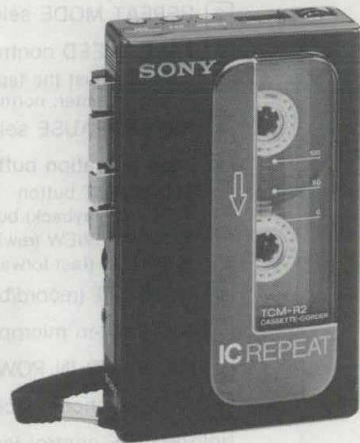


TCM-R2

SERVICE MANUAL



AEP Model
UK Model
E Model

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IC REPEAT

SPECIFICATIONS

Recording system	2-track 1-channel monaural
Fast winding time	Approx. 2 min. with Sony C-60 Cassette
Frequency response	150—8,000Hz
Speaker	Approx. 4cm (1 ⁵ / ₈ inches) dia.
Power output (DC)	350mW (at 10% harmonic distortion)
Input	Microphone input jack (minijack) sensitivity 0.2mV for low impedance microphone
Output	Earphone jack (minijack) for 8—300 ohm earphone
Other jack	Remote control jack (φ2.5mm)
Power requirements	3V DC two R6 (size AA) batteries DC IN 3V jack accepts; • Sony AC-D2M 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 available in other countries for use on 120V AC, 60Hz or 220V AC, 50Hz • Sony DCC-70 car battery cord (optional) for use on 12V car battery

Battery life (hours)

Battery	Recording	Repeat play
Sony battery SUM-3 (NS)	Approx. 3	Approx. 2.5
Sony alkaline battery AM3 (N)	Approx. 7	Approx. 6.5

For maximum performance we recommended the use of alkaline batteries.

Dimensions	Approx. 91 × 134 × 36mm (w/h/d) (3 ⁵ / ₈ × 5 ³ / ₈ × 1 ⁷ / ₁₆ inches) incl. projecting parts and controls
Weight	Approx. 310g (11oz), incl. batteries
Supplied accessories	Monaural headphones equipped with a volume control and a remote control switch (open-air type, 1) Carrying case (1)

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

Model Name Using Simular Mechanism	TCM-R1
Tape Transport Mechanism Type	MT-R2-06

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



FEATURES

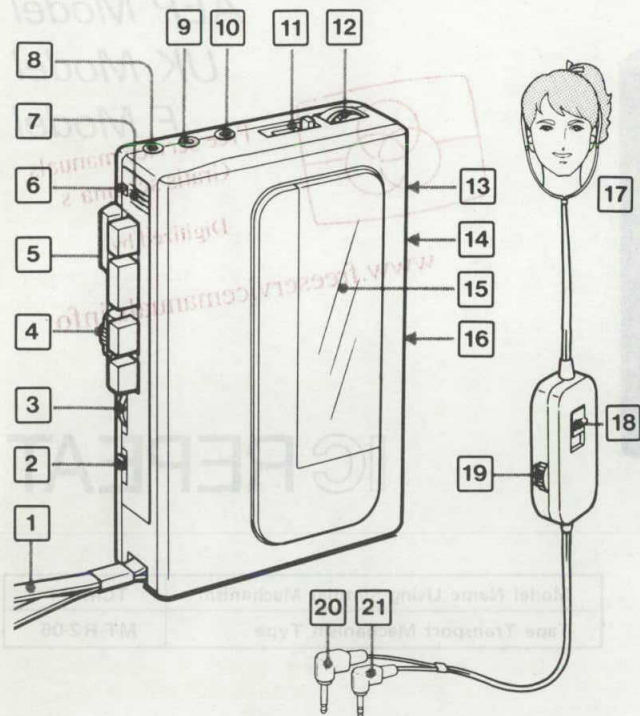
- Repeat playback function—the built-in IC enables the unit to repeat the last 4 sec. or 8 sec. segment you have just played back.
- Repeat pause function—you can stop the playback temporarily during the repeat playback.
- Monaural headphones with remote control switch supplied.
- An optional remote control unit or an optional foot switch can be connected to the REMOTE control jack. (In this case, repeat pause function does not operate.)



MICROFILM

CASSETTE-CORDER SONY®

PARTS IDENTIFICATIONS



- 1 Hand strap
- 2 REPEAT MODE selector
- 3 TAPE SPEED control
Turn to adjust the tape speed during playback.
F: fast Center: normal S: slow
- 4 REPEAT/PAUSE selector
- 5 Tape operation buttons
STOP/EJECT button ● REC (record) button
▼ PLAY (playback) button
▲ REW/REVIEW (rewind/review) button
▼ FF/CUE (fast-forward/cue) button
- 6 REC/BATT (record/battery) indicator
- 7 MIC (built-in microphone)
- 8 MIC (PLUG IN POWER) (external microphone) input jack
- 9 EAR (earphone) jack
- 10 REMOTE control jack
- 11 TAPE COUNTER and reset button
- 12 VOL (volume) control
- 13 DC IN 3V (external power input) jack (right side)
- 14 Speaker (rear)
- 15 Cassette compartment
- 16 Battery compartment (rear)
- 17 Headphones (supplied)
- 18 REPEAT/PAUSE selector
Use this selector in the same way as that of the unit.
- 19 VOLUME control
- 20 Headphones plug (miniplug)
Connect to the EAR (earphone) jack.
- 21 Remote control plug (the smaller one)
Connect to the REMOTE control jack.

FEATURES

- Repeat playback function—the built-in IC enables the unit to repeat the last 4 sec. or 8 sec. segment you have just played back.
- Repeat pause function—you can stop the playback temporarily during the repeat playback.
- Manual headphones with remote control switch supplied.
- An optional remote control unit or an optional foot switch can be connected to the REMOTE control jack (in this case, repeat pause function does not operate).

Item	Approx. 1	Approx. 2	Approx. 3
Battery life (hours)	Approx. 1.5	Approx. 2.0	Approx. 2.5
Body alkaline battery (AMS (M))	Approx. 1.5	Approx. 2.0	Approx. 2.5
Body battery (UM3 (MG))	Approx. 1.5	Approx. 2.0	Approx. 2.5
Recharge time	Approx. 2	Approx. 3	Approx. 4

For maximum performance we recommend the use of alkaline batteries.

Dimensions: Approx. 31 x 121 x 56mm (width x height x depth)

Weight: Approx. 210g (incl. battery)

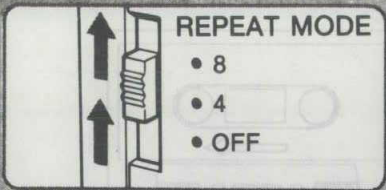
Supplied accessories: Manual, headphones, remote control with a volume control and a remote control switch (optional), carrying case (C).

Note: This appliance conforms with EEC Directives 76/889 and 82/500 regarding interference suppression.



REPEAT PLAYBACK

1




REPEAT MODE

- 8
- 4
- OFF


To listen to the preceding 4 seconds of the tape: set to 4 (seconds)
To listen to the preceding 8 seconds: set to 8 (seconds).

2



3

At the end of the segment you want to repeat



REPEAT/PAUSE

To stop the tape, press STOP/EJECT.

To reset the unit to the ordinary playback mode, slide the REPEAT/PAUSE selector upwards to TAPE.

To Stop the Playback During the Repeat Playback —Repeat Pause Function



START/STOP

To start the repeat playback again, press down the REPEAT/PAUSE selector again.

