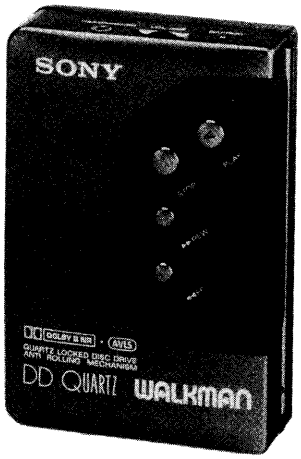
WM-DD22

SERVICE MANUAL

AEP Model



Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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Model Name Using Similar Mechanism	WM-DD11
Tape Transport Mechanism Type	MT-WMDD22-16

SPECIFICATIONS

Frequency response
40 – 15,000 Hz
Wow and flutter
± 0.2% W.Peak (DIN)
Power output
Headphones:
5 mW + 5 mW (at 10% harmonic distortion)
load impedance 16 Ω at DC operation
Output
HEADPHONES jack (stereo minijack)
load impedance 8 – 300 ohms
Power requirements
3 V DC, two R6 (size AA) batteries
DC IN 3V jack accepts:
AC-E30L AC power adaptor (not supplied)
for use on 220 V AC, 50 Hz
DCC-E130L car battery cord (not supplied)
for use on 12 V car battery
Battery life (hours)

Batteries	Continuous playback
Sony SUM-3 (NS)	Approx. 3.5
Sony alkaline AM3 (N)	Approx. 7

For maximum performance we recommend the use of alkaline batteries.

Dimensions
Approx. 83.2 × 119.2 × 38.8 mm (w/h/d)
incl. projecting parts and controls
Mass
Approx. 265 g incl. batteries,
not incl. other accessories
Accessory supplied
Stereo headphones (1)

Design and specifications subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

CASSETTE PLAYER

SONY®

TABLE OF CONTENTS

SERVICING NOTES

Flexible Circuit B ard Repairing

-Keep the temperature of the soldering iron around 270℃ during repairing.

-Do not touch the soldering iron on the same con-ductor of the circuit board (within 3 times).

-Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on Chip Component Replacement

-Never reuse a disconnected chip component.

-Notice that the minus side of a tantalum capacitor may be damaged by heat.

Notes on replacing the speed detection coil (FG901)

FG901 is pressed in chassis.

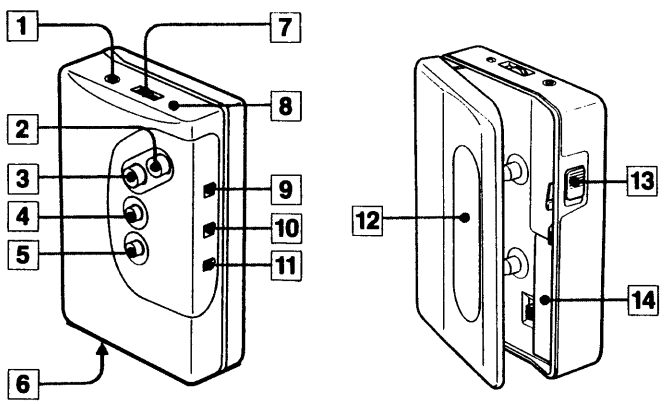
Replace as chassis ass'y when FG901 is defective.

Decide if FG901 is defective or not by removing lead wires of FG901 from audio board and measuring DC resistance value.

DC resistance value of FG901 : Approx. 690Ω

This section is extracted from instruction manual.

A Parts Identification



See illustration A.

1 HEADPHONES jack (stereo minijack)
2 ◀ PLAY button
3 ■ STOP button
4 ▶▶ REW (rewind) button
5 ◀◀ FF (fast forward) button
6 DC IN 3V (external power input) jack
7 VOL (volume) control
8 BATTERY indicator
9 AVLS (Automatic Volume Limiter System) (OFF/1/2) selector
10 TAPE (NORM•CrO_2/METAL) selector
11 DOLBY NR (OFF/ON) switch
12 Cassette holder
13 OPEN switch
14 Battery compartment lid

SECTION 1
ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab :
   playback head pinch roller
   capstan rubber belt
2. Demagnetize the playback head with a head demagnetizer.
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.

1-1. MECHANICAL ADJUSTMENTS

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	22 - 30 g-cm (0.31 - 0.42 oz-inch)
FWD Back Tension		1 - 4 g-cm (0.01 - 0.06 oz-inch)
FF, REW	CQ-201B	More than 65 g-cm (more than 0.9 oz-inch)

Tape Tension Measurement

Mode	Tension meter	Meter reading
FWD	CQ-403A	More than 60 g (more than 0.83 oz)

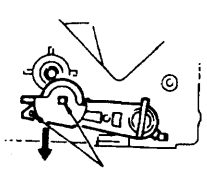
Pinch Roller Pressure Adjustment

— Playback Mode —

1. Pull the spring scale in the direction shown by the arrow.
2. Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating.

Specification :

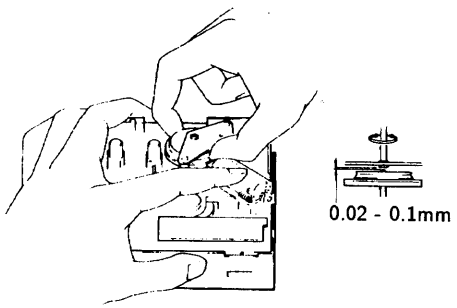
170 ± 20g (5.3 - 6.7 oz)



Hook the spring scale to one of these holes and pull it in the direction of arrow.

W w & flutter and m t r p siti n

1. Adjust with the adjustment screw so that rotor thrust play is within 0.1mm. (When confirming play, press motor down so that the motor pulley and rotor rubber section do not touch.)

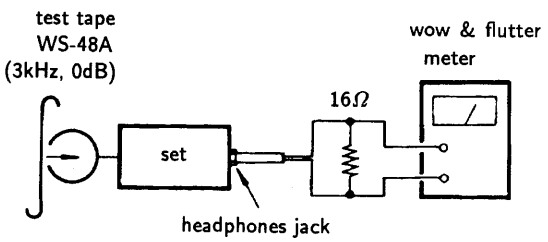


2. Wow & flutter adjustment

Setting :

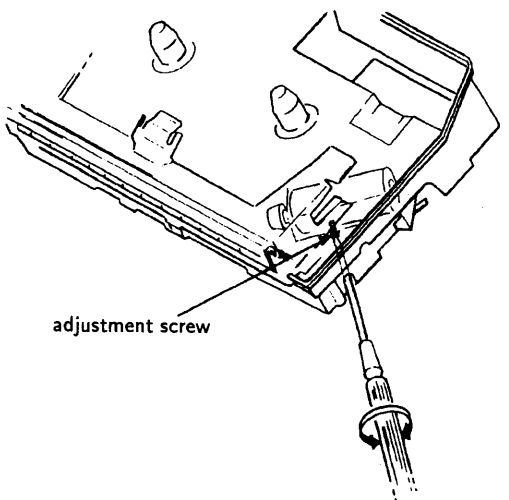
Power supply voltage : 2.5V
Tape : Adjust by using end portion of tape.
VOLUME control : mechanical mid
TAPE SELECT switch : NORM
DOLBY NR switch : OFF
AVLS switch : OFF

Procedure :



1. Mode : playback

Turn the adjustment screw so that the wow and flutter meter reads minimum (less than 0.12% W-RMS).



