 1 k Ω	+24.0V	Fig. 8	
7-1/2 ips. TAPE SPEED ADJUSTMENT	1,000 Hz 7-1/2 ips. test tape	Frequency Counter to Line Output	FWD	7-1/2 ips.	VR1 20 k Ω	1,000 Hz $\pm 1\%$	Fig. 9	
3-3/4 ips. TAPE SPEED ADJUSTMENT	1,000 Hz 7-1/2 ips. test tape	Frequency Counter to Line Output	FWD	3-3/4 ips.	VR2 30 k Ω	500 Hz $\pm 1.5\%$	Fig. 9	
PLAYBACK LEVEL ADJUSTMENT	700 Hz 7-1/2 ips. 0 VU test tape	High Sensitivity V.T.V.M. to Line Output	FWD	7-1/2 ips.	VR1 50 k Ω	0 ± 1 dB	Fig. 10	Within 0 ± 1.5 dB at Reverse mode.
VU METER SENSITIVITY ADJUSTMENT	700 Hz 7-1/2 ips. 0 VU test tape		FWD	7-1/2 ips.	VR2 5 k Ω	0 VU	Fig. 10	
RECORDING LEVEL ADJUSTMENT (low noise)	Scotch #211 tape 1,000 Hz 0 VU recording	Audio Frequency Oscillator to Line Input and High Sensitivity V.T.V.M. to Line Output	REC	7-1/2 ips.	VR3 10 k Ω (left) VR4 10 k Ω (right)	0 ± 1.5 dB	Fig. 10	Set Tape Selector to LOW NOISE.
RECORDING LEVEL ADJUSTMENT (wide range)	Scotch #211 tape 1,000 Hz 0 VU recording	Audio Frequency Oscillator to Line Input and High Sensitivity V.T.V.M. to Line Output	REC	7-1/2 ips.	VR1 10 k Ω (left) VR2 10 k Ω (right)	0 ± 1.5 dB	Fig. 10	Set Tape Selector to WIDE RANGE.
FREQUENCY RESPONSE ADJUSTMENT	Scotch #211 tape 1,000 Hz, 10,000 Hz, -20 VU recording	Audio Frequency Oscillator to Line Input and High Sensitivity V.T.V.M. to Line Output	REC	7-1/2 ips.	C1 TM 80A (left) C2 TM 80A (right)	flat from 1,000 Hz to 10,000 Hz	Fig. 10	Recheck recording level by changing bias.
BIAS LEAK ADJUSTMENT		High Sensitivity V.T.V.M. to Line Output	REC	7-1/2 ips.	L1 23 mH	Less than -30 dB	Fig. 10	Built in Dolby less than -45 dB.

Chart 2

VII. DOLBY NOISE REDUCTION CIRCUIT ADJUSTMENTS

GX-286, GX-286DB only

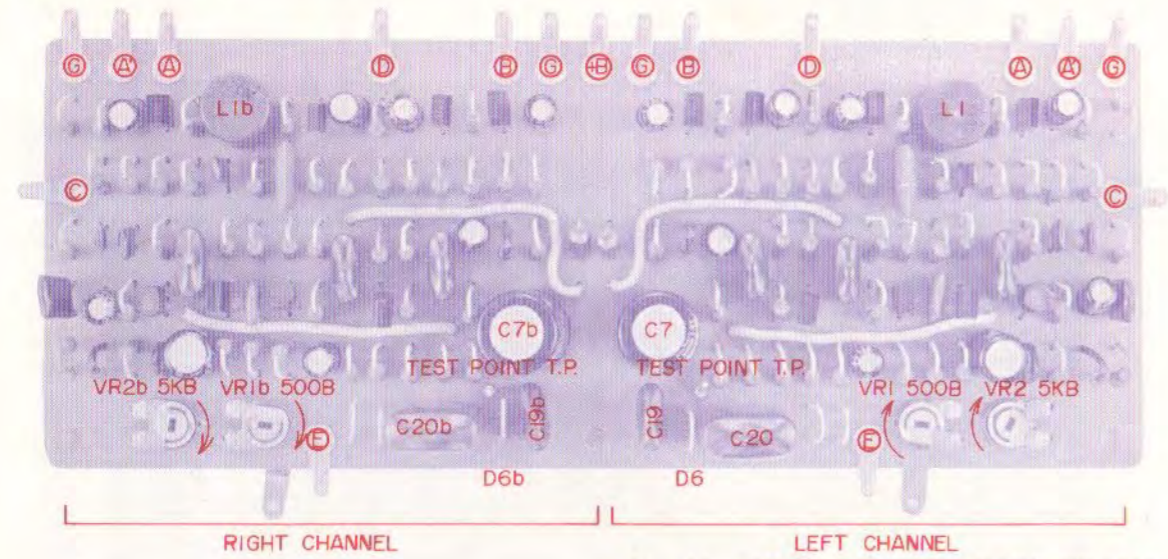


Fig. 11 DOLBY N.R. P.C. BOARD TD-5310 (Face)

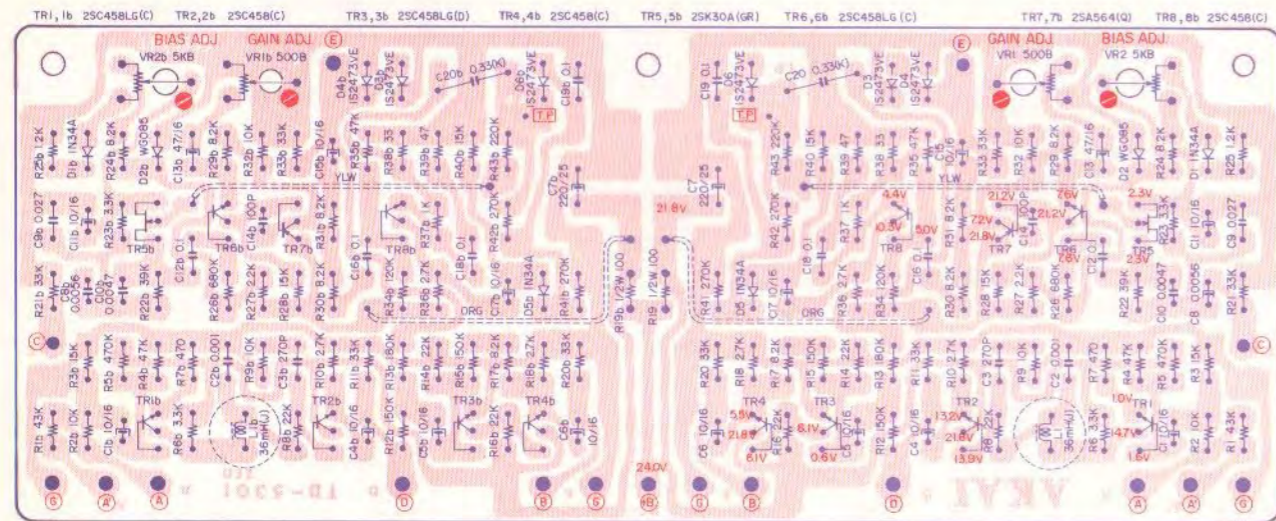


Fig. 12 DOLBY N.R. P.C. BOARD TD-5301 (Reverse)

NOTE:

Identical P.C. Boards are utilized for Recording Dolby N.R. and Playback Dolby N.R. The Recording Dolby N.R. P.C. Board is located on the Recording Amp. P.C. Board, and the Playback Dolby N.R. P.C. Board is located on the Playback Amp. P.C. Board. Adjust left and right channels respectively.

1. RECORDING DOLBY N.R. CIRCUIT ADJUSTMENT (Refer to Fig. 11)

Disconnect the wire connected to dolby circuit input and output terminals (A) and (B). Connect an Audio frequency oscillator to terminal (A) and connect a High-sensitivity V.T.V.M to terminal (B).

- 1) Turn semi-fixed resistors VR1 500B and VR2 5 KB fully clockwise (Fig. 11)
- 2) Ground test points T.P (Fig. 11)
- 3) Set Dolby Switch to OFF position.
- 4) Supply a 5 kHz, -10 dBm signal which has been verified with a frequency counter from the audio frequency oscillator and confirm that at this time the indication of the high-sensitivity V.T.V.M. connected to terminal (B) is 0 dBm.
- 5) Reduce the output of the audio frequency oscillator by -30.5 dB from the condition outlined in item 1-4) (5 kHz, -40.5 dB) and at this time confirm that the indication of the high-sensitivity V.T.V.M. connected to terminal (B) is -30.5 dB.
- 6) Set Dolby Switch to ON position and adjust semi-fixed resistor VR1 500B to obtain a -20.5 dBm indication on the high-sensitivity V.T.V.M. connected terminal (B).
- 7) Disconnect ground wire from test point T.P (grounded in item 1-2) and at this time adjust semi-fixed resistor VR2 5 kB to obtain a -22.5 dBm indication on the high-sensitivity V.T.V.M. connected to terminal (B).

2. PLAYBACK DOLBY N.R. CIRCUIT ADJUSTMENT

This adjustment is carried out in essentially the same way as the recording dolby circuit adjustment.

Disconnect the wire connected to input and output terminals (A') and (B), connect an audio frequency oscillator to terminal (A'), and connect a high-sensitivity V.T.V.M. to terminal (B). Turn semi-fixed resistor VR1 500B and VR2 5 kB fully clockwise, and ground test points T.P.

- 1) Set Dolby Switch to OFF position and supply a 5 kHz, -10 dBm signal which has been verified with a frequency counter from the audio frequency oscillator. Confirm that the high-sensitivity V.T.V.M. indication at this time is 0 dBm. Next, lower the oscillator output by -22.5 dB and confirm that the high-sensitivity V.T.V.M. indication is -22.5 dB.
- 2) Set Dolby Switch to ON position and at this time adjust semi-fixed resistor VR1 500B to obtain a -32.5 dB high-sensitivity V.T.V.M. indication. Next, disconnect ground wire from test points T.P and adjust semi-fixed resistor VR2 5 dB to obtain a -30.5 dBm indication.

VIII. D. C. RESISTANCE OF VARIOUS COILS

Part	Designation	D.C. Resistance
CAPSTAN MOTOR	SCM2-24KJ	Between BLU and RED 100Ω Between YLW and GRN 180Ω Pick-up coil 635Ω
REEL MOTOR	24XO-MR	Between BLU and RED 74Ω Between YLW and GRN 166Ω
BRAKE SOLENOID	SDC-10CM-100V	1,300Ω
PINCH WHEEL SOLENOID	1660THT1-100V	1,064Ω
HEAD SHIFTER SOLENOID	1051PHT-DC24V	95Ω
RELAY	MY-4-OU-AD4 DC24V	650Ω
RELAY	LC1-C	1,650Ω
RELAY	TECK-36	1,000Ω
HEADPHONE OUTPUT TRANSFORMER	N16-535S	Primary 565Ω±15% Secondary 0.95Ω±15%
OSCILLATOR COIL	OT-204	Between 1 and 3 0.3Ω Between 4 and 6 0.7Ω Between 7 and 9 8.2Ω
4 TRACK ERASE HEAD	E4-260	2.0Ω
4 TRACK RECORDING HEAD	R4-200	8.0Ω
4 TRACK PLAYBACK HEAD	P4-202	268Ω

NOTE: The resistance values shown in this chart are average values.

IX. CLASSIFICATION OF VARIOUS P. C. BOARDS

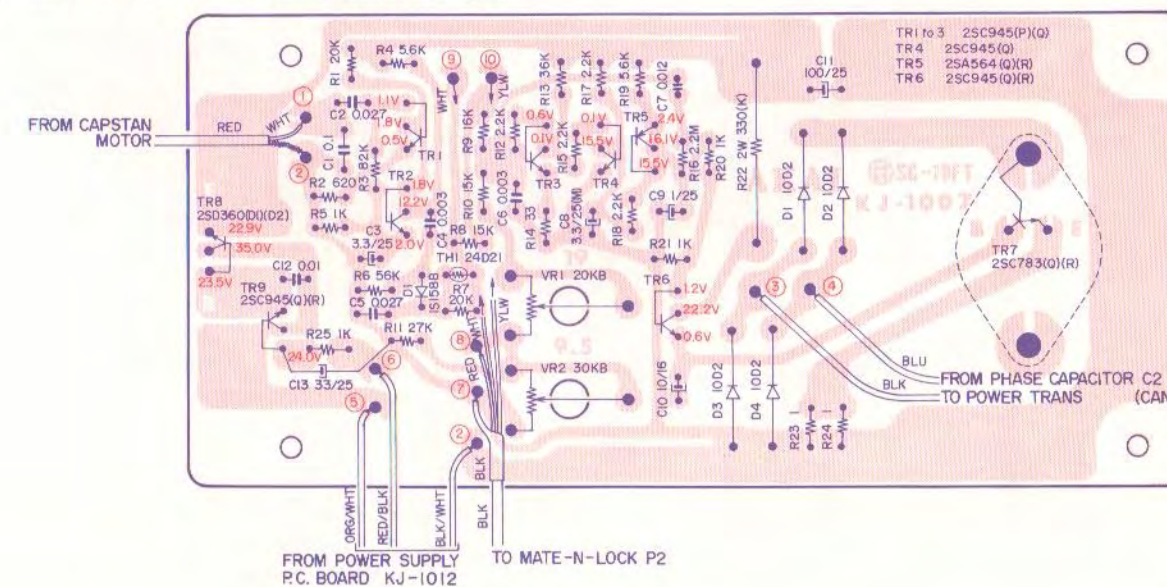
1. P. C. BOARD INTERCHANGEABILITY CHART

P. C. BOARD	GX-286	GX-286D	GX-286DB
SERVO CONTROL P. C. BOARD	KJ-1007	KJ-1007	KJ-1007
POWER AMP. P. C. BOARD	KJ-1010		
RELAY P. C. BOARD	KJ-1011	KJ-1011	KJ-1011
POWER SUPPLY P. C. BOARD	KJ-1012*	KJ-1012	KJ-1012
SYSCON P. C. BOARD	KJ-1013 A,B	KJ-1013 A,B	KJ-1013 A,B
TOUCH BUTTON P. C. BOARD	KJ-2051	KJ-2051	KJ-2051
MUTE P. C. BOARD	KJ05017	KJ-5017	KJ-5017
VR P. C. BOARD B	KJ-5019	KJ-5019	KJ-5019
SW. P. C. BOARD A		KJ-5020	KJ-5020
SW. P. C. BOARD B	KJ-5021		
EQUALIZER P. C. BOARD	KJ-5022	KJ-5022	KJ-5022
OSCILLATOR P. C. BOARD	KJ-5023	KJ-5023	KJ-5023
RECORDING AMP. P. C. BOARD	KJ-5024	KJ-5024*	KJ-5024
PLAYBACK AMP. P. C. BOARD	KJ-5025	KJ-5025	KJ-5025
VR P. C. BOARD	TD-5010	TD-5010	TD-5010
DOLBY NR P. C. BOARD	TD-5301		TD-5301

