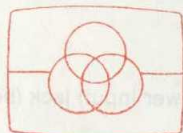


TCM-10

SERVICE MANUAL

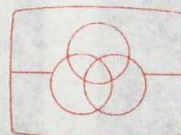
US Model
Canadian Model
AEP Model
UK Model
E Model



Free service manuals
Gratis schema's

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Free service manuals
Gratis schema's

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www.fre servicemanuals.info

SPECIFICATIONS

Tape Transport Mechanism Type

MT-10-26

Recording system 2-track 1-channel monaural
Speaker Approx. 2.8 cm (1 1/8 inches) dia.
Fast winding time Approx. 2 min. 30 sec. with Sony C-60 cassette
Frequency response 150-9,000 Hz
Input Microphone input jack (minijack)
sensitivity 0.2 mV (-72 dB)
for low impedance microphone
Output Earphone jack (minijack)
for 8-ohm earphone or load impedance
10 kilohms or higher
Power output 70 mW (at 10% harmonic distortion)
Power requirements 1.5V dc
One battery size AA (IEC designation R6)
DC IN 1.5V jack accepts;
optional Sony EBP-10 battery case for use on two
batteries size AA (IEC designation R6)
optional Sony AC-D1 ac power adaptor for use on
120 V ac, 60 Hz (US, Canadian model)
optional Sony AC-D1 ac power adaptor for use on
220 V ac, 50 Hz (AEP model)
optional Sony AC-D1 ac power adaptor for use on
240 V ac, 50 Hz (UK model)
optional Sony AC-D1 ac power adaptor for use on
110, 120, 220 or 240 V ac adjustable, 50/60 Hz
(E model)
optional Sony DCC-70 car battery cord for use on
12V car battery

Battery life

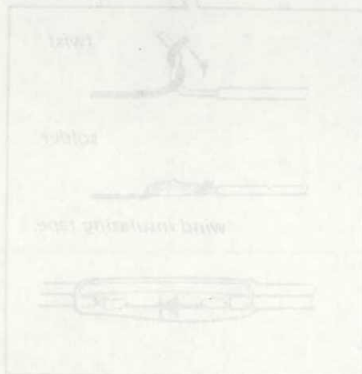
Battery	Recording	Playback
Sony New Super SUM-3(NS) battery or Eveready No.1215 Heavy Duty battery	Approx. 2	Approx. 2.5
Sony Eveready AM3 Alkaline battery	Approx. 4	Approx. 5

(hours)

Dimensions

Approx. 81.4 × 109.9 × 24.9 mm (w/h/d)
(3 1/4 × 4 3/8 × 1 inches)
not incl. projecting parts and controls, with
cassette inside
Approx. 86.5 × 111.8 × 27.9 mm (w/h/d)
(3 1/2 × 4 1/2 × 1 1/8 inches)
incl. projecting parts and controls, with cassette
inside
Approx. 225 g (8.0 oz)
incl. battery, not incl. other accessories

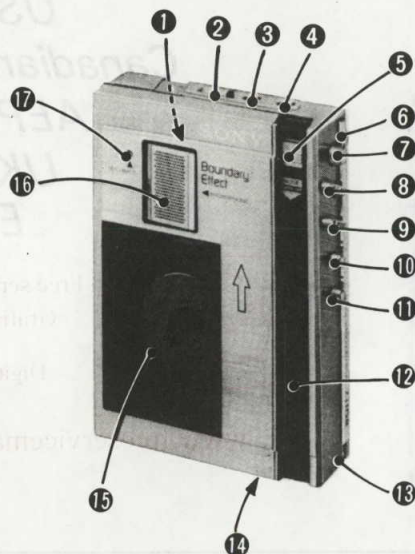
Weight



CASSETTE CORDER
SONY®

TCM-10

PARTS IDENTIFICATION



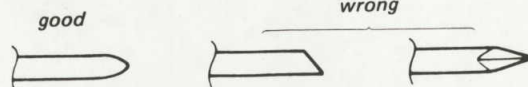
- 1 Speaker (rear)
- 2 TAPE COUNTER and reset button
- 3 EAR (earphone) jack
- 4 MIC (microphone) jack
- 5 II PAUSE/POWER OFF switch
- 6 VOL (volume) control
- 7 REC (record) button
- 8 ◀ PLAY (playback) button
- 9 ■ STOP button
- 10 ◀◀ (fast forward) button
- 11 ▶▶ (rewind) button
- 12 Battery compartment
- 13 Loop for hand strap
- 14 DC IN 1.5V (external power input) jack (bottom)
- 15 Cassette compartment
- 16 MICROPHONE (built-in microphone)
- 17 REC/BATT (record/battery) indicator

SERVICING NOTE

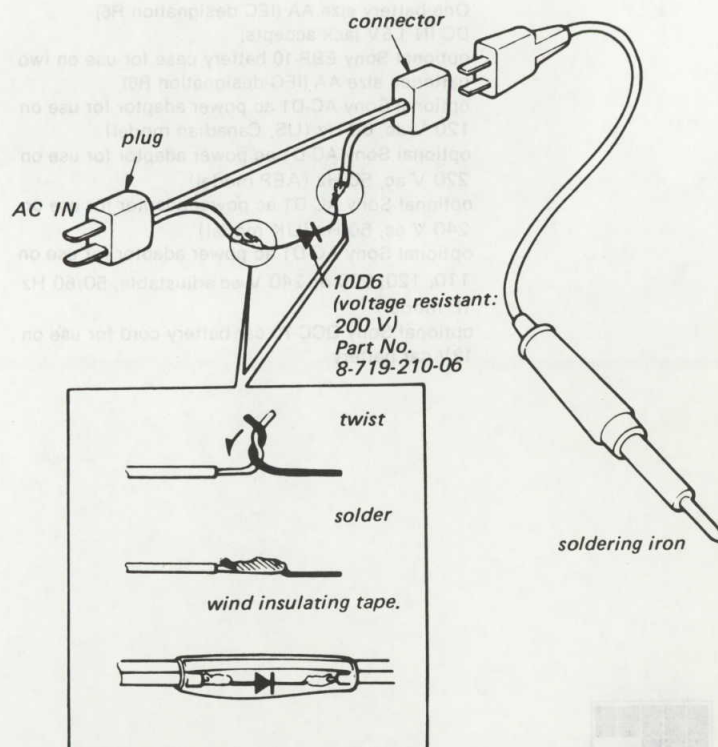
Flexible Circuit Board Repairing

1. Keep the temperature of the soldering iron at $270^{\circ} \pm 10^{\circ}\text{C}$ during repairing.
You can maintain the temperature of the soldering iron around 270°C by using the thermal controller as illustrated on the right.
2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
3. Do not apply force on the conductor when soldering or unsoldering.

Tip of soldering iron



To make thermal controller of soldering iron



Replacing chip components

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

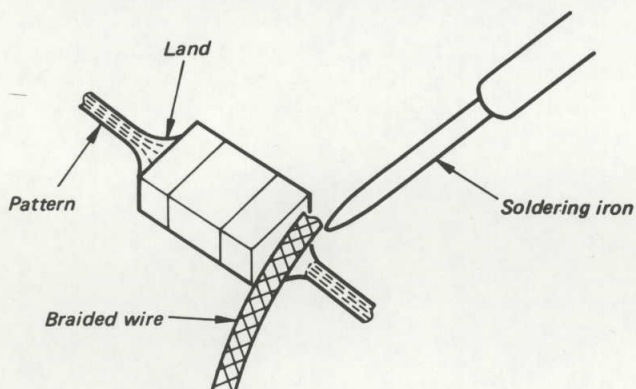
Precautions for replacement

1. Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.
2. Never re-use a disconnected chip component. Dispose of all old chip components.
3. To protect the chip component, heating time for attaching the component should be within 3 seconds.

○ Removing chip components

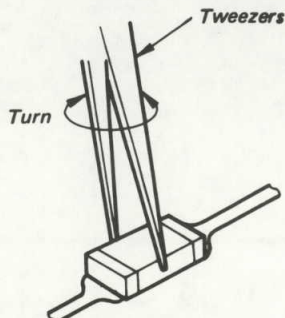
(1) Removing solder at electrode

Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off. Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

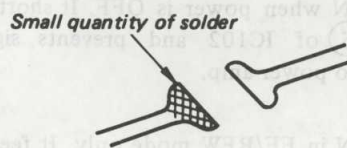
After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

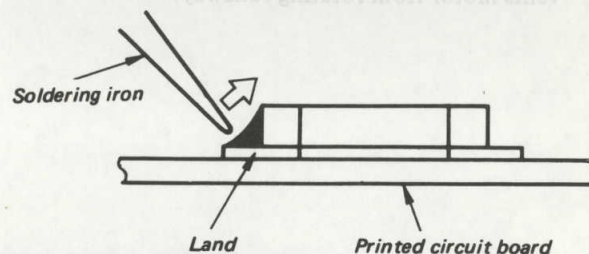
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

RCM-10

CIRCUIT DESCRIPTION

Q119

Q119 is ON in REC mode and reduces the voltage applied to terminal ⑩ of IC101. It prevents output signal from being distorted by large input signal.

As cathode of D103 is normally grounded via power switch, the based of Q120 to 122 are grounded when power switch is ON. Therefore, these are turned off. When power switch is OFF, Q120 to 122 are on and muting and switching operation are made because D103 is OFF.

Q120

Q120 is ON when power is OFF. So, terminal ⑩ of IC101 is grounded via Q120 and click noise is eliminated.

Q122

Q122 is ON when power is OFF. It shorts terminal ③ and ⑤ of IC102 and prevents signal from supplying to power amp.

Q123

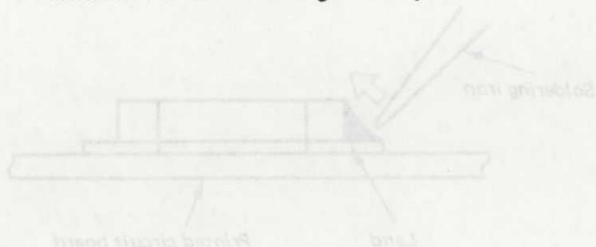
Q123 is ON in FF/REW mode only. It feeds current to rotation detecting switch and operates auto-off circuit.

Q121

Q121 is ON only when power is OFF. It drops power voltage rapidly and prevents click noise.

Q604

Q604 is OFF rapidly when power is OFF and prevents motor from rotating runaway.



SERVICING NOTE

Chassis and cabinet are not grounded.

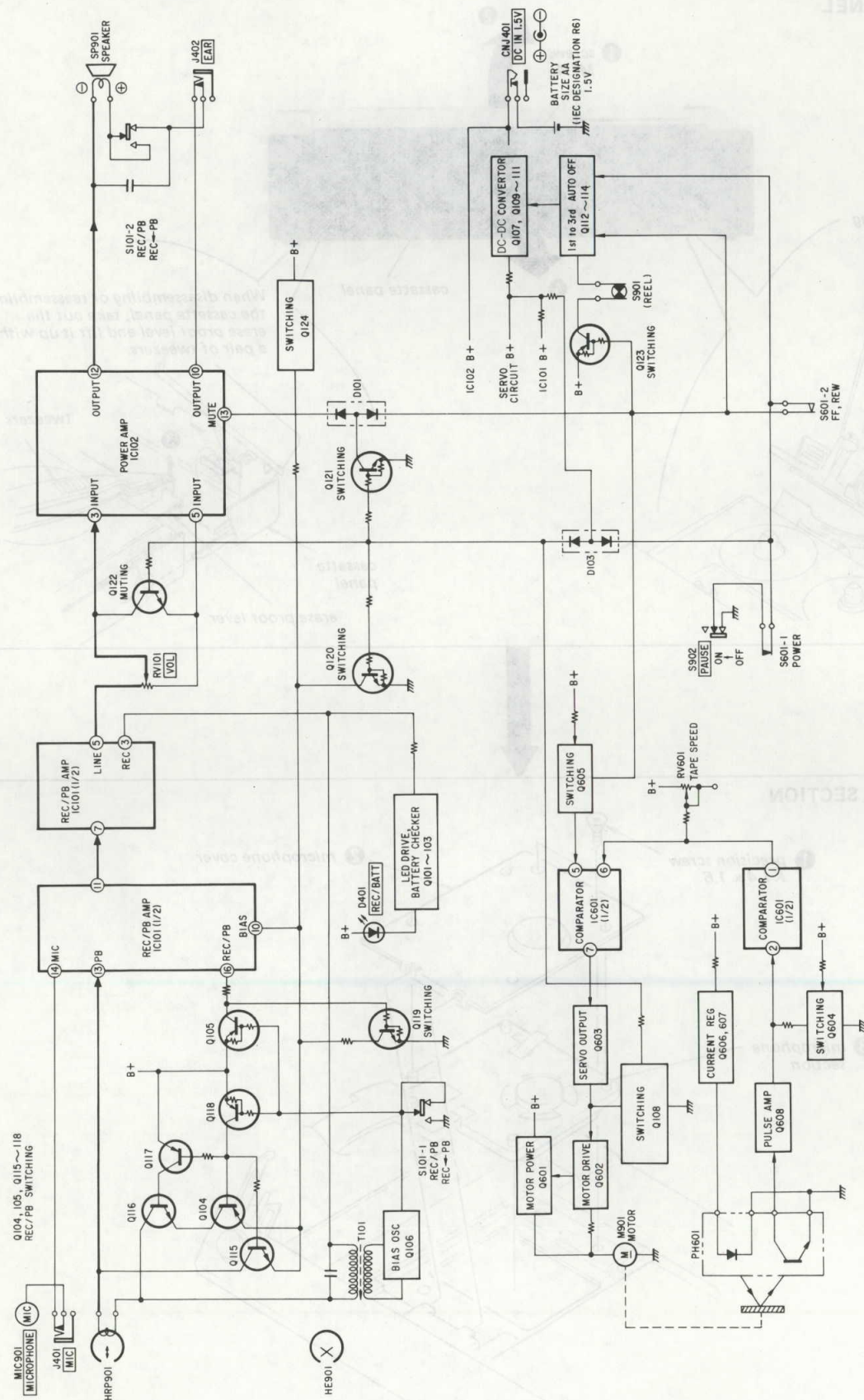
Be careful not to connect them with earth.



(2) Disconnecting chip components
Turn the tweezers with the soldering iron alternately
applied to both electrodes and the chip component
will be disconnected. Take careful precautions while
disconnecting because if the chip component is force-
fully removed the land may peel off.
Never reuse a disconnected chip component.



