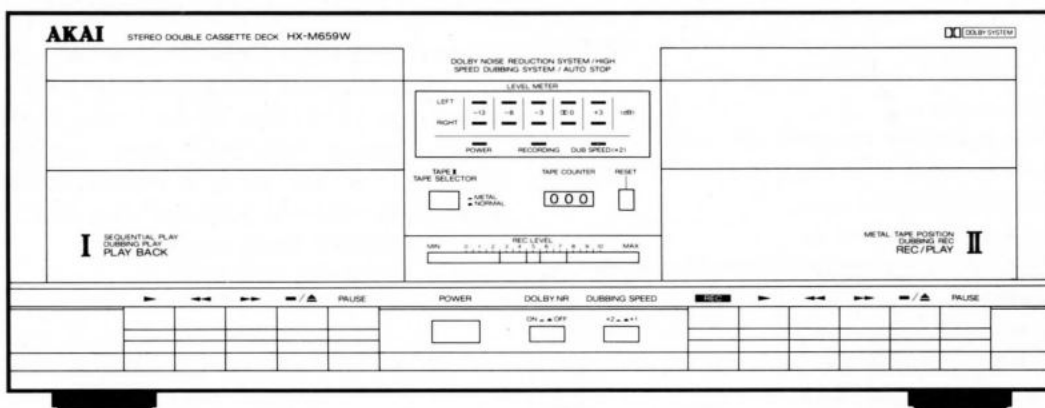


AKAI SERVICE MANUAL



MODEL HX-659W

STEREO DOUBLE CASSETTE DECK

MODEL **HX-M459W**
MODEL **HX-M659W**

I. SPECIFICATIONS

Track System.....	4 track 2 channel stereo	Input sensitivity/ Impedance.....	70 mV/50 kohms
Heads.....	HD head for recording & playback ×1 HD head for playback ×1 Erase head ×1	Output sensitivity/ Impedance.....	388 mV/2 kohms
Motors.....	DC motor ×2 (for capstan & reel)	Power requirements.....	220 V, 50 Hz for Europe ex- cept UK 240 V, 50 Hz for UK and Austraria 110 V - 120 V/220 V - 240 V, 50 Hz/60 Hz Convertible for other countries
Wow & Flutter.....	0.1% (WRMS), 0.2% (DIN)	Dimensions.....	350(W) × 136(H) × 345(D)mm (13.8 × 5.4 × 13.6 × inches)
S/N (Metal).....	57 dB (Measured via tape with peak recording level) Dolby B type NR switch ON: Improves up to 5 dB at 1 kHz, 10 dB above 5 kHz	Weight.....	4.0 kg (8.8 lbs) Model HX-M459W 4.2 kg (9.2 lbs) Model HX-M659W
Total harmonic distortion.....	Less than 0.9% (Metal)	Standard accessories	Connection cords.....
Frequency response		Connection cords.....	RCA pin cord ×2
Normal.....	30 Hz to 14,000 Hz ± 3 dB		
Metal.....	30 Hz to 15,000 Hz ± 3 dB		

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

* Noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and double-D symbol are trad marks of Dolby Laboratories Licensing Corporation.

★ SAFETY INSTRUCTIONS

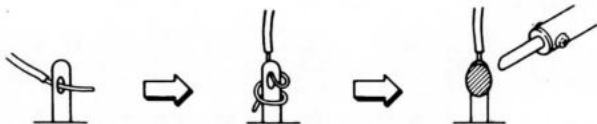
PRECAUTIONS DURING SERVICING

1. Parts identified by the \triangle symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.

These must also be replaced only with specified replacements.

Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.

3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note, especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 M ohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\square C$ or $\square A$, specified insulation resistance should be head-phone jacks, line-in-out jacks, etc. more than 2.2 M ohms (ground terminals, microphone jacks).

★ INFORMATION

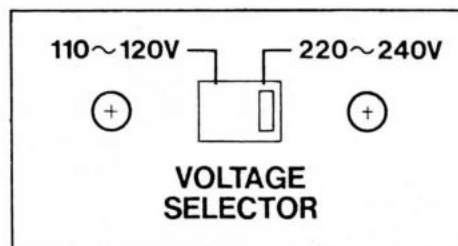
SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

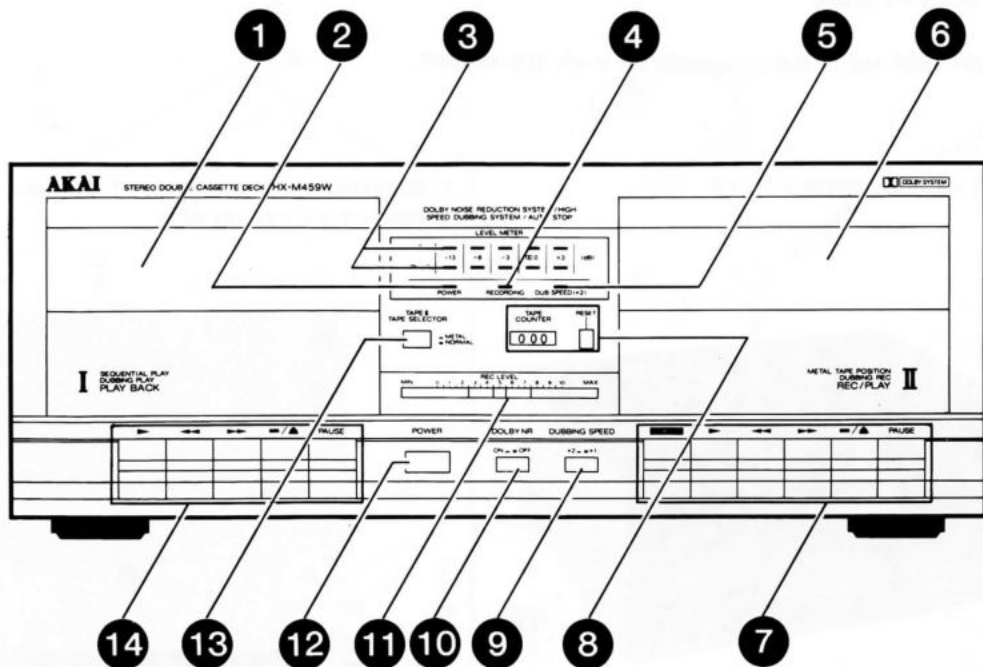
Symbols	Principal Destinations
$\square A$	USA
$\square B$	UK
$\square C$	Canada
$\square E$	Europe (except UK)
$\square J$	Japan
$\square S$	Australia
$\square V$	W. Germany only
$\square U$	Universal Area
$\square Y^*$	Custom version

VOLTAGE CONVERSION ($\square U$ Model only)

Before connecting the power cord, set the VOLTAGE SELECTOR located on the rear panel to the power requirement for your area.



