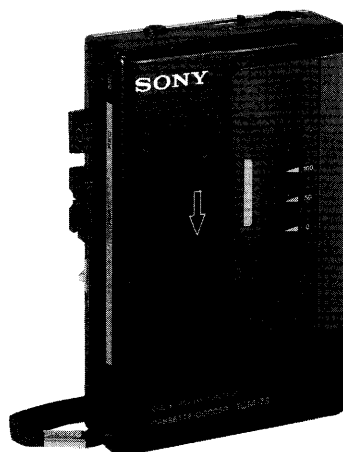


TCM-71/73

SERVICE MANUAL



US Model
E Model

TCM-71

Canadian Model
AEP Model
UK Model

TCM-73

Model Name Using Similar Mechanism Set	TCM-11, 31 TCM-13, 33	
Tape Transport Mechanism Set	TCM-71	MT-71-13
	TCM-73	MT-73-13

SPECIFICATIONS

Recording system.....2-track 1-channel monaural
Frequency response...150—6,000Hz
Speaker.....Approx. 4.5cm (1 ⁷/₁₆ inches) dia.
Power output (DC) ...160mW (at 10% harmonic distortion)
Output.....Earphone jack (minijack) for 8—300 Ω earphone
Power requirements...3V DC, two R6 (size AA) batteries
DC IN 3V jack accepts :

- Sony AC-D2M AC power adaptor (optional) for use on :

US, Canadian model	120V AC,60Hz
UK model	240V AC,50Hz
AEP model	220V AC,50Hz
E model	120V AC,60Hz or 220V AC,50Hz

- Sony DCC-70 car battery cord (optional) for use with 12V car battery.

Battery life (hours)

Battery	Recording
Sony battery SUM-3 (NS)	Approx. 4
Sony alkaline battery AM3 (N)	Approx. 12

Dimensions

TCM-71 :

Approx. 94.1×136.4×37.1mm (w/h/d)
(3 ³/₄ × 5 ⁵/₈ × 1 ¹/₂ inches)

TCM-783 :

Approx. 94.1×137.1×37.1mm (w/h/d)
(3 ³/₄ × 5 ¹/₂ × 1 ¹/₂ inches)

incl. projecting parts and controls

Weight

Appr5ox. 260g (9.2oz)

incl. batteries.

Supplied accessory Battery tube (1)

Design and specifications subject to change without notice.

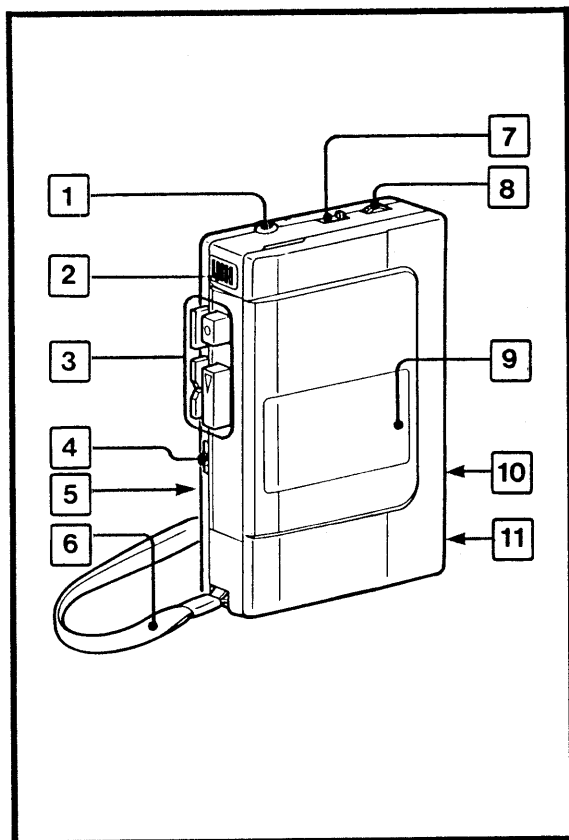
Note: If an AC power adaptor or a car battery cord not manufactured by Sony is used, a fuse must be installed in the battery cord and the polarity of the plug must be as illustrated.