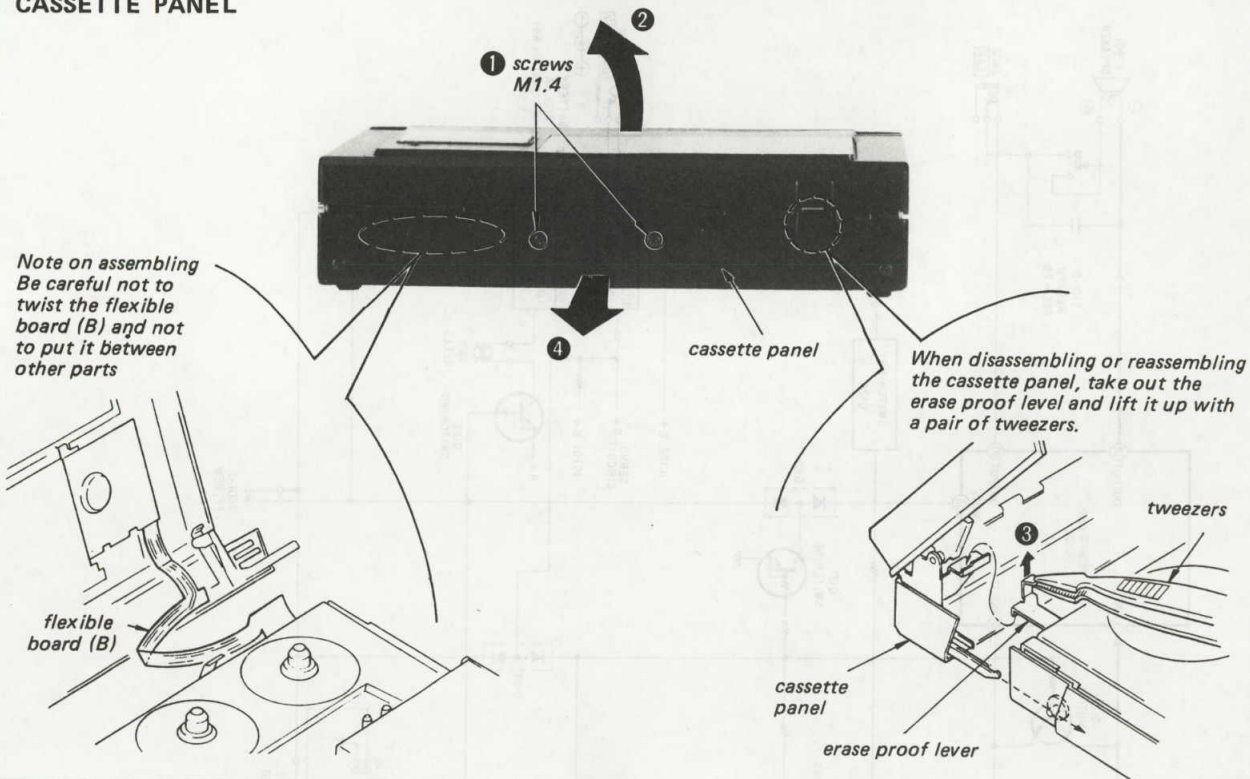
1-1. BLOCK DIAGRAM



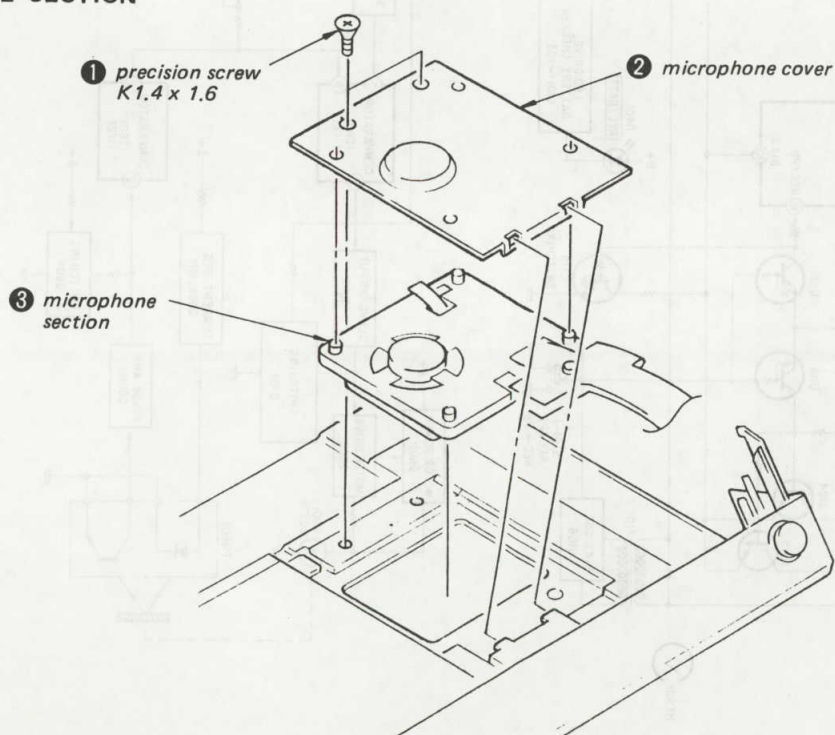
SECTION 2 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

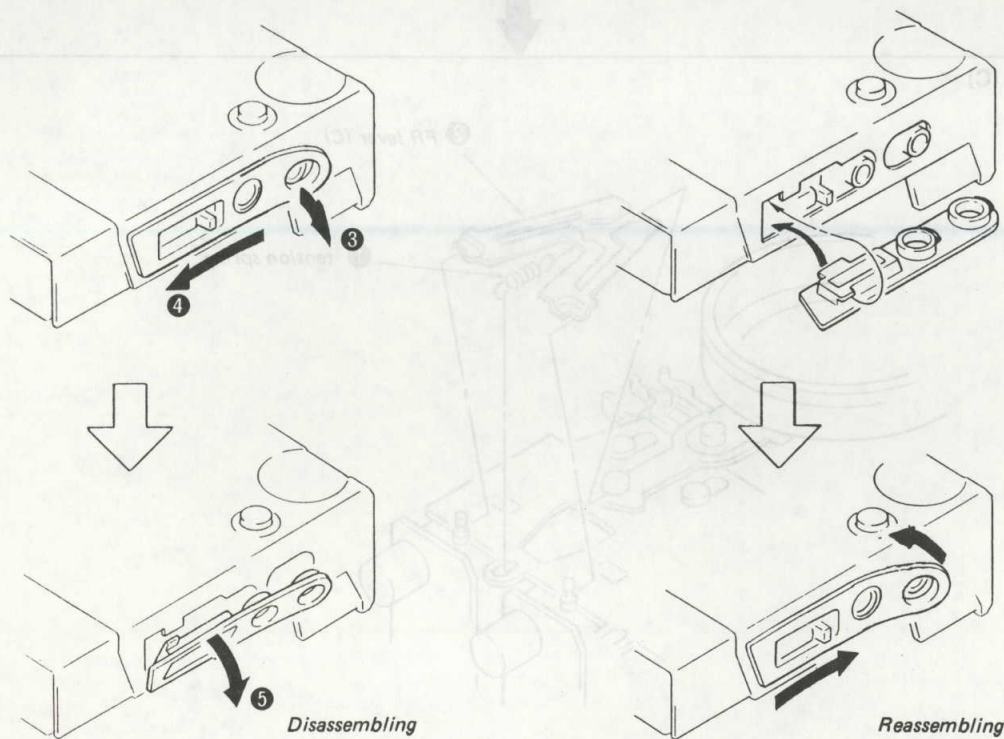
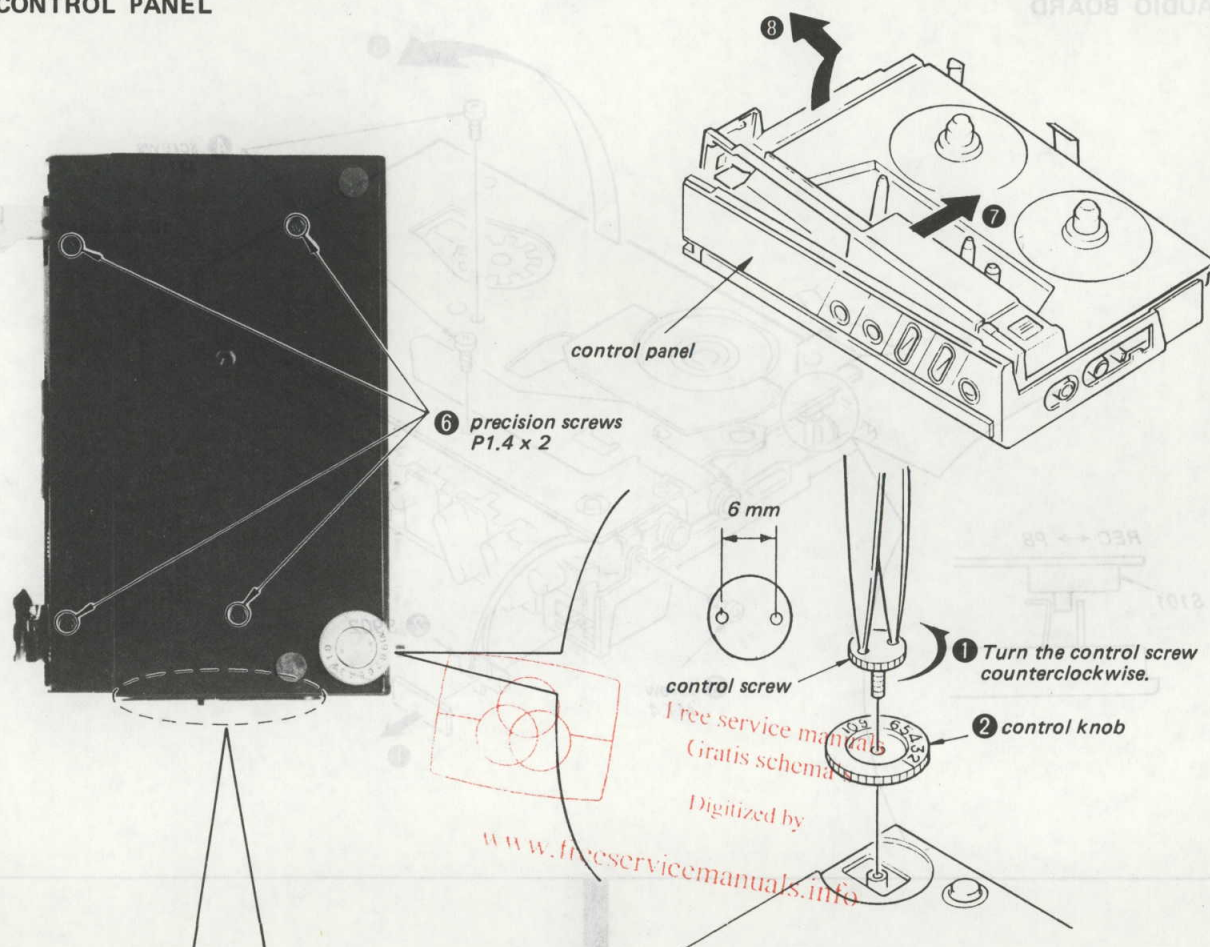
CASSETTE PANEL

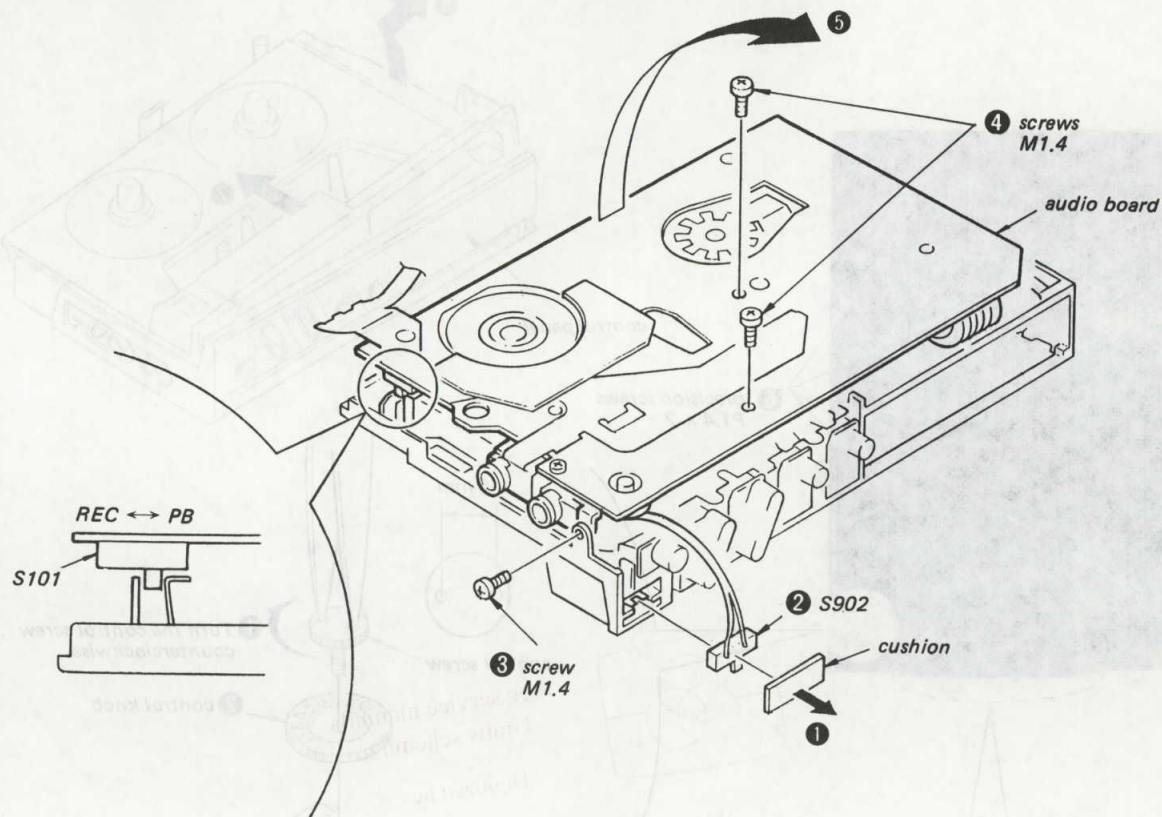
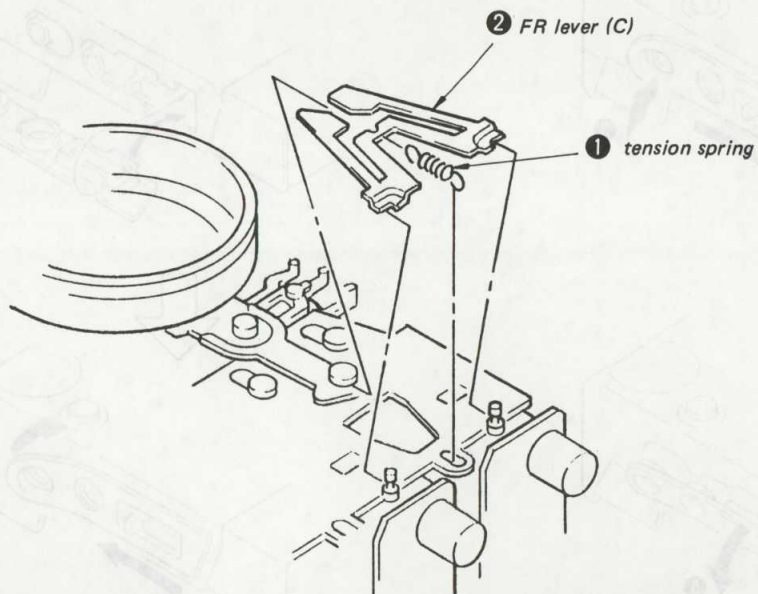