1-2. ELECTRICAL ADJUSTMENTS

Test Tape

Type	Signal	Used for
WS-48A	3 kHz, 0dB	Tape Speed Adjustment
P-4-A100	10kHz, -10dB	Playback Head Azimuth Adjustment
P-4-A063	6.3kHz, -10dB	
P-4-L300	315Hz, 0dB	Playback Level Adjutment

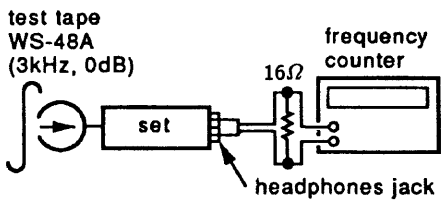
Tape Speed Adjustment

Setting :

VOLUME control : mechanical mid
TAPE SELECT switch : NORM
DOLBY NR switch : OFF
AVLS switch : OFF

Procedure :

Mode : playback



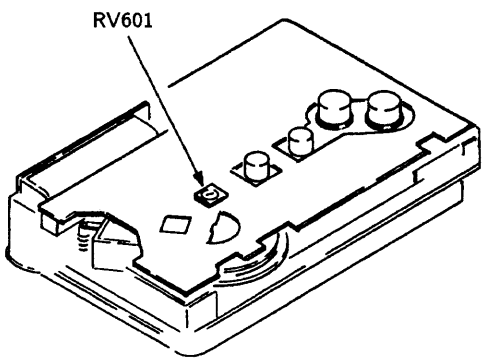
1. Turn RV601 so that frequency reading becomes in 3,000Hz. (at the ending part of the test tape)
2. Play back the test tape top and end and confirm that the frequency reading becomes in the adjustment limit below.

Adjustment Limit :

Frequency counter
3000Hz±30Hz

Adjustment Location :

- AUDIO board -



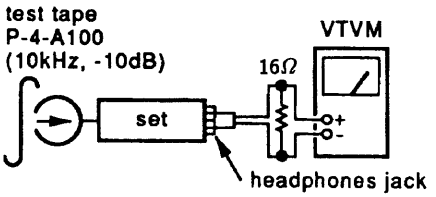
Playback Head Azimuth Adjustment

Setting :

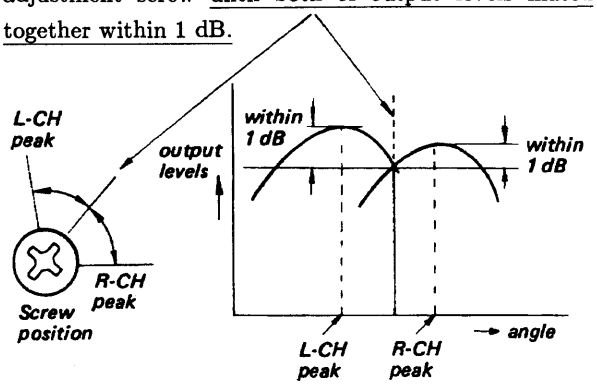
VOLUME control : mechanical mid
TAPE SELECT switch : NORM
DOLBY NR switch : OFF
AVLS switch : OFF

Procedure :

1. Mode : playback

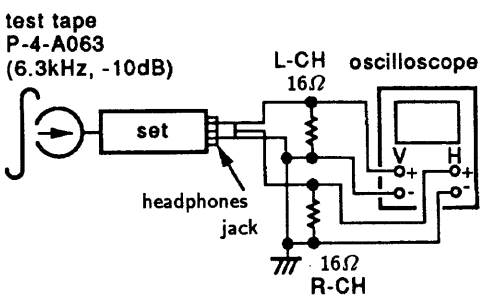


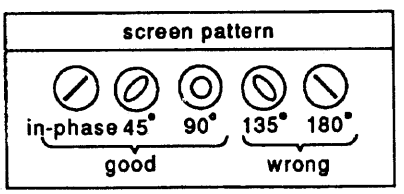
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



3. Phase Check

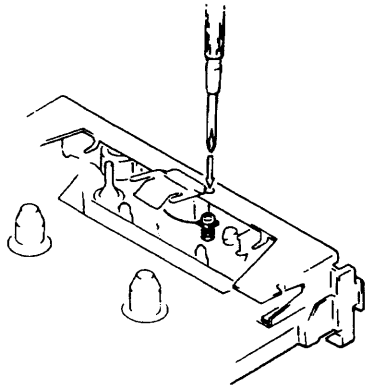
Mode : playback





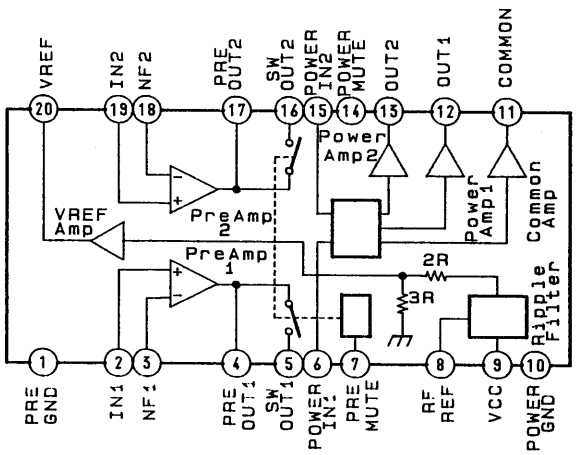
Adjustment Location :