Notes

- Repeat playback can also be started using the remote control switch on the supplied headphones, or using an optional remote control unit or an optional foot switch.
- When the repeat playback function is not to be used, set the REPEAT MODE selector to OFF. If it is left in the 4 or 8 position, the batteries may wear faster than usual.
- Avoid switching the position of the REPEAT MODE selector during repeat playback as this may distort the sound.
- When the supplied headphones or the optional remote control unit is connected, the REPEAT/PAUSE selector on the unit will not function.
- If the part to be played back is shorter than 4 seconds (or 8 seconds), only that part of the tape played back is repeated.

Mode	Meter Reading	Torque Measurement
Forward	33 - 45 g·cm (0.31 - 0.42 oz·inch)	CG-102B
Fast Forward	50 - 95 g·cm (0.50 - 1.32 oz·inch)	CG-301B
Back Tension	1.2 - 3 g·cm (0.02 - 0.04 oz·inch)	CG-102B

Mode	Meter	Tape Tension Measurement
Forward	CG-103A	130 - 520 g (4.9 - 18.3 oz.)

SECTION 1 ADJUSTMENTS

1-1. MECHANICAL ADJUSTMENT

PRECAUTION

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

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- 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.

power supply voltage : 3 V DC

Torque Measurement

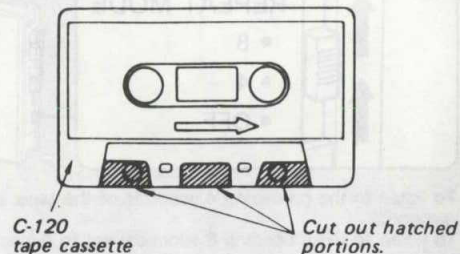
Mode	Meter Reading	Torque Meter
Forward	22 – 45 g·cm (0.31 – 0.62 oz·inch)	CQ-102B
Fast Forward	50 – 95 g·cm (0.70 – 1.32 oz·inch)	CQ-201B
Back Tension	1.5 – 3 g·cm (0.02 – 0.04 oz·inch)	CQ-102B

Tape Tension Measurement

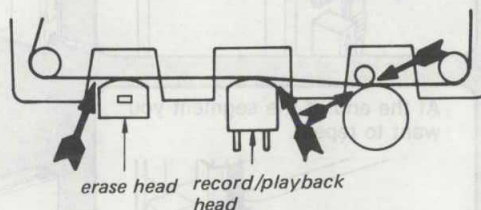
Mode	Meter	Meter Reading
Forward	CQ-403A	130 – 250 g (4.59 – 8.82 oz)

Head Height Adjustment

- Prepare an adjustment cassette as shown below.

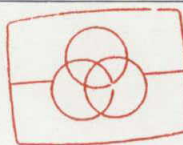


- In record mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrow.



3-578-138-01 (t=0.1)
3-578-138-11 (t=0.2)
3-578-138-21 (t=0.3)

Shim, head height adjustment



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1-2. ELECTRICAL ADJUSTMENT

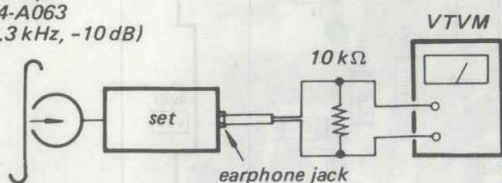
CASSETTE SECTION

Record/playback Head Azimuth Adjustment

VOL Knob: Center (5)
PAUSE SW: TAPE

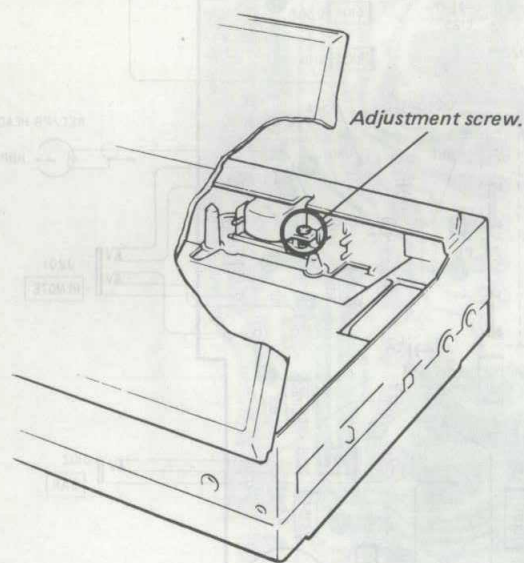
- Procedure:
1. Mode: playback

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



2. Turn the adjustment screw to obtain the maximum reading on VTVM.
- Note: Several peaks may appear, but take the maximum.
3. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location:

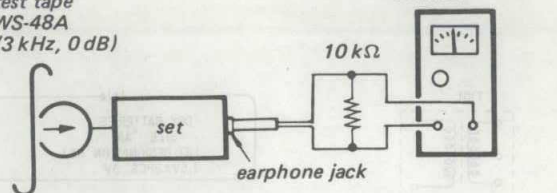


Tape Speed Adjustment

Procedure:

Mode: playback

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

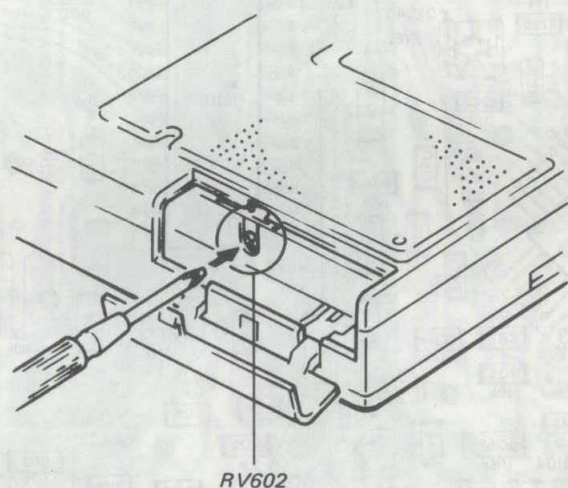


Specification:

Speed checker	Digital frequency counter
3,000 Hz ±0.5%	2,985 – 3,015 Hz

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

Adjustment Location:



Semiconductor Lead Layouts

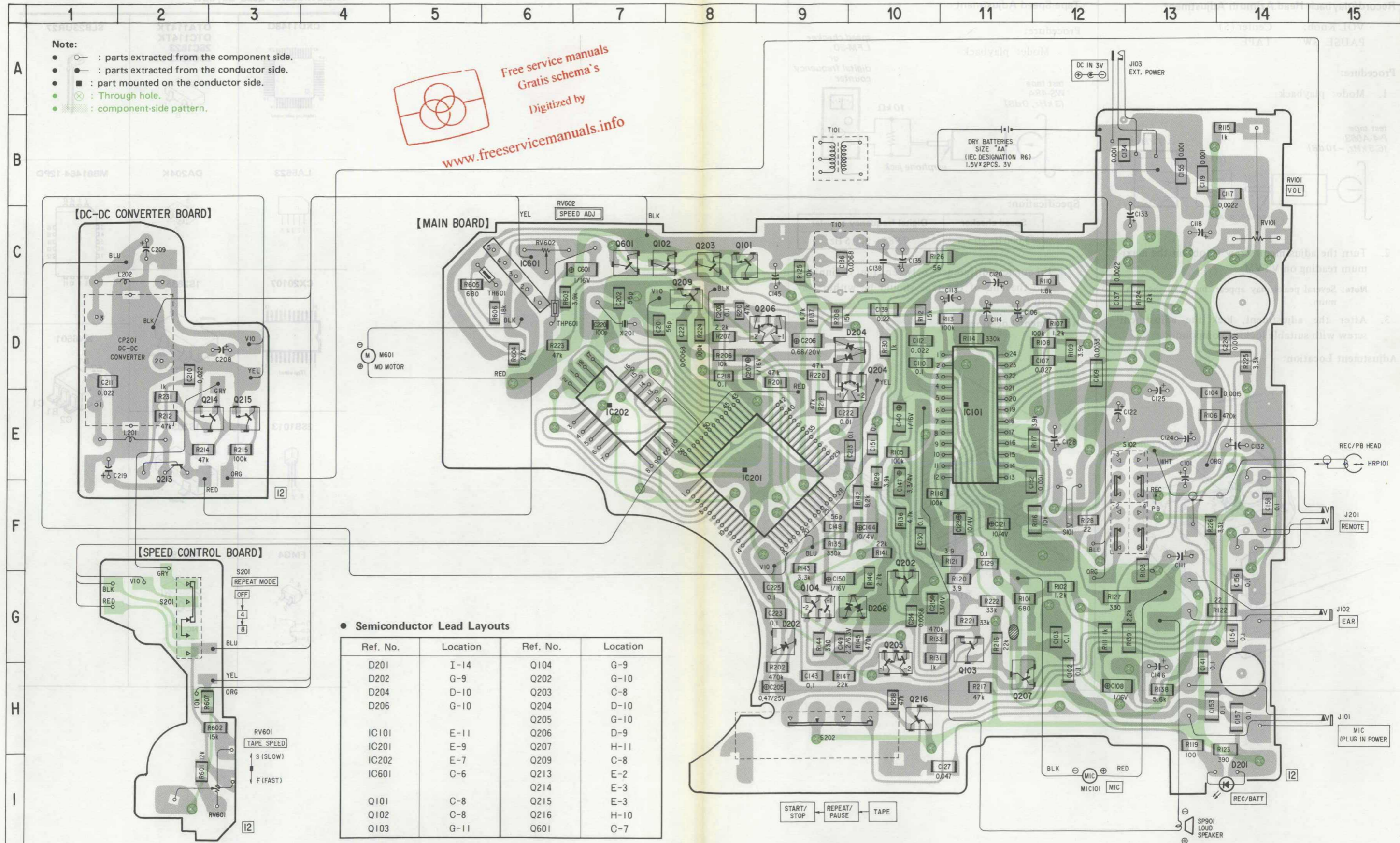
<p>CXD1148Q</p>	<p>DTA114TK DTC114TK 2SC1623 2SC1623-L7</p>	<p>SLB23UR27</p>
<p>LA5523</p>	<p>DA204K</p>	<p>MB81464-12PD</p>
<p>CX20107</p>	<p>1S2835</p>	<p>XN6501</p>
<p>2SB1013</p>	<p>1S2837</p>	
<p>FMG4</p>	<p>1SS196</p>	

Semiconductor Lead Layouts

Ref. No.	Location	Ref. No.	Location
D501	T-14	D501	T-14
D502	D-9	D502	D-9
D503	D-10	D503	D-10
D504	D-10	D504	D-10
D505	D-10	D505	D-10
D506	D-10	D506	D-10
D507	D-10	D507	D-10
D508	D-10	D508	D-10
D509	D-10	D509	D-10
D510	D-10	D510	D-10
D511	D-10	D511	D-10
D512	D-10	D512	D-10
D513	D-10	D513	D-10
D514	D-10	D514	D-10
D515	D-10	D515	D-10
D516	D-10	D516	D-10
D517	D-10	D517	D-10
D518	D-10	D518	D-10
D519	D-10	D519	D-10
D520	D-10	D520	D-10