CASSETTE-CORDER
SONY®

SECTION 1 GENERAL

PARTS IDENTIFICATION



- 1 EAR (EARPHONE) jack
- 2 Built-in microphone
- 3 Tape operation buttons
● REC (record) / ▼ PLAY / ■ STOP / ▽ FF / CUE (fast forward/cue) / ▲ REW / REVIEW (rewind/review)
- 4 PAUSE switch
- 5 Speaker (rear)
- 6 Handstrap (TCM-73)
- 7 Tape COUNTER and reset button (TCM-73)
For indexing the tape contents. Before recording push the reset button to set the counter to "000".
- 8 VOLUME control
- 9 Cassette holder
- 10 DC IN 3V (external power input) jack (right side)
- 11 Battery compartment (right side)

SERVICE NOTE

- **Repairing printed resistor**

Cut both sides of the resistor and solder the carbon resistor having same value in place of printed one of the conductor side.

1/32W carbon resistor is supplied for the replacing part of the printed resistor.

- **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.

SECTION 2 MECHANICAL ADJUSTMENTS

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.

Power Supply Voltage : 3V dc

Torque Measurement

Torque	Meter Reading	Torque Meter
Forward	More than 25 g·cm (More than 0.34 oz·inch)	CQ-102C
Fast Forward and Rewind	More than 60 g·cm (More than 0.83 oz·inch)	CQ-201B
Back Tension	1.5-4 g·cm (0.021-0.056 oz·inch)	CQ-102C

Tape Tension Measurement

Meter	Meter Reading
CQ-403A	More than 70g (2.47 oz)

SECTION 3 ELECTRICAL ADJUSTMENTS

Test tape

Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment

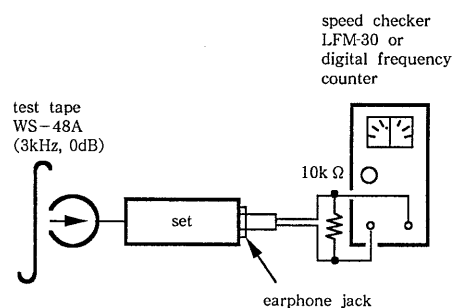
Tape Speed Adjustment

Setting :

VOL control : mechanical mid

Procedure :

Mode : playback

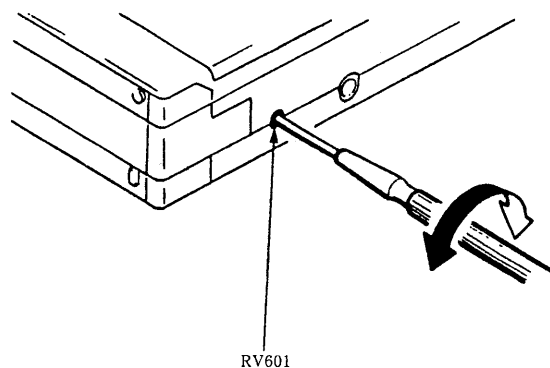


Specification :

Speed checker	Digital frequency counter
-0.5 to +1.5%	2,985-3,045 Hz

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

Adjustment Location :