- cassette chamber -

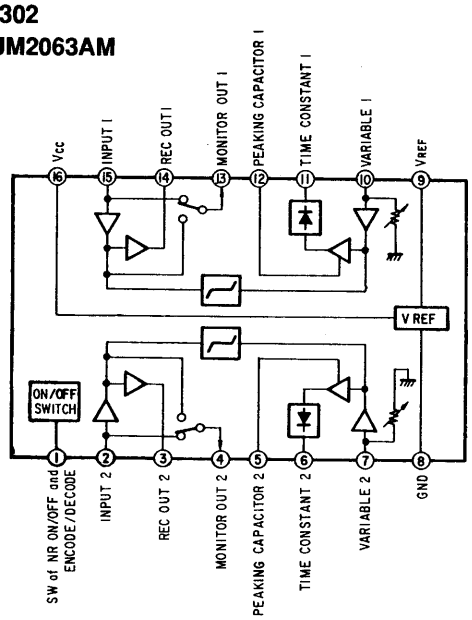


● IC BLOCK DIAGRAMS

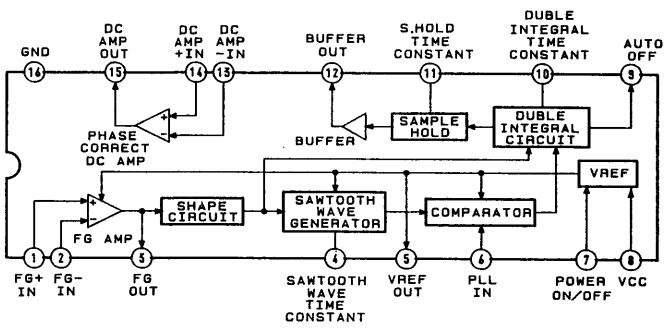
• **IC301**
LA4571M



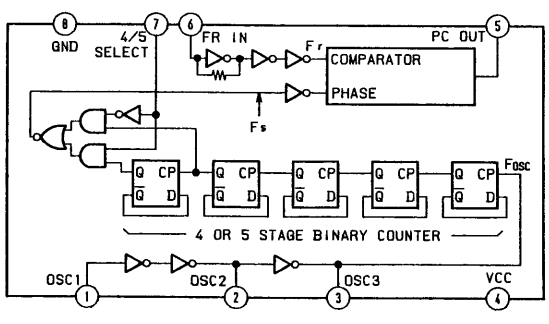
• **IC302**
NJM2063AM



• **IC601**
CXA1423N



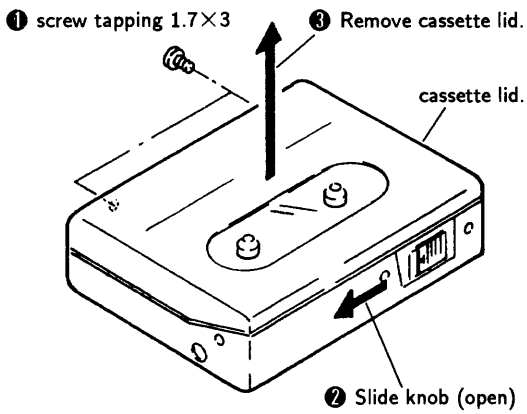
• **IC701**
MSM58141MSK

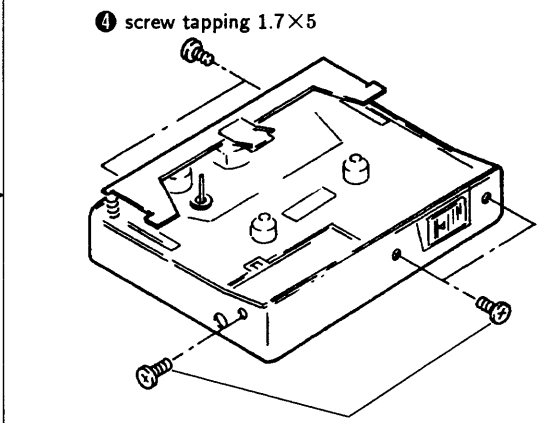


SECTION 2
DISASSEMBLY

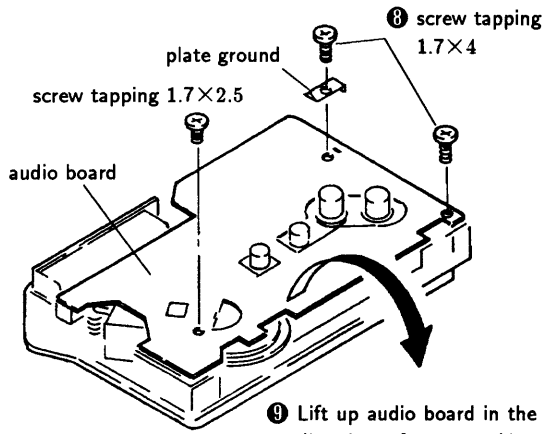
Note : Following the disassenbly procedure in the numerical order given.

Cassette Lid

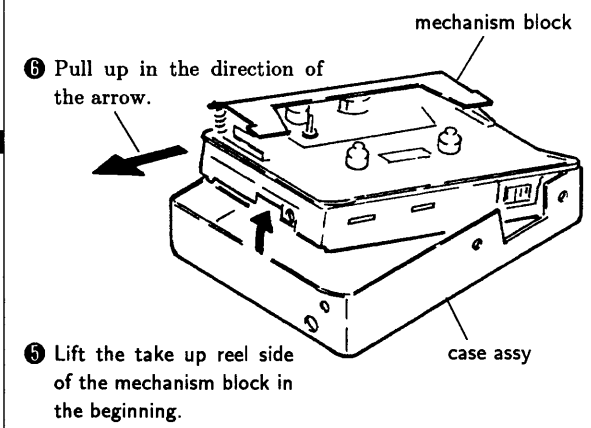




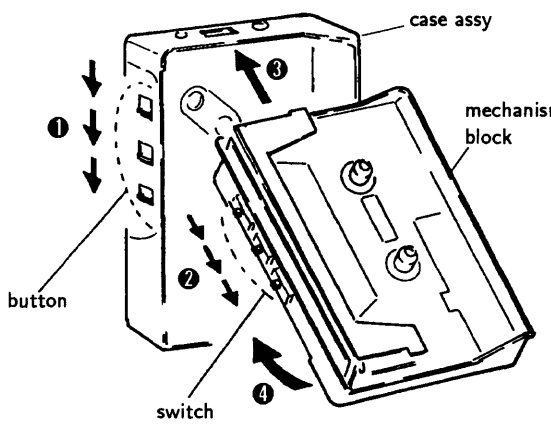
Audi B ard



Mechanism Block



N te f r assembling :



❶ Move the AVLS, TAPE and DOLBY NR button toward arrow direction.

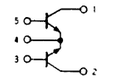
❷ Slide the AVLS, TAPE and DOLBY NR switch toward arrow direction.
(AVLS-OFF, TAPE-NORM, DOLBY NR-OFF position)

❸ Insert the mechanism block to the case assy numerical order ❸ ❹.