I. CONTROLS

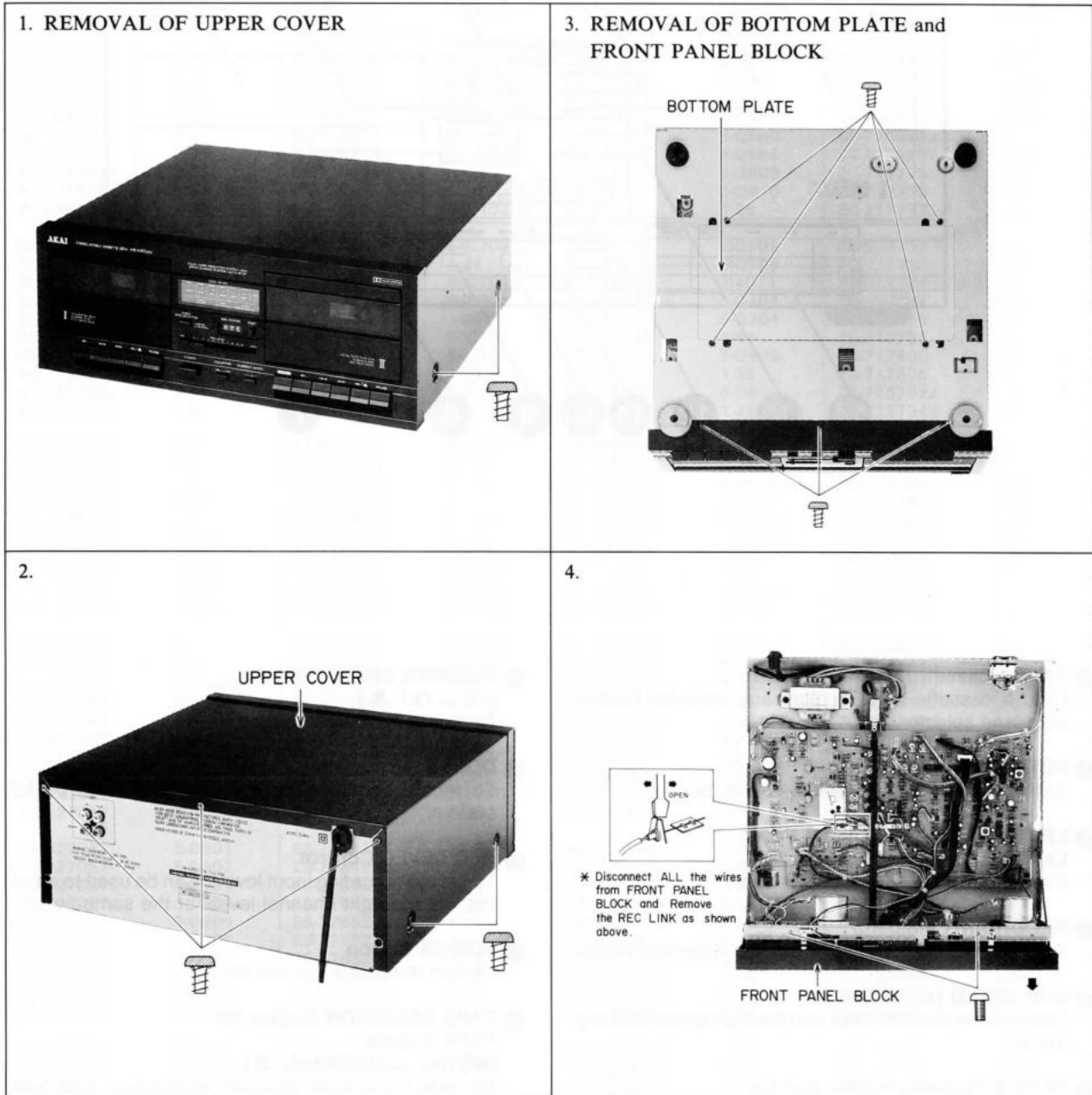


- 1 TAPE I Cassette Holder and Lid**
Load a cassette here for playback. Includes built-in auto tape selector.
- 2 POWER Indicator**
Tells you the cassette deck is turned on.
- 3 LED (Light Emitting Diode) PEAK Level Meter (L:Left/R:Right)**
Shows recording and playback levels.
- 4 RECORDING Indicator**
Tells you the cassette deck is in the recording mode.
- 5 DUB SPEED (x2) Indicator**
Tells you the cassette deck is in the high speed dubbing mode.
- 6 TAPE II Cassette Holder and Lid**
Load a cassette tape here for recording and playback. Does not include auto tape selector.
- 7 TAPE II Deck Tape Operation Buttons (REC, PAUSE, ►►, ■/▲, ► and ◀◀)**
For tape winding, playback and recording operations.
- 8 TAPE COUNTER and RESET Button for the TAPE II deck**
Shows elapsed playback time of the loaded cassette tape.
- 9 DUBBING SPEED Switch (x2 ◯/x1 ■)**
To select the dubbing speed.
- 10 DOLBY NR Switch (◯/■)**
To record or playback with the DOLBY B-type NR system.
- 11 REC LEVEL Control**
To set the recording input levels. Can be used to adjust the left and right channel levels at the same time.
- 12 POWER Button**
To turn the power on and off.
- 13 TAPE SELECTOR Switch for TAPE II Deck (METAL ◯/NORMAL ■)**
To select the tape position (equalization and bias) according to the cassette tape being used.
Attention: Do not change the switch during recording as this may result in the recording and playback head being magnetized.
- 14 TAPE I Deck Tape Operation Buttons (PAUSE, ►►, ■/▲, ► and ◀◀)**
For tape winding and playback operations.

II. DISASSEMBLY

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

* Photographs employed in this paragraphs are mode HX-M659W.



III. PRINCIPAL PARTS LOCATION

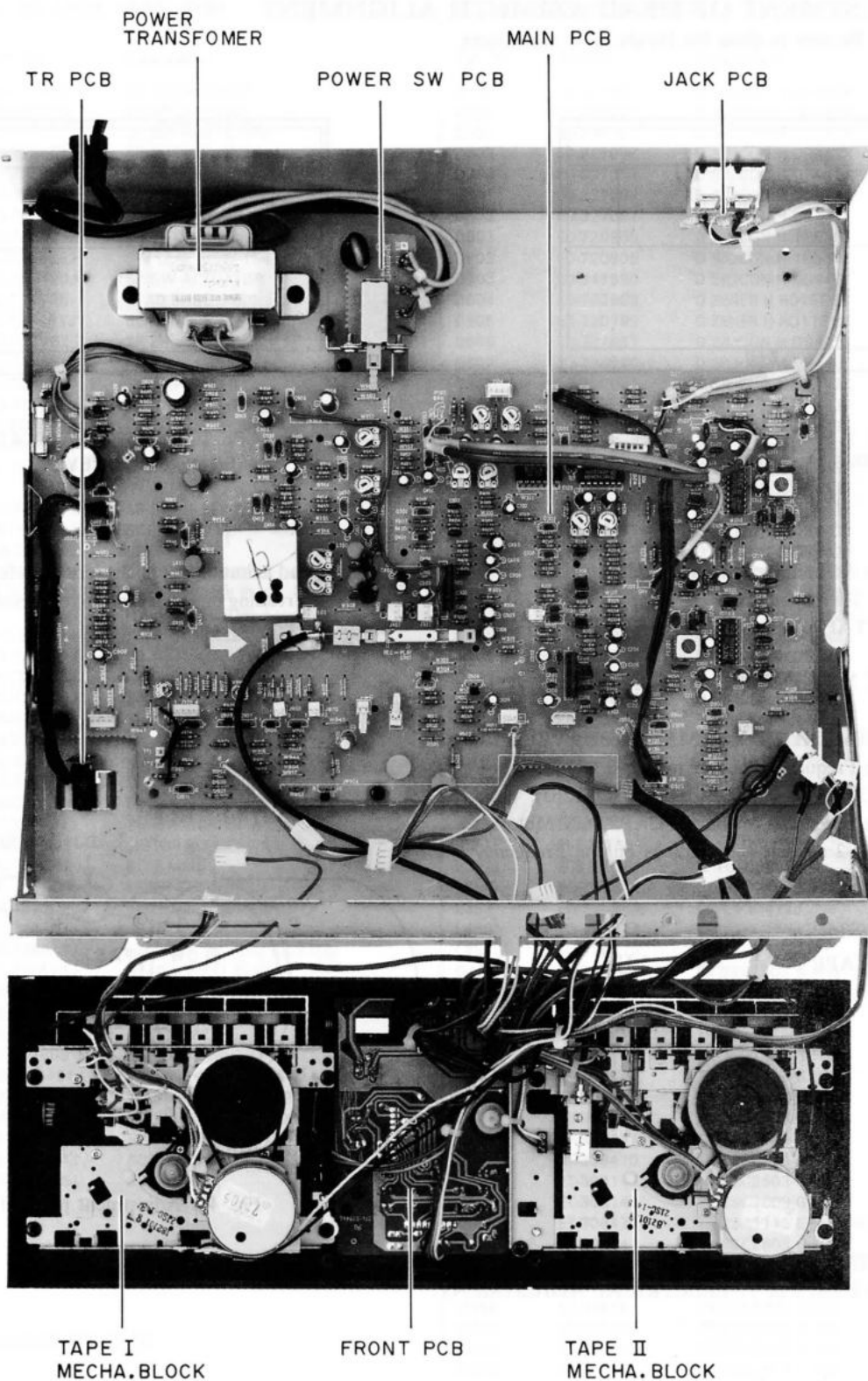


Fig. 3-1

IV. MECHANICAL ADJUSTMENT

4-1. ADJUSTMENT OF HEAD AZIMUTH ALIGNMENT

NOTE: Be sure to clean the Heads before adjustment.

