

WM-B19

SERVICE MANUAL

*UK Model
AEP Model*



Model Name Using Similar Mechanism	WM-B15
Tape Transport Mechanism Type	MT-WMB19-04

SPECIFICATIONS

Power requirements

3 V DC Batteries R6 (AA) × 2
BP-700 rechargeable battery
External DC 3 V power sources

Battery life (Approximate hours)

Sony Alkaline AM3 (N)	8 hrs.
Rechargeable BP-700	2 hrs.

Accessories supplied

Stereo headphones (1) Beltclip (1) Battery tube (1)

Optional accessories


Rechargeable battery (BP-700)/charger (BC-700) kit
BPC-700K*
AC power adaptor AC-D2L
Car battery cord DCC-70
Battery case EBP-500B
Stereo active speaker systems SRS-30, SRS-50

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

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

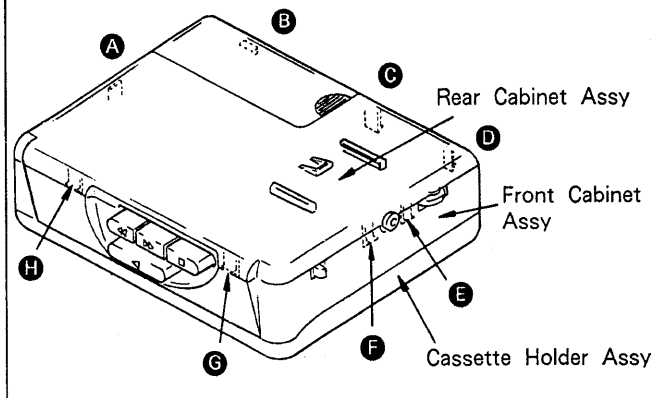
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

CASSETTE PLAYER
SONY[®]

SECTION 1 DISASSEMBLY

Location and shape of claws

The symbols (A)–(H) show the order to uncouple the linkage of the claw, and names of the parts.



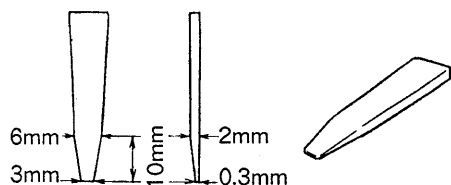
Note: Follow the disassembly procedure the numerical order given.

Tools: Precision Screwdrivers (⊖, width 0.8mm, 1.4mm, and 2.0mm)

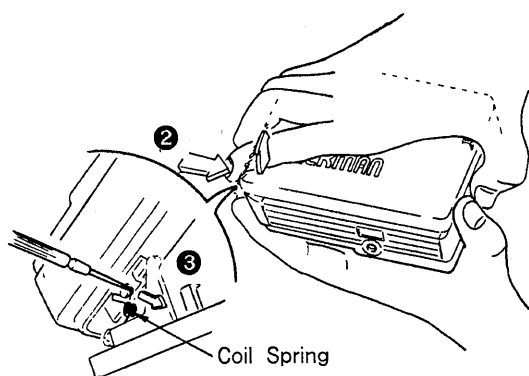
Adhesive tape 1–2cm

Wedge (hand made)

Material ... soft plastic (such as PVC) etc.
Sizes are for the reference.

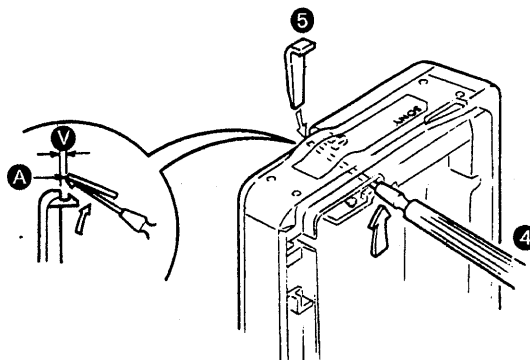


[1] Cassette Holder Removal

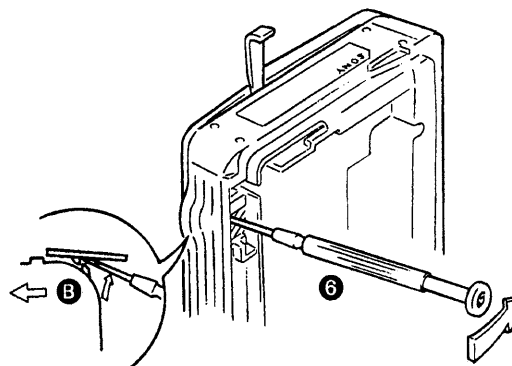


- ① Open the cassette holder.
- ② While pressing the edge of the cassette holder, pull up it in order to take off the cassette holder.
- ③ Take off the end of coil spring with a precision screwdriver (width : 0.8mm).