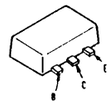
SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

XN1501

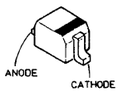


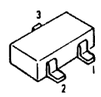
2SB1218A-R **2SB798-DL**
2SB624-BV345
2SD596DV345
2SD1819A-R
UN5115



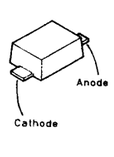
MA110
MA729

MA147

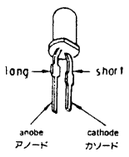




MA8051-M



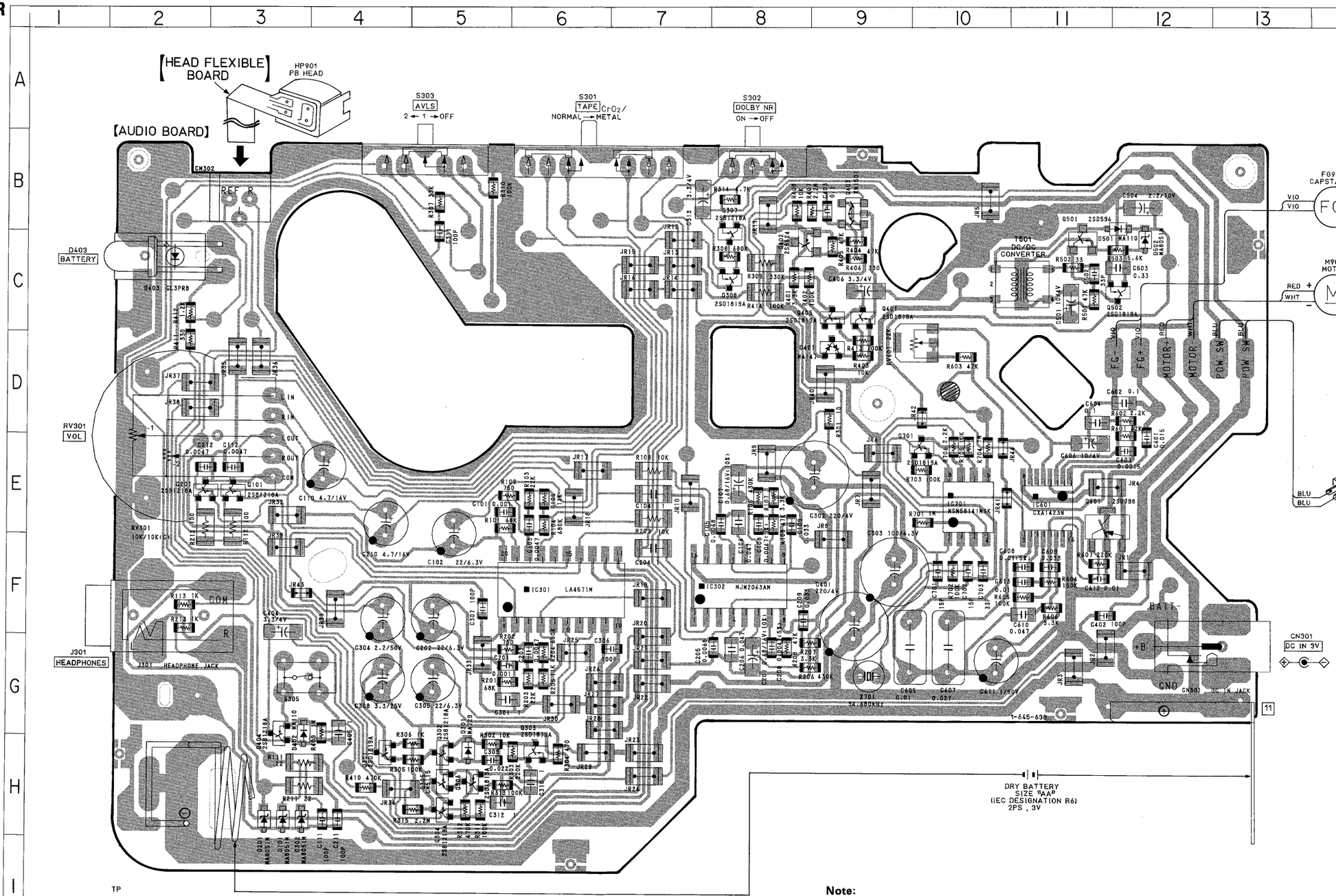
TLR124



- **Semiconductor L cation**

Ref. No.	Location
D101	H-3
D201	H-3
D301	H-5
D302	H-3
D401	D-8
D402	G-3
D403	C-2
D501	B-11
D502	C-12
IC301	F-6
IC302	F-8
IC601	E-11
IC701	E-10
Q101	E-3
Q201	E-3
Q301	H-4
Q302	H-5
Q303	H-6
Q304	H-5
Q305	H-5
Q306	H-5
Q307	C-7
Q308	C-7
Q401	C-9
Q402	C-8
Q403	B-9
Q404	G-3
Q405	C-9
Q501	C-11
Q502	C-11
Q601	E-11
Q701	E-9

3-2. PRINTED WIRING BOARD



Note:

- ——— : parts extracted from the conductor side.
- ▒▒▒ : Pattern on the side which is seen.

Never reuse a disconnected chip component.

Notice that the minus side of a tantalum capacitor may be damaged by heat.

3-3. SCHEMATIC DIAGRAM

• See page 5 for IC block diagram

【AUDIO BOARD】

【HEAD FLEXIBLE BOARD】

HP901-1 Lch
HP901 PB HEAD
HP901-2 Rch
CN302

S301-1 TAPE
S301-2 TAPE
S302 DOLBY NR
S303 AVLS
S303 OFF-1-2
S304 (POWER)

IC301 1/2 LA4571M PRE/POWER AMP
IC301 2/2 LA4571M PRE/POWER AMP
IC302 NJM2063AM DOLBY AMP
IC701 MSM58141MSK PLL
IC601 CXA1423N SEAVO AMP

Q305 UN5115
Q306 2SD1819A
Q304, 305, 306 AVLS CONTROL
Q304 2SB1218A
Q301 2SD1819A AVLS CONTROL
Q302, 303 2SD1819A AVLS DET
Q101, 201 2SB1218A AVLS CONTROL
Q307, 308 2SB1819A POWER MUTE SW
Q701 2SD1819A FG AMP
Q501 2SD596 OSC
Q502 2SD1819A CONVERTER CONTROL
Q601 2SB798 MOTOR DRIVE
Q403 GL3PR8 BATTERY
Q404 2SB1218A RELEASE
Q403 XN1501 — AUTO OFF SW —
Q402 2SB624
Q401, 405 2SD1819A VOLTAGE DET

D501 MA110
D502 MA8051M
D301 MA729
D101 MAB051M
D201 MAB051M
D302 MAB051M
D401 MA147
D402 MA110

RV301 10k/10k VOL
RV601 SPEED
RV601 22k

S305 (RELEASE)

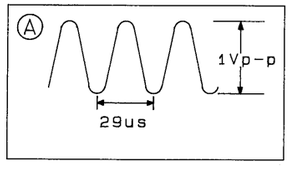
J301 HEADPHONES
CN301 DC IN 3V

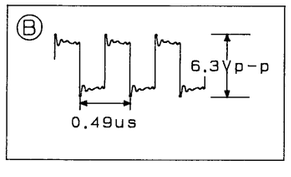
M901 MOTOR
FG901 CAPSTAN FG (MECHANISM)
X701 34.680kHz

TOTAL CURRENT
PB : 140mA
FF : 150mA
REW: 140mA

DRY BATTERY SIZE "AA"
(IEC DESIGNATION R6)
2PCS.3V

B+





Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
  B+ : B+ Line
  ▭ : adjustment for repair.
  Total current is measured with no cassette installed.
- Power voltage is dc 2.5V and fed with regulated dc power supply from external power voltage jack.
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
  Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  Σ : PB