SECTION 4
DIAGRAMS

● SEMICONDUCTOR
LOCATION

Ref. No.	Location
IC101	B-6
IC601	D-12
Q101	D-3
Q102	B-4
D101	B-4
D102	B-4

● SEMICONDUCTOR
LEAD LAYOUTS

LA5523



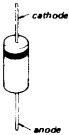
NJM2073D



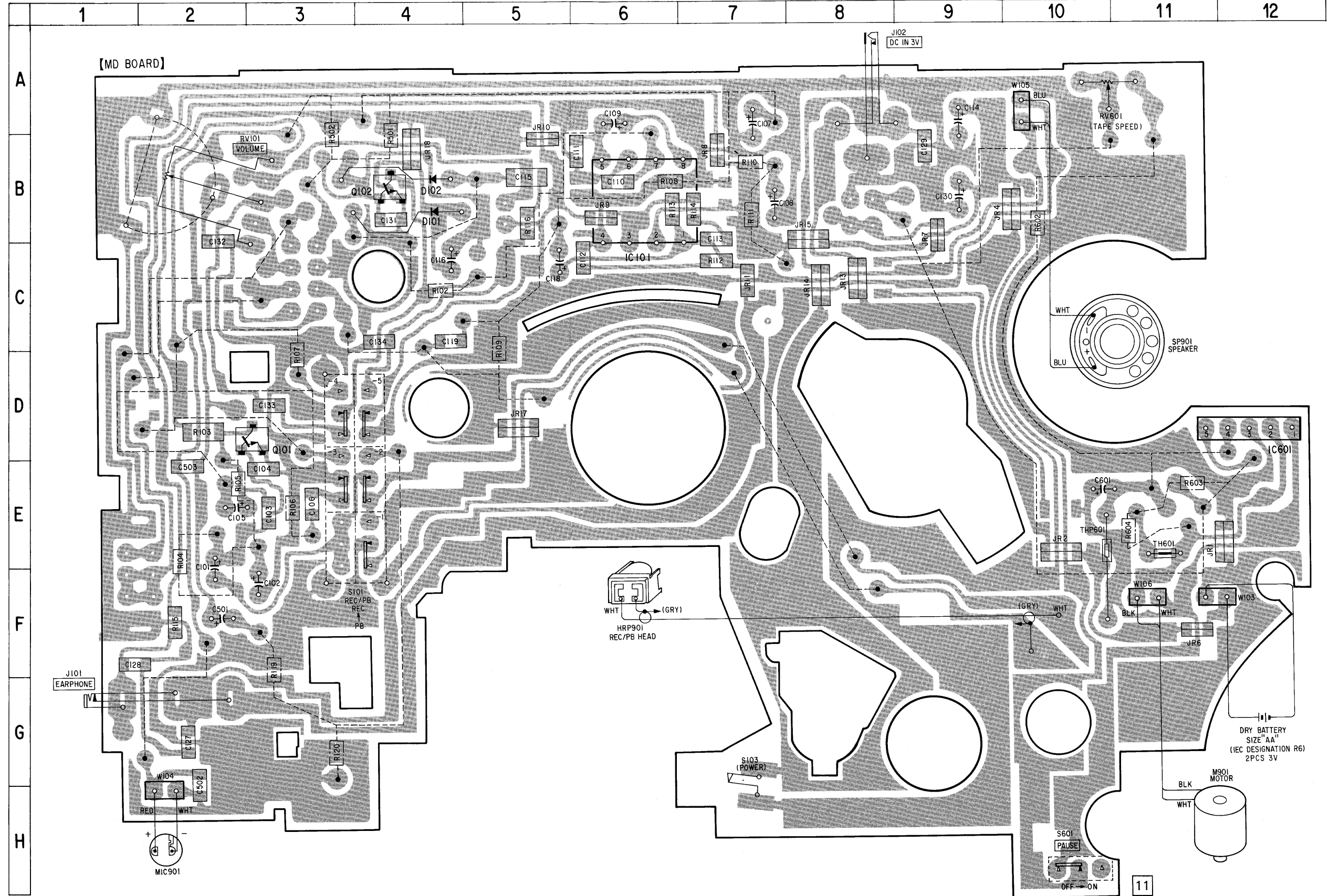
2SC1623



1T22A



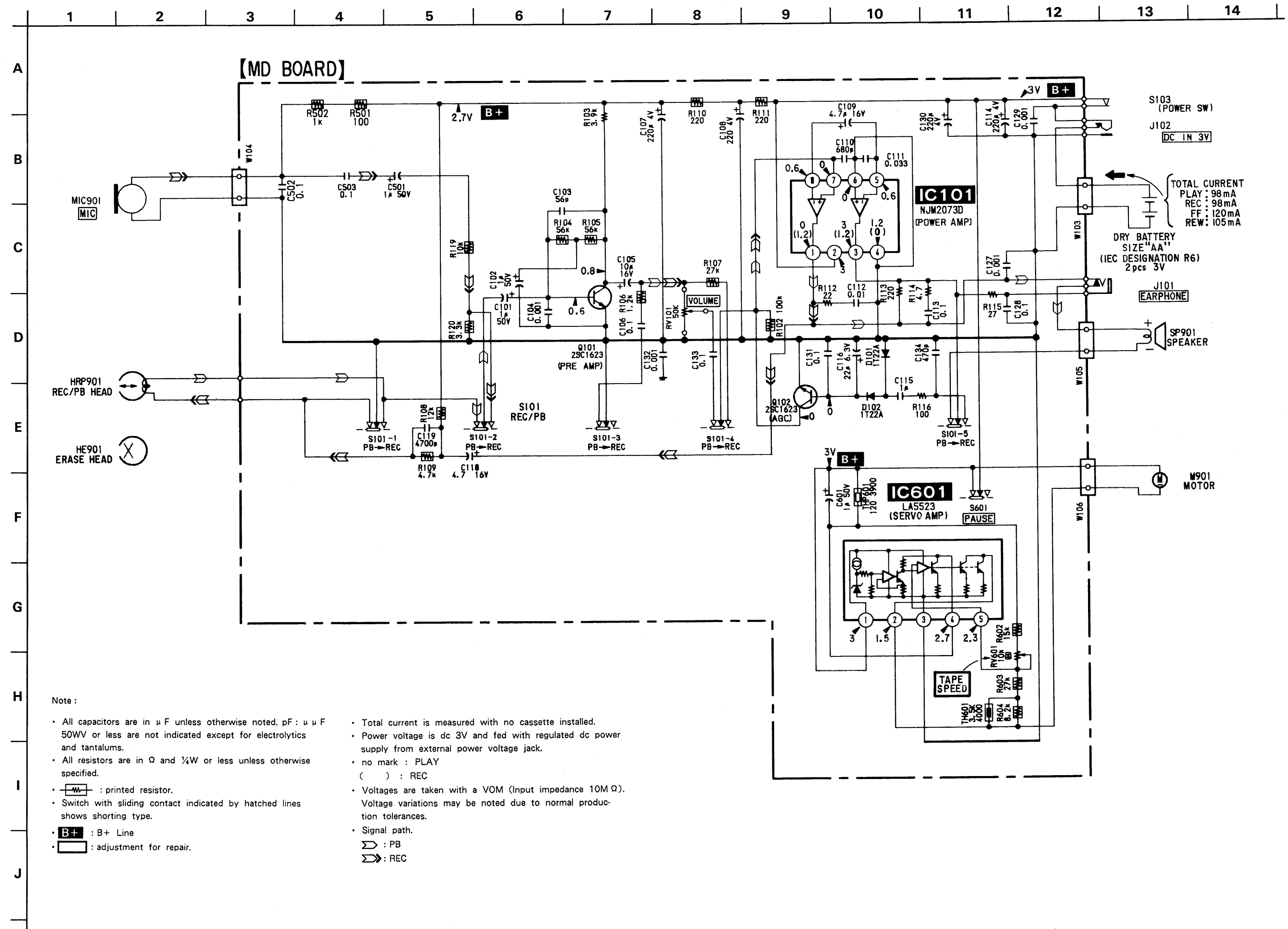
4-1. PRINTED WIRING BOARD



Note :

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : parts mounted on the conductor side.
- : Through hole.
- : Chip components extracted from the side which is seen.
- : Printed resistor.
- ▨ : Patten on the side which is seen.
- : Patten on the rear side.

