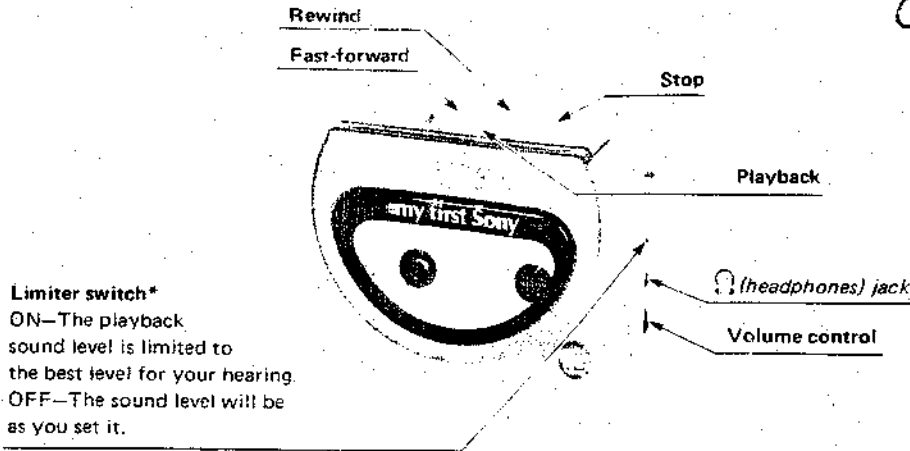


WM-3000

SERVICE MANUAL

US Model
 Canadian Model
 AEP Model
 UK Model



SPECIFICATIONS

Tape track 4-track 2-channel stereo
 Fast winding time Approx. 3 min. 30 sec. with Sony C-60 cassette
 Frequency response 40 – 15,000Hz
 Power output 15mW + 15mW (at 10% harmonic distortion)
 load impedance 32 ohms
 Power requirements 3V DC, two size AA (IEC designation R6) batteries

Battery life

Batteries	Continuous playback hours
Sony New Super SUM-3 (NS)	Approx. 4
Sony alkaline AM3(N)	Approx. 8

For maximum performance we recommend the use of alkaline batteries.

Dimensions Approx. 137 x 95.3 x 40.4mm (w/h/d)
 (5 1/2 x 3 7/8 x 1 5/8 inches)
 incl. projecting parts and controls
 Weight Approx. 264g (6.9 oz) incl. batteries, not incl.
 Accessories Stereo headphones
 Shoulder belt

Model Name Using Similar Mechanism	WM-68 WM-K1
Tape Transport Mechanism Type	MT-WM3000-04



STEREO CASSETTE PLAYER
SONY®

SECTION 1
ADJUSTMENTS

1-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab:
 playback head pinch roller
 capstan
 rubber belts
- Demagnetize the playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	22-45g · cm (0.30-0.63oz · inch)	CQ-102C
Fast Forward	55-130g · cm (0.77-1.8oz · inch)	CQ-201B
Rewind	55-150g · cm (0.77-2.1oz · inch)	CQ-201B
Back Tension	0.5-2g · cm (0.007-0.028oz · inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	more than 100g (3.57oz)

Test Tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	Tape Speed Adjustment
P-4-A063	6.3kHz, -10dB	Playback Head Azimuth Adjustment

1-2. ELECTRICAL ADJUSTMENTS

CASSETTE Section

Tape Speed Adjustment

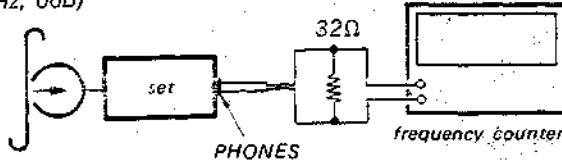
Setting:

VOLUME control: MAX
 LIMITER (S301): OFF

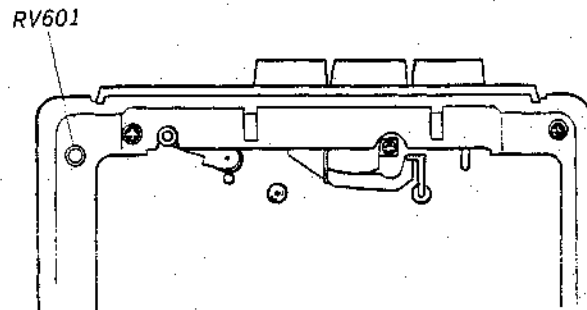
Procedure:

Mode: playback

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



Adjustment Location:



Specifications:

Digital frequency counter
3000 ± 10Hz

Adjust RV601
 Frequency difference between beginning and end of tape should be within ±1% (30Hz).