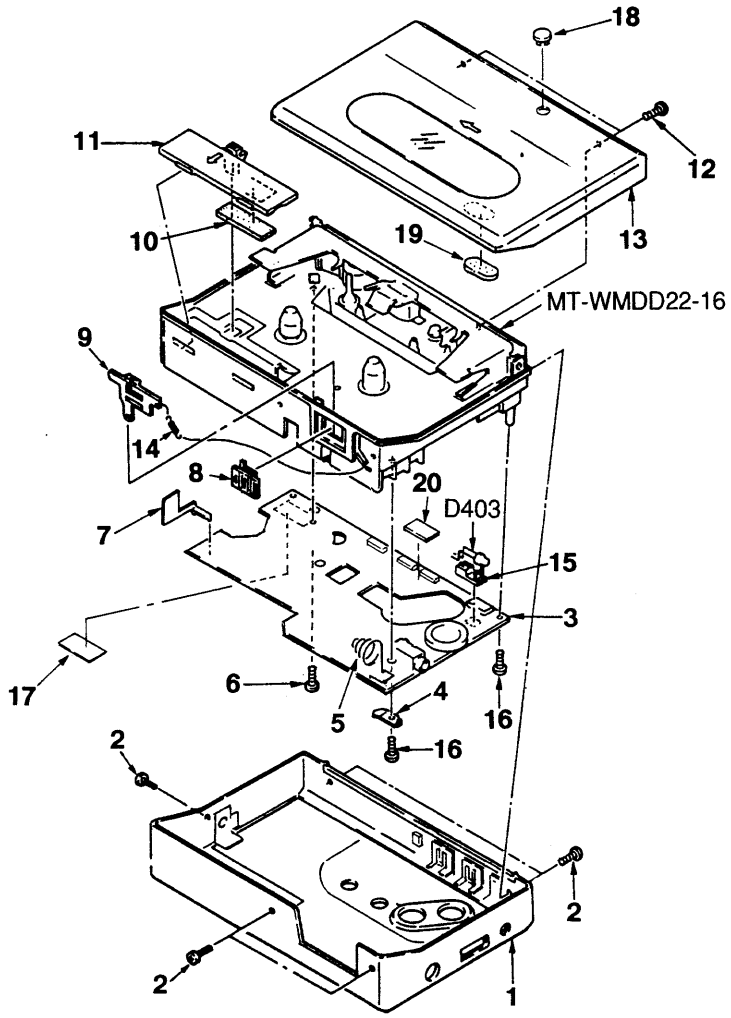
SECTION 4
EXPLODED VIEWS

NOTE:

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

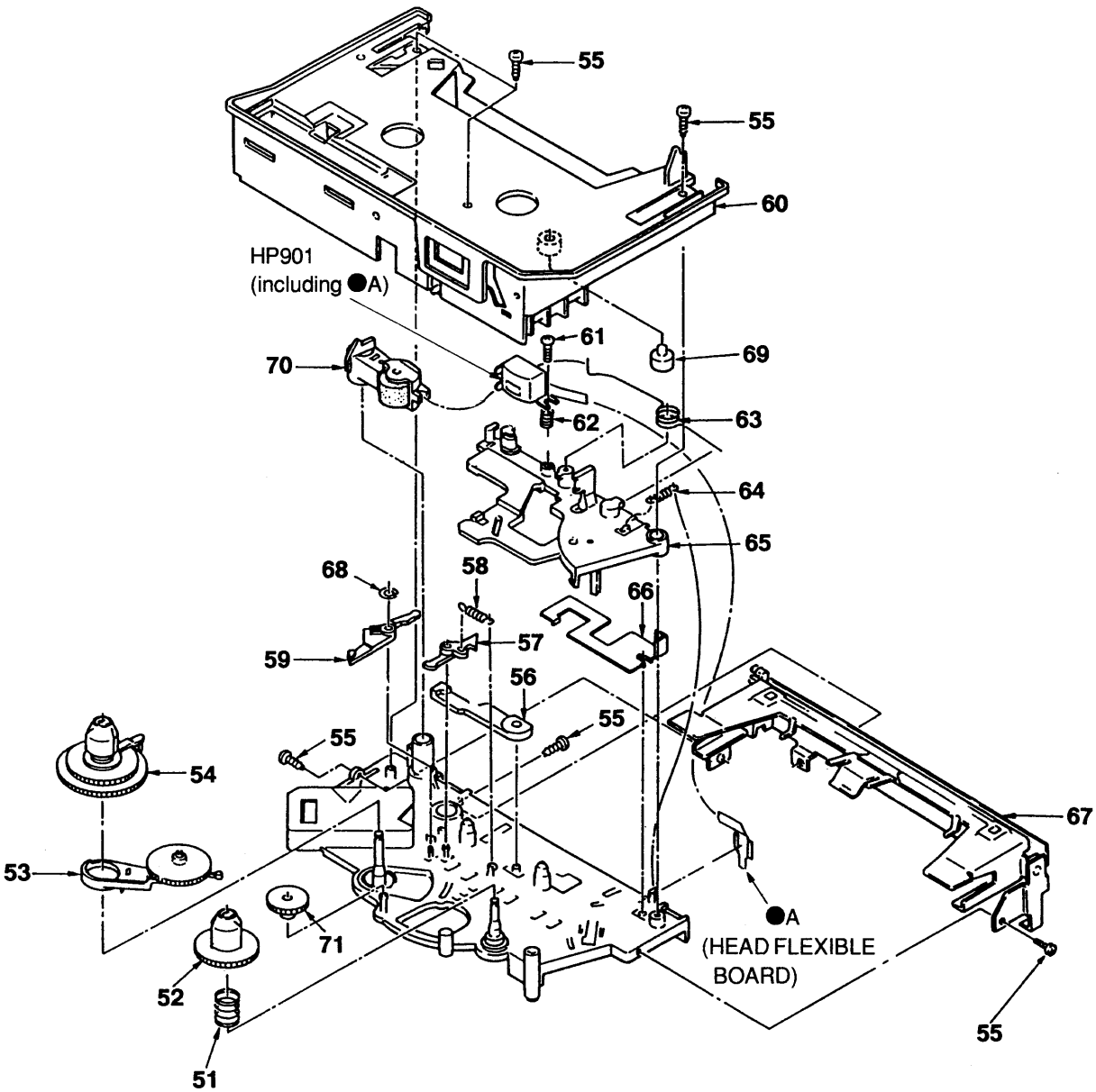
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts' Color