4-2. SCHEMATIC DIAGRAM



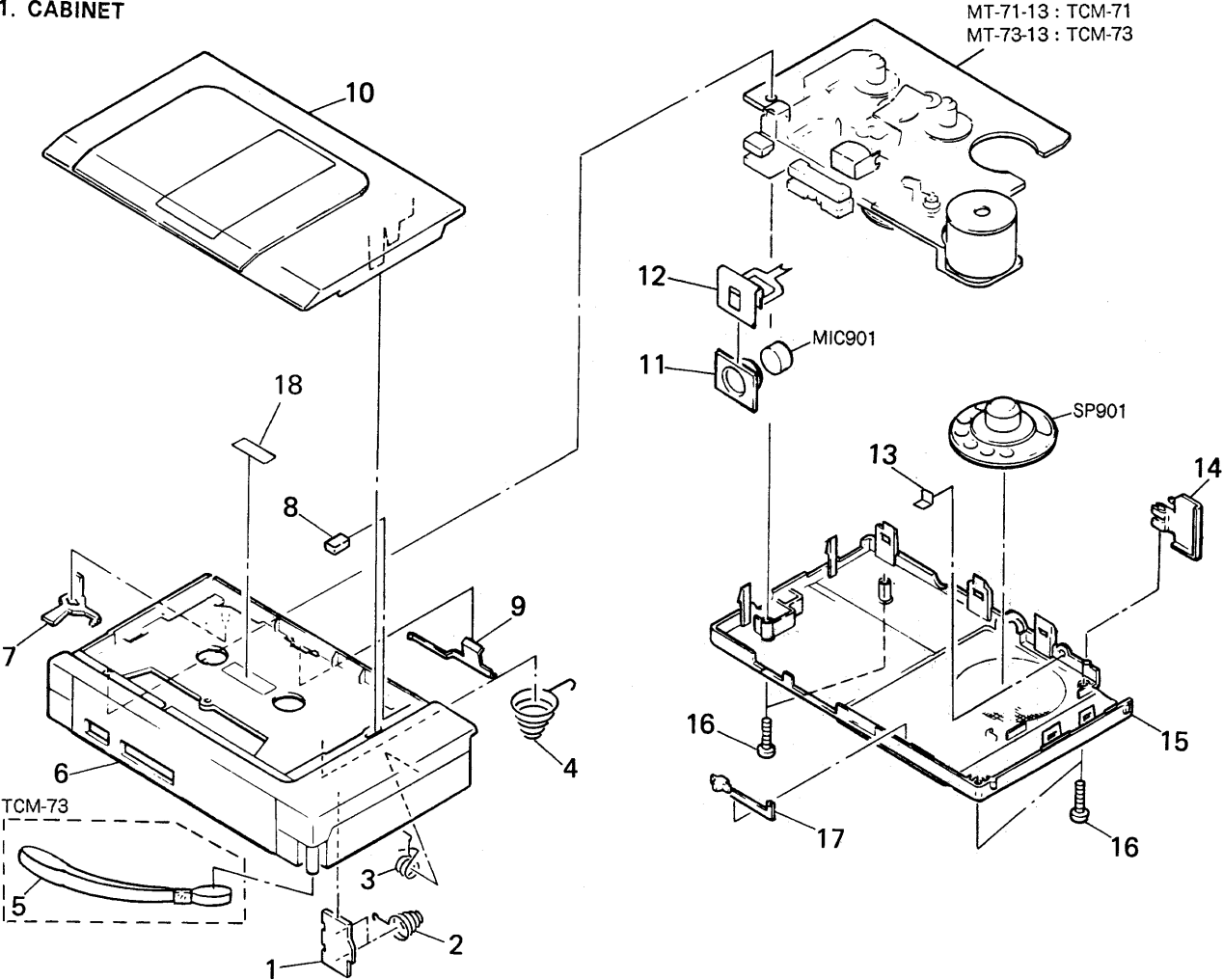
SECTION 5 EXPLODED VIEWS

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

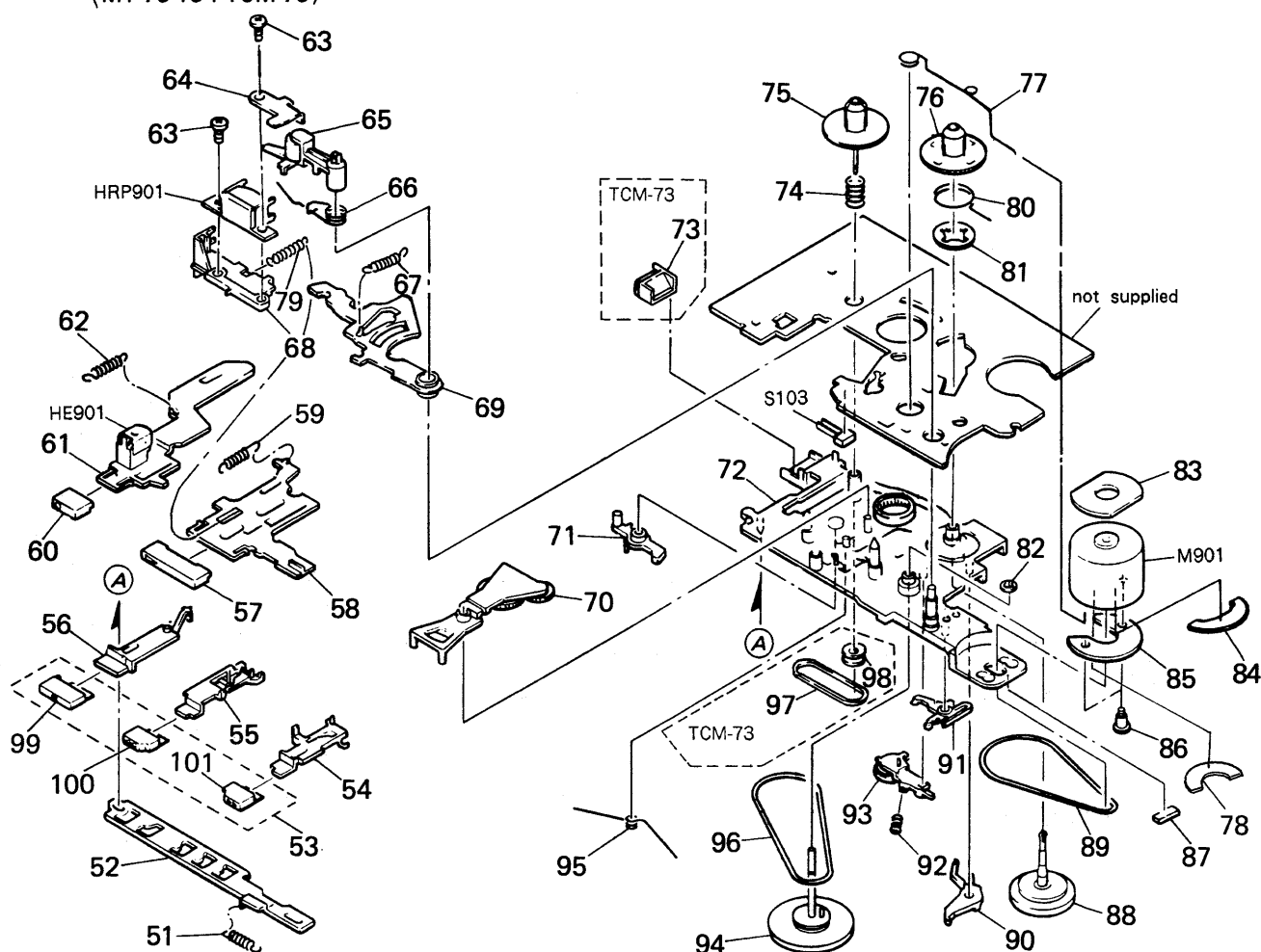
5-1. CABINET



No.	Part No.	Description	Remarks
1	3-352-440-01	HOLDER (BATTERY TERMINAL)	
2	3-352-439-01	SPRING	
3	3-352-433-01	SPRING	
4	3-352-437-01	SPRING (SP)	
5	3-320-982-01	(TCM-73)...STRAP, HAND	
6	3-355-369-01	(TCM-71)...CABINET (A)	
	3-355-369-21	(TCM-73)...CABINET (A)	
7	3-320-976-01	CLAW, ERASE SAFETY	
8	★3-352-471-01	CUSHION (A)	
9	3-320-977-01	SPRING	
10	X-3328-399-1	(TCM-71)...LID ASSY, CASSETTE	
	X-3328-401-1	(TCM-73)...LID ASSY, CASSETTE	

No.	Part No.	Description	Remarks
11	3-320-975-01	CUSHION (A), MICROPHONE	
12	*3-352-434-01	HOLDER (A), MIC	
13	*3-318-389-01	SHEET, CONDUCTIVE, CABINET (REAR)	
14	A-3046-076-A	LID ASSY, BATTERY CASE	
15	3-352-443-01	CABINET (B)	
16	3-335-640-51	SCREW (M2X16)	
17	3-352-432-01	KNOB, PAUSE	
18	3-578-101-11	PLATE, ORNAMENTAL	
MIC901	1-542-080-11	MICROPHONE, BUILT-IN	
