

# WM-F65

## SERVICE MANUAL

*US Model  
Canadian Model  
AEP Model  
E Model*



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RECORDING  
**WALKMAN**

### SPECIFICATIONS

Tape Transport Mechanism Type	MF-WMF65-25
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#### Radio section

Frequency range FM: 87.6–108 MHz  
AM: 530–1,605 kHz

Antenna FM: Headphone cord antenna  
AM: Built-in ferrite bar antenna

#### Tape recorder section and general

Tape track 4-track 2-channel stereo

Fast winding time Approx. 2 min. 30 sec. with Sony C-60 cassette

Frequency response (DOLBY NR OFF)  
40–15,000 Hz (with the PB EQ selector set to METAL/CrO<sub>2</sub>)  
40–15,000 Hz (with the PB EQ selector set to NORM)

Input External microphone input (stereo minijack) (PLUG IN POWER)  
sensitivity 0.2 mV (–72 dB) for low impedance microphone

Output Headphones (stereo minijack)  
load impedance 8–200 ohms

Power output 8 mW + 8 mW  
(at 10 % harmonic distortion) at dc operation

Power requirements 3 V dc  
Two size AA batteries (IEC designation R6)  
DC IN 3 V jack accepts:  
optional Sony AC-D2 ac power adaptor for use on (US, Canadian) . . . 120 V ac, 60 Hz (AEP) . . . 220 V ac, 50 Hz (E) . . . 110, 120 or 220 V ac, 50/60 Hz  
optional Sony EBP-500 battery case for use on two size D batteries (IEC designation R20 batteries)  
optional Sony DCC-70 car battery cord for use with 12 V car battery

#### Battery life

Batteries	FM reception	Tape playback	FM recording (headphones)	Recording (microphone)
Sony SUM-3(NS) New Super batteries	Approx. 19	Approx. 6	Approx. 4	Approx. 4
Sony Eveready AM3 alkaline batteries	Approx. 38	Approx. 12	Approx. 8	Approx. 8

(hours)

For maximum performance we recommend the use of alkaline batteries.

#### Dimensions

Approx. 108.9 x 84.5 x 30.4 mm (w/h/d)  
(4<sup>3</sup>/<sub>8</sub> x 3<sup>3</sup>/<sub>8</sub> x 1<sup>1</sup>/<sub>4</sub> inches)  
not incl. projecting parts and controls  
Approx. 110.3 x 88 x 32 mm (w/h/d)  
(4<sup>3</sup>/<sub>8</sub> x 3<sup>1</sup>/<sub>2</sub> x 1<sup>5</sup>/<sub>16</sub> inches)

#### Weight

Incl. projecting parts and controls  
Approx. 260 g (9.2 oz)  
Incl. batteries not incl. other accessories



FM/AM STEREO CASSETTE RECORDER  
**SONY**®

SERVICING NOTE

**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.

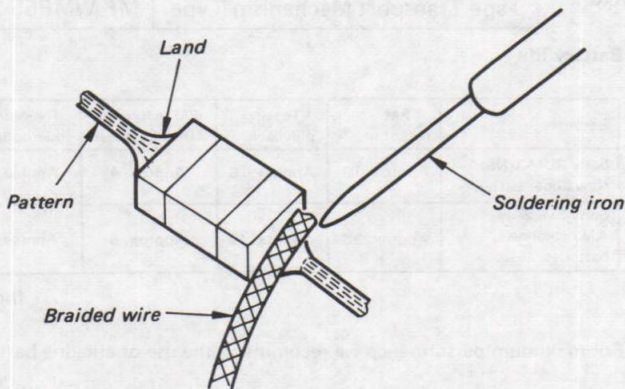
**Precautions for replacement**

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**

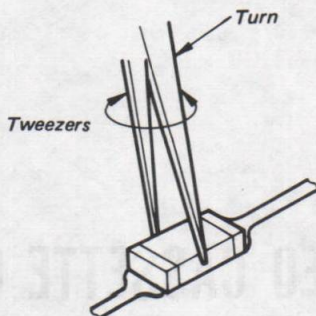
(1) **Removing solder at electrode**

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.

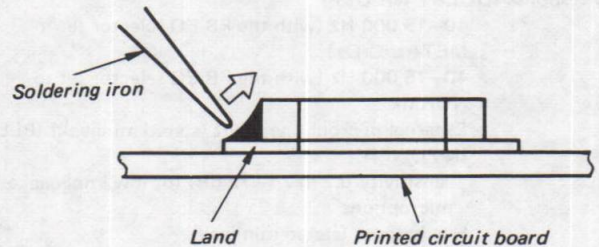
(1) **Applying solder to land on one side**

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**

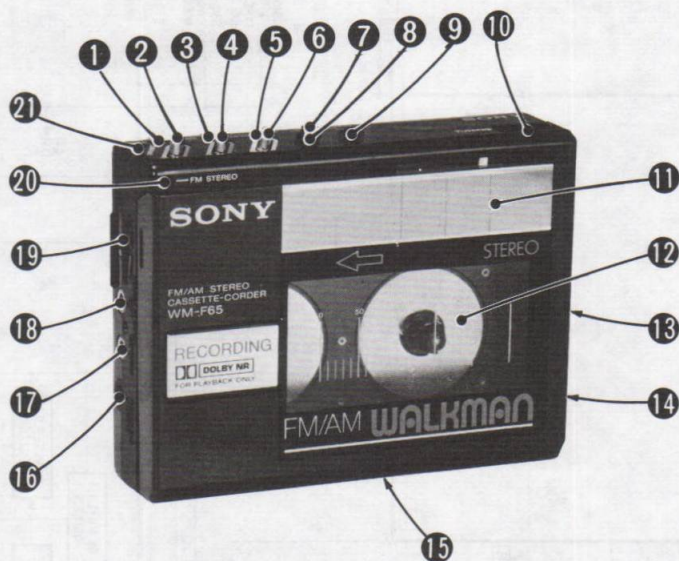
Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) **Speedy soldering of electrode on the other side**

