

TC-WR950

SERVICE MANUAL

US Model



SPECIFICATIONS

Recording system 4-track 2-channel stereo
Fast-forward and rewind time
Approx. 90 sec. (with HF-60 cassette)
Bias frequency 210 kHz
Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch	OFF	B-TYPE ON	C-TYPE ON
Cassette			
TYPE IV (Sony METAL-ES)	59 dB	66 dB	72 dB
TYPE II (Sony UCX-S)	58 dB	65 dB	71 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion
1,0 % (with Sony METAL-ES cassettes)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30 – 17,000 Hz (± 3 dB) 30 – 13,000 Hz (OVU recording)
TYPE II cassette (Sony UCX-s)	30 – 17,000 Hz (± 3 dB)
TYPE I cassette (Sony HF-S)	30 – 15,000 Hz (± 3 dB)

Wow and flutter 0,05 % WRMS (NAB)
 $\pm 0,14$ % (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	77,5 mV (-20 dB)
	Input impedance	50 k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0,44 V (-5 dB) at a load impedance 47 k ohms
	Load impedance	10 k ohms or less
Headphone output (stereo phone jack)	Output level	0 – 2,5 mW at a load impedance of 32 ohms

General

Power requirements

120 V ac, 60 Hz

Power consumption

32 watts

Dimensions

Approx. 430 × 135 × 285 mm (w/h/d)
(17 × 5 $\frac{3}{8}$ × 11 $\frac{1}{4}$ inches)

Weight

including projecting parts and controls
Approx. 5.9 kg (13 lbs 1 oz)

Remote commander RM-950

Remote control system

Infrared control

Power requirement

DC 3V with two size AA (R6P) batteries

Dimensions

43 × 18 × 175 mm (w/h/d)
(1 $\frac{3}{4}$ × 2 $\frac{3}{32}$ × 7 inches)

Weight

incl. projecting parts and controls
Approx. 100 g (4 oz) incl. batteries

Supplied accessories

Audio connecting cord (2)
Remote commander RM-950 (1)
Sony batteries SUM-3 (NS) (2)

Dolby noise reduction manufactured under license from
Dolby Laboratories Licensing Corporation.
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Dolby Laboratories Licensing Corporation.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK
 ON THE SCHEMATIC DIAGRAMS AND IN THE
PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS
WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS
MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

STEREO CASSETTE DECK

SONY®



TC

FEATURES

Double auto-reverse deck

You can perform recording and playback on both decks A and B.

RMS* playback and dubbing

Allow you to play back and dub only the desired selections in a desired order.

Double Dolby NR** system

Decks A and B each have Dolby NR switches. This allows you, for example, to record the same source or to dub with each deck using a different Dolby NR system.

Digital linear counter

Shows the elapsed recording or playing time, activating for both decks A and B.

Other features

- Relay function for long recording and playback
- Supplied remote commander for recording and playback
- Two-speeds auto dubbing: normal and high (double)

* Random Music Sensor

** Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

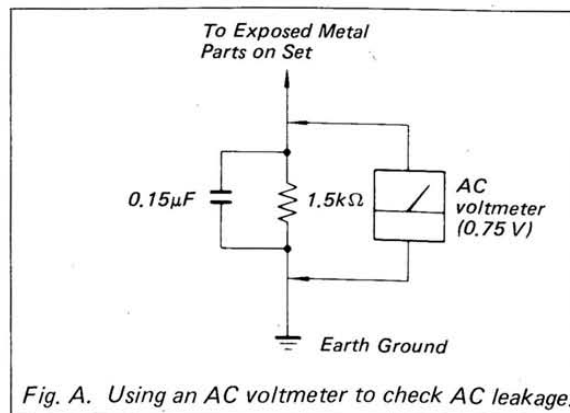


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1 OUTLINE

1-1. LOCATION OF FUNCTION CONTROL

FRONT PANEL

START (RMS playback start) button

DISPLAY (peak level meter/RMS selection) button

A/B (counter select) button

MEMORY button

RESET button

AMS (Automatic music sensor)/BLANK SKIP button

Cassette holder

POWER switch

TIMER switch

Used for timer activated recording and playback.

DIRECTION mode selector

Select the tape transport mode for recording, playback and dubbing.

DIRECTION mode indicators

HEADPHONES jack (stereo phone jack)

LEVEL (headphone volume) control

Tape operation buttons

- ▶▶ (rightward fast winding)
- ◀◀ (leftward fast winding)
- ◀ (reverse play)
- ▶ (forward)
- (record)
- ▲ (eject)
- (stop)
- || PAUSE
- REC MUTE (record muting)

Digital linear counter

Indicates the approximate tape running time. The figures increase as the tape runs to the right and decrease as the tape runs to the left. A minus sign appears if the figures go below 0.00.

A/B indicators

Indicate the deck whose tape counter is displayed.

MEMORY indicator

Appears when you press MEMORY.

RMS selection display

A bar over a selection number indicates that that selection has been programmed for RMS playback or dubbing.

PEAK LEVEL METER

Shows the peak input level of each channel during recording and recorded levels in the playback mode.

Remote sensor

RMS (random music sensor) selection buttons
Choose the selection number for RMS playback and dubbing.

CHECK button

Used to check the order of the selections you have programmed for RMS playback and dubbing.

REC LEVEL (recording level) controls (L and R)

AUTO PAUSE button

Used to pause normal speed dubbing at the end of each selection.

CLEAR button

Used to cancel the selections for RMS playback and dubbing.

DUBBING LEVEL control

SYNCHRO DUBBING buttons

NORMAL SPEED
HIGH SPEED (double the normal speed)

DOLBY NR* (noise reduction) switches

Select Dolby B or C.

[A + B] REC button

Starts recording on both decks A and B simultaneously.

REMOTE COMMANDER

Output indicator

COUNTER buttons

RESET (tape counter reset)
MEMORY
A/B (deck A or B)

Tape operation buttons

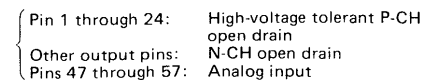
- ◀ (reverse play)
- ▶ (forward)
- REC (record)
- ◀◀ (leftward fast winding)
- ▶▶ (rightward fast winding)
- (stop)
- || (pause)
- (record muting) / AMS/BLANK SKIP*

DECK A/B selector

Select the deck to be controlled with the remote commander.

* Functions as the record muting button during recording and as the AMS/BLANK SKIP button on the front panel of the main unit during playback or dubbing.

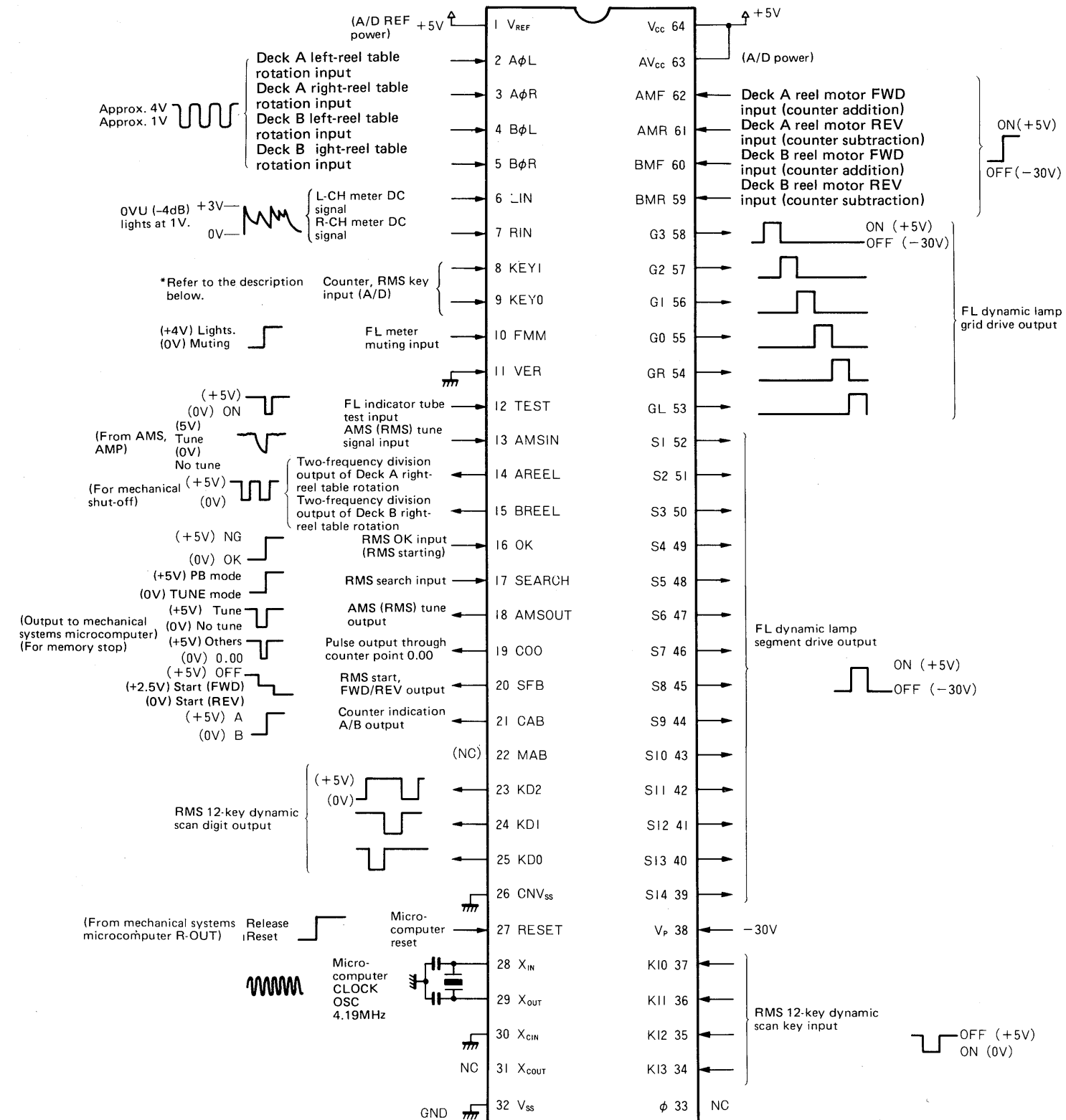
Mechanical control microcomputer



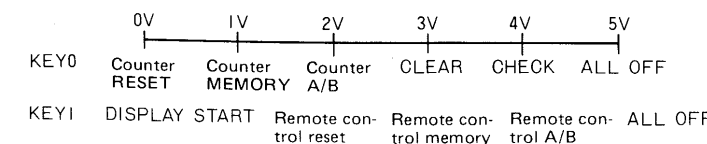
(E) 1	5A	16
(G) 2	5C	15
3		4C
4		4B
(H) 5	5D	13
(F) 6	5B	12
7		4A
8		4D
		11
		10
		S0
		9
		S1

A diagram of a 14-pin D-sub connector. The pins are arranged in two rows of seven. The top row is labeled 7A, 7C, 7D, 7B, 6C, 6B, 6A from left to right. The bottom row is labeled 6D, S0, S1 from left to right. The pins are represented by circles with letters inside, connected to horizontal lines representing the connector pins.

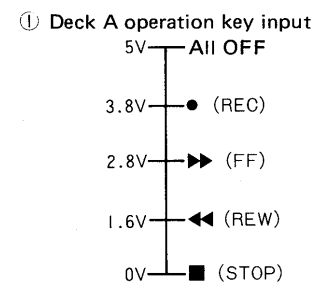
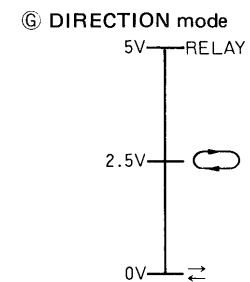
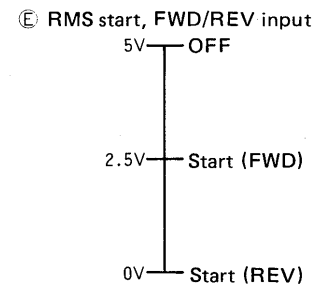
1-3. IC951 PIN FUNCTIONS



*Analog key input potential graph

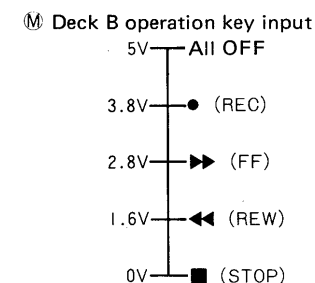


Pins 2 through 9: Analog input
Pins 14 through 25: CMOS output
Pins 39 through 58: High-voltage tolerant P-CH output



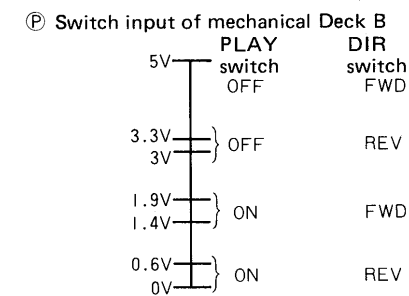
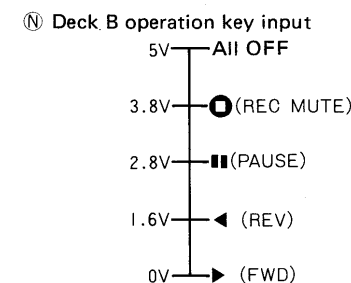
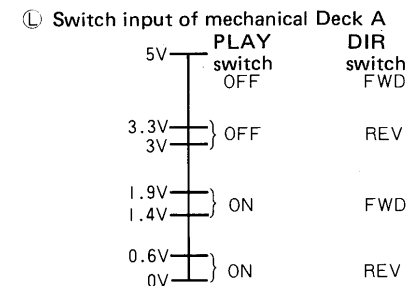
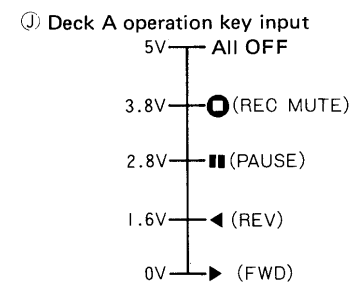
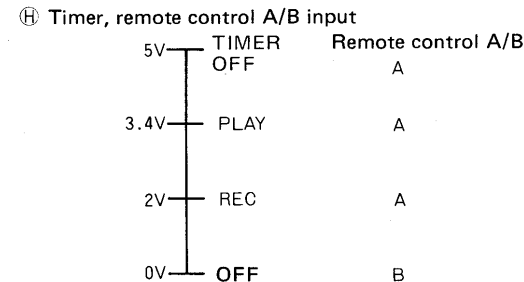
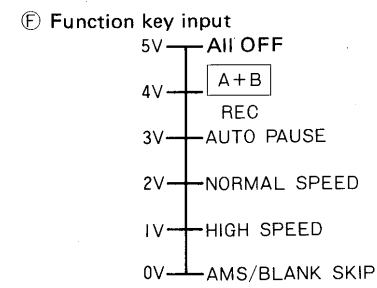
Ⓚ Deck A cassette tab input

	FWD tab	REV tab	Half
5V	All OFF		
4.5V	Yes	No	Yes
3.5V	No	No	Yes
2.6V	Yes	Yes	Yes
1.1V	No	Yes	Yes
0V	X	X	No

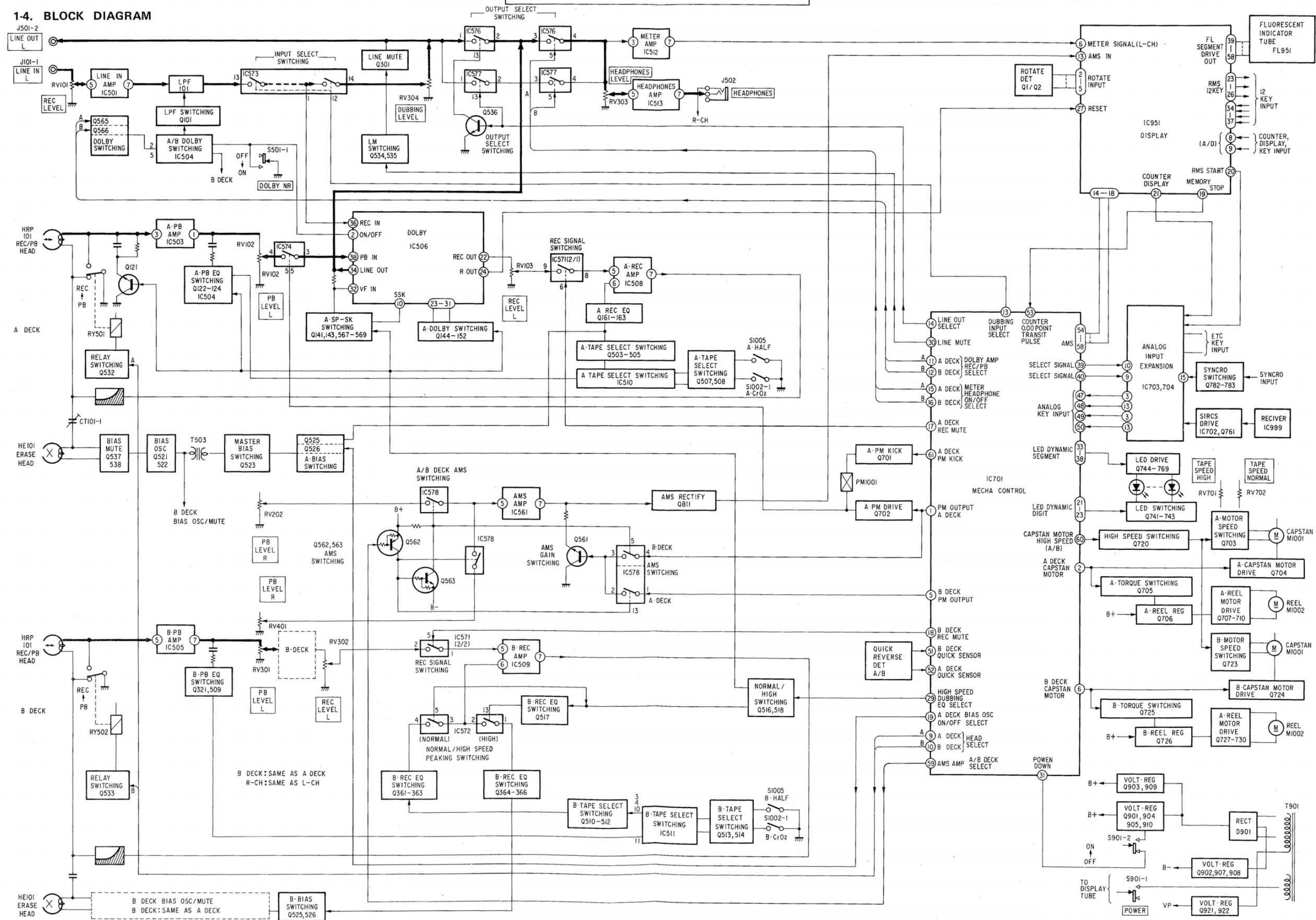


ⓐ Deck B cassette tab input

	FWD tab	REV tab	Half
5V	All OFF		
4.5V	Yes	No	Yes
3.5V	No	No	Yes
2.6V	Yes	Yes	Yes
1.1V	No	Yes	Yes
0V	X	X	No