SP901	1-503-830-11	SPEAKER	

5-2. MD (MT-71-13 : TCM-71)
(MT-73-13 : TCM-73)



No.	Part No.	Description	Remarks
51	3-342-031-01	SPRING, TENSION	99-101
52	*3-342-040-01	PLATE, LOCK	
53	3-342-079-11	BUTTON (FRS)	
54	3-320-993-01	LEVER, FF	
55	3-320-992-01	LEVER, REW	
56	3-320-994-01	LEVER, STOP	
57	3-352-446-01	BUTTON, PLAY	
58	3-352-449-01	LEVER, PLAY	
59	3-342-029-01	SPRING, TENSION (POWER TENSION)	
60	3-352-445-11	BUTTON, REC	
61	3-320-995-01	LEVER, REC	
62	3-342-032-01	SPRING, TENSION	
63	3-352-473-01	SCREW (2), TAPPING	
64	*3-352-467-01	RETAINER, LEVER	
65	X-3320-921-1	PINCH ROLLER ASSY	
66	3-352-470-01	SPRING (P), TORSION	
67	3-342-033-01	SPRING, TENSION	
68	*3-352-447-01	BASE (A), HEAD	
69	3-352-448-01	BASE (B), HEAD	
70	X-3343-311-1	ARM ASSY, FR	
71	3-342-010-01	ARM, CR	
72	X-3352-402-1	CHASSIS ASSY, MECHANICAL	
73	1-548-582-11	(TCM-73)...COUNTER, TAPE (SMALL TYPE)	
74	3-342-030-01	SPRING, COMPRESSION	
75	3-342-013-01	GEAR, S REEL	
76	3-342-014-01	GEAR, T REEL	
77	3-352-453-01	SPRING (GROUND)	