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

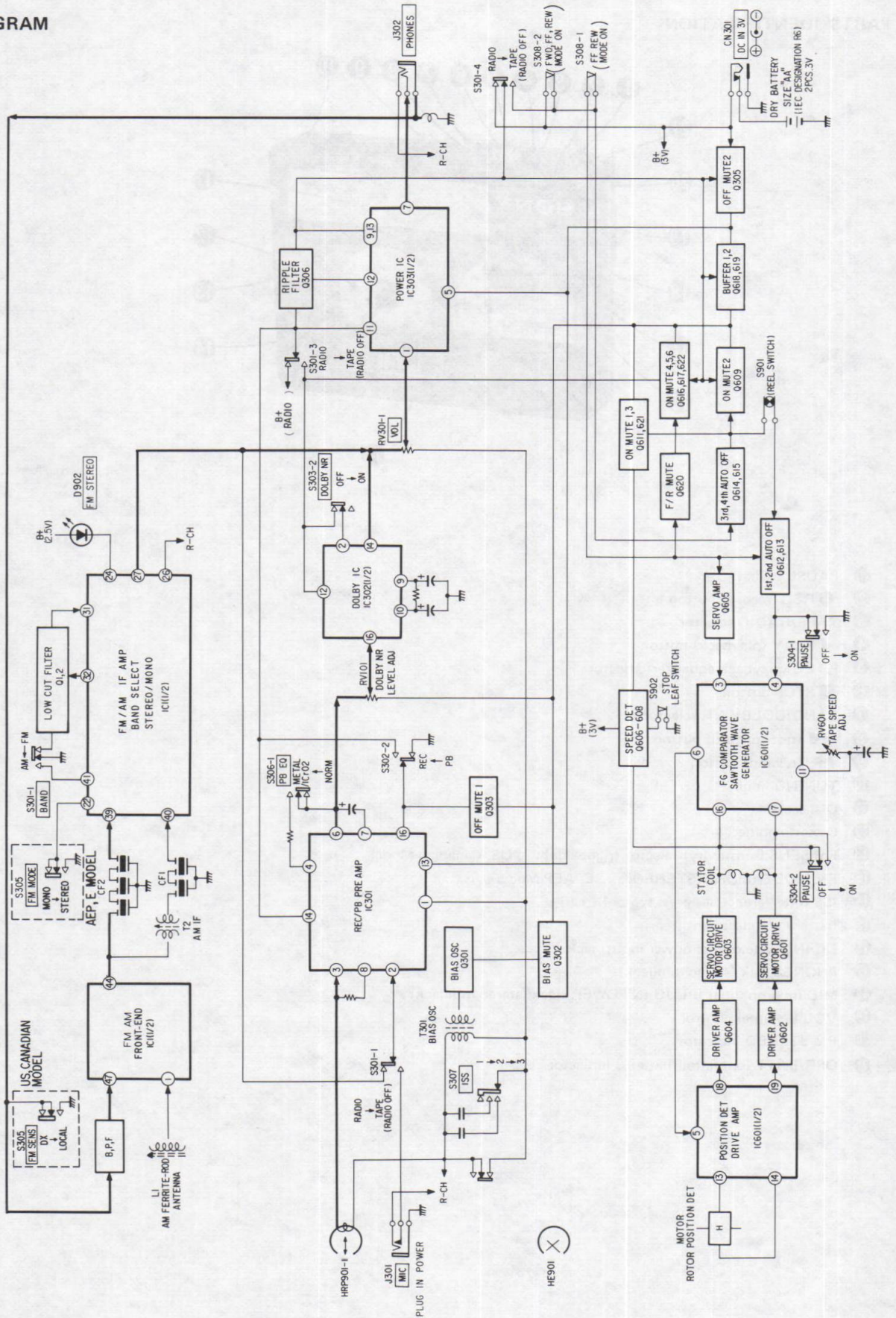
## PARTS IDENTIFICATION



- ① PAUSE switch
- ② ● REC (record) button
- ③ TAPE/RADIO selector
- ④ ◀ PLAY (playback) button
- ⑤ PB EQ (playback equalizer) selector
- ⑥ ■ STOP button
- ⑦ BAND/DOLBY NR selector
- ⑧ ◀◀ (fast-forward) button
- ⑨ ▶▶ (rewind) button
- ⑩ TUNING knob
- ⑪ Dial scale
- ⑫ Cassette holder
- ⑬ FM SENS (sensitivity) selector (right side) . . . US, Canadian Model
- ⑬ FM MODE (MONO/STEREO) . . . E, AEP Model
- ⑭ ISS (interference suppress switch) (rear)
- ⑮ Battery compartment (rear)
- ⑯ DC IN 3 V (external power input) jack
- ⑰ PHONES jack (stereo minijack)
- ⑱ MIC (microphone) (PLUG IN POWER) jack (stereo minijack)
- ⑲ VOL (volume) control
- ⑳ FM STEREO indicator
- ㉑ OPR/BATT (operation/battery) indicator

# SECTION 1 BLOCK DIAGRAM

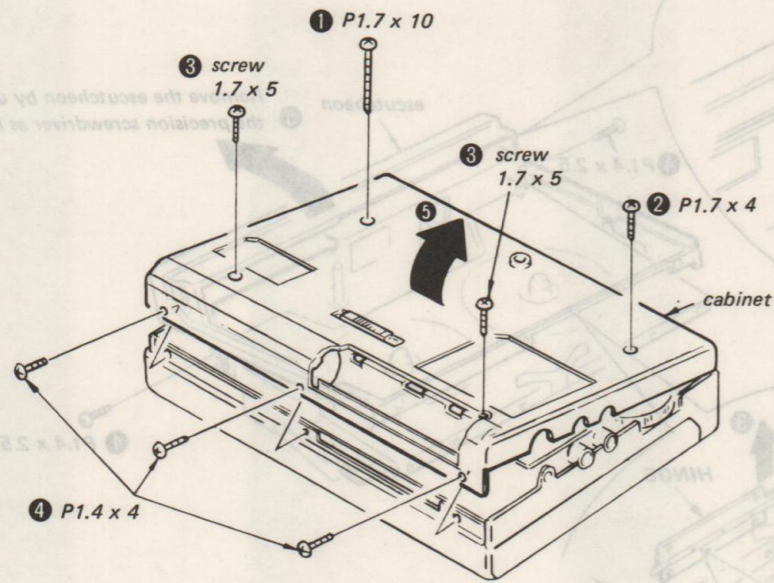
## BLOCK DIAGRAM



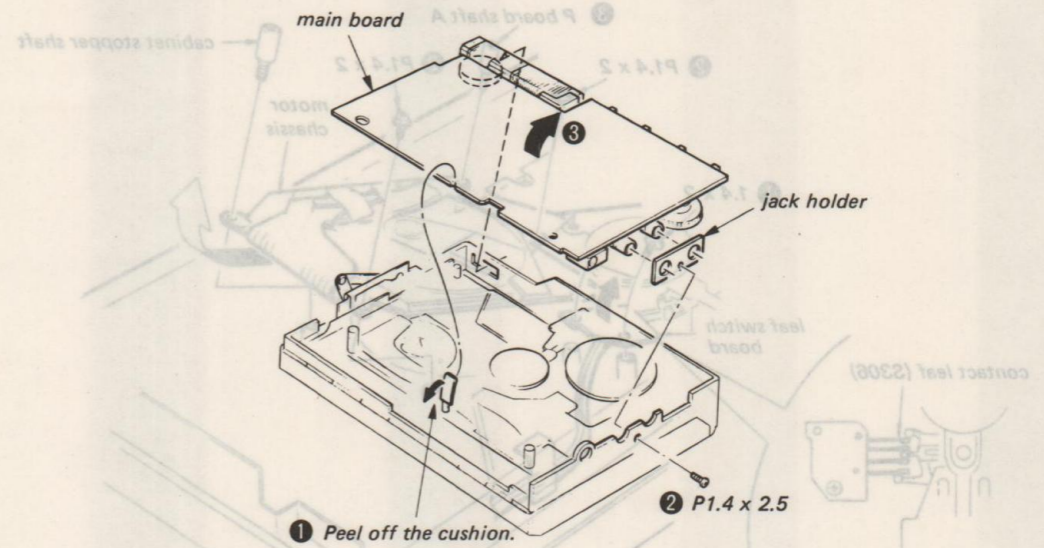
### SECTION 2 DISASSEMBLY

• Follow the disassembly procedure in the numerical order given.