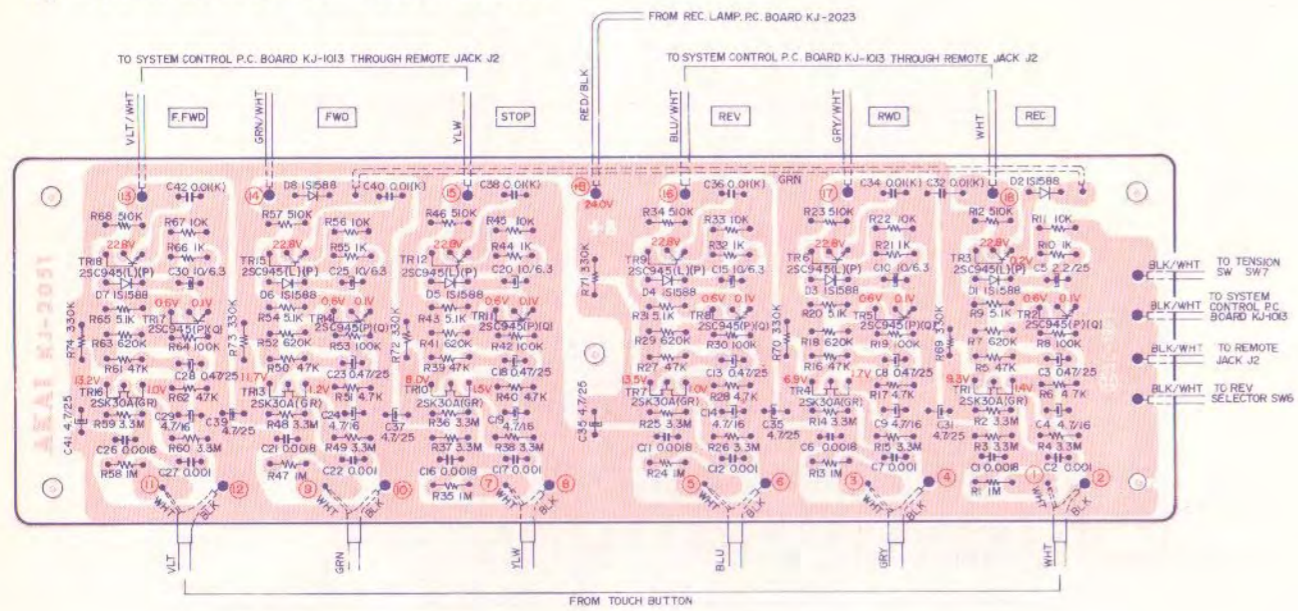
* Not interchangeable

2. COMPOSITE VIEWS OF COMPONENTS

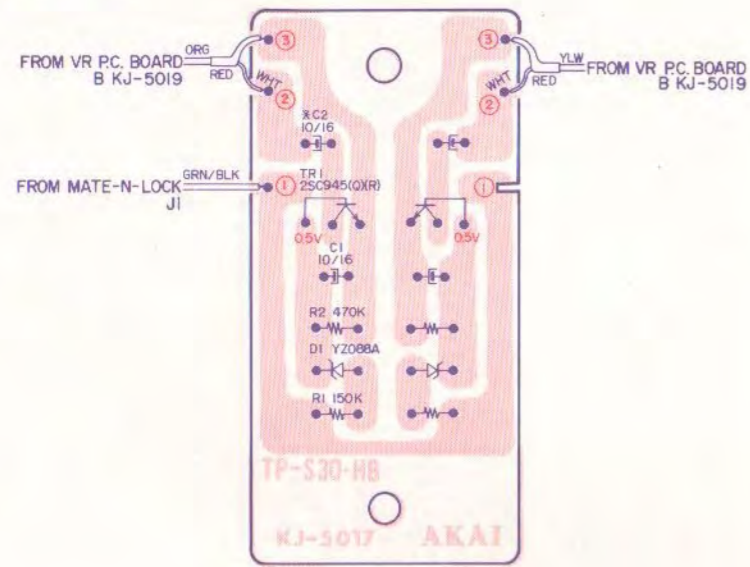
1) SERVO CONTROL P. C. BOARD KJ-1007



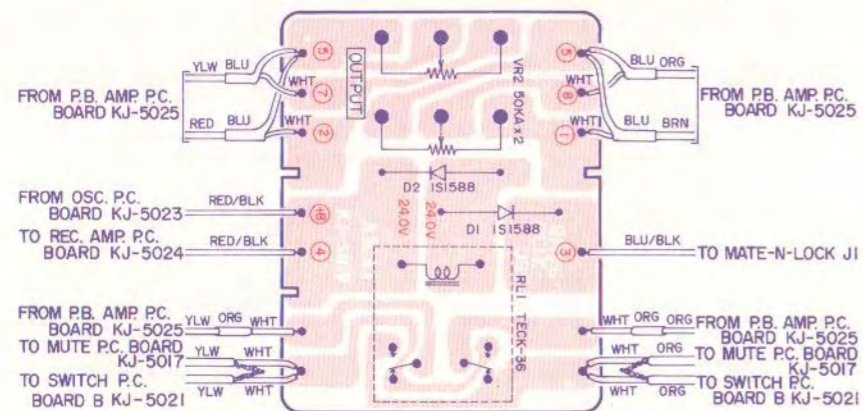
6) TOUCH BUTTON P.C. BOARD KJ-2051



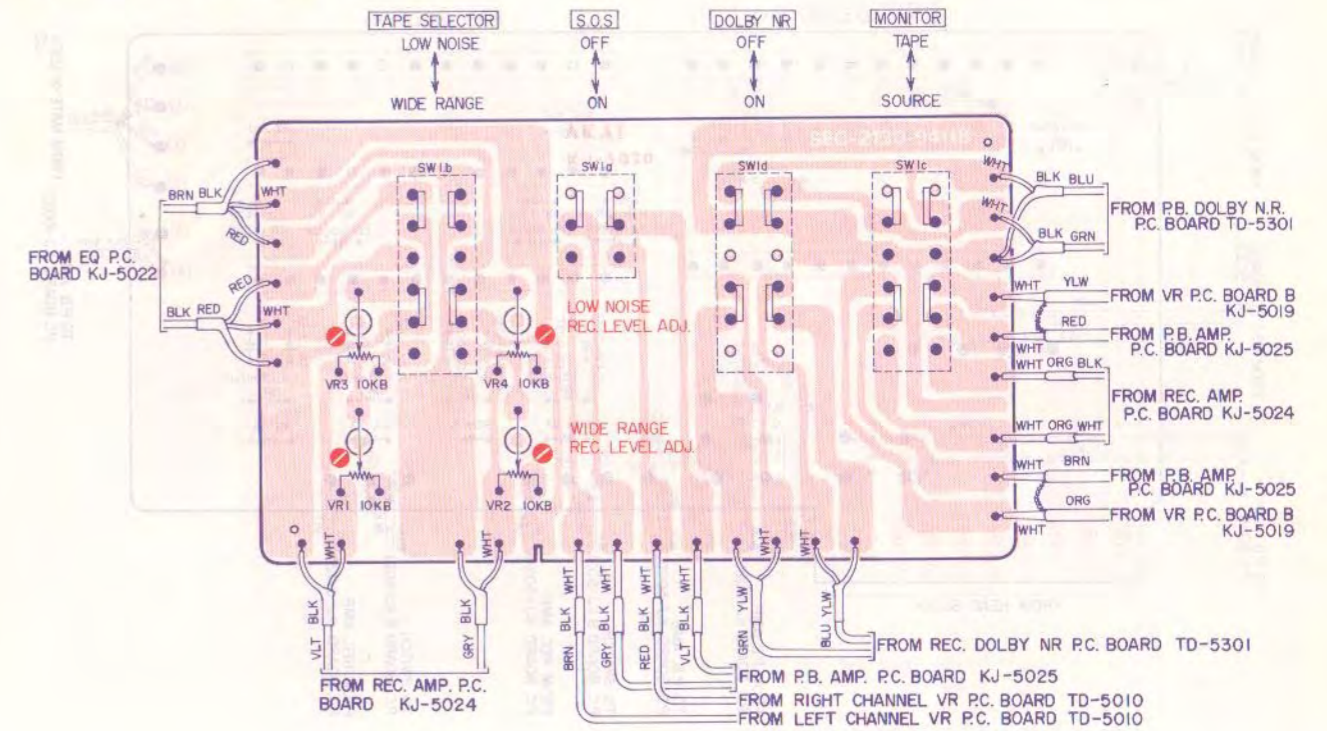
7) MUTE P.C. BOARD KJ-5017



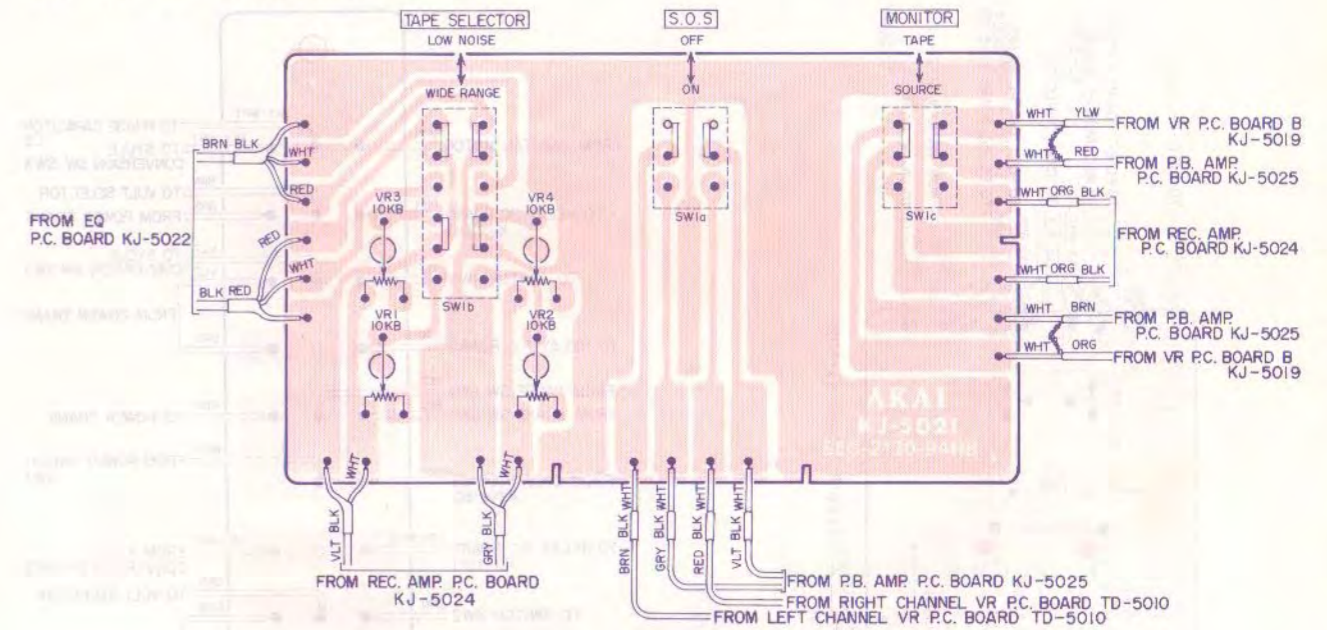
8) VR P.C. BOARD B KJ-5019



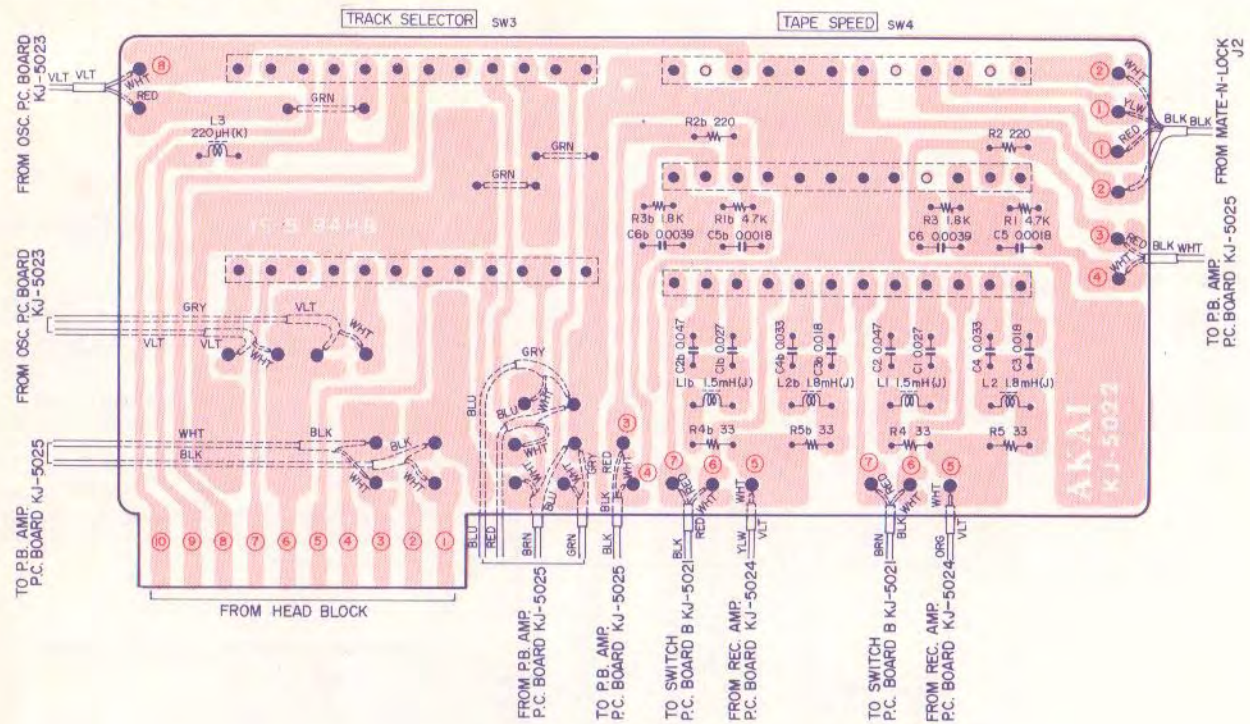
9) SW. P.C. BOARD A KJ-5020



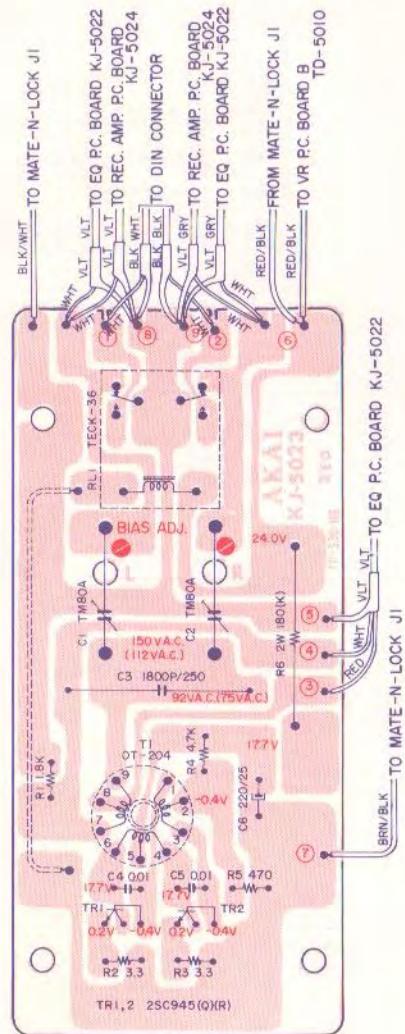
10) SW. P.C. BOARD B KJ-5021



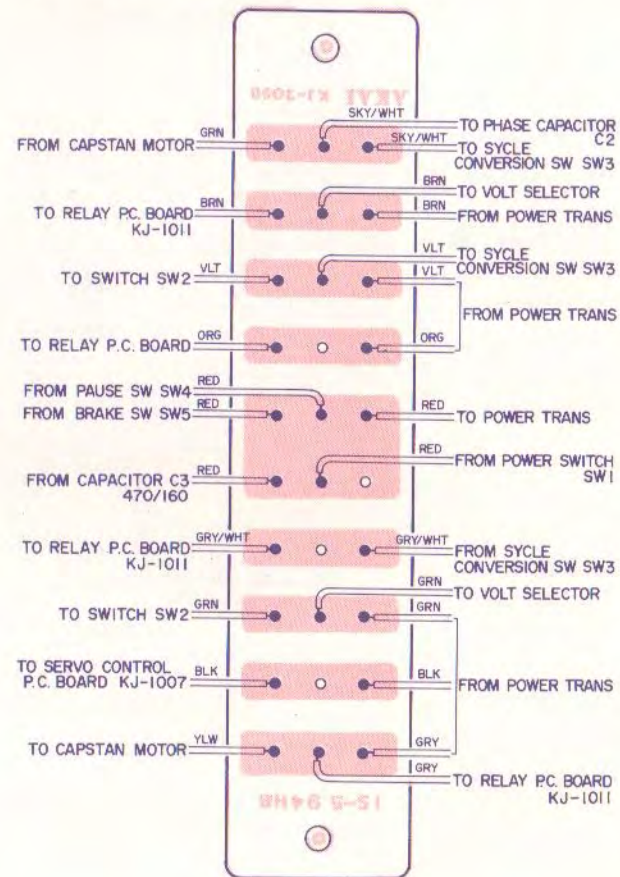
11) EQUALIZER P.C. BOARD KJ-5022



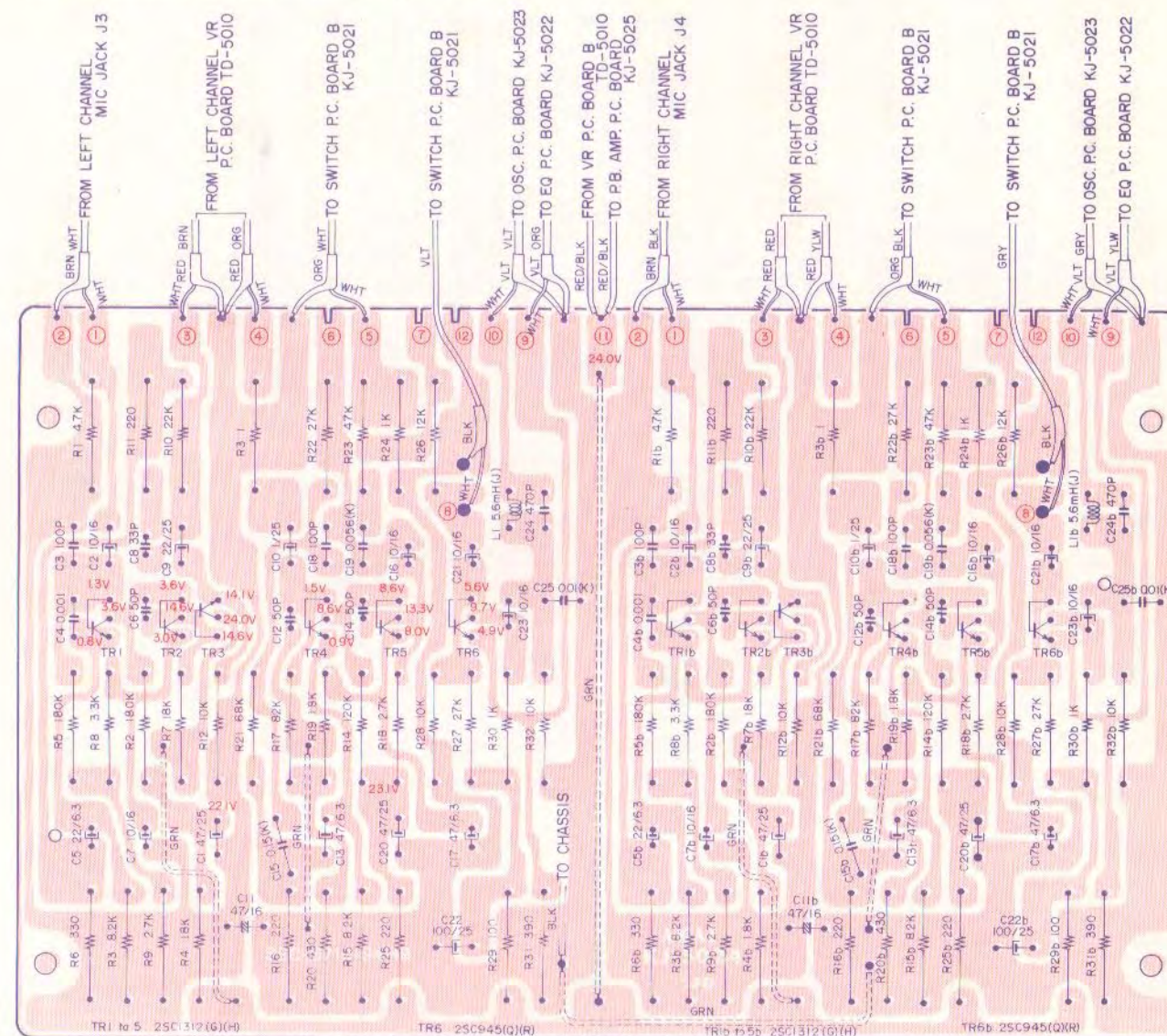
12) OSCILLATOR P.C. BOARD KJ-5023



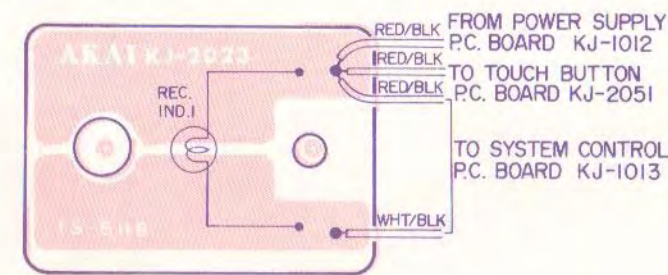
13) TERMINAL P.C. BOARD KJ-2050



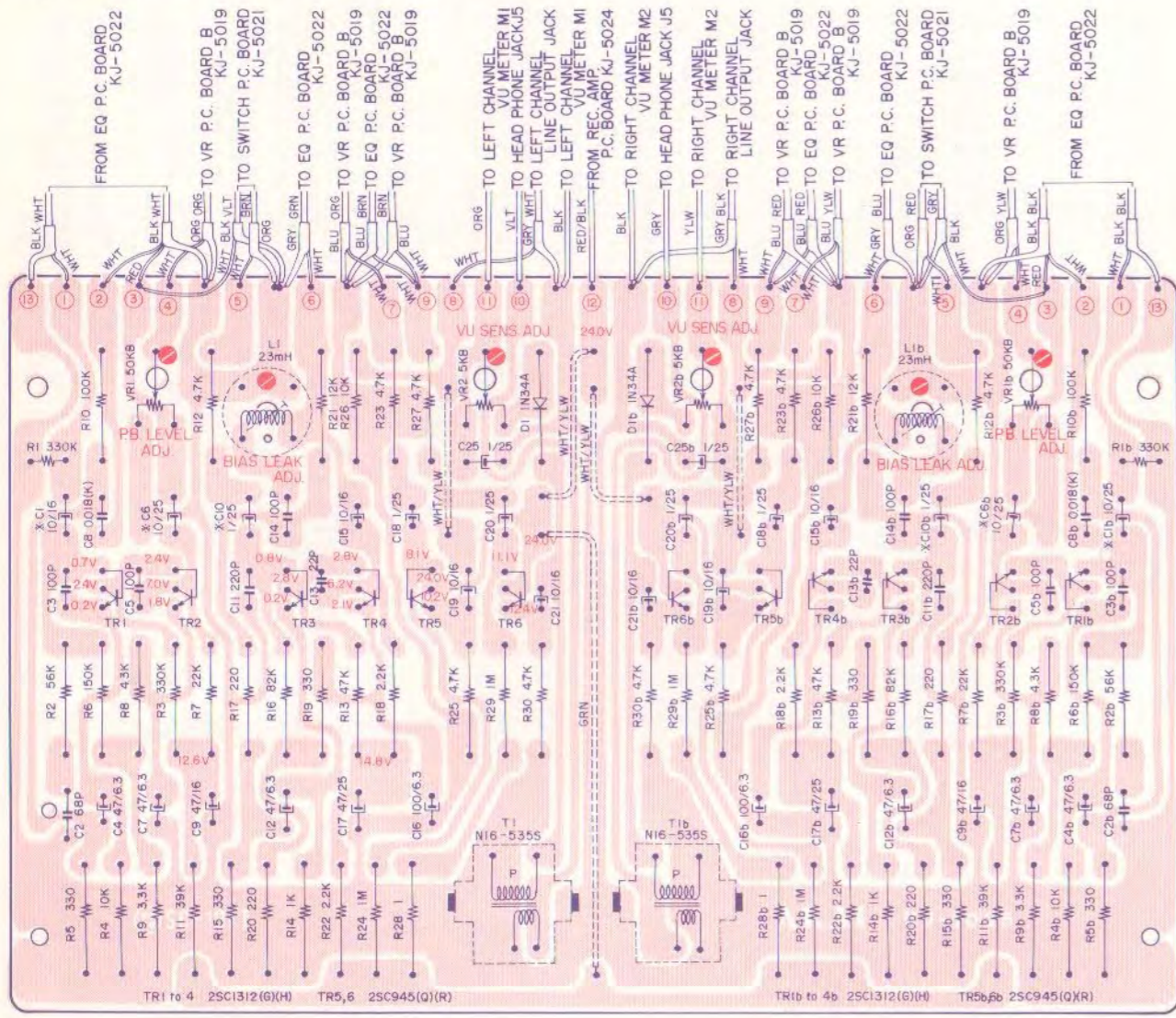
14) RECORDING AMP. P.C. BOARD KJ-5024



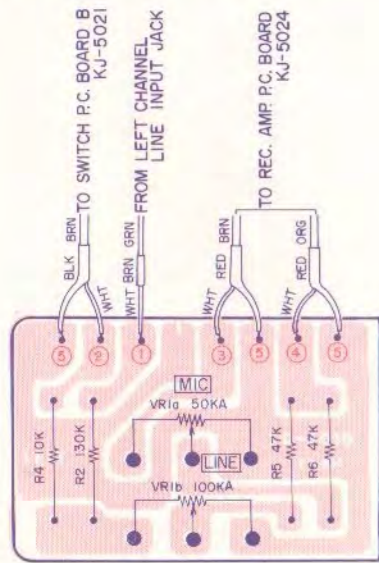
15) REC. LAMP P.C. BOARD KJ-2023



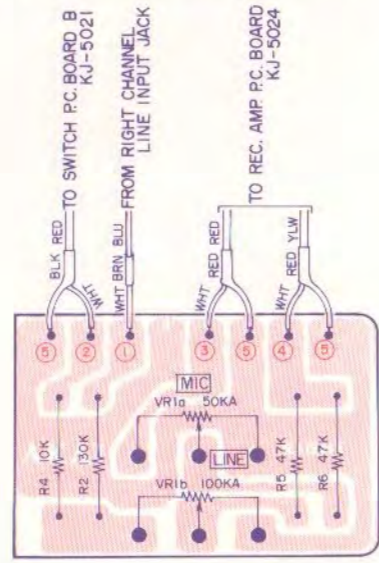
16) PLAYBACK AMP. P.C. BOARD KJ-5025



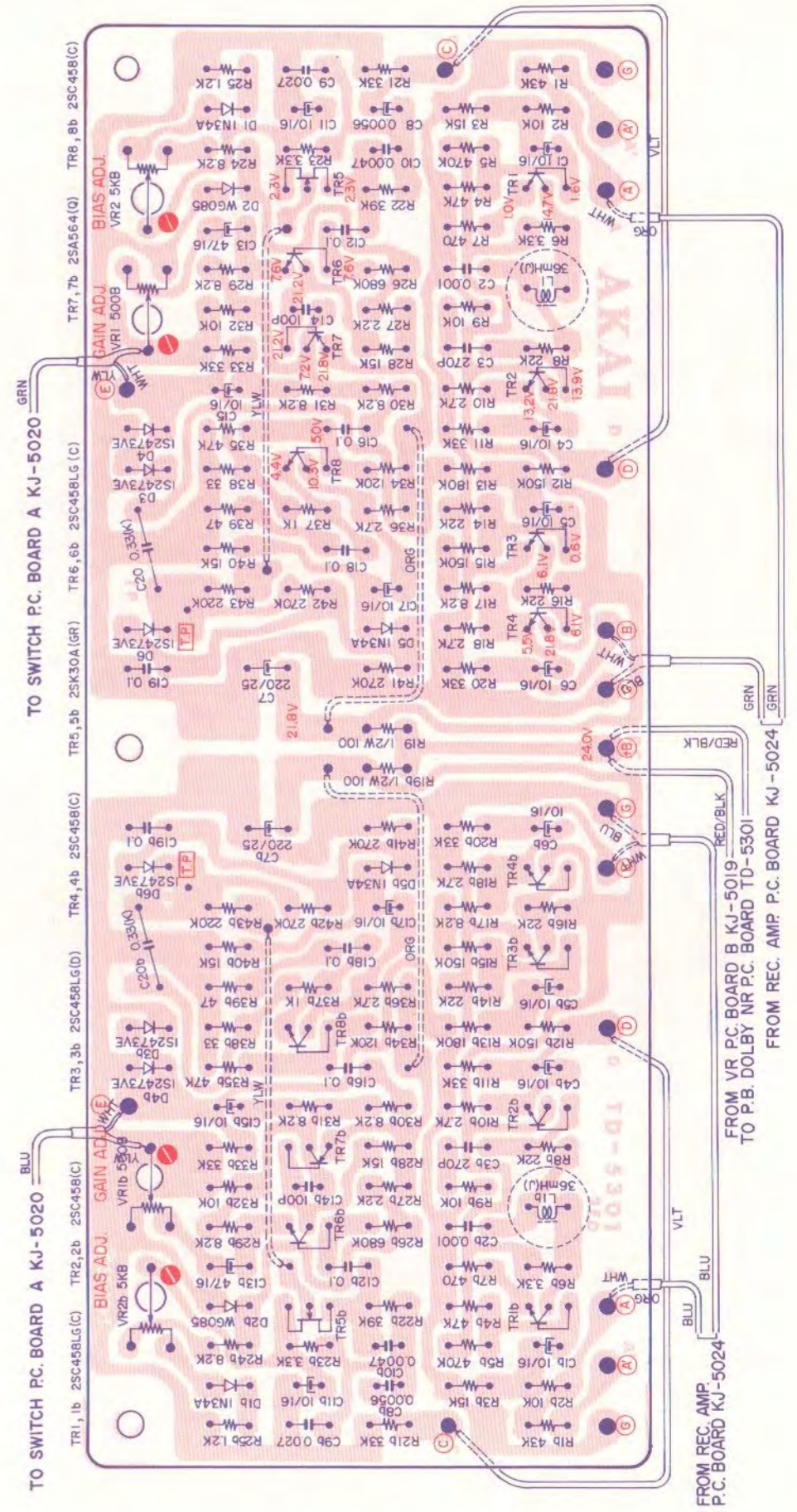
17) VR P.C. BOARD (Left) TD-5010



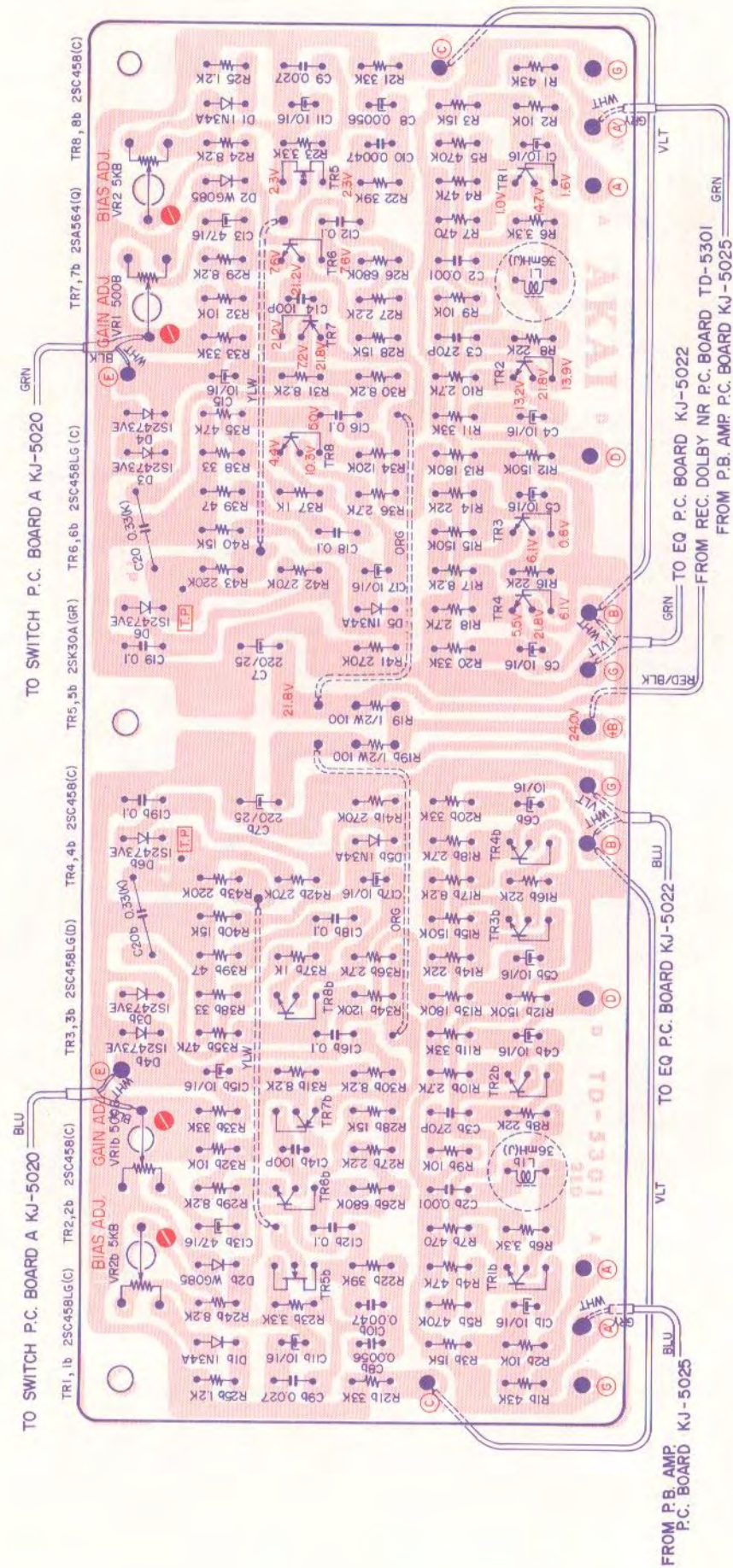
18) VR P.C. BOARD (Right) TD-5010



19) REC. DOLBY NR P.C. BOARD TD-5301



X. TOUCH BUTTON SYSTEM OPERATION



20) PB. DOLBY NR P.C. BOARD TD-5301

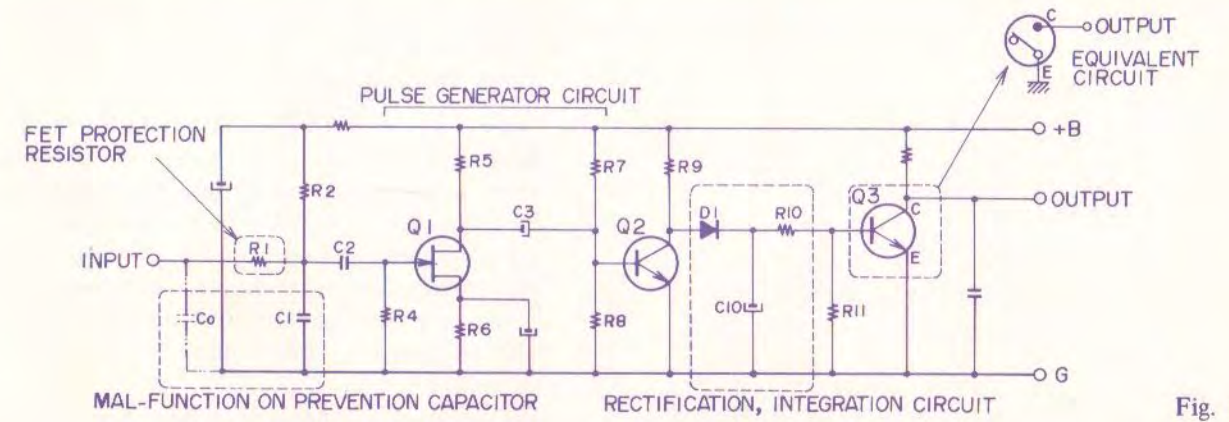


Fig. 13

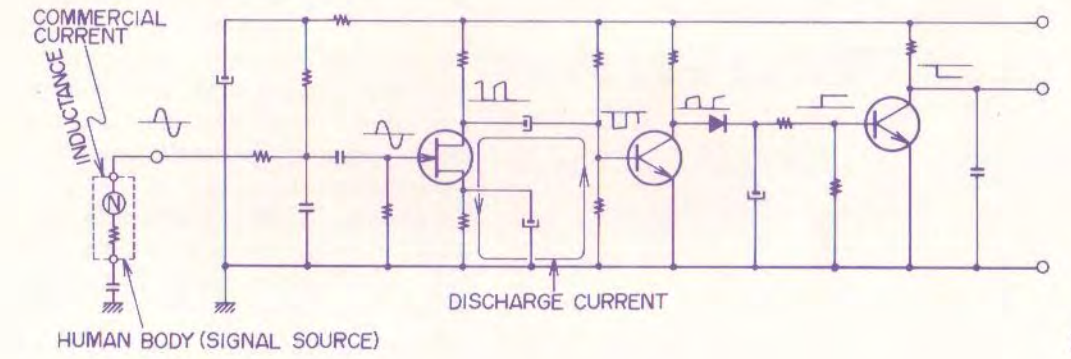


Fig. 14

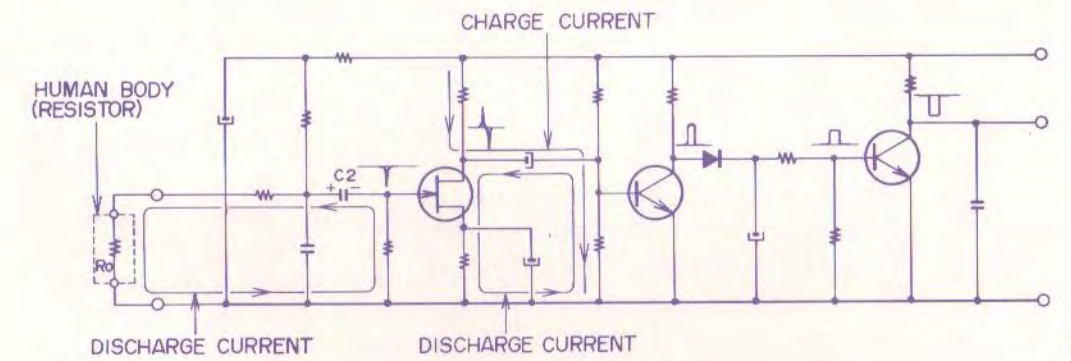


Fig. 15

1. TOUCH BUTTON SYSTEM CIRCUIT COMPONENT (Refer to Fig. 13)

As shown in Fig. 13, generally divided, the touch button system circuit is comprised of a pulse generator circuit, a rectifier circuit, and an integration circuit and includes a malfunction prevention capacitor and FET protection resistor, etc.

Because it is necessary for the malfunction prevention capacitor shown by the dotted line to have a fairly high voltage, a shielded wire distribution capacitor is used with a capacitance of 50 to 60 PF.

As shown by the equivalent circuit in the diagram, last stage transistor Q3 performs the exact same function as a micro switch.

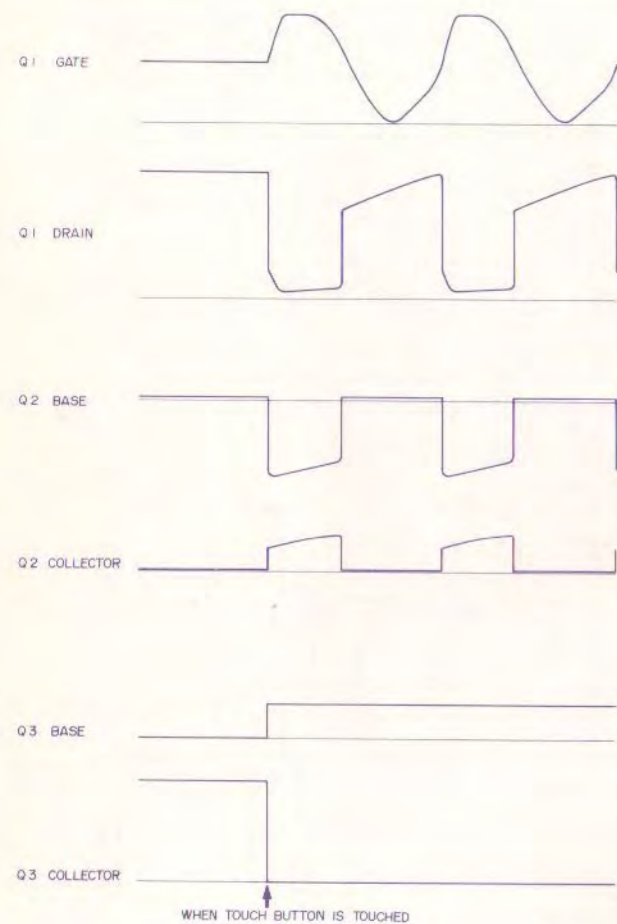


Fig. 16

2. WHEN TOUCH BUTTON IS TOUCHED WITH FINGER, OPERATION IS SAME AS MICRO SWITCH SYSTEM USED TO DATE (Refer to Figs. 14,16)

Because of inductance in our bodies from commercial power supply (50 Hz or 60 Hz), if we touch one of the touch buttons with our finger, our body becomes a signal source as shown in Fig. 14 and the same thing takes place as in the case of a micro switch system to date. Therefore, when a button is touched with a finger, a signal is supplied to FET Q1 gate as shown in Fig. 14.

The charge at C3 when a signal is not supplied is only equivalent to the drain voltage. Base bias is supplied to Q2 from R7 and R8 and no signal is emitted at Q2 collector. Consequently, Q3 base becomes unbiased and Q3 does not function.

The signal supplied to Q1 gate works to reduce the impedance between FET drain and source, and the electric charge charged at C3 passes Q1→R6→and R8 and is discharged.

C3 discharge causes a large minus bias at Q2 base, collector voltage increases, and this pulse is rectified at D1 and integrated at C10, R10 and supplied to Q3 as base bias. Consequently, Q3 is turned ON and functions in exactly the same way as a micro switch has functioned to date.