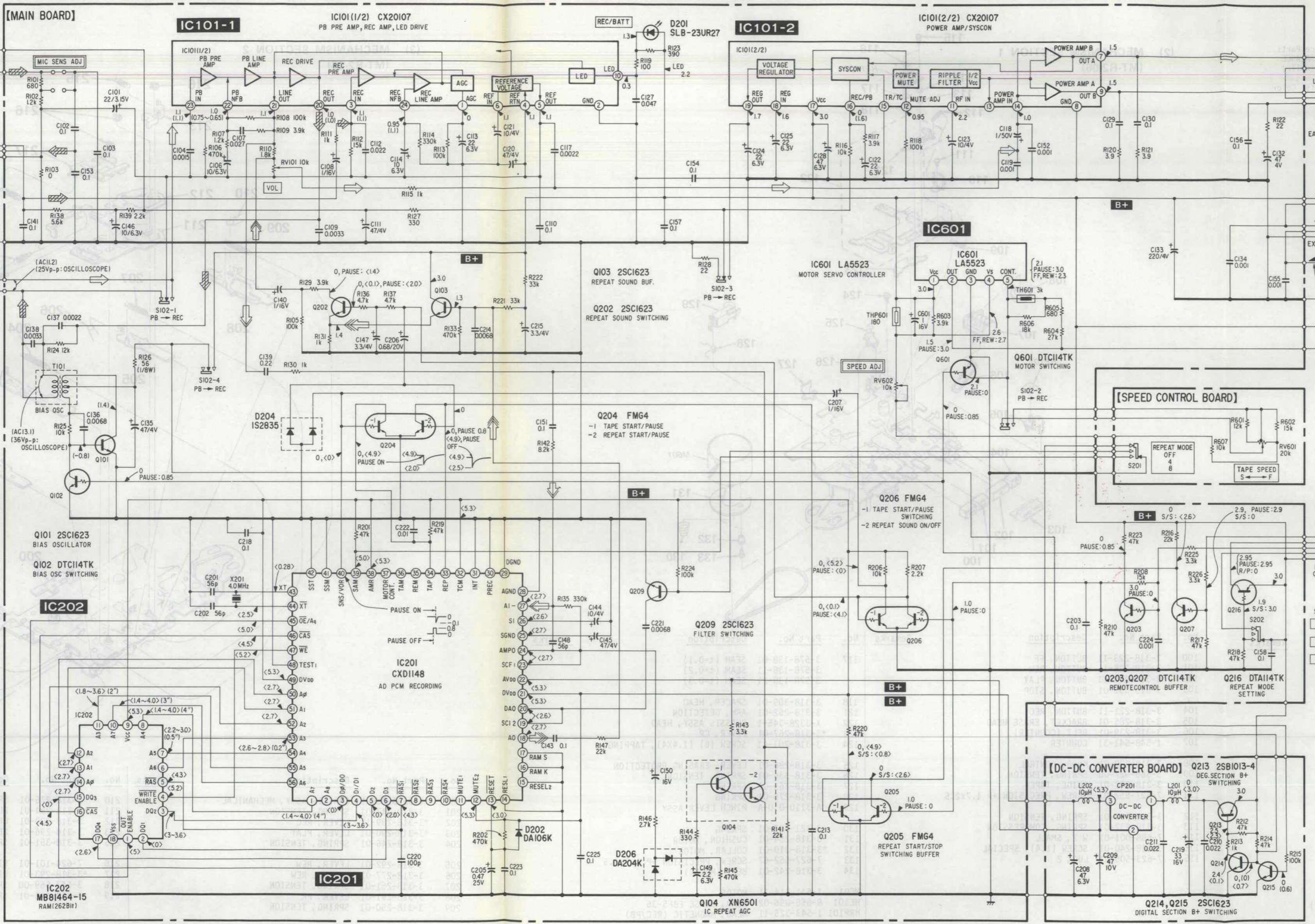
SECTION 2
DIAGRAMS

2-1. PRINTED WIRING BOARDS



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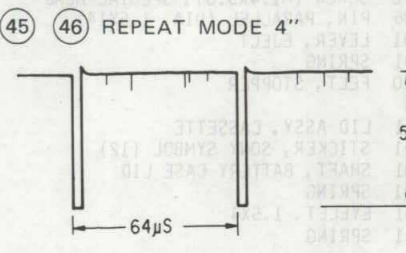
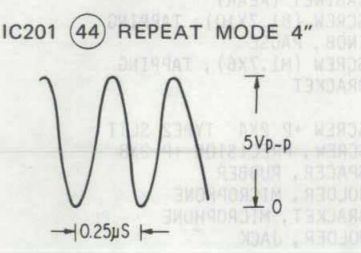
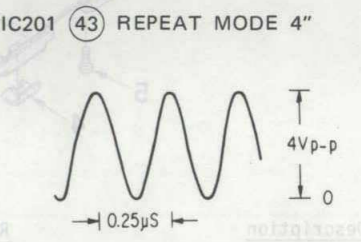
2-2. SCHEMATIC DIAGRAM



- Note:**
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
 - 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 (detuned) conditions with a VOM (50 k Ω/V). no mark: PLAY S/S: START/STOP () : REC < > : REPEAT mode 4 sec.
 - Voltage variations may be noted due to normal production tolerances.
 - Power voltage is 3 V and fed with regulated dc power supply from battery terminal.
 - Voltages are dc with respect to ground in playback (no-signal) mode.
 - Waveforms are taken to ground in no-signal mode by using oscilloscope.
 - Signal paths:
 - PB Signal path
 - REC Signal path
 - IC REC Signal path
 - REPEAT Signal path
 - Switches:

Ref. No.	Switch	Position
S101	POWER	OFF
S102	PB/REC	PB
S201	REPEAT MODE	OFF
S202	REPEAT/PAUSE	TAPE

WAVE FORMS



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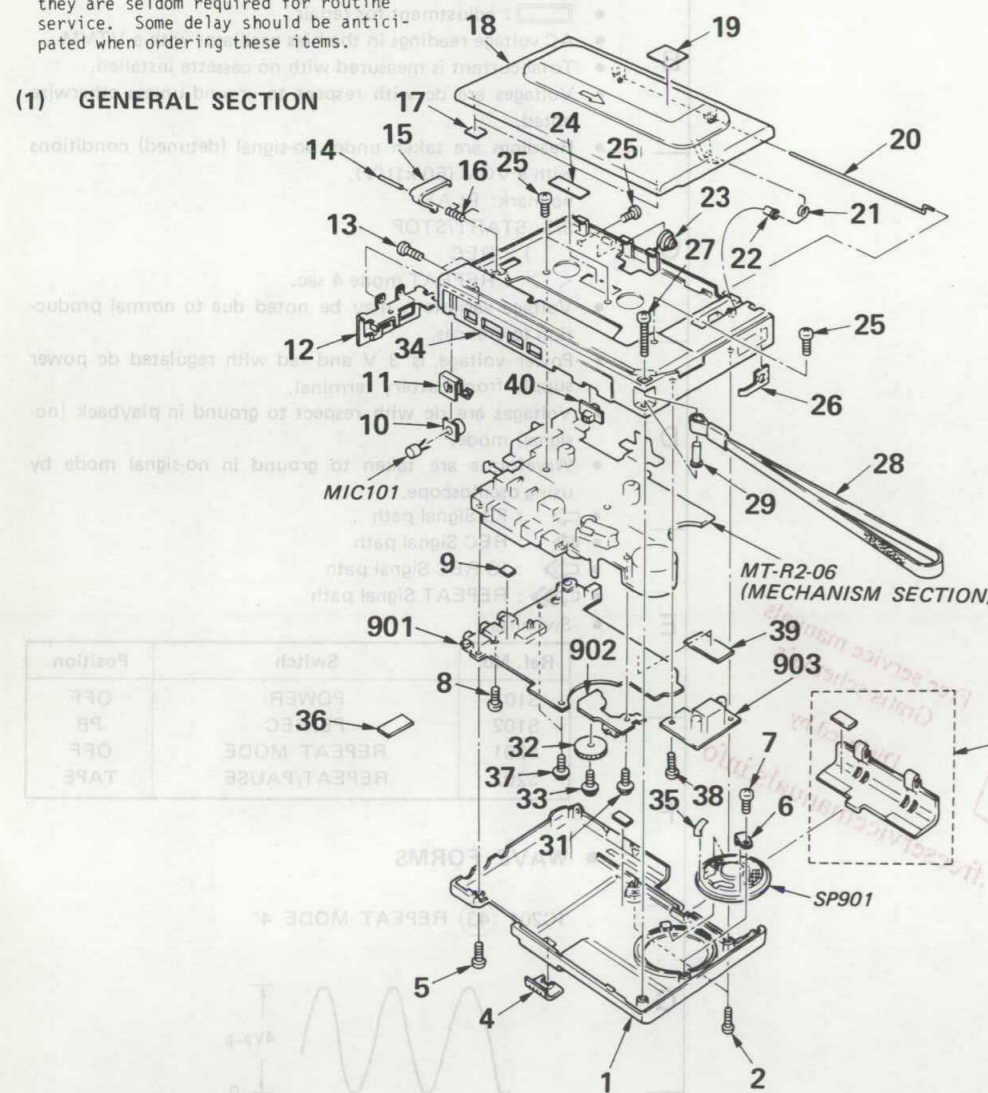
SECTION 3 EXPLODED VIEWS AND PARTS LIST

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.