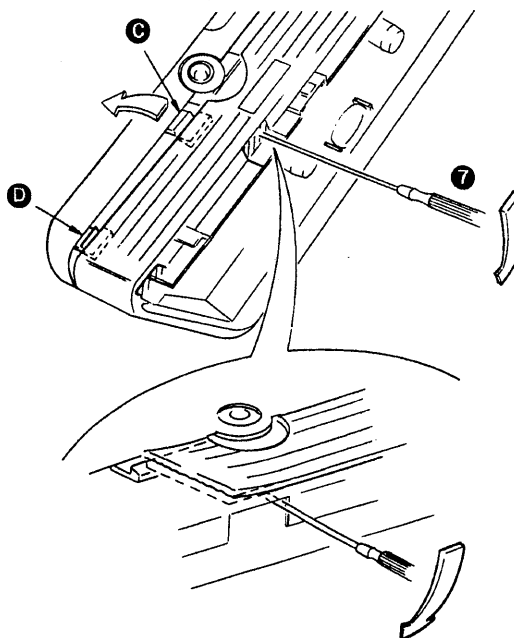
[2] Rear Cabinet Removal



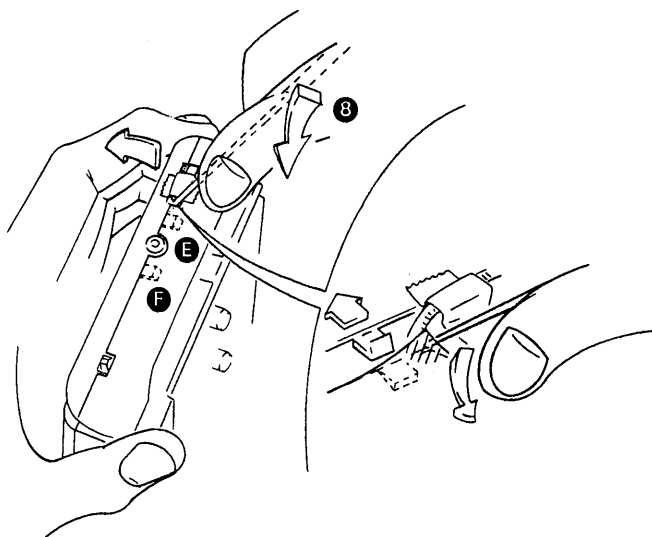
- ④ Insert a precision screwdriver (width : 2.0mm) into the slit of front cabinet, lift the front cabinet as shown in the figure for making a clearance (V).
- ⑤ Insert a wedge in the clearance.



- ⑥ Insert a precision screwdriver (width : 2.0mm), and lift the front cabinet so that the claw (B) comes off.

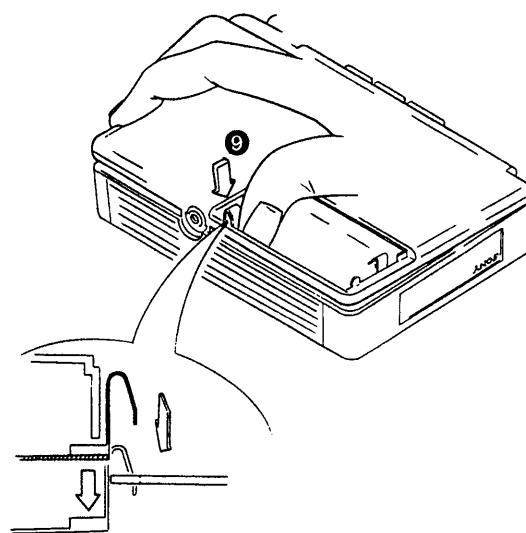


- ⑦ In a similar way as procedure ⑥, uncouple the linkage of the claw (C) and (D).