3. WHEN A BUTTON IS TOUCHED WITH A FINGER AND AT THE SAME TIME THE DECK CHASSIS IS TOUCHED WITH ANOTHER FINGER OR A HAND (See Fig. 15)

As previously explained our body acts as a signal source to operate the touch buttons, but when considering that in this case the high resistance of the human body is utilized, the Q1 gate circuit operation is different.

As shown in Fig. 15, when a button is touched with a finger and the chassis is touched simultaneously, by means of the resistors shown in the circuit diagram, C2 electric charge passes R1→R0→R4 and is discharged. From looking at the circuit, it can be understood that discharge is completed in an extremely short time. In this very short discharge time period, FET is cut, the drain voltage increases, and condenser C3 is charged. When C2 discharge is complete and the voltage of both terminals becomes equal, FET drain current flows and the electric charge charged at C3 is discharged.

Consequently, Q2 base is minus biased and ceases to operate. Thus, Q3 functions in the same way as a micro switch as outlined in item 2) above.

SECTION 2

PARTS LIST

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HOW TO USE THIS PARTS LIST

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

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

This number corresponds with the Figure Number.

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

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

12-115x

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

Quantity of particular part required.

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

4. The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of components of the Schematic Diagram or Service Manual.
5. The indications of Resistors and Capacitors in the photos of P.C. Board are being eliminated.
6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
7. Please utilize separate "Common List for Service Parts" for Resistor parts orders.
8. 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).
9. 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 TABLE

<p>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.</p>  <p>Solid Resistor</p>	 <p>Carbon Resistor</p>	 <p>Metal Oxide Film Resistor</p>
 <p>Cement Resistor</p>	 <p>Wire-Wound Resistor</p>	 <p>Thermister</p>
 <p>MP Capacitor (Tubular Type)</p>	 <p>Plastic Capacitor</p>	 <p>Mylar Capacitor</p>
 <p>Mylar Capacitor</p>	 <p>Tantalum Capacitor</p>	 <p>Oil Capacitor (Tubular Type)</p>
 <p>Electrolytic Capacitor (Tubular Type)</p>	 <p>Electrolytic Capacitor (Vertical Type)</p>	 <p>Ceramic Capacitor</p>
 <p>Metalized Mylar (Paper) Capacitor</p>	 <p>Styrol Capacitor</p>	 <p>VFM (Hi-Q) Capacitor</p>
 <p>Enamel Resistor</p>	 <p>Insulator Type Carbon Resistor</p>	 <p>Stopper Type Carbon Resistor</p>
 <p>Trimmer Condenser</p>	 <p>Semi-Fixed Volume</p>	
 <p>Ferri Inductor</p>	 <p>Transistor</p>	
 <p>Spark Quencher</p>	 <p>Diode (Silicon, Zener, Germanium)</p>	

FIG. 2 ILLUSTRATION OF REEL MOTOR/REEL TABLE BLOCK

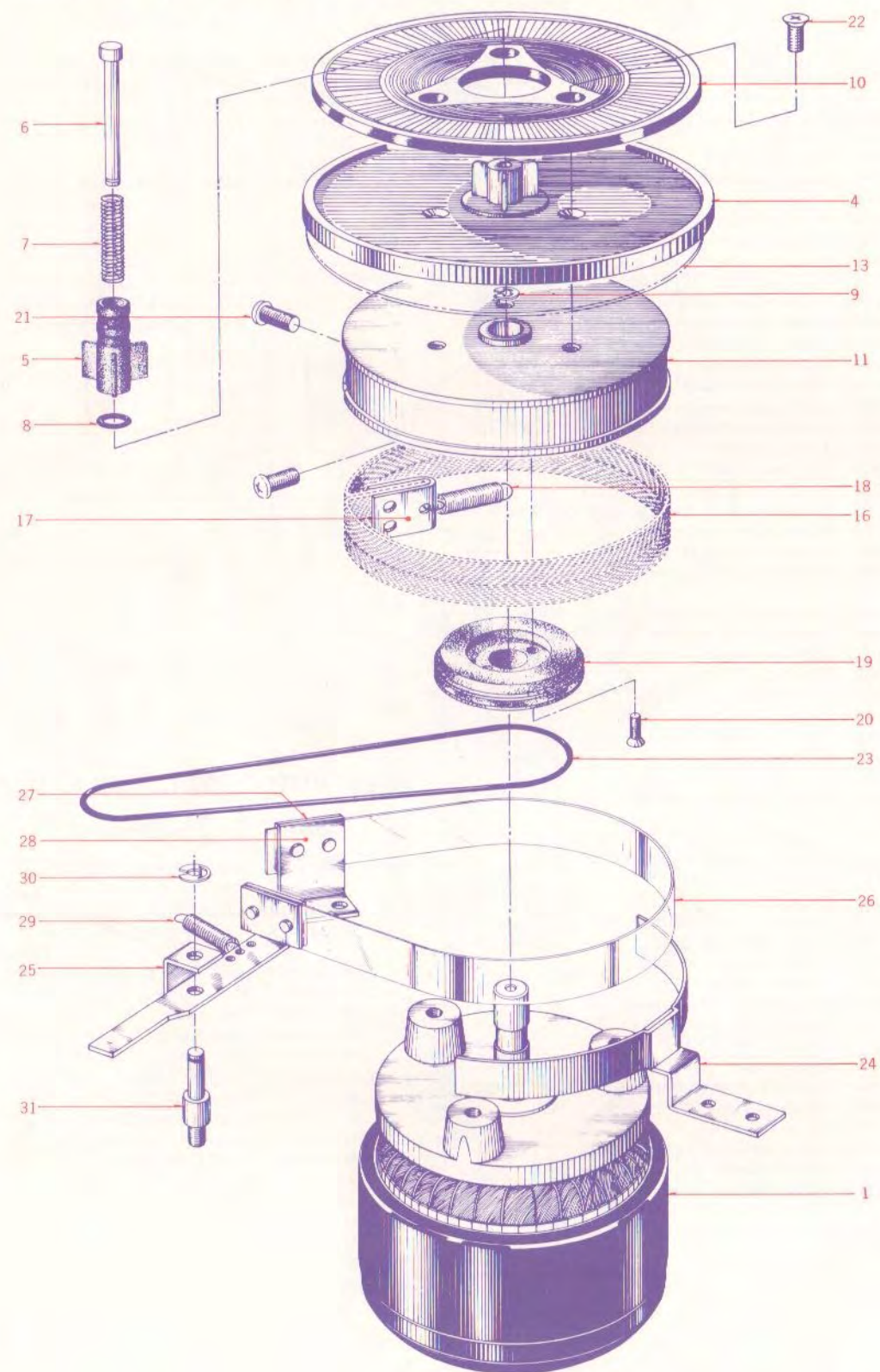


FIG. 3 ILLUSTRATION OF MAIN MOTOR BLOCK

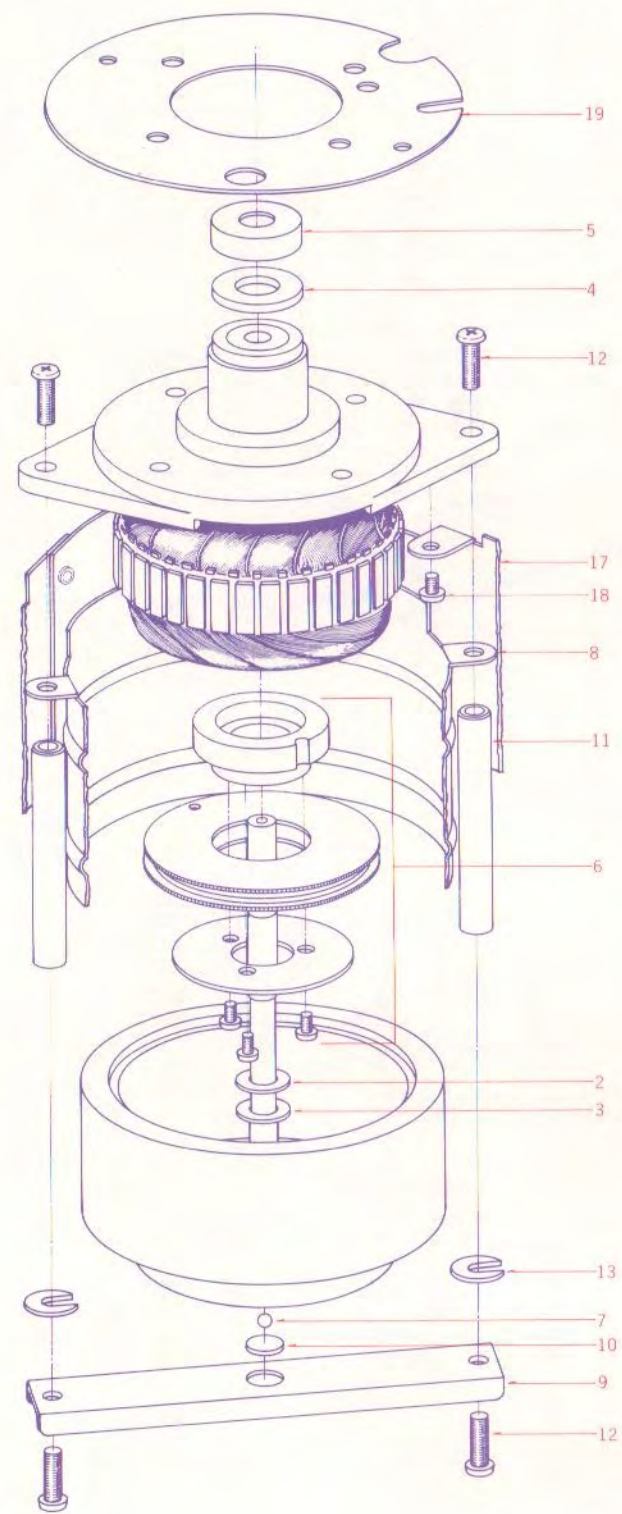


FIG. 4 ILLUSTRATION OF IMPEDANCE ROLLER BLOCK

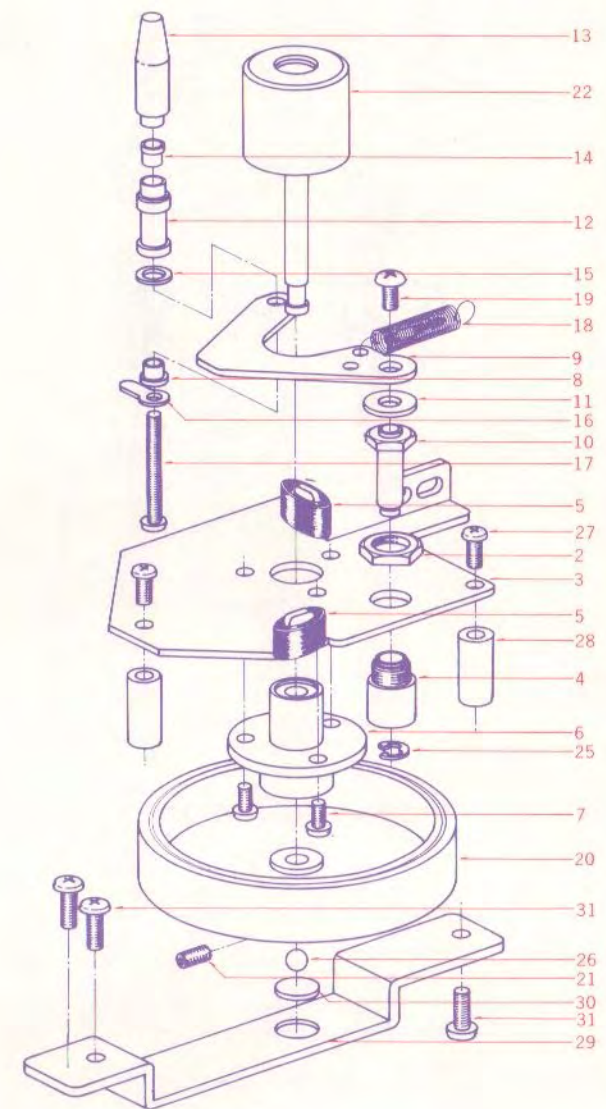


FIG. 5 ILLUSTRATION OF PAUSE SW./TENSION ARM BLOCK

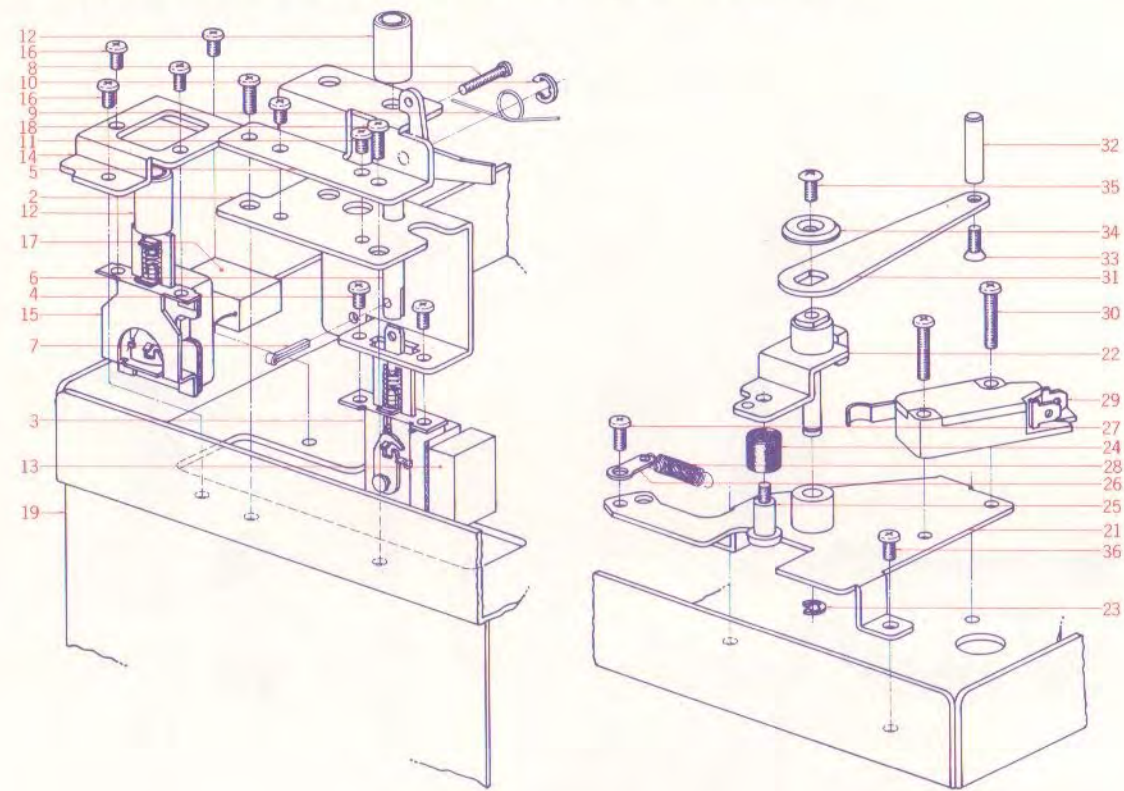
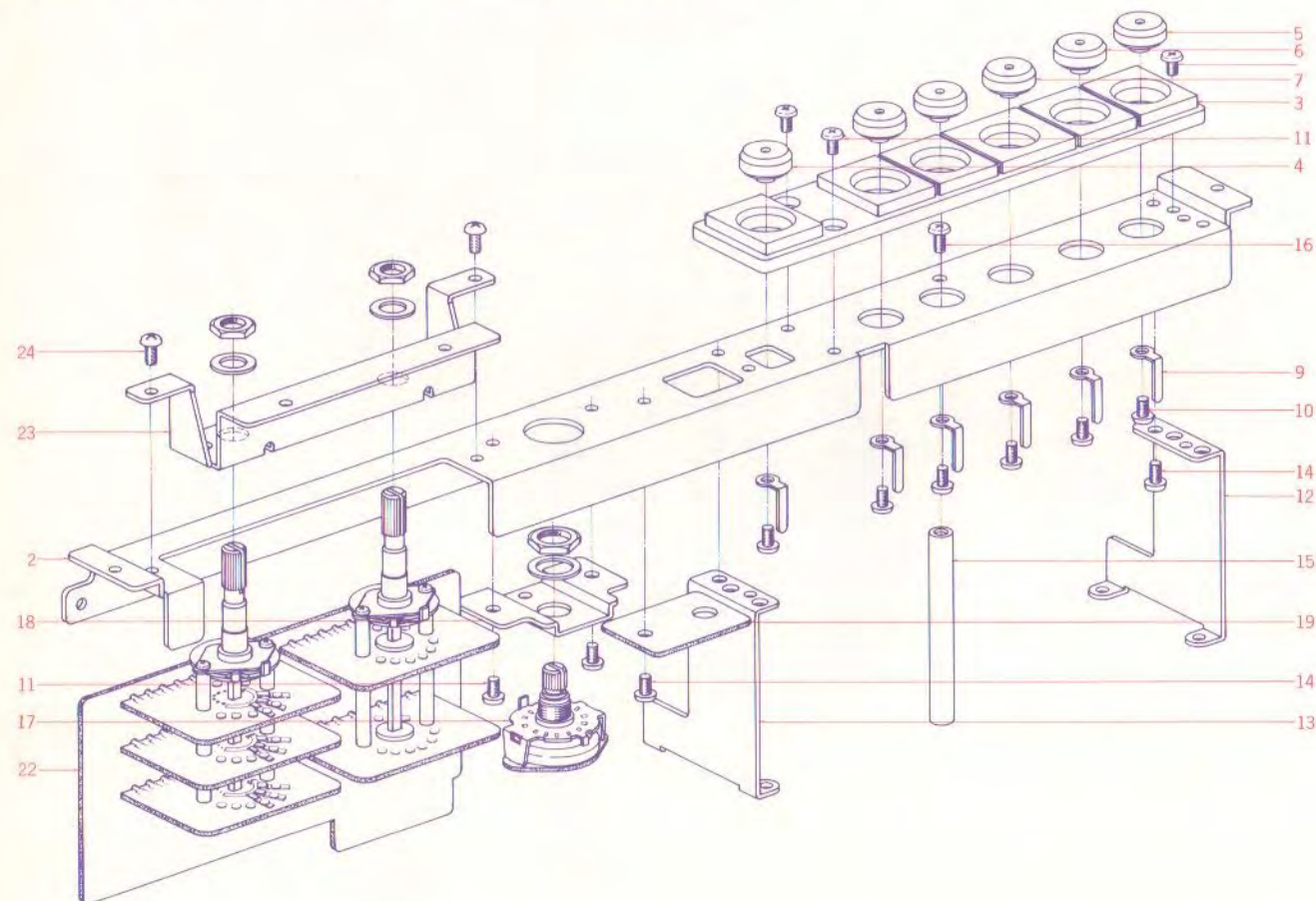