4-1. CABINET



Ref. No.	Part No.	Description	Remark
1	X-3365-662-1	CASE ASSY (DG) (BLACK)	
1	X-3365-664-1	CASE ASSY (BB) (BLUE)	
1	X-3365-665-1	CASE ASSY (T) (SILVER)	
2	3-893-942-21	SCREW (1.7X5), TAPPING (B)	
3	A-3016-262-A	AU BOARD, COMPLETE	
4	3-324-444-01	PLATE, GROUND	
5	3-383-074-01	SPRING, BATTERY COIL	
6	7-627-552-07	SCREW, PRECISION +P 1.7X2.5	
7	3-383-070-01	TERMINAL BOARD, BATTERY	
8	3-362-282-01	KNOB (OPEN)	
9	3-362-286-01	LEVER, LOCK	
10	9-911-815-01	CUSHION, MICROPHONE	
11	3-324-459-01	LID, BATTERY CASE	
12	3-893-942-11	SCREW (1.7X3), TAPPING (B)	
13	X-3365-663-1	LID ASSY (DG), CASSETTE (BLACK)	
13	X-3365-666-1	LID ASSY (BB), CASSETTE (BLUE)	
13	X-3365-667-1	LID ASSY (T), CASSETTE (SILVER)	
14	3-303-955-00	SPRING, TENSION	
* 15	3-343-524-01	HOLDER, LED	
16	3-893-942-31	SCREW (1.7X4), TAPPING (B)	
17	3-831-441-11	CUSHION (B)	
18	3-578-232-21	ORNAMENT, ADJUSTMENT HOLE (BLACK, BLUE)	
18	3-578-232-00	ORNAMENT, ADJUSTMENT HOLE (SILVER)	
19	3-327-119-01	SPACER, OPEN KNOB	
* 20	3-563-504-01	PLATE, ADJUSTMENT	
D403	8-719-812-41	LED TLR124	

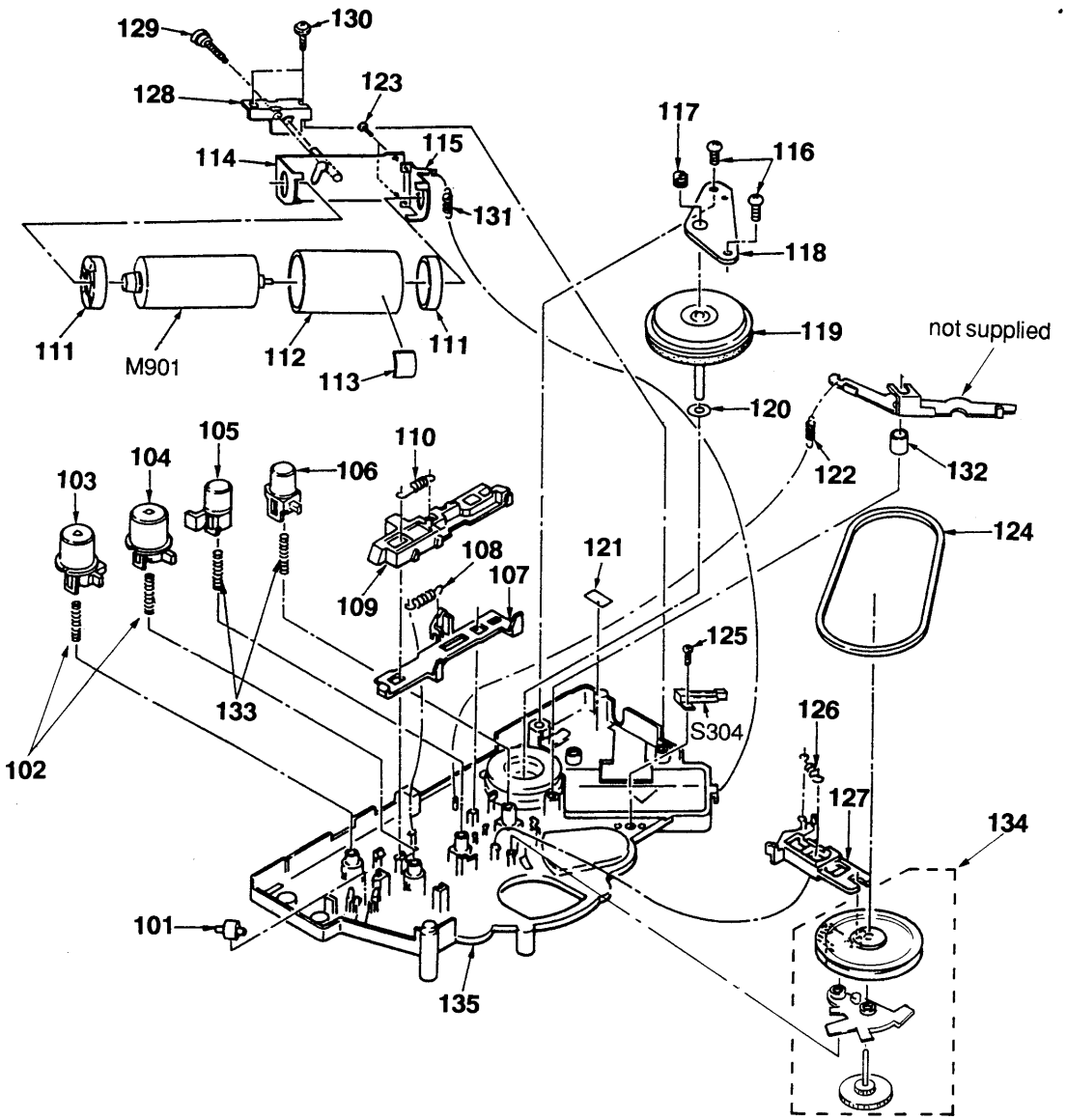
4-2. TAPE TRANSPORT MECHANISM (1) (MT-WMDD22-16)



Ref. No.	Part No.	Description	Remark
51	3-343-505-01	SPRING, COMPRESSION	
52	3-324-478-01	GEAR (S REEL)	
53	X-3310-958-1	ARM ASSY, PLAY	
54	X-3310-956-1	REEL ASSY, T	
55	3-893-942-01	SCREW (1.7X4), TAPPING (B)	
56	3-324-493-01	LEVER (S.OFF)	
57	3-343-508-01	LEVER (DETECTION SAFETY)	
58	3-343-509-01	SPRING, TENSION	
59	X-3310-977-1	ARM ASSY, DETECTION	
60	X-3362-040-7	SHASSIS ASSY, SUB	
61	7-621-255-25	SCREW +PTT 2X4 (S)	

Ref. No.	Part No.	Description	Remark
62	3-343-506-01	SPRING, COMPRESSION	
63	3-343-519-01	SPRING	
64	3-343-503-01	SPRING, TENSION	
65	3-343-513-01	CHASSIS, HEAD	
66	3-324-465-01	LEVER (RELEASE)	
67	X-3365-691-1	HINGE ASSY	
68	3-570-615-00	POLY-WASHER (DIA.1.2)	
69	3-362-280-01	LEVER (PUSH)	
70	X-3310-962-1	PINCH LEVER ASSY	
71	3-324-495-01	GEAR (FF)	
HP901	1-543-481-11	HEAD, MAGNETIC (PLAY BACK)	