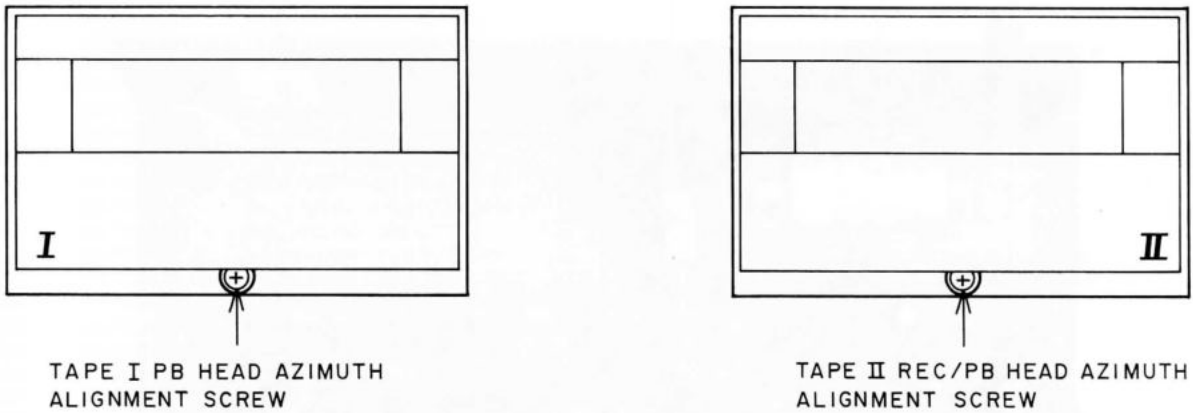


Fig. 4-1

- 1) Connect the AC milli-voltmeter to LINE OUT.
- 2) Playback a 10kHz, -15dB Test Tape (AT-750778) by TAPE I or TAPE II.
- 3) Adjust Head azimuth alignment screw (Refer to Fig. 4-1) so that the reading on the AC milli-voltmeter of both Left and Right channels are maximum.

4-2. TAPE SPEED ADJUSTMENT

4-2-1. ADJUSTMENT OF NORMAL TAPE SPEED

- 1) Connect the Frequency counter to LINE OUT.
- 2) Playback a 3,150 Hz 0dB Test tape (AT-751263).
- 3) Adjust Tape Speed Control in the CAPSTAN Motor as shown Fig. 4-2 so that the readings on the Frequency Counter are below.

TAPE I = 3160 ± 5 Hz
TAPE II = 3150 ± 5 Hz

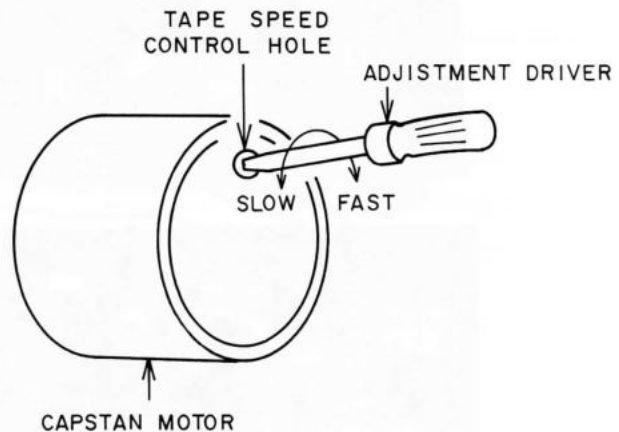


Fig. 4-2 Adjustment point of Tape speed.

4-2-2. ADJUSTMENT OF $\times 2$ TAPE SPEED

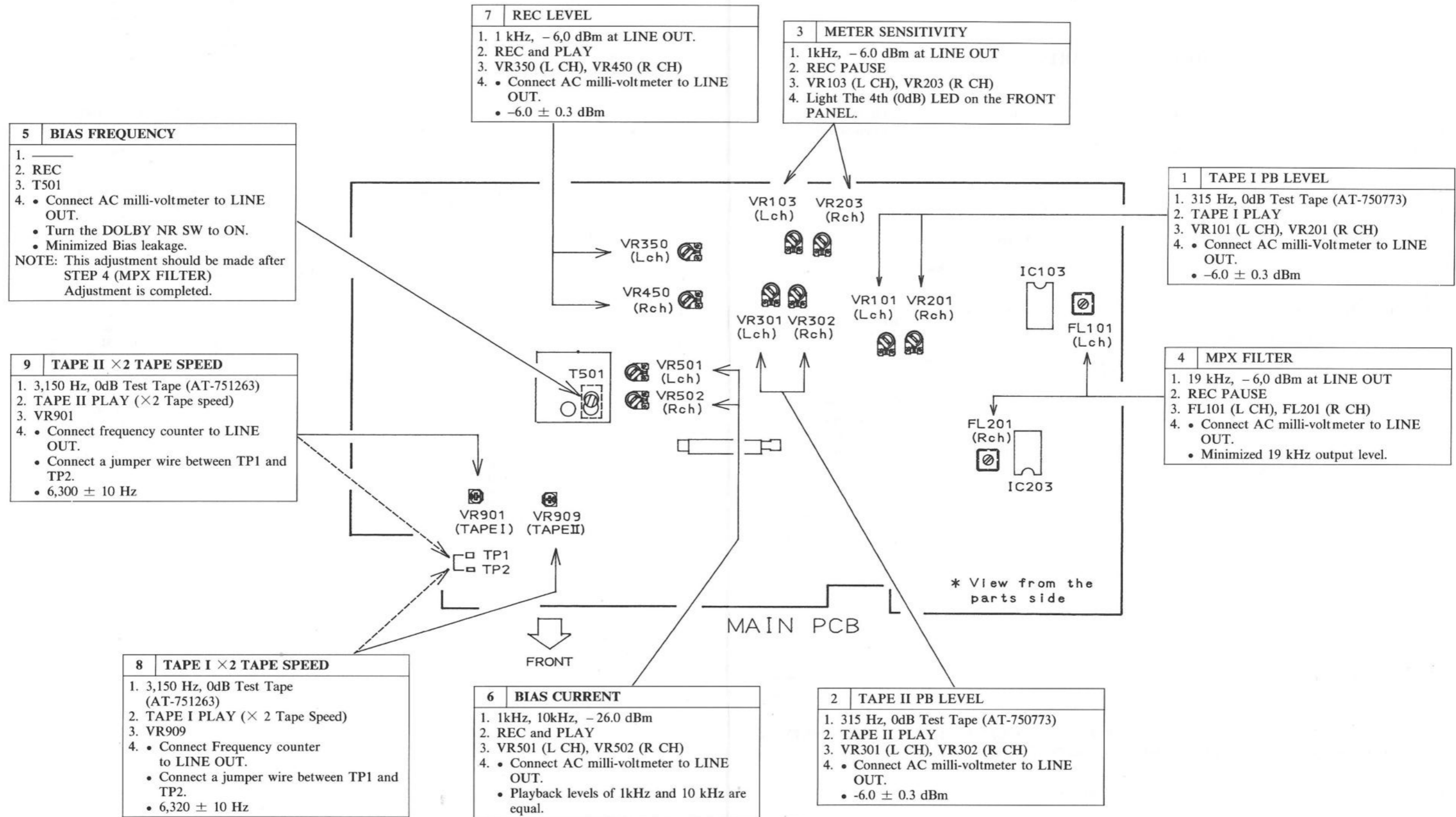
* Refer to Step 8 and 9 of V. ELECTRICAL ADJUSTMENT.

V. ELECTRICAL ADJUSTMENT

- NOTE: 1. Be sure to clean the Heads before adjustment.
 2. All adjustments are adjusting without DOLBY NR.
 3. Use the following measuring cassette tape.
 NORMAL position : MAXELL UD-I C60
 Cr O₂ position : TDK SA C60
 METAL position : TDK MA C60

Step	Adjustment Item
1.	Test tape/Input Signal
2.	Mode
3.	Adjustment part
4.	Result & Remarks

ADJUSTMENT PART →
 TEST POINT →



VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering.
If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
2-1x	BH-T2023A320A	HEAD BASE BLOCK
2-2	HP-H2206A010A	HEAD R/P PR4-8FU C
2-3	ZS-477876	PAN20x03STL CMT
2-4	ZS-536488	BID20x08STL CMT
2-5	ZG-402895	SP CS ANGLE ADJUST

- SP (Service Parts) Classification
- A small "x" indicates that this part is not shown in the Photo or Illustration.
- This number corresponds with the individual parts index number in that figure.
- This number corresponds with the Figure Number.

b) PC Board

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
6-IC1	EI-324536	IC HD14049BP
6-IC2	EI-336801	IC MB8841-564M
6-C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
6-C1B	EC-350949	C MMY V 223M 250DC [J]
6-C1C	EC-338397	C MMY V 223M 125AC [C,A]
6-X1	EI-318384	OSC X'TAL NC-18C