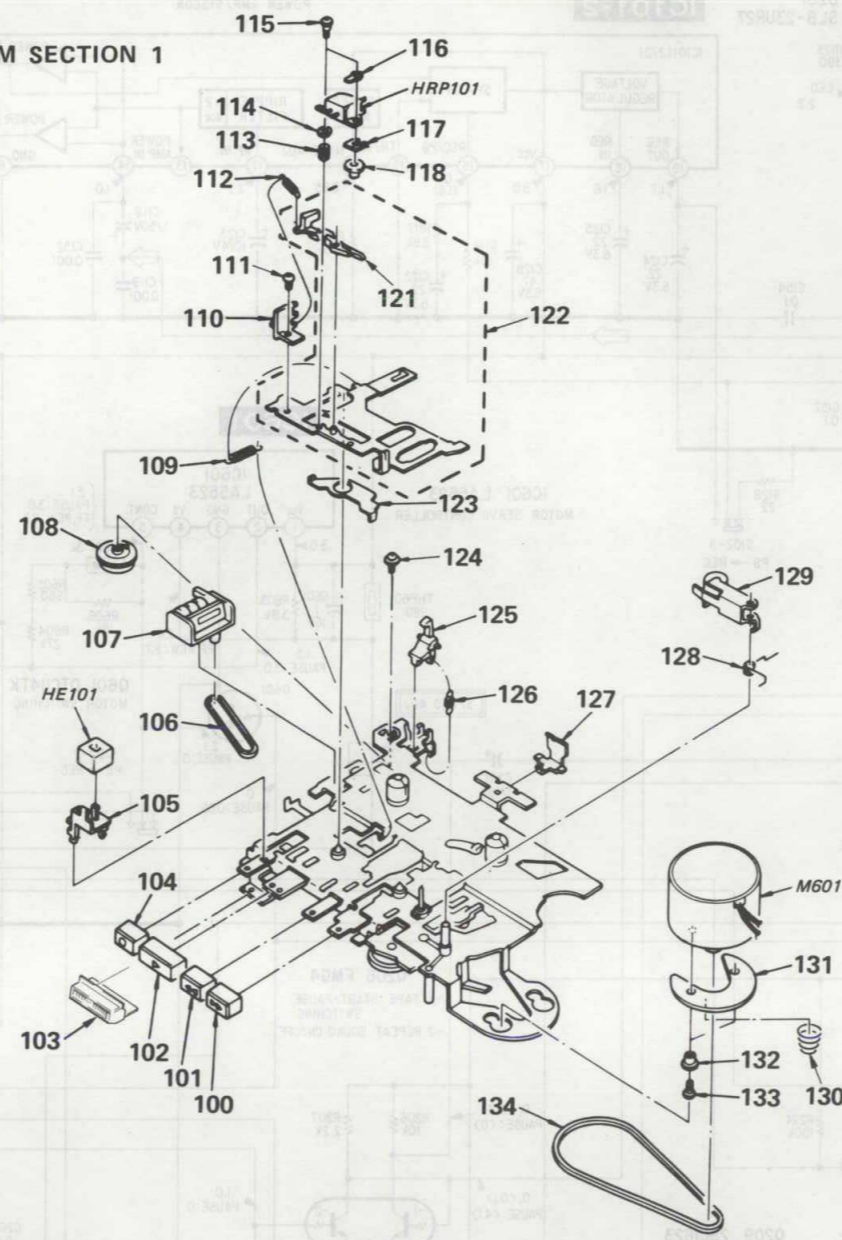
• The construction parts of an assembled part are indicated with a collation number in the remark column.

• Color Indication of Appearance Parts
 Example: (RED) KNOB, BALANCE
 Cabinet's Color Parts' Color

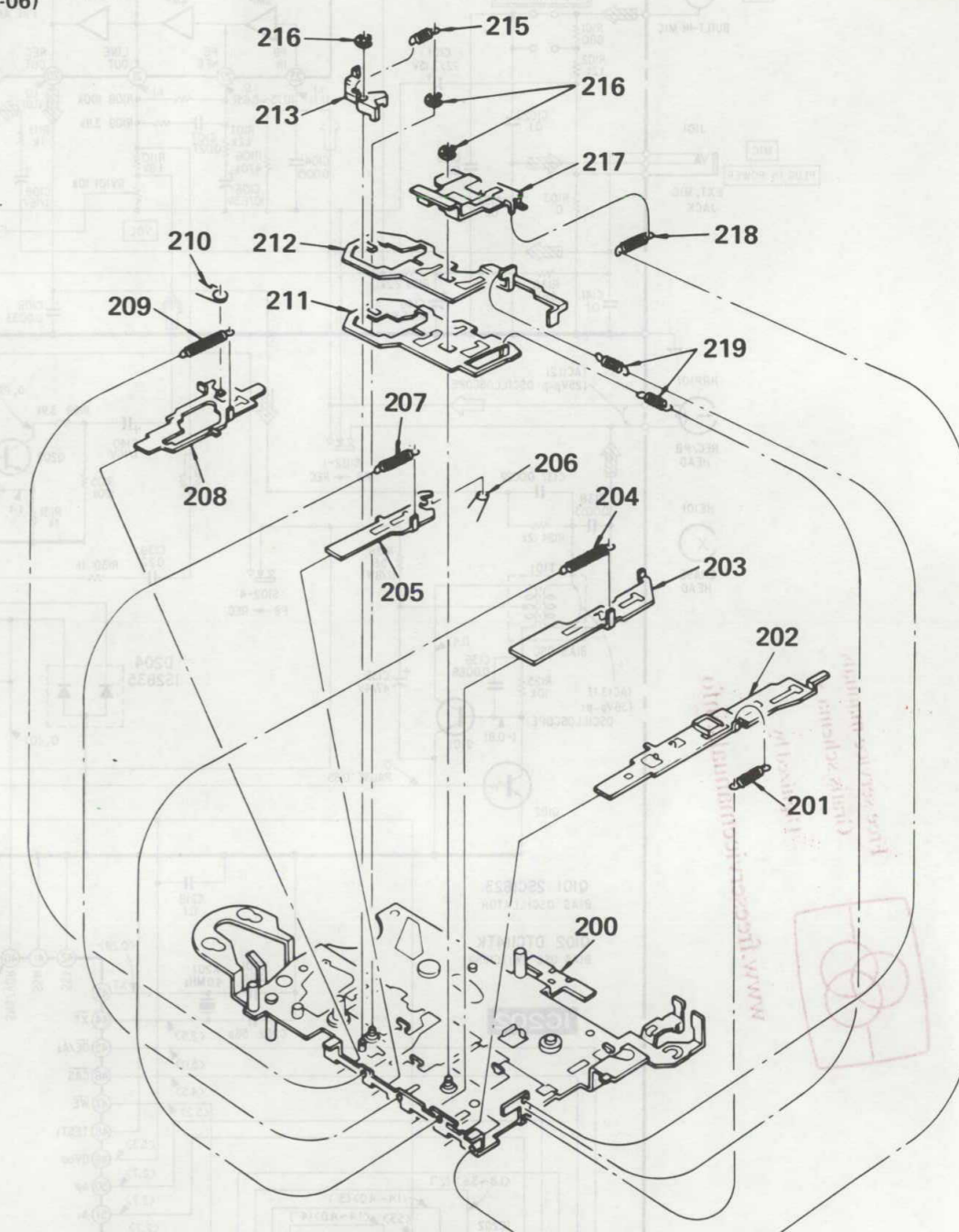
(1) GENERAL SECTION



(2) MECHANISM SECTION 1 (MT-R2-06)



(3) MECHANISM SECTION 2 (MT-R2-06)



No.	Part No.	Description	Remarks
1	3-336-028-11	CABINET (REAR)	
2	3-334-565-11	SCREW (B1.7X10), TAPPING	
4	3-336-020-01	KNOB, PAUSE	
5	3-318-204-31	SCREW (M1.7X6), TAPPING	
6	*3-336-024-01	BRACKET	
7	7-685-102-19	SCREW +P 2X4 TYPE2 SLIT	
8	7-627-553-97	SCREW, PRECISION +P 2X8	
9	3-303-999-01	SPACER, RUBBER	
10	3-320-928-01	HOLDER, MICROPHONE	
11	*3-320-909-01	BRACKET, MICROPHONE	
12	*3-336-023-01	HOLDER, JACK	
13	3-703-816-72	SCREW (M1.4X3.0), SPECIAL HEAD	
14	3-703-357-06	PIN, PARALLEL (DIA. 1.6X1.4)	
15	3-321-022-01	LEVER, EJECT	
16	3-318-215-01	SPRING	
17	3-152-590-00	FELT, STOPPER	
18	X-3336-003-1	LID ASSY, CASSETTE	
19	3-703-710-01	STICKER, SONY SYMBOL (12)	
20	*3-313-552-01	SHAFT, BATTERY CASE LID	
21	3-321-002-01	SPRING	
22	7-623-612-01	EYELET, 1.5X4	
23	3-318-210-01	SPRING	