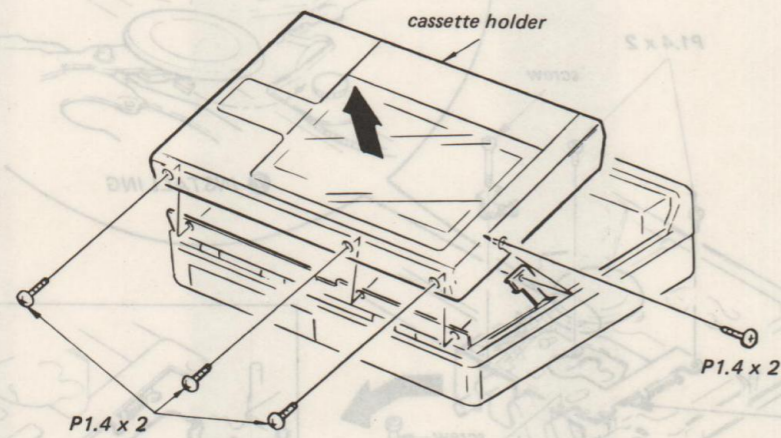
#### CABINET REMOVAL



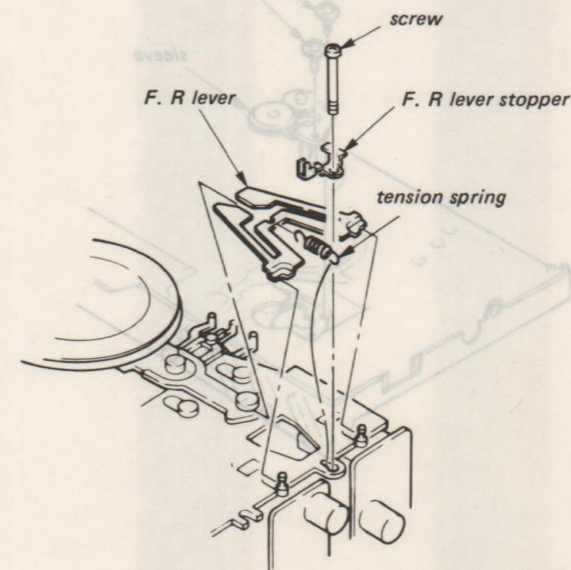
#### MAIN BOARD REMOVAL



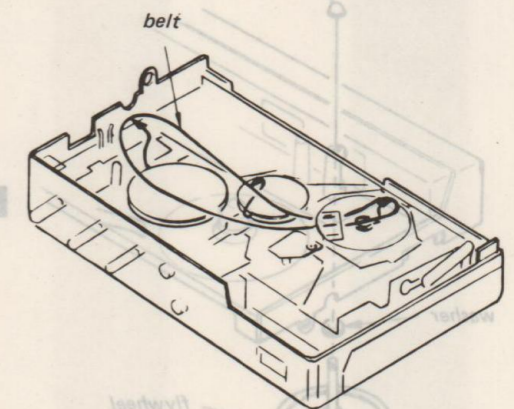
#### CASSETTE HOLDER REMOVAL



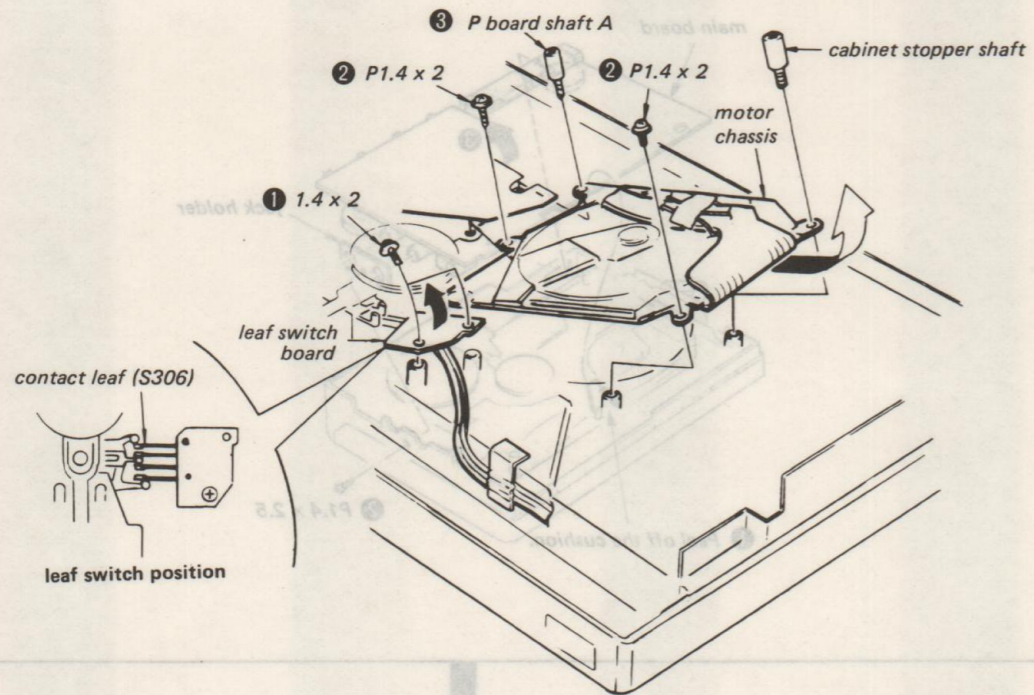
#### F. R LEVER REMOVAL



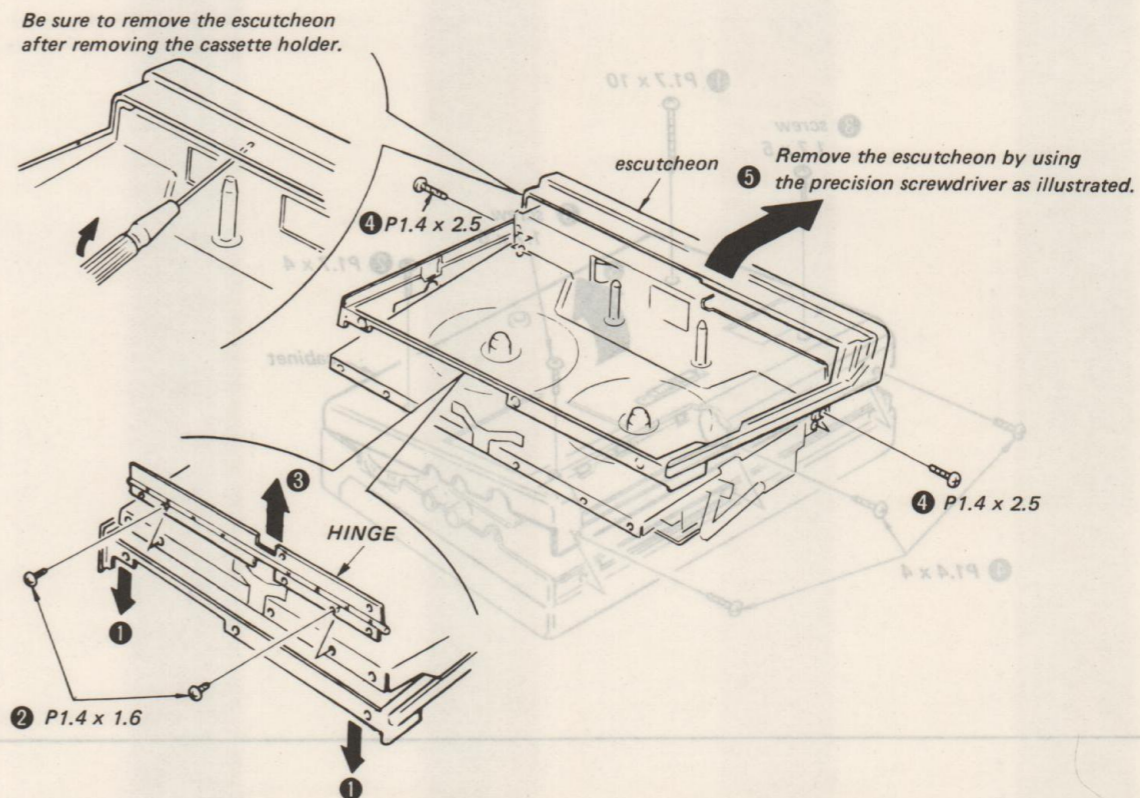
#### BELT REMOVAL



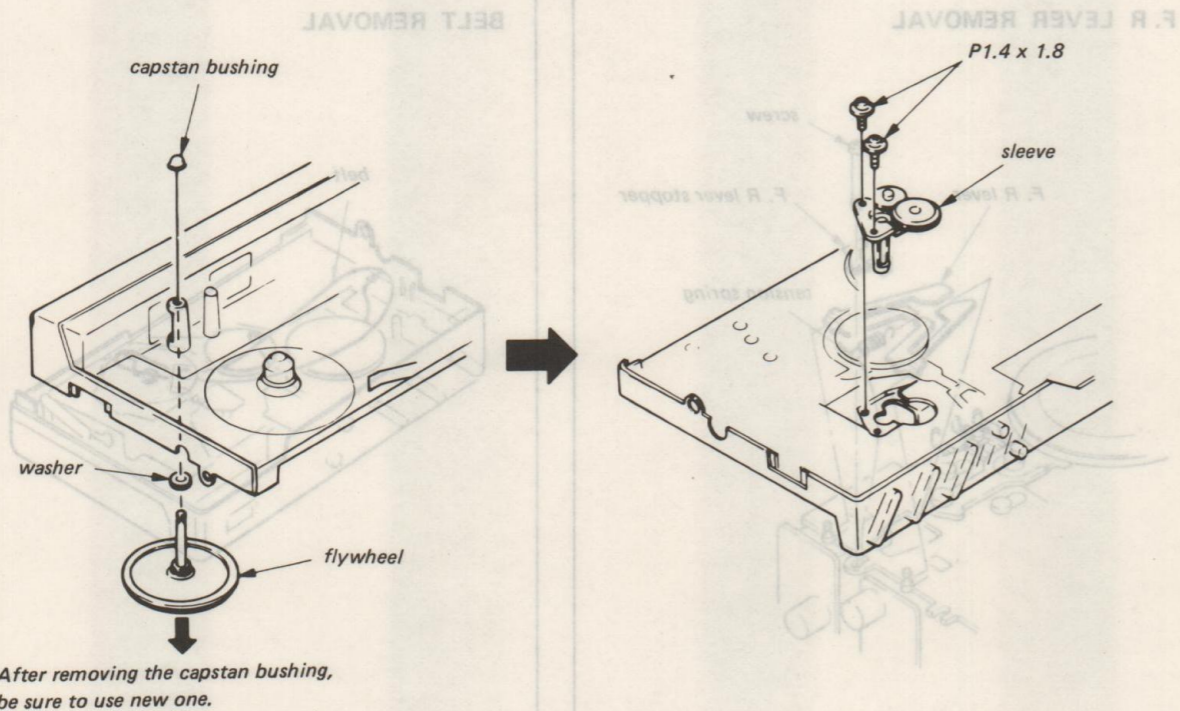
LEAF SW BOARD/MOTOR CHASSIS REMOVAL



