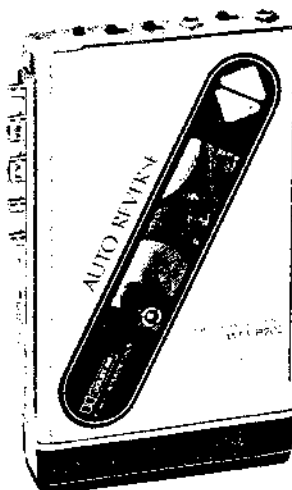


WM-R202

SERVICE MANUAL

AEP Model
UK Model
ET Model



'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories Licensing Corporation. Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Frequency response (DOLBY NR OFF)
40-15,000Hz (playback, with the PB EQ selector set to CrO₂/METAL)
40-15,000Hz (playback, with the PB EQ selector set to NORM)
50-9,000Hz (with the PB EQ selector set to NORM)

Power output
4.5mW+4.5mW at DC operation (at 10% harmonic distortion)

Power requirements
1.5V DC
IEC designation LR6 battery (size AA)
Rechargeable battery (optional)
External batteries (used in the optional Sony EPB-10 battery case): IEC designation LR6 (size AA)×2
DC IN 1.5V jack accepts:
Sony AC-D1 AC power adaptor (optional) available in the United Kingdom for use on 240V ac, 50Hz
available in European countries for use on 220V ac, 50Hz
Sony DCC-70 car battery cord (optional) for use with 12V car battery

Battery life (hours)

Battery	Tape playback	Microphone recording
Sony SUM-3 (NS) New Super	Approx. 2	Approx. 2
Sony Eveready AM3 alkaline	Approx. 4	Approx. 4
Sony NC-5WM Rechargeable battery (optional) (fully charged)	Approx. 2	Approx. 2

For maximum performance we recommend the use of alkaline battery.



Tape transport mechanism type	MT-WMR202-01
Similar mechanism model	WM-F202

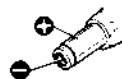
Dimensions

excl. projecting parts and controls
Approx. 69.8×110.5×19.8mm (w/h/d)
(2⁷/₈×4¹/₈×²/₁₁ inches)
with rechargeable battery case attached
Approx. 69.8×119.2×21.4mm (w/h/d)
(2⁷/₈×4¹/₈×²/₁₁ inches)
with battery case attached
incl. projecting parts and controls
Approx. 76.1×112.5×23.8mm
(3×4¹/₂×¹/₁₆ inches)
with rechargeable battery case attached
Approx. 76.1×121.2×23.8mm (w/h/d)
(3×4⁷/₈×¹/₁₆ inches)
with battery case attached

Weight

Approx. 210g (7.2oz) incl. rechargeable battery case and rechargeable battery not incl. other accessories
Approx. 210g (7.2oz) incl. battery and battery case not incl. other accessories

Note: If a car battery cord or a power adaptor not manufactured by Sony is used, a fuse must be installed in the battery cord, or the ac power adaptor and the polarity of the plug must be as illustrated.



Polarity of the Sony plug

STEREO CASSETTE CORDER
SONY



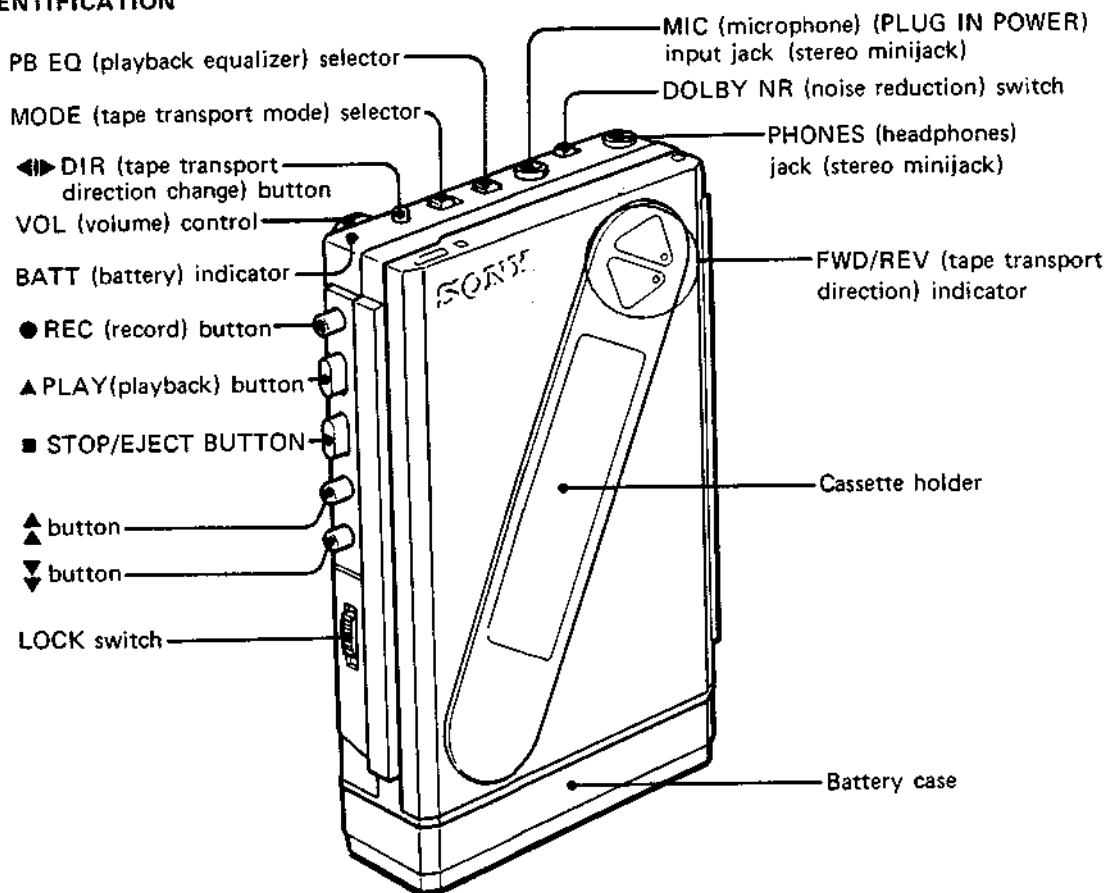
Flexible Circuit Board Repairing

1. Keep the temperature of the soldering iron at $270^{\circ} \pm 10^{\circ} \text{C}$ during repairing.
2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
3. Do not apply force on the conductor when soldering or unsoldering.

Tip of soldering iron



PARTS IDENTIFICATION



Replacing chip components

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

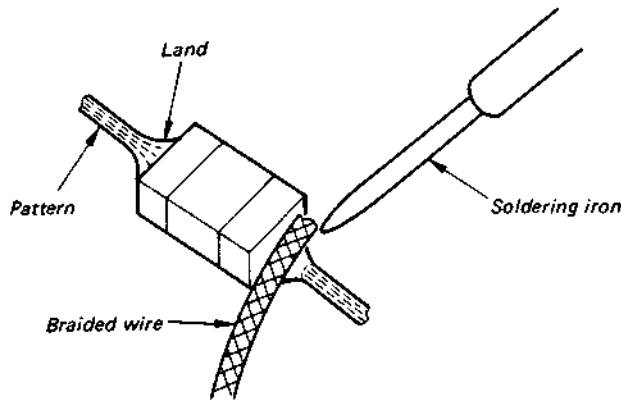
Precautions for replacement

1. Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.
2. Never re-use a disconnected chip component. Dispose of all old chip components.
3. To protect the chip component, heating time for attaching the component should be within 3 seconds.

○ Removing chip components

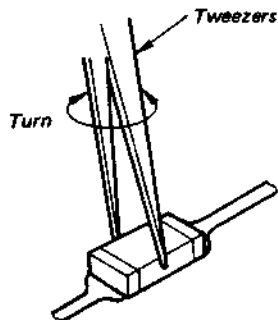
(1) Removing solder at electrode

Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off. Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

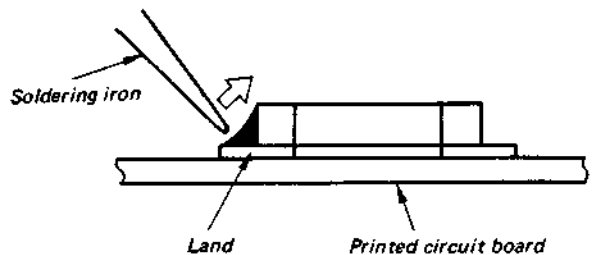
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

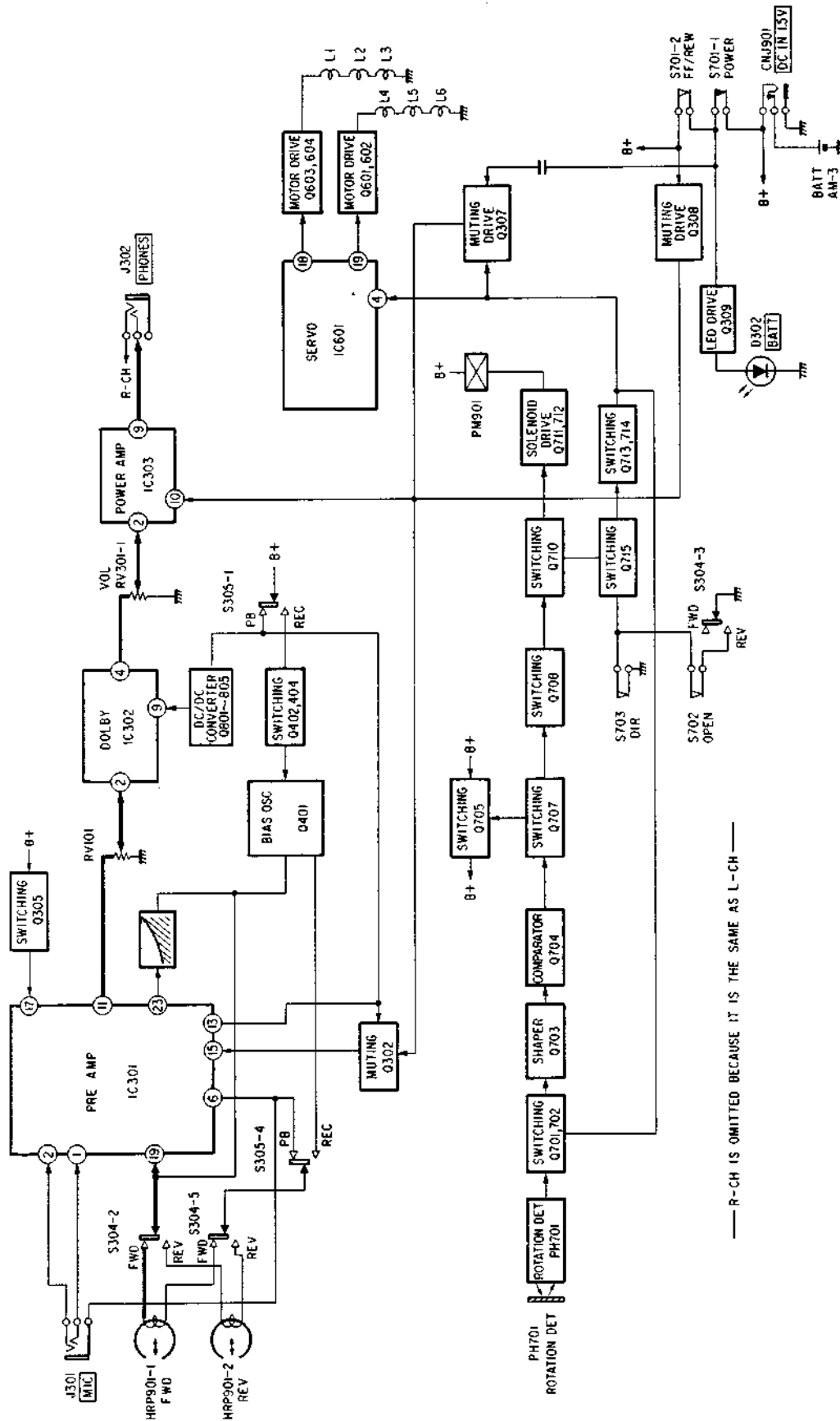
Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