4-3. TAPE TRANSPORT MECHANISM (2) (MT-WMDD22-16)



Ref. No.	Part No.	Description	Remark
101	3-324-498-01	SHAFT (ROLLER)	
102	3-324-497-01	SPRING, COMPRESSION	
103	X-3365-687-1	LEVER ASSY, PLAY BUTTON	
104	X-3365-690-1	LEVER ASSY, STOP BUTTON	
105	X-3365-688-1	LEVER ASSY, REW BUTTON	
106	X-3365-689-1	LEVER ASSY, FF BUTTON	
107	3-343-512-01	LEVER (SW)	
108	3-343-509-01	SPRING, TENSION	
109	3-343-511-01	PLATE, LOCK	
110	3-343-502-01	SPRING, TENSION	
* 111	3-362-276-01	CUSHION (MOTOR)	
112	3-343-507-01	SHIELD, MOTOR	
113	3-831-441-XX	SPACER	
* 114	X-3362-039-1	BRACKET (MOTOR A) ASSY	
* 115	3-362-277-01	BRACKET (MOTOR B)	
116	3-318-203-71	SCREW (B1.7X5), TAPPING	
117	3-357-127-01	SCREW (THRUST)	
* 118	3-324-496-01	RETAINER, THRUST	
119	X-3310-957-2	WHEEL ASSY, CAPSTAN	

Ref. No.	Part No.	Description	Remark
120	3-315-495-11	WASHER (t=0.13)	
120	3-315-495-21	WASHER (t=0.2)	
120	3-315-495-31	WASHER (t=0.3)	
121	3-831-441-11	CUSHION (B)	
122	3-363-785-01	SPRING (LEVER RETURN), TENSION	
123	3-704-197-01	SCREW (M1.4X1.6), LOCKING	
124	3-499-042-XX	BELT	
125	3-309-597-21	SCREW (1.4), TAPPING	
126	3-343-501-01	SPRING, TENSION	
127	3-324-485-01	LEVER (FR)	
* 128	X-3362-038-1	BRACKET ASSY	
129	3-362-275-01	SHAFT (MOTOR HOLDER)	
130	4-908-618-21	SCREW (+BTP) (2X6)	
131	3-364-363-01	SPRING, TENSION	
132	3-363-787-02	SLEEVE (LEVER)	
133	3-363-786-01	SPRING, COMPRESSION	
134	X-3310-976-1	ARM ASSY, MIDWAY	
135	X-3310-975-1	CHASSIS ASSY	
M901	1-541-960-11	MOTOR	
S304	1-553-226-00	SWITCH, LEAF (POWER)	

AU

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

- -XX and -X mean standardized parts, so they may have some difference from the original one.

RESISTORS

All resistors are in ohms.

METAL:Metal-film resistor.

METAL OXIDE: Metal oxide-film resistor.

F:nonflammable

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

- SEMICONDUCTORS

In each case, u:μ, for example:

uA..: μA.. uPA..: μPA..

uPB..: μPB.. uPC..: μPC.. uPD..: μPD..

- CAPACITORS

uF: μF

- COILS

uH: μH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-3016-262-A	AU BOARD, COMPLETE			
		**********			
*	3-343-524-01	HOLDER, LED			
	3-383-070-01	TERMINAL BOARD, BATTERY			
	3-383-074-01	SPRING, BATTERY COIL			
		< CAPACITOR >			
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C102	1-126-153-11	ELECT	22uF	20%	6.3V
C103	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C104	1-162-638-11	CERAMIC CHIP	1uF		16V
C105	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C106	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C107	1-135-226-21	TANTAL. CHIP	0.68uF	10%	16V
C108	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C109	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C110	1-126-163-11	ELECT	4.7uF	20%	50V
C111	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C112	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C201	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C202	1-126-153-11	ELECT	22uF	20%	6.3V
C203	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C204	1-162-638-11	CERAMIC CHIP	1uF		16V
C205	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C206	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C207	1-135-226-21	TANTAL. CHIP	0.68uF	10%	16V
C208	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C209	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C210	1-126-163-11	ELECT	4.7uF	20%	50V
C211	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C212	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C301	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-124-434-00	ELECT	220uF	20%	4V
C303	1-124-584-00	ELECT	100uF	20%	10V
C304	1-124-257-00	ELECT	2.2uF	20%	50V
C305	1-126-153-11	ELECT	22uF	20%	6.3V
C306	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C307	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C308	1-126-162-11	ELECT	3.3uF	20%	50V
C309	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C310	1-164-346-11	CERAMIC CHIP	1uF		16V
C311	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C312	1-164-346-11	CERAMIC CHIP	1uF		16V
C313	1-135-221-11	TANTAL. CHIP	3.3uF	20%	4V
C401	1-124-434-00	ELECT	220uF	20%	4V
C402	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C403	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C404	1-135-221-11	TANTAL. CHIP	3.3uF	20%	4V
C405	1-164-346-11	CERAMIC CHIP	1uF		16V
C406	1-135-221-11	TANTAL. CHIP	3.3uF	20%	4V
C501	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C502	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
C503	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C504	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C601	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C604	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C605	1-136-153-00	FILM	0.01uF	5%	50V
C606	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C607	1-136-158-00	FILM	0.027uF	5%	50V
C608	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C609	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C610	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C611	1-126-160-11	ELECT	1uF	20%	50V
C612	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C613	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C701	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C702	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C703	1-162-947-11	CERAMIC CHIP	33PF	5%	50V
		< CONNECTOR >			
CN301	1-580-372-21	JACK, OUTER POWER			
CN302	1-695-801-11	HOUSING, CONNECTOR 3P			
		< DIODE >			
D101	8-719-420-90	DIODE MA8051-M			
D201	8-719-420-90	DIODE MA8051-M			
D301	8-719-420-51	DIODE MA729			
D302	8-719-420-90	DIODE MA8051-M			
D401	8-719-421-33	DIODE MA147			