1-4. BLOCK DIAGRAM



SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

Remove the case.
M3 screw 4

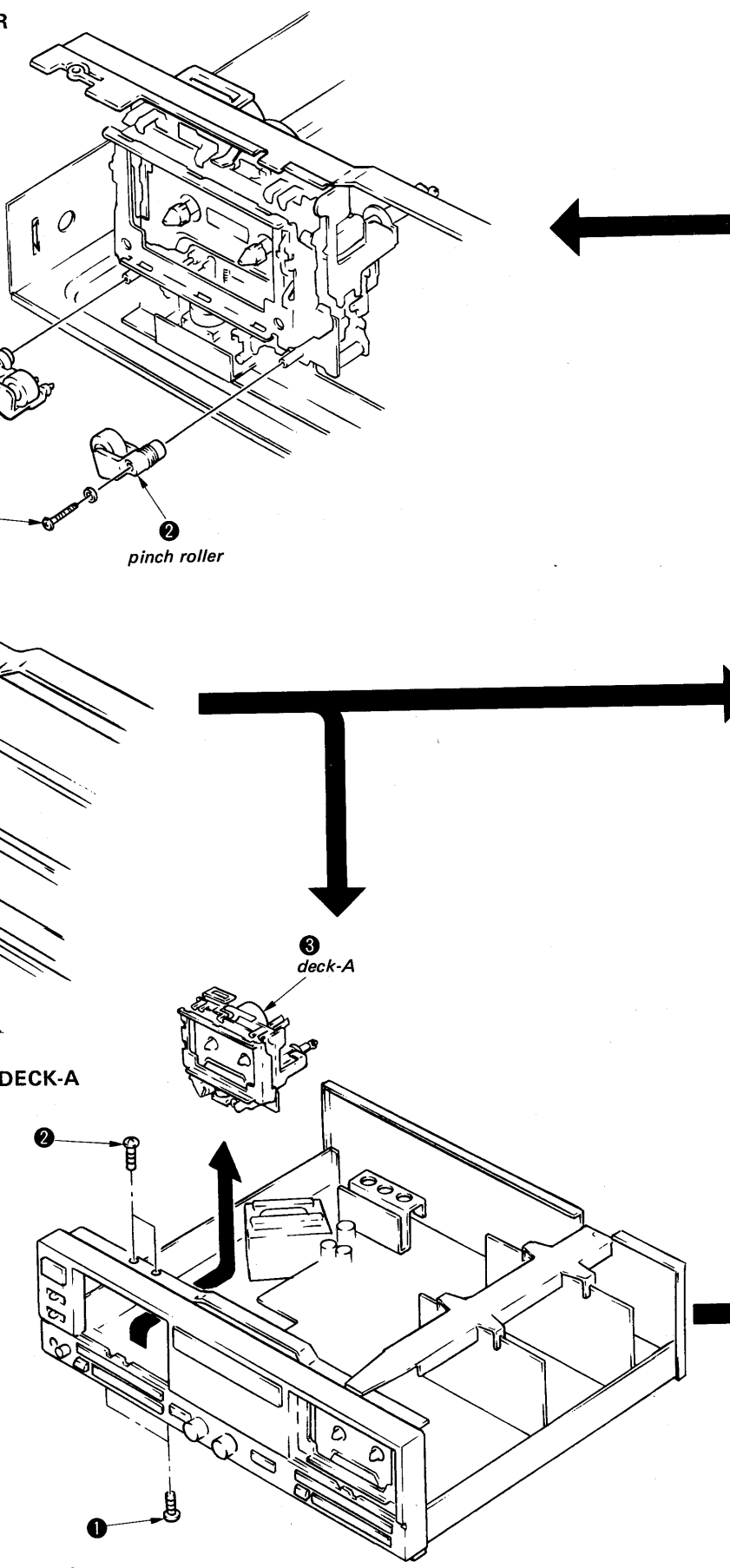
PINCH ROLLER

CASSETTE WINDOW

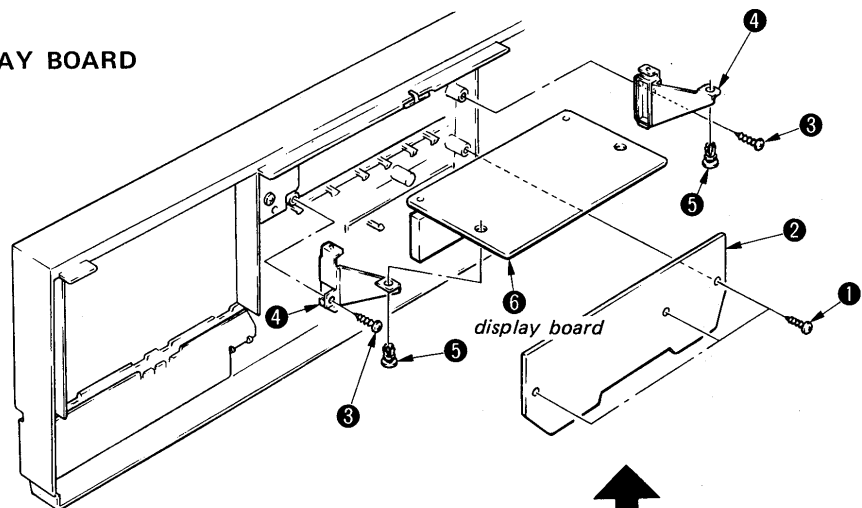
cassette window

DECK-A

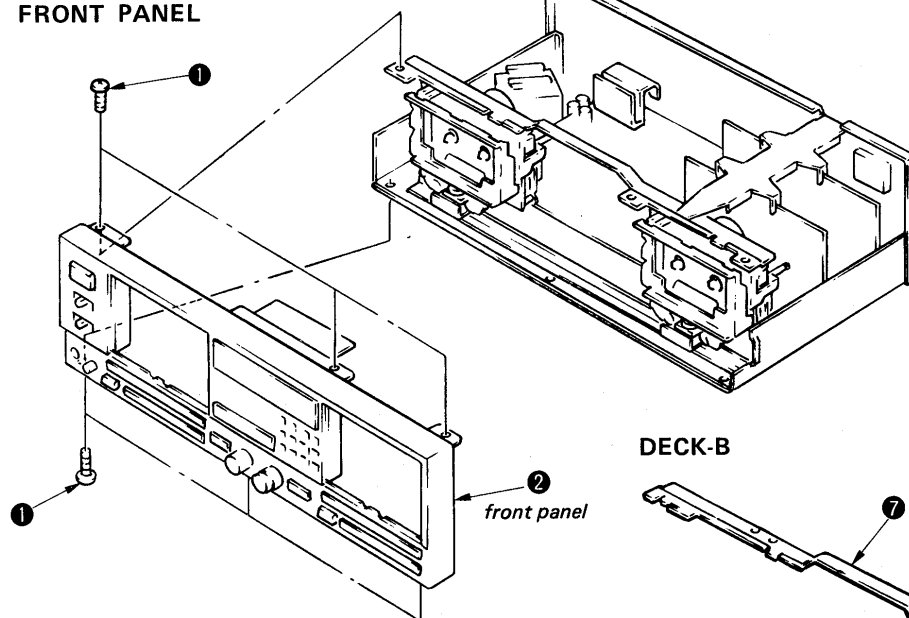
3
deck-A



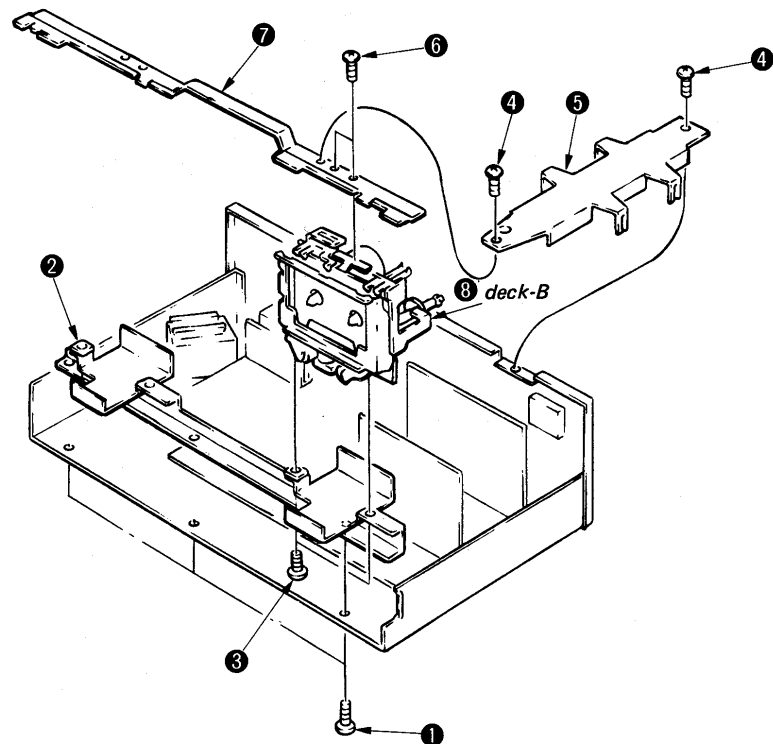
DISPLAY BOARD



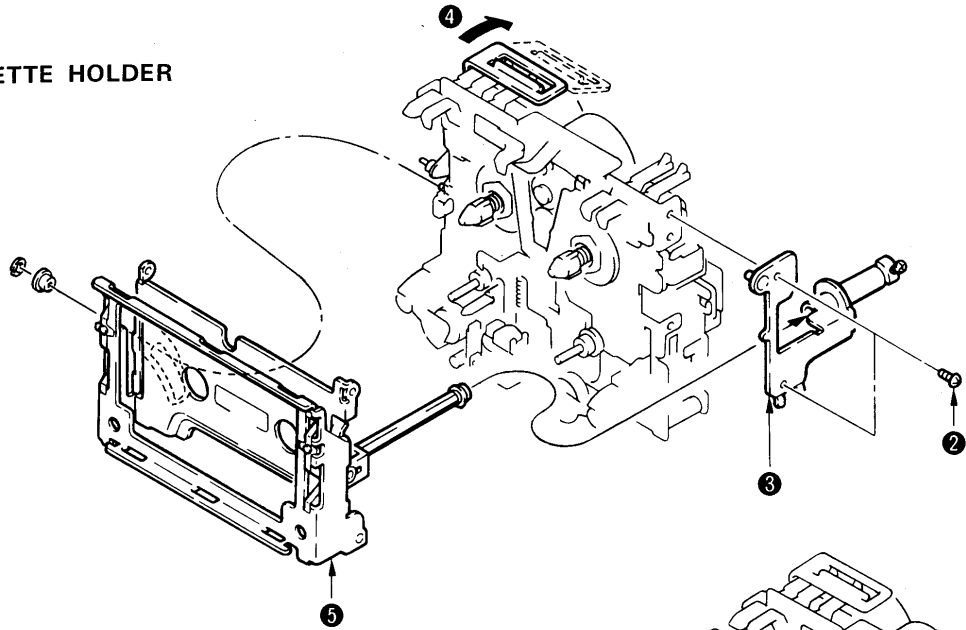
FRONT PANEL



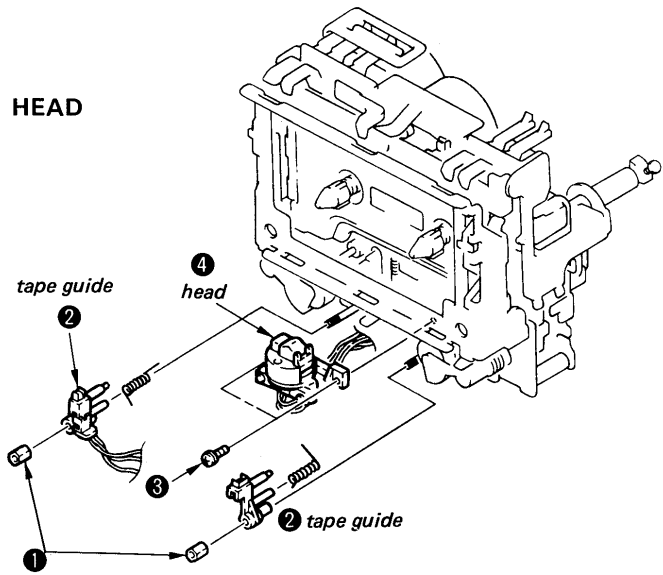
DECK-B



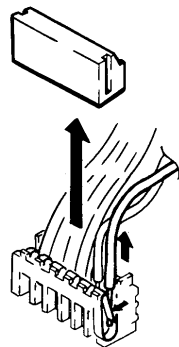
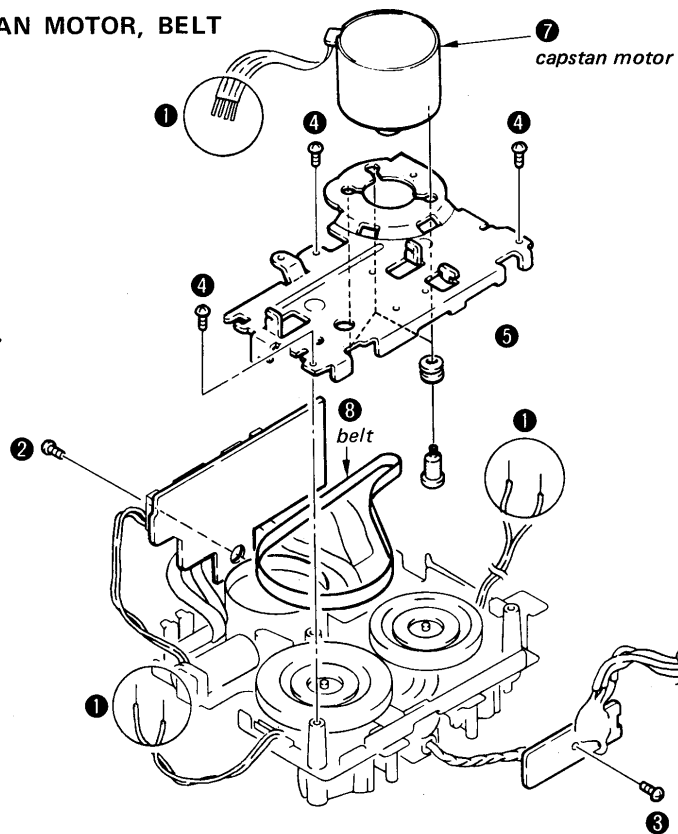
CASSETTE HOLDER



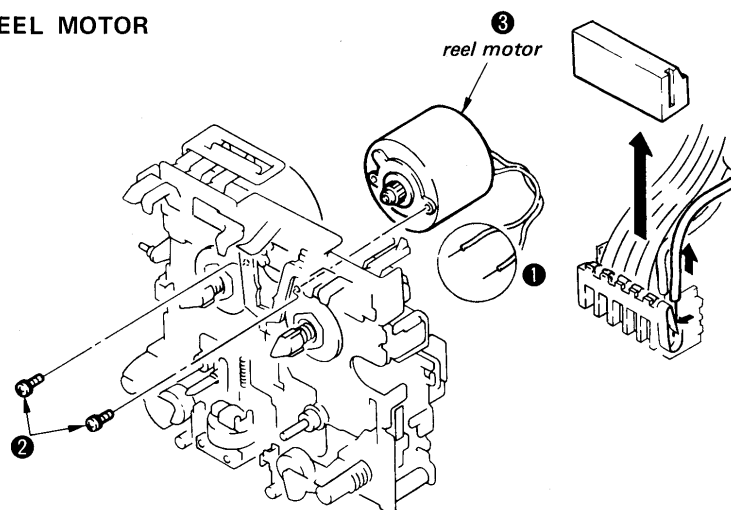
HEAD



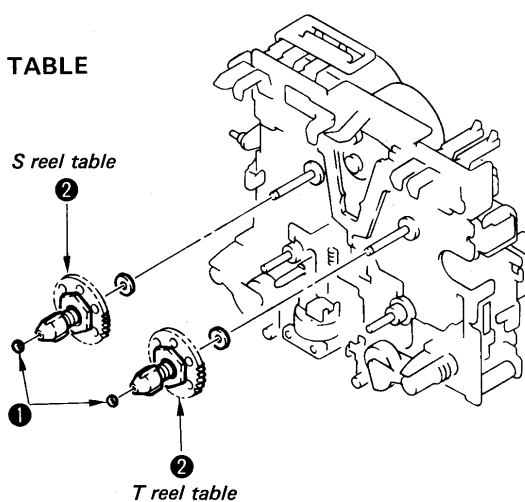
CAPSTAN MOTOR, BELT



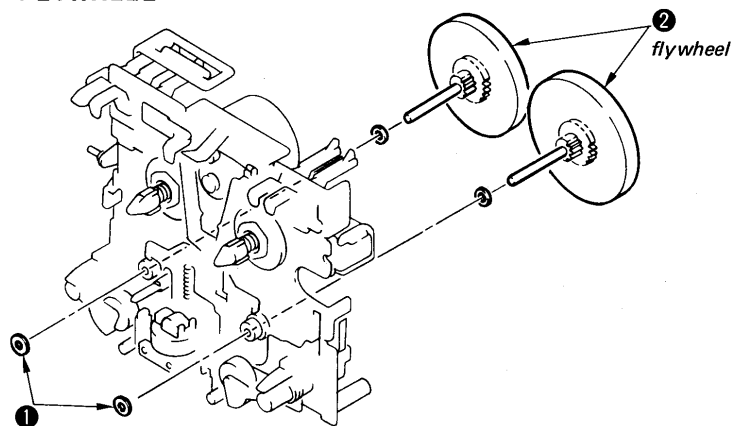
REEL MOTOR



REEL TABLE



FLYWHEEL



SECTION 3 ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Torque meter	Meter reading
FWD	CQ-102C	25 to 75 g•cm (0.35 to 1.04 oz•inch)
FWD Back tension	CQ-102C	1 to 10 g•cm (0.014 to 0.14 oz•inch)
FF, REW	CQ-201B	80 to 180 g•cm (1.11 to 2.5 oz•inch)

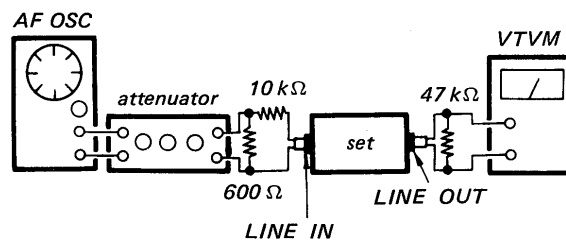
3-2. ELECTRICAL ADJUSTMENTS

1. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.
 - Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
TIMER switch:	OFF
 - Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Mode: record



Standard Input Level

	LINE IN
source impedance	10 kΩ
input level	0.25 V (-10 dB)

Standard Output Level

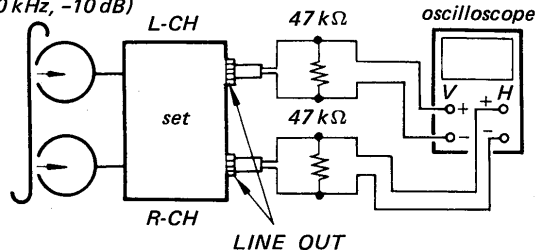
	LINE OUT
load impedance	47 kΩ
output level	0.44 V (-5 dB)

Record/Playback Head Azimuth Adjustment

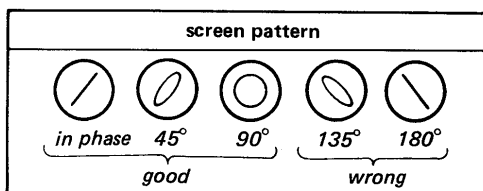
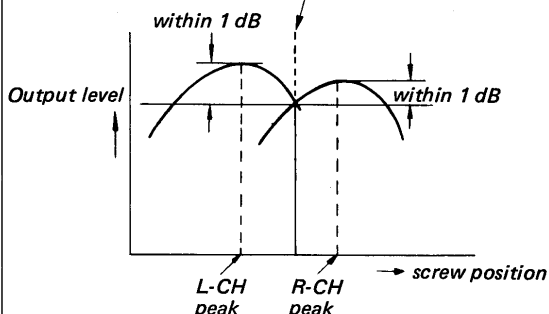
Procedure:

1. Mode: FWD playback

test tape
P-4-A-100
(10 kHz, -10 dB)

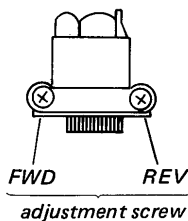


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.



3. Mode: REV
Repeat step 1 and 2.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location: Record/Playback Head



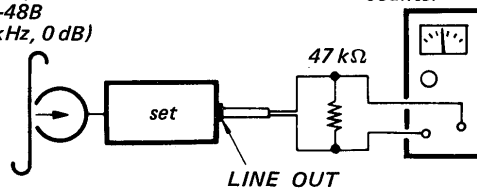
Tape Speed Adjustment

Procedure:

Mode: FWD playback

test tape
WS-48B
(3 kHz, 0 dB)

speed checker or
digital frequency
counter



1. Connect TP701 to the ground with the lead wire.

Specification: high speed

Speed checker	Digital frequency counter
-0.6 - +0.6%	5,960 Hz - 6,040 Hz

Frequency difference between the beginning and the end of the tape should be within 0.8% (48 Hz).

Adjustment Location:

DECK-A side RV701
DECK-B side RV721

2. Remove the wire in step 1.

Specification: normal speed

Speed checker	Digital frequency counter
-0.6 - +0.6%	2,980 Hz - 3,020 Hz

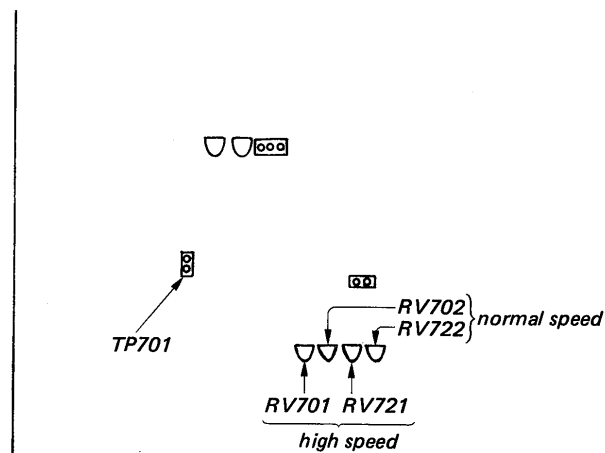
Frequency difference between the beginning and the end of the tape should be within 0.8% (25 Hz).

Adjustment Location:

DECK-A side RV702
DECK-B side RV722

3. If the specifications are not satisfied, repeat step 1 and 2.

Adjustment Location: Main board

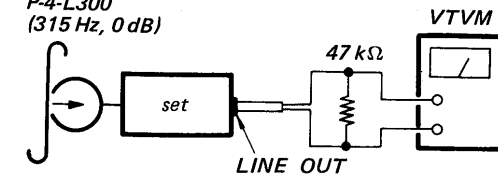


Playback Level Adjustment

Procedure:

Mode: FWD playback

test tape
P-4-L300
(315 Hz, 0 dB)



Adjust,

DECK-A side RV101 (L-CH), RV201 (R-CH)

DECK-B side RV401 (L-CH), RV501 (R-CH)

so that the specifications are satisfied.

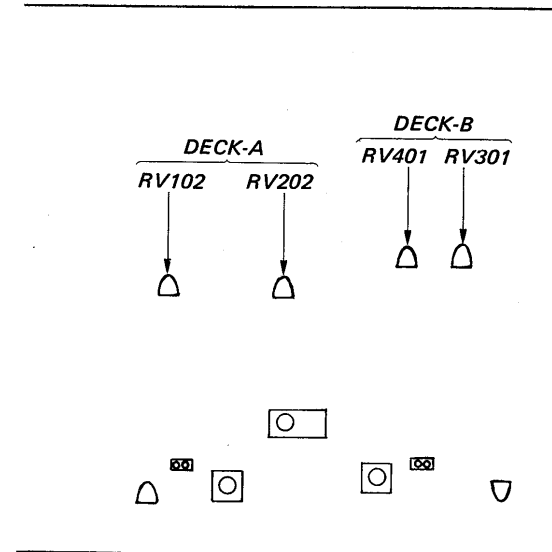
Specification:

LINE OUT level: 0.41 – 0.46 V
(–5.5 – –4.5 dB)

level difference between the channels:
within 0.5 dB

Confirm that LINE OUT level is not changed
when Playback and Stop are repeated.

Adjustment Location: Main board



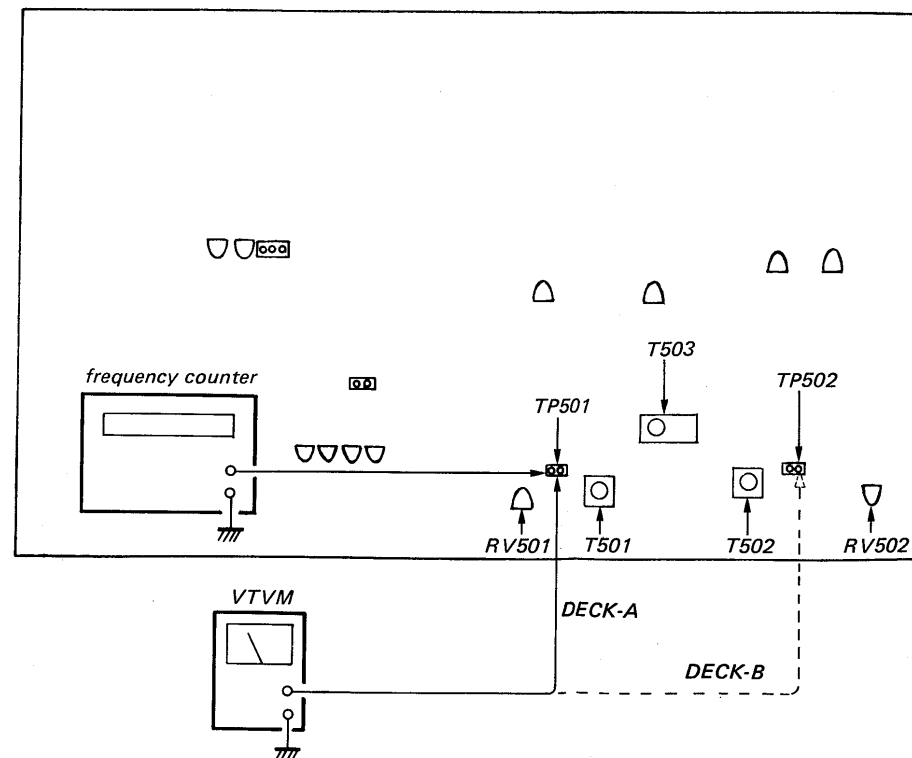
Erase Current Adjustment

The erase current should be adjusted before the
recording bias adjustment.

After adjusting the erase current, readjust the re-
cording bias.

1. Trimmer capacitor
Deck A CT101 (L-CH) CT201 (R-CH)
Deck B CT301 (L-CH) CT401 (R-CH)
Loosen it to half its maximum rotation.
2. Insert an unrecorded cassette tape (CS-412) in-
to Decks A and B and set the decks to the REC
mode.
3. Adjust T503 so that the frequency counter
reads 205 kHz to 215 kHz.
4. Adjust Deck A (T501) and Deck B (T502) so
that the VTVM reads the maximum value.
5. Adjust Deck A (RV501) and Deck B (RV502)
so that the VTVM reads 140 mV to 145 mV.

Adjustment Point: Main board



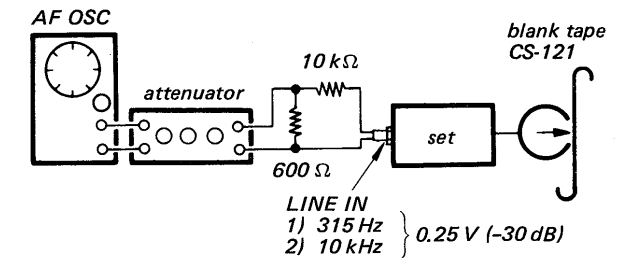
Record Bias Adjustment

Setting:

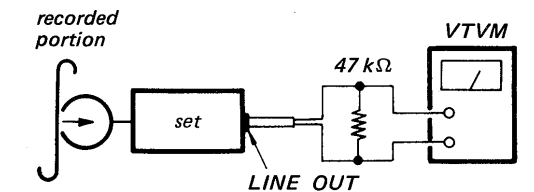
REC LEVEL control: standard record
(See page 15)

Procedure:

1. Mode: record



2. Mode: playback



Play back the tape recorded in step 1. If the
specification is not satisfied, adjust

DECK-A CT101 (L-CH), CT201 (R-CH)

DECK-B CT301 (L-CH), CT401 (R-CH)

and repeat steps 1 and 2.