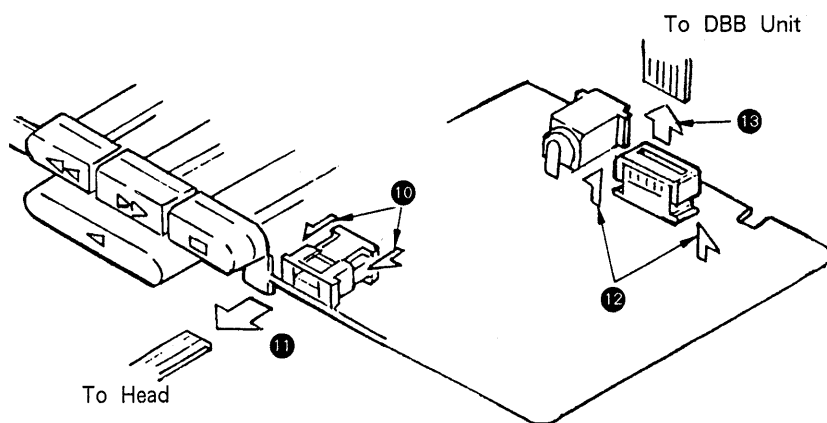
- ⑧ Put a adhesive tape on the volume for protection, Insert a precision screwdriver (width: 1.4mm) and lift the shaded portion, so that the claw ⑤ and ⑥ come off.

CAUTION : Be sure not to touch the volume knob, when inserting precision screwdriver.



- ⑨ Press down the battery terminals in order to leave Mounted PCB in the rear cabinet, and then remove the rear cabinet.

[3] Flexible Board Removal



SECTION 2

MECHANICAL AND ELECTRICAL ADJUSTMENTS

MECHANICAL ADJUSTMENTS

PRECAUTION

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

playback head	pinch roller
capstan	idlers
rubber belts	
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.

Torque Measurement

Torque	Meter Reading	Torque Meter
Foward	22-45g · cm (0.31-0.63oz · inch)	CQ-102C
Fast Forward	55-130g · cm (0.77-1.82oz · inch)	CQ-201B
Rewind	55-150g · cm (0.77-2.1oz · inch)	CQ-201B
Back Tension	1-2g · cm (0.014-0.028oz · inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	more than 90g (1.26oz)

ELECTRICAL ADJUSTMENTS

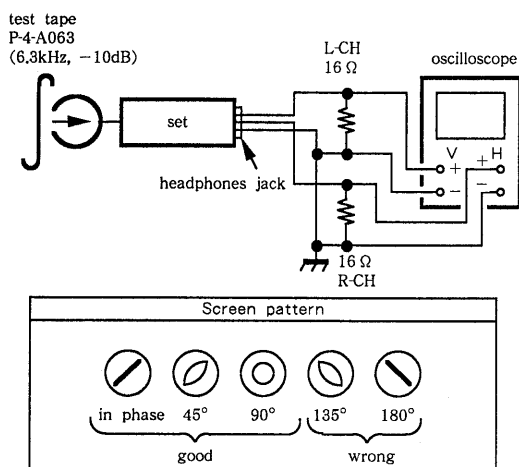
CASSETTE SECTION

Playback Head Phase Check

Note : When replacing the head, check the both L-ch and R-ch phases.

Procedure :

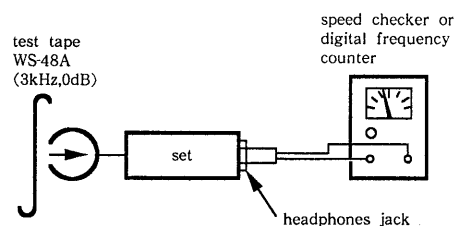
Phase Check
Mode : playback



Tape Speed Adjustment

Procedure :

Mode : playback

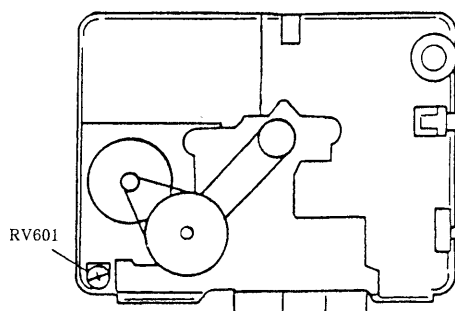


Specification :

speed checker	digital frequency counter (TAPE END)
±0.5%	2,995-3,025Hz

Frequency difference between the beginning and the end of the tape should be within ±1.5% (±45Hz).