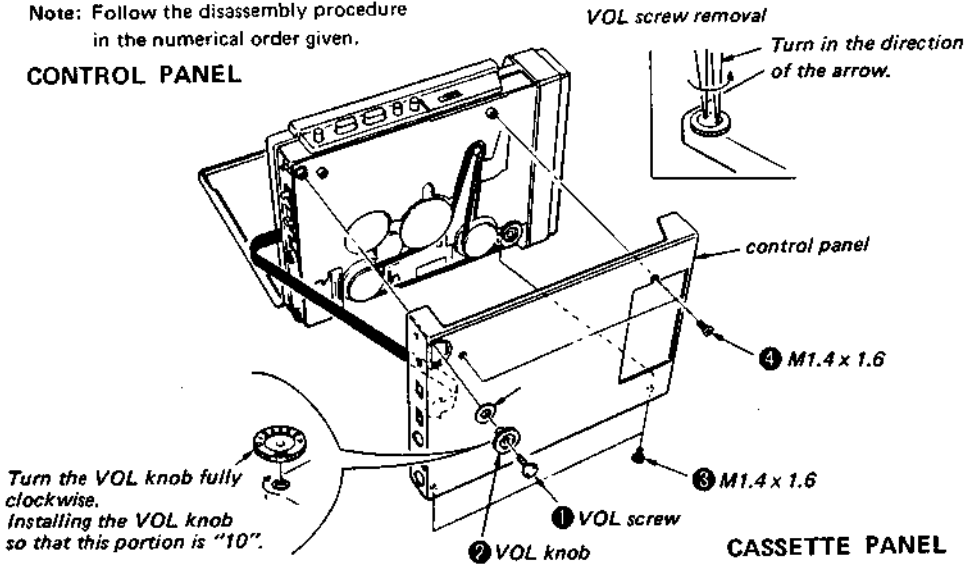
SECTION 1
BLOCK DIAGRAM



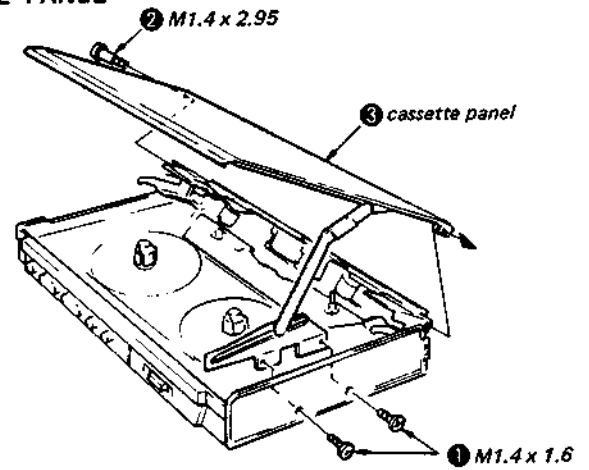
SECTION 2 DISASSEMBLY

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

CONTROL PANEL

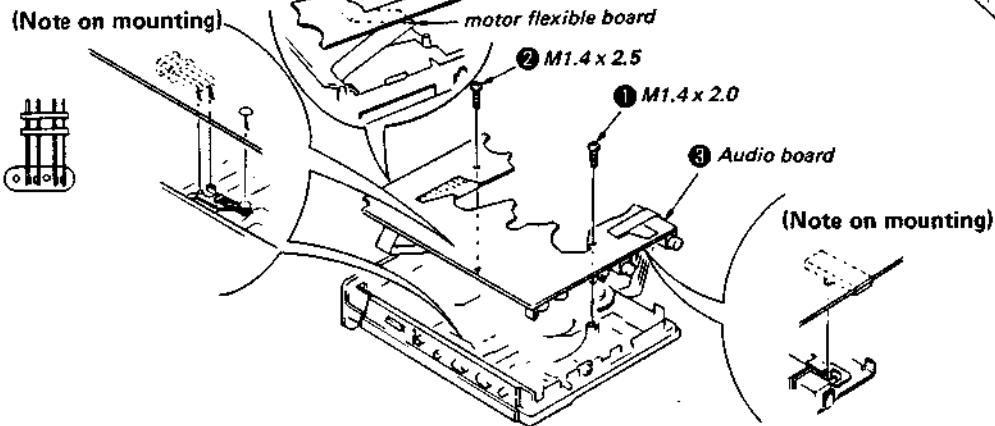


CASSETTE PANEL

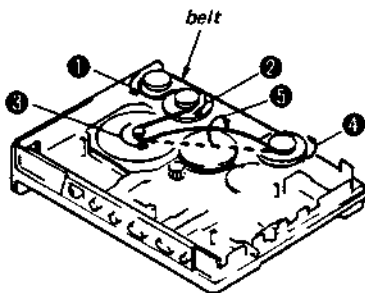


AUDIO BOARD

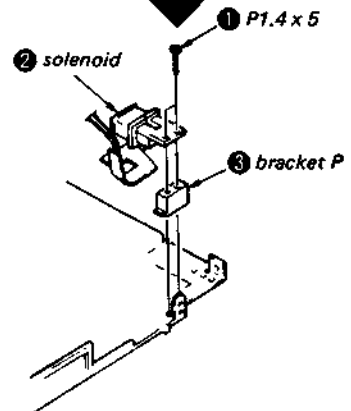
(Note on mounting)



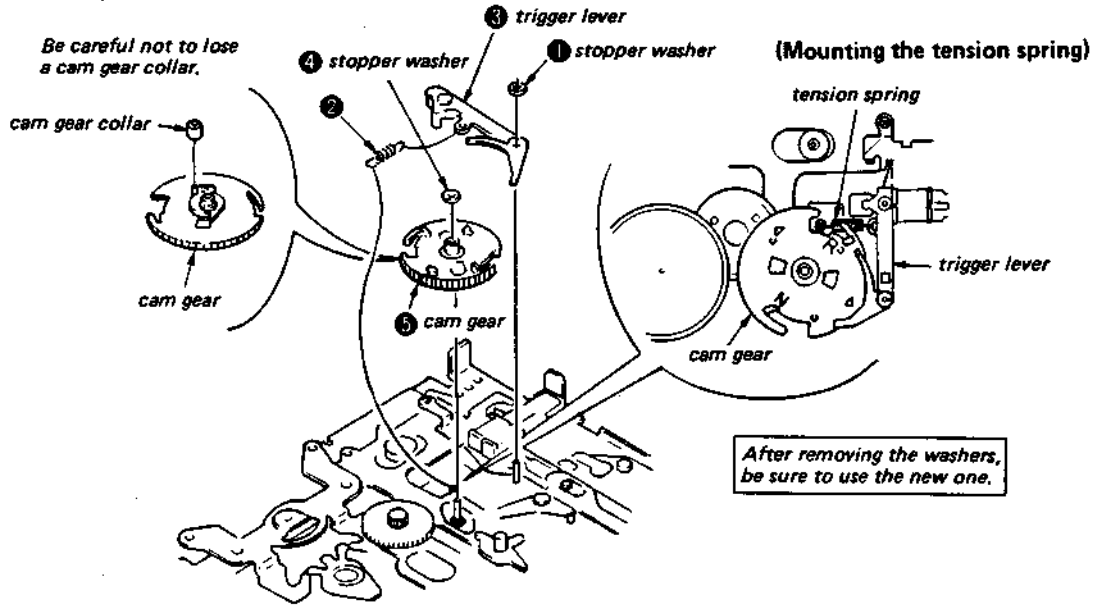
INSTALLING THE BELT



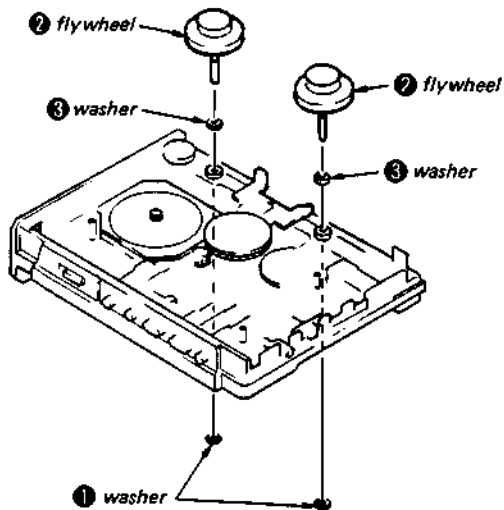
SOLENOID PLUNGER (PM901)