Specification:

10 kHz playback output for 315 kHz one:

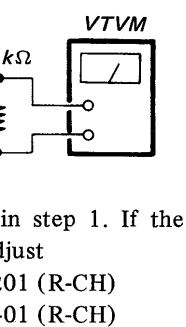
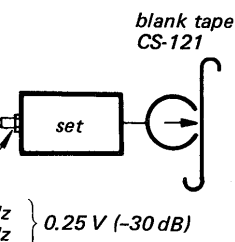
–0.5 dB ~ +0.5 dB

When 10 kHz playback output is too high,
bridge pattern at (A) side.

When 10 kHz playback output is too low,
bridge pattern at (B) side.

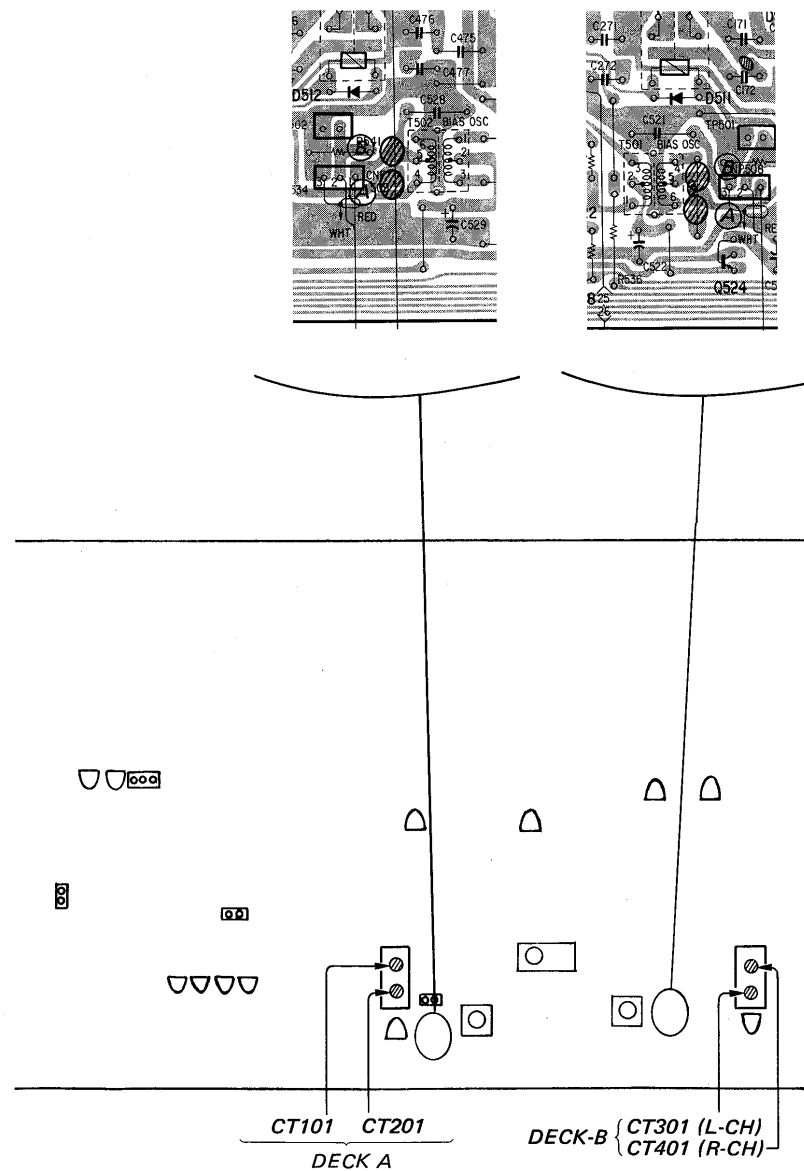
Adjustment Location: Main board

rd record
age 15)



in step 1. If the
adjust
01 (R-CH)
01 (R-CH)

5 kHz one:
put is too high,
put is too low,



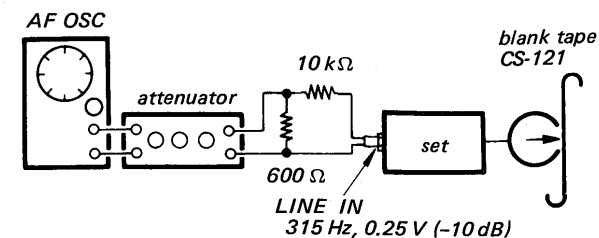
Record Level Adjustment

Setting:

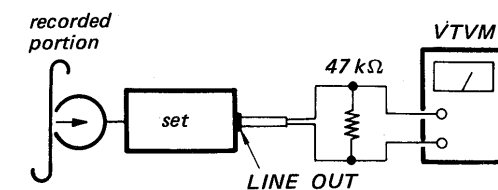
REC LEVEL control: standard record
(See page 15)

Procedure:

1. Mode: record



2. Mode: playback

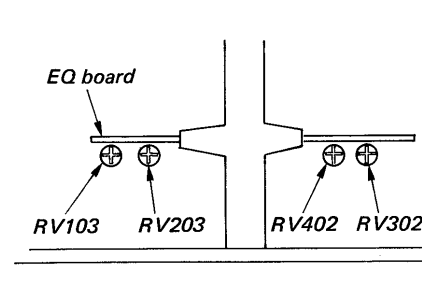


Playback the tape recorded in step 1. If the specification is not satisfied, adjust
DECK-A RV103 (L-CH), RV203 (R-CH)
DECK-B RV302 (L-CH), RV402 (R-CH)
and repeat steps 1 and 2.

Specifications:

LINE OUTPUT level: 0.41 ~ 0.46 V
(-5.5 ~ -4.5 dB)

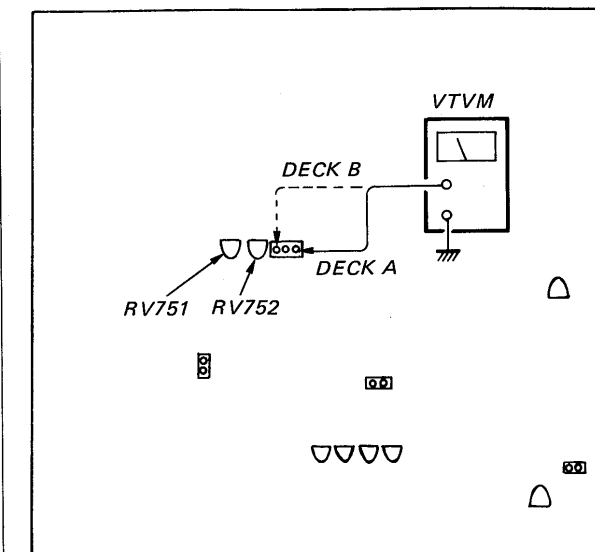
Adjustment Location: EQ board



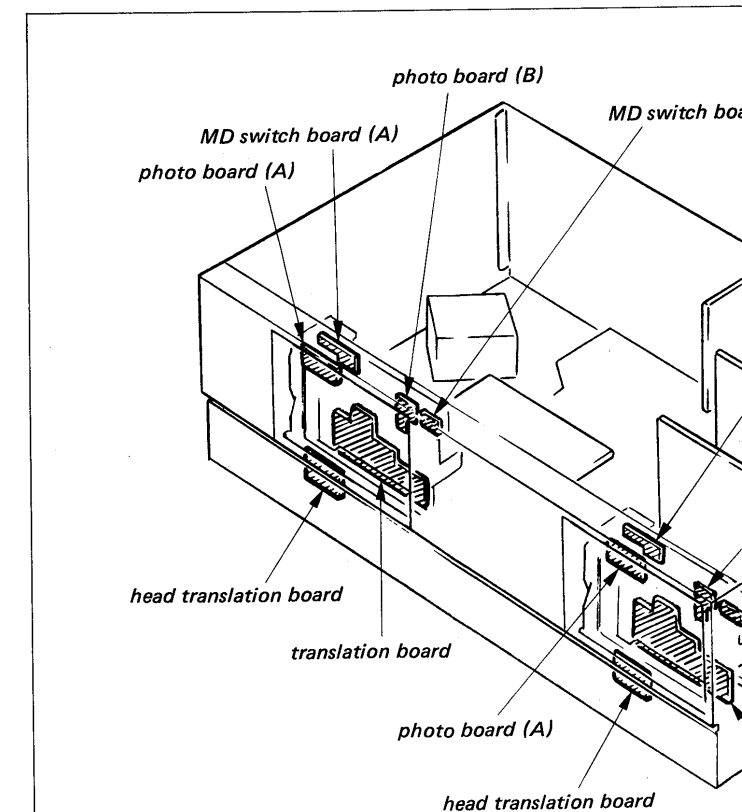
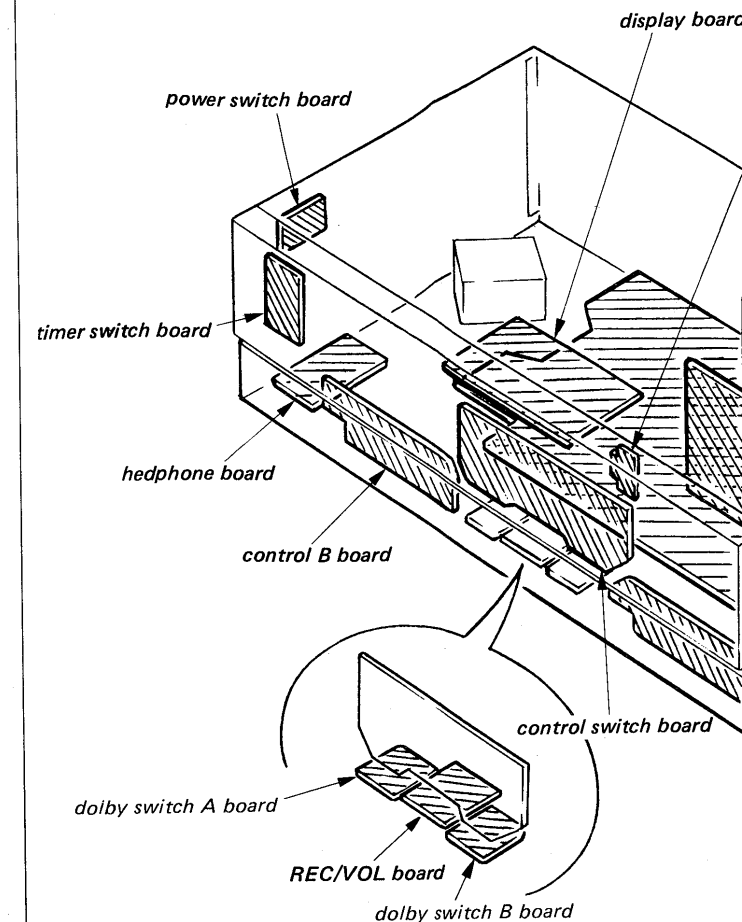
Quick Reverse Adjustment

1. Insert a cassette tape into Deck A and set the deck to the PB mode.
2. Adjust RV751 so that the voltage at TP703 is $3.5 \pm 0.2V$ on the leader tape portion (semi-transparent portion).
3. Insert a cassette tape into Deck B and set the deck to the PB mode.
4. Adjust RV752 so that the voltage at TP703 is $3.5 \pm 0.2V$ on the leader tape portion.
5. After adjusting, check that the drive reverses at the joint of the leader tape and recording portions (check in $\curvearrowright$ state).
(Start the playback approximately ten seconds before the leader tape.)

Adjustment Point: Main board
Specification $3.5 \pm 0.2V$



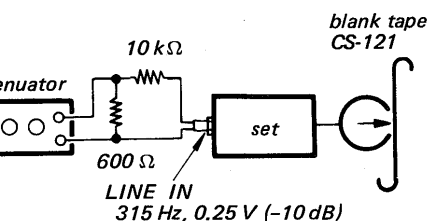
CIRCUIT BOARDS LOCATION



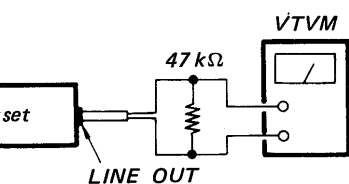
Adjustment

VEL control: standard record
(See page 15)

record



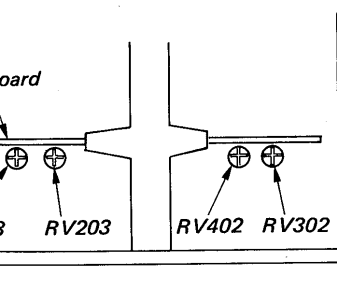
playback



Check the tape recorded in step 1. If the
adjustment is not satisfied, adjust
RV103 (L-CH), RV203 (R-CH)
RV302 (L-CH), RV402 (R-CH)
at steps 1 and 2.

OUTPUT level: 0.41 ~ 0.46 V
(-5.5 ~ -4.5 dB)

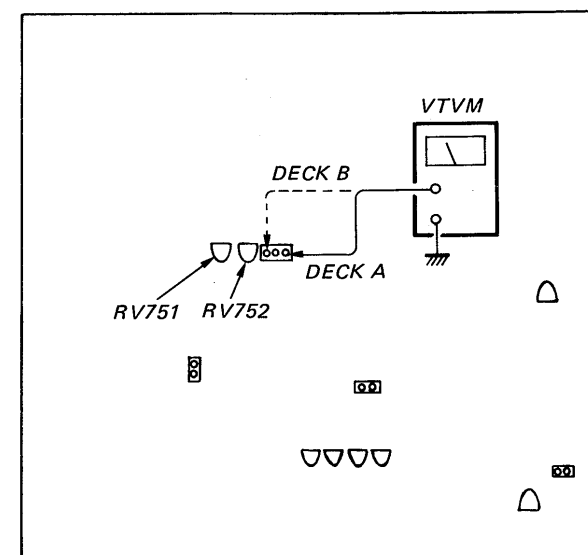
location: EQ board



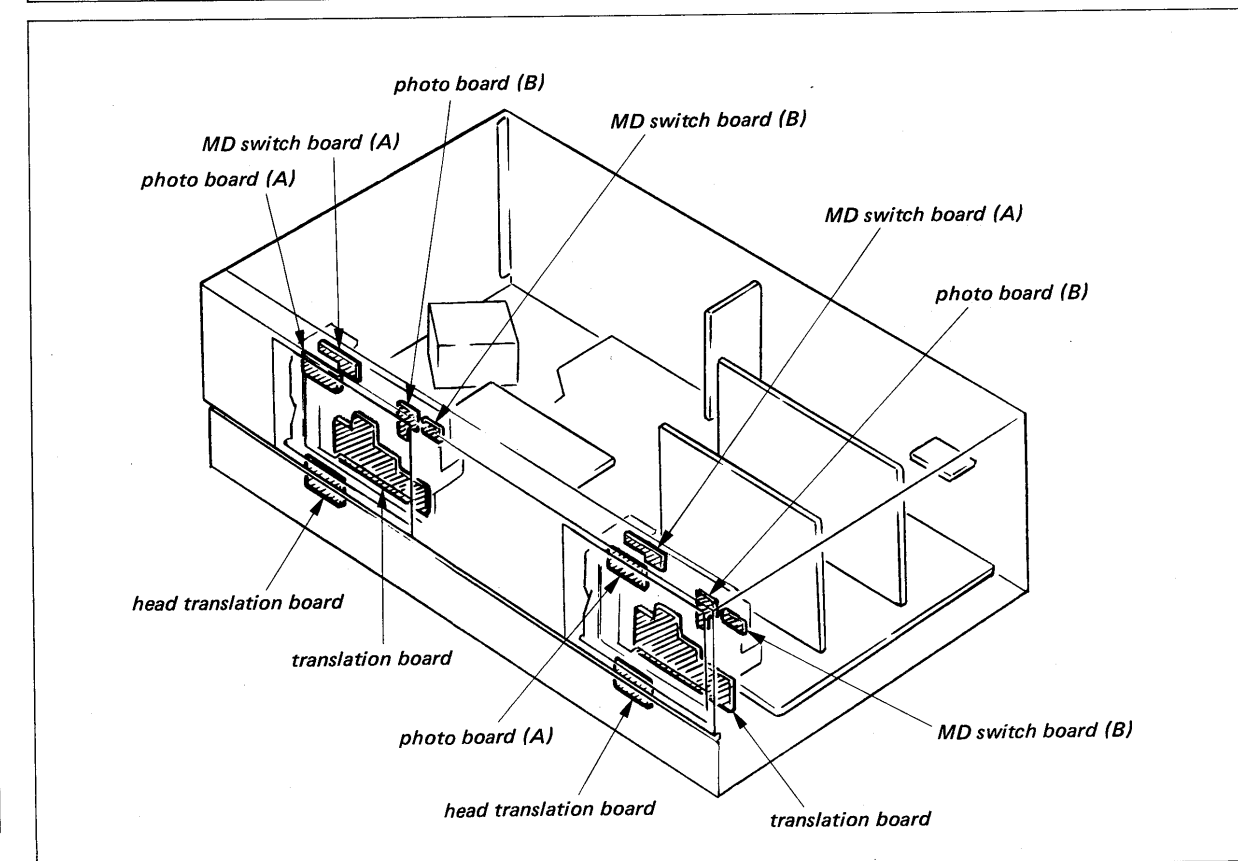
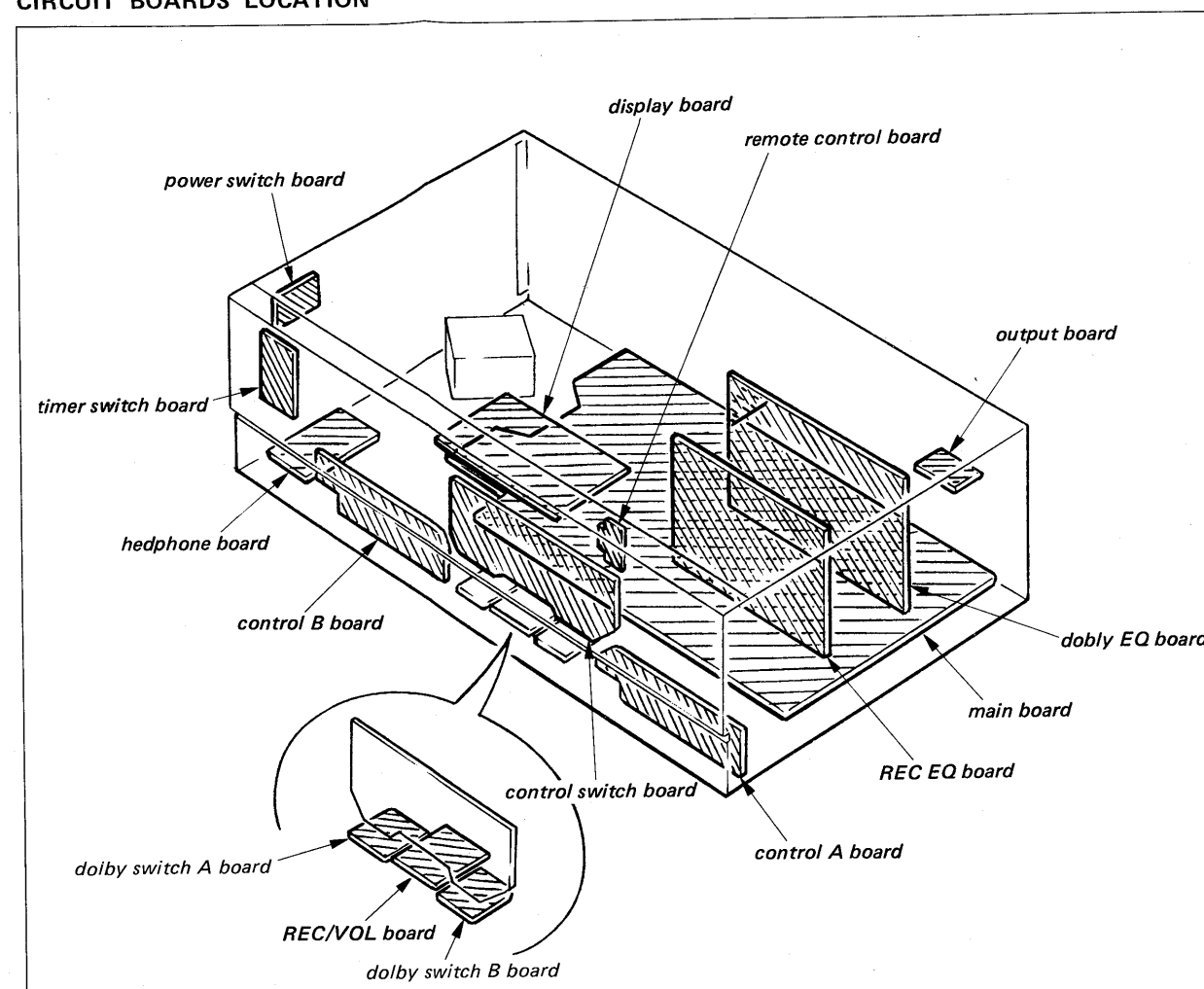
Quick Reverse Adjustment

1. Insert a cassette tape into Deck A and set the deck to the PB mode.
2. Adjust RV751 so that the voltage at TP703 is $3.5 \pm 0.2V$ on the leader tape portion (semi-transparent portion).
3. Insert a cassette tape into Deck B and set the deck to the PB mode.
4. Adjust RV752 so that the voltage at TP703 is $3.5 \pm 0.2V$ on the leader tape portion.
5. After adjusting, check that the drive reverses at the joint of the leader tape and recording portions (check in $\curvearrowright$ state).
(Start the playback approximately ten seconds before the leader tape.)