Ref. No.	Part No.	Description				Remark
D402	8-719-404-46	DIODE	MA110			
D403	8-719-812-41	LED	TLR124			
D501	8-719-404-46	DIODE	MA110			
D502	8-719-420-90	DIODE	MA8051-M			
		< IC >				
IC301	8-759-821-89	IC	LA4571M			
IC302	8-759-701-07	IC	NJM2063AM			
IC601	8-752-039-14	IC	CXA1423N			
IC701	8-759-996-71	IC	MSM58141MSK			
		< JACK >				
J301	1-565-287-11	JACK				
		< JUMPER RESISTOR >				
JR1	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR2	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR3	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR4	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR5	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR6	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR7	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR8	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR9	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR10	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR11	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR12	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR13	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR14	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR15	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR16	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR17	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR18	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR19	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR20	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR21	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR22	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR23	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR24	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR25	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR26	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR27	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR28	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR29	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR30	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR31	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR32	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR33	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR34	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR35	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR36	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR37	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR38	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR39	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR40	1-216-296-00	METAL CHIP	0	5%	1/8W	
		< TRANSISTOR >				
Q101	8-729-402-55	TRANSISTOR	2SB1218A-R			
Q201	8-729-402-55	TRANSISTOR	2SB1218A-R			
Q301	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q302	8-729-402-55	TRANSISTOR	2SB1218A-R			
Q303	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q304	8-729-402-55	TRANSISTOR	2SB1218A-R			
Q305	8-729-420-53	TRANSISTOR	UN5115			
Q306	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q307	8-729-402-55	TRANSISTOR	2SB1218A-R			
Q308	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q401	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q402	8-729-141-48	TRANSISTOR	2SB624-BV345			
Q403	8-729-402-13	TRANSISTOR	XN1501			
Q404	8-729-402-55	TRANSISTOR	2SB1218A-R			
Q405	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q501	8-729-141-75	TRANSISTOR	2SD596DV345			
Q502	8-729-402-32	TRANSISTOR	2SD1819A-R			
Q601	8-729-101-07	TRANSISTOR	2SB798-DL			
Q701	8-729-402-32	TRANSISTOR	2SD1819A-R			
		< RESISTOR >				
R41	1-216-864-11	METAL CHIP	0	5%	1/16W	
R42	1-216-864-11	METAL CHIP	0	5%	1/16W	
R43	1-216-864-11	METAL CHIP	0	5%	1/16W	
R44	1-216-864-11	METAL CHIP	0	5%	1/16W	
R101	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R102	1-218-484-11	METAL GLAZE	750	5%	1/16W	
R103	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R104	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R105	1-218-330-11	METAL GLAZE	11K	5%	1/16W	
R106	1-218-448-11	METAL GLAZE	430K	5%	1/16W	
R107	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R108	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R109	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R111	1-216-158-00	METAL GLAZE	22	5%	1/8W	
R112	1-216-174-00	METAL GLAZE	100	5%	1/8W	
R113	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R201	1-216-843-11	METAL CHIP	68K	5%	1/16W	
R202	1-218-484-11	METAL GLAZE	750	5%	1/16W	
R203	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R204	1-216-855-11	METAL CHIP	680K	5%	1/16W	

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Ref. No.	Part No.	Description			Remark
R205	1-218-330-11	METAL GLAZE	11K	5%	1/16W
R206	1-218-448-11	METAL GLAZE	430K	5%	1/16W
R207	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R208	1-216-841-11	METAL CHIP	47K	5%	1/16W
R209	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R211	1-216-158-00	METAL GLAZE	22	5%	1/8W
R212	1-216-174-00	METAL GLAZE	100	5%	1/8W
R213	1-216-821-11	METAL CHIP	1K	5%	1/16W
R301	1-216-797-11	METAL CHIP	10	5%	1/16W
R302	1-216-833-11	METAL CHIP	10K	5%	1/16W
R303	1-216-849-11	METAL CHIP	220K	5%	1/16W
R304	1-216-817-11	METAL CHIP	470	5%	1/16W
R305	1-216-845-11	METAL CHIP	100K	5%	1/16W
R306	1-216-821-11	METAL CHIP	1K	5%	1/16W
R307	1-216-839-11	METAL CHIP	33K	5%	1/16W
R308	1-216-855-11	METAL CHIP	680K	5%	1/16W
R309	1-216-258-00	METAL GLAZE	330K	5%	1/8W
R310	1-216-845-11	METAL CHIP	100K	5%	1/16W
R311	1-216-845-11	METAL CHIP	100K	5%	1/16W
R312	1-216-853-11	METAL CHIP	470K	5%	1/16W
R313	1-216-845-11	METAL CHIP	100K	5%	1/16W
R314	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R315	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R401	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R402	1-216-845-11	METAL CHIP	100K	5%	1/16W
R403	1-216-833-11	METAL CHIP	10K	5%	1/16W
R404	1-216-841-11	METAL CHIP	47K	5%	1/16W
R405	1-216-841-11	METAL CHIP	47K	5%	1/16W
R406	1-216-815-11	METAL CHIP	330	5%	1/16W
R407	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R408	1-216-833-11	METAL CHIP	10K	5%	1/16W
R409	1-216-857-11	METAL CHIP	1M	5%	1/16W
R410	1-216-853-11	METAL CHIP	470K	5%	1/16W
R411	1-216-815-11	METAL CHIP	330	5%	1/16W
R412	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R413	1-216-845-11	METAL CHIP	100K	5%	1/16W
R414	1-216-246-00	METAL GLAZE	100K	5%	1/8W
R501	1-216-841-11	METAL CHIP	47K	5%	1/16W
R502	1-216-803-11	METAL CHIP	33	5%	1/16W
R503	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R601	1-218-447-11	METAL GLAZE	62K	5%	1/16W
R602	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R603	1-216-841-11	METAL CHIP	47K	5%	1/16W
R604	1-216-847-11	METAL CHIP	150K	5%	1/16W
R605	1-216-845-11	METAL CHIP	100K	5%	1/16W
R606	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R607	1-216-849-11	METAL CHIP	220K	5%	1/16W
R701	1-216-857-11	METAL CHIP	1M	5%	1/16W
R702	1-216-845-11	METAL CHIP	100K	5%	1/16W
R703	1-216-845-11	METAL CHIP	100K	5%	1/16W
R704	1-216-857-11	METAL CHIP	1M	5%	1/16W
R705	1-216-833-11	METAL CHIP	10K	5%	1/16W
R706	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

< VARIABLE RESISTOR >

RV301	1-238-072-11	RES, VAR, CABON 10K/10K (VOL)
RV601	1-238-714-11	RES, ADJ, METAL GLAZE 22K (SPEED)

< SWITCH >

S301	1-570-087-11	SWITCH, SLIDE (TAPE)
S302	1-570-675-11	SWITCH, SLIDE (DOLBY NR)
S303	1-570-386-21	SWITCH, SLIDE (AVLS)
S305	1-572-287-11	SWITCH, PUSH (RELEASE)

< TRANSFORMER >

T501	1-423-324-21	TRANSFORMER, DC-DC CONVERTER

< VIBRATOR >

X701	1-527-957-00	OSCILLATOR, CRYSTAL (34.6KHz)

****

MISCELLANEOUS

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D403	8-719-812-41	LED TLR124
HP901	1-543-481-11	HEAD, MAGNETIC (PLAY BACK)
M901	1-541-960-11	MOTOR
S304	1-553-226-00	SWITCH, LEAF (POWER)

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ACCESSORIES & PACKING MATERIALS

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*	3-368-907-01	CUSHION
*	3-383-053-01	INDIVIDUAL CARTON
	3-755-686-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
	3-755-686-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
	8-952-260-92	HEADPHONE MDR-W10L//K SET

English
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