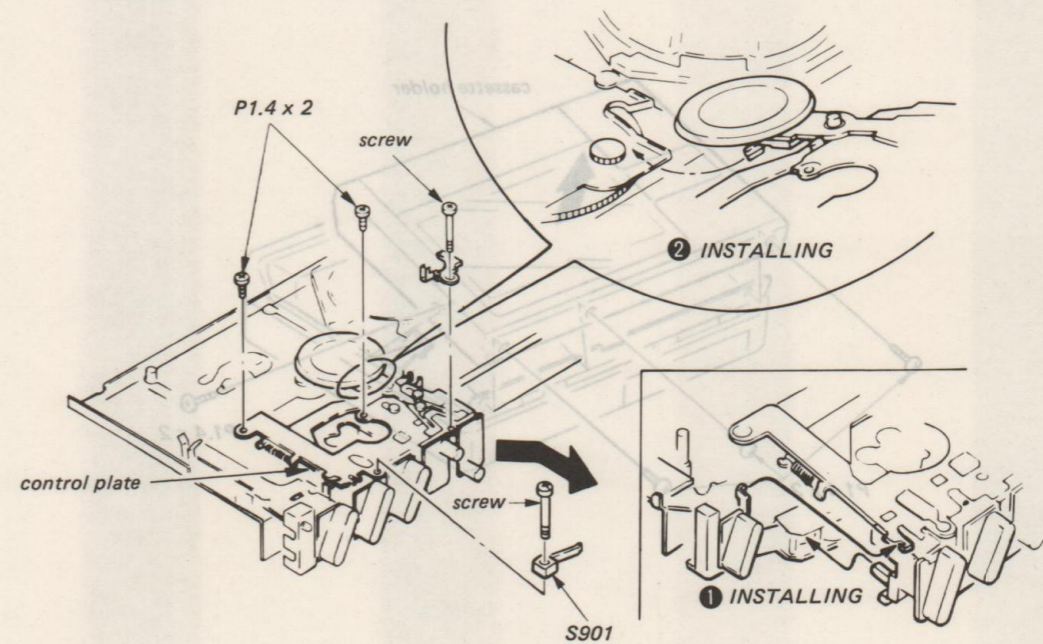
ESCUTCHEON REMOVAL



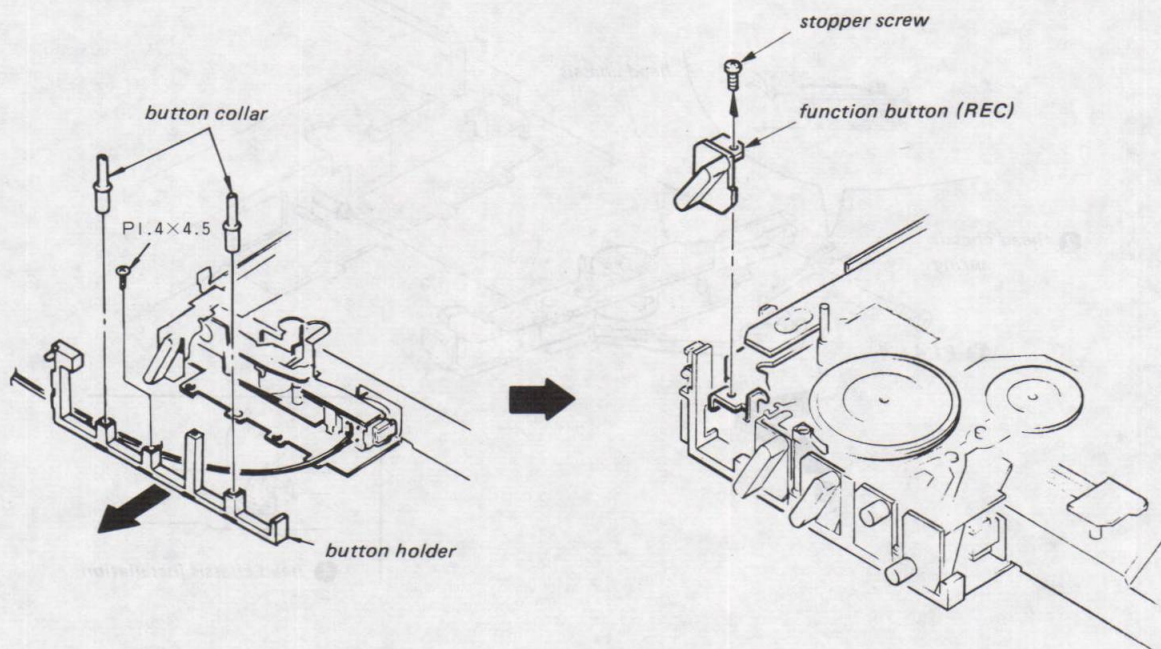
FLYWHEEL/SLEEVE REMOVAL



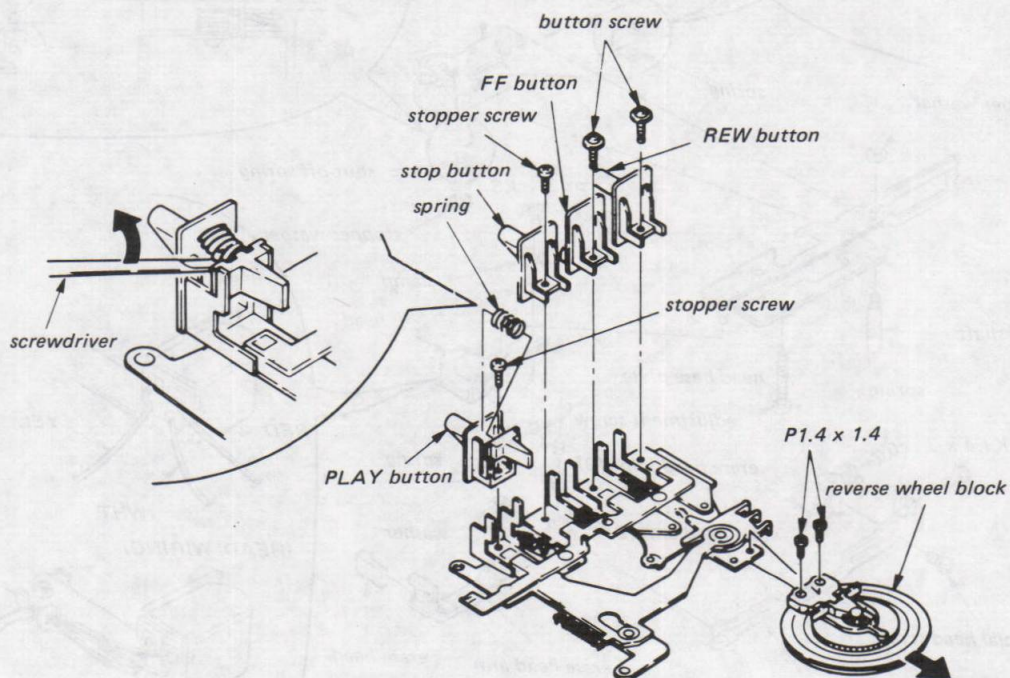
CONTROL PLATE REMOVAL



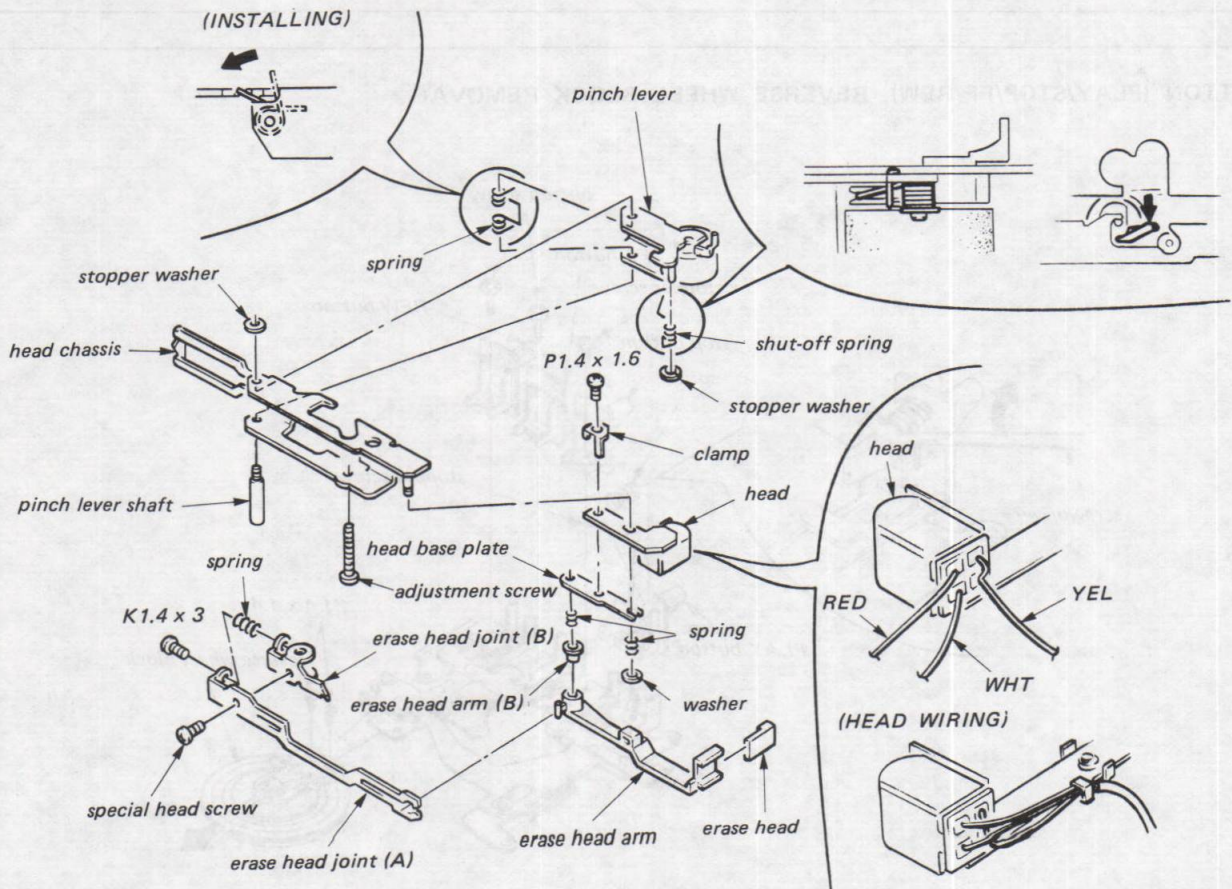
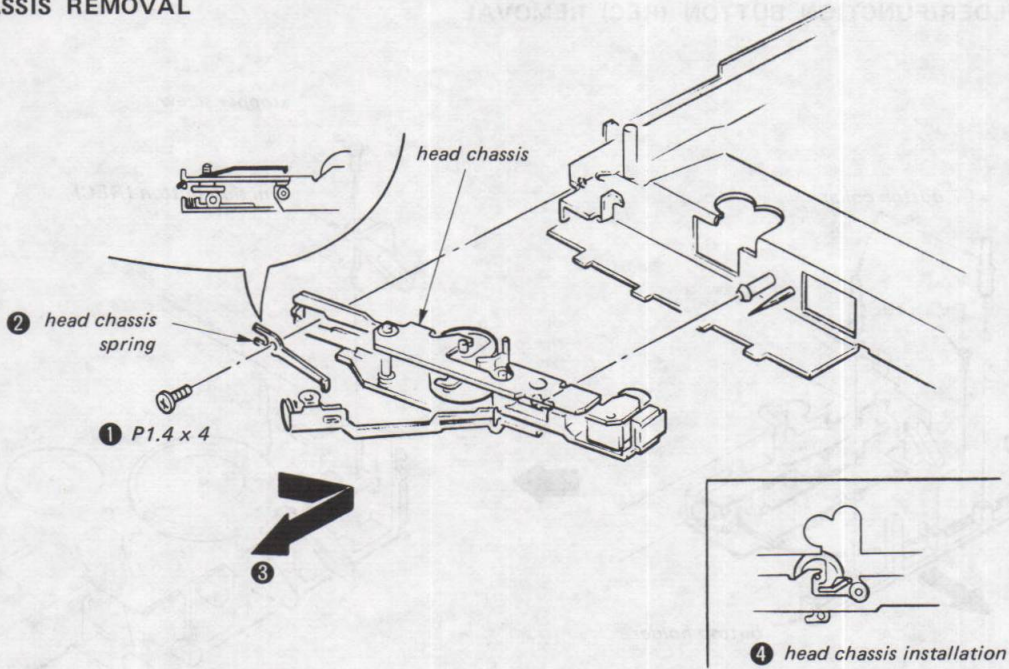
### BUTTON HOLDER/FUNCTION BUTTON (REC) REMOVAL



### BUTTON (PLAY/STOP/FF/REW), REVERSE WHEEL BLOCK REMOVAL



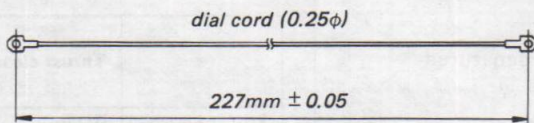