MICROPHONE SECTION

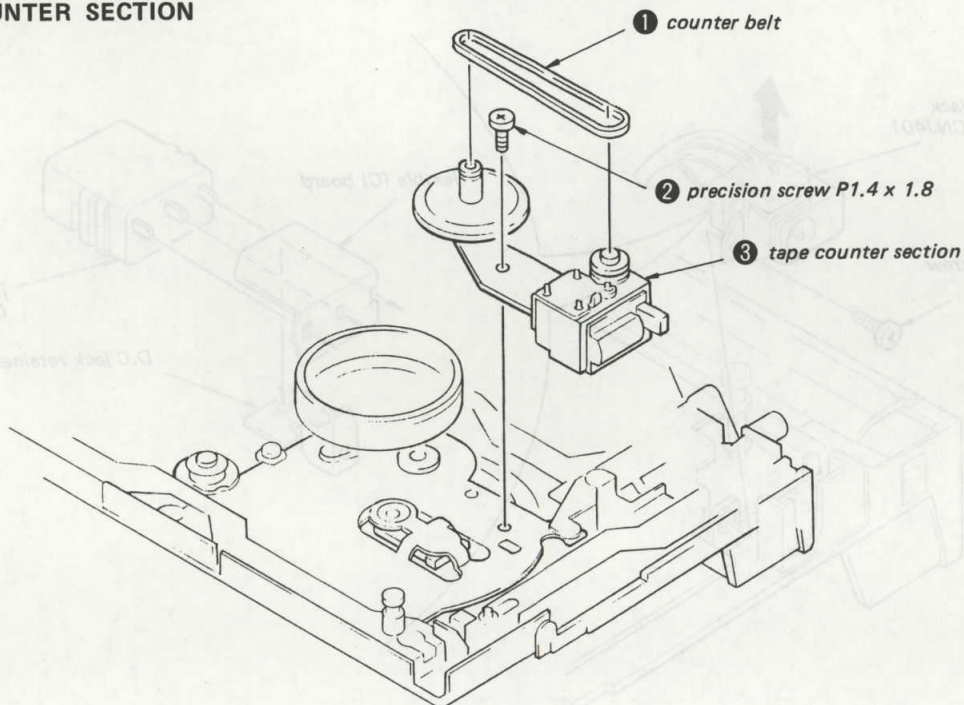


CONTROL PANEL

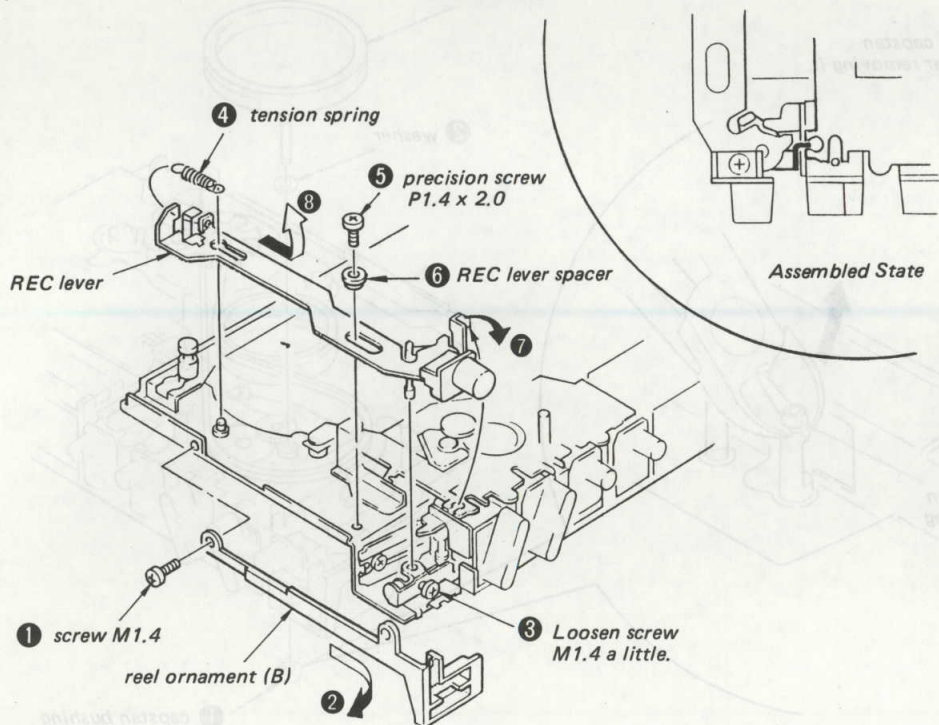


TCM-10**AUDIO BOARD****FR LEVER (C)**

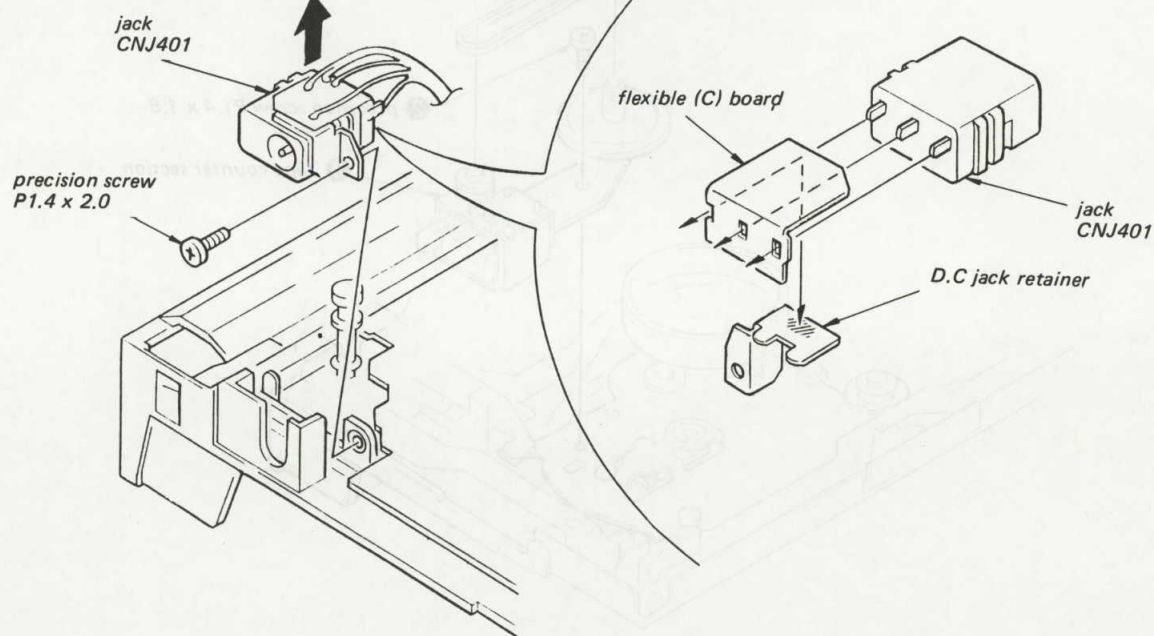
TAPE COUNTER SECTION



REC LEVER

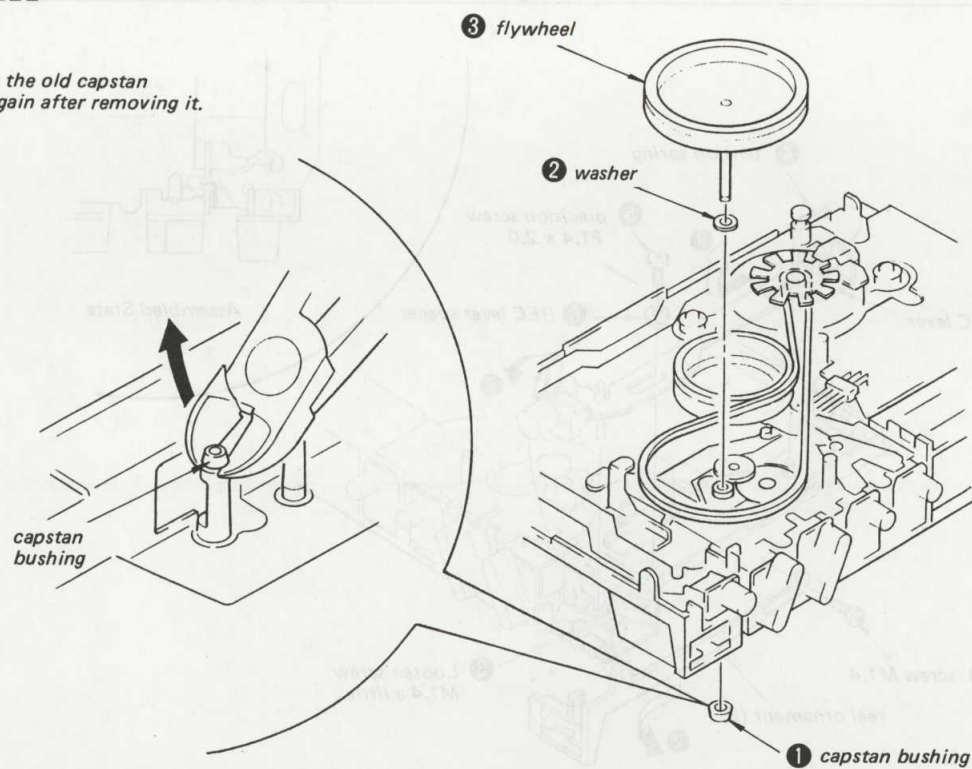


JACK

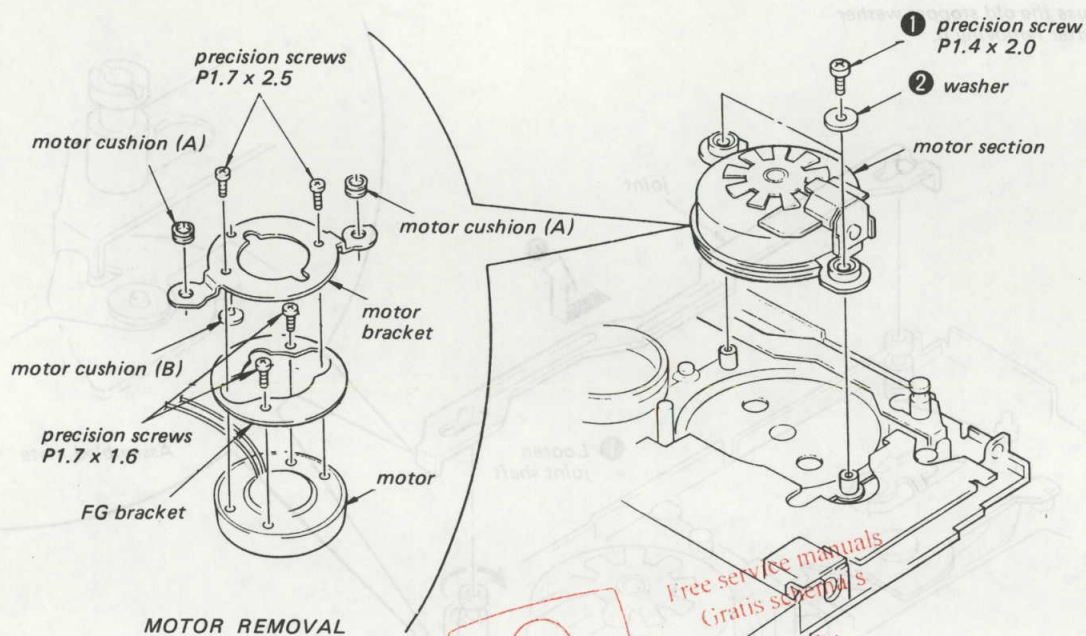


FLYWHEEL

Don't use the old capstan bushing again after removing it.