Playback Head Azimuth Adjustment

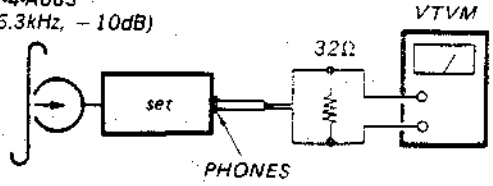
Setting:

- VOLUME control: MAX
- LIMITER (S301): OFF

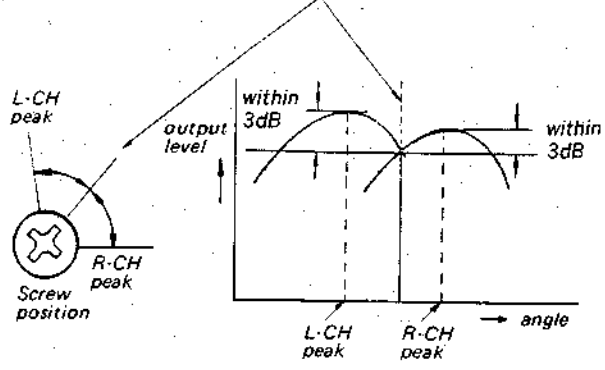
Procedure:

1. Mode: playback

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



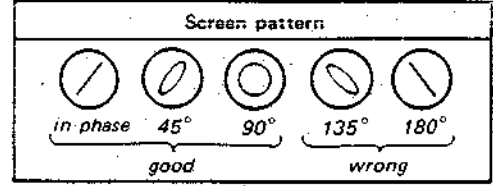
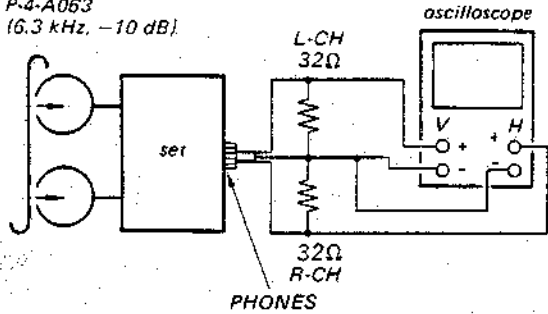
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 3dB.