### HEAD CHASSIS REMOVAL





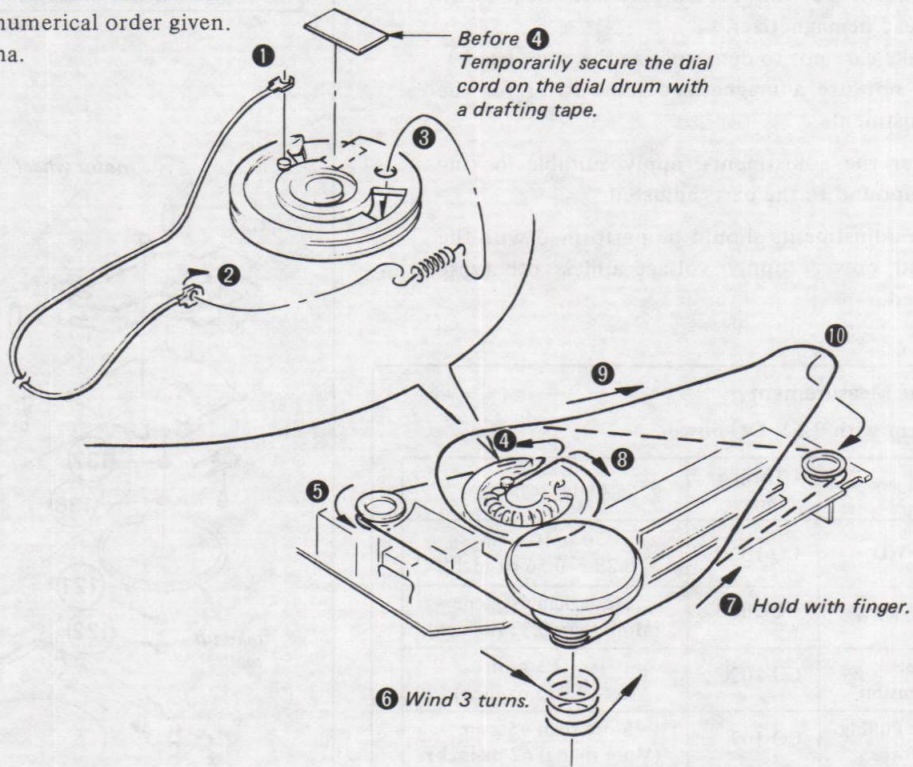
**DIAL CORD STRINGING**

**1. Preparation**



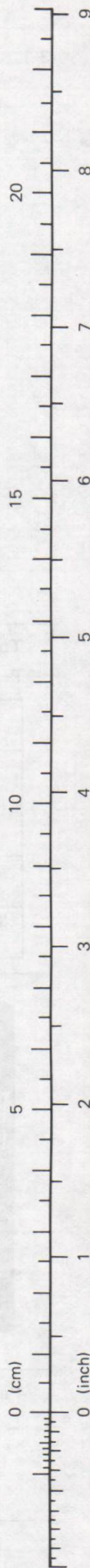
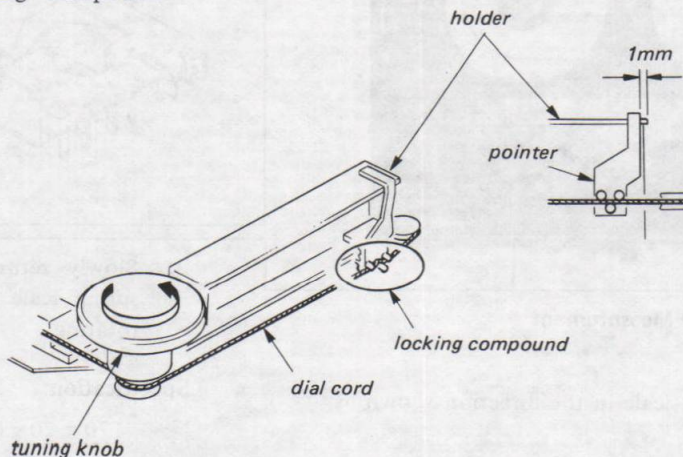
**2. Stringing**

- 1) Remove the ferrite-rod antenna.
- 2) Turn the dial drum fully counterclockwise and string the dial cord in the numerical order given.
- 3) Install the ferrite-rod antenna.