FIG. 6 ILLUSTRATION OF OPERATION BLOCK



MAIN MOTOR BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
3-1x	BM600298	Main Motor Block (SCM2-24) Comp.	KJ, MY	1
3-2	ZW597543	Thrust Washer A	KJ-7009	1
3-3	ZW605698	Thrust Washer B	KJ-7009	1
3-4	ZW597622	Felt Washer	KP-7022	1
3-5	SK597633	Cap	KJ-7023	1
3-6	BZ600300	Detector Gear Block Comp.	KJ	1
3-7	MV368886	Steel Ball D3		1
3-8	MZ597666	Motor Shield Plate	KJ-7026	1
3-9	MZ597644	Thrust Support Angle	KJ-7024	1
3-10	MZ597690	Ball Holder	KJ-7029	1
3-11	MS597655	Thrust Holding Prop	KJ-7025	2
3-12	ZS413234	Screw, pan head 4x12		4
3-13	ZW603786	Adjust. Washer (U) D4x13x0.2t		2
3-14x	ZW603797	Adjust. Washer (U) D4x13x0.5t		2
3-15x	ZW603764	Adjust. Washer (U) D4x13x1.2t		2
3-16x	ZW603775	Adjust. Washer (U) D4x13x1.6x		2
3-17	MZ610762	Motor Shield Plate C	KJ-7035	2
3-18	ZS417216	Screw, pan head 3x4		2
3-19	MZ596878	Motor Shield Plate B	KJ-1017	1

IMPEDANCE ROLLER BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
4-1x	BI600355	Impedance Roller Block Comp.	KJ	1
4-2	MZ603990	Metal Nut	6-3-9	1
4-3	MZ597071	Impedance Base	KJ-2027	1
4-4	MV597082	Sensing Shaft Metal	KJ-2028	1
4-5	MZ606712	Stopper Rubber KJ	KJ-2060	2
4-6	MZ597093	Metal Case, w/metal	KJ-2029	1
4-7	ZS499331	Screw, pan head 2.3x5		3
4-8	EZ606701	Insulator Collar (L)	KJ-2039	1
4-9	MZ597137	Sensing Arm	KJ-2036	1
4-10	MS597148	Sensing Shaft	KJ-2037	1
4-11	ZW604012	Washer D4, 3x11x0.1t		3
4-12	MZ597172	Sensing Post (Lower)	KJ-2040	1
4-13	MZ597150	Sensing Post (Upper)	KJ-2038	1
4-14	SE597161	Insulated Collar (S)	KJ-2039	1
4-15	ZW601075	Washer D4, 1x7x0.1t		1
4-16	ZW273633	Earth Lug M2.3		1
4-17	ZS54962	Screw, pan head 2.3x25		1
4-18	ZG227452	Spring D	900-118	1
4-19	ZS201150	Screw, truss head 3x6 (black)		1
4-20	MI597183	Flywheel	KJ-2041	1
4-21	ZS593796	Set Screw, hexagon socket 3x6 (flat/P.)		2
4-22	MR597115	Impedance Roller, w/shaft	KJ-2033	1
4-23x	MZ597126	Roller Plate	KJ-2035	1
4-24x	ZW616116	Washer D4x10x1t		1
4-25	ZW270101	'E' Ring 3M	6-1-9	1
4-26	MV269965	Steel Ball D4		1
4-27	ZS379350	ISO Screw, pan head 3x6		3
4-28	MH596790	Prop	KJ-1001	3
4-29	MZ596823	Thrust Plate	KJ-1004	1
4-30	ZW583212	Washer D8x1t		1
4-31	ZS421806	Screw, pan head 3x8		3

PAUSE SW./TENSION ARM BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
PAUSE SW. BLOCK				
5-1	BS600333	Pause SW. Block Comp.	KJ	1
5-2	MZ609930	P.S. SW. Base B	KD-A2201	1
5-3	ES524790	Push SW. JH-3A	25-5-79	1
5-4	ZS422076	Screw, pan head 3x5		2
5-5	MZ596880	Pause SW. Base B	KJ-2001	1
5-6	MS596891	Pause Shaft	KJ-2003	1
5-7	ZW314728	Cotter Pin 1.6x8		1
5-8	ZS497733	Screw, round head 2x15		1
5-9	ZG496438	P Spring	KJ-A2213	1
5-10	ZW270123	'E' Ring 4M	6-1-9	1
5-11	ZS467908	Screw, pan head 3x4, w/washer		2
5-12	SK598397	Push Button Knob C	91-5051	2
5-13	ER450786	Spark Quencher U/L 0.1μ+120Ω 400WV	41-1-33	1
5-14	MZ397394	Power SW. Table	KD-2028	1
5-15	ES246025	Push SW. SDF1PBP1 (UEH-12BP U/L)	25-5-11	1
5-16	ZS422076	Screw, pan head 3x5		2
5-17	ER376435	Spark Quencher U/L 0.1μ+120Ω 250WV	41-1-35	1
5-18	ES421806	Screw, pan head 3x8		2
5-19	MZ594011	Equalizer Shield	KJ-1019	1

TENSION ARM BLOCK

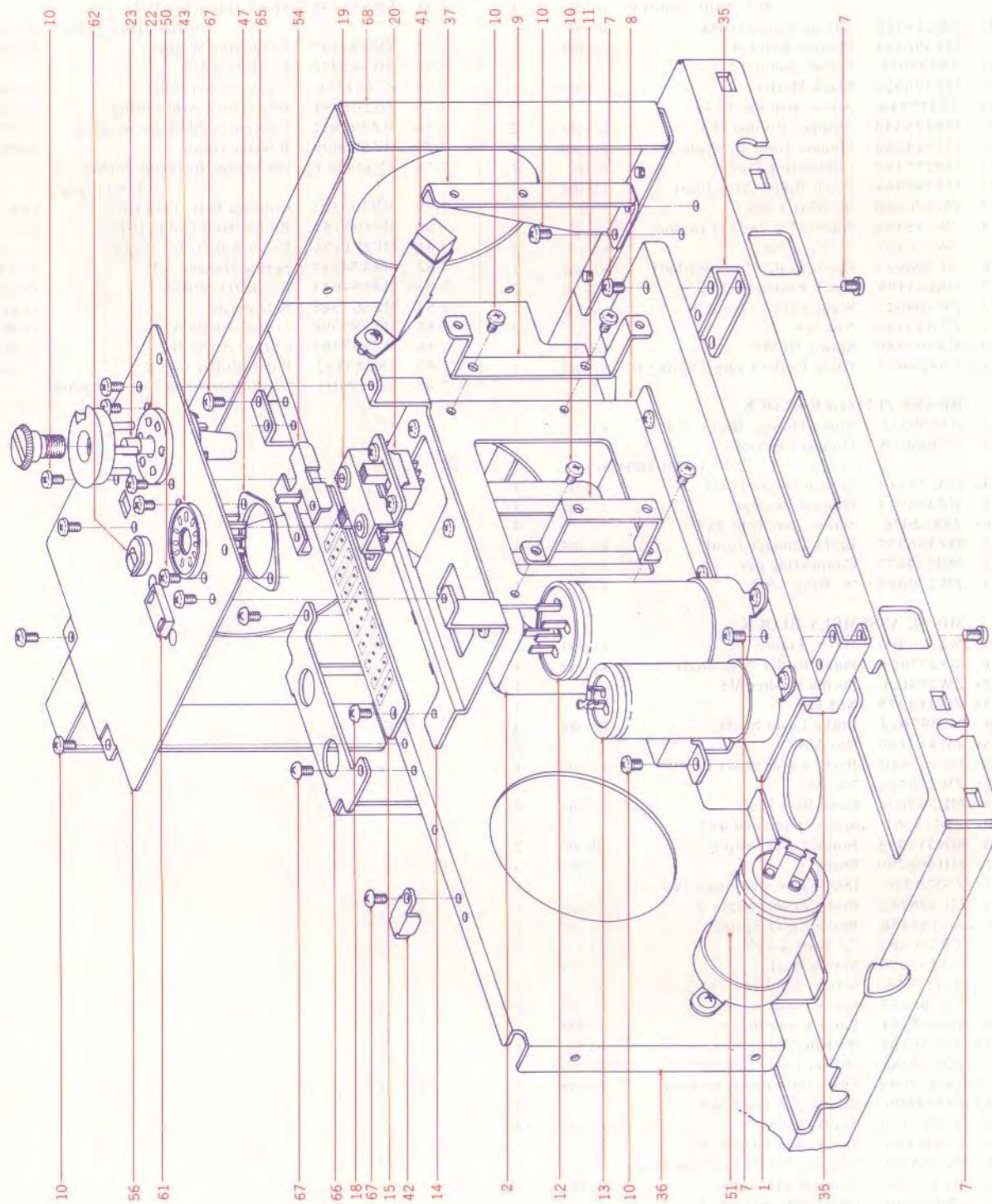
5-20x	BZ600366	Tension Arm Block Comp.	KJ	1
5-21	MZ597194	SW. Table, w/metal	KJ-2043	1
5-22	ML597216	T SW. Lever, w/shaft	KJ-2045	1
5-23	ZW270101	'E' Ring 3M	6-1-9	1
5-24	MZ606712	Stopper Rubber KJ	KJ-2060	1
5-25	ZS478697	Graduated Screw, CG	CG-1093	1
5-26	ZW273778	Earth Lug M3		1
5-27	ZS422076	Screw, pan head 3x5		1
5-28	MZ606723	Spring T	KJ-2059	1
5-29	ES593807	Micro SW. K1L13	25-1-33	1
5-30	ZS422965	Screw, pan head 3x15		2
5-31	MZ597238	T Arm	KJ-2047	1
5-32	MS597240	T Guide	KJ-2048	1
5-33	ZW572242	Screw, countersunk head 2.6x6		1
5-34	ZW535094	Decorative Washer	TW-2077	1
5-35	ZS593133	Screw, oval countersunk head 3x6		1
5-36	ZS379350	ISO Screw, pan head 3x6		3

OPERATION BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
6-1x	BZ600377	Operation block Comp.	KJ	1
6-2	MZ593037	Operation Frame	KJ-2021	1
6-3	SZ597870	Button Base	KJ-2026	1
6-4	SB597014	Touch Button 1 (red)	KJ-2024	1
6-5	SB597025	Touch Button 2 (yellow)	KJ-2024	2
6-6	SB597036	Touch Button 3 (green)	KJ-2024	2
6-7	SB597047	Touch Button 4 (white)	KJ-2024	1
6-8x	EJ553948	Wire Band B	2-35-3	1
6-9	ZW273767	Earth Lug D3x20L		6
6-10	ZS468358	Screw, truss head 3x5		6
6-11	ZS422076	Screw, pan head 3x5		6
6-12	MZ597060	B.P. Holder (L)	KJ-2025	1
6-13	MZ597058	B.P. Holder (R)	KJ-2025	1
6-14	ZS325495	Tapping Screw #2 3x6		2
6-15	UM541978	P.C. Board Prop	CZ-5012	1
6-16	ZS379350	ISO Screw, pan head 3x6		1
6-17	ES593818	Rotary SW. M33S-KOO-1S	25-6-71	1
6-18	MZ596992	Rotary SW. Plate	KJ-2022	1
6-19	EA597003	Lamp P.C. Board	KJ-2023	1
6-20x	EL562004	Pilot Lamp (L/T) 24V 50MA	28-2-34	1
6-21x	ED593403	Silicon Diode 1S1587	45-3-29	1
6-22	EA597947	EQ. P.C. Board	KJ-5022	1
6-23	MZ597328	SW. Plate W	KJ-5010	1
6-24	ZS325495	Tapping Screw #2 3x6		2

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

FIG. 8 ILLUSTRATION OF POWER SUPPLY BLOCK

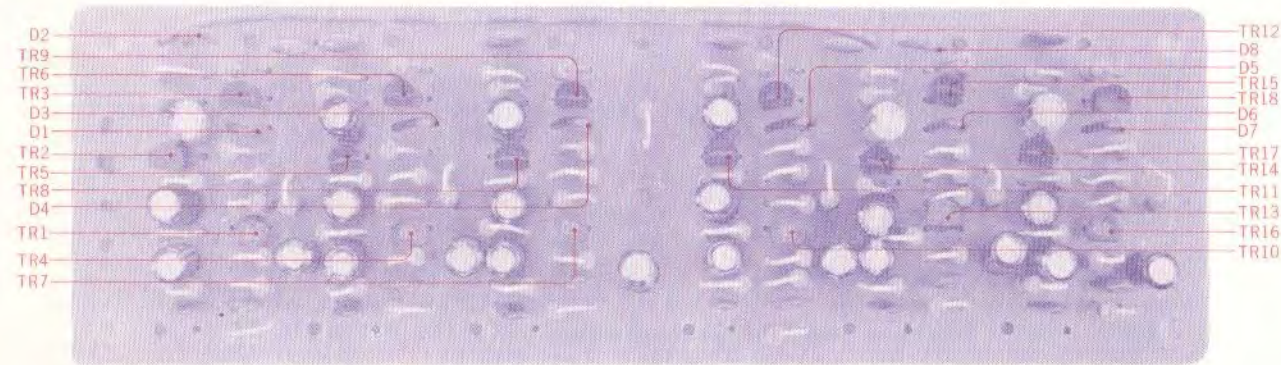


POWER SUPPLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty	Ref. No.	Parts No.	Description	Schematic No.	Q'ty
8-1	MZ597791	Trans. Base	KJ-2012	1	8-56	MZ599861	Connector Base A-2	KJ-2016	1
8-2	BT593717	Power Trans. KJT-1A	38-4-277	1	8-57x	MZ597802	Connector Base A-1	KJ-2016	1
8-3x	BT593728	Power Trnas. KJT-1D (D/DB-3 core)	38-4-276	1	8-58x	MZ597813	Connector Base B (D/DB-CEE)	KJ-2016	1
8-4x	BT593730	Power Trans. KJT-10 (D/DB-CSA)	38-4-278	1	8-59x	MZ597824	Connector Base C (D/DB-CSA)	KJ-2016	1
8-5x	BT593752	Power Trans. KJT-11 (D/DB-CEE)	38-4-279	1	8-60x	MZ597835	Connector Base D (D/DB-JPN)	KJ-2016	1
8-6x	BT593741	Power Trans. KJT-12 (D/DB-JPN)	38-4-280	1	8-61	EJ378944	Socket, AC U/L S-1-9122	31-1-47	1
8-7	ZS417150	Screw, pan head 4x6		6	8-62	EZ382263	Strain Relief SR-4K-4	2-7-12	1
8-8	MZ596968	Connector Base A	KJ-2013	1	8-63x	EZ246936	Strain Relief SR-6W-1 (3 core)	2-7-8	1
8-9	MZ596970	P.C. Board Holder B	KJ-2014	1	8-64x	EJ553948	Wire Band B	2-35-3	7
8-10	ZS472274	Tapping Screw #2 3x6 (bind)		13	8-65	MZ596957	Servo Holder	KJ-2011	1
8-11	MZ596981	P.C. Board Holder C	KJ-2015	1	8-66	MZ597857	Relay P.C. Board Supporter	KJ-2019	1
8-12	EC520626	MP/C. (3+1) μ Fx2 250WV AC (Lug Type Uni/D.)	24-9-74	1	8-67	ZS325495	Tapping Screw #2 3x6		4
8-13	EC593763	MP/C. 3.5+1.5 μ F 150WV AC (Lug Type Uni/D.)	24-9-88	1	8-68	SZ397495	Side Frame A (Right)	KD-6002	1
8-14	MZ596902	Connector Base B	KJ-2004	1	8-69x	SZ397506	Side Frame B (Left)	KD-6002	1
8-15	EZ597892	Terminal Plate	KJ-2050	1	8-70x	EW540112	AC Cord (CUL) 2.5M	26-3-19	1
8-16x	EJ594988	Terminal Plate, Fuse Holder (D/DB) (CSA,CEE,JPN)	KJ-2052	1	8-71x	EW315448	Australia Cord (3 Core)	26-3-11	1
8-17x	EJ592503	Fuse Clip, P.C. Board H0426 (JPN, CSA,CEE)		26	8-72x	ZW273881	Earth Lug M4		1
8-18	ZS422076	Screw, pan head 3x5		4	8-73x	ZW273802	Toothed Lock Washer M3		1
8-19	MZ596913	Cycle SW. Base	KJ-2005	1	8-74x	ZS472274	Tapping Screw #2 3x6 (bind)		1
8-20	ES479485	Slide SW. S-1	25-3-66	2					
8-21x	ZS417216	Screw, pan head 3x4		4					
8-22	EJ233370	Socket S-18010 (Volt. Selector)	40-2-3	1					
8-23	EF588420	Fuse 1A 125V (CSA, JPN)	39-1-52	2					
8-24x	EF593706	Fuse 500MAT (CEE)	39-1-53	5					
8-25x	EF602550	Fuse 1.25AT 250V (CEE)	39-1-53	1					
8-26x	EF277402	Fuse ST-2 1A (CSA)	39-1-26	1					
8-27x	EF601986	Fuse 1.5A 125V (JPN)	39-1-52	1					
8-28x	EA594990	Terminal P.C. Board, AC (CEE)	KJ-2056	1					
8-29x	EA607217	AC Fuse P.C. Board (CSA)	KJ-2058	1					
8-30x	MZ607195	Trans. Retaining Parts (CSA, CEE, JPN)	KJ-2057	2					
8-31x	EJ514822	Fuse Holder, P.C. Board S-NS051 (CSA)	40-1-28	2					
8-32x	EJ553948	Wire Band B (JPN)	2-35-3	2					
8-33x	MZ610942	Trans. Shield Plate D (JPN)	KJ-5035	1					
8-34x	EZ549314	Trans. Shield Cushion (JPN)	MU-5031	3					
8-35	MZ397170	Trans. Table C	KD-1065	2					
8-36	MZ598004	Center Frame	KJ-1006	1					
8-37	MZ596834	P.C. Board Holder A	KJ-1005	1					
8-38x	EZ597846	Power Supply Heat-Sink Plate	KJ-2018	1					
8-39x	EA597251	Transistor P.C. Board	KJ-2049	1					
8-40x	ET465208	Transistor 2SC1098(L,K)	45-1-122	1					
8-41	ER616498	Cement/R. H15B 150(K)	35-16-55	1					
8-42	MZ596935	Sys. Con. Retainer	KJ-2009	1					
8-43	EJ222748	Socket, Sub Magnale #311SG	31-1-39	1					
8-44x	EJ310871	Multi-Jack (J-2) 18P 3250-018-001	31-4-11	1					
8-45x	EJ299834	Mate-N-Lock Plug Housing 6P 1-480273-0	52-1-2	1					
8-46x	EJ373634	Socket Contact 61115-1	52-1-1	24					
8-47	MZ302400	Remote Control Socket Mt. Plate	PX-515	1					
8-48x	EJ293073	Mate-N-Lock Plug Housing 12P 1-480275-0	52-1-1	1					
8-49x	EJ368796	Mate-N-Lock Plug Housing 9P 1-480274-0 (D/DB)	52-1-2	1					
8-50	ZS355522	Screw, pan head 3x6 (Black)		6					
8-51	EC557190	Elect./C. 470 μ F/160WV (Lug Type)	24-10-88	1					
8-52x	EJ205986	Cramp Terminal 2-SD	32-1-8	4					
8-53x	EJ205775	Cramp Terminal 1-SD	32-1-7	4					
8-54	ML596924	Cycle SW. Lever	KJ-2006	1					
8-55x	EF563703	Fuse 2A 250V	39-1-50	1					