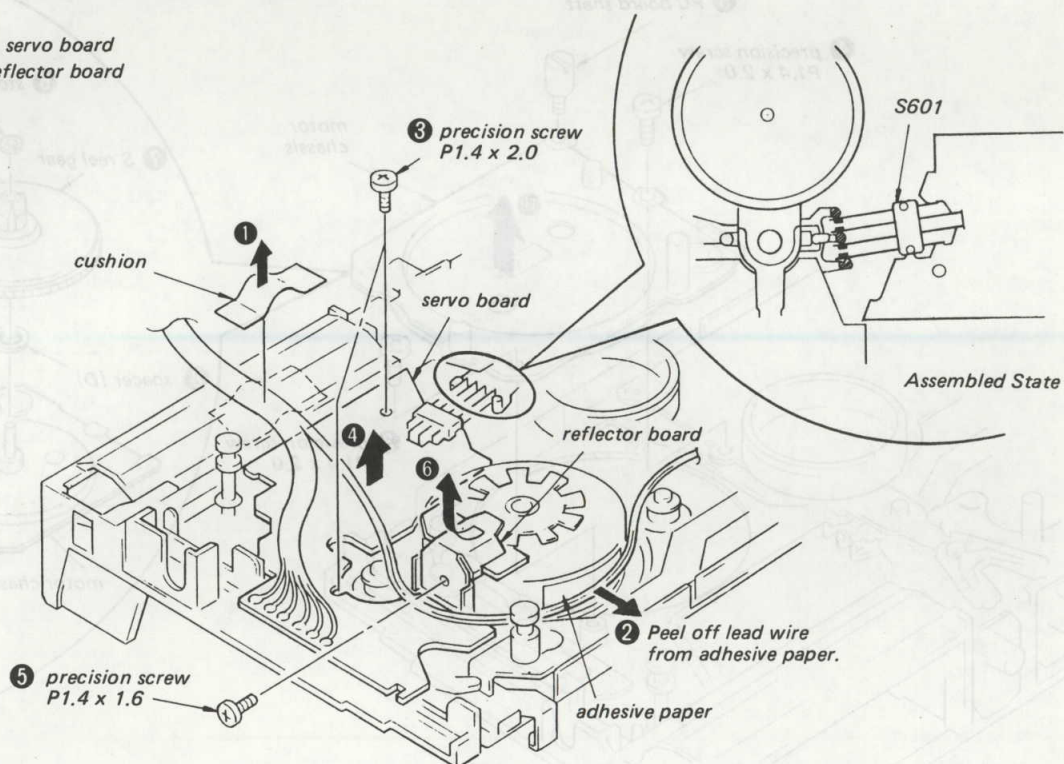


MOTOR SECTION



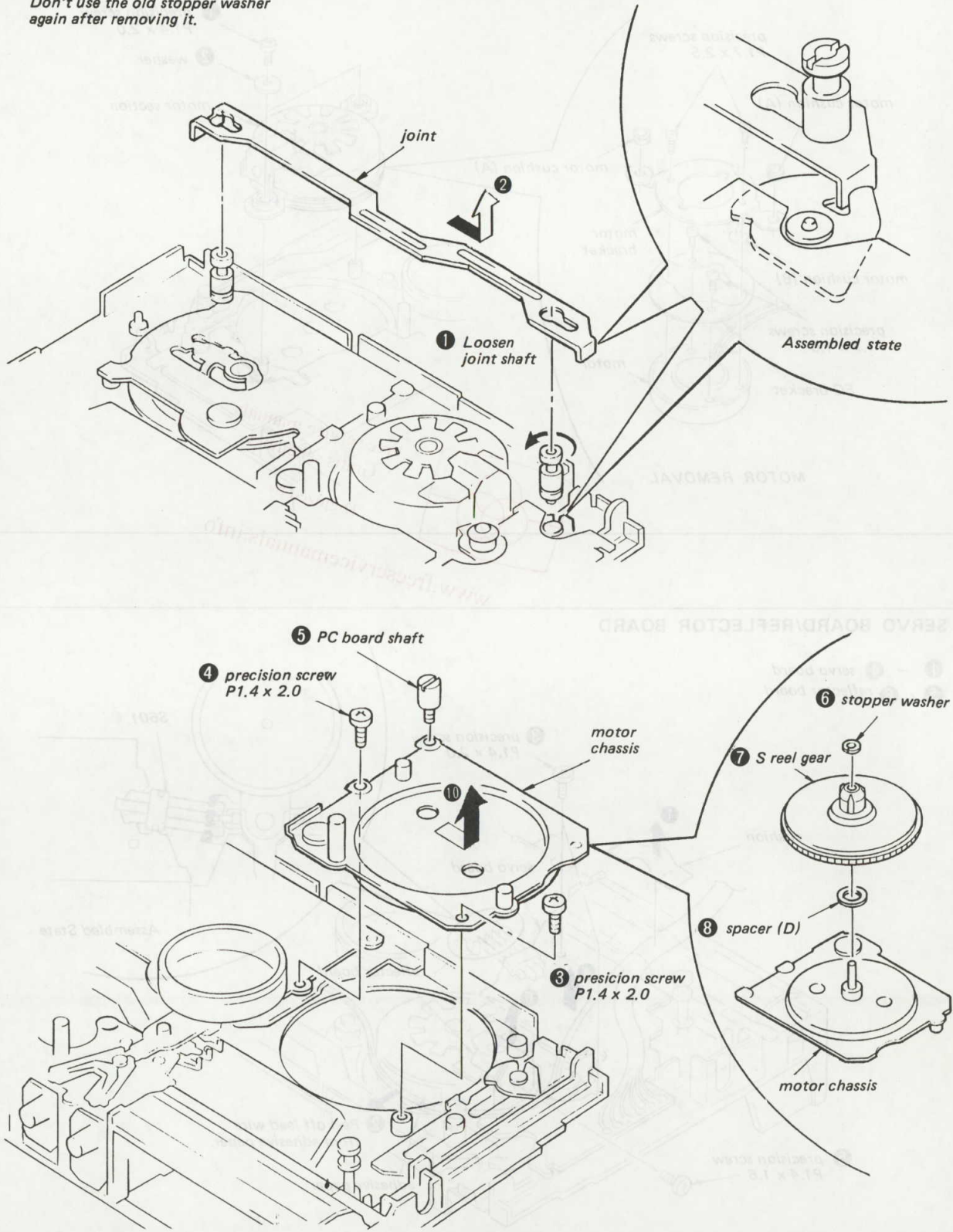
SERVO BOARD/REFLECTOR BOARD

- ① - ④ servo board
⑤ , ⑥ reflector board

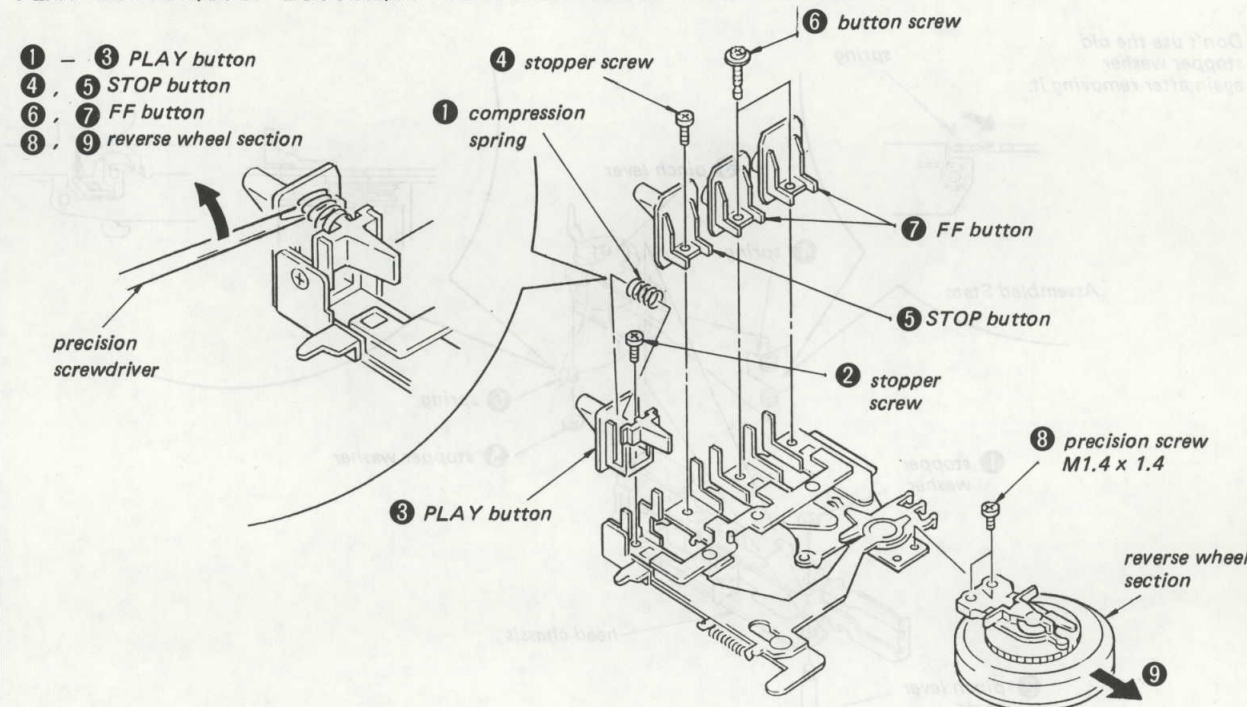


S REEL GEAR

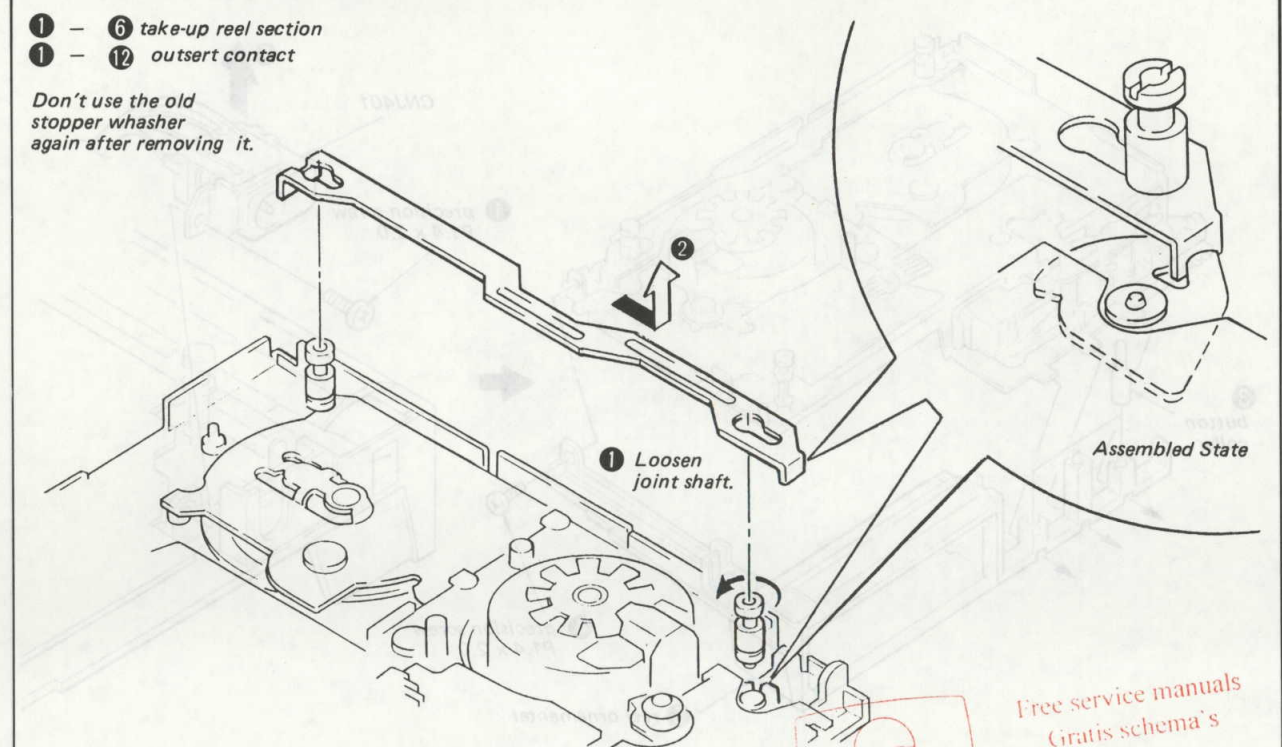
Don't use the old stopper washer again after removing it.



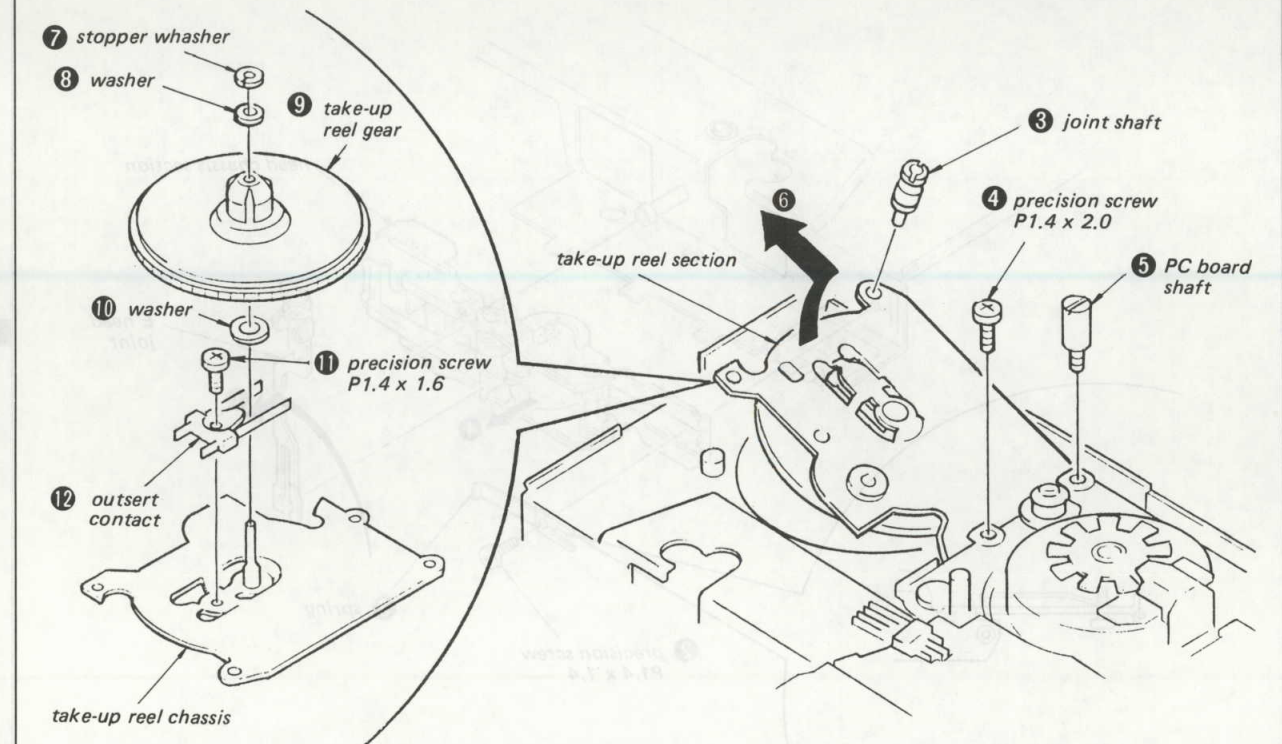
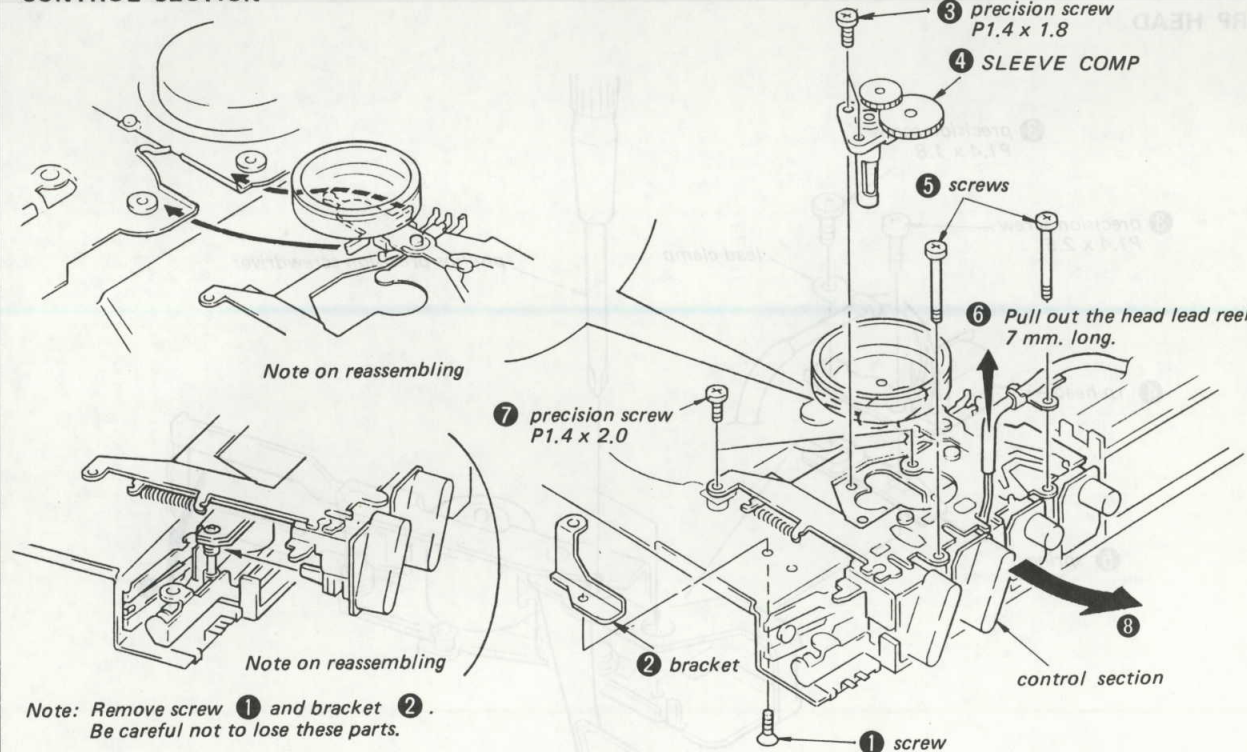
PLAY BUTTON/STOP BUTTON/FF BUTTON/REVERSE WHEEL SECTION