- Symbols for primary destination
 - [A]: AAL(U.S.A.) [S]: SAA(Australia)
 - [B]: BEAB(England) [U]: U/T(Universal Area)
 - [C]: CSA(Canada) [V]: VDE(W. Germany)
 - [E]: CEE(Europe) [Y]: Custom Version
 - [J]: JPN(Japan)
- SP (Service Parts) Classification
- These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

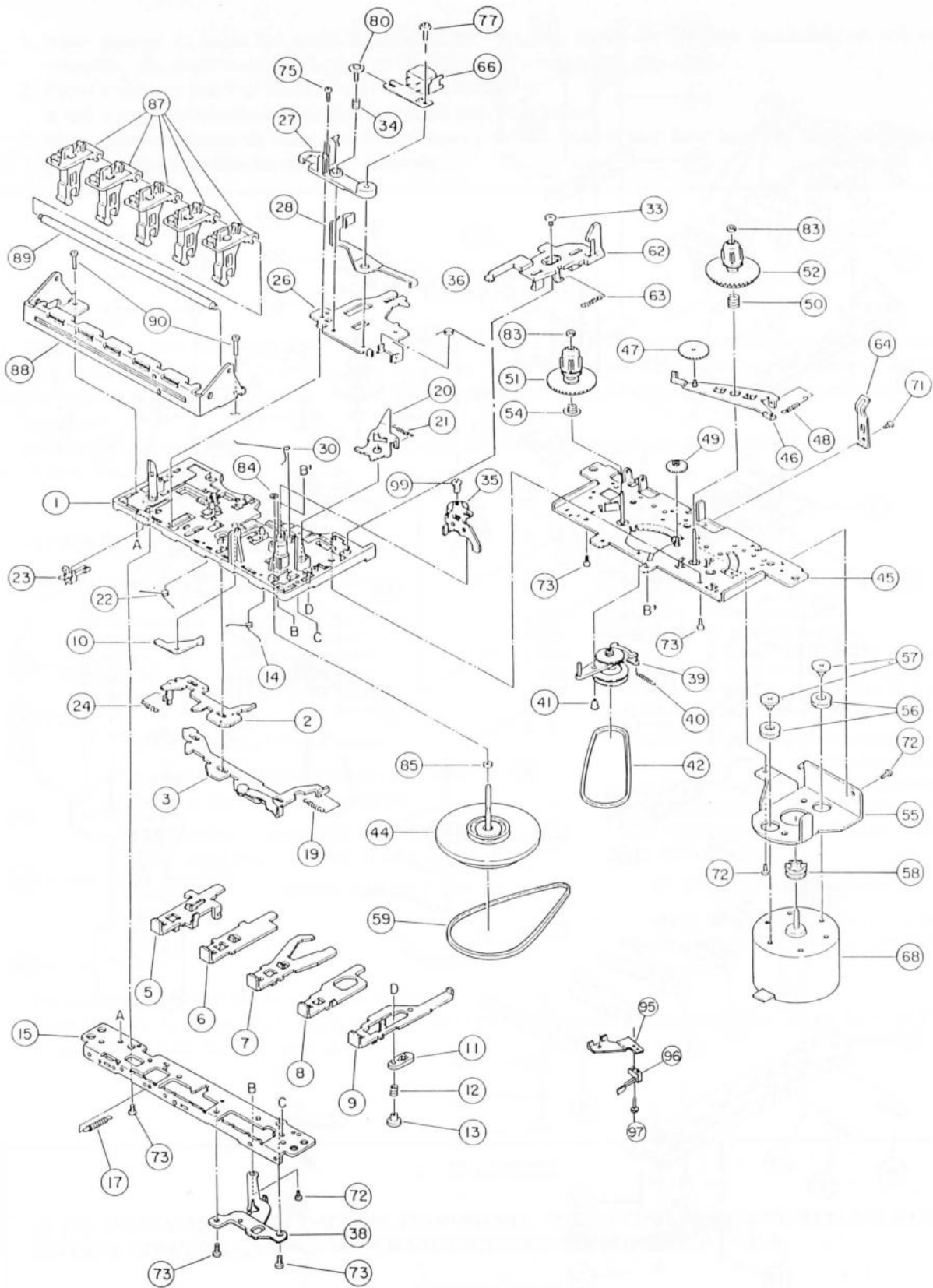
1. RECOMMENDED SPARE PARTS

Ref. No.	Part No.	Description
1	BB-725780T	MECHA (PB) BLK TN-21SC-1437
2	BB-725779T	MECHA (REC/PB) BLK TN-21SC-1405
3	BF-717793	FLYWHEEL ASSY
4	BL-726493J	PINCH ROLLER ARM ASSY
5	BL-726496J	RF PULLEY ARM ASSY
6	BL-726500J	TAKE UP GEAR PLATE ASSY [TAPE SELECTOR]
7	BM-726481T	MOTOR M9H12U16-4
8	BR-726505J	SUPPLY REEL ASSY
9	BR-726506J	TAKE UP REEL ASSY
10	BR-725795J	TAKE-UP REEL ASSY
11	*BT-725635T	TRANS POW HX-M459W(B,S) [B,S]
12	*BT-725636T	TRANS POW HX-M459W(E,V) [E,V]
13	*BT-725637T	TRANS POW HX-M459W(U) [U]
14	ED-725781T	D LED SE65321DS-D
15	ED-725782T	D LED SE65341DS
16	ED-327057	D SILICON H DS442X
17	ED-348990	D SILICON H DS446
18	ED-720805	D SILICON H 1N5393
19	ED-720799	D ZENER H RD11E B3
20	ED-703903	D ZENER H RD15E B2
21	*EF-358641	FUSE BET T 250V 800MA [B]
22	*EF-258344	FUSE SEMKO T 250V 800MA [E,V,S]
23	EH-720815	FILTER KM-10DF
24	EI-345551	IC LB1403
25	EI-709250	IC M51522L
26	EI-310036	IC TC4066BP
27	EI-720804	IC UPC1210C
28	ES-726521J	SW LEAF MSW-1275
29	ES-726522J	SW LEAF MSW-1373
30	ES-726489J	SW LEAF MSW-1541T
31	ES-726523J	SW LEAF MSW-1664
32	ES-722984T	SW PUSH [TAPE SELECTOR]
33	*ES-337902	SW PUSH SDLD1P 01-1 [POWER SW]
34	*ES-725477T	SW SLIDE [U] [VOLTAGE SELECTOR]
35	ET-375780	TR FET 2SK381 E F05
36	ET-308472	TR 2SA1115 E,F,G F05
37	ET-522270	TR 2SC1210 D
38	ET-330225	TR 2SC1815 BL
39	ET-308141	TR 2SC2603 G F05
40	ET-338410	TR 2SC2878 A,B
41	*ET-371028	TR 2SD1266 P,Q
42	EV-725631T	VR SLIDE 50KAX2 [REC LEVEL]
43	HE-726514J	HEAD E E-321 PL-0201
44	HP-726513J	HEAD R/P RP-7342 BR-3110
45	MB-726520J	BELT COUNTER
46	MB-725796J	BELT MAIN
47	MB-726455J	BELT RF
48	MC-725628T	COUNTER
49	MI-725793J	GEAR FF
50	MI-726503J	GEAR FF
51	MI-726456J	GEAR TAKE-UP
52	MI-726501J	TAKE UP ROLLER GEAR
53	MR-719575	MOTOR PULLEY