Adjustment Location :



SECTION 3
DIAGRAMS

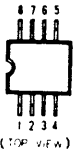
3-1. PRINTED WIRING BOARDS

Semiconductor Location	
Ref. No.	Location
IC301	E-11
IC601	D-1
Q301	H-8

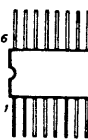
- Note :
- : parts extracted from the component side.
 - : parts mounted on the conductor side.
 - : Through hole.
 - ▨ : Pattern on the side which is seen.
 - ▩ : Pattern of the rear side.
 - : Printed resistor from the rear side.

Semiconductor Lead Layouts

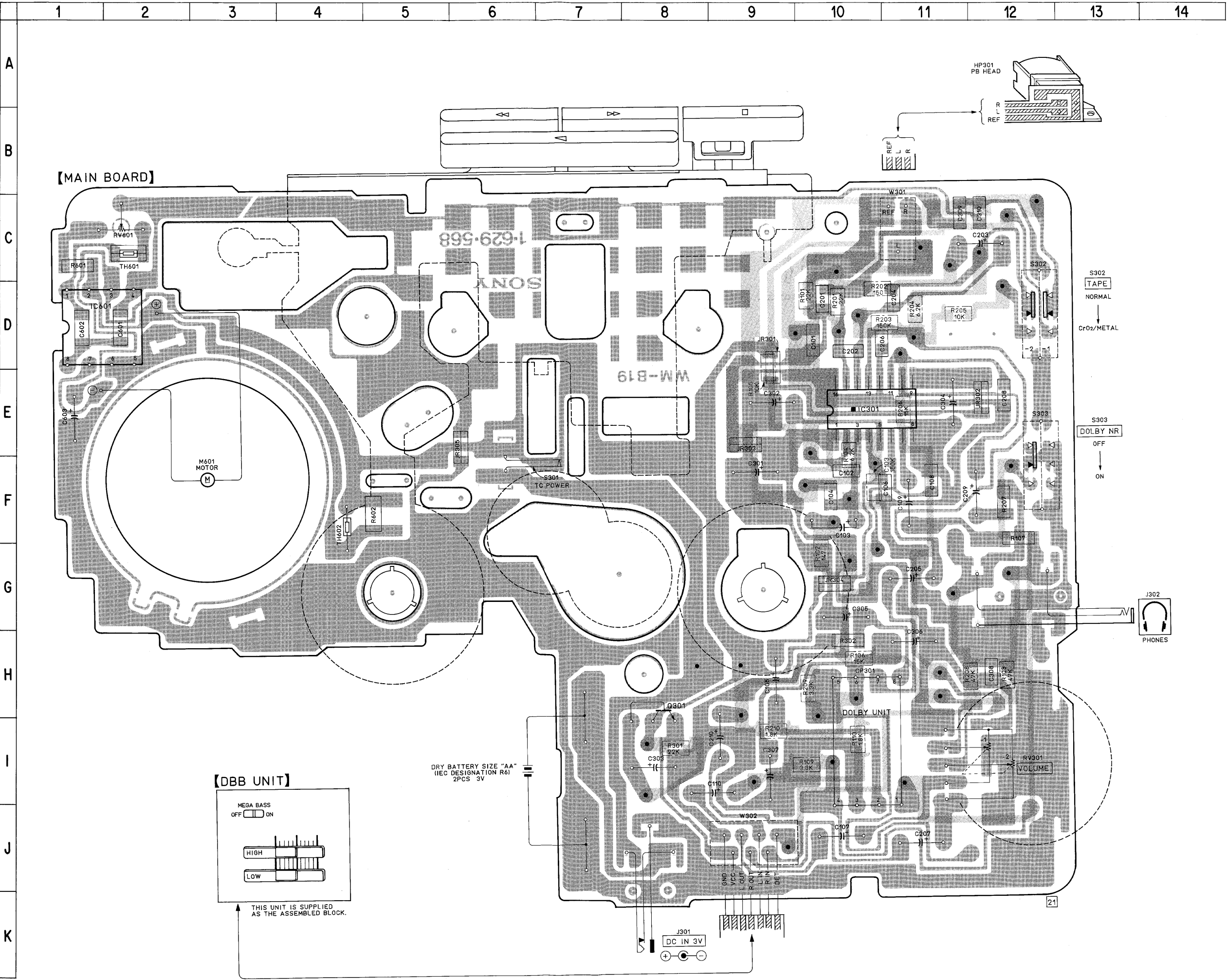
AN6650



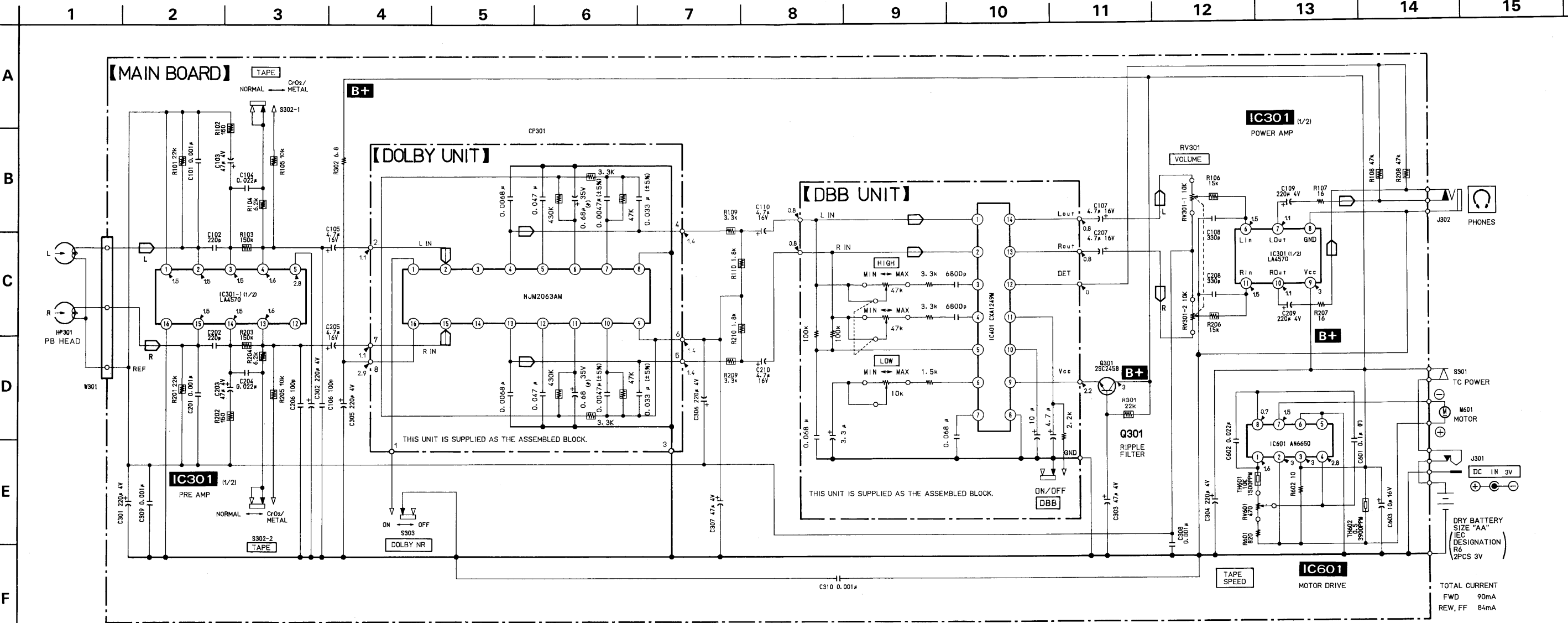
LA4570M



2SC2785-F



3.2. SCHEMATIC DIAGRAM

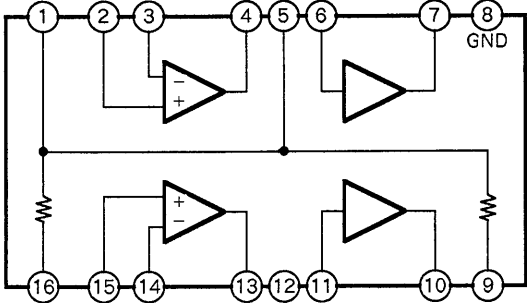


Note :