**3. Dial Pointer Installation**

- 1) Turn the tuning knob fully counterclockwise.
- 2) Set the pointer.
- 3) Set the distance between the holder end and the pointer to 1mm.
- 4) Secure the pointer with locking compound after setting the scale.



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENTS AND MEASUREMENTS

#### PRECAUTION

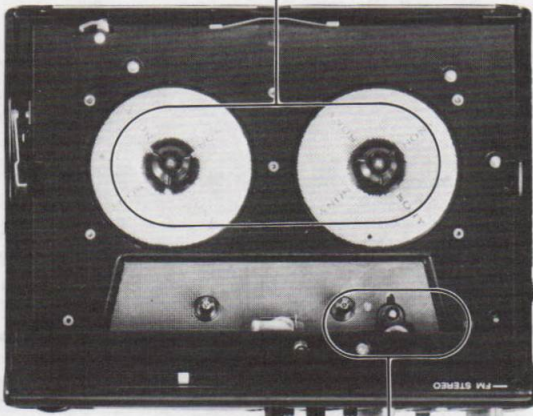
1. Clean the following parts with a denatured-alcohol-moistened swab:
 

record/playback head	pinch roller
erase head	rubber belts
capstan	
2. Demagnetize the record/playback head with a head demagnetizer.  
(Take care not to demagnetize 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

Perform with 2.5V DC power.

	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 (More than 0.83 oz-inch)
Back Tension	CQ-102C	0 – 2.5 g-cm (0 – 0.035 oz-inch)
Tape Pulling Force	CQ-403	More than 45 g-cm (More than 0.62 oz-inch)



#### Pinch Roller Pressure Measurement

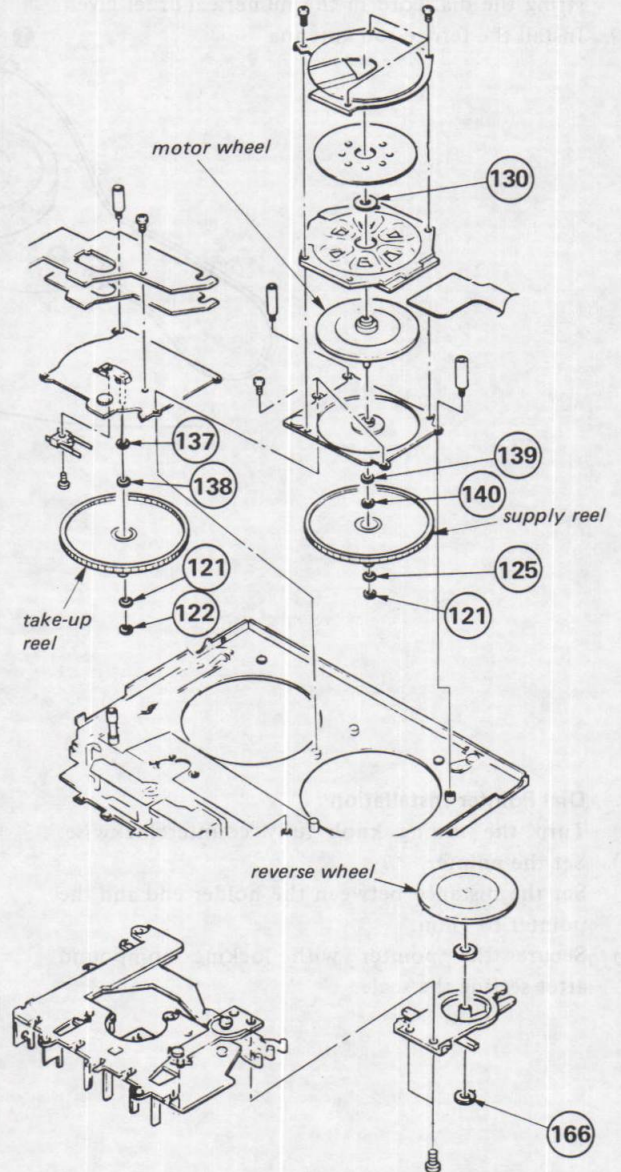
— Playback Mode —

1. Pull the spring scale in the direction shown by the arrow.

#### Thrust Clearance Adjustment

Make sure to rotate each section below smoothly.

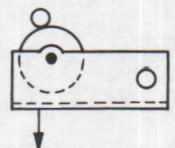
	Thrust clearance	Adjustment Parts (Refer to exploded views and parts list.)
Motor wheel	0.2mm	No. 130
Take-up reel	0.05 – 0.15mm	No. 121/122/137/138
Supply reel	0.05 – 0.15mm	No. 125/139/140/121
Reverse wheel	0.05 – 0.15mm	No. 166



2. Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating.

#### Specification:

170 ± 20 g (5.3 – 6.7 oz)



### ELECTRICAL ADJUSTMENTS

**Note:** The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

● **Standard Record:**

Standard Input Level

INPUT	MIC
source impedance	300Ω
input level	0.77mV (-60dB)

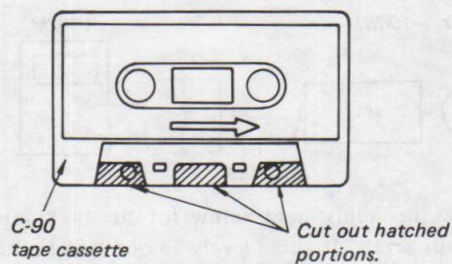
Standard output Level

OUTPUT	HEADPHONES
load impedance	32Ω
output level	*0.245V (-20dB)

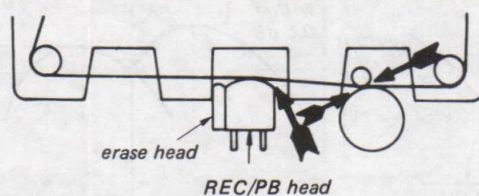
\* Adjust by volume control.

### Head Height Adjustment

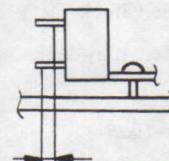
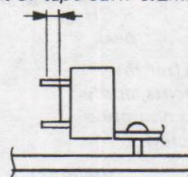
1. Prepare an adjustment cassette as shown below.



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

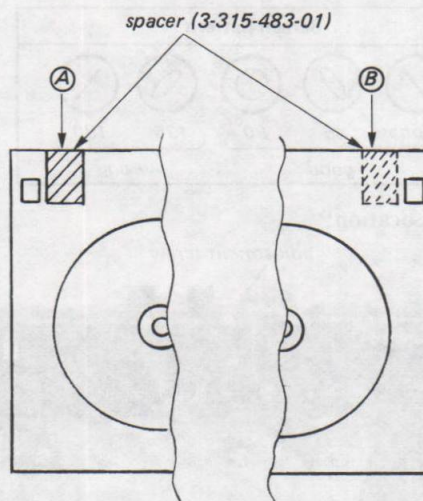


amount of tape curl: 0.2mm or less



amount of tape curl: 0.2mm or less

3. If necessary, stick the spacer on positions (A) and (B).

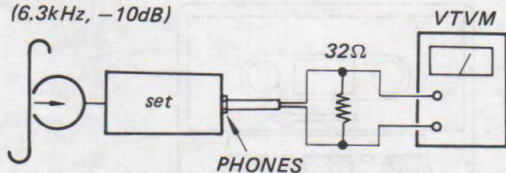


### RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

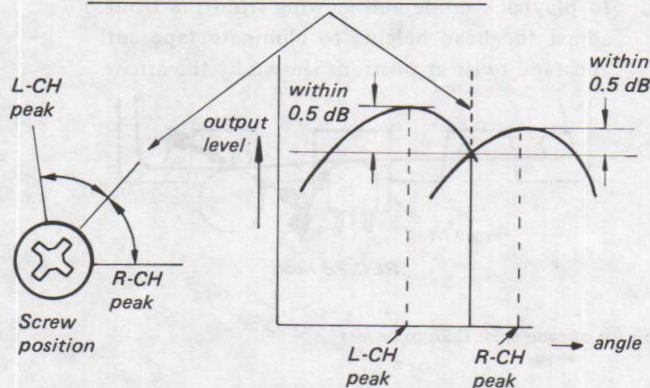
#### Procedure:

1. Mode: playback

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



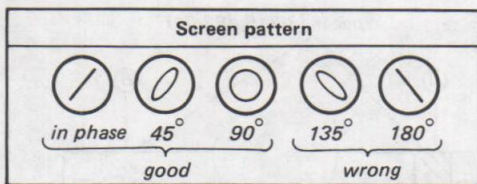
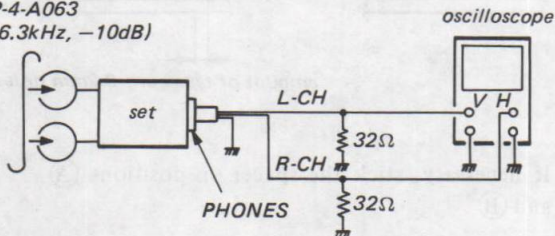
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



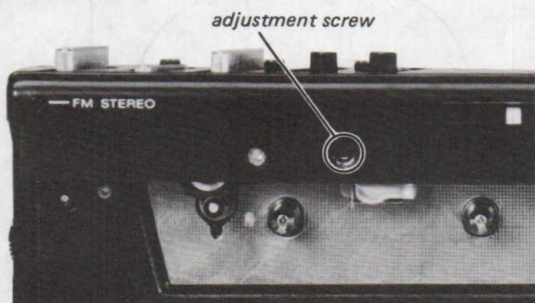
3. Phase Check

Mode: playback

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



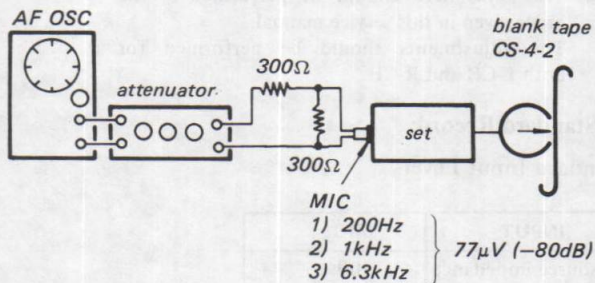
#### Adjustment Location:



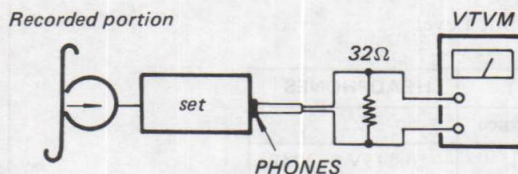
### RECORD BIAS ADJUSTMENT

#### Procedure:

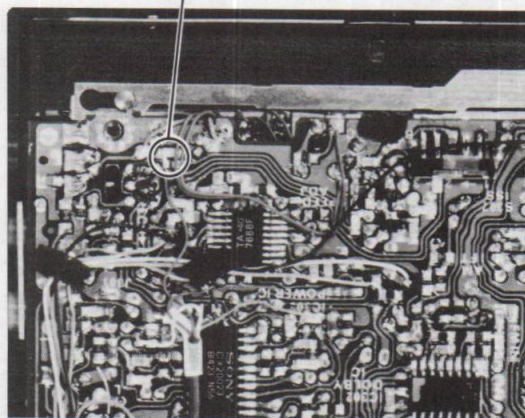
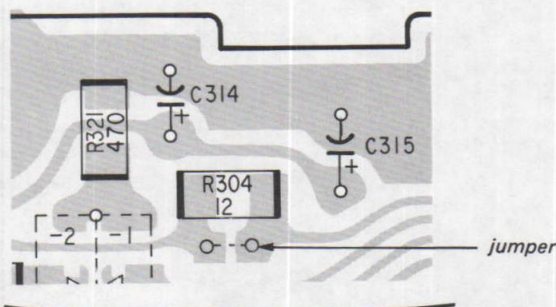
1. RECORD mode



2. PLAYBACK mode



- 1) Adjust VOLUME control so that 1kHz output becomes 77.5mV (-20dB).
- 2) Make sure that 200Hz and 3kHz outputs are  $0 \pm 3\text{dB}$  and  $-3 \pm 3\text{dB}$  relative to 1kHz output, respectively.
- 3) If not, disconnect jumper wire. Make sure that the specification above is met.



FM SECTION

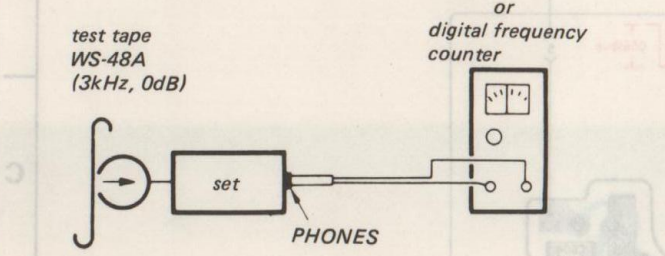
AM SECTION

**Tape Speed Adjustment**

**Setting:**  
VOLUME control: mechanical mid

**Procedure:**

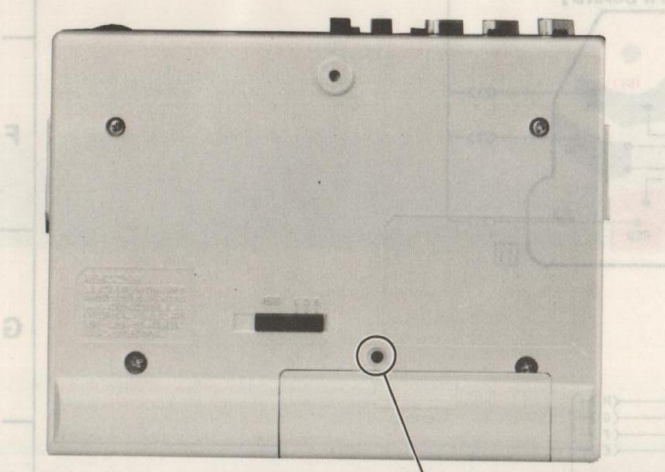
Mode: playback  
test tape WS-48A (3kHz, 0dB)



**Specification:**

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

Adjustment Location: RV601

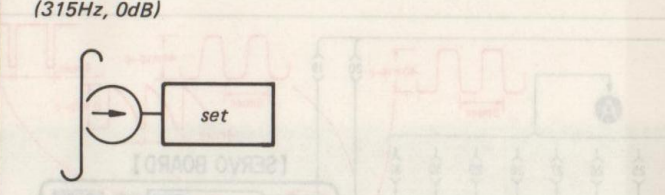


Remove the bushing and adjust the RV601.

**Dolby NR Level Adjustment**

**Setting:**  
TAPE switch: NORM  
DOLBY NR switch: off

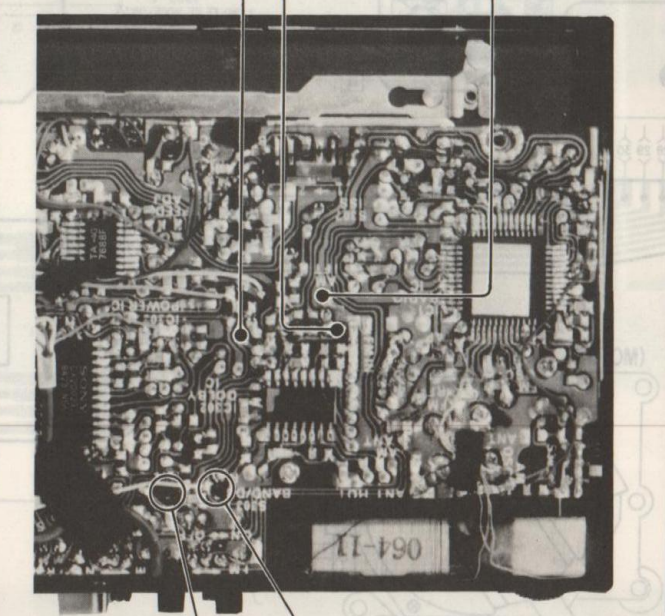
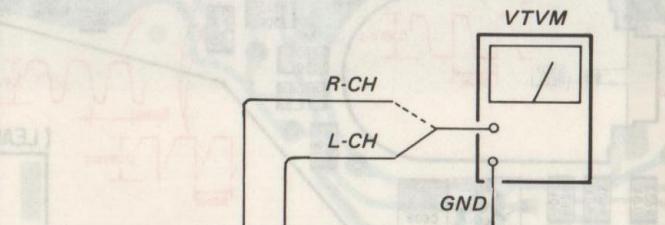
test tape P-4-L300 (315Hz, 0dB)



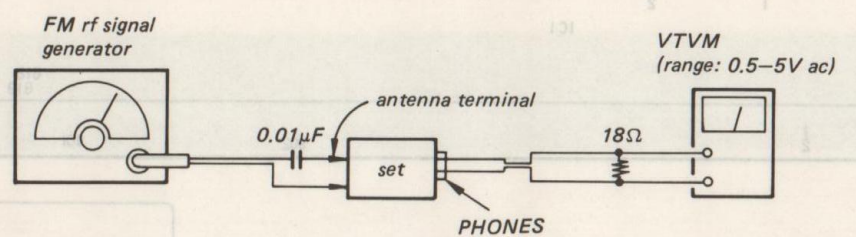
**Procedure:**

Adjust RV101 (L-CH), RV201 (R-CH) to obtain -27.7dB ±0.5dB (0.03V to 0.034V) output level.