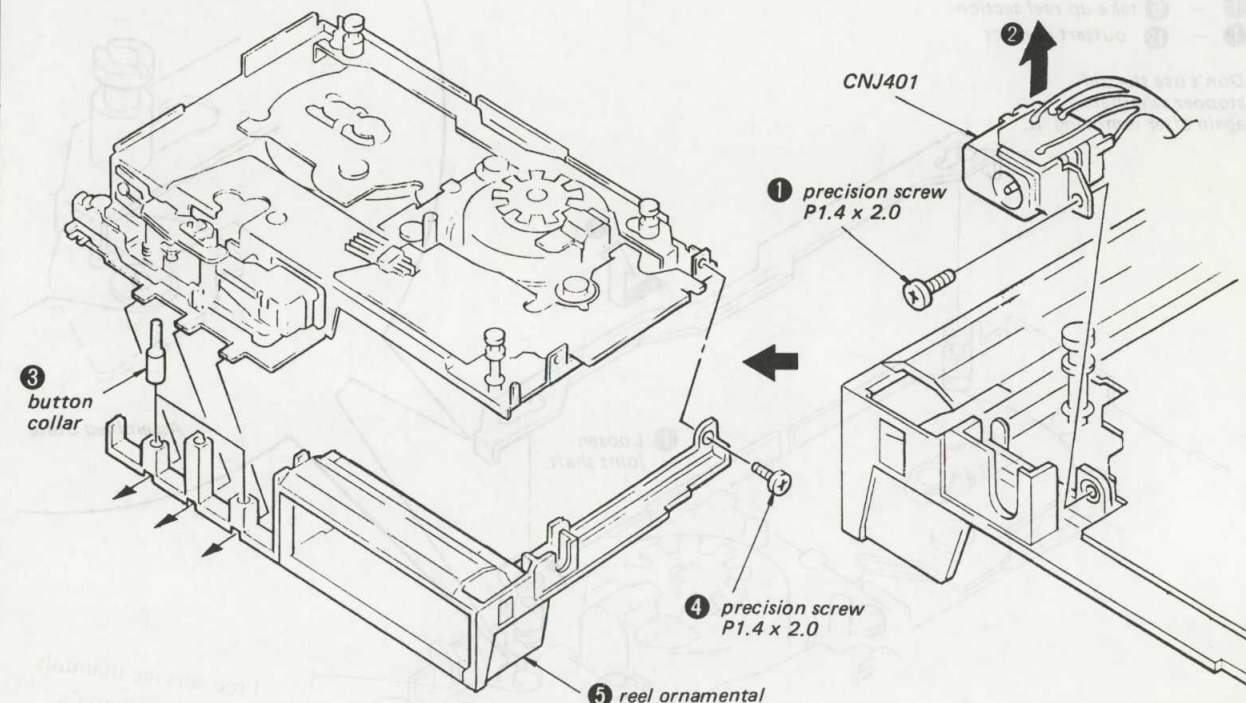
TAKE-UP REEL SECTION/OUTSERT CONTACT



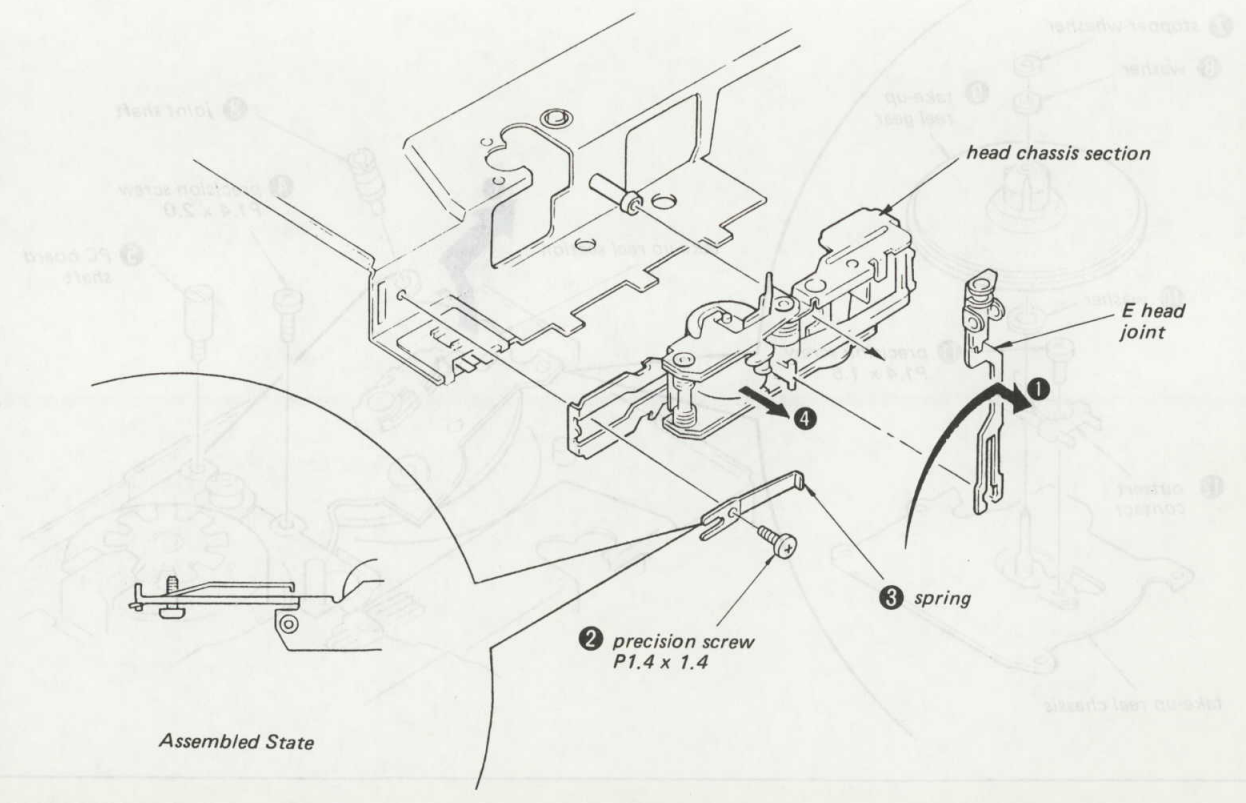
CONTROL SECTION



REEL ORNAMENT

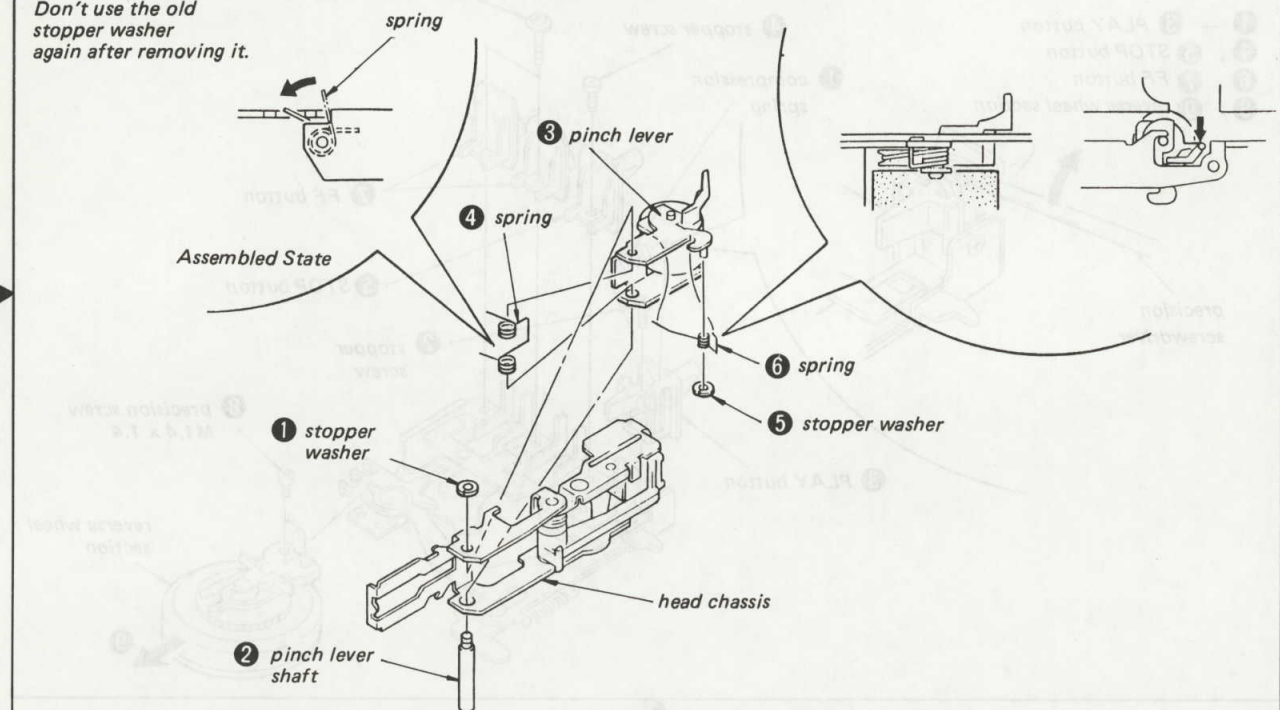


HEAD CHASSIS SECTION

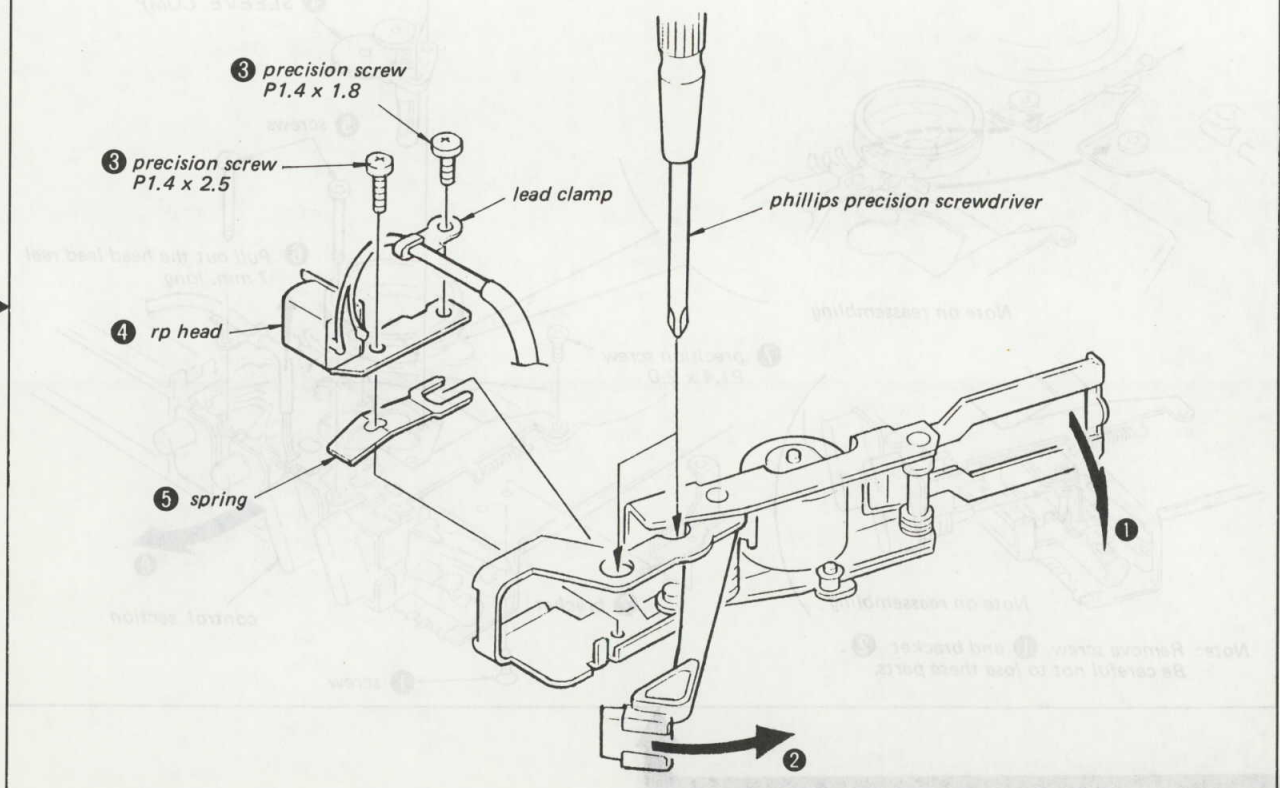


HEAD CHASSIS/PINCH LEVER

Don't use the old stopper washer again after removing it.



RP HEAD



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

PRECAUTION

- 1. Clean the following parts with a denatured-alcohol-moistened swab:
record/playback head pinch roller
capstan rubber belts
- 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.

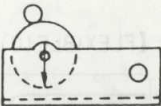
Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	20-40 g · cm (0.28 - 0.56 oz · inch)
FF, REW	CQ-201B	more than 60 g · cm (0.83 oz · inch)
Back Tension	CQ-102C	less than 0-2.5 g · cm (0 - 0.03 oz · inch)
Tape pulling force	CQ-403A	more than 45 g (0.62 oz · inch)

Pinch Roller Pressure Adjustment

- FWD Mode
- 1. Pull the spring scale in the direction of the arrow.
- 2. Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating.

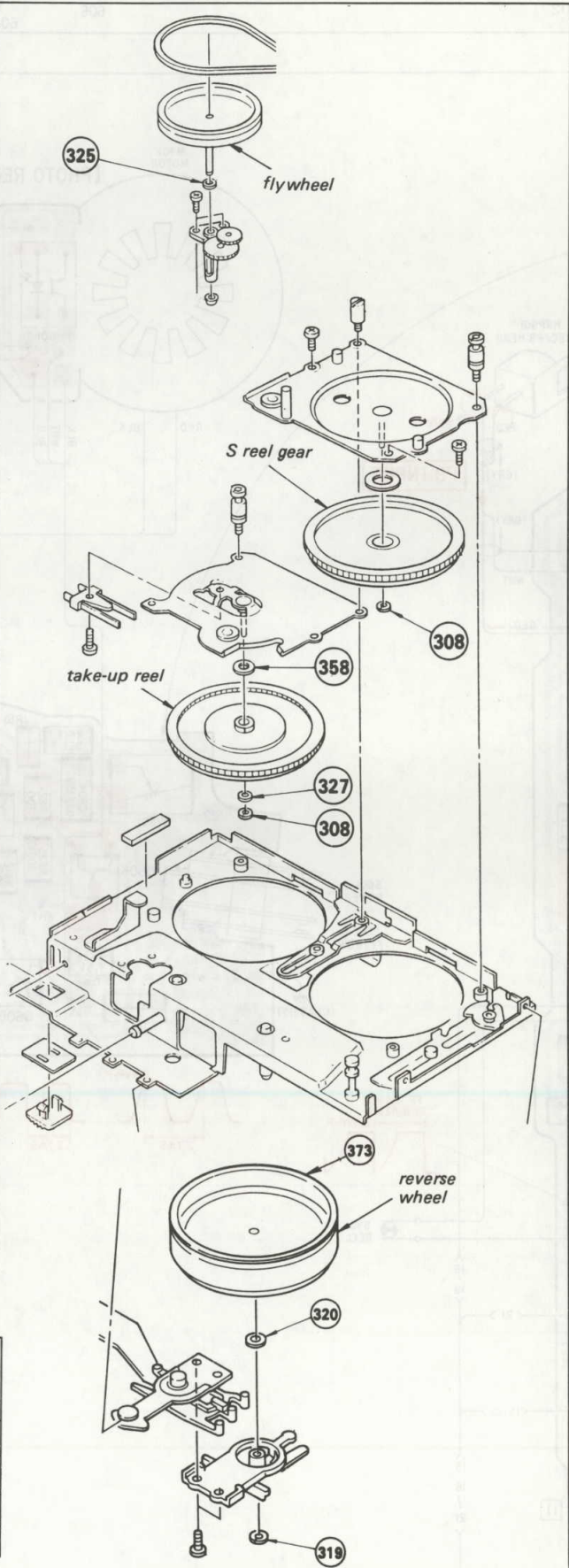
Specification 150 ± 20 g



Thrust Clearance Adjustment

Each section should be rotate smoothly.

	Thrust Clearance	Adjustment parts Refer to parts list on page 31 for part no. and thickness.
flywheel	0.2 mm	No. 325
take-up reel	0.05 - 0.15 mm	No. 308/327/358
S reel gear	0.05 - 0.15 mm	No. 308
reverse wheel	0.05 - 0.15 mm	No. 319/320



3-2. ELECTRICAL ADJUSTMENT
CASSETTE SECTION

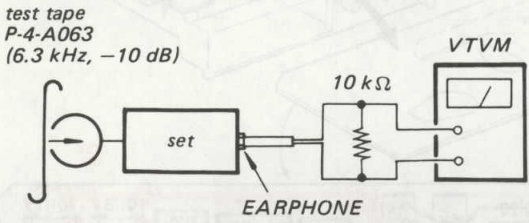
Record/playback Head Azimuth Adjustment

Setting:

VOL control: mechanical mid

Procedure:

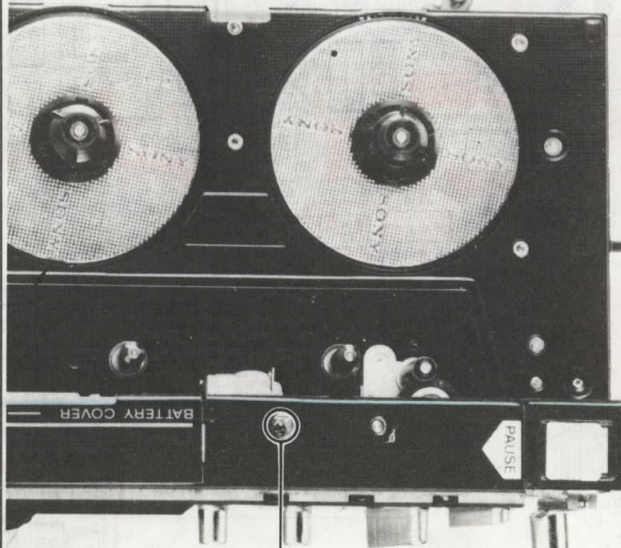
- 1. Mode: playback



- 2. Turn the adjustment screw for maximum VTVM reading.

Note: Several peaks may appear, but take the maximum.

Adjustment Location:



adjustment screw

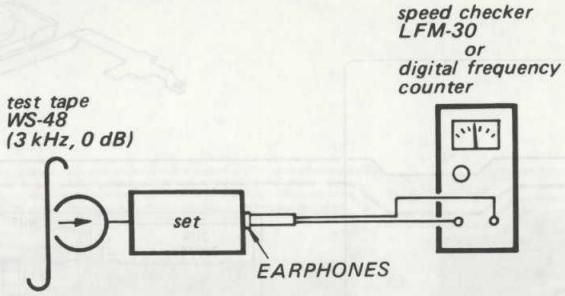
Tape Speed Adjustment

Setting:

VOL control: mechanical mid

Procedure:

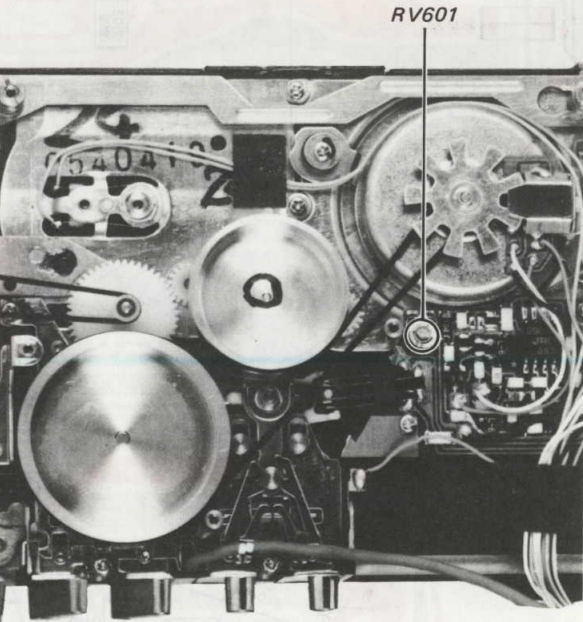
- Mode: FWD



Specification:

Speed checker	Digital frequency counter
3,000 Hz ± 2%	2,940 - 3,060 Hz

Adjustment Location:

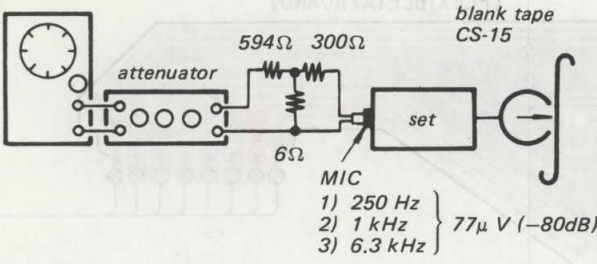


RV601

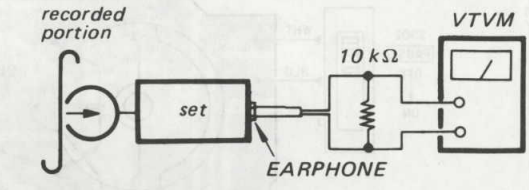
Record Bias Adjustment

Procedure

- 1. Mode: record

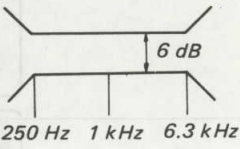


- 2. Mode: playback

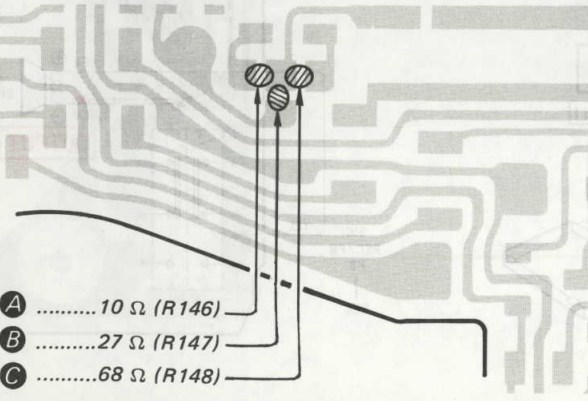


- 1) Adjust the VOLUME control so that 1 kHz output is 77.5 mV (-20 dB).
- 2) Confirm that 250 Hz and 6.3 kHz output is ± 3 dB relative to 1 kHz output.
- 3) If necessary, change the pattern connections and repeat the steps given above.