No.	Part No.	Description	Remarks
78	3-352-476-01	SHEET (MOTOR)	
79	3-352-451-01	SPRING, TENSION (POWER TENSION)	
80	3-342-024-01	SPRING	
81	3-342-055-01	WASHER, T REEL	
82	3-321-483-11	RING, RETAINING	
83	3-342-050-11	RUBBER (A), VIBRATION PROOF	
84	3-342-075-01	SPACER, MOTOR	
85	3-318-254-11	CUSHION, MOTOR	
86	3-342-076-01	SCREW (M2), PRECISION STEP	
87	9-911-839-XX	CUSHION (A) (t=1)	
88	X-3320-918-1	PLATE ASSY, REEL, TAKE-UP	
89	3-480-136-00	BELT	
90	3-342-011-01	LEVER (A), SHUT-OFF	
91	3-342-012-01	LEVER (B), SHUT-OFF	
92	3-342-034-01	SPRING, COMPRESSION	
93	X-3320-919-1	ARM ASSY, IDLER	
94	X-3320-916-1	FLYWHEEL (PA) ASSY	
95	3-342-035-01	SPRING (FR)	
96	3-480-136-00	BELT (MIDWAY PULLEY)	
97	3-554-103-00	(TCM-73)...BELT, DRIVING	
98	3-320-999-11	(TCM-73)...PULLEY (COUNTER)	
99	3-320-989-11	BUTTON, STOP	
100	3-320-987-11	BUTTON, REW	
101	3-320-988-11	BUTTON, FF	
HE901	8-825-771-21	HEAD, ERASE EBF5-36C	
HRP901	1-543-607-11	HEAD, MAGNETIC (REC/PB)	
M901	X-3320-925-2	MOTOR ASSY	
S103	1-570-549-21	SWITCH, LEAF (POWER)	