Adjustment Point: Main board
Specification $3.5 \pm 0.2V$



CIRCUIT BOARDS LOCATION



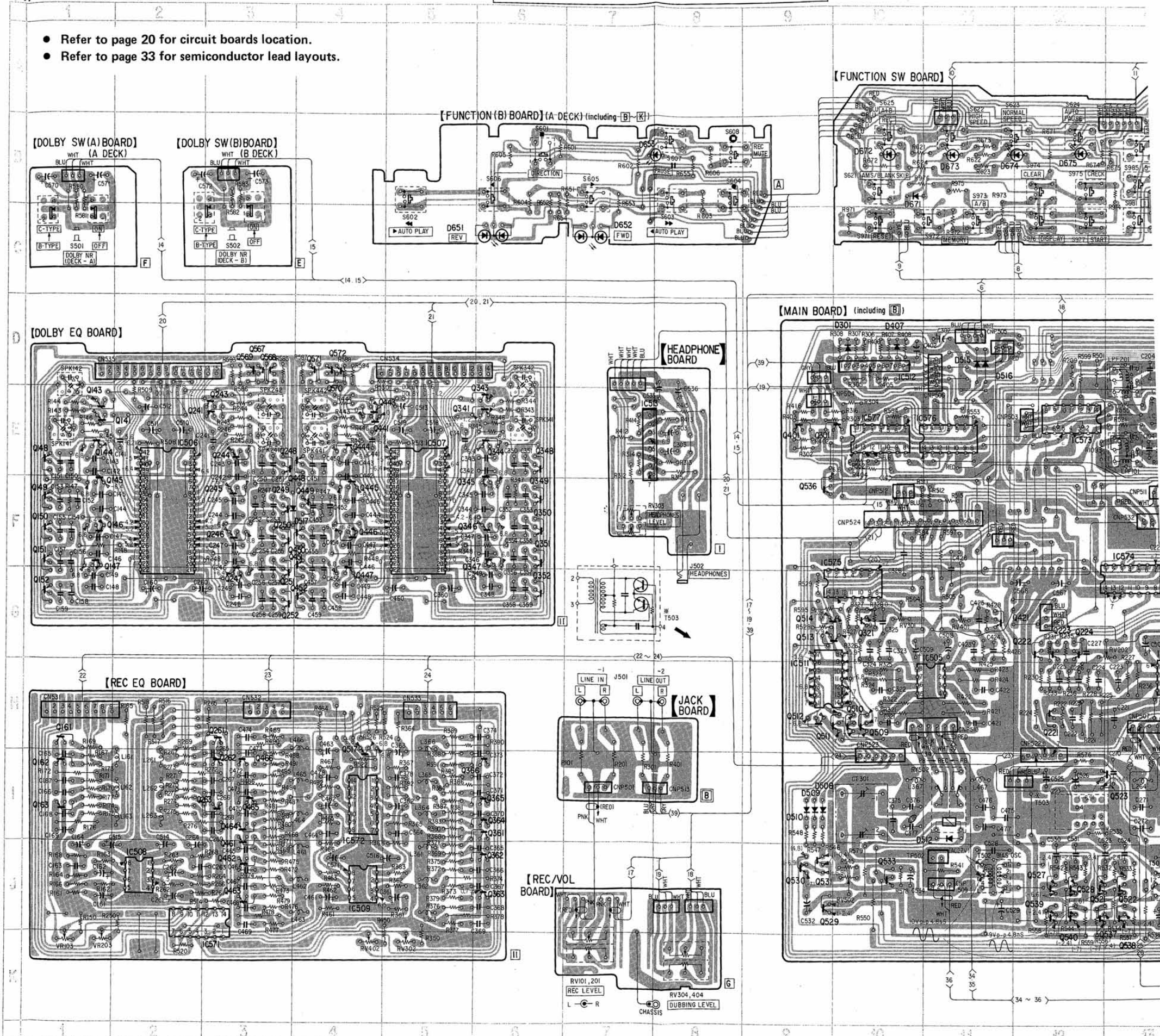
SECTION 4 DIAGRAMS

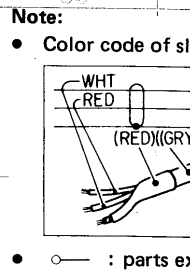
• SEMICONDUCTOR LOCATIONS

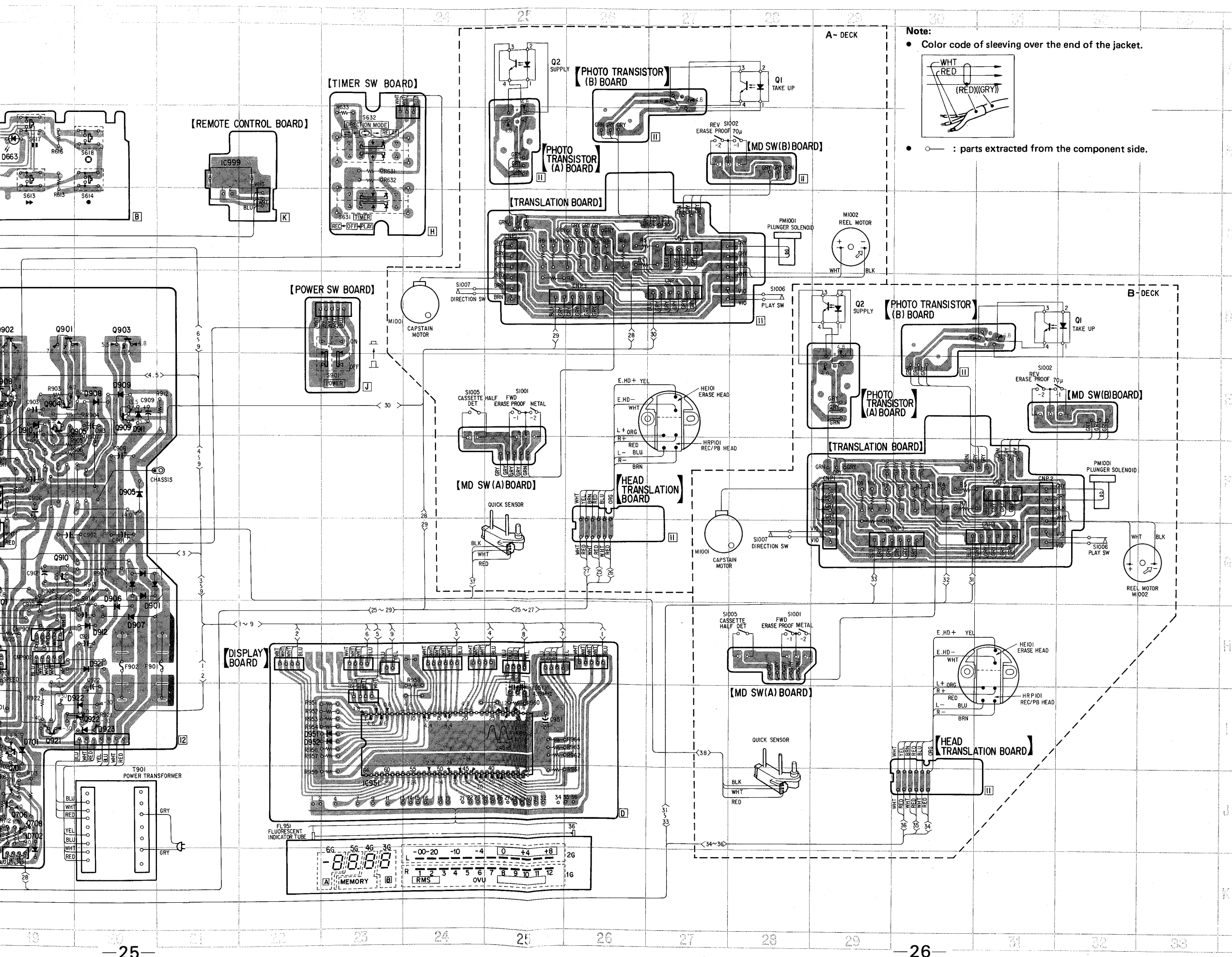
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D301	D-10	IC507	E-5	Q321	G-10	Q536	F-9
D407	D-10	IC508	J-2	Q341	E-1	Q537	J-12
D501	F-14	IC509	J-4	Q343	D-1	Q538	K-13
D502	F-15	IC510	G-15	Q344	E-6	Q539	J-12
D503	J-15	IC511	G-9	Q345	F-5	Q540	J-12
D504	K-15	IC512	D-10	Q346	F-5	Q561	E-15
D505	I-14	IC513	E-7	Q347	F-5	Q562	E-15
D506	I-14	IC561	D-16	Q348	E-6	Q563	E-15
D507	I-14	IC571	J-2	Q349	F-6	Q565	F-14
D508	I-9	IC572	I-4	Q350	F-6	Q566	E-15
D509	I-9	IC573	E-12	Q351	F-6	Q567	D-3
D510	I-9	IC574	F-13	Q352	G-6	Q568	D-3
D511	I-13	IC575	F-9	Q361	I-6	Q569	D-3
D512	I-11	IC576	E-11	Q362	J-6	Q570	D-4
D515	D-11	IC577	E-10	Q363	J-6	Q571	D-4
D516	D-11	IC578	D-15	Q364	I-6	Q572	D-4
D517	F-3	IC701	H-18	Q365	I-6	Q701	I-19
D561	E-15	IC702	D-18	Q366	I-5	Q702	J-18
D651	C-5	IC703	F-17	Q401	E-9	Q703	I-17
D652	C-7	IC704	F-16	Q421	G-11	Q704	J-18
D653	B-7	IC951	J-23	Q441	E-4	Q705	J-18
D661	C-17	IC999	B-21	Q443	E-4	Q706	J-19
D662	C-18			Q444	E-4	Q707	K-18
D663	B-19	Q1	A28(A DECK)	Q445	F-4	Q708	J-19
D671	B-10	Q1	D-32(B DECK)	Q446	F-4	Q709	J-18
D672	B-10	Q2	A-25(A DECK)	Q447	G-4	Q710	J-18
D673	B-11	Q2	D-29(B DECK)	Q448	E-3	Q720	I-17
D674	B-11	Q101	E-13	Q449	F-4	Q721	J-15
D675	B-12	Q121	H-14	Q450	F-3	Q722	J-16
D701	I-19	Q122	G-15	Q451	F-3	Q723	I-16
D702	K-19	Q123	G-14	Q452	G-3	Q724	J-17
D703	I-18	Q124	G-14	Q461	I-3	Q725	J-16
D721	J-15	Q141	E-1	Q462	J-3	Q726	J-16
D722	J-15	Q143	E-1	Q463	J-3	Q727	K-16
D723	J-16	Q144	E-1	Q464	I-3	Q728	K-16
D811	D-16	Q145	E-1	Q465	I-3	Q729	J-16
D822	I-18	Q146	F-1	Q466	I-3	Q730	J-16
D823	I-18	Q147	F-1	Q503	H-15	Q741	I-18
D824	I-18	Q148	E-1	Q504	H-15	Q742	H-18
D825	I-18	Q149	F-1	Q505	H-15	Q743	I-17
D826	E-16	Q150	F-1	Q507	G-15	Q744	G-16
D827	E-16	Q151	F-1	Q508	G-15	Q745	G-16
D828	H-17	Q152	G-1	Q509	H-10	Q746	H-16
D829	I-17	Q161	H-1	Q510	H-9	Q747	G-17
D830	I-16	Q162	I-1	Q512	H-9	Q748	H-17
D831	I-16	Q163	I-1	Q513	G-9	Q749	G-17
D901	G-20	Q201	D-13	Q514	G-9	Q761	D-18
D905	F-20	Q221	H-12	Q516	G-15	Q782	E-18
D906	H-20	Q223	G-12	Q517	H-4	Q783	E-17
D908	E-20	Q224	G-12	Q518	G-15	Q811	D-16
D909	E-20	Q241	E-2	Q521	J-12	Q821	E-16
D910	F-19	Q243	E-3	Q522	J-13	Q822	D-17
D911	E-20	Q244	E-3	Q523	I-13	Q823	D-17
D912	H-20	Q245	F-3Q246	Q524	J-14	Q825	E-16
D921	H-20	Q246	F-3	Q525	J-14	Q901	D-19
D922	I-20	Q247	G-3	Q526	J-15	Q902	D-19
D923	I-20	Q248	E-3	Q527	J-12	Q903	D-20
D951	I-22	Q249	F-3	Q528	J-12	Q904	E-19
D952	I-22	Q250	F-3	Q529	J-9	Q905	E-19
		Q251	G-3	Q530	J-9	Q907	E-19
IC501	E-14	Q252	G-3	Q531	J-9	Q908	E-19
IC503	G-13	Q261	H-3	Q532	J-14	Q909	E-20
IC504	G-14	Q262	I-3	Q533	J-10	Q910	G-19
IC505	G-11	Q263	I-2	Q534	I-16	Q921	I-19
IC506	E-2	Q301	E-9	Q535	I-16	Q922	I-20

4-1. MOUNTING DIAGRAM

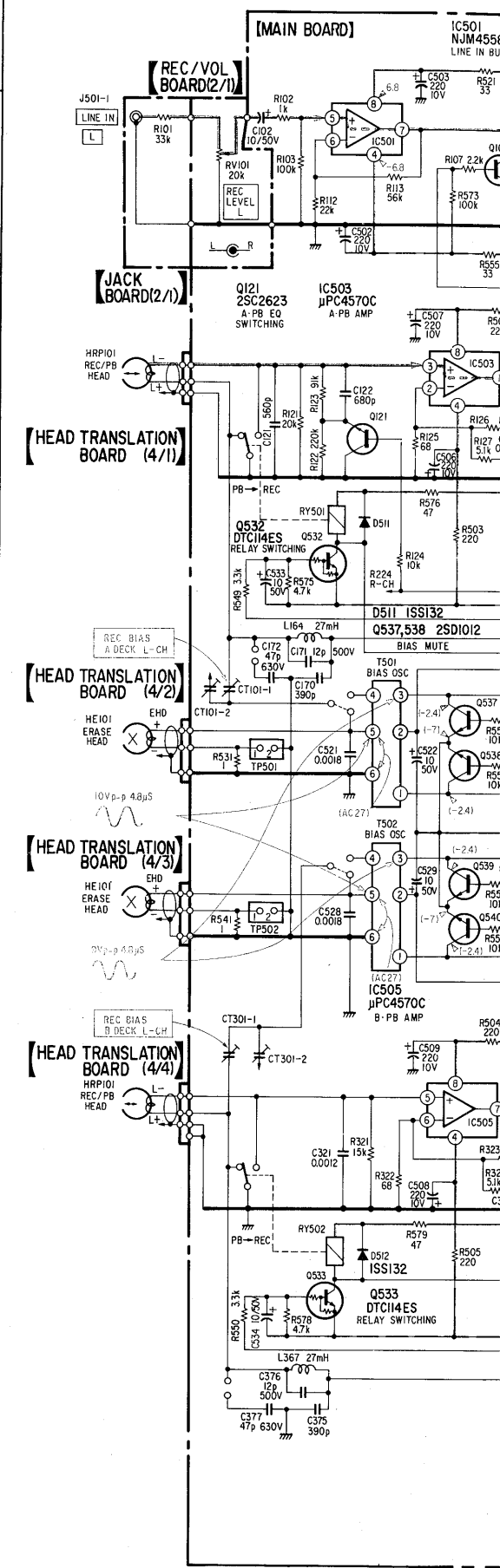
- Refer to page 20 for circuit boards location.
- Refer to page 33 for semiconductor lead layouts.





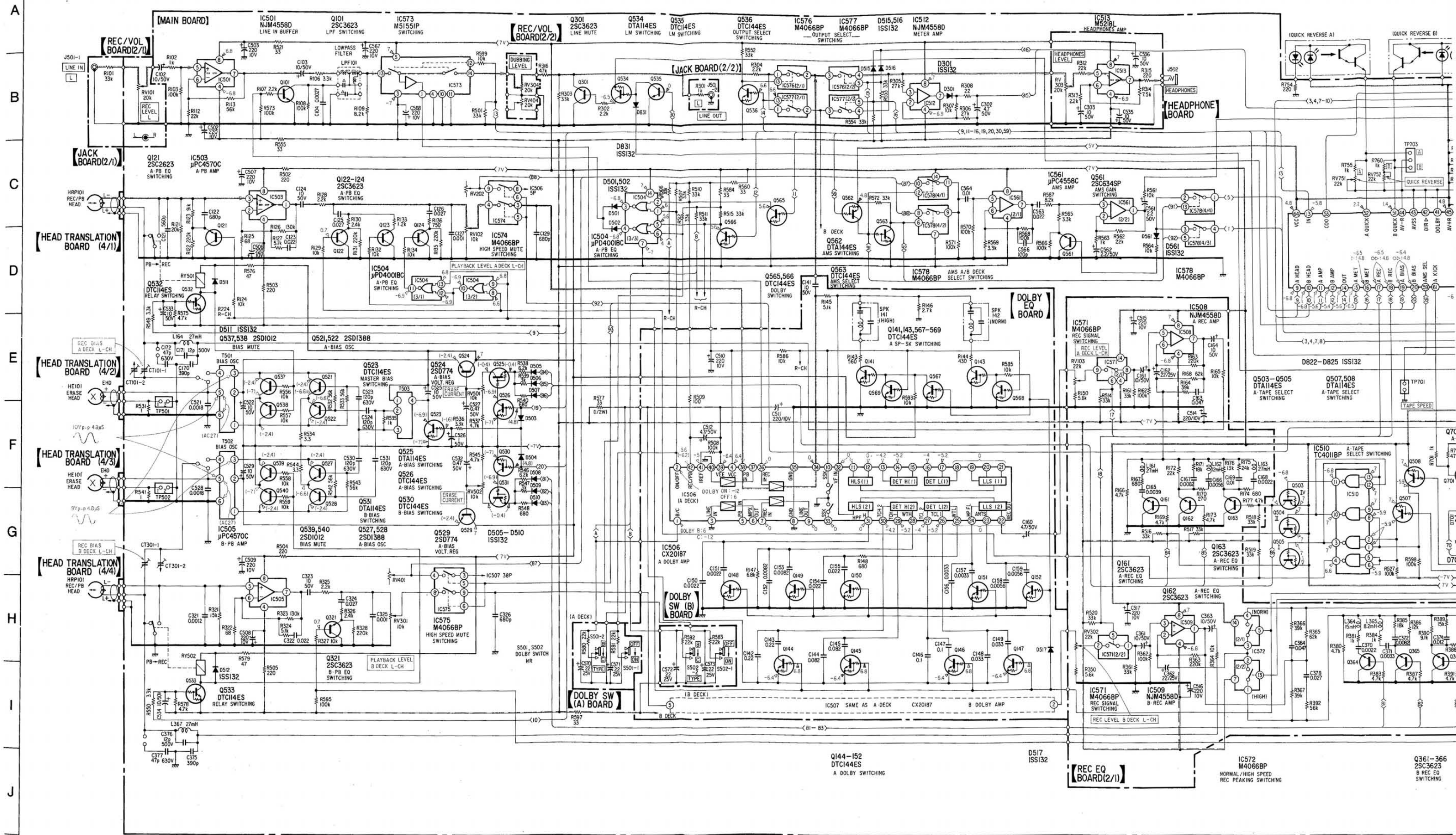


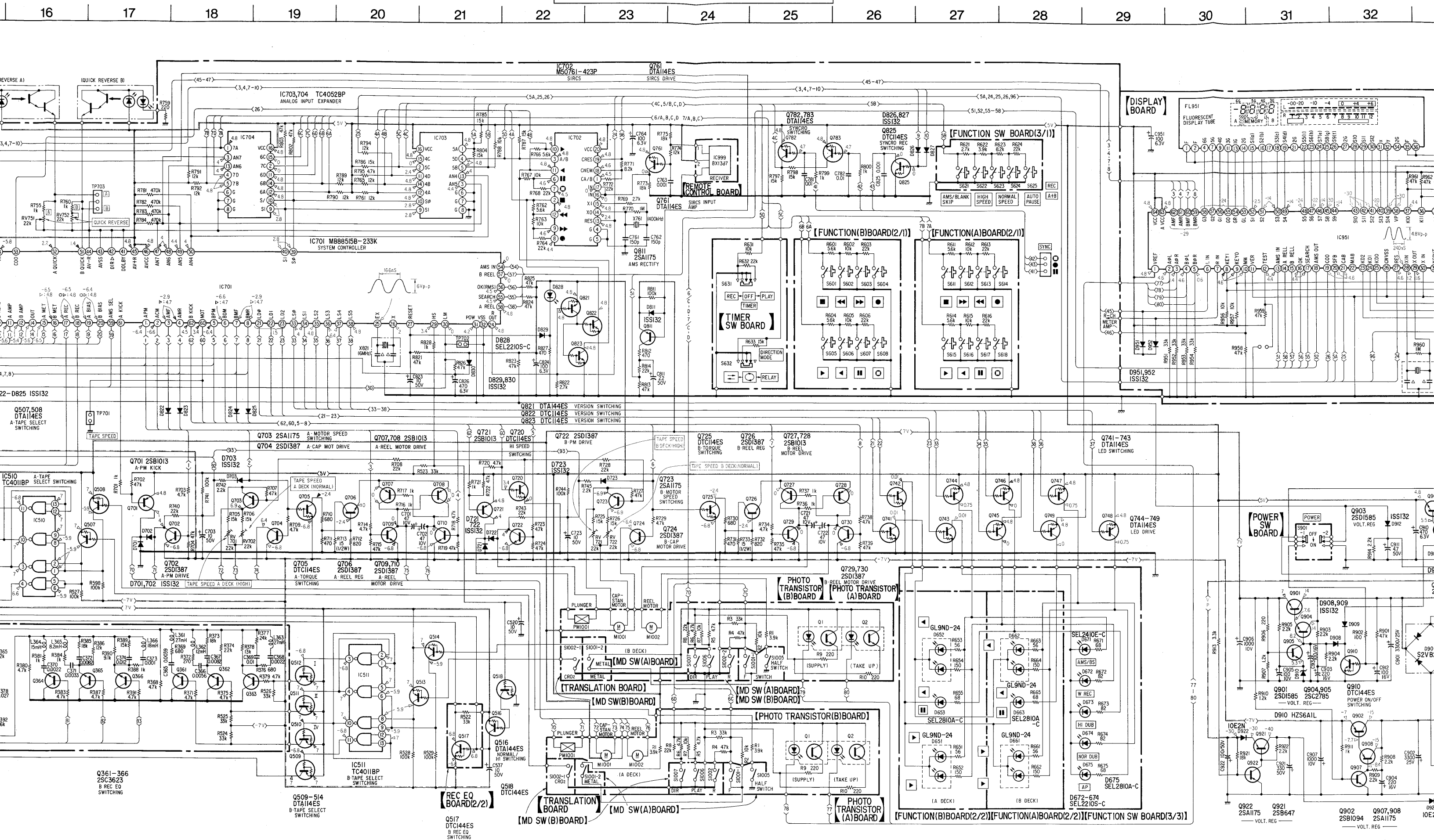
4-2. SCHEMATIC DIAGRAM
Refer to page 32 for note.

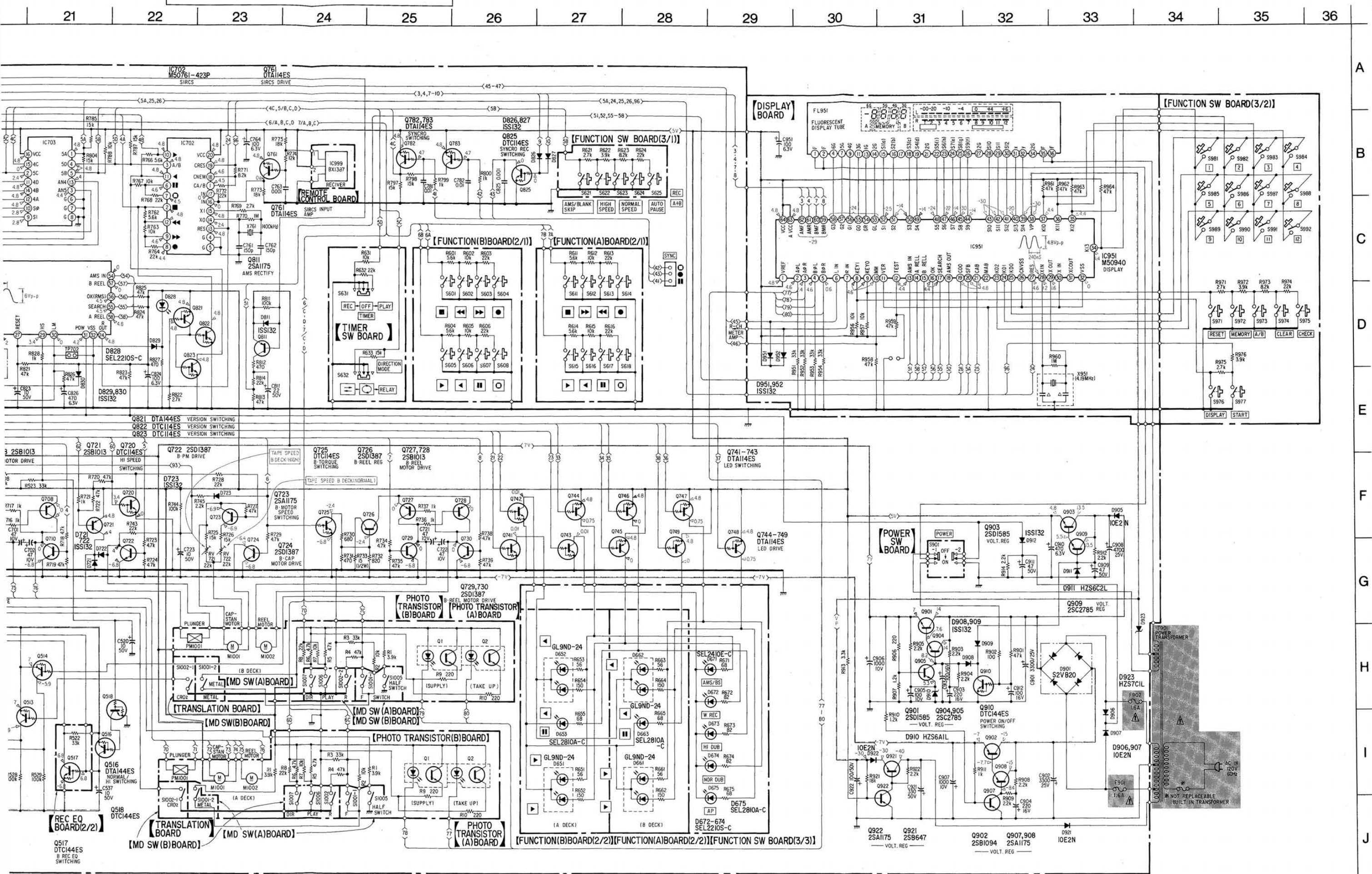


4-2. SCHEMATIC DIAGRAM

• Refer to page 32 for note.







Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : signal path.
- Δ : internal component.
- : B+ bus.
- : B- bus.
- : adjustment for repair.
- AC voltage readings in the bias oscillator with a oscilloscope.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal (detuned) conditions with VOM (50 $\text{k}\Omega/\text{V}$).
- NO MARK: Playback
(): RECORDING
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken to ground in stop mode by using oscilloscope.
- Voltage variations may be noted due to normal production tolerances.

Switches

Ref. No.	Switch	Position
S501	DOLBY NR (DECK-A)	B-TYPE OFF
S502	DOLBY NR (DECK-B)	B-TYPE OFF
S601	(DECK-A)	OFF
S602		OFF
S603		OFF
S604		OFF
S605		OFF
S606		OFF
S607		OFF
S608		OFF
S611		OFF
S612		OFF
S613	(DECK-B)	OFF
S614		OFF
S615		OFF
S616		OFF
S617		OFF
S618		OFF
S621	AMS/BLANK SKIP	OFF
S622	HIGH SPEED	OFF
S623	NORMAL SPEED	OFF
S624	AUTO PAUSE	OFF
S625	A + B REC	OFF
S631	TIMER	OFF
S632	DIRECTION MODE	OFF
S901	POWER	OFF
S971	RESET	OFF
S972	MEMORY	OFF
S973	A/B	OFF
S974	CLEAR	OFF
S975	CHECK	OFF
S976	DISPLAY	OFF
S977	START	OFF
S981	1	OFF
S982	2	OFF
S984	4	OFF
S985	5	OFF
S986	6	OFF
S987	7	OFF
S988	8	OFF
S989	9	OFF
S990	10	OFF
S991	11	OFF
S992	12	OFF
S1001	CLAW DET, METAL	OFF
S1002	CrO_2 CLAW DET	OFF
S1005	CASSETTE HALF DET	NO CLAW
S1006	PLAY	FWD
S1007	DIRECTION	FWD

Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

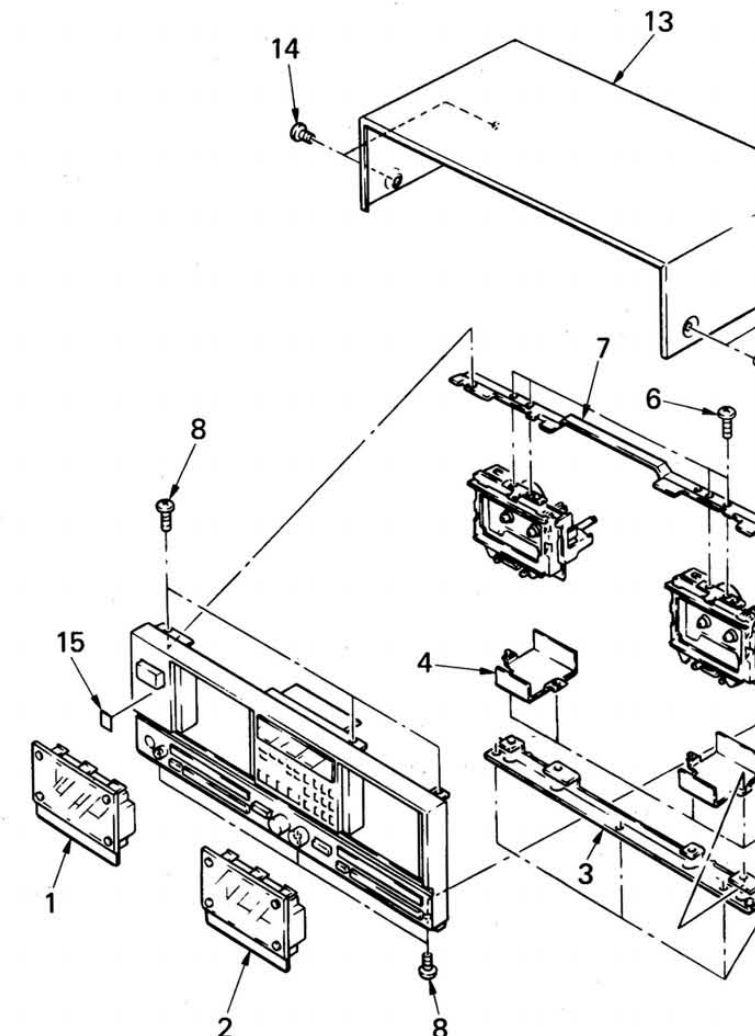
Semiconductor Lead Layouts

$\mu\text{PC4558C}$ $\mu\text{PC4570C}$ 	1SS132 HZS6A1L HZS6C2L 	2SB1013 2SB647-C 2SC2001 2SD1388 2SD1387
M4011BP M4066BP M51551P 	10E2N HZS7C1L 	2SA1345 2SA1348 2SC634SP 2SC2 2SC3402 2SC3901 DTA114ES
M4052BP 	S2VB20 Marking 	2SB1094-L 2SD1585-L
M50761-423P 	SEL2410E-C SEL2210S-C SEL2310A-C 	2SD774
MB88515B-213K M50940-400SP 	GL9ND24 	2SA1175
M5218L 		2SC3623-L MARKING SIDE VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an as part are indicated with a collar number in the remark column.
- Color Indication of Appearance Example: (RED) KNOB, BAL (WH)
- Cabinet's Color Parts'

5-1.



No.	Part No.	Description	Remarks	No.	Part No.
1	A-2169-114-A	WINDOW (A) ASSY, CASSETTE		9	X-3337-10
2	A-2169-115-A	WINDOW (B) ASSY, CASSETTE		10	X-4864-30
3	*3-337-131-01	BRACKET, MD		11	*3-337-132
4	*3-337-104-01	PLATE, SHIELD, HEAD		12	*3-332-416
5	7-685-752-04	SCREW +BVTT 3X8 (S)		13	3-332-427
6	7-685-871-01	SCREW +BVTT 3X6 (S)		14	4-886-821
7	*3-337-129-01	CHASSIS, SUB		15	3-703-713
8	7-685-752-09	SCREW +BVTT 3X8 (S)			

SECTION 5 EXPLODED VIEWS AND PARTS LIST

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The construction parts of an assembled part are indicated with a collation number in the remark column.

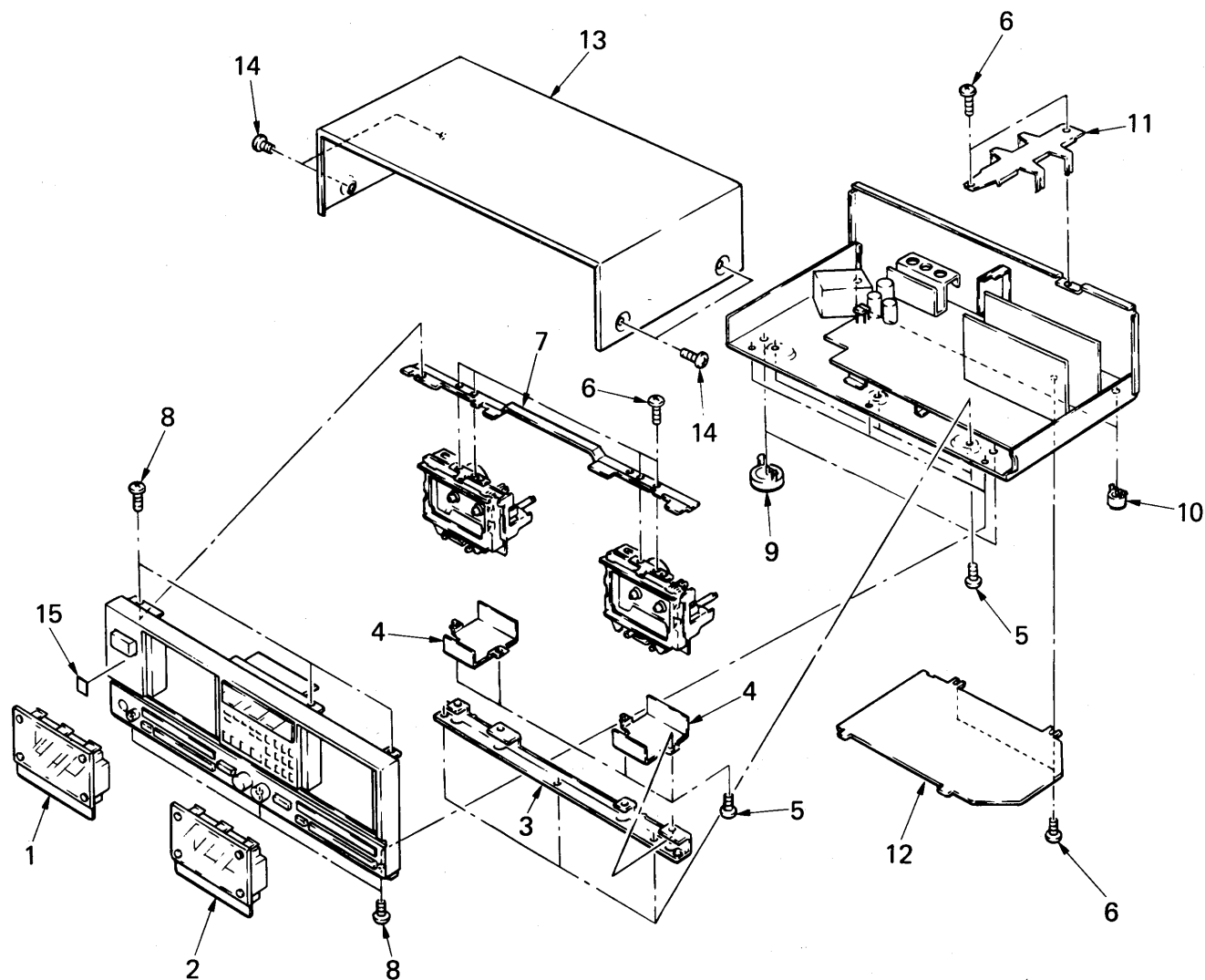
- Color Indication of Appearance Parts
Example: (RED) KNOB, BALANCE (WHITE)

Cabinet's Color

Parts' Color

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

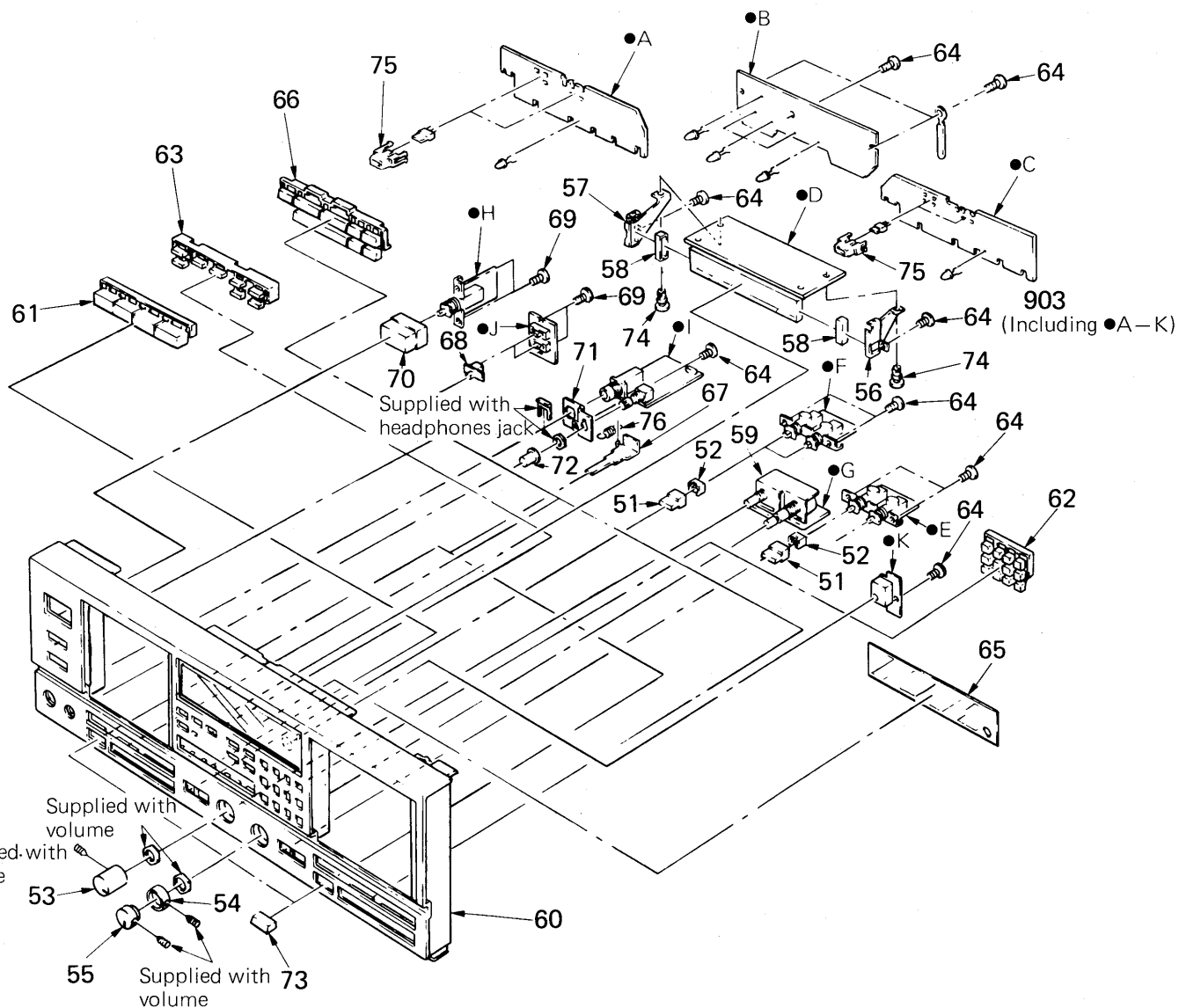
5-1.



No.	Part No.	Description	Remarks
1	A-2169-114-A	WINDOW (A) ASSY, CASSETTE	
2	A-2169-115-A	WINDOW (B) ASSY, CASSETTE	
3	*3-337-131-01	BRACKET, MD	
4	*3-337-104-01	PLATE, SHIELD, HEAD	
5	7-685-752-04	SCREW +BVTT 3X8 (S)	
6	7-685-871-01	SCREW +BVTT 3X6 (S)	
7	*3-337-129-01	CHASSIS, SUB	
8	7-685-752-09	SCREW +BVTT 3X8 (S)	

No.	Part No.	Description	Remarks
9	X-3337-104-1	FOOT ASSY, ORNAMENTAL	
10	X-4864-303-0	FOOT ASSY	
11	*3-337-132-01	REINFORCEMENT	
12	*3-332-418-01	PLATE, BOTTOM	
13	3-332-427-21	CASE	
14	4-886-821-01	SCREW, M3 CASE	
15	3-703-713-41	STICKER, SONY SYMBOL (10)	

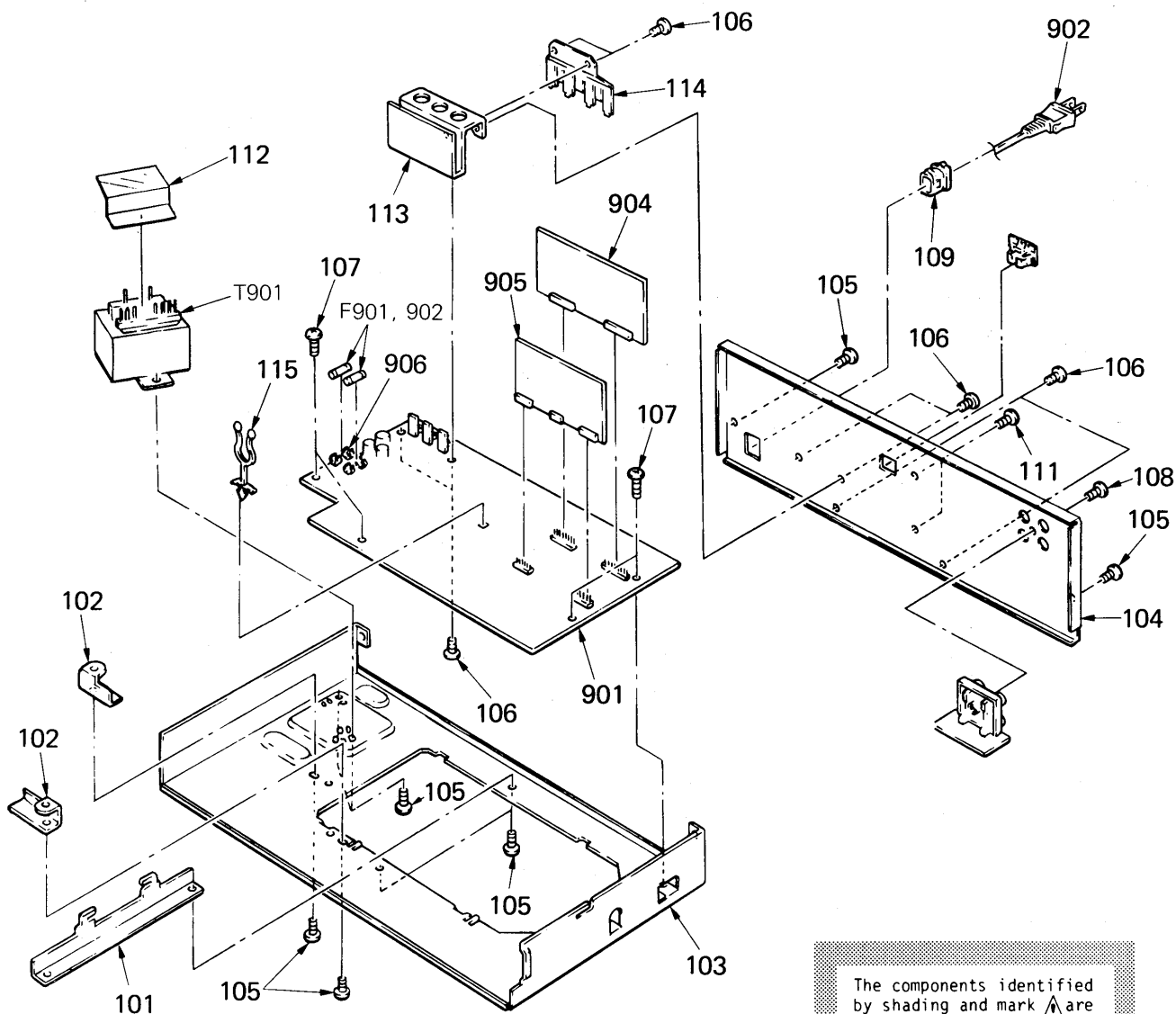
5-2.



No.	Part No.	Description	Remarks
51	3-318-909-11	KNOB, PUSH	
52	4-864-307-00	RING	
53	X-3337-103-1	KNOB ASSY, DUBBING VOL	
54	X-3337-105-1	KNOB (LEFT) ASSY, REC VOL	
55	X-3337-102-1	KNOB (RIGHT) ASSY, REC VOL	
56	*3-337-119-01	BRACKET (RIGHT), METER	
57	*3-337-118-01	BRACKET (LEFT), METER	
58	*3-337-102-01	SPACER, FL TUBE	
59	*3-337-120-01	PLATE, SHIELD	
60	X-3337-108-2	PANEL ASSY, FRONT	
61	X-3337-107-2	BUTTON ASSY, DUBBING	
62	3-337-126-01	BUTTON, RMS	
63	3-337-127-01	BUTTON, RMS COUNTER	

No.	Part No.	Description	Remarks
64	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
65	*3-337-113-01	FILTER, METER	
66	X-3337-106-1	BUTTON (MOLD) ASSY, CONTROL	
67	*3-337-101-01	SLIDER, EJECT	
68	3-307-538-21	KNOB, SWITCH, TIMER	
69	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S	
70	4-917-460-01	KNOB, POWER	
71	*3-337-107-01	BRACKET, H.P.	
72	3-575-701-41	KNOB, HEADPHONE	
73	3-323-410-31	BUTTON, EJECT	
74	4-812-134-11	RIVET NYLON, 3.5	
75	*3-337-108-01	HOLDER, LED	
76	3-307-374-00	SPRING, TENSION	
903	*A-2095-592-A	MOUNTED PCB, PANEL	

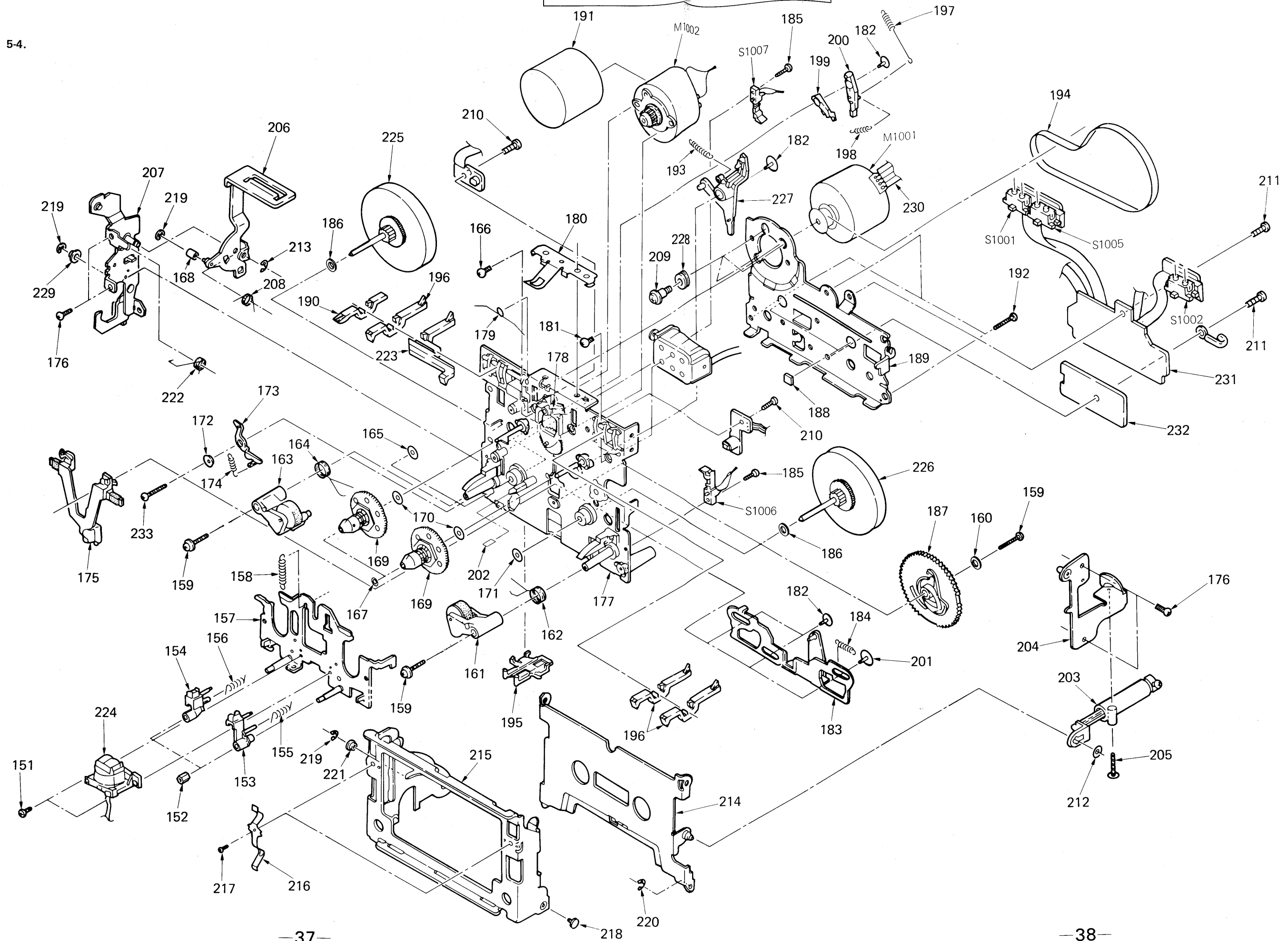
5-3.