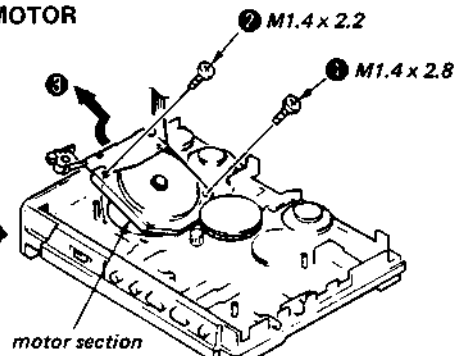
TRIGGER LEVER, CAM GEAR



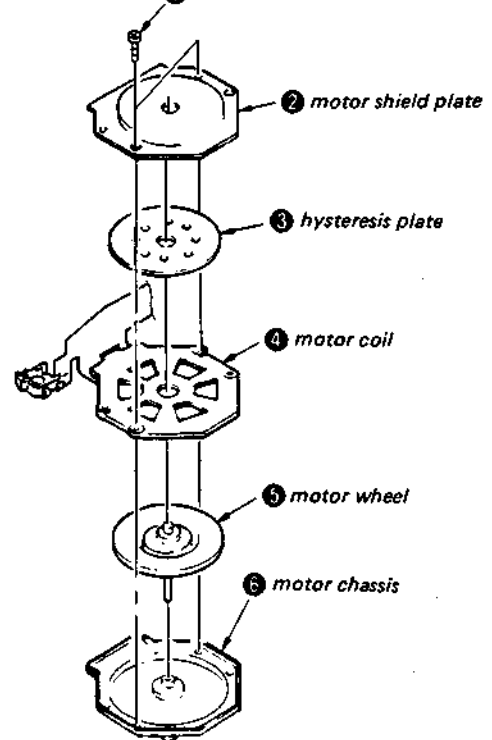
FLYWHEEL



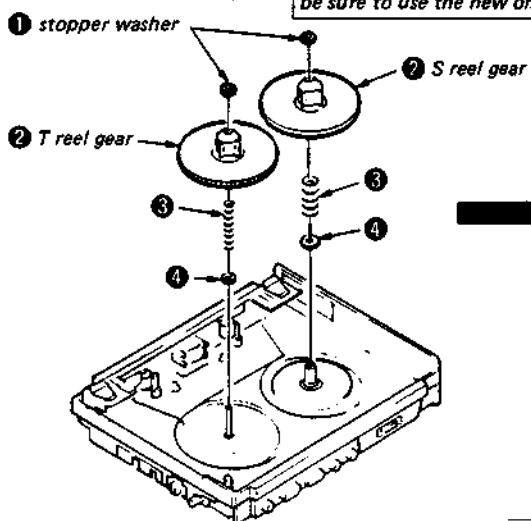
MOTOR



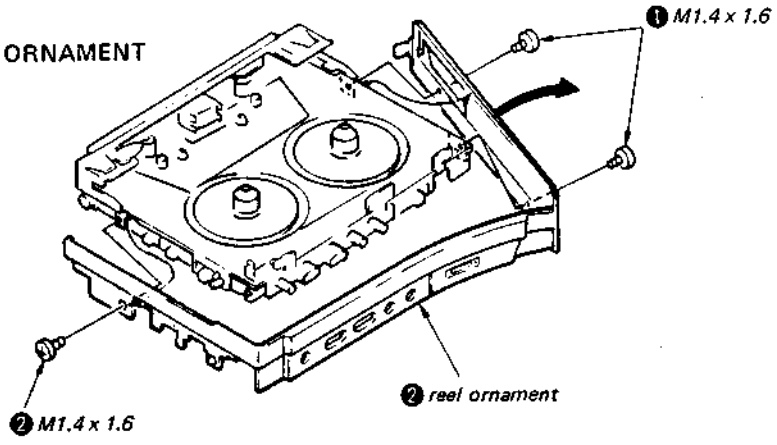
MOTOR COIL



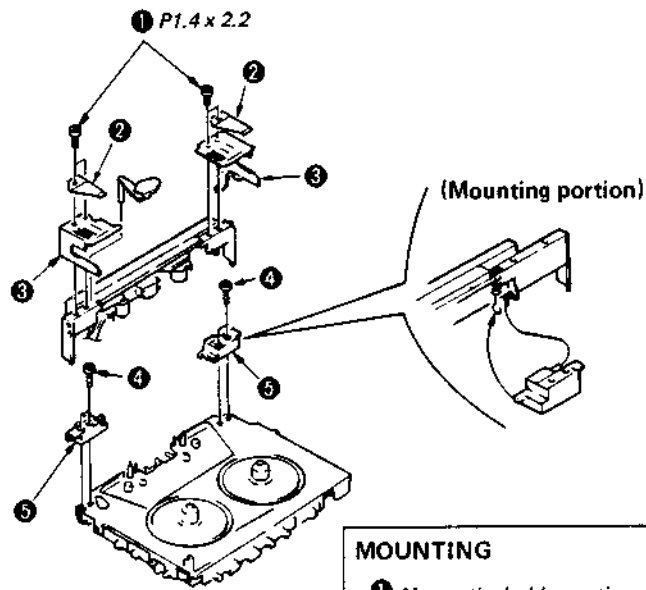
REEL GEAR



REEL ORNAMENT

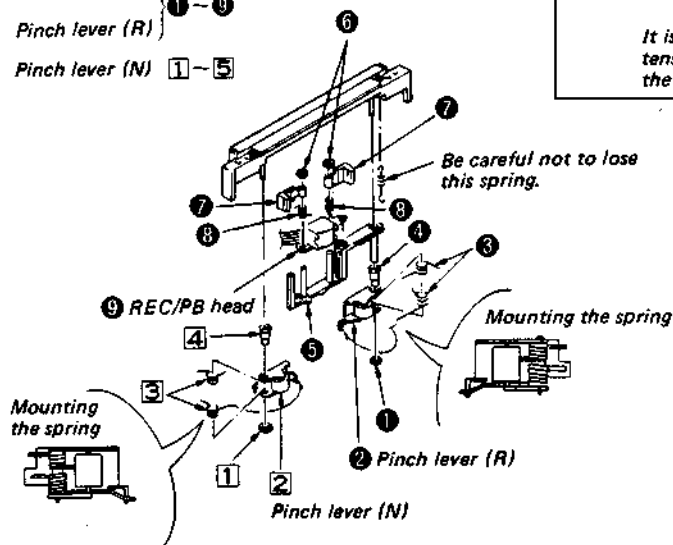


HOLDER



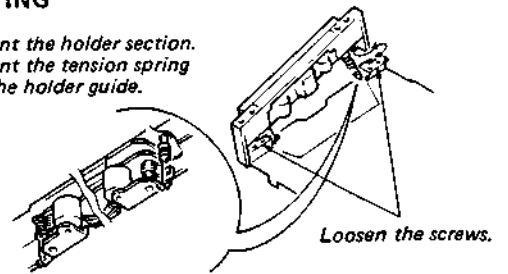
HEAD, PINCH ROLLER

- Head 1-9
- Pinch lever (R) 1-5
- Pinch lever (N) 1-5



MOUNTING

- 1 Mount the holder section.
- 2 Mount the tension spring on the holder guide.



It is easier to install when the tension spring is hooked on the holder guide as illustrated.

SECTION 3 ADJUSTMENTS

3-1. MECHANICAL MEASUREMENT

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.

ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

• Standard Record:

Standard Input Level

INPUT	MIC
source impedance	300Ω
input level	0.77mV (-60 dB)

Standard output Level

OUTPUT	HEADPHONES
load impedance	18Ω
output level	*0.0775V (-20 dB)

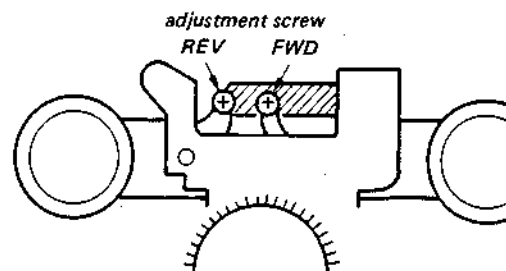
*Adjust by volume control.

Torque Measurement

Perform with 1.3V DC power.

	Torque meter	meter
FWD	CQ-102RC	20 - 38 g·cm (0.28 - 0.52 oz·inch)
FF, REW	CQ-201B	more than 70 g·cm (more than 0.97 oz·inch)
Back Tension (FWD, REV)	CQ-102C	less than 1.5 - 3 g·cm (less than 0.02 - 0.04 oz·inch)
Tape pulling force (FWD)	CQ-403A	more than 60 g (more than 2.1 oz)
REV	CQ-102RC	25 - 38 g·cm (0.35 - 0.52 oz·inch)
Tape pulling force (REV)	CQ-403R	more than 60 g (more than 2.1 oz)

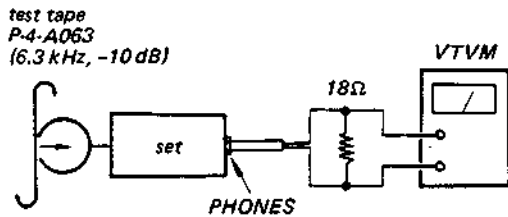
Adjustment Location:



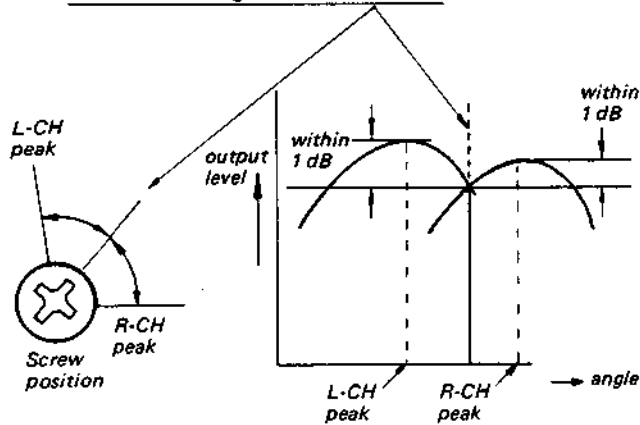
Record/playback Head Azimuth Adjustment

Procedure:

1. Mode: playback FWD, REV mode



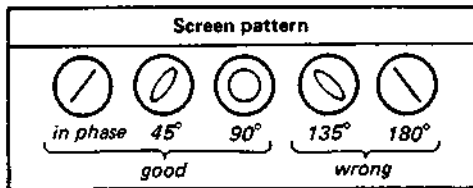
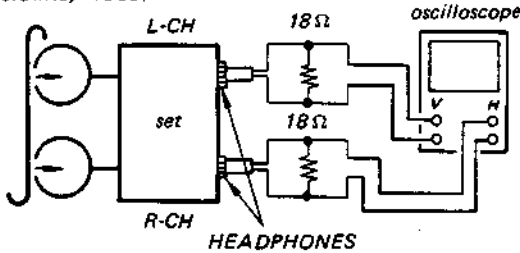
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



Note) After the adjustments, apply locking compound to the screw.

3. Phase Check
Mode: playback

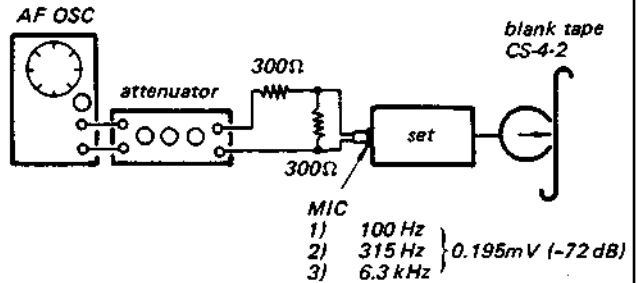
test tape
P-4-A063
(6.3 kHz, -10 dB)



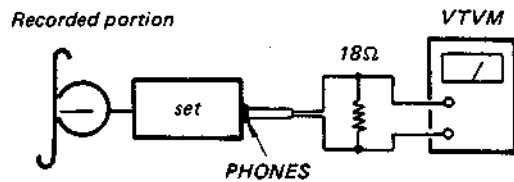
Record Bias Adjustment

Procedure:

1. RECORD mode

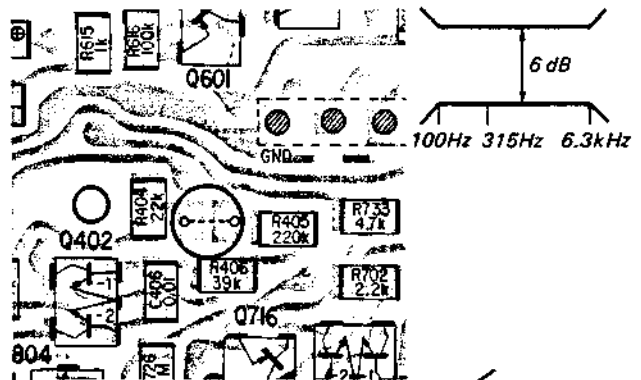


2. PLAYBACK mode

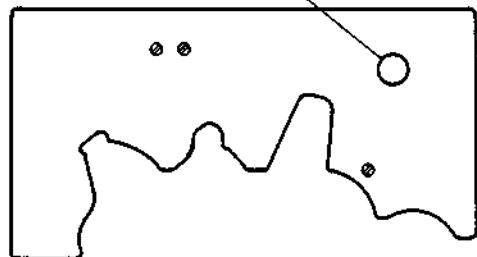


- 1) Adjust VOLUME control so that 315 Hz output becomes 24.5 mV (-30 dB).
- 2) Make sure that 100 Hz and 6.3 kHz values are within the specifications relative to 315 Hz.
- 3) If not, switch the tap and step 1 and 2. (When the pattern is bridged, 6.3 kHz output decreases.)