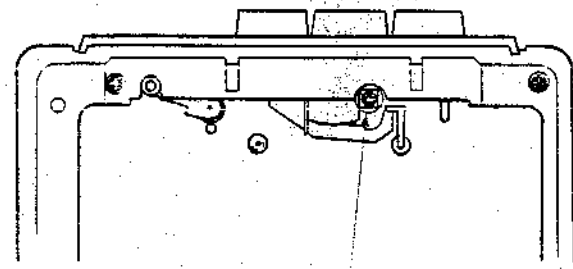
3. Phase Check

Mode: playback

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



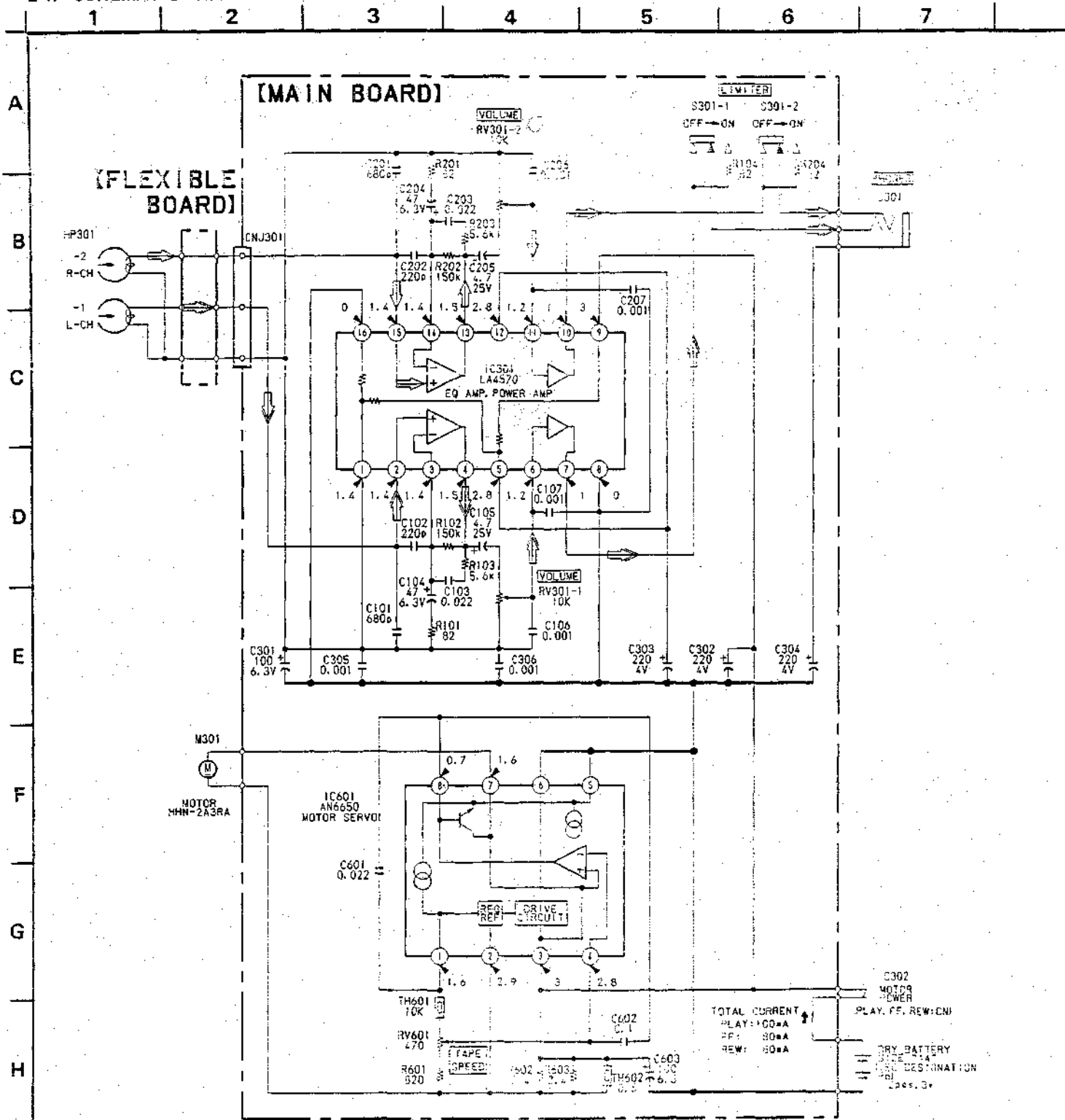
Adjustment Location:



azimuth adjustment screw

SECTION 2
DIAGRAMS

2-1. SCHEMATIC DIAGRAM

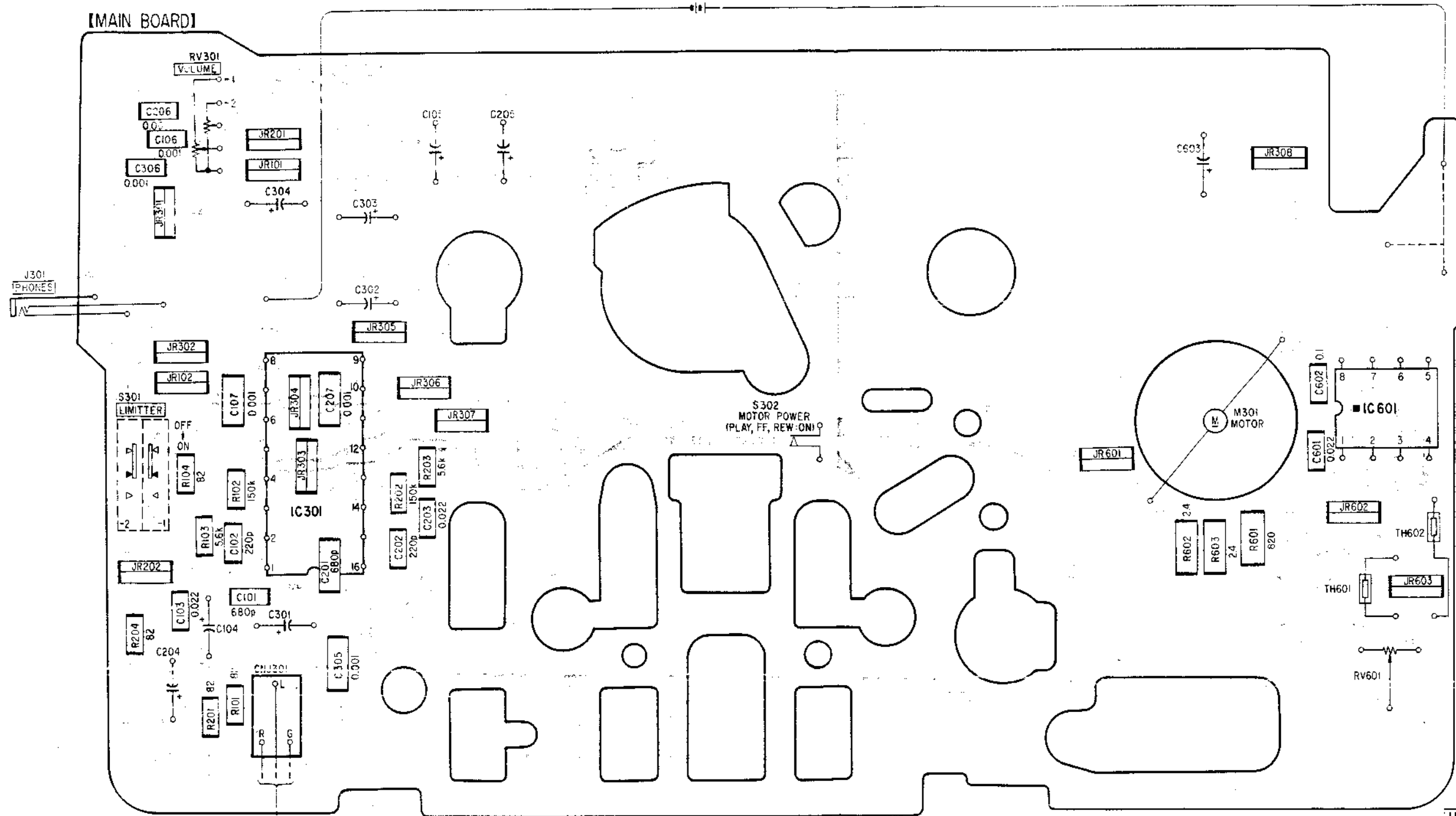


Notes:

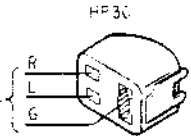
- All capacitors are in μF unless otherwise noted, pF: μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{2}\text{W}$ or less unless otherwise specified.
- \Rightarrow : L-CH signal pat
- \Rightarrow : R-CH signal path
- Total current is measured with no cassette installed.
- Power voltage is 3V and fed with regulated dc power supply from battery terminal. Voltages are dc with respect to ground in PLAY mode. Voltage variations may be noted due to normal production tolerances.

DRY BATTERY
 SIZE "AA"
 IEC DESIGNATION R6:
 2 PCS 3V

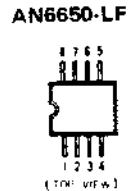
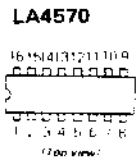
[MAIN BOARD]



[FLEXIBLE BOARD]