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

FIG. 9 PHOTO OF BUTTON P.C. BOARD (KJ-2051) BLOCK



BUTTON P.C. BOARD (KJ-2051) BLOCK

Symbol No.	Parts No.	Description	Q'ty	Symbol No.	Parts No.	Description	Q'ty
9-1x	BA600660	Button P.C. Board Comp. (KJ-2051)	1	9-C31	EC450527	Elect. 4.7μF 25WV	1
9-TR1	ET491051	FET 2SK30A (GR)	1	9-C32	EC250885	Mylar 0.01μF(K) 50WV	1
9-TR2	ET399846	Transistor 2SC945(Q)	1	9-C33	EC450527	Elect. 4.7μF 25WV	1
9-TR3	ET478001	Transistor 2SC945(P)(Q)	1	9-C34	EC250885	Mylar 0.01μF(K) 50WV	1
9-TR4	ET491051	FET 2SK30A (GR)	1	9-C35	EC450527	Elect. 4.7μF 25WV	1
9-TR5	ET399846	Transistor 2SC945(Q)	1	9-C36	EC250885	Mylar 0.01μF(K) 50WV	1
9-TR6	ET478001	Transistor 2SC945(P)(Q)	1	9-C37	EC450527	Elect. 4.7μF 25WV	1
9-TR7	ET491051	FET 2SK30A(GR)	1	9-C38	EC250885	Mylar 0.01μF(K) 50WV	1
9-TR8	ET399846	Transistor 2SC946(Q)	1	9-C39	EC450527	Elect. 4.7μF 25WV	1
9-TR9	ET478001	Transistor 2SC945(P)(Q)	1	9-C40	EC250885	Mylar 0.01μF(K) 50WV	1
9-TR10	ET491051	FET 2SK30A(GR)	1	9-C41	EC450527	Elect. 4.7μF 25WV	1
9-TR11	ET399846	Transistor 2SC945(Q)	1	9-C42	EC250885	Mylar 0.01μF(K) 50WV	1
9-TR12	ET478001	Transistor 2SC945(P)(Q)	1	Carbon resistor omitted			
9-TR13	ET491051	FET 2SK30A(GR)	1				
9-TR14	ET399846	Transistor 2SC945(Q)	1				
9-TR15	ET478001	Transistor 2SC945(P)(Q)	1				
9-TR16	ET491051	FET 2SK30A(GR)	1				
9-TR17	ET399846	Transistor 2SC945(Q)	1				
9-TR18	ET478001	Transistor 2SC945(P)(Q)	1				
9-D1to8	ED557447	Silicon Diode 1S1588	8				
Capacitor, Vertical Type							
9-C1	EC362068	Mylar 0.0018μF(K) 50WV	1				
9-C2	EC250604	Mylar 0.001μF(K) 50WV	1				
9-C3	EC368256	Elect. 0.47μF 25WV	1				
9-C4	EC350706	Elect. 4.7μF 16WV	1				
9-C5	EC220432	Elect. 2.2μF 25WV	1				
9-C6	EC362068	Mylar 0.0018μF(K) 50WV	1				
9-C7	EC250604	Mylar 0.001μF(K) 50WV	1				
9-C8	EC368256	Elect. 0.47μF 25WV	1				
9-C9	EC350706	Elect. 4.7μF 16WV	1				
9-C10	EC307506	Elect. 10μF 6.3WV	1				
9-C11	EC362068	Mylar 0.0018μF(K) 50WV	1				
9-C12	EC250604	Mylar 0.001μF(K) 50WV	1				
9-C13	EC368256	Elect. 0.47μF 25WV	1				
9-C14	EC350706	Elect. 4.7μF 16WV	1				
9-C15	EC307506	Elect. 10μF 6.3WV	1				
9-C16	EC362068	Mylar 0.0018μF(K) 50WV	1				
9-C17	EC250604	Mylar 0.001μF(K) 50WV	1				
9-C18	EC368256	Elect. 0.47μF 25WV	1				
9-C19	EC350706	Elect. 4.7μF 16WV	1				
9-C20	EC307506	Elect. 10μF 6.3WV	1				
9-C21	EC362068	Mylar 0.0018μF(K) 50WV	1				
9-C22	EC250604	Mylar 0.001μF(K) 50WV	1				
9-C23	EC368256	Elect. 0.47μF 25WV	1				
9-C24	EC350706	Elect. 4.7μF 16WV	1				
9-C25	EC307506	Elect. 10μF 6.3WV	1				
9-C26	EC362068	Mylar 0.0018μF(K) 50WV	1				
9-C27	EC250604	Mylar 0.001μF(K) 50WV	1				
9-C28	EC368256	Elect. 0.47μF 25WV	1				
9-C29	EC350706	Elect. 4.7μF 16WV	1				
9-C30	EC307506	Elect. 10μF 6.3WV	1				

FIG. 10 PHOTO OF SERVO P.C. BOARD (KJ-1007) BLOCK

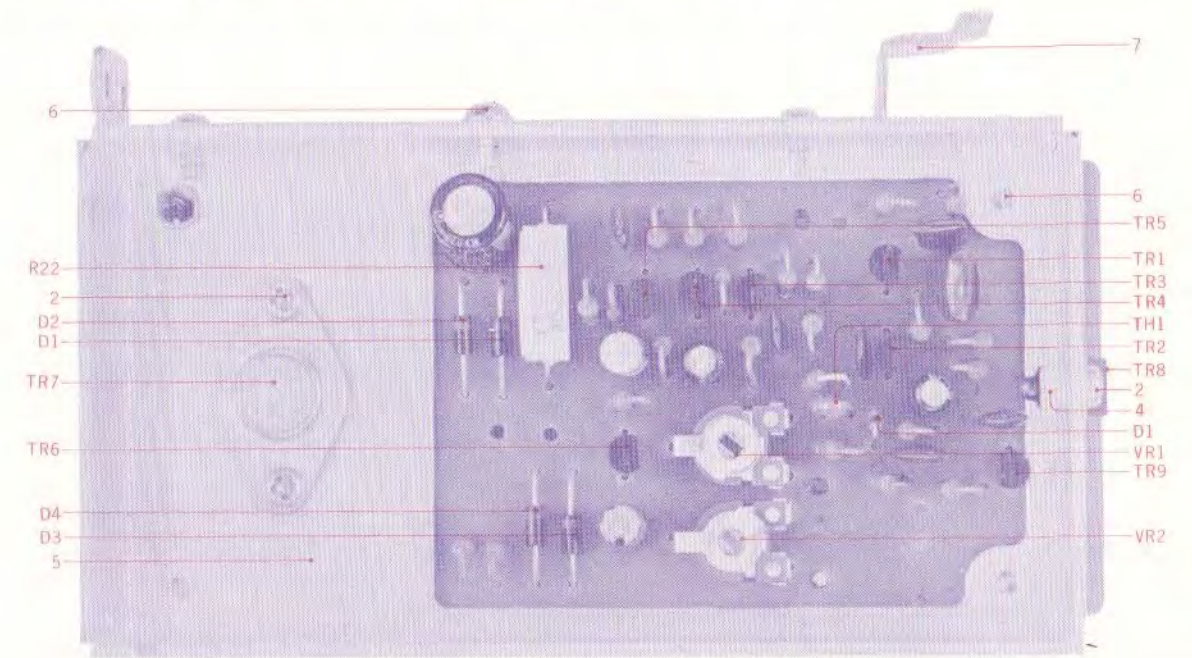


FIG. 11 PHOTO OF SYS. CON. P.C. BOARD (KJ-1013) BLOCK

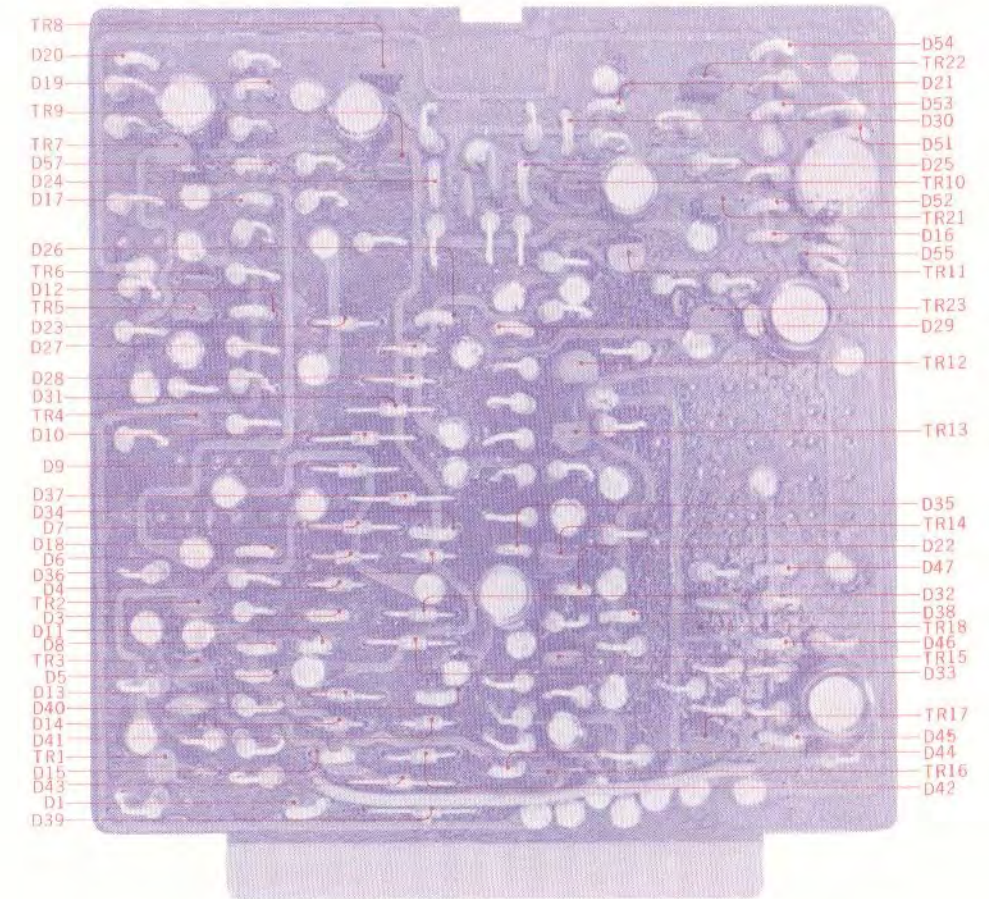


FIG. 12 PHOTO OF RELAY P.C. BOARD (KJ-1011) BLOCK

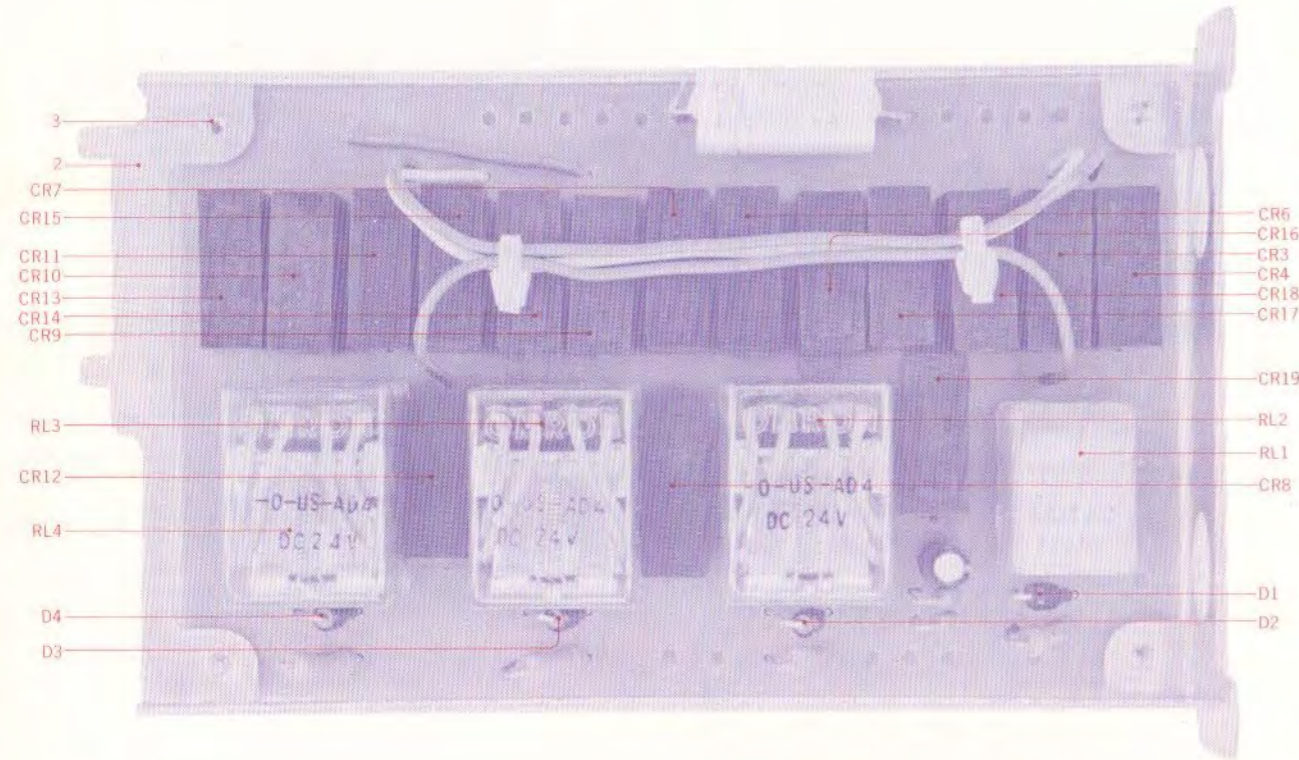
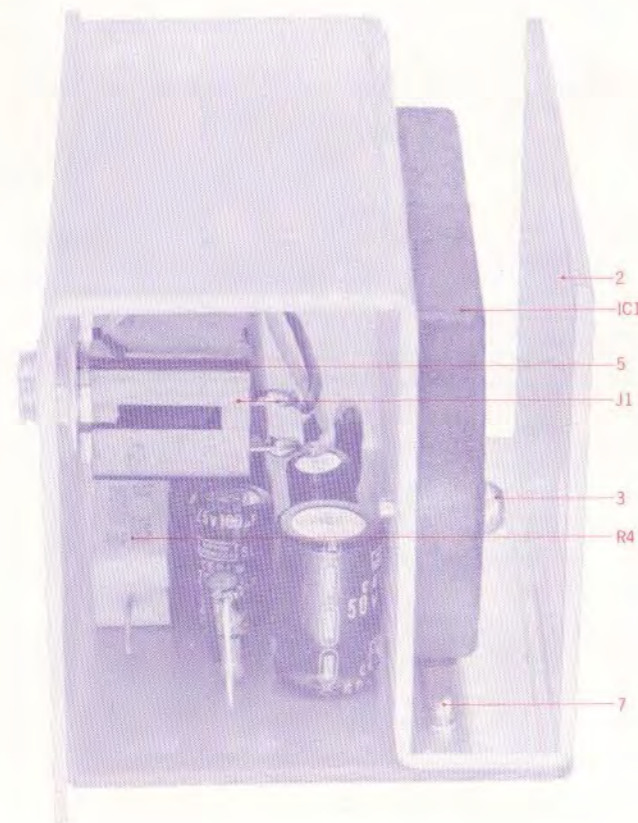


FIG. 13 PHOTO OF POWER AMP. P.C. BOARD (KJ-1010) BLOCK



SERVO P.C. BOARD (KJ-1007) BLOCK

Symbol No.	Parts No.	Description	Q'ty
10-1x	BA600467	Servo P.C. Board Comp (KJ-1007)	1
10-TR1,2,3	ET478001	Transistor 2SC945(P)(Q)	3
10-TR4	ET399846	Transistor 2SC945(Q)	1
10-TR5	ET538154	Transistor 2SA564(Q)(R)	1
10-TR6	ET398711	Transistor 2SC945(Q)(R)	1
10-TR7	ET593335	Transistor 2SC783(O)(R)	1
10-TR8	ET558178	Transistor 2SD360(D1)(D2)	1
10-TR9	ET398711	Transistor 2SC945(Q)(R)	1
10-D1	ED557447	Silicon Diode 1S1588	1
10-D2to5	ED224548	Silicon Diode 10D2	4
10-TH1	ED593357	Thermister 34D21	1
10-VR1	EV560136	Semi-fixed/Vol. V10K8-4-2 20 k Ω	1
10-VR1	EV593368	Semi-fixed/Vol. V10K8-4-2 30 k Ω	1
10-2	ZS421806	Screw, pan head 3x8	3
10-3	ZW273802	Toothed Lock Washer M3	2
10-4	ZW273756	Nut M3	3
10-5	EZ596845	Servo Heat-sink Plate	1
10-6	ZS325495	Tapping Screw #2 3x6	7
10-7	MZ596957	Servo Holder	1
10-R22	ER622045	Cement 2W 330(K) (Metal Ox. Film/T)	1

Capacitor, Vertical Type			
10-C1	EC251291	Mylar 0.1 μ F(K) 50WV	1
10-C2	EC251122	Mylar 0.027 μ F(K) 50WV	1
10-C3	EC331828	Elect. 3.3 μ F 25WV	1
10-C4	EC250582	Mylar 0.0033 μ F(K) 50WV	1
10-C5	EC251122	Mylar 0.027 μ F(K) 50WV	1
10-C6	EC250582	Mylar 0.0033 μ F(K) 50WV	1
10-C7	EC311793	Mylar 0.012 μ F(J) 50WV	1
10-C8	EC557166	Solid Aluminum 3.3 μ F 25WV	1
10-C9	EC450055	Elect. 1 μ F 25WV	1
10-C10	EC320051	Elect. 10 μ F 16WV	1
10-C11	EC220151	Elect. 100 μ F 25WV	1
10-C12	EC250885	Mylar 0.01 μ F(K) 50WV	1
10-C13	EC220612	Elect. 33 μ F 25WV	1

Carbon resistor omitted

SYS. CON. P.C. BOARD (KJ-1013) BLOCK

Symbol No.	Parts No.	Description	Q'ty
11-1x	BA600480	Sys. Con P.C. Board Comp. (KJ-1013)	1
11-TR1	ET478001	Transistor 2SC945(P)(Q)	1
11-TR2,3	ET520288	Transistor 2SC1247A(V)	1
11-TR4,5,6	ET478001	Transistor 2SC945(P)(Q)	3
11-TR7	ET495483	Transistor 2SC945(P)	1
11-TR8to11	ET478001	Transistor 2SC945(P) (Q)	4
11-TR12	ET511694	Transistor 2SC1211(D)(E)	1
11-TR13to18	ET478001	Transistor 2SC945(P) (Q)	6
11-TR21to23	ET478001	Transistor 2SC945(P)(Q)	3
11-D1	ED557447	Silicon Diode 1S1588	1
11-D3to47	ED557447	Silicon Diode 1S1588	45
11-D51to55	ED557447	Silicon Diode 1S1588	5
11-D57	ED593403	Silicon Diode 1S1587	1

Capacitor, Vertical Type			
11-C2	EC250885	Mylar 0.01 μ F(K) 50WV	1
11-C3	EC450055	Elect. 1 μ F 25WV	1
11-C5, 6	EC220612	Elect. 33 μ F 25WV	2
11-C7, 8	EC250885	Mylar 0.01 μ F(K) 50WV	2
11-C9	EC220612	Elect. 33 μ F 25WV	1
11-C10	EC450055	Elect. 1 μ F 25WV	1
11-C11	EC357840	Elect. 22 μ F 50WV	1
11-C12	EC450055	Elect. 1 μ F 25WV	1
11-C13	EC324516	Elect. 220 μ F 6.3WV	1
11-C14	EC250885	Mylar 0.01 μ F(K) 50WV	1
11-C16	EC336126	Elect. 47 μ F 25WV	1
11-C17	EC220151	Elect. 100 μ F 25WV	1
11-C18	EC250885	Mylar 0.01 μ F(K) 50WV	1
11-C19	EC450055	Elect. 1 μ F 25WV	1
11-C20	EC220994	Elect. 10 μ F 25WV	1
11-C21	EC556007	Elect. 2.2 μ F 16WV	1

Carbon resistor omitted

RELAY P.C. BOARD (KJ-1011) BLOCK

Symbol No.	Parts No.	Description	Q'ty
12-1x	BA600478	Relay P.C. Board Comp. (KJ-1011)	1
12-D1to4	ED494583	Silicon Diode 10D05	4
12-CR3, 4	ER450786	Spark Quencher U/L 0.1 μ +120 Ω 400WV	2
12-CR6to19	ER450786	Spark Quencher U/L 0.1 μ +120 Ω 400WV	14
12-RL1	EP616500	Relay LC1-C-JT DC24V	1
12-RL2to4	ER344136	Relay MY4-O-US-AD4 24V	3
12-C1	EC368256	Elect. 0.47 μ F 25WV (Vert. Type)	1
12-R2to5	ER435868	Metal Oxide Film/R. 1W 330(K)	4
12-R6, 7	ER349007	Carbon RD1/4 33k(J)	2
12-2	MZ597857	Relay P.C. Board Supporter	1
12-3	ZS325495	Tapping Screw #2 3x6	4

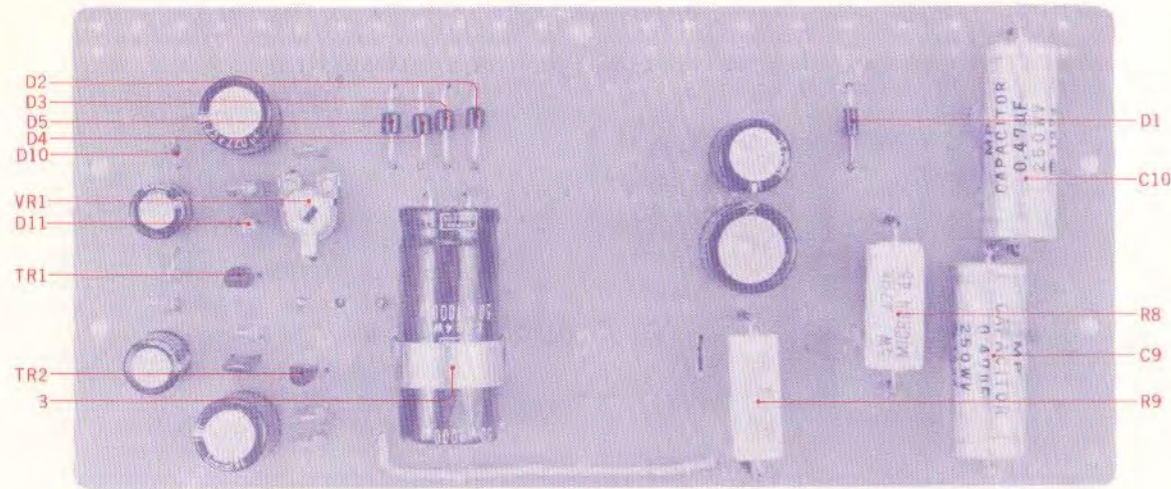
POWER AMP. P.C. BOARD (KJ-1010) BLOCK

Symbol No.	Parts No.	Description	Q'ty
13-1x	BA600456	Power Amp. P.C. Board Comp. (KJ-1010)	1
13-IC1	EI593324	I.C. STK-024	1
13-J1	EJ454858	Mic. Jack 2PMJ1	1
13-2	EZ597868	Amp. Heat-sink Plate	1
13-3	ZS447805	Tapping Screw #2 3x12(BR)	2
13-4	ZW272722	Toothed Lock Washer M9 D9.3x13x0.5t	1
13-5	ZW224976	Jack Thin Washer	1
13-6	ZW554624	E Jack Nut	1
13-7	ZS325495	Tapping Screw #2 3x6	2
13-R4	ER593291	Cement SW 39(M) (Wire-wound Type)	1

Capacitor, Vertical Type			
13-C1	EC220151	Elect. 100 μ F 25WV	1
13-C2	EC220432	Elect. 2.2 μ F 25WV	1
13-C3	EC220151	Elect. 100 μ F 25WV	1
13-C4	EC336126	Elect. 47 μ F 25WV	1
13-C5	EC321221	Elect. 100 μ F 50WV	1
13-C6	EC450270	Elect. 1000 μ F 25WV	1
13-C7	EC593302	Mylar 0.047 μ F(M) 50WV	1

Carbon resistor omitted

FIG. 14 PHOTO OF POWER SUPPLY P.C. BOARD (KJ-1012) BLOCK



POWER SUPPLY P.C. BOARD (KJ-1012) BLOCK

Symbol No.	Parts No.	Description	Q'ty	Symbol No.	Parts No.	Description	Q'ty
14-1x	BA600434	Power Supply P.C. Board Comp. (KJ-1012)	1	14-C1	EC565345	Capacitor, Vertical Type Elect. 1000 μ F 50WV	1
14-2x	BA600445	Power Supply P.C. Board Comp. (KJ-1012) (D/DB)	1	14-C2	EC372148	Elect. 220 μ F 35WV	1
14-TR1	ET398711	Transistor 2SC945(Q)(R)	1	14-C3	EC250918	Mylar 0.01 μ F(M) 50WV	1
14-TR2	ET511920	Transistor 2SC1247A(B)(V)	1	14-C4	EC336115	Elect. 220 μ F 25WV	1
14-D1	ED224550	Silicon Diode 10D4	1	14-C5, 6	EC565345	Elect. 1000 μ F 50WV	2
14-D2 to 9	ED494583	Silicon Diode 10D05	8	14-C7	EC329782	Elect. 220 μ F 10WV	1
14-D10	ED557447	Silicon Diode 1S1588	11	14-C8	EC324516	Elect. 220 μ F 6.3WV	1
14-D11	ED357794	Zener Diode RD-5A(M)	1	14-C9, 10	EC350987	MP 0.47 μ F(M) 250V AC	2
14-VR1	EV484863	Semi-fixed/Vol. V10K8-4-2 1 k Ω (Metalized Film)	1	14-C11	EC337533	Elect. 220 μ F 50WV	1
14-3	EZ596856	Condenser Band A (D/DB)	1	14-C12	EC321221	Elect. 100 μ F 50WV	1
14-4	EZ596867	Condenser Band B	1			Carbon resistor omitted	
14-R8	ER465974	Cement 5W 47(K) (Wire-wound Type)	1				
14-R9	ER435587	Cement 3W 220(K) (Metal Oxide Type)	1				