Specification:



[AU BOARD]



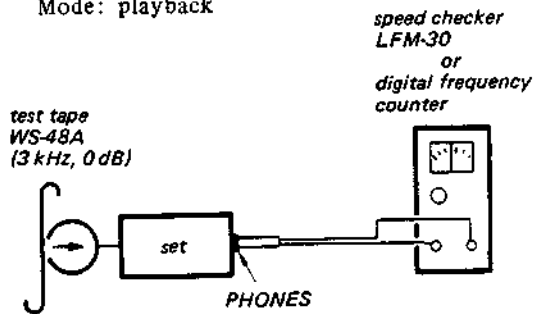
Tape Speed Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

Mode: playback

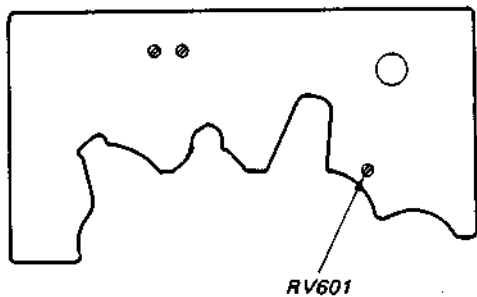


Specification:

Speed checker	Digital frequency counter
±1%	2,970 – 3,030 Hz

Adjustment Location: RV601

[AU BOARD]

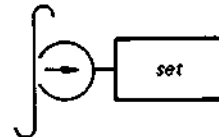


Dolby NR Level Adjustment

Setting:

TAPE switch: NORM
DOLBY NR switch: off

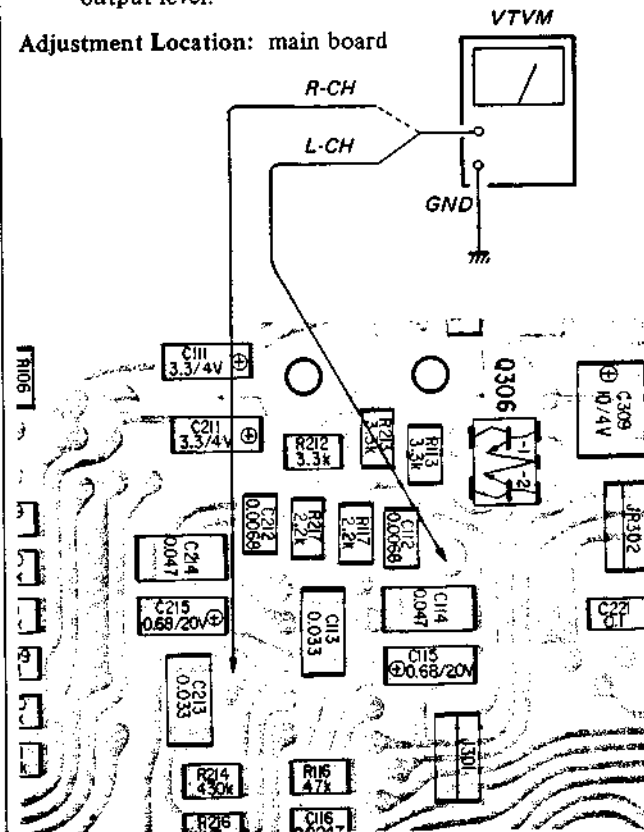
test tape
P-4-L300
(315 Hz, 0 dB)



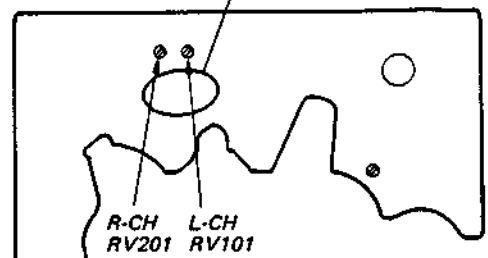
Procedure:

Adjust RV101 (L-CH), RV201 (R-CH) to obtain -20.5 dB ±1 dB (0.082V to 0.065V) output level.

Adjustment Location: main board



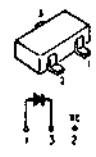
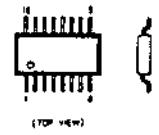
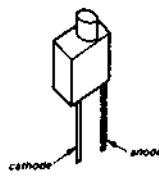
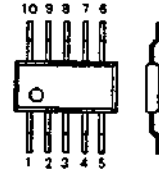
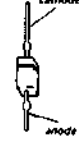
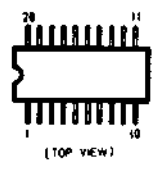

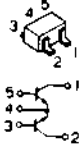
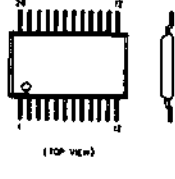

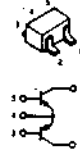
[AU BOARD]



● Semiconductors Location

Ref. No.	Location	Ref. No.	Location
D301	D-3	Q604	B-4
D302	J-15	Q701	E-4
D401	J-2	Q702	F-4
D801	D-2	Q703	C-5
		Q704	C-6
IC301	H-14	Q705	D-3
IC302	G-13	Q706	C-4
IC303	F-14	Q707	C-6
IC601	B-14	Q708	C-6
		Q710	B-5
PH701	G-5	Q711	A-5
		Q712	A-4
Q302	H-13	Q713	A-6
Q305	E-2	Q714	A-7
Q306	F-3	Q715	A-10
Q307	E-3	Q716	C-3
Q308	E-3	Q717	C-3
Q309	D-3	Q718	E-4
Q401	J-2	Q801	D-15
Q402	C-2	Q802	D-15
Q404	C-2	Q803	D-15
Q601	B-3	Q804	C-2
Q602	B-2	Q805	C-2
Q603	B-3		

● Semiconductor Lead Layouts

<p>DA106K</p> 	<p>NJM2063AM</p> 
<p>GL2PR9</p> 	<p>LA4535M</p> 
<p>1S5283</p> 	<p>CX20123</p> 
<p>RD3, 9M-B1</p> 	<p>FMW1 FMG4</p> 
<p>CXA1010M</p> 	<p>DTA114YK 2SA812 DTC114TK 2SD596 2SB624-BV4 2SC1623</p> 
<p>FMS1 FMA4</p> 	

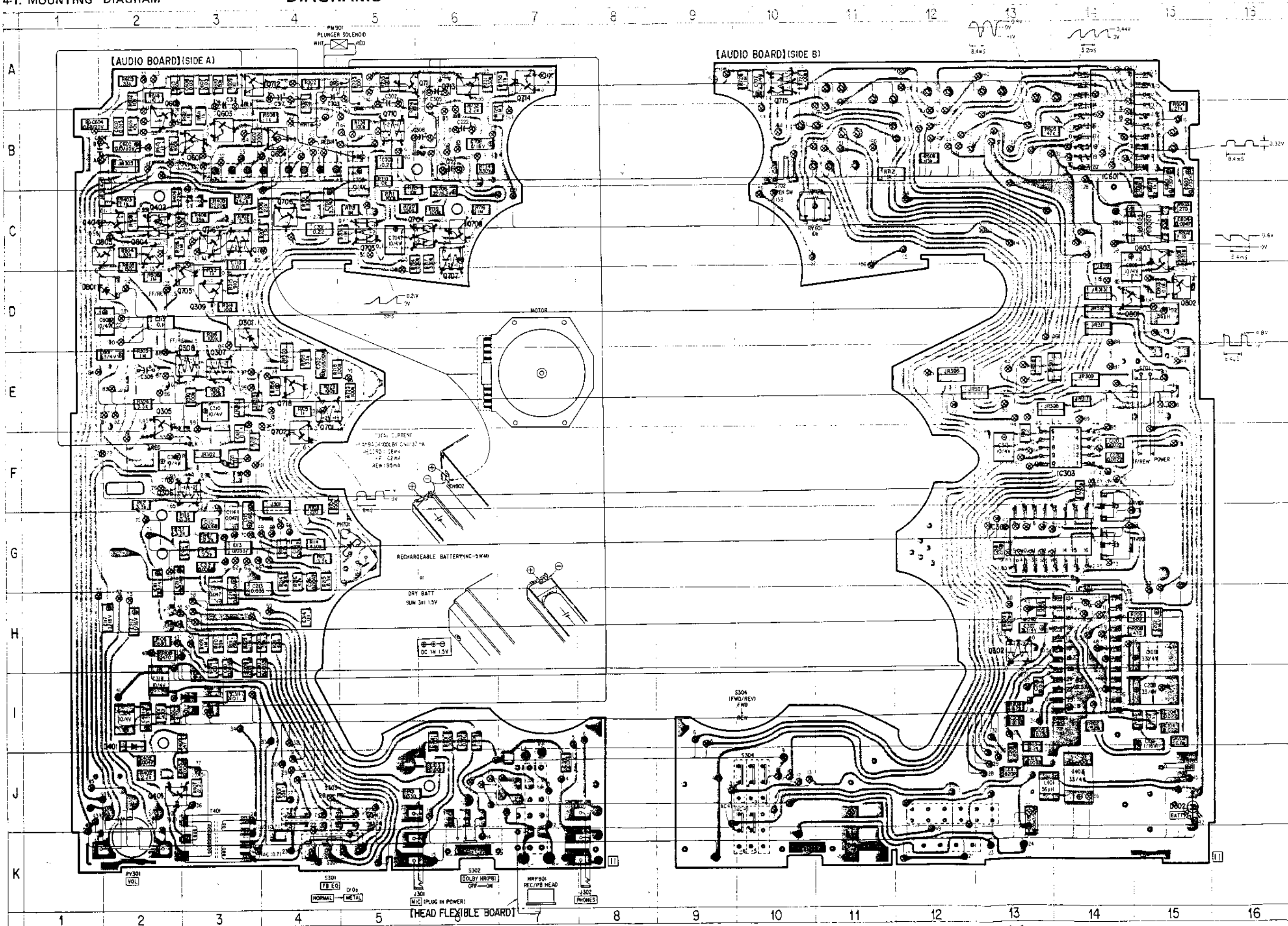
Note:

- ⊗ : Through hole.
- ⊗—⊗ : Component-side p

4-1. MOUNTING DIAGRAM

SECTION 4
DIAGRAMS

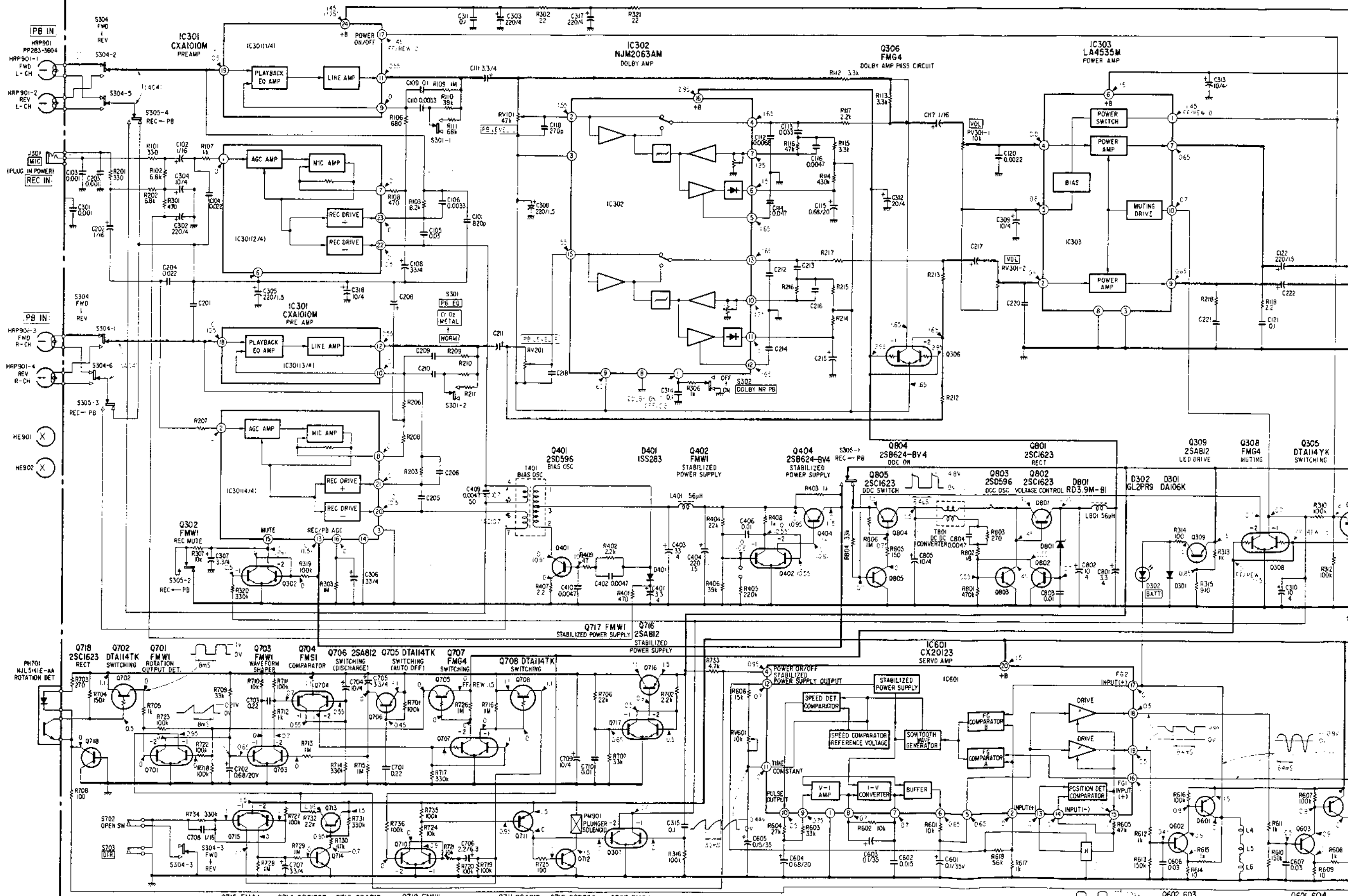
WM-R202 WM-R202



pattern.

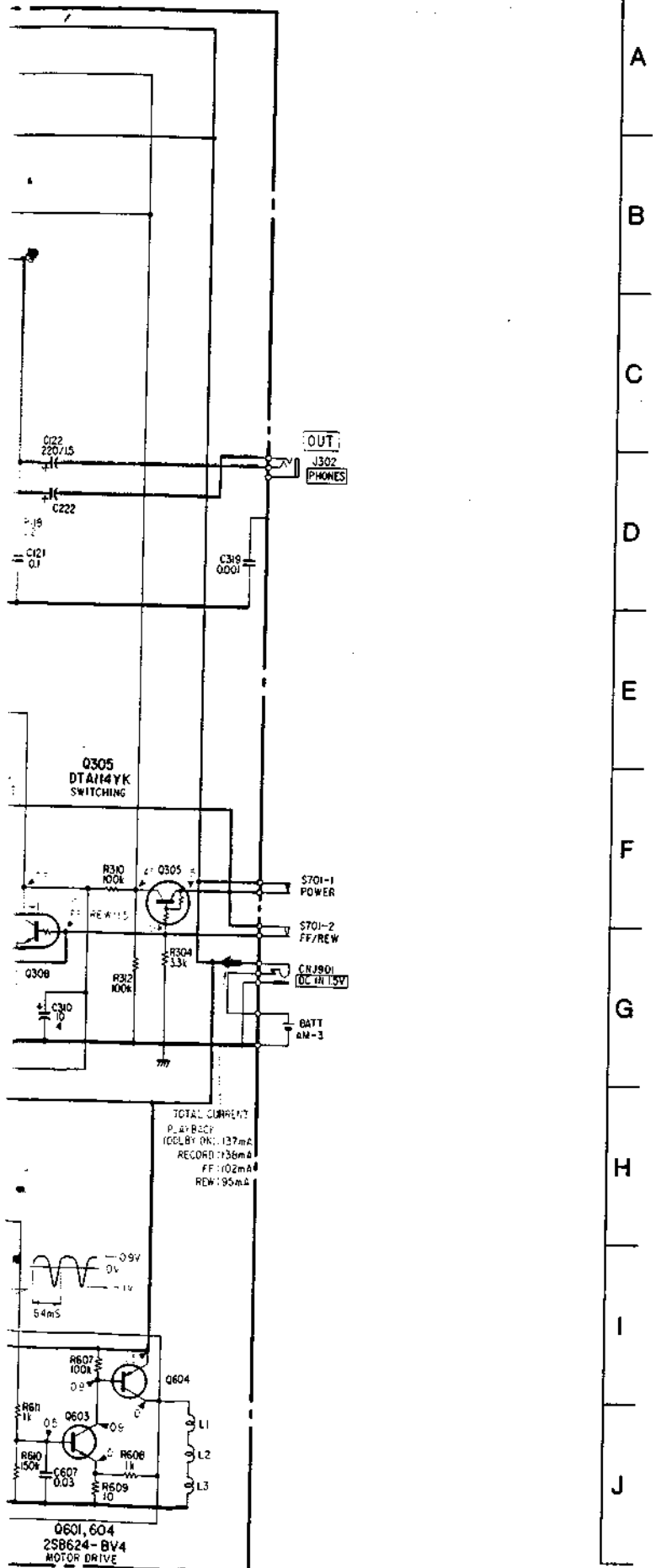
WM-R202 WM-R202

4-2 SCHEMATIC DIAGRAM [AUDIO BOARD]



16 17 18 19

A
B
C
D
E
F
G
H
I
J



Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu\mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4W$ or less unless otherwise specified.
- : Playback signal path.
- : Record signal path.
- Components for right channel have same values as for left channel. Reference numbers are coded from 200.
- : B+ bus.
- : adjustment for repair.
- AC voltage readings in the bias oscillator with a VTVM.
- Total current is measured with no cassette installed.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with VOM (50k Ω/V).
- no mark: playback
() : Record
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken to ground in no-signal mode by using oscilloscope.
- Voltage variations may be noted due to normal production tolerances.

• **Switches**

Ref. No.	Switch	Position
S301	PB EQ	NORM
S302	DOLBY NR	OFF
S304	FWD/REV	FWD
S305	REC/PB	PB
S701	POWER, FF/REW	OFF
S702	OPEN SW	OFF
S703	DIR	OFF