The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	*3-337-135-01	PLATE, RELAY		113	*3-337-116-01	HEAT SINK	
102	3-323-410-31	BUTTON, EJECT		114	*3-337-105-01	RETAINER, TRANSISTOR	
103	*3-332-426-21	CHASSIS		115	4-308-851-00	PURSE LOCK	
104	*3-337-130-11	PLATE, JACK		901	*A-2056-343-A	MOUNTED PCB, MAIN	
105	7-685-752-04	SCREW +BVTT 3X8 (S)		902	1-551-511-00	CORD, POWER	
106	7-682-547-09	SCREW +B 3X6		904	*A-2095-593-A	MOUNTED PCB, DOLBY	
107	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6		905	*A-2095-594-A	MOUNTED PCB, EQ	
108	7-685-646-71	SCREW +BVTP 3X8 TYPE2 N-S		906	1-533-162-00	HOLDER, FUSE	
109	3-703-244-00	BUSHING (2104), CORD		F901	▲ 1-532-742-11	FUSE, GLASS TUBE	
111	7-685-871-01	SCREW +BVTT 3X6 (S)		F902	▲ 1-532-742-11	FUSE, GLASS TUBE	
112	*3-337-136-01	COVER, TRANSFORMER SAFETY		T901	▲ 1-448-773-11	TRANSFORMER, POWER	

5-4.



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	3-391-109-01	SCREW, WASHER		197	3-391-139-01	SPRING	
152	3-391-110-01	NUT, ADJUSTMENT		198	3-391-140-01	SPRING (A)	
153	3-391-111-01	GUIDE, TAPE		199	3-391-141-01	ARM (A)	
154	X-3391-137-1	SENCER ASSY		200	3-391-142-01	ARM (B)	
155	3-391-112-01	SPRING (RIGHT)		201	3-391-143-01	CAP	
156	3-391-113-01	SPRING (LEFT)		202	3-391-162-01	REFLECTOR	
157	X-3391-103-1	HEAD ASSY, PLATE		203	*X-3391-115-1	DAMPER ASSY	
158	3-391-114-01	SPRING		204	*3-391-144-01	BRACKET (R), DAMPER	
159	3-391-168-01	SCREW (2X13), WAVE		205	7-621-955-75	SCREW, TOTSU PWH 2X12	
161	X-3391-104-1	PINCH ROLLER ASSY		206	3-391-163-01	LEVER (B), EJECT	
162	3-391-115-01	SPRING (RIGHT)		207	*X-3391-138-1	ARM ASSY, EJECT	
163	X-3391-105-1	PINCH ROLLER ASSY		208	3-391-146-01	SPRING (B)	
164	3-391-116-01	SPRING (LEFT)		209	3-391-147-01	SCREW, MOTOR FITTING	
165	3-391-117-01	SEAL, WASHER OIL		210	7-685-105-14	SCREW +P 2X8	
166	3-391-118-01	SCREW, WASHER		211	7-685-750-04	SCREW +PTT 3X5 (S)	
167	3-701-436-11	WASHER, 1.6		212	*3-391-148-01	WASHER LOCK	
168	3-391-164-01	ROLLER		213	7-624-105-04	STOP RING 2.3, TYPE -E	
169	X-3391-107-1	REEL ASSY, T.U		214	3-391-149-01	PLATE, ORNAMENTAL	
170	3-327-708-31	WASHER		215	3-391-171-01	HOLDER, CASSETTE	
171	3-391-119-01	SEAL, WASHER OIL		216	3-391-151-01	SPRING	
172	3-391-120-01	CALLOR		217	7-685-780-04	SCREW +PTT 2X3 (S)	
173	3-391-121-01	ARM, EJECT SAFETY		218	3-391-152-01	STUD, DOOR	
174	3-391-122-01	SPRING (A)		219	7-624-102-04	STOP RING 1.5, TYPE -E	
175	X-3391-108-1	BRAKE ASSY		220	7-624-104-04	STOP RING 2.0, TYPE -E	
176	7-685-790-04	SCREW +PTT 2.6X4 (S)		221	3-391-153-01	ROLLER	
177	X-3391-110-1	CHASSIS ASSY		222	*3-391-176-01	SP (A), EJECT	
178	X-3391-111-1	IDLER ASSY		223	3-391-159-01	LEVER, METAL INSPECTION	
179	3-391-124-01	SPRING		224	X-3391-132-1	HEAD ASSY, ROTARY	
180	3-391-125-01	SPRING		225	X-3391-129-1	ASSY F/W	
181	7-628-253-95	SCREW +PS 2.6X4		226	X-3391-133-1	ASSY F/W	
182	3-391-126-01	CAP		227	X-3391-114-1	ARM ASSY, PLAY	
183	X-3391-112-1	PLATE ASSY, SLIDE		228	3-391-138-01	MOTOR, CUSHION	
184	3-391-127-01	SPRING		229	3-391-165-01	ROLLER	
185	7-685-104-14	SCREW +P 2X6 TYPE2 SLIT		230	*3-391-166-01	WIRE, JUMPER, 4 ARBOR	
186	3-701-438-11	WASHER, 2.5		231	*X-3391-140-1	WIRING ASSY, CONNECTOR	
187	3-391-170-01	GEAR (D), CAM		232	*3-391-173-01	PANEL, HEAD RELAY	
188	3-391-169-01	SPACER, SQUER		233	7-685-106-21	SCREW +P 2X10 TYPE2 SLIT	
189	*3-391-130-01	BRACKET (B), F/W		M1001	X-3391-117-1	MOTOR ASSY	
190	3-391-131-01	LEVER, PACK INSPECTION		M1002	X-3391-118-1	MOTOR ASSY	
191	3-391-132-01	PLATE, SHIELD		S1001	1-570-720-11	SWITCH, PUSH (1 KEY)(ERASE PROOF, METAL)	
192	7-685-134-14	SCREW +P 2.6X8 TYPE2 NON-SLIT		S1005	1-570-723-11	SWITCH, PUSH (1 KEY)(CASSETTE HALF DET)	
193	3-391-133-01	SPRING		S1006	1-570-719-11	SWITCH, LEAF (PLAY)	
194	3-391-134-01	BELT, MAIN		S1007	1-570-721-11	SWITCH, LEAF (DIRECTION)	
195	3-391-137-01	HOLDER, REED					
196	3-391-157-01	LEVER, REC INSPECTION					

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μμF.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

MMH: mH, UH: μH

SEMICONDUCTORS

In each case, U: μ, for example:

UA...: μA..., UPA...: μPA..., UPC...: μPC,
UPD...: μPD...

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*A-2056-343-A	MOUNTED PCB, MAIN
902	1-551-511-00	CORD, POWER
903	*A-2095-592-A	MOUNTED PCB, PANEL
904	*A-2095-593-A	MOUNTED PCB, DOLBY
905	*A-2095-594-A	MOUNTED PCB, EQ
906	1-533-162-00	HOLDER, FUSE
C102	1-124-907-00	ELECT 10MF 20% 50V
C103	1-124-907-00	ELECT 10MF 20% 50V
C104	1-110-200-00	MYLAR 0.0027MF 5% 50V
C121	1-110-218-11	MYLAR 560PF 5% 50V
C122	1-110-219-11	MYLAR 680PF 5% 50V
C123	1-130-305-00	FILM 0.022MF 5% 100V
C124	1-124-186-00	ELECT 10MF 20% 50V
C125	1-136-158-00	FILM 0.027MF 5% 50V
C126	1-136-158-00	FILM 0.027MF 5% 50V
C127	1-162-110-00	CERAMIC 0.001MF 10% 50V
C129	1-162-108-00	CERAMIC 680PF 10% 50V
C141	1-124-186-00	ELECT 10MF 20% 50V
C142	1-136-169-00	FILM 0.22MF 5% 50V
C143	1-136-169-00	FILM 0.22MF 5% 50V
C144	1-136-164-00	FILM 0.082MF 5% 50V
C145	1-136-164-00	FILM 0.082MF 5% 50V
C146	1-136-165-00	FILM 0.1MF 5% 50V
C147	1-136-165-00	FILM 0.1MF 5% 50V
C148	1-136-159-00	FILM 0.033MF 5% 50V
C149	1-136-159-00	FILM 0.033MF 5% 50V
C150	1-130-475-00	MYLAR 0.0022MF 5% 50V
C151	1-130-475-00	MYLAR 0.0022MF 5% 50V
C152	1-110-206-00	MYLAR 0.0082MF 5% 50V
C153	1-110-206-00	MYLAR 0.0082MF 5% 50V
C154	1-136-157-00	FILM 0.022MF 5% 50V
C155	1-136-157-00	FILM 0.022MF 5% 50V
C156	1-110-201-00	MYLAR 0.0033MF 5% 50V
C157	1-110-201-00	MYLAR 0.0033MF 5% 50V
C158	1-110-204-00	MYLAR 0.0056MF 5% 50V
C159	1-110-204-00	MYLAR 0.0056MF 5% 50V
C160	1-124-927-11	ELECT 4.7MF 20% 50V
C161	1-124-907-00	ELECT 10MF 20% 50V
C162	1-124-481-11	ELECT 22MF 20% 25V
C163	1-136-161-00	FILM 0.047MF 5% 50V
C164	1-124-907-00	ELECT 10MF 20% 50V
C165	1-110-202-00	MYLAR 0.0039MF 5% 50V
C166	1-110-204-00	MYLAR 0.0056MF 5% 50V
C167	1-110-206-00	MYLAR 0.0082MF 5% 50V
C168	1-130-475-00	MYLAR 0.0022MF 5% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C169	1-136-153-00	FILM 0.01MF 5% 50V
C170	1-162-105-00	CERAMIC 390PF 10% 50V
C171	1-107-204-00	MICA 12PF 5% 500V
C172	1-136-270-11	FILM 47PF 5% 630V
C302	1-124-927-11	ELECT 4.7MF 20% 50V
C303	1-124-907-00	ELECT 10MF 20% 50V
C321	1-110-196-00	MYLAR 0.0012MF 5% 50V
C322	1-130-305-00	FILM 0.022MF 5% 100V
C323	1-124-186-00	ELECT 10MF 20% 50V
C324	1-136-158-00	FILM 0.027MF 5% 50V
C325	1-162-110-00	CERAMIC 0.001MF 10% 50V
C326	1-162-108-00	CERAMIC 680PF 10% 50V
C341	1-124-186-00	ELECT 10MF 20% 50V
C342	1-136-169-00	FILM 0.22MF 5% 50V
C343	1-136-169-00	FILM 0.22MF 5% 50V
C344	1-136-164-00	FILM 0.082MF 5% 50V
C345	1-136-164-00	FILM 0.082MF 5% 50V
C346	1-136-165-00	FILM 0.1MF 5% 50V
C347	1-136-165-00	FILM 0.1MF 5% 50V
C348	1-136-159-00	FILM 0.033MF 5% 50V
C349	1-136-159-00	FILM 0.033MF 5% 50V
C350	1-130-475-00	MYLAR 0.0022MF 5% 50V
C351	1-130-475-00	MYLAR 0.0022MF 5% 50V
C352	1-110-206-00	MYLAR 0.0082MF 5% 50V
C353	1-110-206-00	MYLAR 0.0082MF 5% 50V
C354	1-136-157-00	FILM 0.022MF 5% 50V
C355	1-136-157-00	FILM 0.022MF 5% 50V
C356	1-110-201-00	MYLAR 0.0033MF 5% 50V
C357	1-110-201-00	MYLAR 0.0033MF 5% 50V
C358	1-110-204-00	MYLAR 0.0056MF 5% 50V
C359	1-110-204-00	MYLAR 0.0056MF 5% 50V
C360	1-124-927-11	ELECT 4.7MF 20% 50V
C361	1-124-907-00	ELECT 10MF 20% 50V
C362	1-124-481-11	ELECT 22MF 20% 25V
C363	1-124-907-00	ELECT 10MF 20% 50V
C364	1-136-161-00	FILM 0.047MF 5% 50V
C365	1-110-202-00	MYLAR 0.0039MF 5% 50V
C366	1-110-204-00	MYLAR 0.0056MF 5% 50V
C367	1-110-206-00	MYLAR 0.0082MF 5% 50V
C368	1-130-475-00	MYLAR 0.0022MF 5% 50V
C369	1-136-153-00	FILM 0.01MF 5% 50V
C370	1-130-475-00	MYLAR 0.0022MF 5% 50V
C371	1-110-201-00	MYLAR 0.0033MF 5% 50V
C372	1-110-206-00	MYLAR 0.0082MF 5% 50V
C373	1-110-195-00	MYLAR 0.001MF 5% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C374	1-136-154-00	FILM	0.012MF	5%	50V
C375	1-162-105-00	CERAMIC	390PF	10%	50V
C376	1-107-204-00	MICA	12PF	5%	500V
C377	1-136-270-11	FILM	47PF	5%	630V
C378	1-136-158-00	FILM	0.027MF	5%	50V
C502	1-124-444-00	ELECT	220MF	20%	10V
C503	1-124-444-00	ELECT	220MF	20%	10V
C506	1-124-444-00	ELECT	220MF	20%	10V
C507	1-124-444-00	ELECT	220MF	20%	10V
C508	1-124-444-00	ELECT	220MF	20%	10V
C509	1-124-444-00	ELECT	220MF	20%	10V
C510	1-124-444-00	ELECT	220MF	20%	10V
C511	1-124-444-00	ELECT	220MF	20%	10V
C512	1-124-927-11	ELECT	4.7MF	20%	50V
C513	1-124-927-11	ELECT	4.7MF	20%	50V
C514	1-124-444-00	ELECT	220MF	20%	10V
C515	1-124-444-00	ELECT	220MF	20%	10V
C516	1-124-444-00	ELECT	220MF	20%	10V
C517	1-124-444-00	ELECT	220MF	20%	10V
C518	1-124-444-00	ELECT	220MF	20%	10V
C519	1-124-444-00	ELECT	220MF	20%	10V
C520	1-124-907-00	ELECT	10MF	20%	50V
C522	1-124-907-00	FLECT	10MF	20%	50V
C523	1-136-434-11	FILM	120PF	5%	630V
C524	1-136-434-11	FILM	120PF	5%	630V
C525	1-124-907-00	ELECT	10MF	20%	50V
C526	1-124-903-00	ELECT	1MF	20%	50V
C527	1-123-351-00	ELECT	0.47MF	20%	50V
C529	1-124-907-00	ELECT	10MF	20%	50V
C530	1-136-434-11	FILM	120PF	5%	630V
C531	1-136-434-11	FILM	120PF	5%	630V
C532	1-123-351-00	ELECT	0.47MF	20%	50V
C533	1-124-907-00	ELECT	10MF	20%	50V
C534	1-124-907-00	ELECT	10MF	20%	50V
C535	1-124-907-00	ELECT	10MF	20%	50V
C536	1-124-907-00	ELECT	10MF	20%	50V
C537	1-124-907-00	ELECT	10MF	20%	50V
C561	1-124-904-00	ELECT	2.2MF	20%	50V
C562	1-124-904-00	ELECT	2.2MF	20%	50V
C563	1-162-596-00	CERAMIC	0.022MF		25V
C564	1-162-306-31	CERAMIC	0.01MF	30%	16V
C566	1-162-282-31	CERAMIC	100PF	10%	50V
C567	1-124-995-11	ELECT	220MF	20%	10V
C568	1-124-995-11	ELECT	220MF	20%	10V
C570	1-124-481-11	ELECT	22MF	20%	25V
C571	1-124-481-11	ELECT	22MF	20%	25V
C572	1-124-481-11	ELECT	22MF	20%	25V
C573	1-124-481-11	ELECT	22MF	20%	25V
C574	1-162-113-00	CERAMIC	0.01MF	30%	16V
C701	1-124-892-11	ELECT	47MF	20%	10V
C702	1-124-892-11	ELECT	47MF	20%	10V
C703	1-124-907-00	ELECT	10MF	20%	50V
C721	1-124-892-11	ELECT	47MF	20%	10V
C722	1-124-892-11	ELECT	47MF	20%	10V
C723	1-124-907-00	ELECT	10MF	20%	50V
C761	1-162-100-00	CERAMIC	150PF	10%	50V
C762	1-162-100-00	CERAMIC	150PF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C763	1-162-110-00	CERAMIC	0.001MF	10%	50V
C764	1-124-468-11	ELECT	100MF	20%	6.3V
C781	1-162-113-00	CERAMIC	0.01MF	30%	16V
C782	1-162-113-00	CERAMIC	0.01MF	30%	16V
C811	1-124-904-00	ELECT	2.2MF	20%	50V
C823	1-124-907-00	ELECT	10MF	20%	50V
C824	1-124-468-11	ELECT	100MF	20%	6.3V
C825	1-162-110-00	CERAMIC	0.001MF	10%	50V
C826	1-124-470-11	ELECT	470MF	20%	6.3V
C901	1-124-636-00	ELECT	3300MF	20%	25V
C902	1-124-636-00	ELECT	3300MF	20%	25V
C903	1-123-321-00	ELECT	220MF	20%	16V
C904	1-123-321-00	ELECT	220MF	20%	16V
C905	1-124-443-00	ELECT	100MF	20%	10V
C906	1-124-473-11	ELECT	1000MF	20%	10V
C907	1-124-473-11	ELECT	1000MF	20%	10V
C908	1-124-564-11	ELECT	4700MF	20%	25V
C909	1-124-927-11	ELECT	4.7MF	20%	50V
C910	1-124-470-11	ELECT	470MF	20%	6.3V
C911	1-124-927-11	ELECT	4.7MF	20%	50V
C912	1-124-445-00	ELECT	100MF	20%	16V
C913	1-124-445-00	ELECT	100MF	20%	16V
C921	1-124-912-11	ELECT	330MF	20%	50V
C922	1-124-122-11	ELECT	100MF	20%	50V
C951	1-124-468-11	ELECT	100MF	20%	6.3V
CN531	*1-563-660-11	CONNECTOR 9P			
CN532	*1-563-656-11	CONNECTOR 5P			
CN533	*1-563-657-11	CONNECTOR 6P			
CN534	*1-563-665-11	CONNECTOR 14P			
CN535	*1-563-666-11	CONNECTOR 15P			
CNP501	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP502	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP503	*1-564-337-51	PIN, CONNECTOR 3P			
CNP504	*1-564-337-61	PIN, CONNECTOR 3P			
CNP505	*1-564-338-61	PIN, CONNECTOR 4P			
CNP506	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP507	*1-564-509-11	PLUG, CONNECTOR 6P			
CNP508	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP509	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP510	*1-564-509-11	PLUG, CONNECTOR 6P			
CNP511	*1-564-337-71	PIN, CONNECTOR 3P			
CNP512	*1-564-337-81	PIN, CONNECTOR 3P			
CNP513	*1-564-337-51	PIN, CONNECTOR 3P			
CNP521	*1-560-339-00	PIN, CONNECTOR 9P			
CNP522	*1-560-063-00	PIN, CONNECTOR 5P			
CNP523	*1-560-064-00	PIN, CONNECTOR 6P			
CNP524	*1-506-535-11	PIN, CONNECTOR 14P			
CNP525	*1-566-221-11	PIN, CONNECTOR 15P			
CNP701	*1-564-337-21	PIN, CONNECTOR 3P			
CNP702	*1-564-340-21	PIN, CONNECTOR 6P			
CNP703	*1-564-338-21	PIN, CONNECTOR 4P			
CNP704	*1-564-337-00	PIN, CONNECTOR 3P			
CNP705	*1-564-337-51	PIN, CONNECTOR 3P			
CNP706	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP707	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP708	*1-564-338-71	PIN, CONNECTOR 4P			
CNP709	*1-564-340-51	PIN, CONNECTOR 6P			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNP710*	1-564-337-61	PIN, CONNECTOR 3P
CNP711*	1-564-338-51	PIN, CONNECTOR 4P
CNP712*	1-564-338-81	PIN, CONNECTOR 4P
CNP901*	1-564-339-61	PIN, CONNECTOR 5P
CNP902*	1-564-339-51	PIN, CONNECTOR 5P
CT101	1-141-225-00	CAP, TUNING, TRIMAR
CT301	1-141-225-00	CAP, TUNING, TRIMAR
D301	8-719-940-76	DIODE 1SS132
D407	8-719-940-76	DIODE 1SS132
D501	8-719-940-76	DIODE 1SS132
D502	8-719-940-76	DIODE 1SS132
D503	8-719-940-76	DIODE 1SS132
D504	8-719-940-76	DIODE 1SS132
D505	8-719-940-76	DIODE 1SS132
D506	8-719-940-76	DIODE 1SS132
D507	8-719-940-76	DIODE 1SS132
D508	8-719-940-76	DIODE 1SS132
D509	8-719-940-76	DIODE 1SS132
D510	8-719-940-76	DIODE 1SS132
D511	8-719-940-76	DIODE 1SS132
D512	8-719-940-76	DIODE 1SS132
D515	8-719-940-76	DIODE 1SS132
D516	8-719-940-76	DIODE 1SS132
D517	8-719-940-76	DIODE 1SS132
D561	8-719-940-76	DIODE 1SS132
D651	8-719-939-83	DIODE GL9ND24
D652	8-719-939-83	DIODE GL9ND24
D653	8-719-301-52	DIODE SEL2810A-C
D661	8-719-939-83	DIODE GL9ND24
D662	8-719-939-83	DIODE GL9ND24
D663	8-719-301-52	DIODE SEL2810A-C
D671	8-719-301-43	DIODE SEL2410E-C
D672	8-719-301-38	DIODE SEL2210S-C
D673	8-719-301-38	DIODE SEL2210S-C
D674	8-719-301-38	DIODE SEL2210S-C
D675	8-719-301-52	DIODE SEL2810A-C
D701	8-719-200-77	DIODE 10E2N
D702	8-719-940-76	DIODE 1SS132
D703	8-719-940-76	DIODE 1SS132
D721	8-719-200-77	DIODE 10E2N
D722	8-719-940-76	DIODE 1SS132
D723	8-719-940-76	DIODE 1SS132
D811	8-719-940-76	DIODE 1SS132
D822	8-719-940-76	DIODE 1SS132
D823	8-719-940-76	DIODE 1SS132
D824	8-719-940-76	DIODE 1SS132
D825	8-719-940-76	DIODE 1SS132
D826	8-719-940-76	DIODE 1SS132
D827	8-719-940-76	DIODE 1SS132
D828	8-719-301-38	DIODE SEL2210S-C
D829	8-719-940-76	DIODE 1SS132
D830	8-719-200-77	DIODE 10E2N
D831	8-719-940-76	DIODE 1SS132
D901	8-719-502-20	DIODE S2VB20
D905	8-719-200-77	DIODE 10E2N
D906	8-719-200-77	DIODE 10E2N
D907	8-719-200-77	DIODE 10E2N
D908	8-719-940-76	DIODE 1SS132