FIG. 15 PHOTO OF DOLBY P.C. BOARD (TD-5301) BLOCK

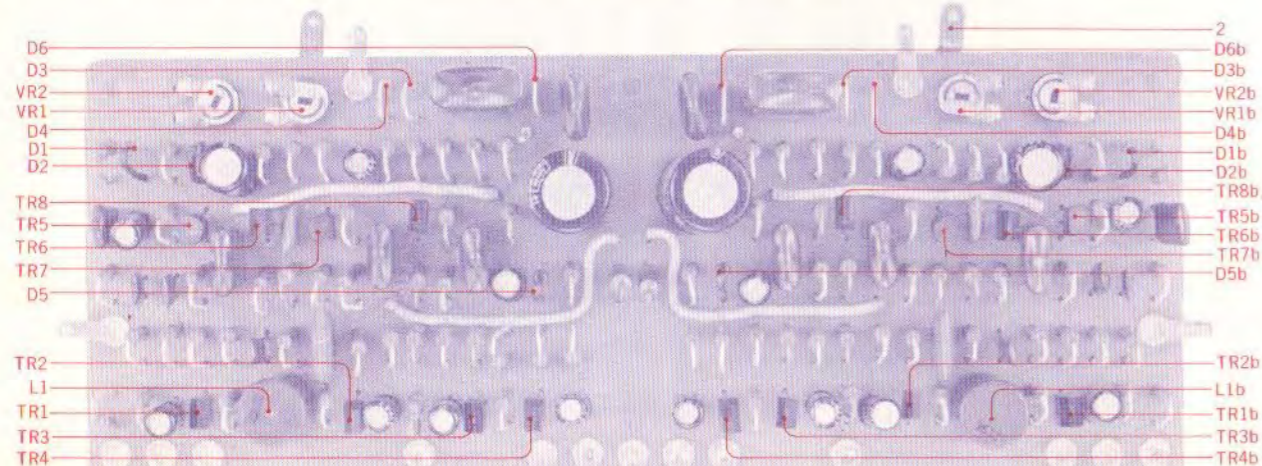
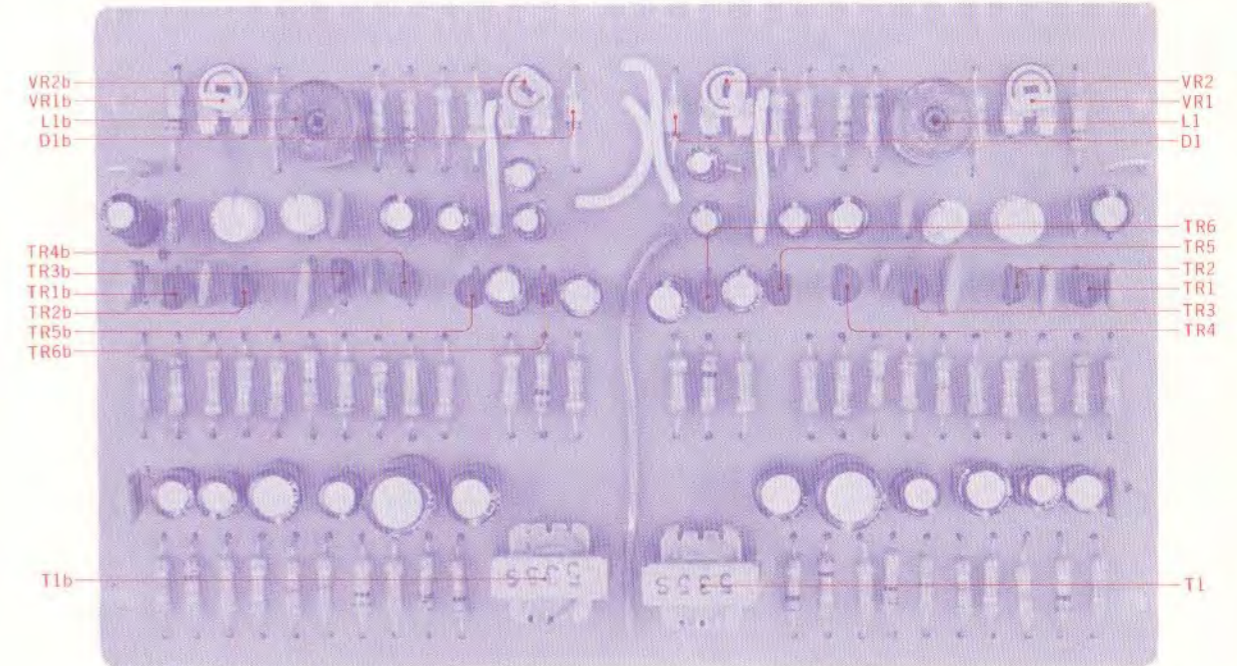


FIG. 16 PHOTO OF P.B. AMP. P.C. BOARD (KJ-5025) BLOCK



DOLBY P.C. BOARD (TD-5301) BLOCK

Symbol No.	Parts No.	Description	Q'ty
15-1x	BA588003	Dolby P.C. Board Comp. (TD-5301)	1
15-TR1	ET234854	Transistor 2SC458L(G)(C)	2
15-TR2	ET329218	Transistor 2SC458(C)	2
15-TR3	ET352146	Transistor 2SC458L(G)(D)	2
15-TR4	ET329218	Transistor 2SC458(C)	2
15-TR5	ET491051	FET 2SK30A(GR)	2
15-TR6	ET234854	Transistor 2SC458L(G)(C)	2
15-TR7	ET350335	Transistor 2SA564(Q)	2
15-TR8	ET329218	Transistor 2SC458(C)	2
15-D1	ED219464	Germanium Diode 1N34A	2
15-D2	ED491130	Zener Diode WZ-085	2
15-D3, 4	ED560913	Silicon Diode 1S2473 VE	4
15-D5	ED219464	Germanium Diode 1N34A	2
15-D6	ED560913	Silicon Diode 1S2473 VE	2
15-VR1	EV523620	Semi-fixed/Vol. V8K4-1 500 Ω B	2
15-VR2	EV464207	Semi-fixed/Vol. V8K4-1 5 k Ω B	2
15-L1	EO496350	Inductor 146LY 36MH(J)	2
15-2	EJ363126	P.C. Board Terminal	2
		Capacitor, Vertical Type	
15-C1	EC320051	Elect. 10 μ F 16WV	2
15-C2	EC350875	Mylar 0.001 μ F (J) 50WV	2
15-C3	EC336194	VFM 270PF(J) 50WV	2
15-C4, 5, 6	EC320051	Elect. 10 μ F 16WV	6
15-C7	EC313121	Elect. 220 μ F 25WV	2
15-C8	EC329883	Mylar 0.0056 μ F(J) 50WV	2
15-C9	EC329861	Mylar 0.027 μ F(J) 50WV	2
15-C10	EC337500	Mylar 0.0047 μ F(J) 50WV	2
15-C11	EC320051	Elect. 10 μ F 16WV	2
15-C12	EC379170	Mylar 0.1 μ F(J) 50WV	2
15-C13	EC320040	Elect. 47 μ F 16WV	2
15-C14	EC290520	VFM 100PF(J) 50WV	2
15-C15	EC320051	Elect. 10 μ F 16WV	2
15-C16	EC379170	Mylar 0.1 μ F (J) 50WV	2
15-C17	EC320051	Elect. 10 μ F 16WV	2
15-C18, 19	EC379170	Mylar 0.1 μ F(J) 50WV	4
15-C20	EC395504	Mylar 0.33 μ F(K) 50W V	2
		Carbon resistor omitted	

P.B. AMP. P.C. BOARD (KJ-5025) BLOCK

Symbol No.	Parts No.	Description	Q'ty
16-1x	BA600568	P.B. Amp. P.C. Board Comp. (KJ-5025)	1
16-TR1 to 4	ET517263	Transistor 2SC1312(G)(H)	8
16-TR5, 6	ET398711	Transistor 2SC945(Q)(R)	4
16-D1	ED219464	Germanium Diode 1N34A	2
16-T1	BT517274	Headphone Trans. N16-535S	2
16-L1	EO496361	Inductor 6070GE 23MH(J)	2
16-VR1	EV464220	Semi-fixed/Vol. V8K4-1 50k Ω B	2
16-VR2	EV464207	Semi-fixed/Vol. V8K4-1 5k Ω B	2
		Capacitor, Vertical Type	
16-C1	EC432810	Elect. 10 μ F 16WV NL	2
16-C2	EC467133	VFM 68PF(J) 50WV	2
16-C3	EC290520	VFM 100PF(J) 50WV	2
16-C4	EC329771	Elect. 47 μ F 6.3 WV	2
16-C5	EC290520	VFM 100PF(J) 50WV	2
16-C6	EC517138	Elect. 10 μ F 25WV NL	2
16-C7	EC329771	Elect. 47 μ F 6.3WV	2
16-C8	EC302297	Mylar 0.018 μ F(K) 50WV	2
16-C9	EC320040	Elect. 47 μ F 16WV	2
16-C10	EC493323	Elect. 1 μ F 25WV NL	2
16-C11	EC329850	VFM 220PF(J) 50WV	2
16-C12	EC329771	Elect. 47 μ F 6.3WV	2
16-C13	EC399565	VFM 22PF(J) 50WV	2
16-C14	EC290520	VFM 100PF(J) 50WV	2
16-C15	EC320051	Elect. 10 μ F 16WV	2
16-C16	EC220364	Elect. 100 μ F 6.3WV	2
16-C17	EC336126	Elect. 47 μ F 25WV	2
16-C18	EC450055	Elect. 1 μ F 25WV	2
16-C19	EC320051	Elect. 10 μ F 16WV	2
16-C20	EC450055	Elect. 1 μ F 25WV	2
16-C21	EC320051	Elect. 10 μ F 16WV	2
16-C22	EC450055	Elect. 1 μ F 25WV	2
		Carbon resistor omitted	

FIG. 17 PHOTO OF REC. AMP. P.C. BOARD (KJ-5024) BLOCK

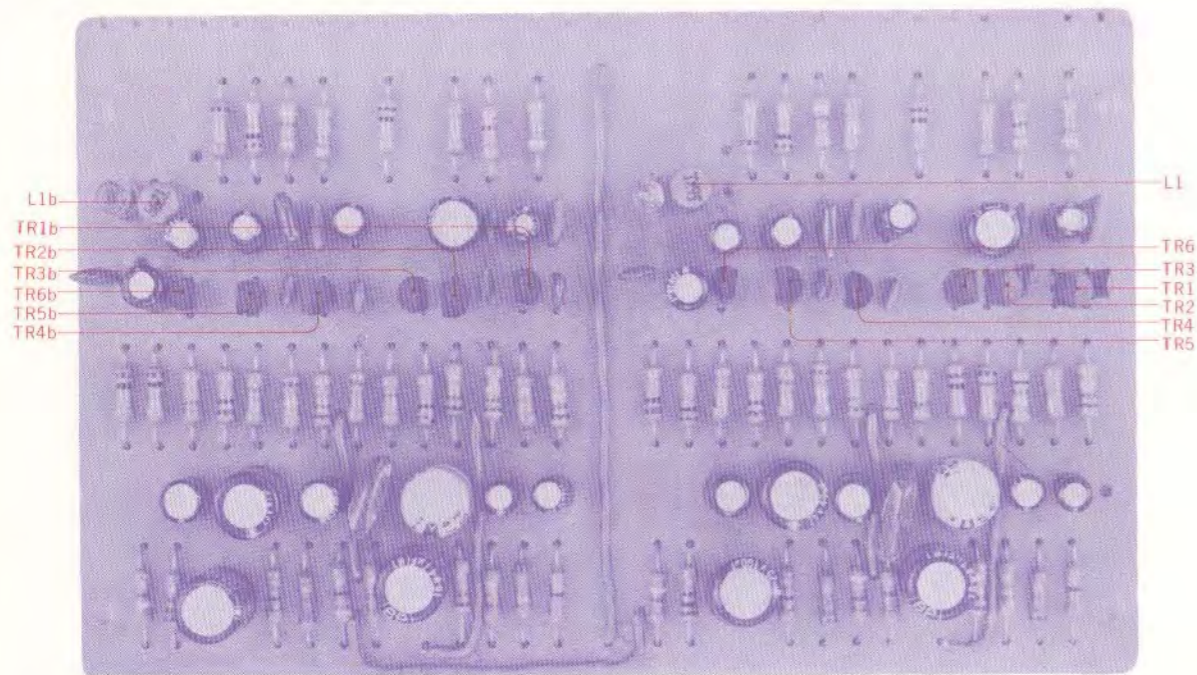


FIG. 18 PHOTO OF OSC. P.C. BOARD (KJ-5023) BLOCK

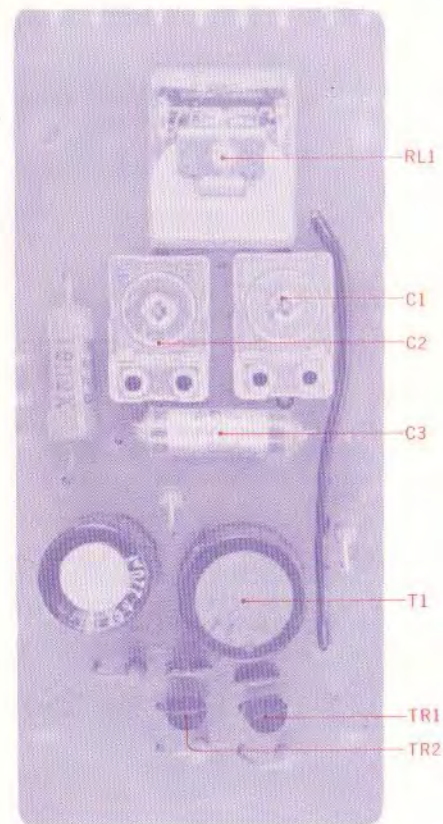


FIG. 20 PHOTO OF MUTE P.C. BOARD (KJ-5017) BLOCK

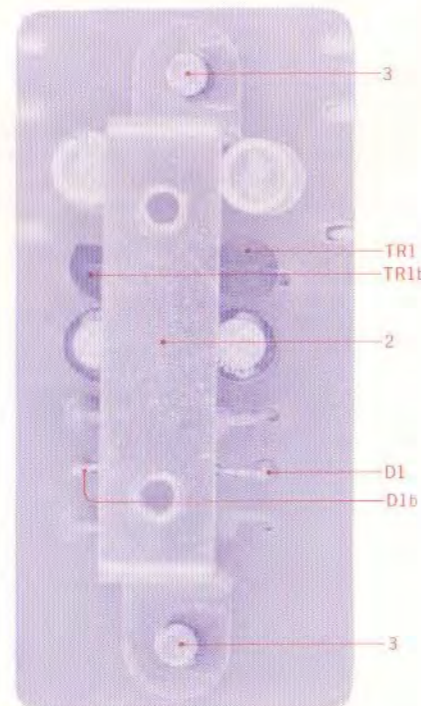
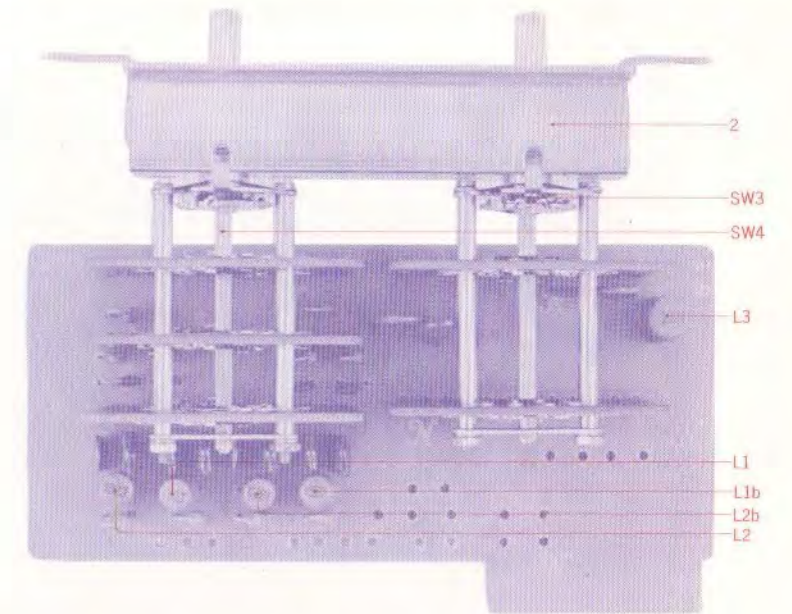


FIG. 19 PHOTO OF EQ. P.C. BOARD (KJ-5022) BLOCK



REC. AMP. P.C. BOARD (KJ-5024) BLOCK

Symbol No.	Parts No.	Description	Q'ty
17-1x	BA600557	Rec. Amp. P.C. Board Comp. (KJ-5024)	1
17-TR1 to 5	ET517263	Transistor 2SC1312(G)(H)	10
17-TR6	ET398711	Transistor 2SC945(Q)(R)	2
17-L1	EO321254	Ferri Inductor FL7H 5.6MH(J)	2
Capacitor, Vertical Type			
17-C1	EC336126	Elect. 47μF 25WV	2
17-C2	EC320051	Elect. 10μF 16WV	2
17-C3	EC290520	VFM 100PF(J) 50WV	2
17-C4	EC250604	Mylar 0.001μF(K) 50WV	2
17-C5	EC220465	Elect. 22μF 6.3WV	2
17-C6	EC350616	VFM 50PF(J) 50WV	2
17-C7	EC320051	Elect. 10μF 16WV	2
17-C8	EC399690	VFM 33PF(J) 50WV	2
17-C9	EC350684	Elect. 22μF 25WV	2
17-C10	EC450055	Elect. 1μF 25WV	2
17-C11	EC593458	NP 47μF 10WV	2
17-C12	EC350616	VFM 50PF(J) 50WV	2
17-C13	EC329771	Elect. 47μF 6.3WV	2
17-C14	EC350616	VFM 50PF(J) 50WV	2
17-C15	EC302253	Mylar 0.15μF(K) 50WV	2
17-C16	EC320051	Elect. 10μF 16WV	2
17-C17	EC329771	Elect. 47μF 6.3WV	2
17-C18	EC290520	VFM 100PF(J) 50WV	2
17-C19	EC251201	Mylar 0.056μF(K) 50WV	2
17-C20	EC336126	Elect. 47μF 25WV	2
17-C21	EC320051	Elect. 10μF 16WV	2
17-C22	EC220151	Elect. 100μF 25WV	2
17-C23	EC320051	Elect. 10μF 16WV	2
17-C24	EC405898	Styrol 470PF(J) 50WV	2
17-C25	EC250885	Mylar 0.01μF(K) 50WV	2
Carbon resistor omitted			

OSC. P.C. BOARD (KJ-5023) BLOCK

Symbol No.	Parts No.	Description	Q'ty
18-1x	BA600546	Osc. P.C. Board Comp. (KJ-5023)	1
18-TR1,2	ET398711	Transistor 2SC945(Q)(R)	2
18-RL1	EP383321	Relay TECK-36 DC22V 1000Ω	1
18-T1	EO383365	Osc. Coil OT-204	1
18-R6	ER593447	Metal Oxide Fiom 2W 180(K)	1
Capacitor			
18-C1, 2	EC558202	Trimmer TM-80A	2
18-C3	EC558235	Styrol 1800PF(J) 250WV (Tub. Type)	1
18-C4, 5	EC250841	Mylar 0.01μF(J) 50WV (Vert. Type)	2
18-C6	EC313121	Elect. 220μF 25WV	1
Carbon resistor omitted			

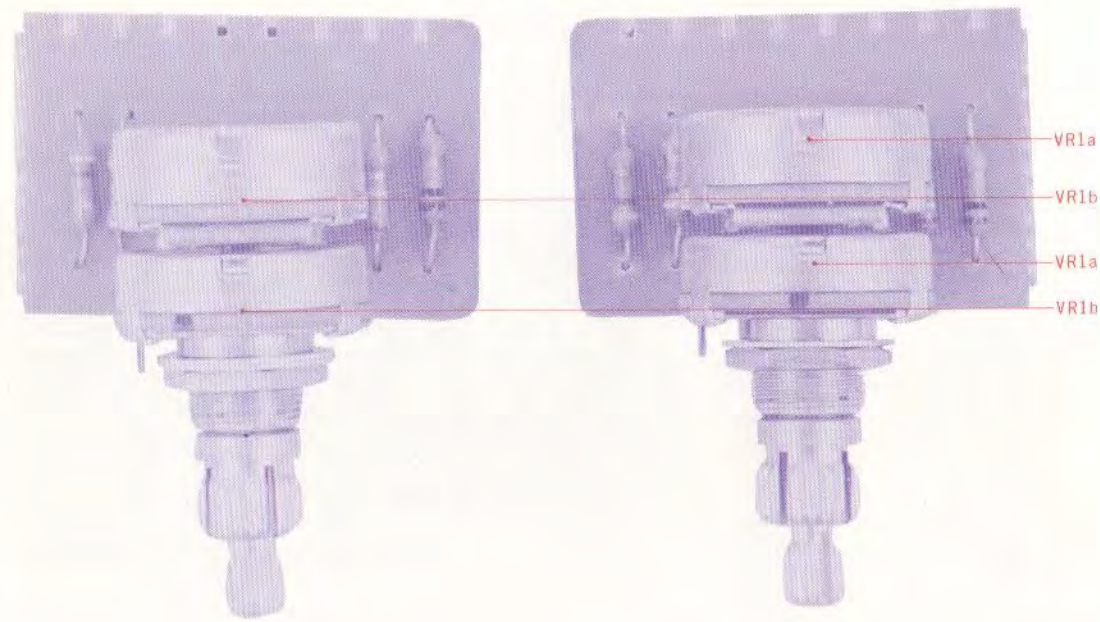
EQ. P.C. BOARD (KJ-5022) BLOCK

Symbol No.	Parts No.	Description	Q'ty
19-1x	BA600647	EQ. P.C. Board Comp. (KJ-5022)	1
19-L1	EO369178	Ferri Inductor FL7H 1.5MH(J)	2
19-L2	EO380564	Ferri Inductor FL7H 1.8MH(J)	2
19-L3	EO390622	Ferri Inductor FL9H 220μH(K)	1
19-SW3	ES593673	Rotary SW. SRE-3122 (Special)	1
19-SW4	ES593684	Rotary SW. SRE-263	1
19-2	MZ597328	SW. Plate W	1
Capacitor, Vertical Type			
19-C1	EC329861	Mylar 0.027μF(J) 50WV	2
19-C2	EC379214	Mylar 0.047μF (J) 50WV	2
19-C3	EC389485	Mylar 0.018μF(J) 50WV	2
19-C4	EC379157	Mylar 0.033μF(J) 50WV	2
19-C5	EC424708	Mylar 0.0018μF(J) 50WV	2
19-C6	EC379787	Mylar 0.0039μF(J) 50WV	2
Carbon resistor omitted			

MUTE P.C. BOARD (KJ-5017) BLOCK

Symbol No.	Parts No.	Description	Q'ty
20-1x	BA600658	Mute P.C. Board Comp. (KJ-5017)	1
20-TR1	ET398711	Transistor 2SC945(Q)(R)	2
20-D1	ED520762	Zener Diode YZ-088A	2
20-2	MZ597330	Mute P.C. Board Holder	1
20-3	ZS379350	ISO Screw, pan head 3x6	2
Capacitor, Vertical Type			
20-C1	EC320051	Elect. 10μF 16WV	2
20-C2	EC432810	Elect. 10μF 16WV NL	2
Carbon resistor omitted			