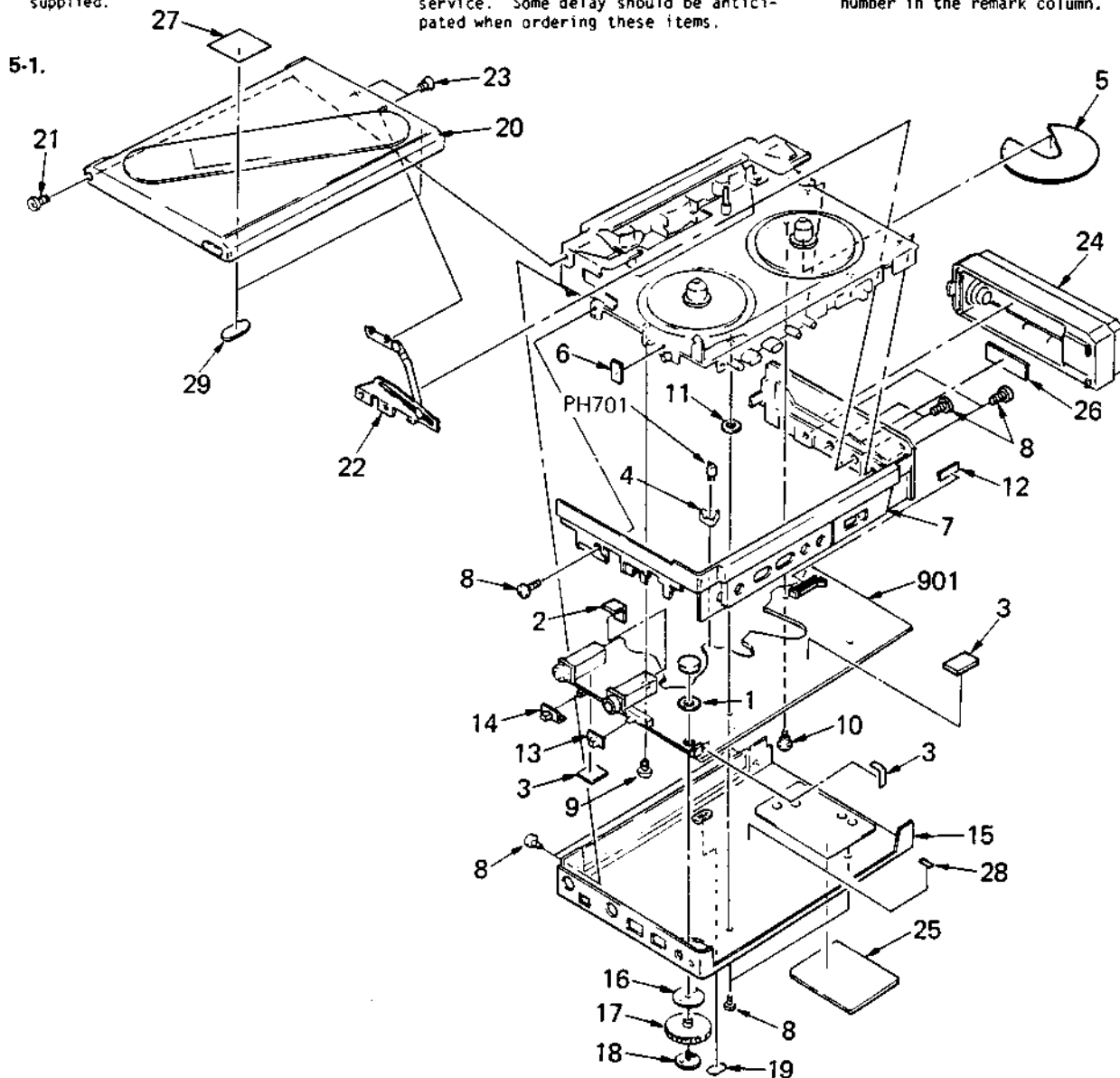
SECTION 5 EXPLODED VIEWS AND PARTS LIST

NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

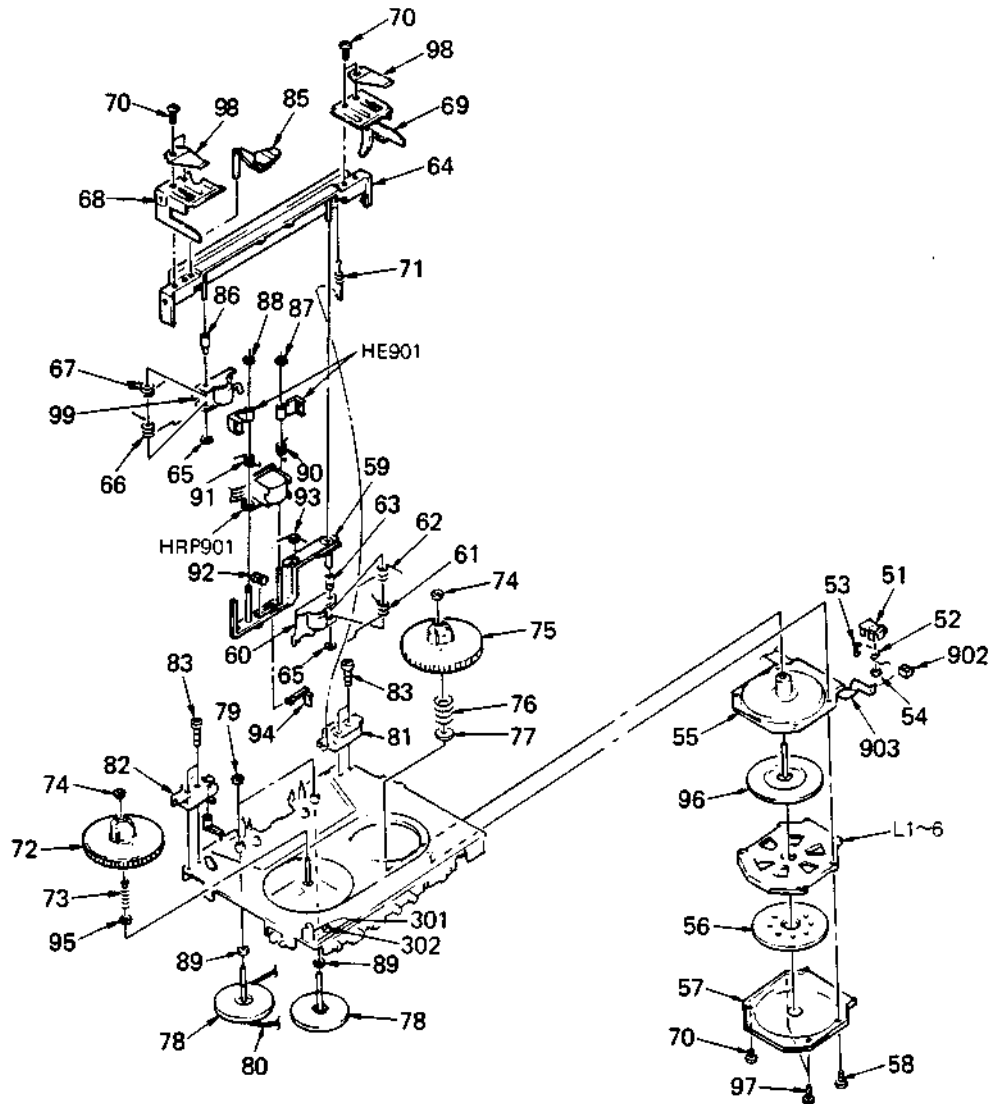
Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	3-330-442-01	SHEET, ADHESIVE, VOL		16	3-315-467-00	WASHER, CONTROL	
2	3-703-929-01	SHEET, M.J		17	3-333-142-01	KNOB, VOL	
3	3-831-441-XX	SPACER		18	3-333-145-01	SCREW, VOL	
4	3-329-761-01	ADJUSTOR, REFLECTOR		19	3-333-162-01	(SILVER)...SHEET, AZIMUTH HOLE	
5	3-333-163-01	SHEET, INSULATING, SHIELD PLATE			3-333-162-11	(BLACK)...SHEET, AZIMUTH HOLE	
7	3-335-922-01	ORNAMENT, REEL		20	X-3329-715-1	(BLACK)...PANEL ASSY (B), CASSETTE	
8	3-703-816-31	SCREW (M1.4X1.6), SPECIAL HEAD			X-3329-716-1	(SILVER)...PANEL ASSY (S), CASSETTE	
9	3-703-816-02	SCREW (M1.4X2.0), SPECIAL HEAD		21	3-329-766-01	SCREW (M1.4X2.95), STEP	
10	3-333-181-01	SCREW (M1.4), PRECISION STEP		22	X-3329-684-1	BRACKET ASSY, ARM	
11	3-701-437-11	WASHER		23	7-627-451-07	SCREW, PRECISION +K 1.4X1.6	
12	*3-317-714-01	BRACKET, SWITCH		24	X-3329-648-1	CASE (B) ASSY, BATTERY	
13	3-333-140-01	KNOB, TAPE SW		25	3-331-025-01	(SILVER)...LABEL, MODEL NUMBER	
14	3-333-141-01	KNOB, DOLBY SW			3-331-025-11	(BLACK)...LABEL, MODEL NUMBER	
15	3-335-920-01	(BLACK)...PANEL, CONTROL		26	3-527-213-00	LABEL, SERIAL NUMBER	
	3-335-920-11	(SILVER)...PANEL, CONTROL		27	3-703-710-01	STICKER, SONY SYMBOL (12)	
				28	3-327-119-01	SHEET, AZIMUTH	
				29	3-323-130-01	CUSHION, CASSETTE	

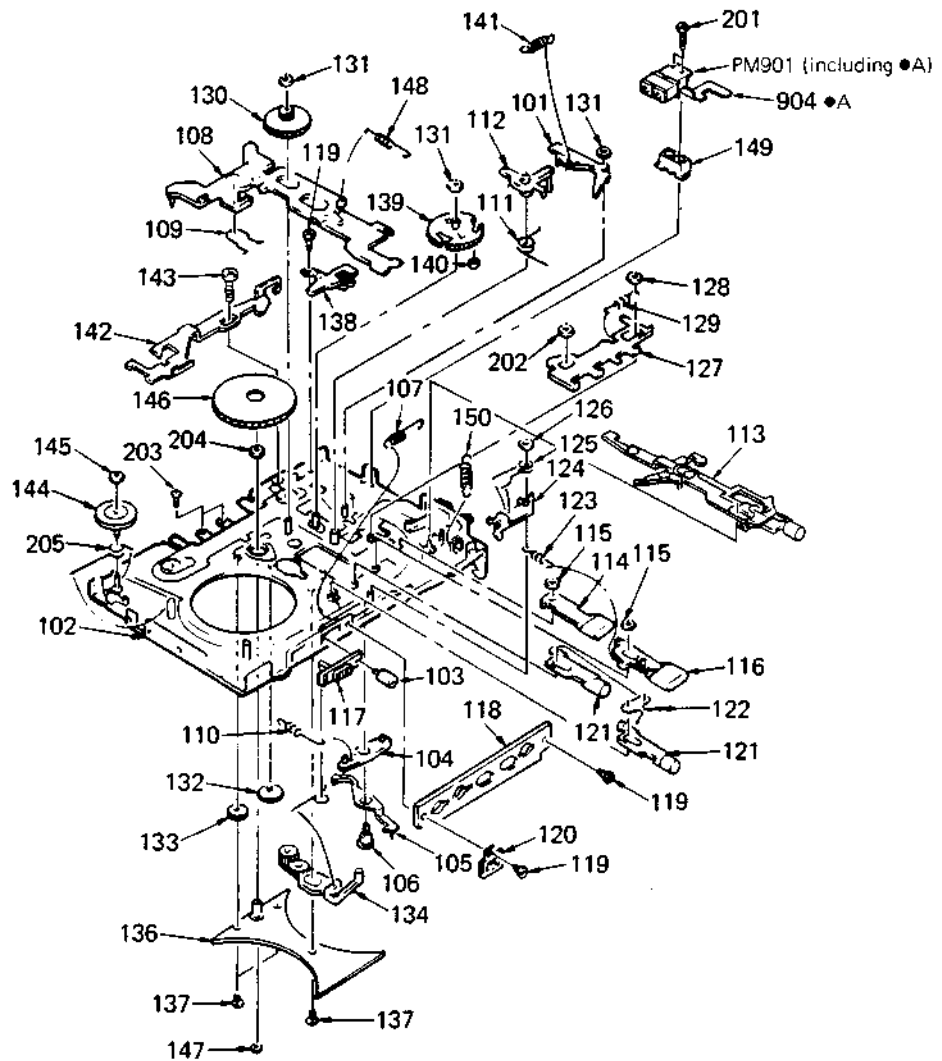
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No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	X-3329-717-1	BRACKET ASSY, CONTACT		77	3-320-354-01	WASHER	
52	3-335-916-01	SPRING		78	X-3329-707-1	FLYWHEEL (R) ASSY	
53	3-335-913-01	SPRING		79	3-331-007-01	WASHER	
54	3-578-224-00	WASHER		80	3-329-695-01	BELT	
55	X-3329-625-1	CHASSIS ASSY, MOTOR		81	3-329-737-01	GUIDE (LEFT), HOLDER	
56	3-333-173-01	PLATE (S), HYSTERESIS		82	3-329-736-01	GUIDE (RIGHT), HOLDER	
57	*3-333-126-01	PLATE (R), SHIELD, MOTOR		83	7-627-552-48	SCREW, PRECISION +P 1.7X4	
58	3-703-816-91	SCREW (M1.4X2.8), SPECIAL HEAD		84	3-329-690-01	GUIDE, MARKER	
59	X-3329-683-1	LEVER ASSY, HEAD		85	3-329-717-01	LEVER, INDICATION, DIRECTION	
60	X-3329-697-1	PINCH LEVER (R) ASSY		86	3-329-637-01	COLLAR, PINCH LEVER	
61	3-329-641-01	SPRING (R)		87	3-335-902-01	WASHER	
62	3-329-643-01	SPRING (R)		88	3-335-902-11	WASHER	
63	3-331-027-01	COLLAR (R), PINCH LEVER		89	3-321-394-21	WASHER	
64	X-3329-719-1	HOLDER (D) ASSY		90	3-333-105-01	SPRING (B)	
65	3-331-036-11	WASHER		91	3-333-104-01	SPRING (A)	
66	3-329-640-01	SPRING (N)		92	3-333-102-11	SHAFT, AZIMUTH	
67	3-329-642-01	SPRING (N)		93	3-333-106-01	SPRING	
	3-329-642-11	SPRING (N)		94	3-333-101-01	LEVER, AZIMUTH	
	3-329-642-21	SPRING (N), PINCH LEVER		95	3-315-415-21	WASHER (1.5-2.3)	
68	3-329-714-01	HOLDER (RIGHT), CASSETTE		96	A-3133-236-A	WHEEL BLOCK ASSY, MOTOR	
69	3-329-713-01	HOLDER (LEFT), CASSETTE		97	3-703-816-92	SCREW (M1.4X2.8), SPECIAL HEAD	
70	3-703-816-62	SCREW (M1.4X2.2), SPECIAL HEAD		98	*3-331-087-01	SPRING	
71	3-331-012-01	SPRING (HOLDER), TENSION		99	X-3329-698-1	PINCH LEVER (N) ASSY	
72	X-3329-705-1	GEAR (R) ASSY, T REEL		301	3-329-706-04	LEVER (B), PANEL LOCK	
73	3-331-013-01	SPRING, COMPRESSION		302	3-333-124-01	SCREW (M1.4), STEP, PRECISION	
74	3-315-384-11	WASHER, STOPPER		902	1-506-905-11	CONNECTOR	
75	3-329-729-01	GEAR, SUPPLY REEL		903	1-618-639-11	PC BOARD, MOTOR CONNECTION	
76	3-331-014-01	SPRING, COMPRESSION		HE901	A-3164-345-A	LEVER BLOCK ASSY, ERASE	