Specification:



Pattern connection	VTVM reading (6.3 kHz)
C	high
B	↑
B C	
A	
A C	
A B	
A B C	low

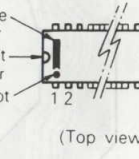


• Semiconductor Lead Layouts

2SA812-M6
2SB624-BV5
2SB798-DL
2SC2712G
2SC1623-T2L6
2SD596-DV4
2SD1048X6
DTA114TK
DTC143TK



BA3410AF
CX20172
NJM2903M



DA106K



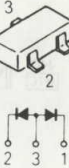
NC
2 3 1

RD3.9M-B2



NC
2 3 1

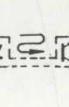
1S2835

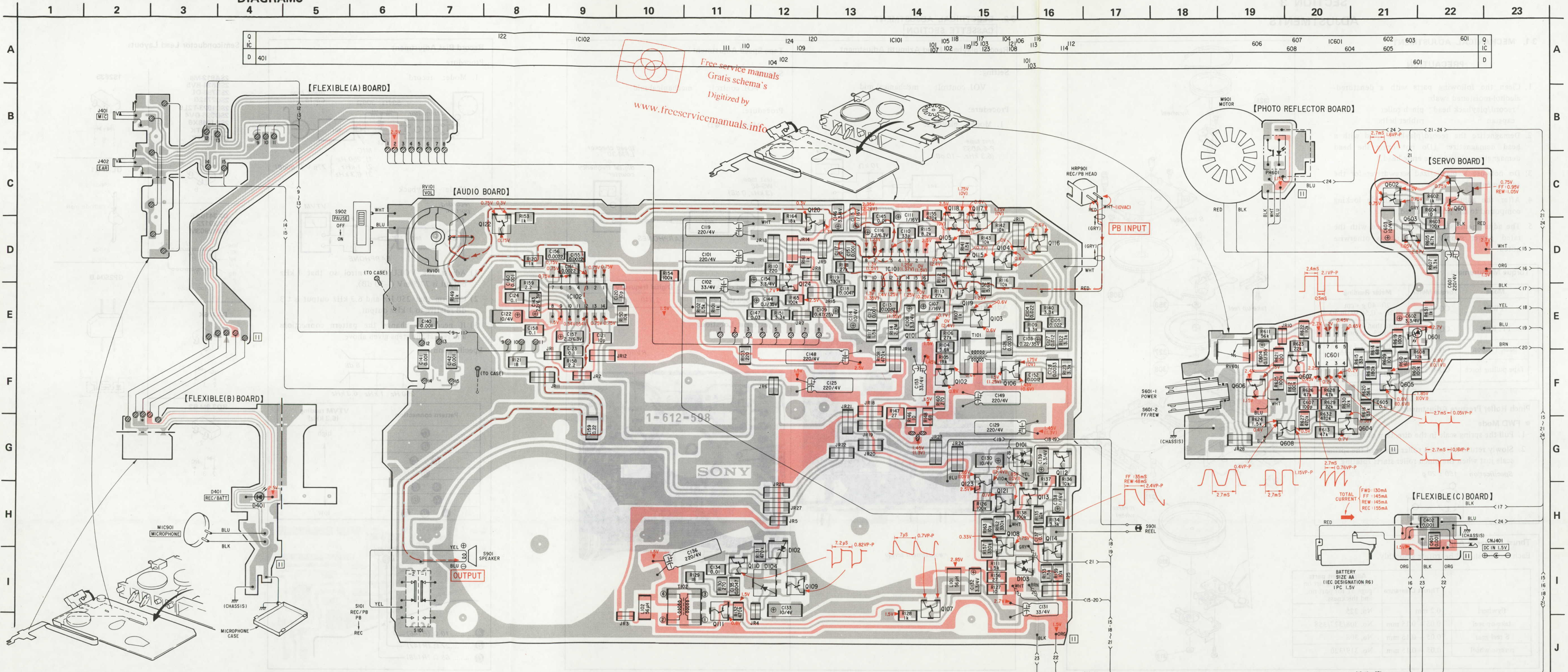


GL-1PR1

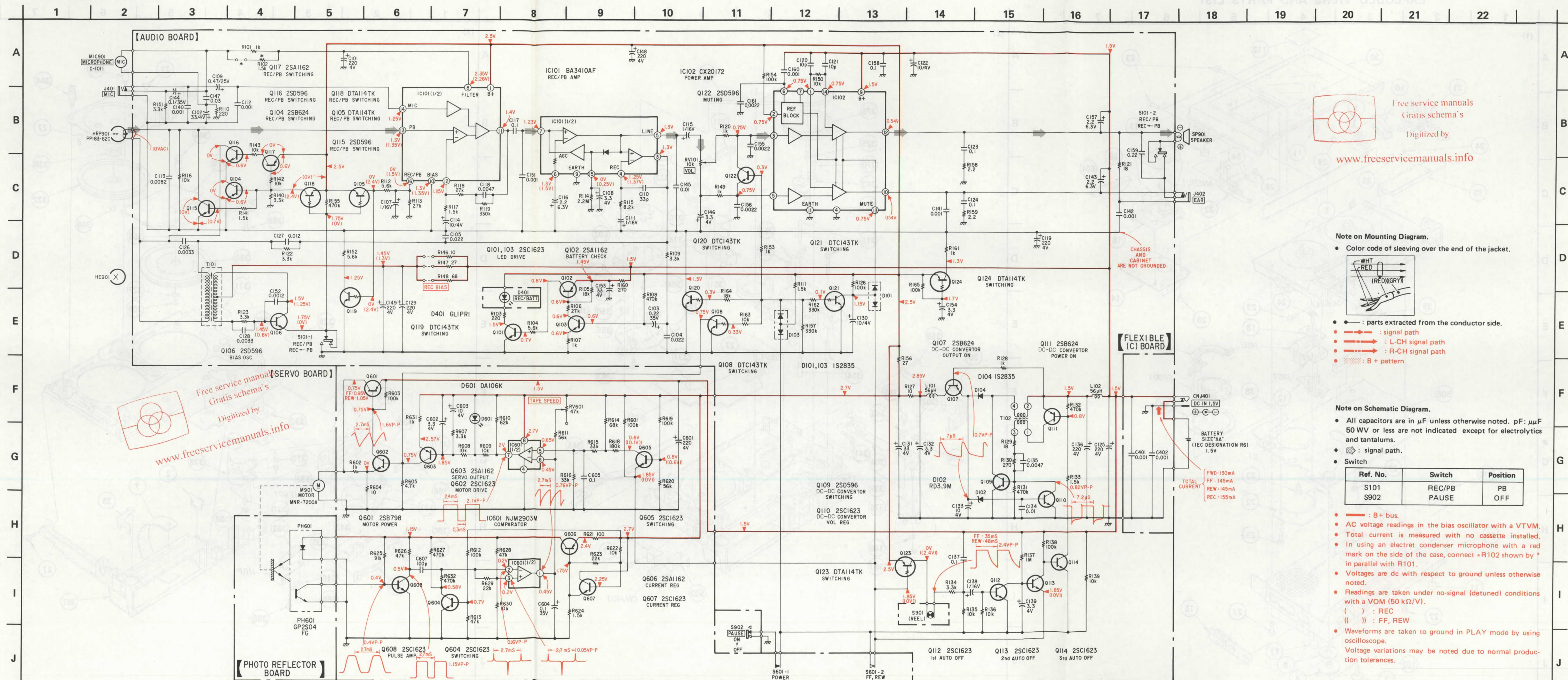


GP2S04-B

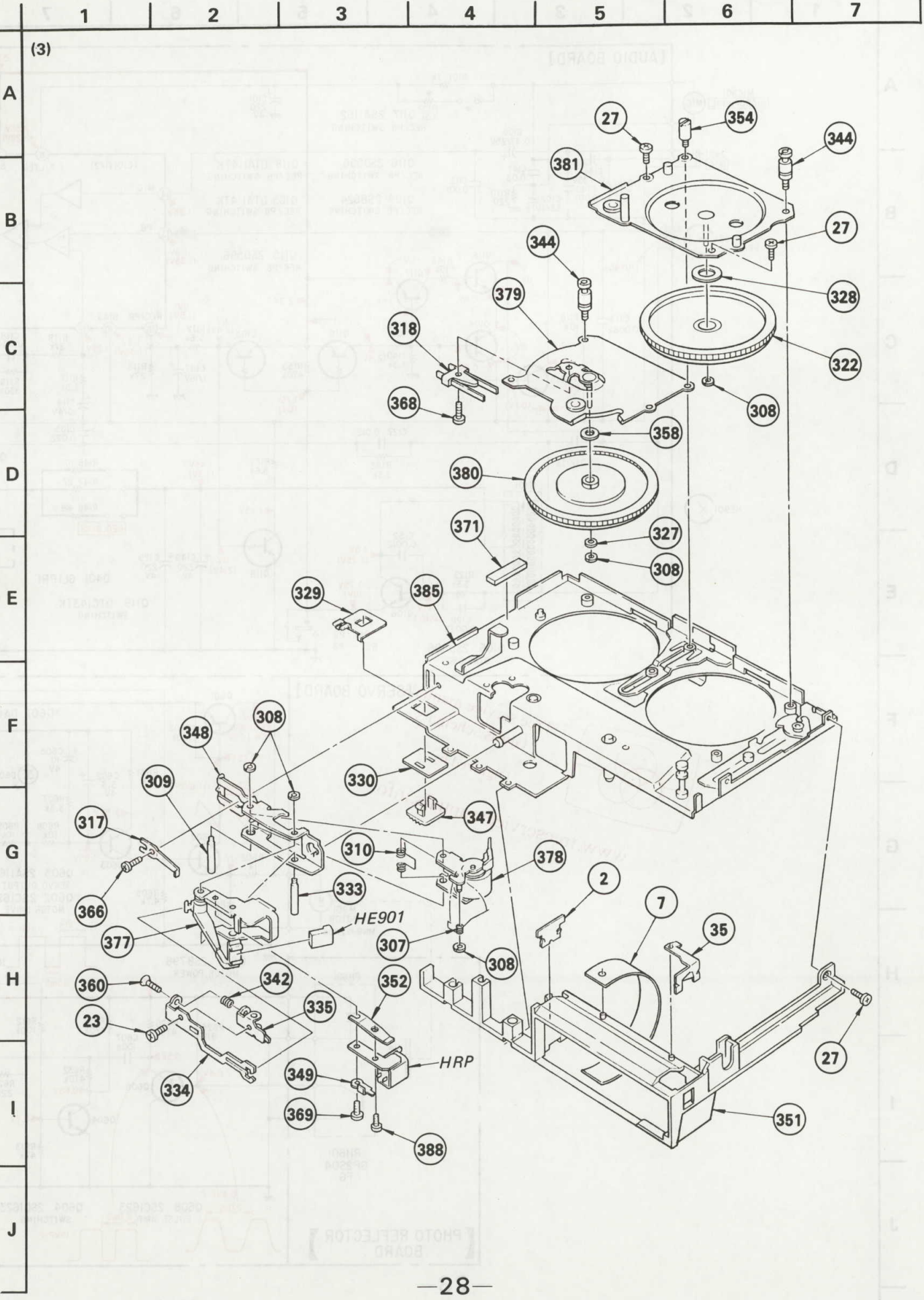
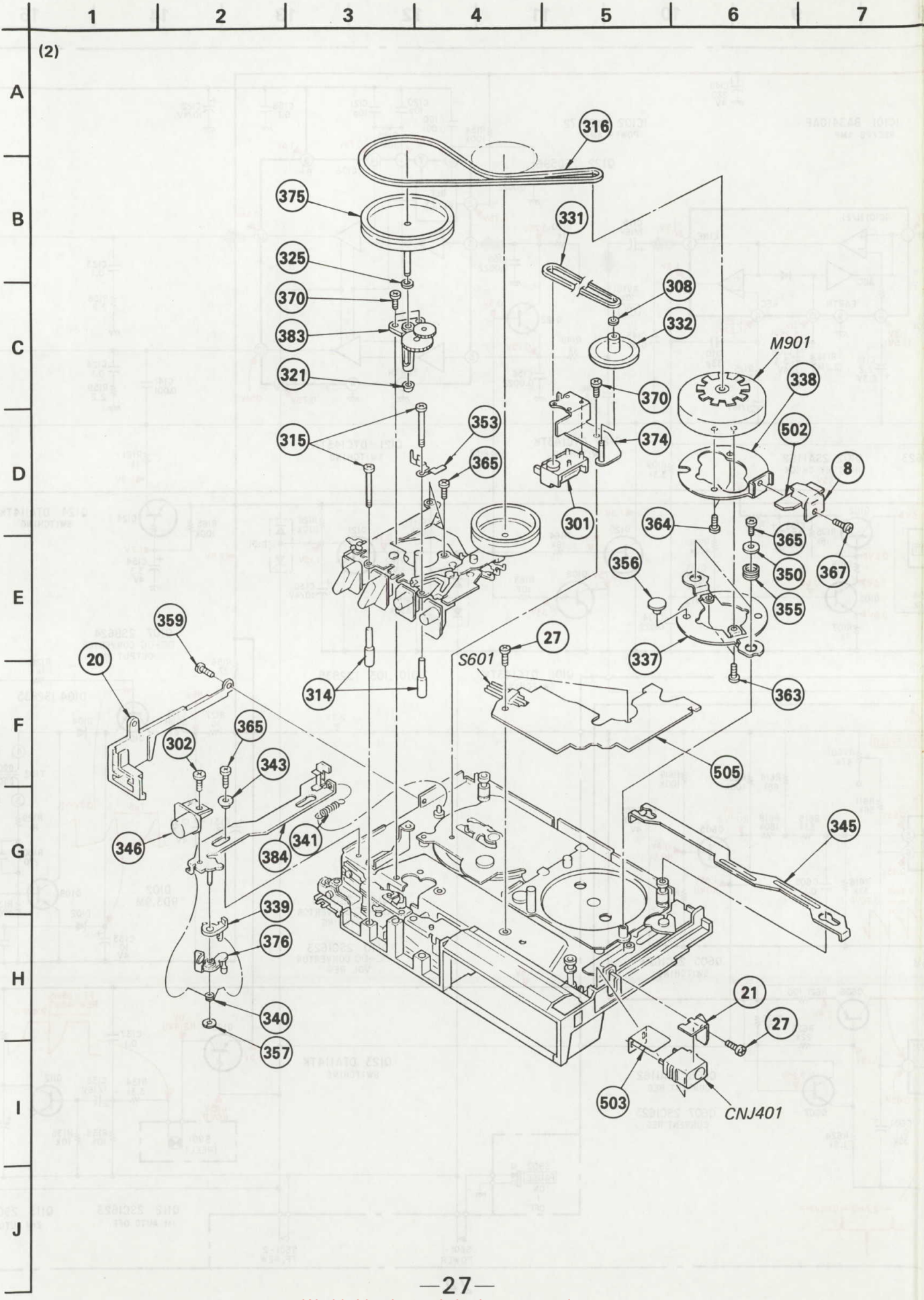
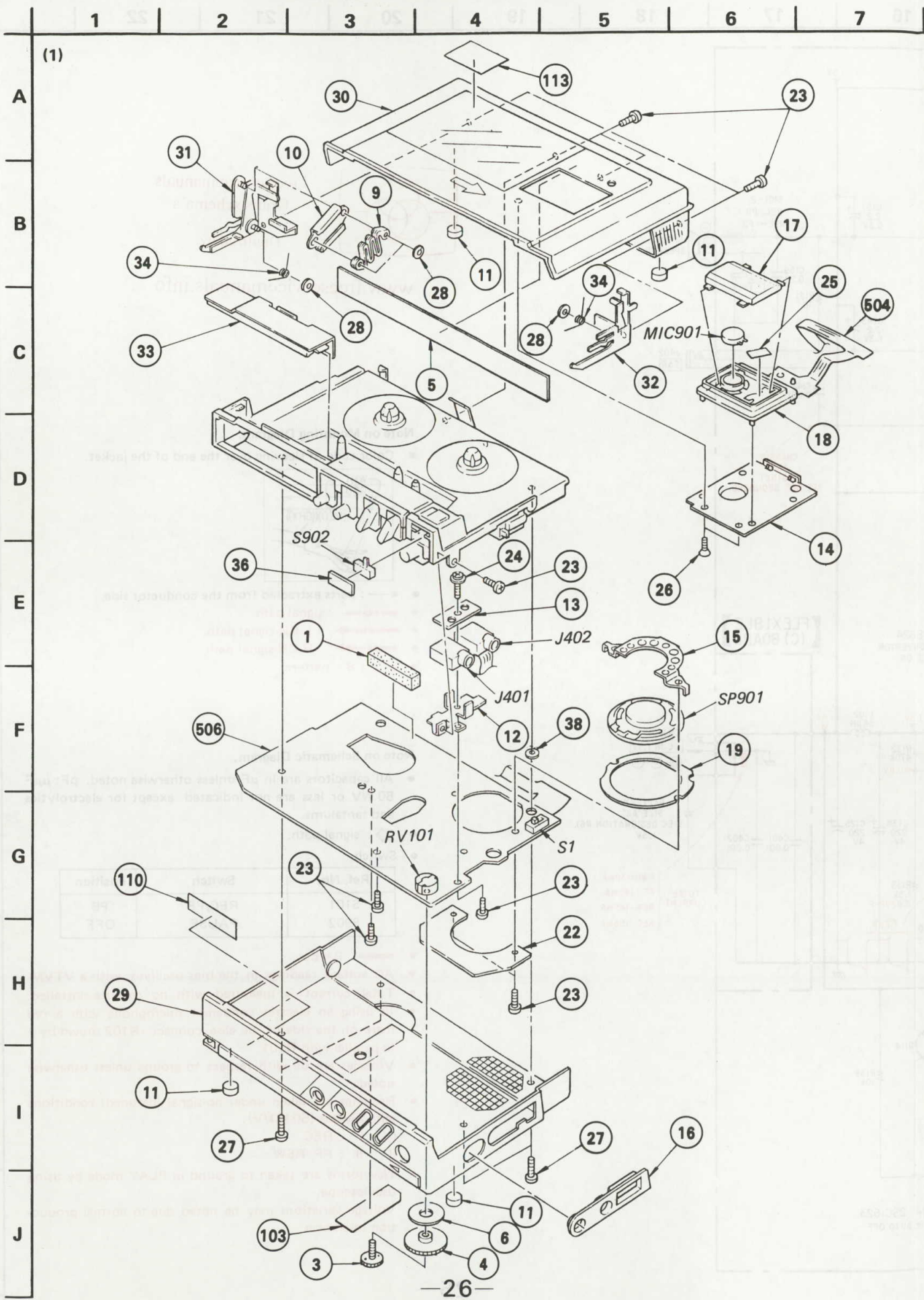