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D909	8-719-940-76	DIODE 1SS132
D910	8-719-933-33	DIODE HZS6A1L
D911	8-719-933-41	DIODE HZS6C3L
D912	8-719-940-76	DIODE 1SS132
D921	8-719-200-77	DIODE 10E2N
D922	8-719-200-77	DIODE 10E2N
D923	8-719-933-49	DIODE HZS7C1L
D951	8-719-940-76	DIODE 1SS132
D952	8-719-940-76	DIODE 1SS132
F901	A.1-532-742-11	FUSE, GLASS TUBE
F902	A.1-532-742-11	FUSE, GLASS TUBE
FL951	1-519-401-11	INDICATOR TUBE, FLUORESCENT
IC501	8-759-145-58	IC UPC4558C
IC503	8-759-106-41	IC UPC4570C
IC504	8-759-601-06	IC M4001BP
IC505	8-759-106-41	IC UPC4570C
IC506	8-752-018-70	IC CX20187
IC507	8-752-018-70	IC CX20187
IC508	8-759-145-58	IC UPC4558C
IC509	8-759-145-58	IC UPC4558C
IC510	8-759-601-06	IC M4011BP
IC511	8-759-601-06	IC M4011BP
IC512	8-759-600-02	IC M5218L
IC513	8-759-600-02	IC M5218L
IC561	8-759-145-58	IC UPC4558C
IC571	8-759-601-43	IC M4066BP
IC572	8-759-601-43	IC M4066BP
IC573	8-759-604-71	IC M51551P
IC574	8-759-601-43	IC M4066BP
IC575	8-759-601-43	IC M4066BP
IC576	8-759-601-43	IC M4066BP
IC577	8-759-601-43	IC M4066BP
IC578	8-759-601-43	IC M4066BP
IC701	8-759-939-76	IC MB88515B-233K
IC702	8-759-604-07	IC M50761-423P
IC703	8-759-240-52	IC M4052BP
IC704	8-759-240-52	IC M4052BP
IC951	8-759-603-79	IC M50940-400SP
IC999	8-741-138-70	IC BX-1387
J501	1-507-908-11	JACK, PIN 4P
J502	1-507-796-21	JACK
L161	1-408-929-00	MICRO INDUCTOR 27MMH
L162	1-408-925-11	MICRO INDUCTOR 12MMH
L163	1-408-929-00	MICRO INDUCTOR 27MMH
L164	1-408-929-00	MICRO INDUCTOR 27MMH
L261	1-408-929-00	MICRO INDUCTOR 27MMH
L262	1-408-925-11	MICRO INDUCTOR 12MMH
L263	1-408-929-00	MICRO INDUCTOR 27MMH
L264	1-408-929-00	MICRO INDUCTOR 27MMH
L361	1-408-929-00	MICRO INDUCTOR 27MMH
L362	1-408-925-11	MICRO INDUCTOR 12MMH
L363	1-408-929-00	MICRO INDUCTOR 27MMH
L364	1-408-926-11	MICRO INDUCTOR 15MMH
L365	1-408-923-00	MICRO INDUCTOR 8.2MMH
L366	1-408-927-11	MICRO INDUCTOR 18MMH
L367	1-408-929-00	MICRO INDUCTOR 27MMH

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
L461	1-408-929-00	MICRO INDUCTOR 27MMH
L462	1-408-925-11	MICRO INDUCTOR 12MMH
L463	1-408-929-00	MICRO INDUCTOR 27MMH
L464	1-408-926-11	MICRO INDUCTOR 15MMH
L465	1-408-923-00	MICRO INDUCTOR 8.2MMH
L466	1-408-927-11	MICRO INDUCTOR 18MMH
L467	1-408-929-00	MICRO INDUCTOR 27MMH
LPF101	1-235-764-11	FILTER, LOW PASS
LPF201	1-235-764-11	FILTER, LOW PASS
M1001	X-3391-117-1	MOTOR ASSY
M1002	X-3391-118-1	MOTOR ASSY
PM1001	1-454-428-11	SOLENOID, PLUNGER
Q1	1-807-509-11	PHOTO SENSOR (GP2S09)
Q2	1-807-509-11	PHOTO SENSOR (GP2S09)
Q101	8-729-107-77	TRANSISTOR 2SC3623-L
Q121	8-729-107-77	TRANSISTOR 2SC3623-L
Q122	8-729-107-77	TRANSISTOR 2SC3623-L
Q123	8-729-107-77	TRANSISTOR 2SC3623-L
Q124	8-729-107-77	TRANSISTOR 2SC3623-L
Q141	8-729-806-38	TRANSISTOR 2SC3399
Q143	8-729-806-38	TRANSISTOR 2SC3399
Q144	8-729-806-38	TRANSISTOR 2SC3399
Q145	8-729-806-38	TRANSISTOR 2SC3399
Q146	8-729-806-38	TRANSISTOR 2SC3399
Q147	8-729-806-38	TRANSISTOR 2SC3399
Q148	8-729-806-38	TRANSISTOR 2SC3399
Q149	8-729-806-38	TRANSISTOR 2SC3399
Q150	8-729-806-38	TRANSISTOR 2SC3399
Q151	8-729-806-38	TRANSISTOR 2SC3399
Q152	8-729-806-38	TRANSISTOR 2SC3399
Q161	8-729-107-77	TRANSISTOR 2SC3623-L
Q162	8-729-107-77	TRANSISTOR 2SC3623-L
Q163	8-729-107-77	TRANSISTOR 2SC3623-L
Q201	8-729-107-77	TRANSISTOR 2SC3623-L
Q221	8-729-107-77	TRANSISTOR 2SC3623-L
Q222	8-729-107-77	TRANSISTOR 2SC3623-L
Q223	8-729-107-77	TRANSISTOR 2SC3623-L
Q224	8-729-107-77	TRANSISTOR 2SC3623-L
Q241	8-729-806-38	TRANSISTOR 2SC3399
Q243	8-729-806-38	TRANSISTOR 2SC3399
Q244	8-729-806-38	TRANSISTOR 2SC3399
Q245	8-729-806-38	TRANSISTOR 2SC3399
Q246	8-729-806-38	TRANSISTOR 2SC3399
Q247	8-729-806-38	TRANSISTOR 2SC3399
Q248	8-729-806-38	TRANSISTOR 2SC3399
Q249	8-729-806-38	TRANSISTOR 2SC3399
Q250	8-729-806-38	TRANSISTOR 2SC3399
Q251	8-729-806-38	TRANSISTOR 2SC3399
Q252	8-729-806-38	TRANSISTOR 2SC3399
Q261	8-729-107-77	TRANSISTOR 2SC3623-L
Q262	8-729-107-77	TRANSISTOR 2SC3623-L
Q263	8-729-107-77	TRANSISTOR 2SC3623-L
Q301	8-729-100-13	TRANSISTOR 2SC2001
Q321	8-729-107-77	TRANSISTOR 2SC3623-L
Q341	8-729-806-38	TRANSISTOR 2SC3399
Q343	8-729-806-38	TRANSISTOR 2SC3399
Q344	8-729-806-38	TRANSISTOR 2SC3399
Q345	8-729-806-38	TRANSISTOR 2SC3399
Q346	8-729-806-38	TRANSISTOR 2SC3399

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q347	8-729-806-38	TRANSISTOR 2SC3399
Q348	8-729-806-38	TRANSISTOR 2SC3399
Q349	8-729-806-38	TRANSISTOR 2SC3399
Q350	8-729-806-38	TRANSISTOR 2SC3399
Q351	8-729-806-38	TRANSISTOR 2SC3399
Q352	8-729-806-38	TRANSISTOR 2SC3399
Q361	8-729-107-77	TRANSISTOR 2SC3623-L
Q362	8-729-107-77	TRANSISTOR 2SC3623-L
Q363	8-729-107-77	TRANSISTOR 2SC3623-L
Q364	8-729-107-77	TRANSISTOR 2SC3623-L
Q365	8-729-107-77	TRANSISTOR 2SC3623-L
Q366	8-729-107-77	TRANSISTOR 2SC3623-L
Q401	8-729-100-13	TRANSISTOR 2SC2001
Q421	8-729-107-77	TRANSISTOR 2SC3623-L
Q441	8-729-806-38	TRANSISTOR 2SC3399
Q443	8-729-806-38	TRANSISTOR 2SC3399
Q444	8-729-806-38	TRANSISTOR 2SC3399
Q445	8-729-806-38	TRANSISTOR 2SC3399
Q446	8-729-806-38	TRANSISTOR 2SC3399
Q447	8-729-806-38	TRANSISTOR 2SC3399
Q448	8-729-806-38	TRANSISTOR 2SC3399
Q449	8-729-806-38	TRANSISTOR 2SC3399
Q450	8-729-806-38	TRANSISTOR 2SC3399
Q451	8-729-806-38	TRANSISTOR 2SC3399
Q452	8-729-806-38	TRANSISTOR 2SC3399
Q461	8-729-107-77	TRANSISTOR 2SC3623-L
Q462	8-729-107-77	TRANSISTOR 2SC3623-L
Q463	8-729-107-77	TRANSISTOR 2SC3623-L
Q464	8-729-107-77	TRANSISTOR 2SC3623-L
Q465	8-729-107-77	TRANSISTOR 2SC3623-L
Q466	8-729-107-77	TRANSISTOR 2SC3623-L
Q503	8-729-159-01	TRANSISTOR 2SA1348
Q504	8-729-159-01	TRANSISTOR 2SA1348
Q505	8-729-159-01	TRANSISTOR 2SA1348
Q507	8-729-806-20	TRANSISTOR 2SA1345
Q508	8-729-806-20	TRANSISTOR 2SA1345
Q509	8-729-159-01	TRANSISTOR 2SA1348
Q510	8-729-159-01	TRANSISTOR 2SA1348
Q511	8-729-159-01	TRANSISTOR 2SA1348
Q512	8-729-159-01	TRANSISTOR 2SA1348
Q513	8-729-806-20	TRANSISTOR 2SC1345
Q514	8-729-806-20	TRANSISTOR 2SC1345
Q516	8-729-806-20	TRANSISTOR 2SA1345
Q517	8-729-806-38	TRANSISTOR 2SA3399
Q518	8-729-806-38	TRANSISTOR 2SA3399
Q521	8-729-802-34	TRANSISTOR 2SD1388
Q522	8-729-802-34	TRANSISTOR 2SD1388
Q523	8-729-806-28	TRANSISTOR 2SC3402
Q524	8-729-177-43	TRANSISTOR 2SD774
Q525	8-729-159-01	TRANSISTOR 2SA1348
Q526	8-729-806-38	TRANSISTOR 2SA3399
Q527	8-729-802-34	TRANSISTOR 2SD1388
Q528	8-729-802-34	TRANSISTOR 2SD1388
Q529	8-729-177-43	TRANSISTOR 2SD774
Q530	8-729-806-38	TRANSISTOR 2SA3399
Q531	8-729-159-01	TRANSISTOR 2SA1348

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q532	8-729-806-28	TRANSISTOR 2SC3402
Q533	8-729-806-28	TRANSISTOR 2SC3402
Q534	8-729-159-01	TRANSISTOR 2SA1348
Q535	8-729-600-27	TRANSISTOR 2SC634SP
Q536	8-729-806-38	TRANSISTOR 2SA3399
Q537	8-729-100-13	TRANSISTOR 2SC2001
Q538	8-729-100-13	TRANSISTOR 2SC2001
Q539	8-729-100-13	TRANSISTOR 2SC2001
Q540	8-729-100-13	TRANSISTOR 2SC2001
Q561	8-729-600-27	TRANSISTOR 2SC634SP
Q562	8-729-806-20	TRANSISTOR 2SA1345
Q563	8-729-806-38	TRANSISTOR 2SC3399
Q565	8-729-806-38	TRANSISTOR 2SC3399
Q566	8-729-806-38	TRANSISTOR 2SC3399
Q567	8-729-806-38	TRANSISTOR 2SC3399
Q568	8-729-806-38	TRANSISTOR 2SC3399
Q569	8-729-806-38	TRANSISTOR 2SC3399
Q570	8-729-806-38	TRANSISTOR 2SC3399
Q571	8-729-806-38	TRANSISTOR 2SC3399
Q572	8-729-806-38	TRANSISTOR 2SC3399
Q701	8-729-801-83	TRANSISTOR 2SB1013
Q702	8-729-801-93	TRANSISTOR 2SD1387
Q703	8-729-117-54	TRANSISTOR 2SA1175
Q704	8-729-801-93	TRANSISTOR 2SD1387
Q705	8-729-806-28	TRANSISTOR 2SC3402
Q706	8-729-801-93	TRANSISTOR 2SD1387
Q707	8-729-801-83	TRANSISTOR 2SB1013
Q708	8-729-801-83	TRANSISTOR 2SB1013
Q709	8-729-801-93	TRANSISTOR 2SD1387
Q710	8-729-801-93	TRANSISTOR 2SD1387
Q720	8-729-806-28	TRANSISTOR 2SC3402
Q721	8-729-801-83	TRANSISTOR 2SB1013
Q722	8-729-801-93	TRANSISTOR 2SD1387
Q723	8-729-117-54	TRANSISTOR 2SA1175
Q724	8-729-801-93	TRANSISTOR 2SD1387
Q725	8-729-806-28	TRANSISTOR 2SC3402
Q726	8-729-801-93	TRANSISTOR 2SD1387
Q727	8-729-801-83	TRANSISTOR 2SB1013
Q728	8-729-801-83	TRANSISTOR 2SB1013
Q729	8-729-801-93	TRANSISTOR 2SD1387
Q730	8-729-801-93	TRANSISTOR 2SD1387
Q741	8-729-806-26	TRANSISTOR 2SA3901
Q742	8-729-806-26	TRANSISTOR 2SA3901
Q743	8-729-806-26	TRANSISTOR 2SA3901
Q744	8-729-159-01	TRANSISTOR 2SA1348
Q745	8-729-159-01	TRANSISTOR 2SA1348
Q746	8-729-159-01	TRANSISTOR 2SA1348
Q747	8-729-159-01	TRANSISTOR 2SA1348
Q748	8-729-159-01	TRANSISTOR 2SA1348
Q749	8-729-159-01	TRANSISTOR 2SA1348
Q761	8-729-159-01	TRANSISTOR 2SA1348
Q782	8-729-159-01	TRANSISTOR 2SA1348
Q783	8-729-159-01	TRANSISTOR 2SA1348
Q811	8-729-117-54	TRANSISTOR 2SA1175
Q821	8-729-806-20	TRANSISTOR 2SA1345
Q822	8-729-806-26	TRANSISTOR 2SC3402
Q823	8-729-806-26	TRANSISTOR 2SC3402