2. MECHA BLOCK (PB)

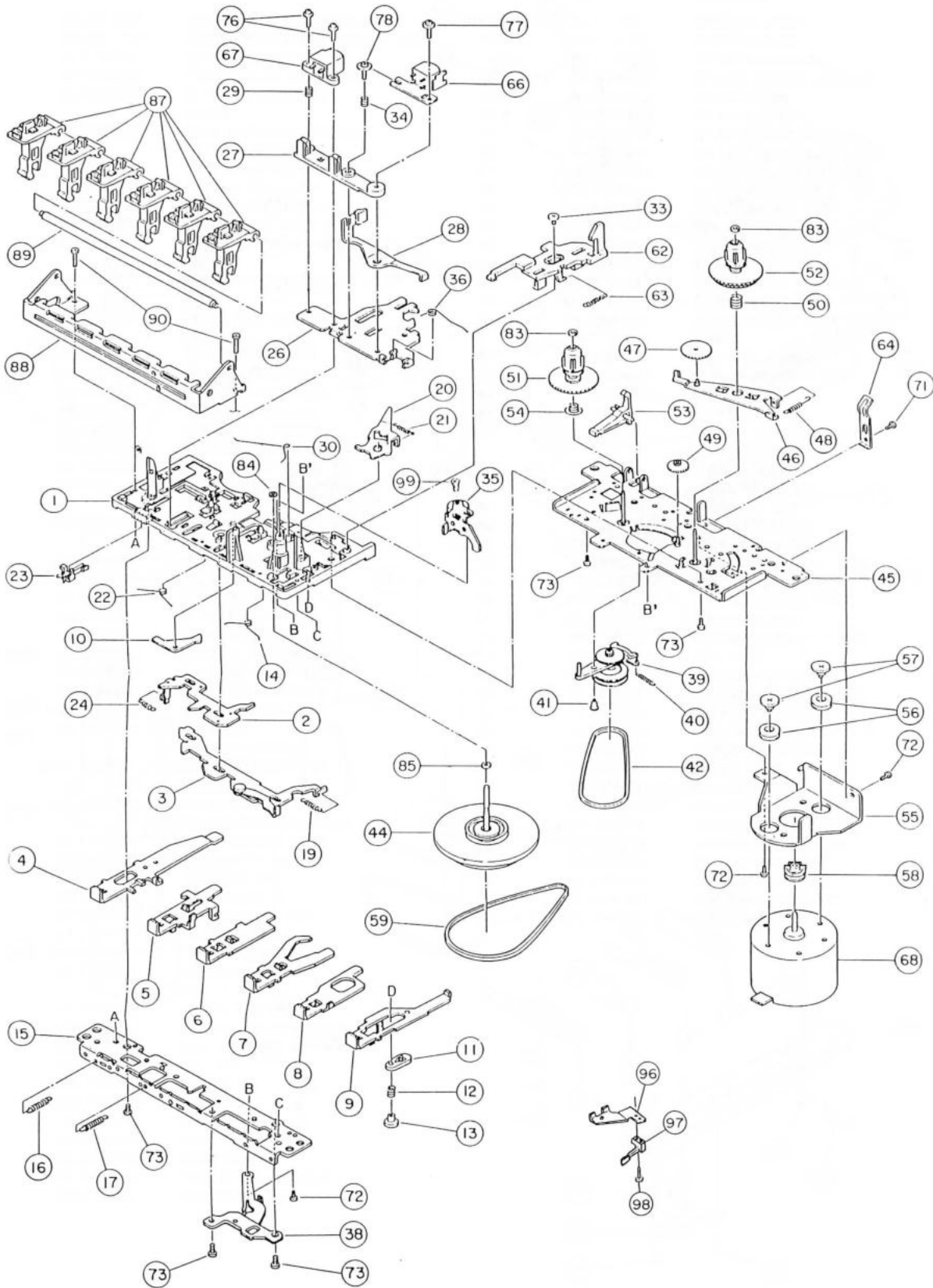
Ref. No.	Part No.	Description
12	ZG-717775	SP PAUSE LEVER
13	MZ-717776	STOPPER PAUSE
14	ZG-717777	SP BUTTON LEVER(C)
17	ZG-726486J	SP PLAY BUTTON LEVER(S)
19	ZG-726487J	SP ACTUATOR
21	ZG-725798J	SP AUTO LEVER
22	ZG-726488J	SP BUTTON LEVER (E)
23	ES-726489J	SW LEAF MSW-1541T
24	ZG-726490J	SP SW ACTUATOR
27	HZ-717780	HEAD BASE
28	BL-726491J	SENSING PLATE ASSY
30	ZG-717784	SP HEAD PANEL (S)
33	ZS-725799J	SCREW PME
34	ZG-717786	SP AZIMUTH
35	BL-726493J	PINCH ROLLER ARM ASSY
36	ZG-725792J	SP PINCH ROLLER
39	BL-726496J	RF PULLEY ARM ASSY [PLAY]
40	ZG-726497J	SP RF PULLEY ARM
41	ZS-726498J	SCREW COLLER RF ARM
42	MB-726455J	BELT RF
44	BF-717793	FLYWHEEL ASSY
46	BL-726500J	TAKE UP GEAR PLATE ASSY [TAPE SELECTOR]
47	MI-726456J	GEAR TAKE-UP
48	ZG-726502J	SP TG PLATE
49	MI-725793J	GEAR FF
50	ZG-725794J	SP BACK TENSION
51	BR-726505J	SUPPLY REEL ASSY
52	BR-725795J	TAKE-UP REEL ASSY
54	ZG-726508J	SP BACK TENSION
56	MB-726509J	CUSHION MOTOR
57	ZS-725791J	SCREW COLLER
58	MR-719575	MOTOR PULLEY
59	MB-725796J	BELT MAIN
62	ML-717804	LEVER SLIDE EJECT
63	ZG-717806	SP LEVER SLIDE EJECT
64	ZS-725797J	SP CASSETTE PACK
66	HP-726513J	HEAD R/P RP-7342 BR-3110
68	BM-726481T	MOTOR M9H12U16-4
77	ZS-726516J	SCREW M2X7
78	ZS-717809	SCREW AZIMUTH
83	ZW-726464J	WASHER CUT1.2X3.8X0.4
84	ZW-726518J	WASHER CUT1.55X3.8X0.5
85	ZW-726519J	WASHER CUT2.05X4X0.5
94	ES-726523J	SW LEAF MSW-1664
96	ES-726522J	SW LEAF MSW-1373
97	ZS-726524J	SCREW CAMERA 1.7X3
99	ZS-726495J	SCREW MS

MECHA BLOCK (PB)



NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHA BLOCK (REC/PB)



NOTE:
 Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

3. MECHA BLOCK (REC/PB)

Ref. No.	Part No.	Description
12	ZG-717775	SP PAUSE LEVER
13	MZ-717776	STOPPER PAUSE
14	ZG-717777	SP BUTTON LEVER(C)
16	ZG-726485J	SP BUTTON LEVER (A)
17	ZG-726486J	SP PLAY BUTTON LEVER(S)
19	ZG-726487J	SP ACTUATOR
21	ZG-725798J	SP AUTO LEVER
22	ZG-726488J	SP BUTTON LEVER (E)
23	ES-726489J	SW LEAF MSW-1541T
24	ZG-726490J	SP SW ACTUATOR
27	HZ-717785	HEAD BASE
28	BL-726491J	SENSING PLATE ASSY
29	ZG-717782	SP EH
30	ZG-717784	SP HEAD PANEL (S)
33	ZS-725799J	SCREW PME
34	ZG-717786	SP AZIMUTH
35	BL-726493J	PINCH ROLLER ARM ASSY
36	ZG-726494J	SP PINCH ROLLER
39	BL-726496J	RF PULLEY ARM ASSY [PLAY]
40	ZG-726497J	SP RF PULLEY ARM
41	ZS-726498J	SCREW COLLER RF ARM
42	MB-726455J	BELT RF
44	BF-717793	FLYWHEEL ASSY
46	BL-726500J	TAKE UP GEAR PLATE ASSY [TAPE SELECTOR]
47	MI-726501J	TAKE UP ROLLER GEAR
48	ZG-726502J	SP TG PLATE
49	MI-726503J	GEAR FF
50	ZG-726504J	SP BACK TENSION
51	BR-726505J	SUPPLEY REEL ASSY
52	BR-726506J	TAKE UP REEL ASSY
53	ML-726507J	LEVER REC SAFETY
54	ZG-726508J	SP BACK TENSION
56	MB-726509J	CUSHION MOTOR
57	ZS-725791J	SCREW COLLER
58	MR-719575	MOTOR PULLEY
59	MB-725796J	BELT MAIN
62	ML-717804	LEVER SLIDE EJECT
63	ZG-717806	SP LEVER SLIDE EJECT
64	ZS-725797J	SP CASSETTE PACK
66	HP-726513J	HEAD R/P RP-7342 BR-3110
67	HE-726514J	HEAD E E-321 PL-0201
68	BM-726481T	MOTOR M9H12U16-4
76	ZS-726515J	SCREW M2X8
77	ZS-726516J	SCREW M2X7
78	ZS-717809	SCREW AZIMUTH
83	ZW-726464J	WASHER CUT1.2X3.8X0.4
84	ZW-726518J	WASHER CUT1.55X3.8X0.5
85	ZW-726519J	WASHER CUT2.05X4X0.5
97	ES-726522J	SW LEAF MSW-1373
98	ZS-726524J	SCREW CAMERA 1.7X3
99	ZS-726495J	SCREW MS

4. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1A	BA-725777T	PC MAIN BLK HX-M459W(U) [U]
1B	BA-725634T	PC MAIN BLK HX-M459W(E,V,B,S) [E,V,B,S]

5. MAIN P.C BOARD

Ref. No.	Part No.	Description
D101	ED-327057	D SILICON H DS442X
D201	ED-327057	D SILICON H DS442X
D301	ED-327057	D SILICON H DS442X
D302	ED-327057	D SILICON H DS442X
D303	ED-327057	D SILICON H DS442X
D501	ED-327057	D SILICON H DS442X
D502	ED-327057	D SILICON H DS442X
D601	ED-720805	D SILICON H 1N5393
D602	ED-720805	D SILICON H 1N5393
D603	ED-348990	D SILICON H DS446
D604	ED-703903	D ZENER H RD15E B2
D605	ED-720799	D ZENER H RD11E B3
D606	ED-327057	D SILICON H DS442X
D607	ED-348990	D SILICON H DS446
D901	ED-327057	D SILICON H DS442X
D902	ED-327057	D SILICON H DS442X
D903	ED-327057	D SILICON H DS442X
D904	ED-327057	D SILICON H DS442X
D905	ED-327057	D SILICON H DS442X
D906	ED-327057	D SILICON H DS442X
D907	ED-327057	D SILICON H DS442X
D908	ED-327057	D SILICON H DS442X
D909	ED-327057	D SILICON H DS442X
D910	ED-327057	D SILICON H DS442X
D911	ED-327057	D SILICON H DS442X
D912	ED-327057	D SILICON H DS442X
D915	ED-327057	D SILICON H DS442X
D920	ED-327057	D SILICON H DS442X
D921	ED-327057	D SILICON H DS442X
D922	ED-327057	D SILICON H DS442X
FL101	EH-720815	FILTER KM-10DF
FL201	EH-720815	FILTER KM-10DF
IC101	EI-709250	IC M5 1522L
IC102	EI-310036	IC TC4066BP
IC103	EI-720804	IC UPC1210C
IC203	EI-720804	IC UPC1210C
IC301	EI-709250	IC M5 1522L
IC302	EI-310036	IC TC4066BP
L350	EO-720814	COIL FIX 153J V3615031-G
L351	EO-720813	COIL FIX 472J
L450	EO-720814	COIL FIX 153J V3615031-G
L451	EO-720813	COIL FIX 472J
Q101	ET-308141	TR 2SC2603 G F05
Q102	ET-308141	TR 2SC2603 G F05
Q103	ET-308141	TR 2SC2603 G F05
Q104	ET-338410	TR 2SC2878 A,B
Q105	ET-308141	TR 2SC2603 G F05
Q106	ET-308141	TR 2SC2603 G F05
Q201	ET-308141	TR 2SC2603 G F05
Q202	ET-308141	TR 2SC2603 G F05
Q203	ET-308141	TR 2SC2603 G F05
Q204	ET-338410	TR 2SC2878 A,B
Q206	ET-308141	TR 2SC2603 G F05
Q301	ET-308141	TR 2SC2603 G F05
Q302	ET-308472	TR 2SA1115 E,F,G F05
Q303	ET-308141	TR 2SC2603 G F05
Q350	ET-308141	TR 2SC2603 G F05
Q351	ET-308141	TR 2SC2603 G F05
Q352	ET-308141	TR 2SC2603 G F05
Q353	ET-308141	TR 2SC2603 G F05
Q401	ET-308141	TR 2SC2603 G F05
Q450	ET-308141	TR 2SC2603 G F05
Q451	ET-308141	TR 2SC2603 G F05
Q452	ET-308141	TR 2SC2603 G F05
Q453	ET-308141	TR 2SC2603 G F05
Q501	ET-308141	TR 2SC2603 G F05
Q502	ET-330225	TR 2SC1815 BL
Q503	ET-330225	TR 2SC1815 BL
Q504	ET-308141	TR 2SC2603 G F05
Q601	ET-375780	TR FET 2SK381 E F05
Q602	ET-522270	TR 2SC1210 D
Q604	ET-308141	TR 2SC2603 G F05
Q605	ET-308141	TR 2SC2603 G F05
Q606	ET-308141	TR 2SC2603 G F05
Q901	ET-308472	TR 2SA1115 E,F,G F05
Q902	ET-308141	TR 2SC2603 G F05

Ref. No.	Part No.	Description
Q903	ET-308141	TR 2SC2603 G F05
Q904	ET-308472	TR 2SA1115 E,F,G F05
Q906	ET-308141	TR 2SC2603 G F05
Q907	ET-308141	TR 2SC2603 G F05
Q909	ET-308472	TR 2SA1115 E,F,G F05
Q910	ET-308472	TR 2SA1115 E,F,G F05
Q911	ET-308141	TR 2SC2603 G F05
Q912	ET-308141	TR 2SC2603 G F05
R927	ER-720801	R THERMO H 1/4S 150-J LT2600
R928	ER-720801	R THERMO H 1/4S 150-J LT2600
R929	ER-720800	R THERMO 1/4S 1.6K-J LT0700
R930	ER-720800	R THERMO 1/4S 1.6K-J LT0700
S301	ES-720798	SW SLIDE CL104K E8234438M
T501	EO-720816	COIL OSC MC-129J
VR101	EV-720807	R S-FIX H V8EK-PV 0.20W 223
VR103	EV-720809	R S-FIX H V8EK-PV 0.20W 473
VR201	EV-720807	R S-FIX H V8EK-PV 0.20W 223
VR203	EV-720809	R S-FIX H V8EK-PV 0.20W 473
VR301	EV-720807	R S-FIX H V8EK-PV 0.20W 223
VR350	EV-355120	R S-FIX H V8EK-PV 0.20W 104
VR401	EV-720807	R S-FIX H V8EK-PV 0.20W 223
VR450	EV-355120	R S-FIX H V8EK-PV 0.20W 104
VR501	EV-355120	R S-FIX H V8EK-PV 0.20W 104
VR502	EV-355120	R S-FIX H V8EK-PV 0.20W 104
VR909	EV-371287	R S-FIX H VM6CKPVB 0.30W 204
VR910	EV-371287	R S-FIX H VM6CKPVB 0.30W 204
F1A	*EF-258344	FUSE SEMKO T 250V 800MA [E,V,S]
F1B	*EF-358641	FUSE BET T 250V 800MA [B]

6. FRONT P.C BOARD

Ref. No.	Part No.	Description
D701	ED-725781T	D LED SE65321DS-D
D702	ED-725781T	D LED SE65321DS-D
D703	ED-725781T	D LED SE65321DS-D
D704	ED-725782T	D LED SE65341DS
D705	ED-725782T	D LED SE65341DS
D801	ED-725781T	D LED SE65321DS-D
D802	ED-725781T	D LED SE65321DS-D
D803	ED-725781T	D LED SE65321DS-D
D804	ED-725782T	D LED SE65341DS
D805	ED-725782T	D LED SE65341DS
D930	ED-725782T	D LED SE65341DS [REC]
D940	ED-725782T	D LED SE65341DS [POWER]
D950	ED-725782T	D LED SE65341DS [DOLBY NR]
IC701	EI-345551	IC LB1403
IC801	EI-345551	IC LB1403
R702	ER-341633	R OMF H S15 FS 1W 680J
R802	ER-341633	R OMF H S15 FS 1W 680J
S930	ES-722984T	SW PUSH [TAPE SELECTOR]
S940	ES-722984T	SW PUSH [DUBBING SPEED]
S950	ES-722984T	SW PUSH [DOLBY NR]
VR102	EV-725631T	VR SLIDE 50KAX2 [REC LEVEL]