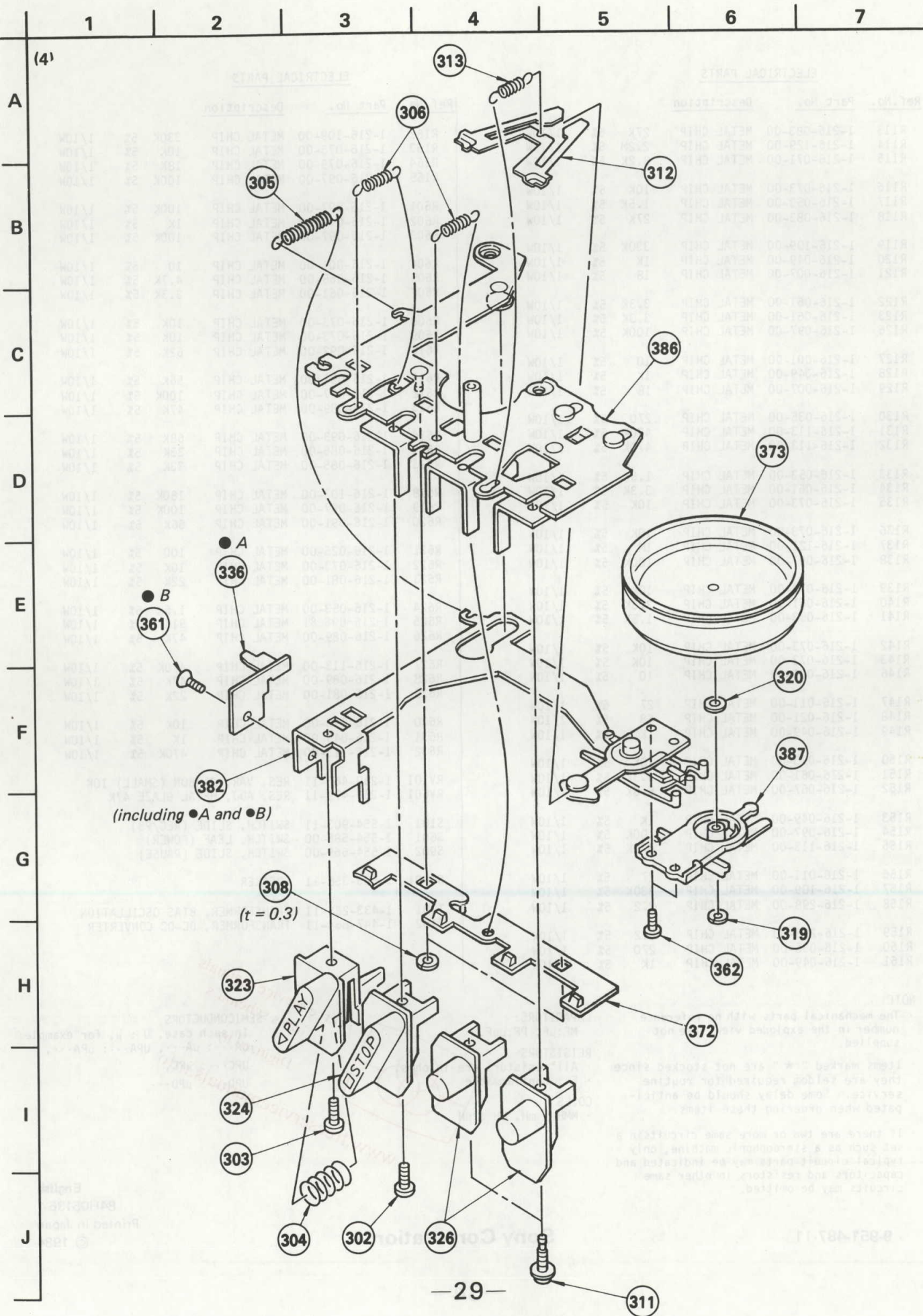


4-2. SCHEMATIC DIAGRAM



SECTION 5
EXPLODED VIEWS AND PARTS LIST





GENERAL SECTION		
No.	Part No.	Description
1	2-299-318-01	CUSHION
2	3-315-306-05	TERMINAL (A), BATTERY
3	3-315-308-00	SCREW, CONTROL
4	3-315-322-00	KNOB, CONTROL
5	3-315-466-00	SHEET, PANEL
6	3-315-467-00	WASHER, CONTROL
7	3-315-480-11	CLOTH, BATTERY DRAWING
8	*3-320-348-01	REFLECTOR
9	3-320-379-01	LEVER, S
10	3-320-406-01	GUARD (B), S
11	3-320-382-01	FOOT, RUBBER
12	*3-320-386-01	BRACKET (A), JACK
13	*3-320-387-01	BRACKET (B), JACK
14	3-320-390-01	COVER MIC
15	3-320-392-01	RETAINER, SPEAKER
16	3-320-393-01	(For SILVER)...ORNAMENT, JACK
16	3-320-393-11	(BLACK)...ORNAMENT, JACK
17	3-320-394-01	ORNAMENT, MICROPHONE
18	3-320-395-01	HOLDER, MICROPHONE
19	3-320-405-01	CUSHION, SPEAKER
20	3-320-413-01	ORNAMENT (B), REEL
21	3-320-421-01	RETAINER, JACK, D.C
22	3-320-422-01	REINFORCER, SPEAKER
23	3-703-816-01	(For SILVER)...SCREW (M1.4)
23	3-703-816-02	(For BLACK)...SCREW (M1.4)
24	3-703-925-01	SCREW (M1.4X7), O NUMBER PW
25	3-831-441-XX	CUSHION
26	7-627-451-08	SCREW, PRECISION +K 1.4X1.6
27	7-627-850-07	SCREW, PRECISION +P 1.4X2
28	9-910-999-34	WASHER, STOPPER
29	X-3320-330-1	(For SILVER)...PANEL BLOCK ASSY, CONTROL
29	X-3320-332-1	(For BLACK)...PANEL BLOCK ASSY, CONTROL
30	X-3320-331-1	(For BLACK)...PANEL BLOCK ASSY, CASSETTE
30	X-3320-333-1	(For SILVER)...PANEL BLOCK ASSY, CASSETTE
31	X-3320-326-1	SLIDER (L) ASSY
32	*X-3320-327-1	SLIDER (R) ASSY
33	X-3320-328-1	LID ASSY, BATTERY CASE
34	3-320-424-02	SPRING
35	3-317-704-01	SPRING
36	9-911-838-XX	CUSHION, METER
37	3-703-816-11	(For SILVER)...SCREW (M1.4X4)
37	3-703-816-12	(For BLACK)...SCREW (M1.4)
38	9-911-863-XX	SHEET, FIBER

NOTE:

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- 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

ACCESSORY & PACKING MATERIAL		
No.	Part No.	Description
101	1-504-090-11	EARPHONE (ME-L82)
102	1-528-052-00	BATTERY, ALKALINE MANGANIN (AM3)
103	3-320-418-01	(For SILVER)...LABEL, MODEL NUMBER
103	3-320-418-11	(For BLACK)...LABEL, MODEL NUMBER
104	3-320-429-01	CASE, CARRYING
105	3-320-433-01	INDIVIDUAL CARTON
106	3-320-435-01	SPACER
107	3-320-436-01	CUSHION
108	3-320-440-01	STRAP, HAND
109	3-320-443-01	BAG, PROTECTION
110	3-527-213-00	LABEL, SERIAL NUMBER
111	3-701-622-00	BAG, POLYETHYLENE
112	3-773-942-11	(AEP,UK,E)...MANUAL, INSTRUCTION
112	3-773-942-21	(US).....MANUAL, INSTRUCTION
112	3-773-942-31	(Canadian)...MANUAL, INSTRUCTION
113	3-703-710-01	STICKER, SONY SYMBOL

SEMICONDUCTORS
In each case, U : µ, for example:
UA... : µA..., UPA... : µPA...,
UPC... : µPC,
UPD... : µPD...

MECHANISM SECTION		
No.	Part No.	Description
301	1-548-583-11	COUNTER, TAPE (SMALL TYPE)
302	3-305-528-11	SCREW, STOPPER
303	3-305-528-21	SCREW, STOPPER
304	3-315-331-00	SPRING, COMPRESSION
305	3-315-341-00	SPRING, TENSION (POWER TENSION)
306	3-315-343-00	SPRING, TENSION (POWER TENSION)
307	3-315-357-00	SPRING
308	3-315-384-01	WASHER, STOPPER (t=0.13)
308	3-315-384-11	WASHER, STOPPER (t=0.25)
308	3-315-384-21	WASHER, STOPPER (t=0.20)
308	3-315-384-31	WASHER, STOPPER (t=0.3)
308	3-315-384-41	WASHER, STOPPER (t=0.35)
309	3-315-393-00	SHAFT, PINCH LEVER
310	3-315-394-00	SPRING
311	3-315-395-00	SCREW, BUTTON
312	3-315-396-00	LEVER (C), F.R
313	3-315-397-00	SPRING, TENSION (POWER TENSION)
314	3-315-399-00	COLLAR, BUTTON
315	3-315-404-00	SCREW
316	3-315-405-00	BELT
317	3-315-406-00	SPRING
318	3-315-412-00	CONTACT, OUTSERT
319	3-315-414-01	WASHER
319	3-315-414-11	WASHER
319	3-315-414-21	WASHER
320	3-315-415-00	WASHER (1.5-2.3)
320	3-315-416-00	WASHER
320	3-315-416-01	WASHER (t=0.1)
320	3-315-416-11	WASHER (t=0.25)
320	3-315-416-21	WASHER (t=0.18)
321	3-315-417-00	BUSHING, CAPSTAN
322	3-315-430-00	REEL GEAR, S
323	3-315-432-00	BUTTON, PLAY
324	3-315-435-00	BUTTON, STOP
325	3-315-495-01	WASHER
325	3-315-495-11	WASHER
325	3-315-495-21	WASHER
325	3-315-495-31	WASHER
326	3-317-512-11	BUTTON, FF
327	3-317-701-01	WASHER
327	3-317-701-11	WASHER
328	3-317-702-01	SPACER (D)
329	3-320-338-01	RETAINER, PAUSE KNOB
330	3-320-339-01	LABEL, PAUSE
331	3-320-340-01	BELT, COUNTER
332	3-320-341-01	GEAR, MIDWAY
333	3-320-342-01	SHAFT, TAPE GUIDE

NOTE:

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CAPACITORS:
MF:µF, PF:µµF.

RESISTORS
All resistors are in ohms.
F : nonflammable

COILS
MMH : mH, UH : µH

MECHANISM SECTION		
No.	Part No.	Description
334	3-320-343-01	JOINT (A), E HEAD
335	3-320-344-01	JOINT (B), E HEAD
336	3-320-345-01	PLATE, LOCK, REC
337	*3-320-346-01	BRACKET, MOTOR
338	*3-320-347-01	BRACKET, FG
339	3-320-349-01	CLAW, REC LOCK
340	3-320-350-01	SPRING
341	3-320-351-01	SPRING, TENSION
342	3-320-352-01	SPRING, COMPRESSION
344	3-320-355-01	SPACER, REC LEVER
344	3-320-356-01	SHAFT, JOINT
345	3-320-367-01	JOINT
346	3-320-369-01	BUTTON, REC
347	3-320-370-01	KNOB, PAUSE
348	*3-320-410-01	CHASSIS, HEAD
349	3-320-411-01	CLAMP, LEAD
350	3-320-412-01	WASHER (1.4), SPECIAL
351	3-320-414-01	ORNAMENT (A), REEL
352	3-320-419-01	SPRING
353	3-320-420-01	STOPPER, FR LEVER (C)
354	*3-320-442-01	SHAFT, PC BOARD
355	3-570-770-00	CUSHION (A), MOTOR
356	3-570-771-00	CUSHION (B), MOTOR
357	3-578-224-11	WASHER
358	3-701-438-01	WASHER
358	3-701-438-11	WASHER, 2.5
359	3-703-816-01	SCREW (M1.4)
360	7-627-451-28	SCREW, PRECISION +K 1.4X3
361	7-627-451-37	SCREW, PRECISION +K 1.4X2
362	7-627-551-47	SCREW, PRECISION +P 1.4X1.4
363	7-627-552-07	SCREW, PRECISION +P 1.7X2.5
364	7-627-552-18	SCREW, PRECISION +P 1.7X1.6
365	7-627-850-07	SCREW, PRECISION +P 1.4X2
366	7-627-850-37	SCREW, PRECISION +P 1.4X1.4
367	7-627-850-47	SCREW, PRECISION +P 1.4X1.6
368	7-627-850-48	+P 1.4X1.6
369	7-627-850-77	SCREW, PRECISION +P 1.4X1.8
370	7-627-850-78	PRECISION SCREW +P 1.4X1.8
371	9-911-838-XX	CUSHION
372	X-3315-304-1	PLATE ASSY, LOCK
373	X-3320-304-1	WHEEL ASSY, REVERSE
374	X-3320-307-1	BRACKET ASSY, COUNTER
375	X-3320-308-1	FLYWHEEL ASSY
376	X-3320-309-1	ARM ASSY, JOINT, E HEAD

SEMICONDUCTORS
In each case, U : µ, for example:
UA... : µA..., UPA... : µPA...,
UPC... : µPC,
UPD... : µPD...