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No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	X-3329-615-1	LEVER ASSY, TRIGGER		129	3-331-009-01	SPRING (LOCK LEVER), TENSION	
102	X-3329-629-1	CHASSIS COMPLETE (R) ASSY		130	3-329-687-01	GEAR, DRIVING	
103	3-329-697-01	SCREW, STEP, PRECISION		131	3-315-384-11	WASHER, STOPPER	
104	X-3329-617-1	LEVER (B) ASSY, DRIVING		132	3-329-688-01	GEAR (A), T	
105	3-329-684-01	LEVER (A), SELECT		133	3-329-689-01	GEAR (B), T	
106	3-331-056-01	SHAFT, DRIVING LEVER (B)		134	X-3329-626-1	LEVER (B) ASSY, F.R	
107	3-335-931-01	SPRING (SELECT LEVER), TENSION		135	3-329-699-01	SPRING	
108	X-3329-699-1	LEVER (AD) ASSY, DRIVING		136	X-3329-618-1	COVER ASSY, REEL	
109	3-329-698-01	SPRING (B)		137	3-331-047-01	SCREW (M1.4X1.4), SPECIAL HEAD	
110	3-331-018-01	SPRING, TENSION		138	3-329-685-01	SPRING (A)	
111	3-329-700-01	SPRING		139	3-329-730-01	GEAR, CAM	
112	3-329-733-01	LEVER (A), SHUT-OFF		140	3-329-693-01	COLLAR, CAM GEAR	
113	X-3329-627-1	LEVER (A) ASSY, REC		141	3-331-011-01	SPRING (TRIGGER LEVER), TENSION	
114	X-3329-620-1	LEVER ASSY, PLAY		142	X-3329-682-1	LEVER (A) ASSY, ERASE	
115	3-578-242-21	WASHER		143	3-329-696-01	SCREW, ERASE LEVER	
116	X-3329-636-1	LEVER ASSY, STOP		144	3-329-686-01	WHEEL, REVERSE	
117	3-333-115-01	KNOB, SAFETY LOCK		145	3-331-036-01	WASHER	
118	*3-329-734-01	HOLDER, BUTTON		146	X-3329-628-1	PULLEY COMPLETE ASSY, MIDWAY	
119	3-703-816-32	SCREW (M1.4X1.6), SPECIAL HEAD		147	3-331-007-01	WASHER	
120	3-331-043-01	SPRING		149	*3-331-041-01	BRACKET, P	
121	X-3329-621-1	LEVER (A) ASSY, F.R		150	3-333-157-01	SPRING, TENSION (PANEL ROCK LEVER (B))	
122	3-331-016-01	SPRING		201	7-627-551-37	SCREW, PRECISION +P 1.4X5	
123	3-331-010-01	SPRING (STOP LEVER), TENSION		202	3-311-815-21	WASHER, POLYETHYLENE	
124	3-329-692-05	LEVER, SW		203	3-331-097-01	SCREW, AZIMUTH	
125	3-329-702-01	SPRING		204	3-521-394-21	WASHER	
126	3-331-036-11	WASHER		205	3-341-440-01	SPRING, HOLDER LOCK	
127	3-329-731-01	LEVER, LOCK		904	1-618-641-11	PC BOARD, MP FLEXIBLE	
128	3-578-224-00	WASHER					

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...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	A-3070-174-A	PC BOARD ASSY, AU			
902	1-506-905-11	CONNECTOR			
903	1-618-639-11	PC BOARD, MOTOR CONNECTION			
904	1-618-641-11	PC BOARD, MP FLEXIBLE			
C101	1-163-139-00	CERAMIC CHIP 820PF	10%	50V	
C102	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C103	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C104	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C105	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C106	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C108	1-135-105-00	TANTAL. CHIP 33MF	20%	4V	
C109	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C110	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C111	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C112	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V	
C113	1-163-074-00	CERAMIC CHIP 0.033MF	5%	25V	
C114	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V	
C115	1-135-087-21	TANTAL. CHIP 0.68MF	10%	20V	
C116	1-163-017-00	CERAMIC CHIP 0.0047MF	5%	50V	
C117	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C118	1-163-127-00	CERAMIC CHIP 270PF	10%	50V	
C120	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V	
C121	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C122	1-124-947-11	ELECT 220MF	20%	1.5V	
C201	1-163-139-00	CERAMIC CHIP 820PF	10%	50V	
C202	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C203	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C204	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C205	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C206	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C208	1-135-105-00	TANTAL. CHIP 33MF	20%	4V	
C209	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C210	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C211	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C212	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V	
C213	1-163-074-00	CERAMIC CHIP 0.033MF	5%	25V	
C214	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V	
C215	1-135-087-21	TANTAL. CHIP 0.68MF	10%	20V	
C216	1-163-017-00	CERAMIC CHIP 0.0047MF	5%	50V	
C217	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C218	1-163-127-00	CERAMIC CHIP 270PF	10%	50V	
C220	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V	
C221	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C222	1-124-947-11	ELECT 220MF	20%	1.5V	
C301	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C302	1-124-434-00	ELECT 220MF	20%	4V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C303	1-124-434-00	ELECT 220MF	20%	4V	
C304	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C305	1-124-947-11	ELECT 220MF	20%	1.5V	
C306	1-124-431-00	ELECT 33MF	20%	4V	
C307	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C308	1-124-947-11	ELECT 220MF	20%	1.5V	
C309	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C310	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C311	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C312	1-124-434-00	ELECT 220MF	20%	4V	
C313	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C314	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C315	1-163-077-00	CERAMIC CHIP 0.1MF		50V	
C317	1-124-434-00	ELECT 220MF	20%	4V	
C318	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C319	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C401	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C402	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C403	1-135-105-00	TANTAL. CHIP 33MF	20%	4V	
C404	1-124-947-11	ELECT 220MF	20%	1.5V	
C406	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C409	1-162-625-11	CERAMIC CHIP 0.0047MF	5%	50V	
C410	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C601	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V	
C602	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V	
C603	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V	
C604	1-135-087-21	TANTAL. CHIP 0.68MF	10%	20V	
C605	1-135-071-21	TANTAL. CHIP 0.15MF	10%	35V	
C606	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C607	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C701	1-163-081-00	CERAMIC CHIP 0.22MF		25V	
C702	1-135-087-21	TANTAL. CHIP 0.68MF	10%	20V	
C703	1-163-081-00	CERAMIC CHIP 0.22MF		25V	
C704	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C705	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C706	1-135-099-00	TANTAL. CHIP 2.2MF	20%	6.3V	
C707	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C708	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C709	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C710	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C801	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C802	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C803	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C804	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C805	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
D301	8-719-908-30	DIODE DA106K			
D302	1-807-305-11	DIODE GL2PR9 (LED)			
D401	8-719-118-21	DIODE 1SS283			
D801	8-719-105-57	DIODE R03.9M-B1			
HE901	A-3164-345-A	LEVER BLOCK ASSY, ERASE			
HRP901	1-543-308-11	HEAD, MAGNETIC			
IC301	8-752-030-34	IC CXA1010M			
IC302	8-759-701-07	IC NJM2063AM			
IC303	8-759-802-80	IC LA4535M			
IC601	8-752-012-32	IC CX20123			
J301	1-562-975-21	JACK			
J302	1-562-975-11	JACK			
JR301	1-216-296-00	METAL CHIP	0	5%	1/8W
JR302	1-216-296-00	METAL CHIP	0	5%	1/8W
JR303	1-216-296-00	METAL CHIP	0	5%	1/8W
JR304	1-216-296-00	METAL CHIP	0	5%	1/8W
JR305	1-216-296-00	METAL CHIP	0	5%	1/8W
JR306	1-216-296-00	METAL CHIP	0	5%	1/8W
JR307	1-216-296-00	METAL CHIP	0	5%	1/8W
JR308	1-216-296-00	METAL CHIP	0	5%	1/8W
JR309	1-216-296-00	METAL CHIP	0	5%	1/8W
JR310	1-216-296-00	METAL CHIP	0	5%	1/8W
JR311	1-216-296-00	METAL CHIP	0	5%	1/8W
JR313	1-216-296-00	METAL CHIP	0	5%	1/8W
JR314	1-216-295-00	METAL CHIP	0	5%	1/10W
JR315	1-216-295-00	METAL CHIP	0	5%	1/10W
JR317	1-216-295-00	METAL CHIP	0	5%	1/10W
JR318	1-216-295-00	METAL CHIP	0	5%	1/10W
JR319	1-216-295-00	METAL CHIP	0	5%	1/10W
L1	1-462-230-11	COIL, MOTOR (STATOR)			
L2	1-462-230-11	COIL, MOTOR (STATOR)			
L3	1-462-230-11	COIL, MOTOR (STATOR)			
L4	1-462-230-11	COIL, MOTOR (STATOR)			
L5	1-462-230-11	COIL, MOTOR (STATOR)			
L6	1-462-230-11	COIL, MOTOR (STATOR)			
L401	1-410-213-51	INDUCTOR CHIP 56UH			
L801	1-410-213-51	INDUCTOR CHIP 56UH			
PH701	8-719-751-42	DIODE NJL5141E-AA			
PM901	1-454-406-11	SOLENOID, PLUNGER			
Q302	8-729-903-10	TRANSISTOR FMW1			
Q305	8-729-901-46	TRANSISTOR DTA114TK			
Q306	8-729-902-93	TRANSISTOR FMG4			
Q307	8-729-902-93	TRANSISTOR FMG4			
Q308	8-729-902-93	TRANSISTOR FMG4			
Q309	8-729-100-76	TRANSISTOR 2SA812			
Q401	8-729-159-64	TRANSISTOR 2SD596			
Q402	8-729-903-10	TRANSISTOR FMW1			
Q404	8-729-162-44	TRANSISTOR 2SB624-BV4			
Q601	8-729-162-44	TRANSISTOR 2SB624-BV4			
Q602	8-729-100-66	TRANSISTOR 2SC1623			
Q603	8-729-100-66	TRANSISTOR 2SC1623			
Q604	8-729-162-44	TRANSISTOR 2SB624-BV4			
Q701	8-729-903-10	TRANSISTOR FMW1			
Q702	8-729-900-51	TRANSISTOR DTA114TK			
Q703	8-729-903-10	TRANSISTOR FMW1			