No.	Part No.	Description	Remarks
24	3-578-101-11	PLATE, ORNAMENTAL	
25	3-318-204-91	SCREW (M1.7X4), TAPPING	
26	3-318-209-01	TERMINAL BOARD, PLUS	
27	3-564-708-21	SCREW (2X18)	
28	3-320-908-01	STRAP, HAND	
29	3-320-918-01	SPACER, STRAP	
30	X-3336-006-1	LID ASSY, BATTERY	
31	3-318-201-21	SCREW (B) (1.4X5), TAPPING	
32	3-318-379-01	KNOB, SPEED CONTROL	
33	3-892-318-00	SCREW, SMALL	
34	3-336-027-11	CABINET (FRONT)	
35	3-831-441-XX	CUSHION	
36	3-831-441-11	CUSHION (B)	
37	3-332-035-01	SCREW (M1.4X3), TAPPING, PWM	
38	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
39	9-911-815-01	CUSHION	
40	3-336-021-01	KNOB, REPEAT	
901	A-3015-568-A	PC BOARD ASSY, MAIN	
902	*1-624-256-11	PC BOARD, SPEED CONTROL	
903	*1-624-255-11	PC BOARD, DC-DC CONVERTER	
MIC101	8-814-204-00	MICROPHONE, BUILT-IN (C-1016)	
SP901	1-503-646-11	SPEAKER	

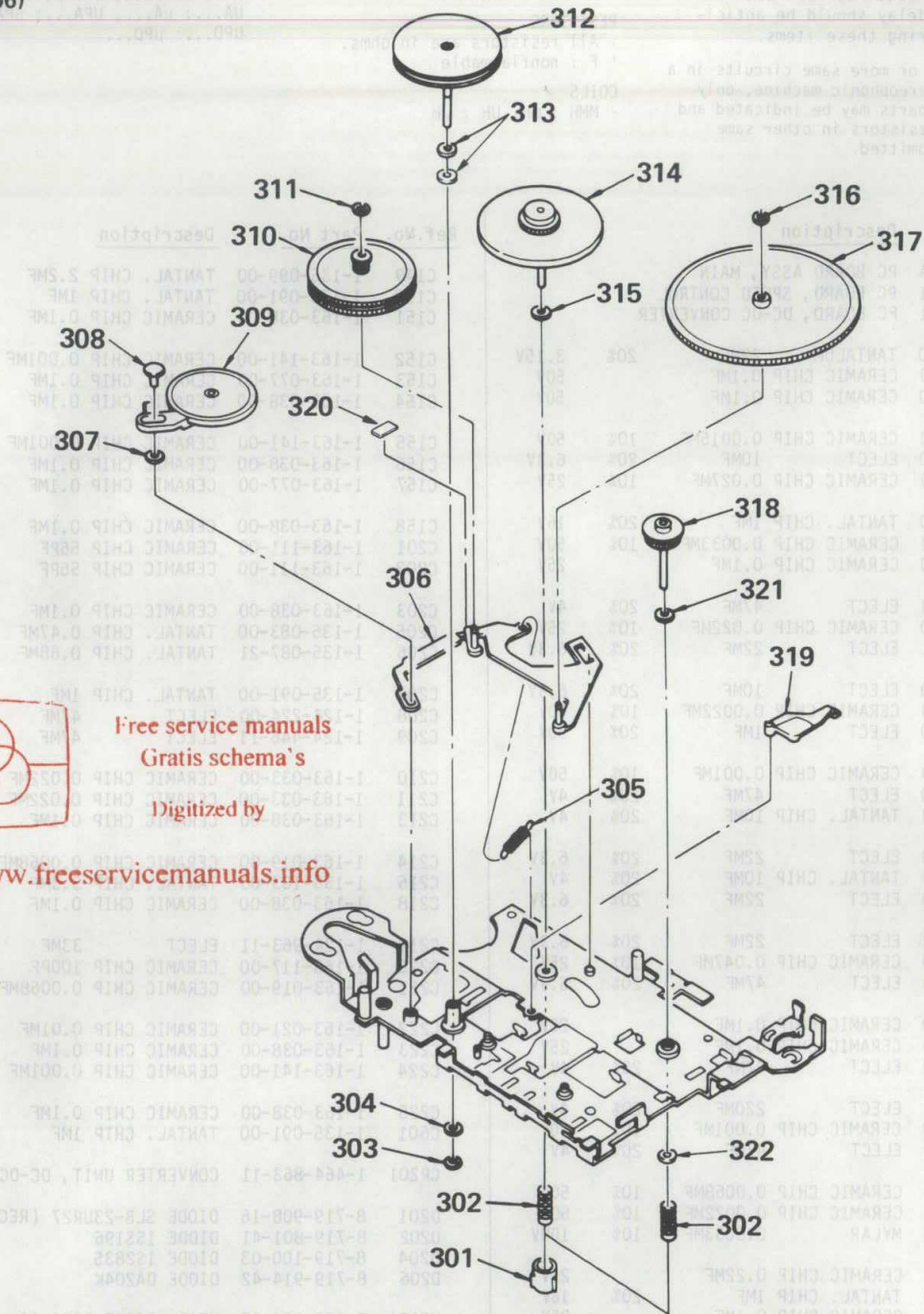
No.	Part No.	Description	Remarks
100	3-318-223-11	BUTTON, FF	
101	3-318-228-11	BUTTON, REW	
102	3-318-222-11	BUTTON, PLAY	
103	3-318-355-01	BUTTON, STOP	
104	3-318-221-11	BUTTON, REC	
105	3-318-285-01	BRACKET, ERASE HEAD	
106	3-318-239-01	BELT (COUNTER)	
107	1-548-541-31	COUNTER	
108	3-318-220-21	KNOB, CONTROL	
109	3-565-927-00	SPRING, TENSION	
110	3-318-287-01	GUIDE, TAPE	
111	7-627-552-07	SCREW, PRECISION +P 1.7X2.5	
112	3-318-238-01	SPRING, TENSION	
113	3-318-237-01	SPRING, COMPRESSION	
114	7-688-001-01	W 2, SMALL	
115	3-318-240-01	SCREW (1.4), SPECIAL	
116	7-623-505-01	LUG, 2	

No.	Part No.	Description	Remarks
117	3-578-138-01	SEAM (t=0.1)	
	3-578-138-11	SEAM (t=0.2)	
	3-578-138-21	SEAM (t=0.3)	
118	3-318-309-01	SPACER, HEAD	
121	3-318-252-01	ARM, DETECTION	
122	X-3328-345-1	CHASSIS ASSY, HEAD	
123	*3-318-267-01	LEVER, CR	
124	3-318-201-41	SCREW (B) (1.4X4), TAPPING	
125	3-318-286-01	LEVER, ERASING PROTECTION	
126	3-318-336-01	SPRING, TENSION	
127	3-318-269-01	SPRING	
128	3-318-275-01	SPRING	
129	A-3110-010-A	PINCH LEVER ASSY	
130	3-321-067-01	SPRING	
131	3-318-254-01	CUSHION, MOTOR	
132	*3-318-310-01	COLLAR, MOTOR	
133	7-627-552-67	SCREW, PRECISION +P 1.7X4.5	
134	3-318-242-01	BELT (MOTOR)	
M601	1-541-414-11	MOTOR	
HE101	8-658-096-02	HEAD, ERASE EBF5-36	
HRP101	1-543-325-11	HEAD, MAGNETIC (REC/PB)	