• Semiconductor Lead Layouts



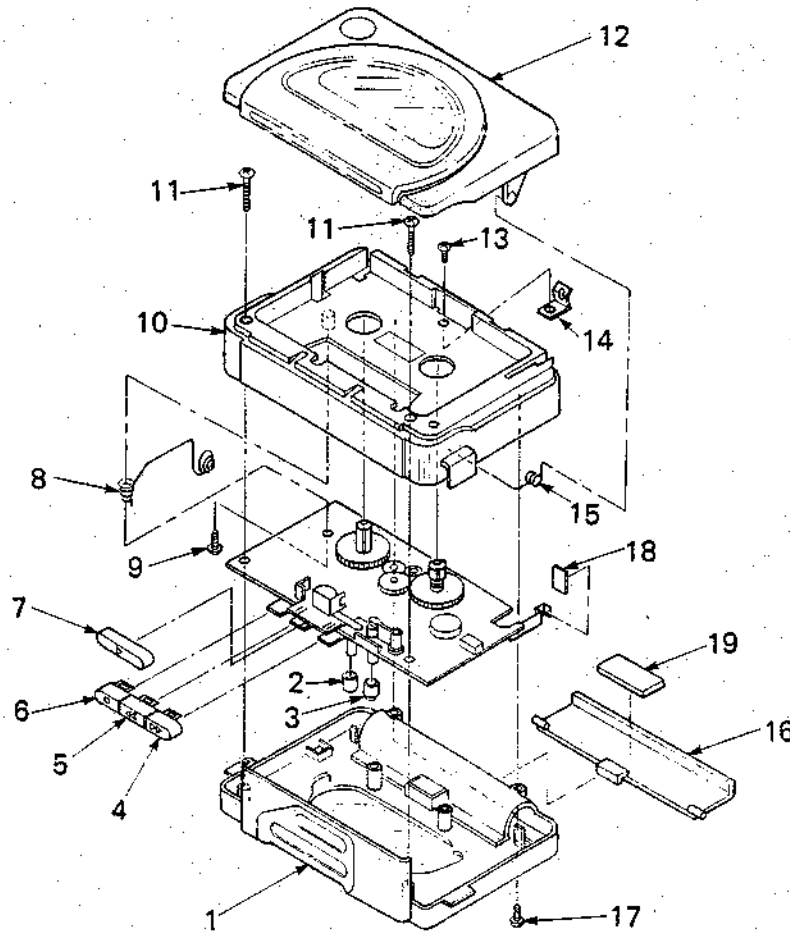
• ■ : part mounted on the conductor side.

SECTION 3
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.

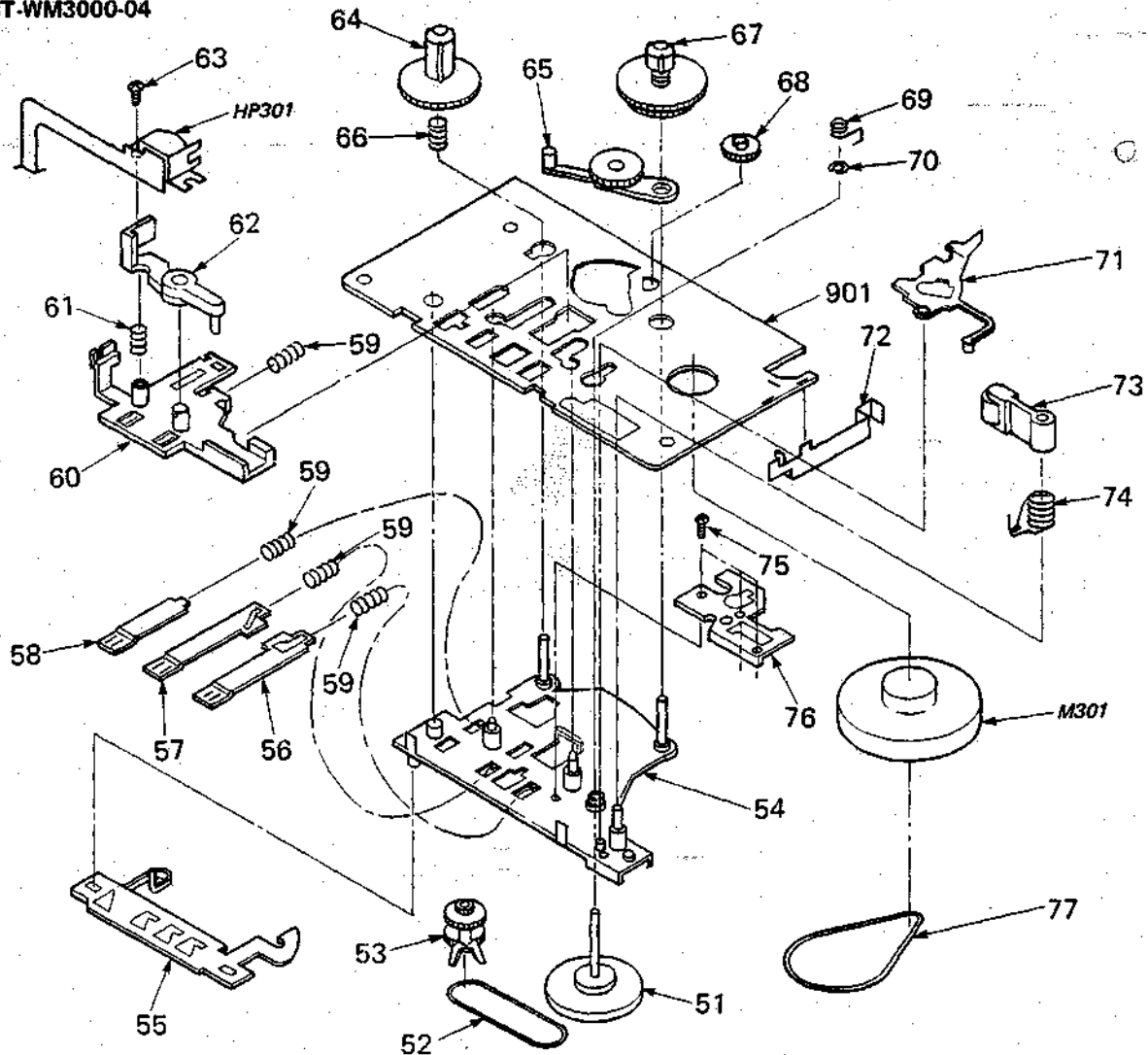
(1)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3335-651-1	CABINET (REAR) ASSY		11	3-335-640-11	SCREW (M2X12)	
2	*3-342-905-01	CAP (B)		12	X-3335-650-1	HOLDER ASSY, CASSETTE	
3	*3-342-904-01	CAP (A)		13	3-339-862-01	SCREW (M1.7X2.5)	
4	3-334-059-21	BUTTON, FF		14	3-339-805-01	SPRING	
5	3-334-060-21	BUTTON, REW		15	3-342-903-01	SPRING	
6	3-334-061-31	BUTTON, STOP		16	3-342-913-01	LID, BATTERY CASE	
7	3-339-808-11	BUTTON, PLAY		17	3-335-640-21	SCREW (M2X8)	
8	3-342-906-01	SPRING		18	9-911-863-XX	STOPPER, H (t=0.5)	
9	3-338-356-01	SCREW (M2), TAPPING		19	9-911-815-01	STOPPER (t=3)	
10	3-342-916-01	CABINET (FRONT)					