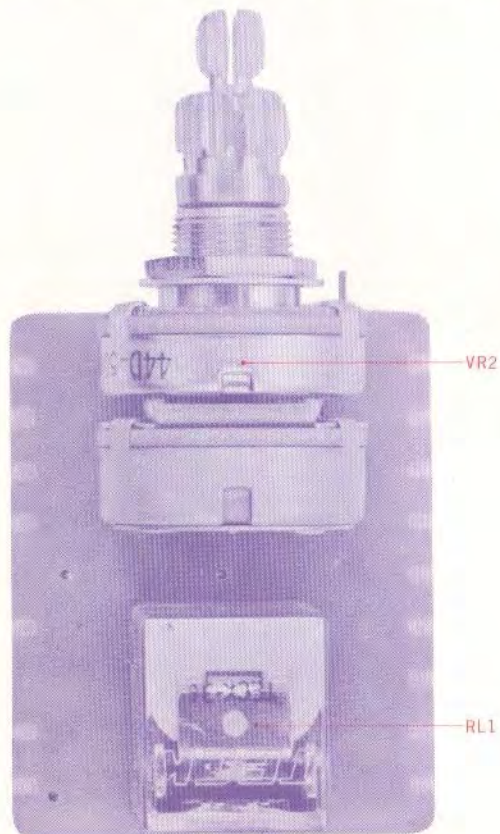
FIG. 21 PHOTO OF VOL. P.C. BOARD (TD-5010) BLOCK



VOL. P.C. BOARD (TD-5010) BLOCK

Symbol No.	Parts No.	Description	Q'ty
21-1x	BA600603	Vol. P.C. Board Comp. (TD-5010)	1
21-VR1	EV593638	Double/Vol. DJ60R 100KA 50 kA	1
Carbon resistor omitted			

FIG. 22 PHOTO OF VOL. P.C. BOARD (B) (KJ-5019) BLOCK



VOL. P.C. BOARD (B) (KJ-5019) BLOCK

Symbol No.	Parts No.	Description	Q'ty
22-1x	BA600614	Vol. P.C. Board (B) comp. (KJ-5019)	1
22-D1, 2	ED557447	Silicon Diode 1S1588	2
22-RL1	EP383321	Relay TECK-36 DC22V 1000Ω	1
22-VR2	EV593640	Double/Vol. DJ60R 50kAx2	1

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

FIG. 23 PHOTO OF SW. P.C. BOARD (A) (KJ-5020) BLOCK

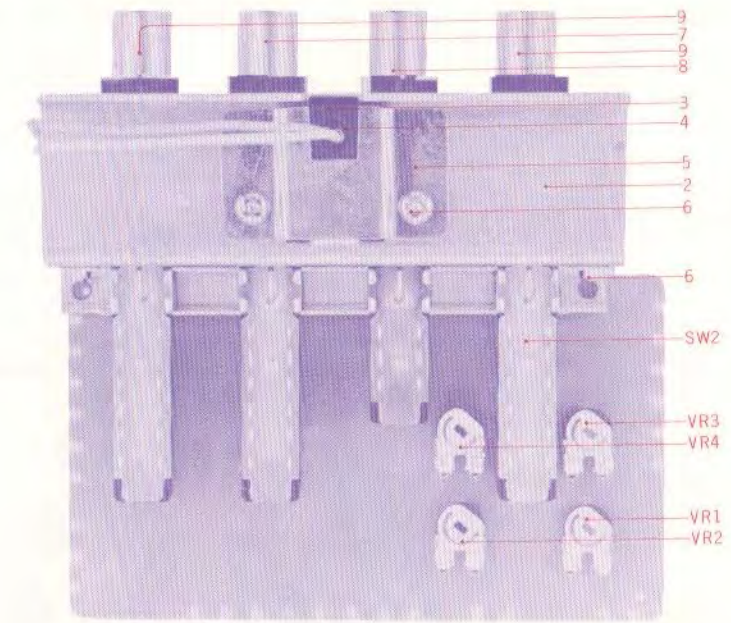
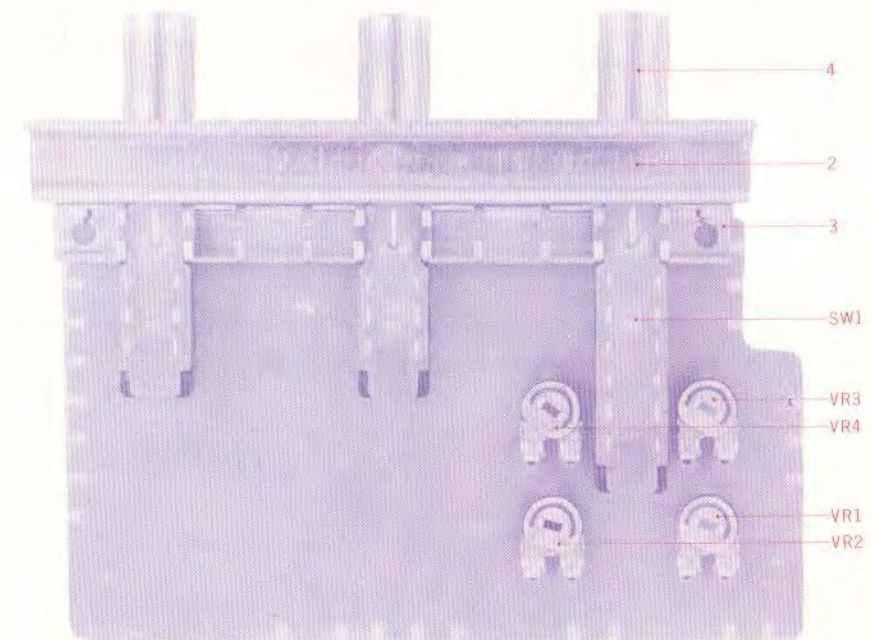


FIG. 24 PHOTO OF SW. P.C. BOARD (B) (KJ-5021) BLOCK



SW. P.C. BOARD (A) (KJ-5020) BLOCK

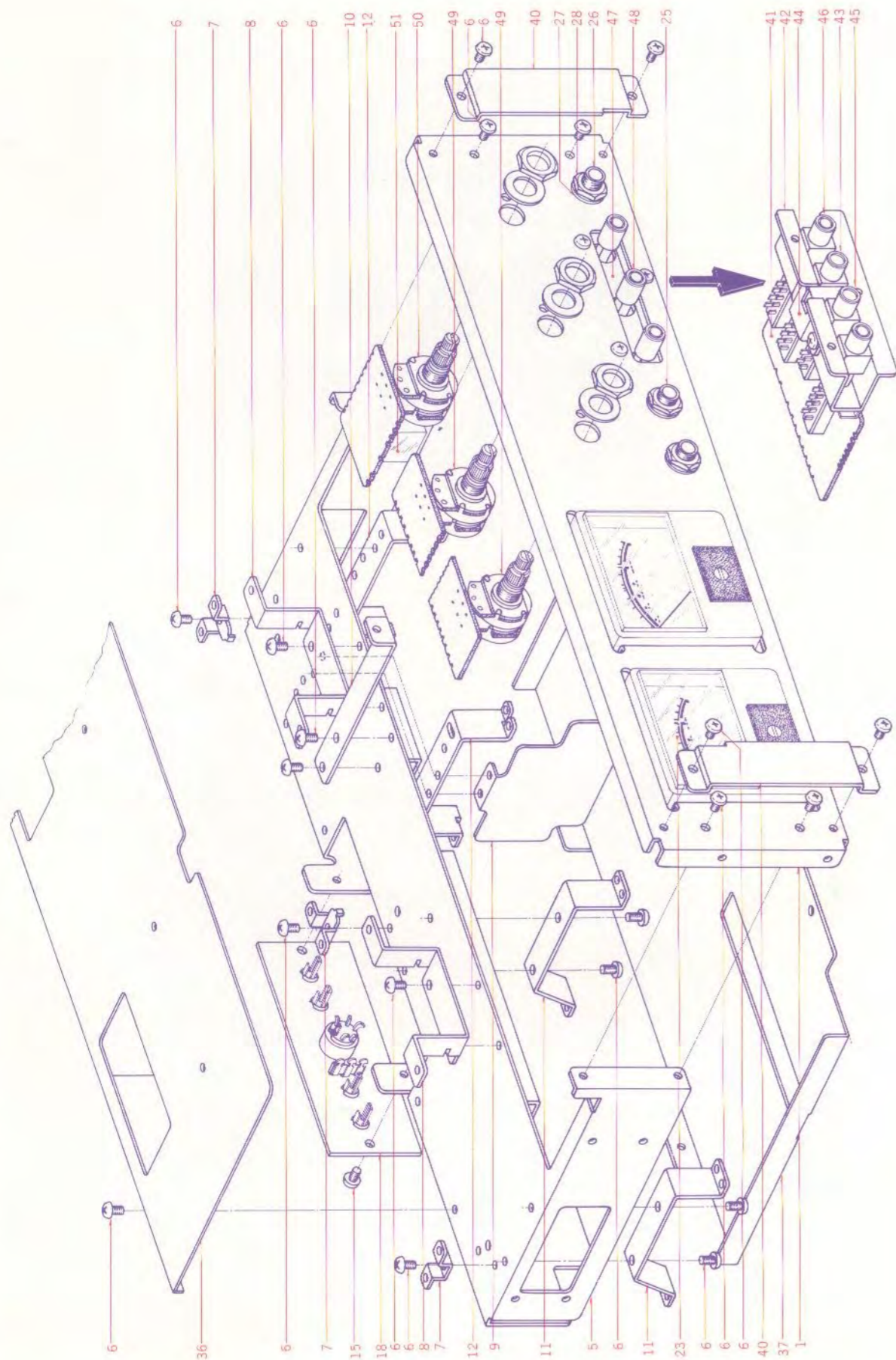
Symbol No.	Parts No.	Description	Q'ty
23-1x	BA600625	SW. P.C. Board (A) Comp. (KJ-5020)	1
23-SW2	ESS93651	Push SW. 4FT-0001 FF-1320	1
23-VR2, 3	EV520806	Semi-fixed/Vol. V8K4-1 10kB	4
23-IND3	EL593662	Cord Lamp 5.5V 60MA(220MMx2)	1
23-2	MZ597352	SW. Base	1
23-3	SE580983	Lamp Mask	1
23-4	EZ580994	Lamp Holder	1
23-5	EZ581005	Lamp Holder Retainer	1
23-6	ZS417216	Screw, pan head 3x4	4
23-7	SB581016	Lamp Button A (Green)	1
23-8	SB581027	Lamp Button B (Orange)	1
23-9	SBS98274	Lamp Button C	2

SW. P.C. BOARD (B) (KJ-5021) BLOCK

Symbol No.	Parts No.	Description	Q'ty
24-1x	BA600636	SW. P.C. Board (B) Comp. (KJ-5021) (286D)	1
24-SW1	ESS93436	Push SW. 3FT-0002 DF-1320	1
24-VR2, 3	EV520806	Semi-fixed/Vol. V8K4-1 10kB	4
24-2	MZ597341	SW. Base B	1
24-3	ZS417216	Screw, pan head 3x4	2
24-4	SK531224	Push Button Knob	3

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

FIG. 25 ILLUSTRATION OF AMP. ASSEMBLY BLOCK

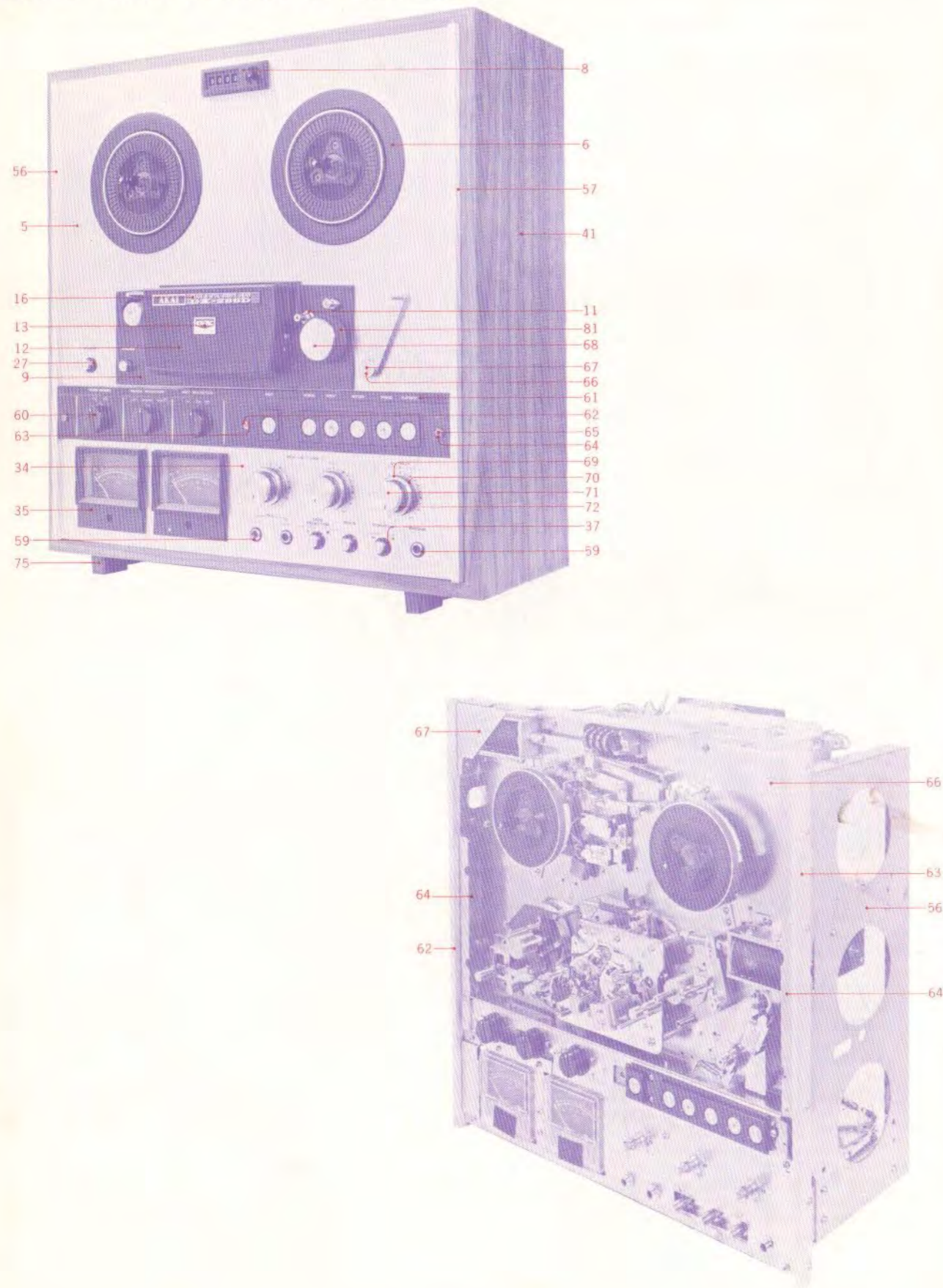


AMP. ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty
FRONT CHASSIS BLOCK				
25-1	MZ598048	Amp. Front Chassis	KJ-5001	1
25-2x	ZS325495	Tapping Screw #2 3x6		7
25-3x	ZS455207	Tapping Screw #2 3x5 (BR)		1
25-4x	ZW273767	Earth Lug D3x20L		1
AMP. CHASSIS BLOCK				
25-5	EZ598050	Amp. Chassis	KJ-5002	1
25-6	ZS325495	Tapping Screw #2 3x6		37
25-7	MZ597284	P.C. Board Holder 2	KJ-5005	3
25-8	MZ597273	P.C. Board Holder 1	KJ-5004	2
25-9	MZ597317	Shield Plate C	KJ-5009	1
25-10	MZ597262	Chassis Reinforce Plate	KJ-5003	1
25-11	MZ597295	P.C. Board Holder 4	KJ-5007	2
25-12	MZ597306	P.C. Board Holder 5	KJ-5008	2
25-13x	ZW273778	Earth Lug M3		2
25-14x	ZW273802	Toothed Lock Washer M3		2
25-15	ZS447761	Tapping Screw #2 3x6 (BR) (Black)		3
25-16x	EJ514607	Wire Clip 220-JD485210-01 (Nylon)	2-7-18	2
JACK PLATE BLOCK				
25-17x	EJ600570	Jack Plate Block Comp.	KJ	1
25-18	EJ621191	Jack Plate KJ	31-5-118	1
25-19x	ER440921	Carbon/R. RD1/4 27k(J) (Insu. Type)	35-9-5	2
25-20x	ER214290	Carbon/R. RD1/4 4.7k(J) (Insu. Type)	35-9-5	2
25-21x	ER345677	Carbon/R. RD1/4 15k(J) (Insu. Type)	35-9-5	2
25-22x	ER324685	Carbon RD1/4 33k(J) (Insu. Type)	35-9-5	2
AMP. ASSEMBLY BLOCK				
25-23	EM561756	VU Meter KL-250B-27 (Black)	46-1-79	2
25-24x	EM573748	VU Meter KL-280B-28 (Yellow)(D,JPN)	46-1-86	2
25-25	EJ592435	Mic. Jack 2PMJ4	31-2-44	2
25-26	EJ601481	Mic. Jack 3PMJ4	31-2-45	1
25-27	ZW272722	Toothed Lock Washer M9 D9.3x13x0.5t		3
25-28	ZW554624	E Jack Nut	7-1-56	3
25-29x	SE529457	Meter Mask	ND-5043	2
25-30x	EJ293062	Mate-N-Lock Cap Housing 12P 1-480278-0	52-1-1	1
25-31x	EJ373691	Mate-N-Lock Cap Housing 9P 1-480277-0 (D/DB/D,JPN)	52-1-2	11
25-32x	EJ373623	Pin Contact 61116-1	52-1-1	11
25-33x	ZG290878	VU Meter Spring	DX-504	4
25-34x	ZW272756	Nut M3		4
25-35x	ZW465715	Washer D3.2x6x0.5t(SPC)		4
25-36	MZ597903	Shield Plate A	KJ-5015	1
25-37	MZ597914	Shield Plate B	KJ-5016	1
25-38x	EJ299823	Mate-N-Lock Cap Housing 6P 1-480276-0	52-1-2	1
25-39x	EJ373623	Pin Contact 61116-1	52-1-1	4
25-40	MZ597374	Reinforcement Bracket	KJ-6003	2
25-41	BA600625	SW. P.C. Board A (KJ-5020) Comp.	KJ-5020	1
25-42	MZ597352	SW. Base	KJ-5013	1
25-43	SB581016	Lamp Button A (Green)	TD-5024	1
25-44	EZ581005	Lamp Holder Retainer	TD-5023	1
25-45	SB581027	Lamp Button B (Orange)	TD-5024	1
25-46	SB598274	Lamp Button C	TD-5024	2
25-47	BA600636	SW. P.C. Board B (KJ-5021) Comp.	KJ-5021	1
25-48	SK531224	Push Button Knob	91-5051	3
25-49	BA600603	Vol. P.C. Board (TD-5010) Comp.	TD-5010	1
25-50	BA600614	Vol. P.C. Board B (KJ-5019) Comp.	KJ-5019	1
25-51	EP383321	Relay TECK-36 DC22V 1000Ω	47-2-20	1

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

FIG. 26 PHOTO OF FINAL ASSEMBLY BLOCK



FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Q'ty	Ref. No.	Parts No.	Description	Schematic No.	Q'ty
MECH. PANEL BLOCK									
26-1x	BZ600120	Mech. Panel Block Comp.	KJ	1	26-42x	SZ382230	Ventilator (Upper)	RD-A404	1
26-2x	BZ600131	Mech. Panel Block Comp. (DB)	KJ	1	26-43x	ZS601470	Screw, truss head (without hollow 3x15)		4
26-3x	BZ600142	Mech. Panel Block Comp. (Deck)	KJ	1	26-44x	ZW516993	Nut M3		4
26-4x	SP598094	Mech. Panel B	KJ-6007	1	26-45x	SZ382241	Ventilator Retaining Plate	RD-A405	1
26-5	SP598083	Mech. Panel A (Deck)	KJ-6007	1	26-46x	ZS200610	Tapping Screw #1 4x12 (Truss)		1
26-6	MT597982	Reel Table Escutcheon	KJ-6009	2	26-47x	ZW259503	Washer D3.1x8x0.5t (Nylon)		4
26-7x	ZW575730	P Type Speed Nut 3	6-3-6	8	26-48x	ZW406247	Washer D3.2x10x0.5t(SUP)		4
26-8	SE397618	Counter Escutcheon	KD-6008	1	26-49x	SZ549516	Foot For ND	ND-6041	2
26-9	SC598105	Head Cover Base	KJ-6010	1	26-50x	ZS593166	Wood Screw, round head 4.1x20		4
26-10x	ZS422076	Screw, pan head 3x5		4	26-51x	SE424945	Speaker Grill	MS-6004	2
26-11	SE597418	Capstan Escutcheon	KJ-6012	1	26-52x	SZ424967	Reflection Plate	MS-6006	2
26-12	SC598116	Head Cover	KJ-6013	1	26-53x	SZ237508	Reflection Plate Retaining Parts (4)	3A-419	4
26-13	SM598983	GX-Symbol Plate	KJ-6021	1	26-54x	ZS201183	Screw, truss head 3x8(Black)		4
26-14x	SM597464	Model Name Plate GX-286	KJ-6019	1	26-55x	ZS447963	Tapping Screw #1 3x10 (Truss)		8
26-15x	SM597475	Model Name Plate GX-286DB	KJ-6020	1	FINAL ASSEMBLY				
26-16	SM597453	Model Name Plate GX-286D	KJ-6018	1	26-56	SE597971	Sash L, w/knock pin	KJ-6006	1
26-17x	SZ473646	Stopper Rubber	KH-1020	2	26-57	SE599872	Sash R, w/knock pin	KJ-6006	1
26-18x	MZ597442	Hinge Bracket	KJ-6016	1	26-58x	MZ597960	Connector Plate (286)	KJ-6001	1
26-19x	ZS369145	ISO Screw, countersunk head 3x5 D=5		2	26-59	ZW526577	Collar B, Jack	MC-5006	3
26-20x	MS597431	Hinge Shaft	KJ-6015	1	26-60	SK597486	Selector Knob	KJ-6022	3
26-21x	SE597420	Collar	KJ-6014	1	26-61	SP598140	Operation Panel	KJ-6029	1
36-22x	MZ598263	Hinge Angle, w/ball sleeve	KJ-6017	1	26-62	SE594180	Lamp Lens C-1	EG-6008	1
26-23x	MV537862	Steel Ball D4		1	26-63	WM549988	Lens Holder C	PG-6009	1
26-24x	ZG249107	Ball Retaining Spring	RD-632	1	26-64	SZ483737	Panel Washer B	ED-6029	2
26-25x	ZS593188	Set Screw 5x4 (Flat/P.)		1	26-65	ZS482815	Screw, oval Countersunk head 3x8		2
26-26x	ZS379350	ISO Screw, pan head 3x6		2	26-66	ZW535094	Decorative Washer	TW-2077	1
26-27	SE569744	Knob Escutcheon	TD-6017	1	26-67	ZS593133	Screw, oval countersunk head 3x6		1
26-28x	SZ594000	Panel Cloth	KJ-6030	2	26-68	SK583132	Pinch Roller Cap B, w/screw	MS-6020	1
AMP. PANEL BLOCK									
26-29x	BZ600153	Amp. Panel Block Comp.	KJ	1	26-69	SK549843	Double Knob A	TW-6304	3
26-30x	BZ600164	Amp. Panel Block Comp.(DB)	KJ	1	26-70	MB549865	Double Knob Rubber Ring A	TW-6306	3
26-31x	BZ600175	Amp. Panel Block Comp. (Deck)	KJ	1	26-71	SK549876	Double Knob B	TW-6307	3
26-32x	SP594187	Amp. Panel C	KJ-6023	1	26-72	MB548627	Double Knob (upper) Rubber Ring	MU-6215	3
26-33x	SP598138	Amp. Panel B (DB)	KJ-6023	1	26-73x	SZ598173	Ventilator (Rear)	KJ-6032	1
26-34	SP598127	Amp. Panel A (Deck)	KJ-6023	1	26-74x	ZS392365	Tapping Screw #1 6x12(truss)		4
26-35	SE597993	Meter Escutcheon	KJ-6026	2	26-75	SA377190	Rubber Foot, LM	LM-404	4
26-36x	ZS524812	Screw, countersunk head 2x4		4	26-76x	ZS593155	Screw, pan head 4x40		4
26-37	SE569744	Knob Escutcheon	TD-6017	4	26-77x	ZW562757	Washer D4.3x11x0.8t		6
CASE BLOCK									
26-38x	BC600107	Case Block Comp.	KJ	1	26-78x	ZS54771	Screw, pan head 4x20		2
26-39x	BC600118	Case Block Comp. (DB/D)	KJ	1	26-79x	SS616465	Speaker KJ-1 (286)	29-5-16	2
26-40x	SC598151	Wood Case A (286)	KJ-6031	1	26-80x	EF563681	Fuse 1A 250V	39-1-50	1
26-41	SC598162	Wood Case B (D/DB)	KJ-6031	1	26-81	MP271170	Pinch Roller, LC D=38	LC-321	1