No.	Part No.	Description	Remarks
200	*X-3336-004-1	CHASSIS ASSY, MECHANICAL	
201	3-318-247-01	SPRING, TENSION	
202	*3-318-289-11	LEVER, REC	
203	*3-318-290-01	LEVER, PLAY	
204	3-318-246-01	SPRING, TENSION	
205	3-318-292-01	LEVER, REW	
206	3-318-277-01	SPRING, REW	
207	3-318-251-01	SPRING, TENSION	
208	3-318-291-01	LEVER, FR	
209	3-318-250-01	SPRING, TENSION	

No.	Part No.	Description	Remarks
210	3-318-276-01	SPRING	
211	*3-318-294-01	PLATE, LOCK	
212	3-318-300-01	LEVER, SWITCH	
213	3-318-296-01	LEVER, SHUT-OFF	
215	3-318-351-01	SPRING, TENSION	
216	7-624-101-01	RING, RETAINING E-1.2	
217	*3-318-293-01	LEVER, STOP	
218	3-547-669-00	SPRING, TENSION	
219	3-318-248-01	SPRING, TENSION	

(4) MECHANISM SECTION 3
(MT-R2-06)



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No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
301	3-306-836-02	CAP, REEL, T		312	X-3328-346-1	FLYWHEEL ASSY	
302	3-318-241-01	SPRING, COMPRESSION		313	3-590-770-00	POLY-SLIDER (A)	
303	3-318-236-01	WASHER, POLY, SLIT		314	X-3325-619-1	CLUTCH ASSY	
304	3-701-437-01	WASHER (t=0.13)		315	3-701-437-41	WASHER (t=0.35)	
305	3-318-243-01	SPRING, TENSION		316	3-570-615-00	POLY-WASHER (DIA.1.2)	
306	X-3318-208-1	LEVER ASSY, FR		317	3-318-265-01	GEAR (B), FR	
307	3-827-323-11	WASHER (DIA. 3.1)(t=0.075)		318	X-3318-204-1	GEAR ASSY, REW	
308	3-318-324-01	BUSHING, IDLER LEVER		319	3-318-288-01	ARM, FF	
309	X-3328-344-1	LEVER ASSY, FWD IDLER		320	3-831-441-XX	CUSHION	
310	X-3318-207-1	GEAR (A) ASSY, FR		321	3-701-437-21	WASHER (t=0.5)	
311	3-578-265-11	WASHER, STOPPER		322	3-325-690-01	WASHER, B.T	

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 : µ, for example:
UA...: µA..., UPA...: µPA..., UPC...: µPC,
UPD...: µPD...

Ref.No.	Part No.	Description			
901	A-3015-568-A	PC BOARD ASSY, MAIN			
902	*1-624-256-11	PC BOARD, SPEED CONTROL			
903	*1-624-255-11	PC BOARD, DC-DC CONVERTER			
C101	1-131-391-00	TANTALUM 22MF	20%	3.15V	
C102	1-163-077-00	CERAMIC CHIP 0.1MF		50V	
C103	1-163-077-00	CERAMIC CHIP 0.1MF		50V	
C104	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V	
C106	1-124-462-00	ELECT 10MF	20%	6.3V	
C107	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V	
C108	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C109	1-163-053-00	CERAMIC CHIP 0.0033MF	10%	50V	
C110	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C111	1-124-432-00	ELECT 47MF	20%	4V	
C112	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C113	1-124-638-11	ELECT 22MF	20%	6.3V	
C114	1-124-462-00	ELECT 10MF	20%	6.3V	
C117	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V	
C118	1-123-611-00	ELECT 1MF	20%	50V	
C119	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C120	1-124-432-00	ELECT 47MF	20%	4V	
C121	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C122	1-124-222-00	ELECT 22MF	20%	6.3V	
C123	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C124	1-124-222-00	ELECT 22MF	20%	6.3V	
C125	1-124-222-00	ELECT 22MF	20%	6.3V	
C127	1-163-075-00	CERAMIC CHIP 0.047MF	10%	25V	
C128	1-124-224-00	ELECT 47MF	20%	6.3V	
C129	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C130	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C132	1-124-432-00	ELECT 47MF	20%	4V	
C133	1-124-434-00	ELECT 220MF	20%	4V	
C134	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C135	1-124-432-00	ELECT 47MF	20%	4V	
C136	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V	
C137	1-163-213-00	CERAMIC CHIP 0.0022MF	10%	50V	
C138	1-106-355-12	MYLAR 0.0033MF	10%	100V	
C139	1-163-081-00	CERAMIC CHIP 0.22MF		25V	
C140	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C141	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C143	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C144	1-135-104-00	TANTAL. CHIP 10MF	20%	4V	
C145	1-124-432-00	ELECT 47MF	20%	4V	
C146	1-124-462-00	ELECT 10MF	20%	6.3V	
C147	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C148	1-163-111-00	CERAMIC CHIP 56PF	5%	50V	

Ref.No.	Part No.	Description			
C149	1-135-099-00	TANTAL. CHIP 2.2MF	20%	6.3V	
C150	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C151	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C152	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C153	1-163-077-00	CERAMIC CHIP 0.1MF		50V	
C154	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C155	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C156	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C157	1-163-077-00	CERAMIC CHIP 0.1MF		50V	
C158	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C201	1-163-111-00	CERAMIC CHIP 56PF	5%	50V	
C202	1-163-111-00	CERAMIC CHIP 56PF	5%	50V	
C203	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C205	1-135-083-00	TANTAL. CHIP 0.47MF	20%	25V	
C206	1-135-087-21	TANTAL. CHIP 0.68MF	20%	20V	
C207	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
C208	1-124-224-00	ELECT 47MF	20%	6.3V	
C209	1-124-446-11	ELECT 47MF	20%	10V	
C210	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C211	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C213	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C214	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V	
C215	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V	
C218	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C219	1-124-963-11	ELECT 33MF	20%	16V	
C220	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C221	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V	
C222	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C223	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C224	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V	
C225	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C601	1-135-091-00	TANTAL. CHIP 1MF	20%	16V	
CP201	1-464-863-11	CONVERTER UNIT, DC-DC			
D201	8-719-908-16	DIODE SLB-23UR27 (REC/BATT)			
D202	8-719-801-41	DIODE 1S5196			
D204	8-719-100-03	DIODE 1S2835			
D206	8-719-914-42	DIODE DA204K			
HE101	8-658-096-02	HEAD, ERASE EBF5-36			
HRP101	1-543-325-11	HEAD, MAGNETIC (REC/PB)			
IC101	8-752-010-71	IC CX20107			
IC201	8-759-946-55	IC CXD1148Q			
IC202	8-759-942-06	IC MB81464-12PD			
IC601	8-759-801-12	IC LA5523			