7. REGULATOR P.C BOARD

Ref. No.	Part No.	Description
Q603	*ET-371028	TR 2SD1266 P,Q

8. JACK P.C BOARD

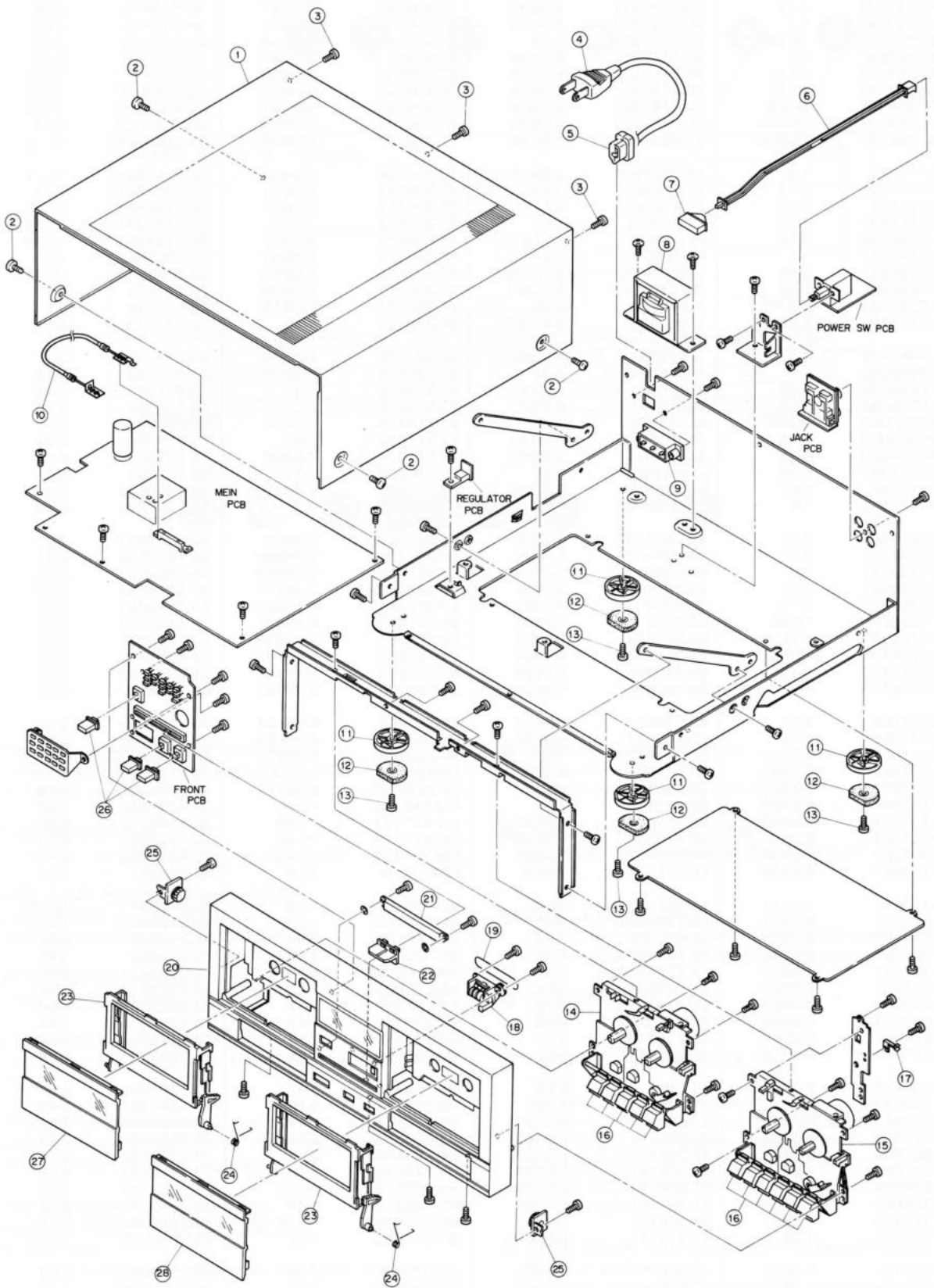
Ref. No.	Part No.	Description
J102	EJ-720703	PIN J

9. POWER SW P.C BOARD

Ref. No.	Part No.	Description
C1	*EC-338496	C CE V FZ 472P 400AC
S1	*ES-337902	SW PUSH SDDL1P 01-1 [POWER SW]

10. ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1	SP-725659J	COVER UPPER HX (S,P)
2	ZS-322580	ST BID40X08STL BNI
3	ZS-305827	ST BID30X06STL BNI
4A	*EW-374894	AC CORD 2C VM-0129A,VFF U/T [U]
4B	*EW-347897	AC CORD 2 CORES VM0364,LCFL EV [E,V]
4C	*EW-346249	AC CORD 2 CORES LCFL2X0.75 B [B]
4D	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S [S]
5	*EZ-371605	BUSH CORD 2271
6	MZ-725632T	JOINT POWER
7	SK-725482T	KNOB POWER-B
8A	*BT-725637T	TRANS POW HX-M459W(U) [U]
8B	*BT-725636T	TRANS POW HX-M459W(E,V) [E,V]
8C	*BT-725635T	TRANS POW HX-M459W(B,S) [B,S]
9	*ES-725477T	SW SLIDE [U] [VOLTAGE SELECTOR]
10	MZ-725621T	LINK REC/PB
11	SA-725458T	FOOT (ABS)
12	SA-725452T	CUSHION FOOT (GUM)
13	ZS-305827	ST BID30X06STL BNI
14	BB-725780T	MECHA (PB) BLK TN-21SC-1437
15	BB-725779T	MECHA (REC/PB) BLK TN-21SC-1405
16	SK-725620T	KNOB DECK FUNCTION
17	ES-726521J	SW LEAF MSW-1275
18	MC-725628T	COUNTER
19	MB-726520J	BELT COUNTER
20A	BD-725622T	PANEL SUB ASSY HX-M459W
20B	BD-726525T	PANEL SUB ASSY HX-M659W
21	SZ-725623T	HOLDER VOL KNOB
22	SK-725627T	KNOB VOL
23	MZ-725624T	HOLDER COVER CASSETTE
24	ZW-725625T	SP W
25	MZ-725626T	DUMPER CASSETTE CASE
26	SK-725629T	KNOB PUSH
27	BD-725618T	LID CASSETTE (L) HX-M459W
28	BD-725619T	LID CASSETTE (R) HX-M459W



Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

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ABBREVIATIONS FOR SERVICE MANUAL (CASSETTE)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AC	Alternating Current	MEMO	MEMORy
A/D	Analog/Digital	MICOM	MIcroCOMputer
AF	Auto Fader	MIN	MINute
A.M	Auto Mute	MML	Maximum Modulation Level
AMP	AMPLifier	MOL	Maximum Output Level
AR	Anti Recording	MPX	Multi Plex
AT BIAS	Auto Tuning BIAS	NC	Not Connected (No Connection)
ATT	ATTenuator	NFB	Negative Feed Back
BAL	BALance	NORM	NORMAL
BEF	Band Elimination Filter	NR	Noise Reduction
BSS	Blank Search System	OSC	OSCillator (OSCillation)
BSPS	Blank Skip Play System	P	Pulse
CAP M	CAPs Tan Motor	PB	Play Back
CH	CHannel	QMSS	Quick Memory Search System
COMP	COMParator	QR	Quick Reverse
CONT	CONTinuance	R CH	Right CHannel
CRLP	Computer Recording Level Processing	REC	RECORD (RECORDing)
CS	Chip Select	REV	REVerse
D/A	Digital/Analog	ROT	ROTation
DC	Direct Current	REW	REWind
DET	DETECTOR	SEC	SECond
DISCRI	DISCRIminator	SELE	SELEctor
DUB	DUBbing	SENS	SENSitivity
EQ	EQUALizer	SEPP	Single Ended Push Pull
FF (or F.FWD)	Fast Forward	SIG	SIGnal
FLD	FLUorescent Display	SPECT	SPECTrum
FREQ	FREQUency	STD	STANdard
FWD	ForWARd	SW	SWitch
GND	GrouND	SYSCON	SYStem CONtrol
H	High	TP	Test Point
HPF	High Pass Filter	TRIG	TRIGa
IND	INDicator	VCA	Voltage Control Attenuator
IPLS	Instant Program Location System	VOL	VOLUME
L	Low	VOLT	VOLTage
L CH	Left CHannel	VR	Variable Resistor
LED	Light Emitting Diode	X'TAL	cysTAL
		X1	Normal speed
		X2	Dubble speed