MECHANISM SECTION

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

ELECTRICAL PARTS

No.	Part No.	Description
377	X-3320-310-1	GUIDE ASSY, TAPE
378	X-3320-311-1	PINCH LEVER ASSY
379	X-3320-312-1	CHASSIS ASSY, TAKE-UP REEL
380	X-3320-313-1	GEAR ASSY, TAKE-UP REEL
381	X-3320-315-1	CHASSIS ASSY, MOTOR
382	X-3320-316-1	LEVER ASSY, PLAY
383	X-3320-317-1	SLEEVE COMP ASSY
384	X-3320-318-1	LEVER ASSY, REC
385	X-3320-319-1	CHASSIS ASSY, REEL
386	X-3320-320-1	PLATE ASSY, CONTROL
387	X-3320-329-1	LEVER (B) ASSY, FR
388	7-627-551-27	SCREW, PRECISION +P 1.4X2.5

Ref.No.	Part No.	Description
501	1-612-596-11	PC BOARD, FLEXIBLE (A)
502	1-612-597-11	PC BOARD, PHOTO REFLECTOR
503	1-613-241-11	PC BOARD, FLEXIBLE (C)
504	X-3320-335-1	PC BOARD (B) ASSY, FLEXIBLE
505	A-3065-046-A	MOUNTED PCB, SERVO
506	*A-3070-128-A	MOUNTED PCB, AUDIO
C101	1-124-413-00	ELECT 220MF 20% 4V
C102	1-124-220-00	ELECT 33MF 20% 4V
C103	1-135-072-21	TANTAL. CHIP 0.22MF 20% 35V
C104	1-163-033-00	CERAMIC CHIP 0.022MF 10% 25V
C105	1-163-033-00	CERAMIC CHIP 0.022MF 10% 25V
C107	1-135-091-00	TANTAL. CHIP 1MF 20% 16V
C108	1-135-103-00	TANTAL. CHIP 3.3MF 20% 4V
C109	1-135-083-00	TANTAL. CHIP 0.47MF 20% 25V
C110	1-163-105-00	CERAMIC CHIP 33PF 5% 50V
C111	1-135-091-00	TANTAL. CHIP 1MF 20% 16V
C112	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C113	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V
C114	1-135-104-00	TANTAL. CHIP 10MF 20% 4V
C115	1-135-091-00	TANTAL. CHIP 1MF 20% 16V
C116	1-135-099-00	TANTAL. CHIP 2.2MF 20% 6.3V
C117	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C118	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V
C119	1-124-413-00	ELECT 220MF 20% 4V
C120	1-163-093-00	CERAMIC CHIP 10PF 5% 50V
C121	1-163-093-00	CERAMIC CHIP 10PF 5% 50V
C122	1-135-104-00	TANTAL. CHIP 10MF 20% 4V
C123	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C124	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C125	1-124-413-00	ELECT 220MF 20% 4V
C126	1-163-053-00	CERAMIC CHIP 0.0033MF 10% 50V
C127	1-163-022-00	CERAMIC CHIP 0.012MF 10% 50V
C128	1-163-053-00	CERAMIC CHIP 0.0033MF 10% 50V
C129	1-124-413-00	ELECT 220MF 20% 4V
C130	1-135-104-00	TANTAL. CHIP 10MF 20% 4V
C131	1-124-220-00	ELECT 33MF 20% 4V
C132	1-135-103-00	TANTAL. CHIP 3.3MF 20% 4V
C133	1-135-104-00	TANTAL. CHIP 10MF 20% 4V
C134	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C135	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V
C136	1-124-413-00	ELECT 220MF 20% 4V
C137	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C138	1-135-091-00	TANTAL. CHIP 1MF 20% 16V
C139	1-135-103-00	TANTAL. CHIP 3.3MF 20% 4V
C140	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V

Ref.No.	Part No.	Description
C141	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C142	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C143	1-135-099-00	TANTAL. CHIP 2.2MF 20% 6.3V
C144	1-135-070-00	TANTAL. CHIP 0.1MF 20% 35V
C145	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C146	1-135-103-00	TANTAL. CHIP 3.3MF 20% 4V
C147	1-163-810-00	CERAMIC CHIP 0.03MF 10% 25V
C148	1-124-413-00	ELECT 220MF 20% 4V
C149	1-124-413-00	ELECT 220MF 20% 4V
C151	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C152	1-163-013-00	CERAMIC CHIP 0.0012MF 10% 50V
C153	1-124-220-00	ELECT 33MF 20% 4V
C154	1-135-103-00	TANTAL. CHIP 3.3MF 20% 4V
C155	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V
C156	1-163-013-00	CERAMIC CHIP 0.0022MF 10% 50V
C157	1-135-099-00	TANTAL. CHIP 2.2MF 20% 6.3V
C158	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C159	1-163-081-00	CERAMIC CHIP 0.22MF 25V
C160	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C601	1-124-413-00	ELECT 220MF 20% 4V
C602	1-135-103-00	TANTAL. CHIP 3.3MF 20% 4V
C603	1-135-104-00	TANTAL. CHIP 10MF 20% 4V
C604	1-135-070-00	TANTAL. CHIP 0.1MF 10% 35V
C605	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C606	1-163-017-00	CERAMIC CHIP 0.0047MF 10% 50V
C607	1-163-117-00	CERAMIC CHIP 100PF 5% 50V
CNJ401	1-507-894-00	JACK, EXTERNAL POWER
D101	8-719-100-03	DIODE 1S2835
D102	8-719-105-58	DIODE RD3.9M-B2
D103	8-719-100-93	DIODE 1S2835
D104	8-719-100-03	DIODE 1S2835
D401	8-719-912-24	DIODE GL-1PR1
D601	8-719-908-30	DIODE DA106K
HE	8-825-581-10	HEAD, E
HRP	8-829-375-30	HEAD, RP (PP183-62C)
IC101	8-759-910-97	IC BA3410AF
IC102	8-759-017-21	IC CX-20172
IC601	8-759-700-07	IC NJM2903M
J401	1-507-921-00	JACK (MIC)
J402	1-507-921-00	JACK (EAR)
JR1-10	1-216-295-00	METAL CHIP 0 5% 1/10W
JR11-28	1-216-296-00	METAL CHIP 0 5% 1/8W
L101	1-408-946-00	INDUCTOR CHIP 56UH
L102	1-408-946-00	INDUCTOR CHIP 56UH

Ref.No.	Part No.	Description
M901	X-3320-334-1	DC MOTOR (MNR-7200A) ASSY
MIC901	8-814-184-00	MICROPHONE UNIT (C-1011)
PH601	8-719-913-55	DIODE GP2S04-B
Q101	8-729-271-22	TRANSISTOR 2SC2712G
Q102	8-729-104-90	TRANSISTOR 2SA812-M6
Q103	8-729-271-22	TRANSISTOR 2SC2712G
Q104	8-729-162-45	TRANSISTOR 2SB624-BV5
Q105	8-729-900-51	TRANSISTOR DTA114TK
Q106	8-729-159-64	TRANSISTOR 2SD596-DV4
Q107	8-729-162-45	TRANSISTOR 2SB624-BV5
Q108	8-729-900-98	TRANSISTOR DTC143TK
Q109	8-729-800-36	TRANSISTOR 2SD1048X6
Q110	8-729-271-22	TRANSISTOR 2SC2712G
Q111	8-729-162-45	TRANSISTOR 2SB624-BV5
Q112	8-729-271-22	TRANSISTOR 2SC2712G
Q113	8-729-271-22	TRANSISTOR 2SC2712G
Q114	8-729-271-22	TRANSISTOR 2SC2712G
Q115	8-729-800-36	TRANSISTOR 2SD1048X6
Q116	8-729-800-36	TRANSISTOR 2SD1048X6
Q117	8-729-104-90	TRANSISTOR 2SA812-M6
Q118	8-729-900-51	TRANSISTOR DTA114TK
Q119	8-729-900-98	TRANSISTOR DTC143TK
Q120	8-729-900-98	TRANSISTOR DTC143TK
Q121	8-729-900-98	TRANSISTOR DTC143TK
Q122	8-729-800-36	TRANSISTOR 2SD1048X6
Q123	8-729-900-51	TRANSISTOR DTA114TK
Q601	8-729-101-07	TRANSISTOR 2SB798-DL
Q602	8-729-104-90	TRANSISTOR 2SA812-M6
Q604	8-729-271-22	TRANSISTOR 2SC2712G
Q605	8-729-271-22	TRANSISTOR 2SC2712G
Q606	8-729-104-90	TRANSISTOR 2SA812-M6
Q607	8-729-271-22	TRANSISTOR 2SC2712G
Q608	8-729-271-22	TRANSISTOR 2SC2712G
R101	1-216-049-00	METAL CHIP 1K 5% 1/10W
R102	1-216-053-00	METAL CHIP 1.5K 5% 1/10W
R103	1-216-033-00	METAL CHIP 220 5% 1/10W
R104	1-216-067-00	METAL CHIP 5.6K 5% 1/10W
R105	1-216-079-00	METAL CHIP 18K 5% 1/10W
R106	1-216-083-00	METAL CHIP 27K 5% 1/10W
R107	1-216-049-00	METAL CHIP 1K 5% 1/10W
R108	1-216-113-00	METAL CHIP 470K 5% 1/10W
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R110	1-216-033-00	METAL CHIP 220 5% 1/10W
R111	1-216-053-00	METAL CHIP 1.5K 5% 1/10W
R112	1-216-067-00	METAL CHIP 5.6K 5% 1/10W

Ref.No.	Part No.	Description
R113	1-216-083-00	METAL CHIP 27K 5% 1/10W
R114	1-216-129-00	METAL CHIP 2.2M 5% 1/10W
R115	1-216-071-00	METAL CHIP 8.2K 5% 1/10W
R116	1-216-073-00	METAL CHIP 10K 5% 1/10W
R117	1-216-053-00	METAL CHIP 1.5K 5% 1/10W
R118	1-216-083-00	METAL CHIP 27K 5% 1/10W
R119	1-216-109-00	METAL CHIP 330K 5% 1/10W
R120	1-216-049-00	METAL CHIP 1K 5% 1/10W
R121	1-216-007-00	METAL CHIP 18 5% 1/10W
R122	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R123	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R126	1-216-097-00	METAL CHIP 100K 5% 1/10W
R127	1-216-001-00	METAL CHIP 10 5% 1/10W
R128	1-216-049-00	METAL CHIP 1K 5% 1/10W
R129	1-216-007-00	METAL CHIP 18 5% 1/10W
R130	1-216-035-00	METAL CHIP 270 5% 1/10W
R131	1-216-113-00	METAL CHIP 470K 5% 1/10W
R132	1-216-113-00	METAL CHIP 470K 5% 1/10W
R133	1-216-053-00	METAL CHIP 1.5K 5% 1/10W
R134	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R135	1-216-073-00	METAL CHIP 10K 5% 1/10W
R136	1-216-073-00	METAL CHIP 10K 5% 1/10W
R137	1-216-121-00	METAL CHIP 1M 5% 1/10W
R138	1-216-097-00	METAL CHIP 100K 5% 1/10W
R139	1-216-073-00	METAL CHIP 10K 5% 1/10W
R140	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R141	1-216-053-00	METAL CHIP 1.5K 5% 1/10W
R142	1-216-073-00	METAL CHIP 10K 5% 1/10W
R143	1-216-073-00	METAL CHIP 10K 5% 1/10W
R146	1-216-001-00	METAL CHIP 10 5% 1/10W
R147	1-216-011-00	METAL CHIP 27 5% 1/10W
R148	1-216-021-00	METAL CHIP 68 5% 1/10W
R149	1-216-049-00	METAL CHIP 1K 5% 1/10W
R150	1-216-073-00	METAL CHIP 10K 5% 1/10W
R151	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R152	1-216-067-00	METAL CHIP 5.6K 5% 1/10W
R153	1-216-049-00	METAL CHIP 1K 5% 1/10W
R154	1-216-097-00	METAL CHIP 100K 5% 1/10W
R155	1-216-113-00	METAL CHIP 470K 5% 1/10W
R156	1-216-011-00	METAL CHIP 27 5% 1/10W
R157	1-216-109-00	METAL CHIP 330K 5% 1/10W
R158	1-216-298-00	METAL CHIP 2.2 5% 1/10W
R159	1-216-298-00	METAL CHIP 2.2 5% 1/10W
R160	1-216-035-00	METAL CHIP 270 5% 1/10W
R161	1-216-049-00	METAL CHIP 1K 5% 1/10W

Ref.No.	Part No.	Description
R162	1-216-109-00	METAL CHIP 330K 5% 1/10W
R163	1-216-073-00	METAL CHIP 10K 5% 1/10W
R164	1-216-079-00	METAL CHIP 18K 5% 1/10W
R165	1-216-097-00	METAL CHIP 100K 5% 1/10W
R601	1-216-097-00	METAL CHIP 100K 5% 1/10W
R602	1-216-049-00	METAL CHIP 1K 5% 1/10W
R603	1-216-097-00	METAL CHIP 100K 5% 1/10W
R604	1-216-001-00	METAL CHIP 10 5% 1/10W
R605	1-216-065-00	METAL CHIP 4.7K 5% 1/10W
R607	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R608	1-216-073-00	METAL CHIP 10K 5% 1/10W
R609	1-216-073-00	METAL CHIP 10K 5% 1/10W
R610	1-216-092-00	METAL CHIP 62K 5% 1/10W
R611	1-216-091-00	METAL CHIP 56K 5% 1/10W
R612	1-216-097-00	METAL CHIP 100K 5% 1/10W
R613	1-216-089-00	METAL CHIP 47K 5% 1/10W
R614	1-216-093-00	METAL CHIP 68K 5% 1/10W
R615	1-216-085-00	METAL CHIP 33K 5% 1/10W
R616	1-216-085-00	METAL CHIP 33K 5% 1/10W
R618	1-216-103-00	METAL CHIP 180K 5% 1/10W
R619	1-216-097-00	METAL CHIP 100K 5% 1/10W
R620	1-216-091-00	METAL CHIP 56K 5% 1/10W
R621	1-216-025-00	METAL CHIP 100 5% 1/10W
R622	1-216-073-00	METAL CHIP 10K 5% 1/10W
R623	1-216-081-00	METAL CHIP 22K 5% 1/10W
R624	1-216-053-00	METAL CHIP 1.5K 5% 1/10W
R625	1-216-096-81	METAL CHIP 91K 5% 1/10W
R626	1-216-089-00	METAL CHIP 47K 5% 1/10W
R627	1-216-113-00	METAL CHIP 470K 5% 1/10W
R628	1-216-089-00	METAL CHIP 47K 5% 1/10W
R629	1-216-081-00	METAL CHIP 22K 5% 1/10W
R630	1-216-073-00	METAL CHIP 10K 5% 1/10W
R631	1-216-049-00	METAL CHIP 1K 5% 1/10W
R632	1-216-113-00	METAL CHIP 470K 5% 1/10W
RV101	1-230-466-11	RES, VAR, CARBON (SMALL) 10K
RV601	1-230-479-11	RES, ADJ, METAL GLAZE 47K
S101	1-554-903-11	SWITCH, SLIDE (REC/PB)
S601	1-554-586-00	SWITCH, LEAF (POWER)
S902	1-554-669-00	SWITCH, SLIDE (PAUSE)
SP901	1-503-356-11	SPEAKER
T101	1-433-286-11	TRANSFORMER, BIAS OSCILLATION
T102	1-447-864-11	TRANSFORMER, DC-DC CONVERTER

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.
- 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...