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q825	8-729-806-26	TRANSISTOR 2SC3402
Q901	8-729-107-25	TRANSISTOR 2SD1585-L
Q902	8-729-111-67	TRANSISTOR 2SB1094-L
Q903	8-729-107-25	TRANSISTOR 2SD1585-L
Q904	8-729-600-27	TRANSISTOR 2SC634SP
Q905	8-729-600-27	TRANSISTOR 2SC634SP
Q907	8-729-117-54	TRANSISTOR 2SA1175
Q908	8-729-117-54	TRANSISTOR 2SA1175
Q909	8-729-600-27	TRANSISTOR 2SC634SP
Q910	8-729-806-28	TRANSISTOR 2SC3402
Q921	8-729-364-72	TRANSISTOR 2SB647-C
Q922	8-729-117-54	TRANSISTOR 2SA1175
R1	1-249-424-11	CARBON 3.9K 5% 1/6W
R2	1-249-429-11	CARBON 10K 5% 1/6W
R3	1-249-435-11	CARBON 33K 5% 1/6W
R4	1-249-425-11	CARBON 4.7K 5% 1/6W
R5	1-249-425-11	CARBON 4.7K 5% 1/6W
R6	1-249-425-11	CARBON 4.7K 5% 1/6W
R7	1-249-429-11	CARBON 10K 5% 1/6W
R8	1-249-433-11	CARBON 22K 5% 1/6W
R9	1-249-409-11	CARBON 220K 5% 1/6W
R10	1-249-409-11	CARBON 220K 5% 1/6W
R101	1-247-726-11	CARBON 33K 5% 1/4W
R102	1-249-417-11	CARBON 1K 5% 1/6W
R103	1-249-441-11	CARBON 100K 5% 1/6W
R106	1-249-423-11	CARBON 3.3K 5% 1/6W
R107	1-249-421-11	CARBON 2.2K 5% 1/6W
R108	1-249-441-11	CARBON 100K 5% 1/6W
R109	1-249-428-11	CARBON 8.2K 5% 1/6W
R112	1-249-433-11	CARBON 22K 5% 1/6W
R113	1-249-438-11	CARBON 56K 5% 1/6W
R121	1-247-162-00	CARBON 20K 5% 1/4W
R122	1-247-887-00	CARBON 220K 5% 1/6W
R123	1-246-520-00	CARBON 91K 5% 1/4W
R124	1-249-429-11	CARBON 10K 5% 1/6W
R125	1-249-524-11	CARBON 68 1/4W
R126	1-249-603-11	CARBON 130K 1/4W
R127	1-247-148-00	CARBON 5.1K 1/4W
R128	1-249-421-11	CARBON 2.2K 5% 1/6W
R129	1-249-429-11	CARBON 10K 5% 1/6W
R130	1-247-840-00	CARBON 2.4K 5% 1/6W
R131	1-247-887-00	CARBON 220K 5% 1/6W
R132	1-249-429-11	CARBON 10K 5% 1/6W
R133	1-249-418-11	CARBON 1.2K 5% 1/6W
R134	1-249-429-11	CARBON 10K 5% 1/6W
R135	1-247-887-00	CARBON 220K 5% 1/6W
R136	1-247-828-00	CARBON 750 5% 1/6W
R143	1-249-414-11	CARBON 560 5% 1/6W
R144	1-247-822-00	CARBON 430 5% 1/6W
R145	1-247-848-00	CARBON 5.1K 5% 1/6W
R146	1-249-422-11	CARBON 2.7K 5% 1/6W
R147	1-249-427-11	CARBON 6.8K 5% 1/6W
R148	1-249-415-11	CARBON 680 5% 1/6W
R150	1-247-849-00	CARBON 5.6K 5% 1/6W
R161	1-249-435-11	CARBON 33K 5% 1/6W
R162	1-249-441-11	CARBON 100K 5% 1/6W
R163	1-247-887-00	CARBON 220K 5% 1/6W
R164	1-249-436-11	CARBON 39K 5% 1/6W
R165	1-249-429-11	CARBON 10K 5% 1/6W
R166	1-249-425-11	CARBON 4.7K 5% 1/6W
R167	1-249-415-11	CARBON 680 5% 1/6W
R168	1-247-874-00	CARBON 62K 5% 1/6W
R169	1-249-425-11	CARBON 4.7K 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R170	1-249-410-11	CARBON	270	5%	1/6W
R171	1-249-432-11	CARBON	18K	5%	1/6W
R172	1-249-433-11	CARBON	22K	5%	1/6W
R173	1-249-425-11	CARBON	4.7K	5%	1/6W
R174	1-249-415-11	CARBON	680	5%	1/6W
R175	1-247-864-00	CARBON	24K	5%	1/6W
R176	1-247-858-00	CARBON	13K	5%	1/6W
R177	1-249-425-11	CARBON	4.7K	5%	1/6W
R301	1-247-713-11	CARBON	1K	5%	1/4W
R302	1-249-421-11	CARBON	2.2K	5%	1/6W
R303	1-249-435-11	CARBON	33K	5%	1/6W
R304	1-249-421-11	CARBON	2.2K	5%	1/6W
R305	1-249-434-11	CARBON	27K	5%	1/6W
R306	1-249-434-11	CARBON	27K	5%	1/6W
R307	1-249-429-11	CARBON	10K	5%	1/6W
R308	1-247-791-00	CARBON	22	5%	1/6W
R312	1-249-433-11	CARBON	22K	5%	1/6W
R313	1-249-421-11	CARBON	2.2K	5%	1/6W
R314	1-247-852-00	CARBON	7.5K	5%	1/6W
R315	1-247-704-11	CARBON	220	5%	1/4W
R316	1-247-871-00	CARBON	47K	5%	1/6W
R321	1-249-460-11	CARBON	15K	5%	1/4W
R322	1-249-524-11	CARBON	68		1/4W
R323	1-249-603-11	CARBON	130K		1/4W
R324	1-247-148-00	CARBON	5.1K		1/4W
R325	1-249-421-11	CARBON	2.2K	5%	1/6W
R326	1-247-840-00	CARBON	2.4K	5%	1/6W
R327	1-249-429-11	CARBON	10K	5%	1/6W
R328	1-247-887-00	CARBON	220K	5%	1/6W
R343	1-249-414-11	CARBON	560	5%	1/6W
R344	1-247-822-00	CARBON	430	5%	1/6W
R345	1-247-848-00	CARBON	5.1K	5%	1/6W
R346	1-249-422-11	CARBON	2.7K	5%	1/6W
R347	1-249-427-11	CARBON	6.8K	5%	1/6W
R348	1-249-415-11	CARBON	680	5%	1/6W
R350	1-247-849-00	CARBON	5.6K	5%	1/6W
R361	1-249-435-11	CARBON	33K	5%	1/6W
R362	1-249-441-11	CARBON	100K	5%	1/6W
R363	1-247-887-00	CARBON	220K	5%	1/6W
R364	1-249-429-11	CARBON	10K	5%	1/6W
R365	1-247-874-00	CARBON	62K	5%	1/6W
R366	1-249-436-11	CARBON	39K	5%	1/6W
R367	1-249-436-11	CARBON	39K	5%	1/6W
R368	1-249-425-11	CARBON	4.7K	5%	1/6W
R369	1-249-415-11	CARBON	680	5%	1/6W
R371	1-249-425-11	CARBON	4.7K	5%	1/6W
R372	1-249-410-11	CARBON	270	5%	1/6W
R373	1-249-432-11	CARBON	18K	5%	1/6W
R374	1-249-433-11	CARBON	22K	5%	1/6W
R375	1-249-425-11	CARBON	4.7K	5%	1/6W
R376	1-249-415-11	CARBON	680	5%	1/6W
R377	1-247-864-00	CARBON	24K	5%	1/6W
R378	1-247-858-00	CARBON	13K	5%	1/6W
R379	1-249-425-11	CARBON	4.7K	5%	1/6W
R380	1-249-425-11	CARBON	4.7K	5%	1/6W
R381	1-249-417-11	CARBON	1K	5%	1/6W
R383	1-249-425-11	CARBON	4.7K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R384	1-249-417-11	CARBON	1K	5%	1/6W
R385	1-249-432-11	CARBON	18K	5%	1/6W
R386	1-249-430-11	CARBON	12K	5%	1/6W
R387	1-249-425-11	CARBON	4.7K	5%	1/6W
R388	1-249-417-11	CARBON	1K	5%	1/6W
R389	1-249-431-11	CARBON	15K	5%	1/6W
R390	1-247-854-00	CARBON	9.1K	5%	1/6W
R391	1-249-425-11	CARBON	4.7K	5%	1/6W
R392	1-249-438-11	CARBON	56K	5%	1/6W
R501	1-249-435-11	CARBON	33K	5%	1/6W
R502	1-247-704-11	CARBON	220	5%	1/4W
R503	1-247-704-11	CARBON	220	5%	1/4W
R504	1-247-704-11	CARBON	220	5%	1/4W
R505	1-247-704-11	CARBON	220	5%	1/4W
R506	1-249-435-11	CARBON	33K	5%	1/6W
R507	1-249-435-11	CARBON	33K	5%	1/6W
R508	1-215-469-00	METAL	100K	1%	1/6W
R509	1-249-405-11	CARBON	100	5%	1/6W
R510	1-249-435-11	CARBON	33K	5%	1/6W
R511	1-249-435-11	CARBON	33K	5%	1/6W
R512	1-249-435-11	CARBON	33K	5%	1/6W
R513	1-215-469-00	METAL	100K	1%	1/6W
R514	1-249-435-11	CARBON	33K	5%	1/6W
R515	1-249-435-11	CARBON	33K	5%	1/6W
R516	1-249-435-11	CARBON	33K	5%	1/6W
R517	1-249-435-11	CARBON	33K	5%	1/6W
R518	1-249-435-11	CARBON	33K	5%	1/6W
R519	1-249-435-11	CARBON	33K	5%	1/6W
R520	1-249-435-11	CARBON	33K	5%	1/6W
R521	1-247-694-11	CARBON	33	5%	1/4W
R522	1-249-435-11	CARBON	33K	5%	1/6W
R523	1-249-435-11	CARBON	33K	5%	1/6W
R524	1-249-435-11	CARBON	33K	5%	1/6W
R525	1-249-435-11	CARBON	33K	5%	1/6W
R526	1-249-435-11	CARBON	33K	5%	1/6W
R527	1-249-441-11	CARBON	100K	5%	1/6W
R528	1-249-441-11	CARBON	100K	5%	1/6W
R529	1-249-441-11	CARBON	100K	5%	1/6W
R530	1-249-405-11	CARBON	100	5%	1/6W
R531	1-249-447-11	CARBON	1	5%	1/4W
R532	1-249-438-11	CARBON	56K	5%	1/6W
R533	1-249-438-11	CARBON	56K	5%	1/6W
R534	1-247-771-00	CARBON	3.3	5%	1/6W
R535	1-249-417-11	CARBON	1K	5%	1/6W
R536	1-249-423-11	CARBON	3.3K	5%	1/6W
R537	1-249-425-11	CARBON	4.7K	5%	1/6W
R538	1-247-850-00	CARBON	6.2K	5%	1/6W
R539	1-247-842-00	CARBON	3K	5%	1/6W
R540	1-249-415-11	CARBON	680	5%	1/6W
R541	1-249-447-11	CARBON	1	5%	1/4W
R542	1-249-438-11	CARBON	56K	5%	1/6W
R543	1-249-438-11	CARBON	56K	5%	1/6W
R544	1-247-771-00	CARBON	3.3	5%	1/6W
R545	1-249-425-11	CARBON	4.7K	5%	1/6W
R546	1-247-850-00	CARBON	6.2K	5%	1/6W
R547	1-247-842-00	CARBON	3K	5%	1/6W
R548	1-249-415-11	CARBON	680	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R549	1-249-423-11	CARBON	3.3K	5%	1/6W
R550	1-249-423-11	CARBON	3.3K	5%	1/6W
R552	1-249-435-11	CARBON	33K	5%	1/6W
R553	1-249-435-11	CARBON	33K	5%	1/6W
R554	1-249-435-11	CARBON	33K	5%	1/6W
R555	1-247-694-11	CARBON	33	5%	1/4W
R556	1-249-429-11	CARBON	10K	5%	1/6W
R557	1-249-429-11	CARBON	10K	5%	1/6W
R558	1-249-429-11	CARBON	10K	5%	1/6W
R559	1-249-429-11	CARBON	10K	5%	1/6W
R560	1-247-733-11	CARBON	33	5%	1/2W
R561	1-249-429-11	CARBON	10K	5%	1/6W
R562	1-249-433-11	CARBON	22K	5%	1/6W
R563	1-249-417-11	CARBON	1K	5%	1/6W
R564	1-249-429-11	CARBON	10K	5%	1/6W
R565	1-249-423-11	CARBON	3.3K	5%	1/6W
R566	1-249-441-11	CARBON	100K	5%	1/6W
R567	1-249-428-11	CARBON	8.2K	5%	1/6W
R568	1-249-441-11	CARBON	100K	5%	1/6W
R569	1-249-423-11	CARBON	3.3K	5%	1/6W
R570	1-249-441-11	CARBON	100K	5%	1/6W
R571	1-249-441-11	CARBON	100K	5%	1/6W
R572	1-249-435-11	CARBON	33K	5%	1/6W
R573	1-249-441-11	CARBON	100K	5%	1/6W
R575	1-249-425-11	CARBON	4.7K	5%	1/6W
R576	1-247-799-00	CARBON	47	5%	1/6W
R577	1-247-733-11	CARBON	33	5%	1/2W
R578	1-249-425-11	CARBON	4.7K	5%	1/6W
R579	1-247-799-00	CARBON	47	5%	1/6W
R580	1-249-433-11	CARBON	22K	5%	1/6W
R581	1-249-433-11	CARBON	22K	5%	1/6W
R582	1-249-433-11	CARBON	22K	5%	1/6W
R583	1-249-433-11	CARBON	22K	5%	1/6W
R584	1-247-733-11	CARBON	33	5%	1/2W
R585	1-249-429-11	CARBON	10K	5%	1/6W
R586	1-249-429-11	CARBON	10K	5%	1/6W
R587	1-249-429-11	CARBON	10K	5%	1/6W
R588	1-249-429-11	CARBON	10K	5%	1/6W
R593	1-249-429-11	CARBON	10K	5%	1/6W
R594	1-249-429-11	CARBON	10K	5%	1/6W
R595	1-249-441-11	CARBON	100K	5%	1/6W
R597	1-247-733-11	CARBON	33	5%	1/2W
R598	1-249-441-11	CARBON	100K	5%	1/6W
R599	1-249-429-11	CARBON	10K	5%	1/6W
R601	1-247-849-00	CARBON	5.6K	5%	1/6W
R602	1-249-429-11	CARBON	10K	5%	1/6W
R603	1-249-433-11	CARBON	22K	5%	1/6W
R604	1-247-849-00	CARBON	5.6K	5%	1/6W
R605	1-249-429-11	CARBON	10K	5%	1/6W
R606	1-249-433-11	CARBON	22K	5%	1/6W
R611	1-247-849-00	CARBON	5.6K	5%	1/6W
R612	1-249-429-11	CARBON	10K	5%	1/6W
R613	1-249-433-11	CARBON	22K	5%	1/6W
R614	1-247-849-00	CARBON	5.6K	5%	1/6W
R615	1-249-429-11	CARBON	10K	5%	1/6W
R616	1-249-433-11	CARBON	22K	5%	1/6W
R621	1-249-422-11	CARBON	2.7K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R622	1-249-424-11	CARBON	3.9K	5%	1/6W
R623	1-249-428-11	CARBON	8.2K	5%	1/6W
R624	1-249-433-11	CARBON	22K	5%	1/6W
R631	1-249-429-11	CARBON	10K	5%	1/6W
R632	1-249-433-11	CARBON	22K	5%	1/6W
R633	1-249-431-11	CARBON	15K	5%	1/6W
R651	1-247-801-00	CARBON	56	5%	1/6W
R652	1-249-407-11	CARBON	150	5%	1/6W
R653	1-247-801-00	CARBON	56	5%	1/6W
R654	1-249-407-11	CARBON	150	5%	1/6W
R655	1-247-803-00	CARBON	68	5%	1/6W
R661	1-247-801-00	CARBON	56	5%	1/6W
R662	1-249-407-11	CARBON	150	5%	1/6W
R663	1-247-801-00	CARBON	56	5%	1/6W
R664	1-249-407-11	CARBON	150	5%	1/6W
R665	1-247-803-00	CARBON	68	5%	1/6W
R671	1-247-803-00	CARBON	68	5%	1/6W
R672	1-247-805-00	CARBON	82	5%	1/6W
R673	1-247-805-00	CARBON	82	5%	1/6W
R674	1-247-805-00	CARBON	82	5%	1/6W
R675	1-247-803-00	CARBON	68	5%	1/6W
R701	1-249-417-11	CARBON	1K	5%	1/6W
R702	1-249-437-11	CARBON	47K	5%	1/6W
R703	1-249-425-11	CARBON	4.7K	5%	1/6W
R704	1-249-437-11	CARBON	47K	5%	1/6W
R705	1-249-431-11	CARBON	15K	5%	1/6W
R706	1-249-431-11	CARBON	15K	5%	1/6W
R707	1-249-437-11	CARBON	47K	5%	1/6W
R708	1-249-433-11	CARBON	22K	5%	1/6W
R709	1-249-425-11	CARBON	4.7K	5%	1/6W
R710	1-249-415-11	CARBON	680	5%	1/6W
R711	1-249-413-11	CARBON	470	5%	1/6W
R712	1-249-416-11	CARBON	820	5%	1/6W
R713	1-247-729-11	CARBON	15	5%	1/2W
R714	1-249-425-11	CARBON	4.7K	5%	1/6W
R715	1-249-437-11	CARBON	47K	5%	1/6W
R716	1-249-417-11	CARBON	1K	5%	1/6W
R717	1-249-417-11	CARBON	1K	5%	1/6W
R718	1-249-425-11	CARBON	4.7K	5%	1/6W
R719	1-249-437-11	CARBON	47K	5%	1/6W
R720	1-249-425-11	CARBON	4.7K	5%	1/6W
R721	1-249-417-11	CARBON	1K	5%	1/6W
R722	1-249-437-11	CARBON	47K	5%	1/6W
R723	1-249-425-11	CARBON	4.7K	5%	1/6W
R724	1-249-437-11	CARBON	47K	5%	1/6W
R725	1-249-431-11	CARBON	15K	5%	1/6W
R726	1-249-431-11	CARBON	15K	5%	1/6W
R727	1-249-437-11	CARBON	47K	5%	1/6W
R728	1-249-433-11	CARBON	22K	5%	1/6W
R729	1-249-425-11	CARBON	4.7K	5%	1/6W
R730	1-249-415-11	CARBON	680	5%	1/6W
R731	1-249-413-11	CARBON	470	5%	1/6W
R732	1-249-416-11	CARBON	820	5%	1/6W
R733	1-247-729-11	CARBON	15	5%	1/2W
R734	1-249-425-11	CARBON	4.7K	5%	1/6W
R735	1-249-437-11	CARBON	47K	5%	1/6W
R736	1-249-417-11	CARBON	1K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R737	1-249-417-11	CARBON	1K	5%	1/6W
R738	1-249-425-11	CARBON	4.7K	5%	1/6W
R739	1-249-437-11	CARBON	47K	5%	1/6W
R740	1-249-433-11	CARBON	22K	5%	1/6W
R741	1-249-441-11	CARBON	100K	5%	1/6W
R742	1-249-421-11	CARBON	2.2K	5%	1/6W
R743	1-249-433-11	CARBON	22K	5%	1/6W
R744	1-249-441-11	CARBON	100K	5%	1/6W
R745	1-249-421-11	CARBON	2.2K	5%	1/6W
R754	1-249-409-11	CARBON	220	5%	1/6W
R755	1-249-417-11	CARBON	1K	5%	1/6W
R759	1-249-409-11	CARBON	220	5%	1/6W
R760	1-249-417-11	CARBON	1K	5%	1/6W
R761	1-249-430-11	CARBON	12K	5%	1/6W
R762	1-247-849-00	CARBON	5.6K	5%	1/6W
R763	1-249-429-11	CARBON	10K	5%	1/6W
R764	1-249-433-11	CARBON	22K	5%	1/6W
R765	1-249-430-11	CARBON	12K	5%	1/6W
R766	1-247-849-00	CARBON	5.6K	5%	1/6W
R767	1-249-429-11	CARBON	10K	5%	1/6W
R768	1-249-433-11	CARBON	22K	5%	1/6W
R769	1-249-422-11	CARBON	2.7K	5%	1/6W
R770	1-247-903-00	CARBON	1M	5%	1/6W
R771	1-249-428-11	CARBON	8.2K	5%	1/6W
R772	1-249-433-11	CARBON	22K	5%	1/6W
R773	1-249-432-11	CARBON	18K	5%	1/6W
R774	1-249-430-11	CARBON	12K	5%	1/6W
R775	1-249-432-11	CARBON	18K	5%	1/6W
R781	1-247-895-00	CARBON	470K	5%	1/6W
R782	1-247-895-00	CARBON	470K	5%	1/6W
R783	1-247-895-00	CARBON	470K	5%	1/6W
R784	1-247-895-00	CARBON	470K	5%	1/6W
R785	1-249-431-11	CARBON	15K	5%	1/6W
R786	1-249-431-11	CARBON	15K	5%	1/6W
R787	1-249-431-11	CARBON	15K	5%	1/6W
R788	1-249-429-11	CARBON	10K	5%	1/6W
R789	1-249-430-11	CARBON	12K	5%	1/6W
R790	1-249-430-11	CARBON	12K	5%	1/6W
R791	1-249-430-11	CARBON	12K	5%	1/6W
R792	1-249-430-11	CARBON	12K	5%	1/6W
R794	1-249-430-11	CARBON	12K	5%	1/6W
R795	1-249-425-11	CARBON	4.7K	5%	1/6W
R797	1-249-431-11	CARBON	15K	5%	1/6W
R798	1-249-431-11	CARBON	15K	5%	1/6W
R799	1-249-417-11	CARBON	1K	5%	1/6W
R800	1-249-417-11	CARBON	1K	5%	1/6W
R802	1-249-437-11	CARBON	47K	5%	1/6W
R803	1-249-437-11	CARBON	47K	5%	1/6W
R804	1-249-431-11	CARBON	15K	5%	1/6W
R811	1-249-441-11	CARBON	100K	5%	1/6W
R812	1-249-413-11	CARBON	470	5%	1/6W
R813	1-249-437-11	CARBON	47K	5%	1/6W
R814	1-249-433-11	CARBON	22K	5%	1/6W
R821	1-249-437-11	CARBON	47K	5%	1/6W
R822	1-249-422-11	CARBON	2.7K	5%	1/6W
R823	1-249-437-11	CARBON	47K	5%	1/6W
R824	1-249-437-11	CARBON	47K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R825	1-249-437-11	CARBON	47K	5%	1/6W
R826	1-249-437-11	CARBON	47K	5%	1/6W
R827	1-249-413-11	CARBON	470	5%	1/6W
R828	1-249-417-11	CARBON	1K	5%	1/6W
R901	1-249-465-11	CARBON	47K	5%	1/4W
R902	1-249-405-11	CARBON	100	5%	1/6W
R903	1-247-717-11	CARBON	2.2K	5%	1/4W
R904	1-247-717-11	CARBON	2.2K	5%	1/4W
R905	1-247-717-11	CARBON	2.2K	5%	1/4W
R906	1-247-704-11	CARBON	220	5%	1/4W
R907	1-247-714-11	CARBON	1.2K	5%	1/4W
R908	1-247-717-11	CARBON	2.2K	5%	1/4W
R909	1-247-717-11	CARBON	2.2K	5%	1/4W
R910	1-247-714-11	CARBON	1.2K	5%	1/4W
R911	1-247-713-11	CARBON	1K	5%	1/4W
R912	1-247-717-11	CARBON	2.2K	5%	1/4W
R913	1-247-719-11	CARBON	3.3K	5%	1/4W
R914	1-249-421-11	CARBON	2.2K	5%	1/6W
R921	1-249-461-11	CARBON	18K	5%	1/4W
R922	1-247-717-11	CARBON	2.2K	5%	1/4W
R951	1-249-435-11	CARBON	33K	5%	1/6W
R952	1-249-435-11	CARBON	33K	5%	1/6W
R953	1-249-435-11	CARBON	33K	5%	1/6W
R954	1-249-435-11	CARBON	33K	5%	1/6W
R956	1-249-429-11	CARBON	10K	5%	1/6W
R957	1-249-429-11	CARBON	10K	5%	1/6W
R958	1-249-437-11	CARBON	47K	5%	1/6W
R959	1-249-437-11	CARBON	47K	5%	1/6W
R960	1-247-903-00	CARBON	1M	5%	1/6W
R961	1-249-437-11	CARBON	47K	5%	1/6W
R962	1-249-437-11	CARBON	47K	5%	1/6W
R963	1-249-437-11	CARBON	47K	5%	1/6W
R964	1-249-437-11	CARBON	47K	5%	1/6W
R971	1-249-422-11	CARBON	2.7K	5%	1/6W
R972	1-249-424-11	CARBON	3.9K	5%	1/6W
R973	1-249-428-11	CARBON	8.2K	5%	1/6W
R974	1-249-433-11	CARBON	22K	5%	1/6W
R975	1-249-422-11	CARBON	2.7K	5%	1/6W
R976	1-249-424-11	CARBON	3.9K	5%	1/6W
RV101	1-226-740-00	RES, VAR, CARBON 20K/20K (REC LEVEL)			
RV102	1-230-630-11	RES, ADJ, CARBON 10K			
RV103	1-230-722-11	RES, ADJ, CARBON 22K			
RV202	1-230-630-11	RES, ADJ, CARBON 10K			
RV203	1-230-722-11	RES, ADJ, CARBON 22K			
RV301	1-230-630-11	RES, ADJ, CARBON 10K			
RV302	1-230-722-11	RES, ADJ, CARBON 22K			
RV303	1-230-313-00	RES, VAR, CARBON 20K/20K (HEADPHONES-LEVEL)			
RV304	1-237-454-11	RES, VAR, CARBON 20K/20K (DUBBING LEVEL)			
RV401	1-230-630-11	RES, ADJ, CARBON 10K			
RV402	1-230-722-11	RES, ADJ, CARBON 22K			
RV501	1-230-630-11	RES, ADJ, CARBON 10K			
RV502	1-230-630-11	RES, ADJ, CARBON 10K			
RV701	1-228-995-00	RES, ADJ, CARBON 22K			
RV702	1-228-995-00	RES, ADJ, CARBON 22K			
RV721	1-228-995-00	RES, ADJ, CARBON 22K			
RV722	1-228-995-00	RES, ADJ, CARBON 22K			
RV751	1-228-995-00	RES, ADJ, CARBON 22K			
RV752	1-228-995-00	RES, ADJ, CARBON 22K			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RY501	1-515-547-11	RELAY
RY502	1-515-547-11	RELAY
S501	1-570-487-11	SWITCH, PUSH (2 KEY)(DOLBY NR DECK-A)
S502	1-570-487-11	SWITCH, PUSH (2 KEY)(DOLBY NR DECK-B)
S601	1-554-303-21	SWITCH, KEY BOARD (■)
S602	1-554-303-21	SWITCH, KEY BOARD (◀▶)
S603	1-554-303-21	SWITCH, KEY BOARD (▶▶◀)
S604	1-554-303-21	SWITCH, KEY BOARD (●)
S605	1-554-303-21	SWITCH, KEY BOARD (▶)
S606	1-554-303-21	SWITCH, KEY BOARD (◀)
S607	1-554-303-21	SWITCH, KEY BOARD (■■)
S608	1-554-303-21	SWITCH, KEY BOARD (○)
S611	1-554-303-21	SWITCH, KEY BOARD (■)
S612	1-554-303-21	SWITCH, KEY BOARD (◀▶)
S613	1-554-303-21	SWITCH, KEY BOARD (▶▶◀)
S614	1-554-303-21	SWITCH, KEY BOARD (●)
S615	1-554-303-21	SWITCH, KEY BOARD (▶)
S616	1-554-303-21	SWITCH, KEY BOARD (◀)
S617	1-554-303-21	SWITCH, KEY BOARD (■■)
S618	1-554-303-21	SWITCH, KEY BOARD (○)
S621	1-554-303-21	SWITCH, KEY BOARD (AMS/BLANK SKIP)
S622	1-554-303-21	SWITCH, KEY BOARD (HIGH SPEED)
S623	1-554-303-21	SWITCH, KEY BOARD (NORMAL SPEED)
S624	1-554-303-21	SWITCH, KEY BOARD (AUTO PAUSE)
S625	1-554-303-21	SWITCH, KEY BOARD (A+B REC)
S631	1-554-208-00	SWITCH, SLIDE (TIMER)
S632	1-554-208-00	SWITCH, SLIDE (DIRECTION MODE)
S901	1-570-103-21	SWITCH, PUSH (1 KEY)(POWER)
S971	1-554-303-21	SWITCH, KEY BOARD (RESET)
S972	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S973	1-554-303-21	SWITCH, KEY BOARD (A/B)
S974	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S975	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S976	1-554-303-21	SWITCH, KEY BOARD (DISPLAY)
S977	1-554-303-21	SWITCH, KEY BOARD (START)
S981	1-554-303-21	SWITCH, KEY BOARD (1)
S982	1-554-303-21	SWITCH, KEY BOARD (2)
S983	1-554-303-21	SWITCH, KEY BOARD (3)
S984	1-554-303-21	SWITCH, KEY BOARD (4)
S985	1-554-303-21	SWITCH, KEY BOARD (5)
S986	1-554-303-21	SWITCH, KEY BOARD (6)
S987	1-554-303-21	SWITCH, KEY BOARD (7)
S988	1-554-303-21	SWITCH, KEY BOARD (8)
S989	1-554-303-21	SWITCH, KEY BOARD (9)

ELECTRICAL PARTS

Ref.No.	Part No.	Description
S990	1-554-303-21	SWITCH, KEY BOARD (10)
S991	1-554-303-21	SWITCH, KEY BOARD (11)
S992	1-554-303-21	SWITCH, KEY BOARD (12)
S1001	1-570-720-11	SWITCH, PUSH (1 KEY)(ERASE PROOF, METAL)
S1005	1-570-723-11	SWITCH, PUSH (1 KEY)(CASSETTE HALF DET)
S1006	1-570-719-11	SWITCH, LEAF (PLAY)
S1007	1-570-721-11	SWITCH, LEAF (DIRECTION)
SPK141	1-235-937-11	ENCAPSULATED COMPONENT (SP-SK FILTER)
SPK142	1-235-186-00	ENCAPSULATED COMPONENT
SPK241	1-235-937-11	ENCAPSULATED COMPONENT (SP-SK FILTER)
SPK242	1-235-186-00	ENCAPSULATED COMPONENT
SPK341	1-235-937-11	ENCAPSULATED COMPONENT (SP-SK FILTER)
SPK342	1-235-186-00	ENCAPSULATED COMPONENT
SPK441	1-235-937-11	ENCAPSULATED COMPONENT (SP-SK FILTER)
SPK442	1-235-186-00	ENCAPSULATED COMPONENT
T501	1-433-320-11	TRANSFORMER, BIAS OSCILLATION
T502	1-433-320-11	TRANSFORMER, BIAS OSCILLATION
T503	1-464-573-11	OSCILLATION UNIT, BIAS
T901	1-448-773-11	TRANSFORMER, POWER
TP501	*1-564-505-11	PLUG, CONNECTOR 2P
TP502	*1-564-505-11	PLUG, CONNECTOR 2P
TP701	*1-564-505-11	PLUG, CONNECTOR 2P
TP702	*1-560-060-00	PIN, CONNECTOR 2P
TP703	*1-560-061-00	PIN, CONNECTOR 3P
X761	1-527-532-00	OSCILLATOR, CERAMIC (400kHz)
X821	1-567-776-21	VIBRATOR, CERAMIC (6MHz)
X951	1-567-775-21	VIBRATOR, CERAMIC (4.19MHz)

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-463-797-11	REMOTE COMMANDER (RM-950)
1-551-734-11	CORD, CONNECTION (RK-74A)
3-304-973-00	SHEET, PROTECTION
3-337-137-01	CUSHION
3-337-139-11	INDIVIDUAL CARTON
3-701-630-00	BAG, POLYETHYLENE
3-703-450-01	INSTRUCTION
3-765-728-21	MANUAL, INSTRUCTION

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

TROUBLESHOOTING GUIDE

	Trouble	Cause and remedy
TAPE OPERATION BUTTONS AND TAPE TRANSPORT	The tape does not run when the operation button is pressed.	The unit does not work for about two seconds after the power is turned on. ➡ Wait until the indicator goes off. The cassette is not properly inserted. The cassette holder is not properly closed. The II button is pressed. ➡ Press the II button again to release the pause mode.
	Playback or recording begins just as the power is turned on.	The TIMER switch is not set to OFF. ➡ Set the TIMER switch to OFF.
	The transport noise seems excessively loud at the fast reverse or fast forward mode.	No trouble. This situation depends upon the cassette used.
	The automatic shut-off mechanism activates before the tape ends.	The cassette has tape slack. The cassette is defective.
	The ● button does not activate.	No cassette is in the holder. The cassette tab has removed. ➡ Cover the slot with plastic tape.
	The AMS function does not operate.	A blank space is too short (less than 4 seconds). ➡ Insert over 4-second blank with the record muting button There is noise in the blank space between selections.
	Playback cannot be heard, recording cannot be made, or the sound level decrease.	The heads are dirty. The connections are not made properly. The amplifier input selector is not set to the correct position.
	Excessive wow and flutter or drop out	The heads, capstans or pinch rollers are dirty.
	Incomplete erasure	The erase head is dirty.
	Noise or erasure occurs.	Magnetic build-up on the head. ➡ Demagnetize the head.
RECORDING AND PLAYBACK	Unbalanced tone in higher frequencies	The DOLBY NR switches are not set to the correct position. ➡ During playback, set the switches to the same position used when the cassette was recorded. The unit is placed near a television set.
	A hum is heard	The unit is placed directly on or under the amplifier. ➡ Move the deck away from the amplifier.
NOISE	Noise is recorded	Recording is made near a television set or a color monitor. ➡ Move the unit away from the television set or color monitor.