SECTION 6 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 F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn 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				
904	*1-563-470-11	HOUSING, CONNECTOR 2P					JR6	1-216-295-00	METAL GLAZE	0	5%	1/10W	
C101	1-126-160-11	ELECT 1MF	20%		50V		JR8	1-216-295-00	METAL GLAZE	0	5%	1/10W	
C102	1-126-160-11	ELECT 1MF	20%		50V		JR9	1-216-295-00	METAL GLAZE	0	5%	1/10W	
C103	1-163-111-00	CERAMIC CHIP 56PF	5%		50V		JR10	1-216-295-00	METAL GLAZE	0	5%	1/10W	
C104	1-163-009-11	CERAMIC CHIP 0.001MF			50V		JR11	1-216-295-00	METAL GLAZE	0	5%	1/10W	
C105	1-126-157-11	ELECT 10MF	20%		16V		JR13	1-216-296-00	METAL GLAZE	0	5%	1/8W	
C106	1-163-038-00	CERAMIC CHIP 0.1MF			25V		JR14	1-216-296-00	METAL GLAZE	0	5%	1/8W	
C107	1-124-434-00	ELECT 220MF	20%		4V		JR15	1-216-296-00	METAL GLAZE	0	5%	1/8W	
C108	1-124-434-00	ELECT 220MF	20%		4V		JR17	1-216-296-00	METAL GLAZE	0	5%	1/8W	
C109	1-126-094-11	ELECT 4.7MF	20%		16V		JR18	1-216-296-00	METAL GLAZE	0	5%	1/8W	
C110	1-163-007-11	CERAMIC CHIP 680PF	10%		50V		M901	X-3320-925-2	MOTOR ASSY				
C111	1-163-034-00	CERAMIC CHIP 0.033MF			50V		MIC901	1-542-080-11	MICROPHONE, BUILT-IN				
C112	1-164-232-11	CERAMIC CHIP 0.01MF	10%		50V		Q101	8-729-100-66	TRANSISTOR 2SC1623				
C113	1-163-038-00	CERAMIC CHIP 0.1MF			25V		Q102	8-729-100-66	TRANSISTOR 2SC1623				
C114	1-124-434-00	ELECT 220MF	20%		4V		R102	1-249-441-11	CARBON 100K	5%		1/4W	
C115	1-162-638-11	CERAMIC CHIP 1MF			16V		R103	1-216-212-00	METAL GLAZE	3.9K	5%	1/8W	
C116	1-126-153-11	ELECT 22MF	20%		6.3V		R104	1-249-438-11	CARBON 56K	5%		1/4W	
C118	1-126-094-11	ELECT 4.7MF	20%		16V		R105	1-249-438-11	CARBON 56K	5%		1/4W	
C119	1-163-017-00	CERAMIC CHIP 0.0047MF	10%		50V		R106	1-249-418-11	CARBON 1.2K	5%		1/4W	
C127	1-163-009-11	CERAMIC CHIP 0.001MF			50V		R107	1-249-434-11	CARBON 27K	5%		1/4W	
C128	1-163-038-00	CERAMIC CHIP 0.1MF			25V		R108	1-249-430-11	CARBON 12K	5%		1/4W	
C129	1-163-009-11	CERAMIC CHIP 0.001MF			50V		R109	1-249-425-11	CARBON 4.7K	5%		1/4W	
C130	1-124-434-00	ELECT 220MF	20%		4V		R110	1-249-409-11	CARBON 220	5%		1/4W	
C131	1-163-038-00	CERAMIC CHIP 0.1MF			25V		R111	1-249-409-11	CARBON 220	5%		1/4W	
C132	1-163-009-11	CERAMIC CHIP 0.001MF			50V		R112	1-216-009-00	METAL GLAZE	22	5%	1/10W	
C133	1-163-038-00	CERAMIC CHIP 0.1MF			25V		R113	1-216-033-00	METAL GLAZE	220	5%	1/10W	
C134	1-163-005-11	CERAMIC CHIP 470PF	10%		50V		R114	1-216-308-00	METAL GLAZE	4.7	5%	1/10W	
C501	1-124-438-00	ELECT 1MF	20%		50V		R115	1-216-011-00	METAL GLAZE	27	5%	1/10W	
C502	1-163-038-00	CERAMIC CHIP 0.1MF			25V		R116	1-216-025-00	METAL GLAZE	100	5%	1/10W	
C503	1-163-038-00	CERAMIC CHIP 0.1MF			25V		R119	1-249-429-11	CARBON 10K	5%		1/4W	
C601	1-124-438-00	ELECT 1MF	20%		50V		R120	1-249-423-11	CARBON 3.3K	5%		1/4W	
D101	8-719-022-21	DIODE 1T22A					R501	1-249-405-11	CARBON 100	5%		1/4W	
D102	8-719-022-21	DIODE 1T22A					R502	1-249-417-11	CARBON 1K	5%		1/4W	
HE901	8-825-771-21	HEAD, ERASE EBF5-36C					R602	1-249-431-11	CARBON 15K	5%		1/4W	
HRP901	1-543-607-11	HEAD, MAGNETIC (REC/PB)					R603	1-249-434-11	CARBON 27K	5%		1/4W	
IC101	8-759-701-54	IC NJM2073D					R604	1-249-428-11	CARBON 8.2K	5%		1/4W	
IC601	8-759-801-12	IC LA5523					RV101	1-237-771-11	RES, VAR, CARBON 50K (VOLUME)				
J101	1-566-740-11	JACK (EAR)					RV601	1-237-278-11	RES, ADJ, CARBON 10K (TAPE SPEED)				
J102	1-568-228-11	JACK, EXTERNAL POWER (DC IN 3V)					S101	1-571-151-11	SWITCH, SLIDE (REC/PB)				
JR1	1-216-296-00	METAL GLAZE	0	5%	1/8W		S103	1-570-549-21	SWITCH, LEAF (POWER)				
JR2	1-216-296-00	METAL GLAZE	0	5%	1/8W		S601	1-570-675-11	SWITCH, SLIDE (PAUSE)				
JR4	1-216-296-00	METAL GLAZE	0	5%	1/8W		SP901	1-503-830-11	SPEAKER				

Ref.No.	Part No.	Description
TH601	1-808-980-11	THERMISTOR
THP601	1-808-272-11	THERMISTOR, POSITIVE (120)
WI03	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
WI04	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
WI05	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
WI06	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P

ACCESSORY & PACKING MATERIAL

3-351-508-01	TUBE, PROTECTION
*3-355-350-01	(EXCEPT US)...CUSHION
*3-355-352-01	(TCM-71:E)...INDIVIDUAL CARTON
*3-355-356-01	(TCM-73).....INDIVIDUAL CARTON
3-751-512-11	(EXCEPT US)...MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,PORTUGUESE)
3-751-512-21	(US)....MANUAL, INSTRUCTION(ENGLISH)
3-751-512-41	(AEP)...MANUAL, INSTRUCTION (GERMAN,DUTCH,SWEDISH,ITALIAN)