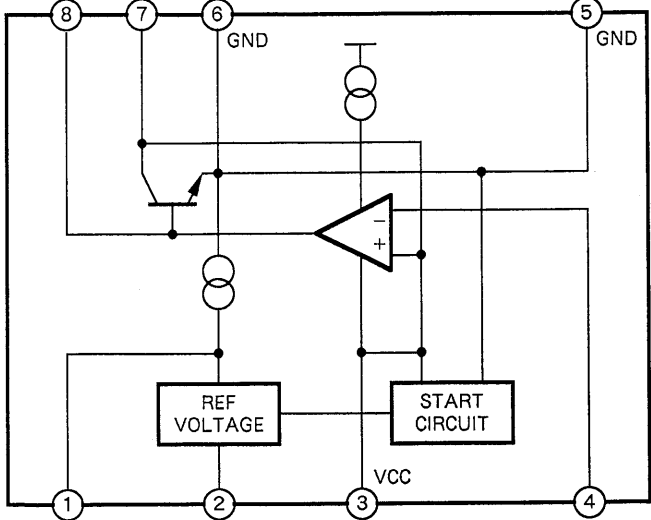
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- : printed resistor.
- B+** : B+ Line
- Total current is measured with no cassette installed.
- Power voltage is dc 3V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : FWD
- Voltagess are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : PB

● IC BLOCK DIAGRAMS

LA4570M



IC AN6650



SECTION 4 EXPLODED VIEW

REVISED

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.

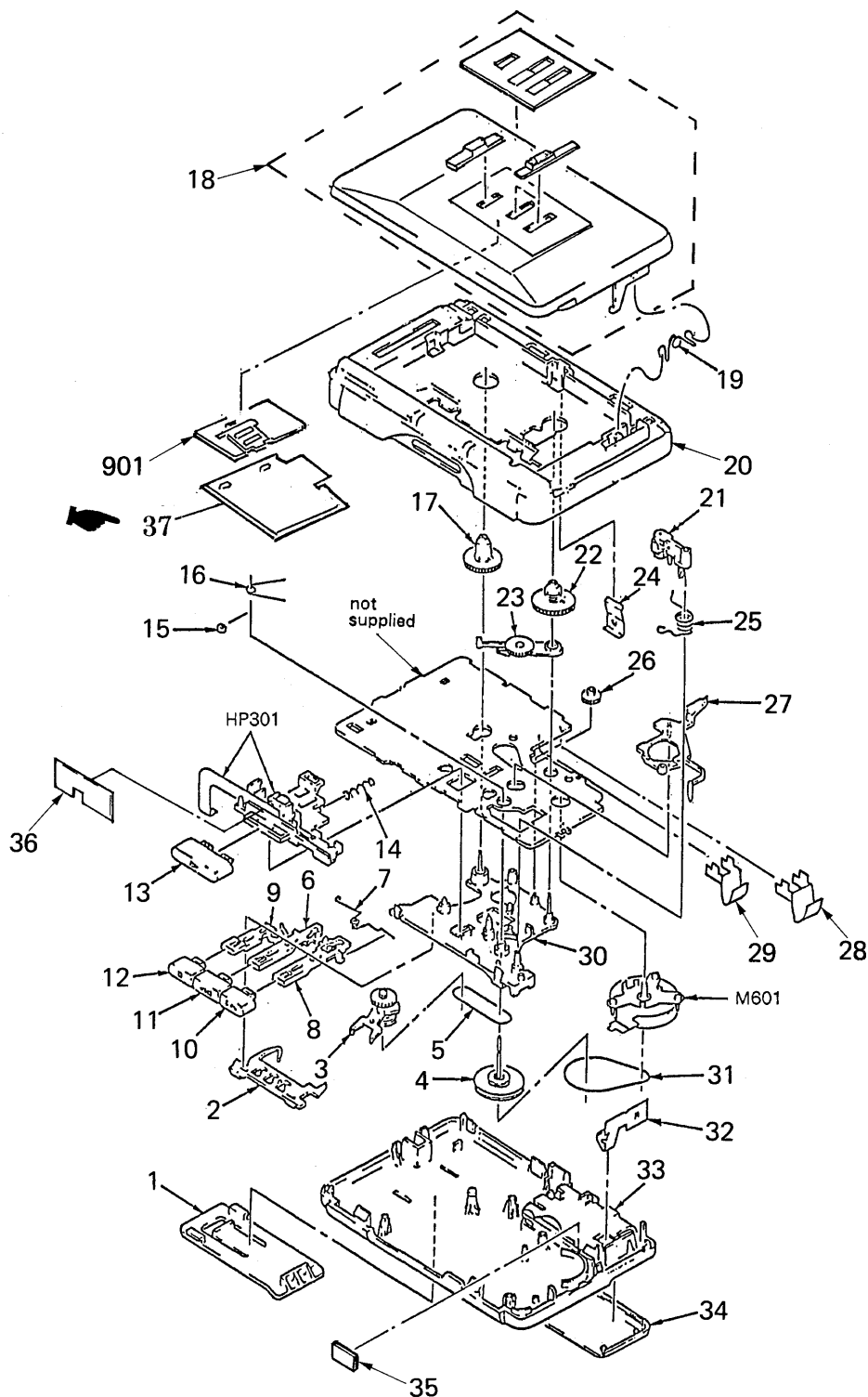
Color Indication of Appearance Parts
Example:

(RED) ... KNOB, BALANCE (WHITE)

↑
Cabinet's Color

↑
Parts Color

(1)



<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
1	3-346-518-01	CLIP, BELT		20	3-351-510-21	CABINET (FRONT) (TC-A)	
2	3-346-522-01	PLATE, LOCK		21	X-3334-005-1	PINCH ROLLER ASSY	
3	X-3346-503-1	GEAR ASSY, MIDWAY		22	X-3346-502-1	TABLE ASSY, T REEL	
4	X-3346-505-1	WHEEL ASSY, CAPSTAN		23	X-3346-504-1	GEAR ASSY, PLAY	
5	3-335-604-01	BELT, MIDWAY		24	3-346-516-01	SPRING	
6	3-346-527-01	LEVER (REW)		25	3-335-608-01	SPRING	
7	3-346-539-01	SPRING (FR)		26	3-334-089-01	GEAR, FF	
8	3-346-526-01	LEVER (FF)		27	3-346-523-01	LEVER (SHUT-OFF)	
9	3-346-528-01	LEVER (STOP)		28	3-341-794-01	TERMINAL BOARD, MINUS	
10	3-346-513-11	BUTTON (FF)		29	3-347-109-01	TERMINAL BOARD, PLUS	
11	3-346-514-11	BUTTON (REW)		30	X-3346-536-1	BASE ASSY (B), GUIDE	
12	3-346-515-11	BUTTON (STOP)		31	3-351-544-01	BELT (CAPSTAN)	
13	3-346-512-11	BUTTON (PLAY)		32	3-334-057-01	TERMINAL BOARD, RELAY	
14	3-335-605-01	SPRING, COMPRESSION		33	3-351-511-01	CABINET (REAR) (TC-B)	
15	3-343-358-01	RING, RETAINING		34	3-346-517-01	LID, BATTERY CASE	
16	3-346-538-01	SPRING (GROUND)		35	*3-338-263-01	CUSHION (U)	
17	3-346-525-01	GEAR (S REEL)		36	*3-347-177-01	SPACER (HI)	
18	X-3346-707-1	HOLDER (TC-C) ASSY (B), CASSETTE		901	1-464-994-11	DBB UNIT	
19	3-346-509-01	SPRING		HP301	A-3108-292-A	PC BOARD ASSY, HEAD	
				M601	1-541-650-21	MOTOR	
				37	*3-351-515-01	COVER (89)	

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.

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: μ F, PF: μ MF.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:

UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
901	1-464-994-11	DBB UNIT				JR304	1-216-296-00	METAL GLAZE	0	5%	1/8W
C101	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V		JR305	1-216-296-00	METAL GLAZE	0	5%	1/8W
C102	1-163-125-00	CERAMIC CHIP 220PF	10%	50V		M601	1-541-650-21	MOTOR			
C103	1-124-432-00	ELECT 47MF	20%	4V		Q301	8-729-178-54	TRANSISTOR 2SC2785-F			
C104	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V		R101	1-249-433-11	RES,CARBON	22K	5%	1/32W
C105	1-126-094-11	ELECT 4.7MF	20%	16V		R102	1-249-407-11	RES,CARBON	150	5%	1/32W
C106	1-163-117-00	CERAMIC CHIP 100PF	5%	50V		R103	1-215-473-00	RES,CARBON	150K	5%	1/32W
C107	1-126-094-11	ELECT 4.7MF	20%	16V		R104	1-215-440-00	RES,CARBON	6.2K	5%	1/32W
C108	1-163-129-00	CERAMIC CHIP 330PF	10%	50V		R105	1-249-429-11	RES,CARBON	10K	5%	1/32W
C109	1-124-434-00	ELECT 220MF	20%	4V		R106	1-249-431-11	RES,CARBON	15K	5%	1/32W
C110	1-126-094-11	ELECT 4.7MF	20%	16V		R107	1-216-155-00	METAL GLAZE	16	5%	1/8W
C201	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V		R108	1-249-437-11	RES,CARBON	47K	5%	1/32W
C202	1-163-125-00	CERAMIC CHIP 220PF	10%	50V		R109	1-249-423-11	RES,CARBON	3.3K	5%	1/4W
C203	1-124-432-00	ELECT 47MF	20%	4V		R110	1-249-420-11	RES,CARBON	1.8K	5%	1/4W
C204	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V		R201	1-249-433-11	RES,CARBON	22K	5%	1/32W
C205	1-126-094-11	ELECT 4.7MF	20%	16V		R202	1-249-407-11	RES,CARBON	150	5%	1/32W
C206	1-163-117-00	CERAMIC CHIP 100PF	5%	50V		R203	1-215-473-00	RES,CARBON	150K	5%	1/32W
C207	1-126-094-11	ELECT 4.7MF	20%	16V		R204	1-215-440-00	RES,CARBON	6.2K	5%	1/32W
C208	1-163-129-00	CERAMIC CHIP 330PF	10%	50V		R205	1-249-429-11	RES,CARBON	10K	5%	1/32W
C209	1-124-434-00	ELECT 220MF	20%	4V		R206	1-249-431-11	RES,CARBON	15K	5%	1/32W
C210	1-126-094-11	ELECT 4.7MF	20%	16V		R207	1-216-155-00	METAL GLAZE	16	5%	1/8W
C301	1-124-434-00	ELECT 220MF	20%	4V		R208	1-249-437-11	RES,CARBON	47K	5%	1/32W
C302	1-124-434-00	ELECT 220MF	20%	4V		R209	1-249-423-11	RES,CARBON	3.3K	5%	1/4W
C303	1-124-432-00	ELECT 47MF	20%	4V		R210	1-249-420-11	RES,CARBON	1.8K	5%	1/4W
C304	1-124-434-00	ELECT 220MF	20%	4V		R301	1-249-433-11	RES,CARBON	22K	5%	1/32W
C305	1-124-434-00	ELECT 220MF	20%	4V		R302	1-216-146-00	METAL GLAZE	6.8	5%	1/8W
C306	1-124-434-00	ELECT 220MF	20%	4V		R601	1-216-196-00	METAL GLAZE	820	5%	1/8W
C307	1-124-432-00	ELECT 47MF	20%	4V		R602	1-216-150-00	METAL GLAZE	10	5%	1/8W
C308	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V		RV301	1-238-072-11	RES, VAR, CABON 10K/10K (VOLUME)			
C309	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V		RV601	1-238-011-11	RES, ADJ, CARBON 470			
C310	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V		S301	1-570-549-11	SWITCH, LEAF (TC POWER)			
C601	1-163-077-00	CERAMIC CHIP 0.1MF		50V		S302	1-571-478-11	SWITCH, SLIDE (TAPE)			
C602	1-163-063-00	CERAMIC CHIP 0.022MF	10%	50V		S303	1-571-478-11	SWITCH, SLIDE (DOLBY NR)			
C603	1-126-157-11	ELECT 10MF	20%	16V		TH601	1-808-664-21	THERMISTOR, POSITIVE			
CP301	1-466-099-11	DOLBY UNIT				TH602	1-807-489-41	THERMISTOR (POSITIVE)			
HP301	A-3108-292-A	PC BOARD ASSY, HEAD				W301	*1-565-288-11	HOUSING, CONNECTOR 3P			
IC301	8-759-820-19	IC LA4570M				W302	*1-565-289-11	HOUSING, CONNECTOR 7P			
IC601	8-759-403-83	IC AN6650									
J301	1-568-228-11	JACK, EXTERNAL POWER (DC IN 3V)									
J302	1-565-287-11	JACK (PHONES)									
JR301	1-216-296-00	METAL GLAZE	0	5%	1/8W						
JR302	1-216-296-00	METAL GLAZE	0	5%	1/8W						
JR303	1-216-296-00	METAL GLAZE	0	5%	1/8W						

ACCESSORY & PACKING MATERIAL

3-351-508-01	TUBE, PROTECTION
3-786-983-11	(UK)...MANUAL, INSTRUCTION
3-786-983-41	(AEP)...MANUAL, INSTRUCTION
8-952-260-91	HEADPHONE MDR-W10L