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Ref.No.	Part No.	Description			
J101	1-563-319-21	JACK (MIC)			
J102	1-563-319-21	JACK (EARPHONE)			
J103	1-507-723-00	JACK, EXTENSION POWER (DC IN 3V)			
J201	1-566-895-11	JACK 1P (REMOTE)			
L201	1-408-563-00	INDUCTOR 10UH			
L202	1-408-563-00	INDUCTOR 10UH			
M601	1-541-414-11	MOTOR			
MIC101	8-814-204-00	MICROPHONE, BUILT-IN (C-1016)			
Q101	8-729-100-66	TRANSISTOR 2SC1623			
Q102	8-729-902-99	TRANSISTOR DTC114TK			
Q103	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q104	8-729-402-19	TRANSISTOR XN6501			
Q202	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q203	8-729-902-99	TRANSISTOR DTC114TK			
Q204	8-729-902-93	TRANSISTOR FMG4			
Q205	8-729-902-93	TRANSISTOR FMG4			
Q206	8-729-902-93	TRANSISTOR FMG4			
Q207	8-729-902-99	TRANSISTOR DTC114TK			
Q209	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q213	8-729-801-83	TRANSISTOR 2SB1013			
Q214	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q215	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q216	8-729-900-51	TRANSISTOR DTA114TK			
Q601	8-729-902-99	TRANSISTOR DTC114TK			
R101	1-216-045-00	METAL GLAZE 680	5%	1/10W	
R102	1-216-200-00	METAL GLAZE 1.2K	5%	1/8W	
R103	1-216-295-00	METAL GLAZE 0	5%	1/10W	
R105	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R106	1-216-113-00	METAL GLAZE 470K	5%	1/10W	
R107	1-216-051-00	METAL GLAZE 1.2K	5%	1/10W	
R108	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R109	1-216-063-00	METAL GLAZE 3.9K	5%	1/10W	
R110	1-216-055-00	METAL GLAZE 1.8K	5%	1/10W	
R111	1-216-198-00	METAL GLAZE 1K	5%	1/8W	
R112	1-216-077-00	METAL GLAZE 15K	5%	1/10W	
R113	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R114	1-216-109-00	METAL GLAZE 330K	5%	1/10W	
R115	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R116	1-216-222-00	METAL GLAZE 10K	5%	1/8W	
R117	1-216-063-00	METAL GLAZE 3.9K	5%	1/10W	
R118	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R119	1-216-025-00	METAL GLAZE 100	5%	1/10W	
R120	1-216-306-11	METAL GLAZE 3.9	5%	1/10W	
R121	1-216-306-11	METAL GLAZE 3.9	5%	1/10W	
R122	1-216-158-00	METAL GLAZE 22	5%	1/8W	

Ref.No.	Part No.	Description			
R123	1-216-039-00	METAL GLAZE 390	5%	1/10W	
R124	1-216-224-00	METAL GLAZE 12K	5%	1/8W	
R125	1-216-073-00	METAL GLAZE 10K	5%	1/10W	
R126	1-216-168-00	METAL GLAZE 56	5%	1/8W	
R127	1-216-186-00	METAL GLAZE 330	5%	1/8W	
R128	1-216-009-00	METAL GLAZE 22	5%	1/10W	
R129	1-216-063-00	METAL GLAZE 3.9K	5%	1/10W	
R130	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R131	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R133	1-216-113-00	METAL GLAZE 470K	5%	1/10W	
R135	1-216-109-00	METAL GLAZE 330K	5%	1/10W	
R136	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	
R137	1-216-065-00	METAL GLAZE 4.7K	5%	1/10W	
R138	1-216-067-00	METAL GLAZE 5.6K	5%	1/10W	
R139	1-216-206-00	METAL GLAZE 2.2K	5%	1/8W	
R141	1-216-081-00	METAL GLAZE 22K	5%	1/10W	
R142	1-216-071-00	METAL GLAZE 8.2K	5%	1/10W	
R143	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W	
R144	1-216-037-00	METAL GLAZE 330	5%	1/10W	
R145	1-216-113-00	METAL GLAZE 470K	5%	1/10W	
R146	1-216-059-00	METAL GLAZE 2.7K	5%	1/10W	
R147	1-216-081-00	METAL GLAZE 22K	5%	1/10W	
R201	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R202	1-216-113-00	METAL GLAZE 470K	5%	1/10W	
R206	1-216-073-00	METAL GLAZE 10K	5%	1/10W	
R207	1-216-057-00	METAL GLAZE 2.2K	5%	1/10W	
R208	1-216-077-00	METAL GLAZE 15K	5%	1/10W	
R210	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R212	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R213	1-216-049-00	METAL GLAZE 1K	5%	1/10W	
R214	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R215	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R216	1-216-081-00	METAL GLAZE 22K	5%	1/10W	
R217	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R218	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R219	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R220	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R221	1-216-085-00	METAL GLAZE 33K	5%	1/10W	
R222	1-216-085-00	METAL GLAZE 33K	5%	1/10W	
R223	1-216-089-00	METAL GLAZE 47K	5%	1/10W	
R224	1-216-097-00	METAL GLAZE 100K	5%	1/10W	
R225	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W	
R226	1-216-061-00	METAL GLAZE 3.3K	5%	1/10W	
R601	1-216-075-00	METAL GLAZE 12K	5%	1/10W	
R602	1-216-077-00	METAL GLAZE 15K	5%	1/10W	



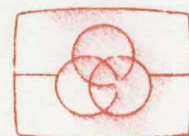
Ref.No.	Part No.	Description
R603	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W
R604	1-216-083-00	METAL GLAZE 27K 5% 1/10W
R605	1-216-045-00	METAL GLAZE 680 5% 1/10W
R606	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R607	1-216-073-00	METAL GLAZE 10K 5% 1/10W
RV101	1-228-121-00	RES, VAR, CARBON 10K (VOLUME)
RV601	1-230-888-11	RES, VAR, CARBON 20K (TAPE SPEED)
RV602	1-230-496-11	RES, ADJ, CARBON 10K (SPEED ADJ)
S101	1-554-297-00	SWITCH, LEAF (POWER)
S102	1-554-745-11	SWITCH, SLIDE (REC/PB)
S201	1-570-402-11	SWITCH, SLIDE (REPEAT MODE)
S202	1-571-268-11	SWITCH, SLIDE (PAUSE/REPEAT)
SP901	1-503-646-11	SPEAKER
T101	1-433-251-00	TRANSFORMER, BIAS OSCILLATOR
TH601	1-800-200-00	THERMISTOR
THP601	1-806-881-11	THERMISTOR (POSITIVE)
X201	1-567-918-11	VIBRATOR, CERAMIC (4.0MHz)

ACCESSORY & PACKING MATERIAL

3-320-902-01	CUSHION, 4 GANG
3-336-008-01	SPACER
*3-336-034-01	INDIVIDUAL CARTON
3-336-035-01	CASE, CARRYING
3-769-575-11	MANUAL, INSTRUCTION
3-769-575-41	(AEP)...MANUAL, INSTRUCTION
8-952-355-90	HEADPHONE MDR-W10MRV SET

Troubleshooting Guide

Cassette cannot be inserted.	<ul style="list-style-type: none"> The ▼ button is depressed
The ● button cannot be depressed.	<ul style="list-style-type: none"> No cassette in the cassette compartment. The cassette inserted has had the tabs removed. Cover the slot with a small piece of plastic tape.
The ▼ button cannot be locked.	<ul style="list-style-type: none"> The tape is completely wound towards the arrow direction on the cassette compartment lid. Rewind the tape with the ▲ button.
Tape does not move.	<ul style="list-style-type: none"> Incorrect polarity of batteries. Weak batteries. The REPEAT/PAUSE selector is slid down. Battery operation is attempted while the AC power adaptor or car battery cord is connected to the recorder but not to the wall outlet or the cigarette lighter socket.
No sound from the speaker.	<ul style="list-style-type: none"> The headphones are plugged in. The VOL (volume) or VOLUME control is turned down completely.
Weak or distorted sound, sound drop-outs, or excessive noise.	<ul style="list-style-type: none"> Weak batteries. See "Battery installation" on page 8. Dirty heads. See "Maintenance" on page 18.
Recording cannot be made or is unsatisfactory.	<ul style="list-style-type: none"> Improper connection. See "Recording from various sound sources" on page 16.



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