WM-3000

(2) MD
MT-WM3000-04



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	X-3335-659-1	FLYWHEEL ASSY		66	3-335-602-01	SPRING, COMPRESSION	
52	3-335-604-01	BELT, MIDWAY		67	X-3334-006-2	TABLE ASSY, REEL, TAKE-UP	
53	X-3334-008-1	GEAR ASSY, MIDWAY		68	3-334-089-01	GEAR, FF	
54	X-3334-020-7	BASE ASSY, GUIDE		69	*3-336-705-02	SPRING	
55	3-335-618-21	PLATE, LOCK BUTTON		70	3-321-483-11	RING, RETAINING	
56	3-335-611-11	LEVER, FF		71	3-335-613-11	LEVER (A), SHUT-OFF	
57	3-335-610-11	LEVER, REW		72	3-342-902-01	TERMINAL BOARD, PLUS	
58	3-335-609-01	LEVER, STOP		73	X-3334-099-1	PINCH ROLLER ASSY	
59	3-335-605-01	SPRING, COMPRESSION		74	3-335-608-01	SPRING	
60	3-334-080-01	CHASSIS, HEAD		75	3-894-748-01	SCREW (B1.4X2.5), TAPPING	
61	3-334-078-01	SPRING (AZIMUTH), COMPRESSION		76	*3-338-375-01	SPACER (A), GUIDE	
62	3-336-765-01	LEVER, PU		77	3-338-334-01	BELT, CAPSTAN	
63	3-342-917-01	SCREW (IT3-C), TAPPING, + 8		901	*A-3015-560-A	PC BOARD ASSY, MAIN	
64	3-335-612-01	GEAR, SUPPLY REEL		HP301	1-543-411-11	HEAD, MAGNETIC (PLAYBACK)	
65	X-3334-007-1	GEAR ASSY, PLAY		M301	1-541-416-21	MOTOR	

**SECTION 4
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: u, for example:
UA....: uA...., UPA....: uPA...., UPC....: uPC,
UPD....: uPD...