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA588003	15-1x	BA600603	21-1x	BA600660	9-1x	BT517274	16-T1	EZ600164	26-30x
BA600434	14-1x	BA600603	25-49	BC600107	26-38x	BT593717	8-2	BZ600175	26-31x
BA600445	14-2x	BA600614	22-1x	BC600118	26-39x	BT593728	8-3x	BZ600300	3-6
BA600456	13-1x	BA600614	25-50	BH600344	1-1x	BT593730	8-4x	BZ600311	7-1x
BA600467	10-1x	BA600625	23-1x	BI600355	4-1x	BT593741	8-6x	BZ600322	7-22x
BA600478	12-1x	BA600625	25-41	BM314741	2-1	BT593752	8-5x	BZ600366	5-20x
BA600480	11-1x	BA600636	24-1x	BM600298	3-1x	BZ600120	26-1x	BZ600377	6-1x
BA600546	18-1x	BA600636	25-47	BR398430	2-2x	BZ600131	26-2x	BA463206	1-27x
BA600557	17-1x	BA600647	19-1x	BR398441	2-3x	BZ600142	26-3x	EA466547	1-28x
BA600568	16-1x	BA600658	20-1x	BS600333	5-1x	BZ600153	26-29x	EA594990	8-28x

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

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EA597251	8-39x	EC329771	16-C4	EC520626	8-12	EO380564	19-L2	ET491051	9-TR10
EA597947	6-22	EC329771	16-C7	EC556007	11-C21	EO383365	18-T1	ET491051	9-TR13
EA607217	8-29x	EC329771	16-C12	EC557166	10-C8	EO390622	19-L3	ET491051	9-TR16
EC220151	10-C11	EC329771	17-C13	EC557190	8-51	EO496350	15-L1	ET491051	15-TR5
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EC220612	11-C9	EC336126	16-C17	ED224548	7-4x	ER344136	12-RL2to4	EV464207	16-VR2
EC220994	11-C20	EC336126	17-C1	ED224548	7-24x	ER345677	25-21x	EV464220	16-VR1
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EC250582	10-C6	EC336194	15-C3	ED224550	14-D1	ER376424	7-3x	EV520806	23-VR2,3
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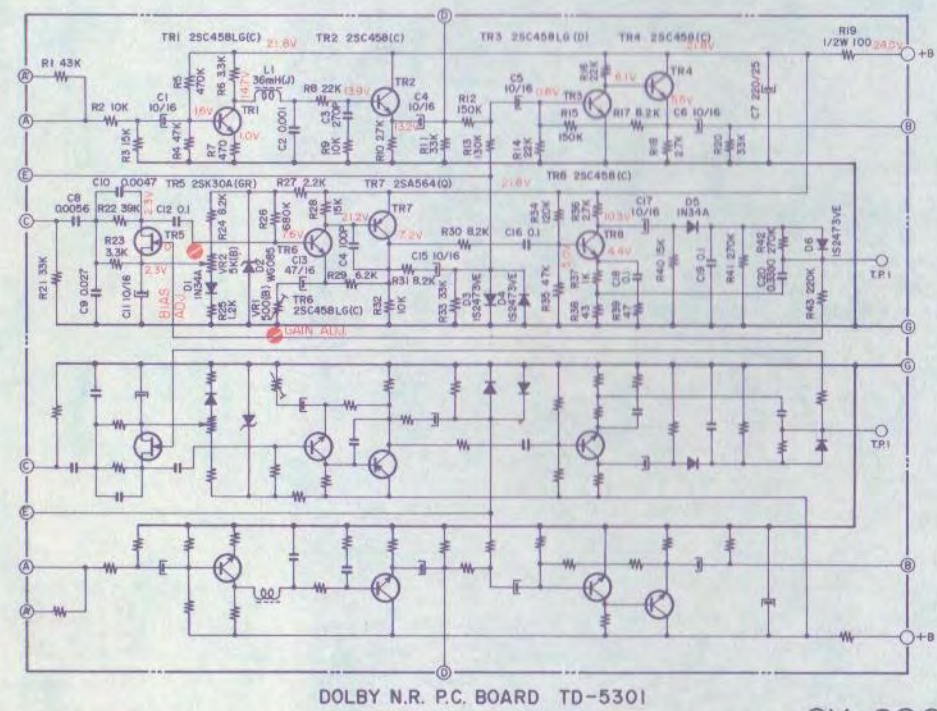
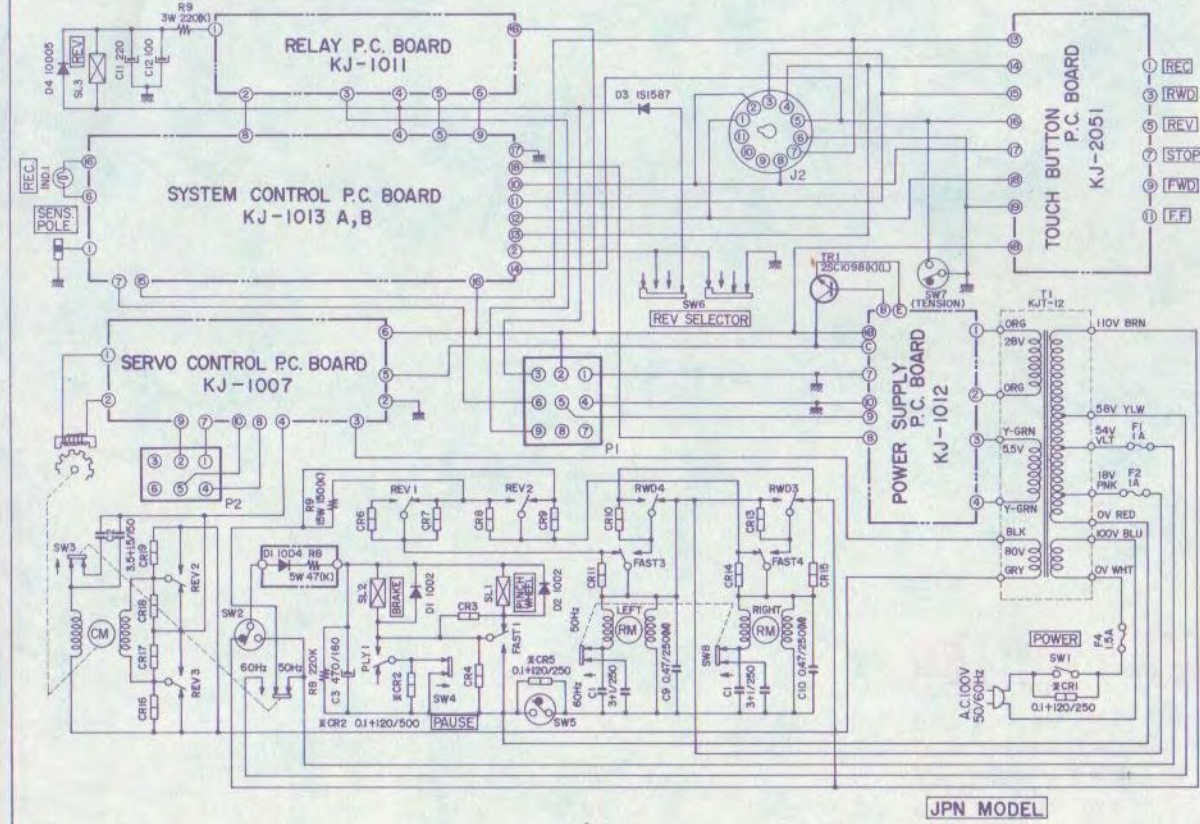
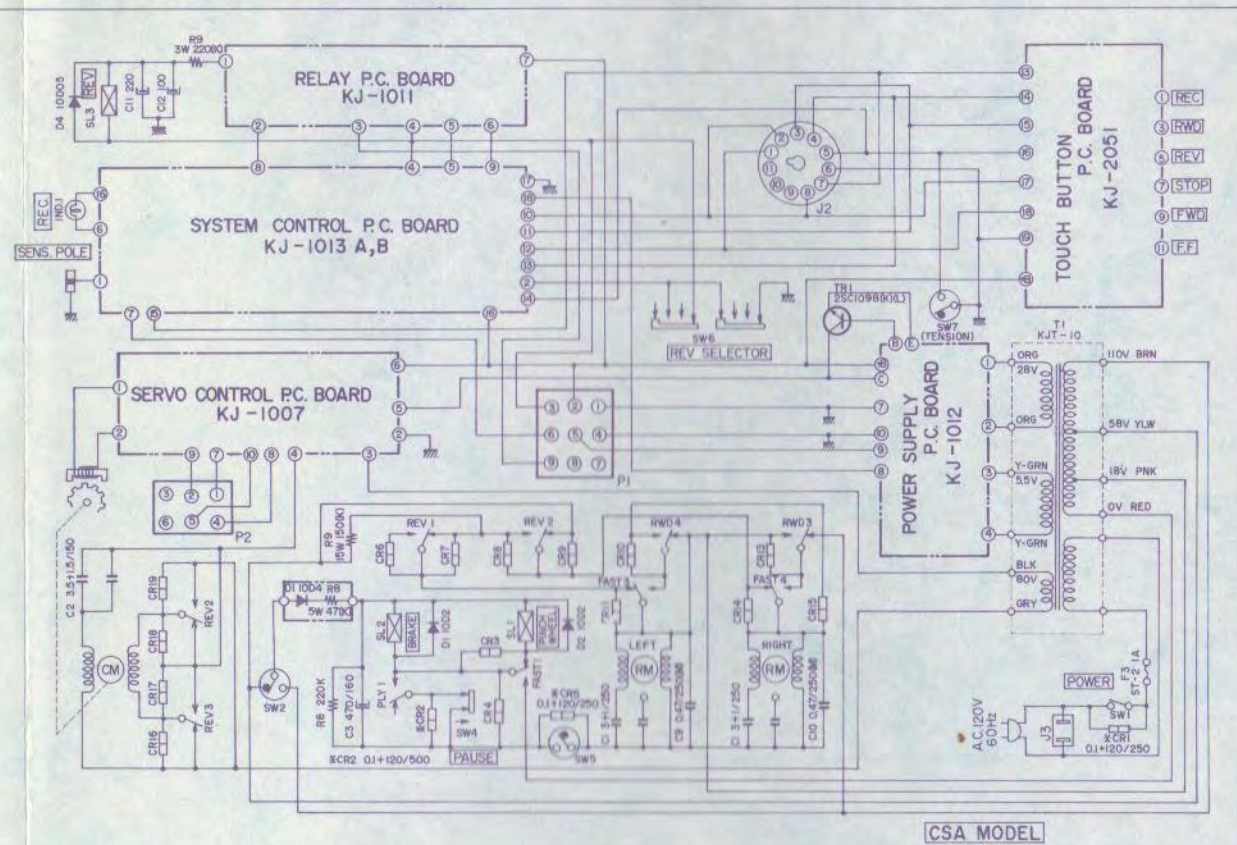
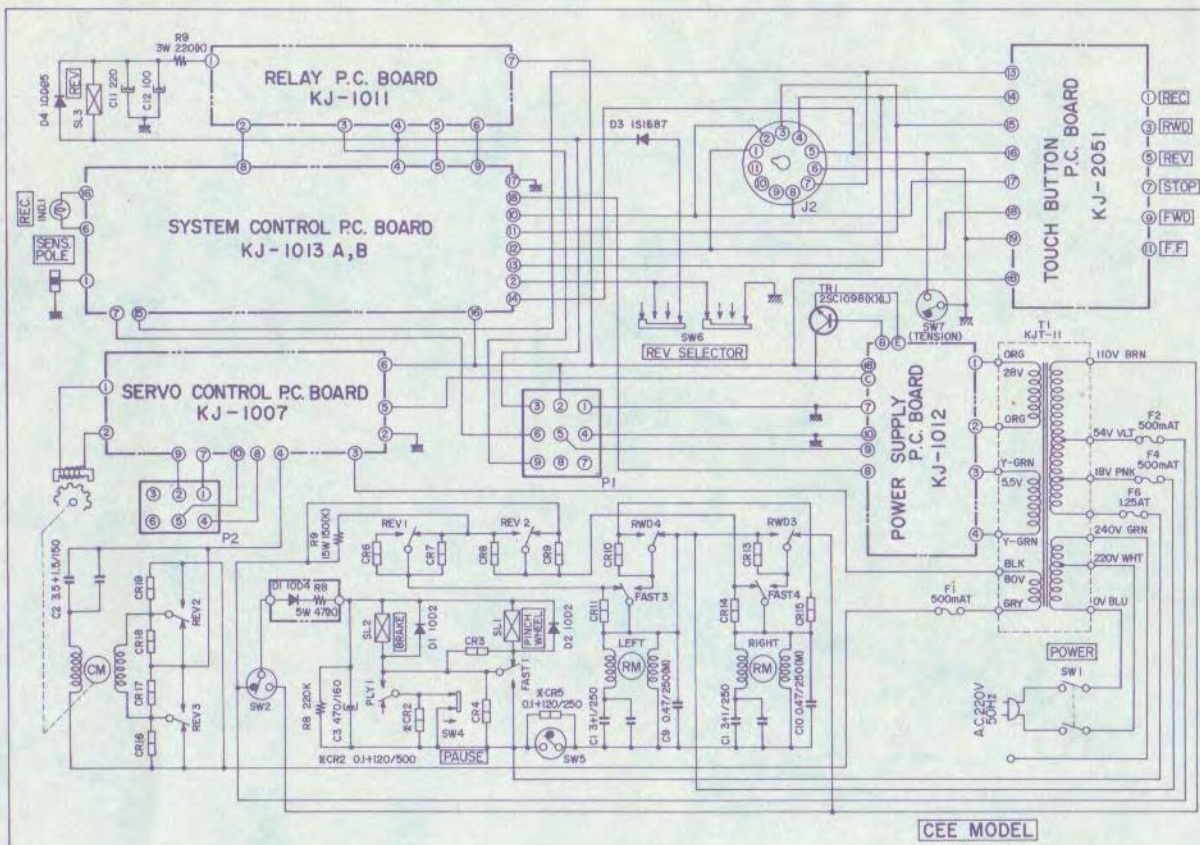
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SECTION 3

SCHEMATIC DIAGRAM

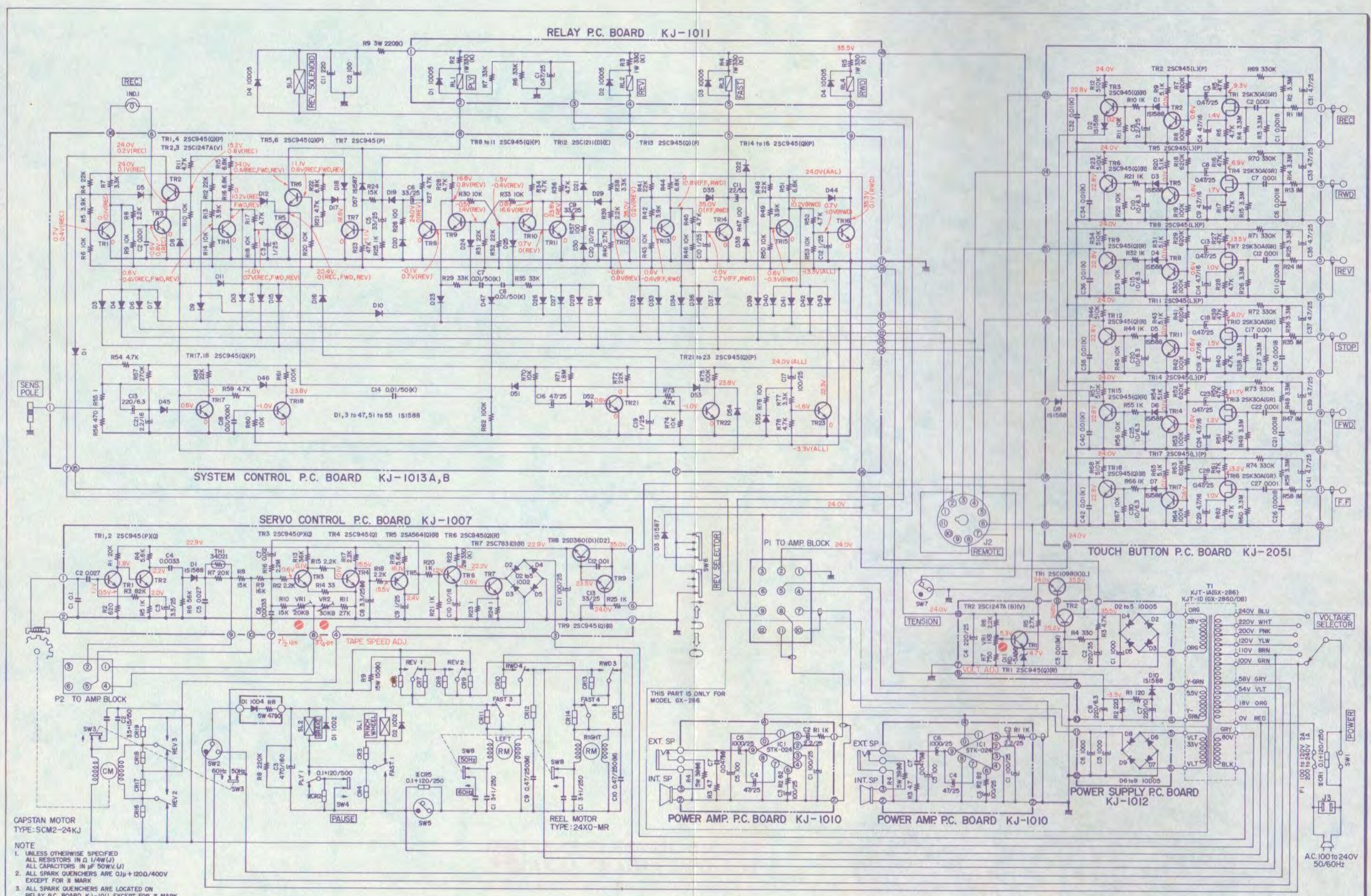
1. GX-286 SCHEMATIC DIAGRAM
2. GX-286 DB SCHEMATIC DIAGRAM
3. GX-286 D SCHEMATIC DIAGRAM



NOTE

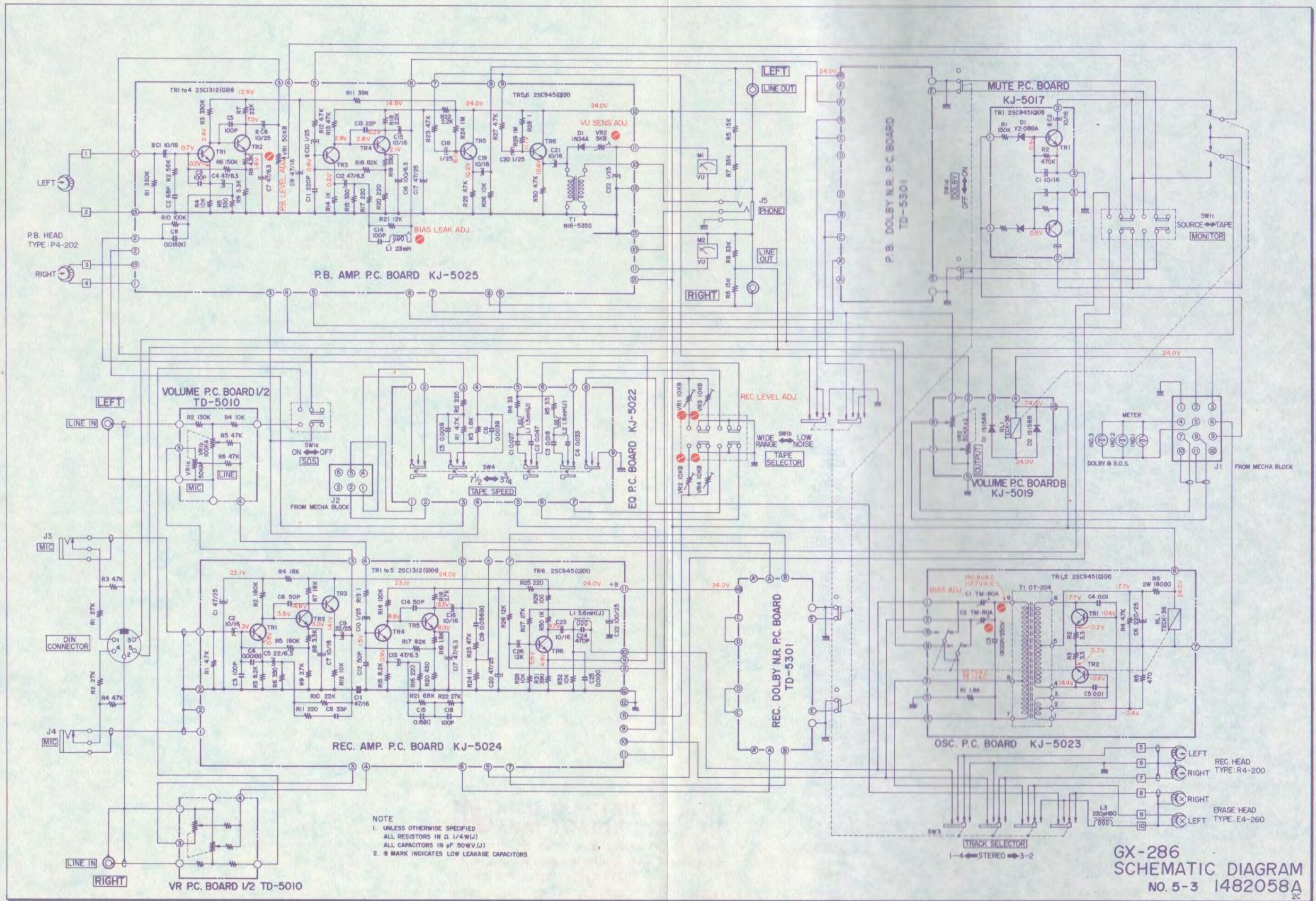
- UNLESS OTHERWISE SPECIFIED ALL RESISTORS IN Ω (1/4W/1/2)
- ALL CAPACITORS IN μF (50WV/1)
- ALL SPARK QUENCHERS ARE 0.1μ+120Ω/400V EXCEPT FOR * MARK ON RELAY P.C. BOARD KJ-1011 EXCEPT FOR * MARK
- DOLBY P.C. BOARD IS USED FOR REC. AND P.B. DOLBY SYSTEM. HOWEVER IN CASE OF P.B. DOLBY TERMINAL (C) - (B) ARE CONNECTED AND IN CASE OF REC. DOLBY. TERMINAL (C) - (D) ARE CONNECTED

GX-286, DB, D
SCHEMATIC DIAGRAM
NO. 5-2 1482057A



NOTE
 1. UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN Ω, 1/W(Ω)
 ALL CAPACITORS IN μF 50WV(μ)
 2. ALL SPARK QUENCHERS ARE 0.1μ + 120Ω/400V
 EXCEPT FOR * MARK
 3. ALL SPARK QUENCHERS ARE LOCATED ON
 RELAY P.C. BOARD KJ-1011 EXCEPT FOR * MARK

GX-286, DB, D SCHEMATIC DIAGRAM
 NO.5-1 1482056A
 2C



NOTE
 1. UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS IN Ω 1/4 W(J)
 ALL CAPACITORS IN μ F 50V(V,J)
 2. * MARK INDICATES LOW LEAKAGE CAPACITORS

GX-286
 SCHEMATIC DIAGRAM
 NO. 5-3 1482058A
 2C