AKAI

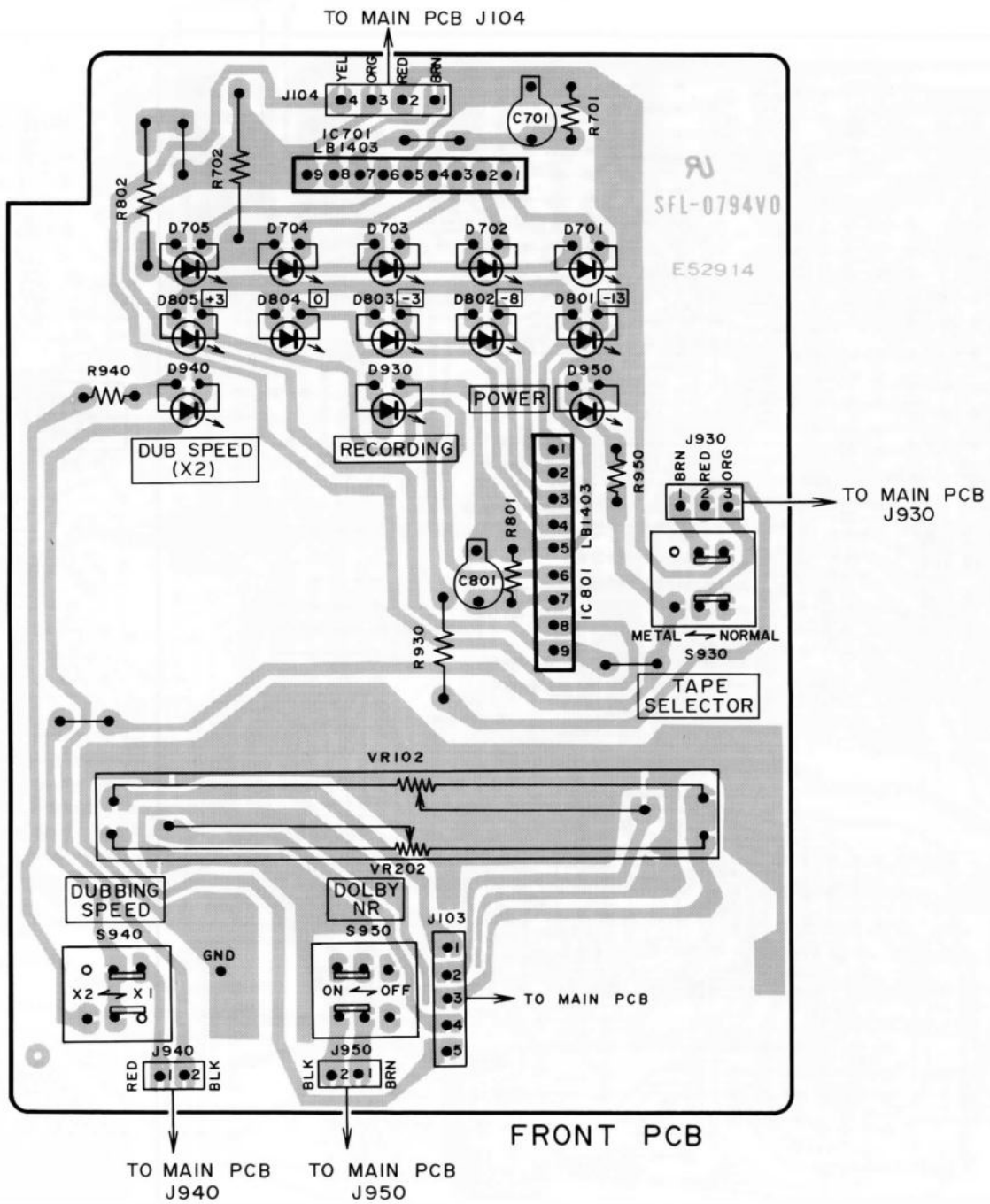
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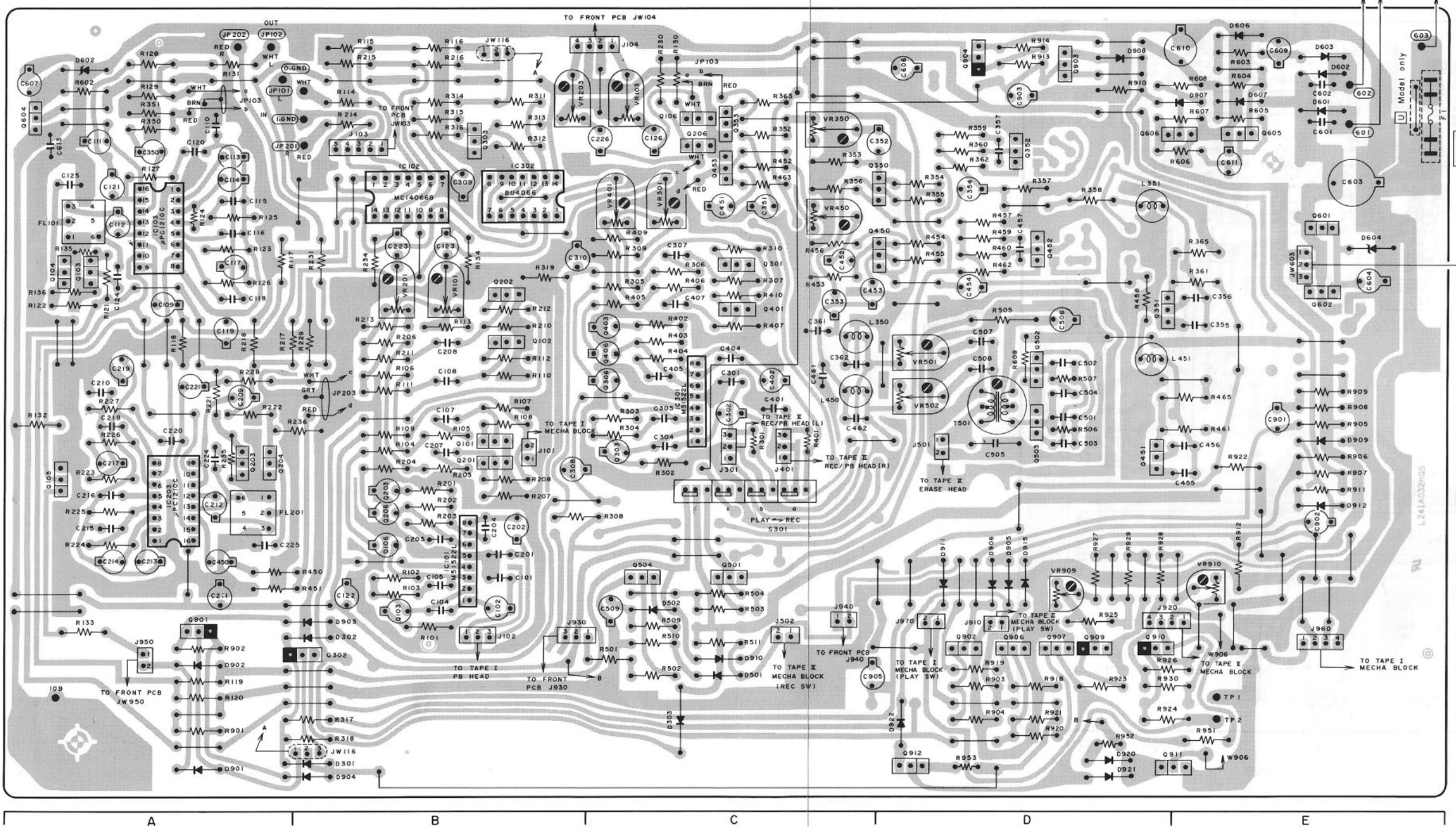
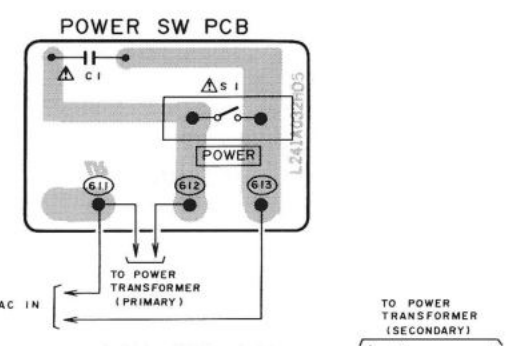
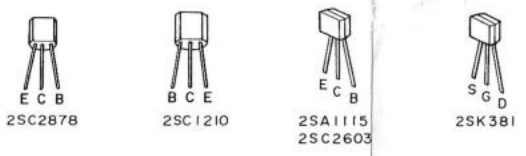
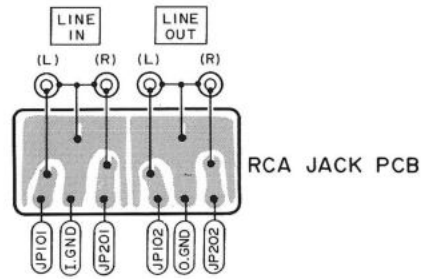
MODEL **HX-M659W**

SCHEMATIC DIAGRAM AND PC BOARDS

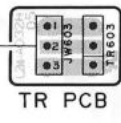
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Model only



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J401	C3	J960	E4
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WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

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12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan
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