IT: Italian model

FR: French model

WG: West Germany model

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-3015-560-A	PC BOARD ASSY, MAIN			
C101	1-163-137-00	CERAMIC CHIP 680PF	10%	50V	
C102	1-163-125-00	CERAMIC CHIP 220PF	10%	50V	
C103	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C104	1-124-224-00	ELECT 47MF	20%	6.3V	
C105	1-124-245-00	ELECT 4.7MF	20%	25V	
C106	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C107	1-163-205-00	CERAMIC CHIP 0.001MF	10%	50V	
C201	1-163-201-00	CERAMIC CHIP 680PF	10%	50V	
C202	1-163-125-00	CERAMIC CHIP 220PF	10%	50V	
C203	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C204	1-124-224-00	ELECT 47MF	20%	6.3V	
C205	1-124-245-00	ELECT 4.7MF	20%	25V	
C206	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C207	1-163-205-00	CERAMIC CHIP 0.001MF	10%	50V	
C301	1-123-661-00	ELECT 100MF	20%	6.3V	
C302	1-123-827-00	ELECT 220MF	20%	4V	
C303	1-123-827-00	ELECT 220MF	20%	4V	
C304	1-123-827-00	ELECT 220MF	20%	4V	
C305	1-163-205-00	CERAMIC CHIP 0.001MF	10%	50V	
C306	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C601	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C602	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C603	1-123-661-00	ELECT 100MF	20%	6.3V	
CNJ301*	1-563-350-11	CONNECTOR, F.P.C 3P			
HP301	1-543-411-11	HEAD, MAGNETIC (PLAYBACK)			
IC301	8-759-802-85	IC LA4570			
IC601	8-759-403-65	IC AN6650-LF			
J301	1-563-316-31	JACK (PHONES)			
JR101	1-216-296-00	METAL CHIP	0	5%	1/8W
JR102	1-216-296-00	METAL CHIP	0	5%	1/8W
JR201	1-216-296-00	METAL CHIP	0	5%	1/8W
JR202	1-216-296-00	METAL CHIP	0	5%	1/8W
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

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
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
JR601	1-216-296-00	METAL CHIP	0	5%	1/8W
JR602	1-216-296-00	METAL CHIP	0	5%	1/8W
JR603	1-216-296-00	METAL CHIP	0	5%	1/8W
M301	1-541-416-21	MOTOR			
R101	1-216-023-00	METAL CHIP	82	5%	1/10W
R102	1-216-101-00	METAL CHIP	150K	5%	1/10W
R103	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R104	1-216-023-00	METAL CHIP	82	5%	1/10W
R201	1-216-023-00	METAL CHIP	82	5%	1/10W
R202	1-216-101-00	METAL CHIP	150K	5%	1/10W
R203	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R204	1-216-023-00	METAL CHIP	82	5%	1/10W
R601	1-216-196-00	METAL CHIP	820	5%	1/8W
R602	1-216-135-00	METAL CHIP	2.4	5%	1/8W
R603	1-216-135-00	METAL CHIP	2.4	5%	1/8W
RV301	1-237-623-11	RES, VAR, CARBON 10K/10K with KNOB (VOLUME)			
RV601	1-237-130-11	RES, ADJ, CARBON 470			
S301	1-570-659-11	SWITCH, SLIDE (LIMITER)			
S302	1-570-549-11	SWITCH, LEAF (MOTOR POWER)			
TH601	1-807-488-11	THERMISTOR (POSITIVE)			
TH602	1-807-489-11	THERMISTOR (POSITIVE)			

ACCESSORY & PACKING MATERIAL

Part No.	Description
3-338-345-01	CARD BOARD
3-342-910-01	BELT, SHOULDER
3-342-918-01	CUSHION
*3-342-921-02	(US).....INDIVIDUAL CARTON
*3-345-609-01	(Canadian).....INDIVIDUAL CARTON
*3-347-825-01	(AEP, IT, FR)...INDIVIDUAL CARTON
3-769-945-12	(AEP, UK, IT, FR, WG)...MANUAL, INSTRUCTION
3-769-945-41	(AEP, IT, WG).....MANUAL, INSTRUCTION
8-952-313-92	HEADPHONE MDR-005L/R SET