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q704	8-729-902-96	TRANSISTOR FMS1			
Q705	8-729-900-51	TRANSISTOR DTA114TK			
Q706	8-729-100-76	TRANSISTOR 2SA812			
Q707	8-729-902-93	TRANSISTOR FMG4			
Q708	8-729-900-51	TRANSISTOR DTA114TK			
Q710	8-729-903-10	TRANSISTOR FMW1			
Q711	8-729-100-76	TRANSISTOR 2SA812			
Q712	8-729-159-64	TRANSISTOR 2SD596			
Q713	8-729-100-76	TRANSISTOR 2SA812			
Q714	8-729-100-66	TRANSISTOR 2SC1623			
Q715	8-729-902-90	TRANSISTOR FMA4			
Q716	8-729-100-76	TRANSISTOR 2SA812			
Q717	8-729-903-10	TRANSISTOR FMW1			
Q718	8-729-100-66	TRANSISTOR 2SC1623			
Q801	8-729-100-66	TRANSISTOR 2SC1623			
Q802	8-729-100-66	TRANSISTOR 2SC1623			
Q803	8-729-159-64	TRANSISTOR 2SD596			
Q804	8-729-162-44	TRANSISTOR 2SB624-BV4			
Q805	8-729-100-66	TRANSISTOR 2SC1623			
R101	1-216-037-00	METAL CHIP	330	5%	1/10W
R102	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R103	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R106	1-216-045-00	METAL CHIP	680	5%	1/10W
R107	1-216-049-00	METAL CHIP	1K	5%	1/10W
R108	1-216-041-00	METAL CHIP	470	5%	1/10W
R109	1-216-121-00	METAL CHIP	1M	5%	1/10W
R110	1-216-087-00	METAL CHIP	39K	5%	1/10W
R111	1-216-093-00	METAL CHIP	68K	5%	1/10W
R112	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R113	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R114	1-216-112-00	METAL CHIP	430K	5%	1/10W
R115	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R116	1-216-089-00	METAL CHIP	47K	5%	1/10W
R117	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R118	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R201	1-216-037-00	METAL CHIP	330	5%	1/10W
R202	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R203	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R206	1-216-045-00	METAL CHIP	680	5%	1/10W
R207	1-216-049-00	METAL CHIP	1K	5%	1/10W
R208	1-216-041-00	METAL CHIP	470	5%	1/10W
R209	1-216-121-00	METAL CHIP	1M	5%	1/10W
R210	1-216-087-00	METAL CHIP	39K	5%	1/10W
R211	1-216-093-00	METAL CHIP	68K	5%	1/10W
R212	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R213	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R214	1-216-112-00	METAL CHIP	430K	5%	1/10W
R215	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R216	1-216-089-00	METAL CHIP	47K	5%	1/10W
R217	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R218	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R301	1-216-041-00	METAL CHIP	470	5%	1/10W
R302	1-216-009-00	METAL CHIP	22	5%	1/10W
R303	1-216-121-00	METAL CHIP	1M	5%	1/10W
R304	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R306	1-216-049-00	METAL CHIP	1K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R310	1-216-097-00	METAL CHIP	100K	5%	1/10W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R312	1-216-097-00	METAL CHIP	100K	5%	1/10W
R313	1-216-049-00	METAL CHIP	1K	5%	1/10W
R314	1-216-025-00	METAL CHIP	100	5%	1/10W
R315	1-216-048-00	METAL CHIP	910	5%	1/10W
R316	1-216-097-00	METAL CHIP	100K	5%	1/10W
R319	1-216-097-00	METAL CHIP	100K	5%	1/10W
R320	1-216-109-00	METAL CHIP	330K	5%	1/10W
R321	1-216-009-00	METAL CHIP	22	5%	1/10W
R401	1-216-041-00	METAL CHIP	470	5%	1/10W
R402	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R403	1-216-049-00	METAL CHIP	1K	5%	1/10W
R404	1-216-081-00	METAL CHIP	22K	5%	1/10W
R405	1-216-105-00	METAL CHIP	220K	5%	1/10W
R406	1-216-087-00	METAL CHIP	39K	5%	1/10W
R407	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R408	1-216-049-00	METAL CHIP	1K	5%	1/10W
R409	1-216-017-00	METAL CHIP	47	5%	1/10W
R601	1-216-073-00	METAL CHIP	10K	5%	1/10W
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W
R603	1-216-085-00	METAL CHIP	33K	5%	1/10W
R604	1-216-083-00	METAL CHIP	27K	5%	1/10W
R605	1-216-089-00	METAL CHIP	47K	5%	1/10W
R606	1-216-077-00	METAL CHIP	15K	5%	1/10W
R607	1-216-097-00	METAL CHIP	100K	5%	1/10W
R608	1-216-049-00	METAL CHIP	1K	5%	1/10W
R609	1-216-001-00	METAL CHIP	10	5%	1/10W
R610	1-216-101-00	METAL CHIP	150K	5%	1/10W
R611	1-216-049-00	METAL CHIP	1K	5%	1/10W
R612	1-216-049-00	METAL CHIP	1K	5%	1/10W
R613	1-216-101-00	METAL CHIP	150K	5%	1/10W
R614	1-216-001-00	METAL CHIP	10	5%	1/10W
R615	1-216-049-00	METAL CHIP	1K	5%	1/10W
R616	1-216-097-00	METAL CHIP	100K	5%	1/10W
R617	1-216-049-00	METAL CHIP	1K	5%	1/10W
R618	1-216-091-00	METAL CHIP	56K	5%	1/10W
R701	1-216-097-00	METAL CHIP	100K	5%	1/10W
R702	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R703	1-216-035-00	METAL CHIP	270	5%	1/10W
R704	1-216-101-00	METAL CHIP	150K	5%	1/10W
R705	1-216-049-00	METAL CHIP	1K	5%	1/10W
R706	1-216-081-00	METAL CHIP	22K	5%	1/10W
R707	1-216-085-00	METAL CHIP	33K	5%	1/10W
R708	1-216-025-00	METAL CHIP	100	5%	1/10W
R709	1-216-085-00	METAL CHIP	33K	5%	1/10W
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W
R711	1-216-097-00	METAL CHIP	100K	5%	1/10W
R712	1-216-198-00	METAL CHIP	1K	5%	1/8W
R713	1-216-121-00	METAL CHIP	1M	5%	1/10W
R714	1-216-109-00	METAL CHIP	330K	5%	1/10W
R715	1-216-121-00	METAL CHIP	1M	5%	1/10W
R716	1-216-121-00	METAL CHIP	1M	5%	1/10W
R717	1-216-109-00	METAL CHIP	330K	5%	1/10W
R718	1-216-097-00	METAL CHIP	100K	5%	1/10W
R719	1-216-097-00	METAL CHIP	100K	5%	1/10W
R720	1-216-097-00	METAL CHIP	100K	5%	1/10W
R721	1-216-073-00	METAL CHIP	10K	5%	1/10W
R722	1-216-097-00	METAL CHIP	100K	5%	1/10W
R723	1-216-097-00	METAL CHIP	100K	5%	1/10W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R724	1-216-073-00	METAL CHIP	10K	5%	1/10W
R725	1-216-025-00	METAL CHIP	100	5%	1/10W
R726	1-216-121-00	METAL CHIP	1M	5%	1/10W
R727	1-216-097-00	METAL CHIP	100K	5%	1/10W
R728	1-216-121-00	METAL CHIP	1M	5%	1/10W
R729	1-216-121-00	METAL CHIP	1M	5%	1/10W
R730	1-216-089-00	METAL CHIP	47K	5%	1/10W
R731	1-216-109-00	METAL CHIP	330K	5%	1/10W
R732	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R733	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R734	1-216-109-00	METAL CHIP	330K	5%	1/10W
R735	1-216-097-00	METAL CHIP	100K	5%	1/10W
R736	1-216-097-00	METAL CHIP	100K	5%	1/10W
R801	1-216-113-00	METAL CHIP	470K	5%	1/10W
R802	1-216-007-00	METAL CHIP	18	5%	1/10W
R803	1-216-035-00	METAL CHIP	270	5%	1/10W
R804	1-216-085-00	METAL CHIP	33K	5%	1/10W
R805	1-216-029-00	METAL CHIP	150	5%	1/10W
R806	1-216-121-00	METAL CHIP	1M	5%	1/10W
RV101	1-237-006-11	RES, ADJ, METAL GLAZE	47K		
RV201	1-237-006-11	RES, ADJ, METAL GLAZE	47K		
RV301	1-230-955-11	RES, VAR, CARBON	10K/10K		
RV601	1-237-004-11	RES, ADJ, METAL GLAZE	10K		
S301	1-554-613-00	SWITCH, SLIDE (TAPE)			
S302	1-570-397-11	SWITCH, SLIDE (DOLBY NR)			
S304	1-570-399-11	SWITCH, SLIDE (FWD/REV)			
S305	1-570-400-11	SWITCH, SLIDE (REC/PB)			
S701	1-570-548-11	SWITCH, LEAF (POWER)			
S702	1-570-398-11	SWITCH (FF/REW)			
S703	1-570-395-11	SWITCH, LEAF (DIR)			
T401	1-433-310-11	TRANSFORMER, BIAS OSCILLATION			
T801	1-447-864-11	TRANSFORMER, DC-DC CONVERTER			

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-528-052-00	BATTERY, ALKALINE MANGANIN (LR6)
1-542-071-11	MICROPHONE (C-3001)
3-329-793-02	LID, CUSHION
3-331-025-11	LABEL, MODEL NUMBER
3-333-133-01	CUSHION
3-333-134-01	SPACER (8)
3-335-923-01	(ET).....INDIVIDUAL CARTON
3-335-924-01	(AEP,UK)...INDIVIDUAL CARTON
3-335-927-01	CASE, CARRYING
3-527-213-00	LABEL, SERIAL NUMBER
3-703-710-01	STICKER, SONY SYMBOL (12)
3-765-093-01	(ET).....MANUAL, INSTRUCTION
3-765-093-11	(AEP,UK)...MANUAL, INSTRUCTION
3-765-093-41	(AEP).....MANUAL, INSTRUCTION
8-952-236-90	(ET).....HEADPHONE MDR-E212
8-952-266-94	(AEP,UK)...HEADPHONE MDR-A10L/B SET
X-3324-513-1	STAND ASSY, MICROPHONE
X-3329-646-2	CASE (B) ASSY, BATTERY
X-3329-657-1	(ET)....ATTACHMENT ASSY