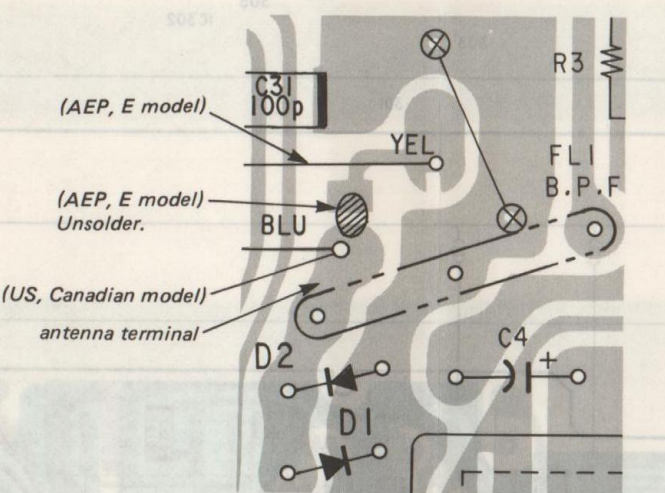
Adjustment Location: main board



RV201 (R-CH)  
RV101 (L-CH)



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.
- Solder after the adjustment.

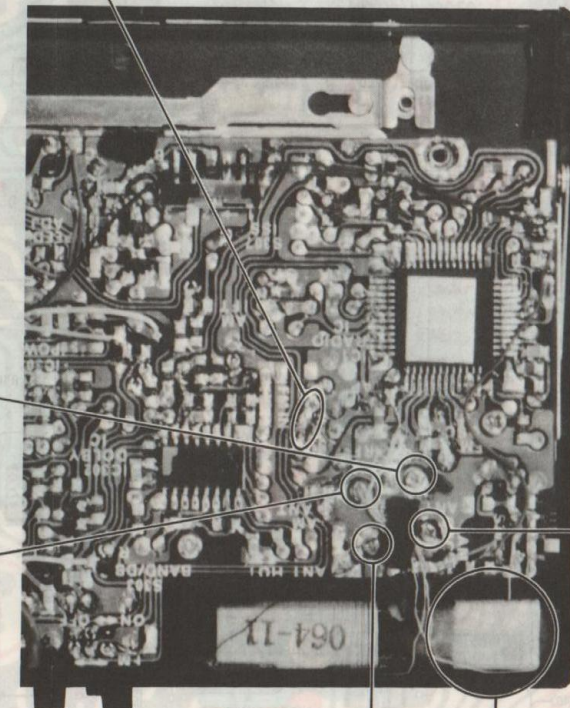
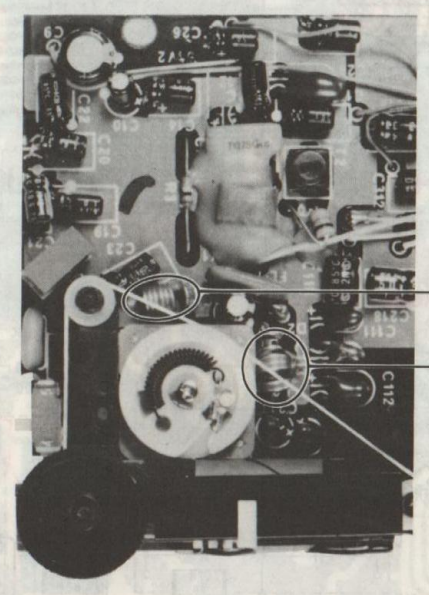


**FM FREQUENCY COVERAGE ADJUSTMENT**  
Adjust for a maximum VTVM reading

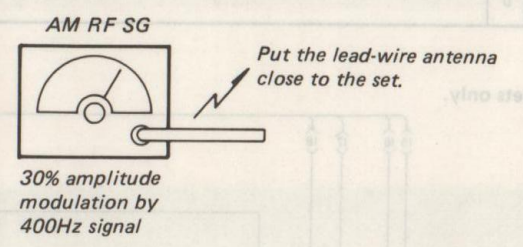
86.5MHz	109.5MHz
L3	CT2

**FM TRACKING ADJUSTMENT**  
Adjust for a maximum VTVM reading.

86.5MHz	L2
109.5MHz	CT3



**Setting:**  
Band Switch: AM



Put the lead-wire antenna close to the set.  
30% amplitude modulation by 400Hz signal

**AM FREQUENCY COVERAGE ADJUSTMENT**  
Adjust for a maximum reading on VTVM.

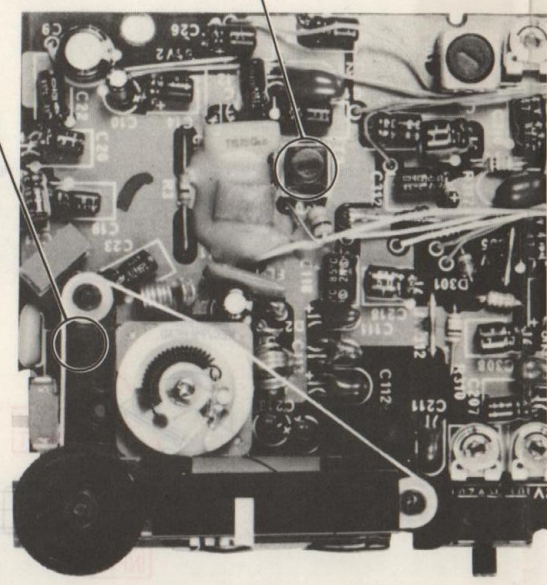
1,680kHz	520kHz
CT1	T1

**AM IF ALIGNMENT**  
Adjust for a maximum reading on VTVM.

455kHz
T2

**AM TRACKING ADJUSTMENT**  
Adjust for a maximum reading on VTVM.

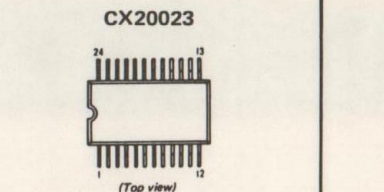
L1	620kHz
CT4	1,400kHz



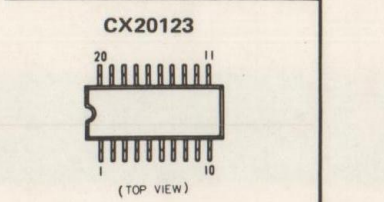
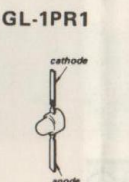
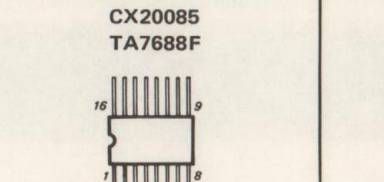
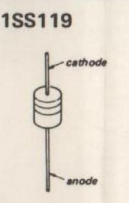
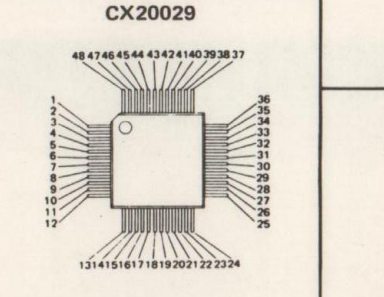
- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

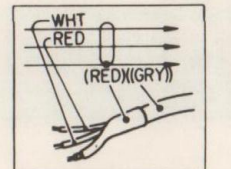
• Semiconductor Lead Layouts



2SA1162  
2SB624-BV4  
2SC2712-G  
2SC1623-L7  
2SD596  
DTA114YK  
DTC114YK

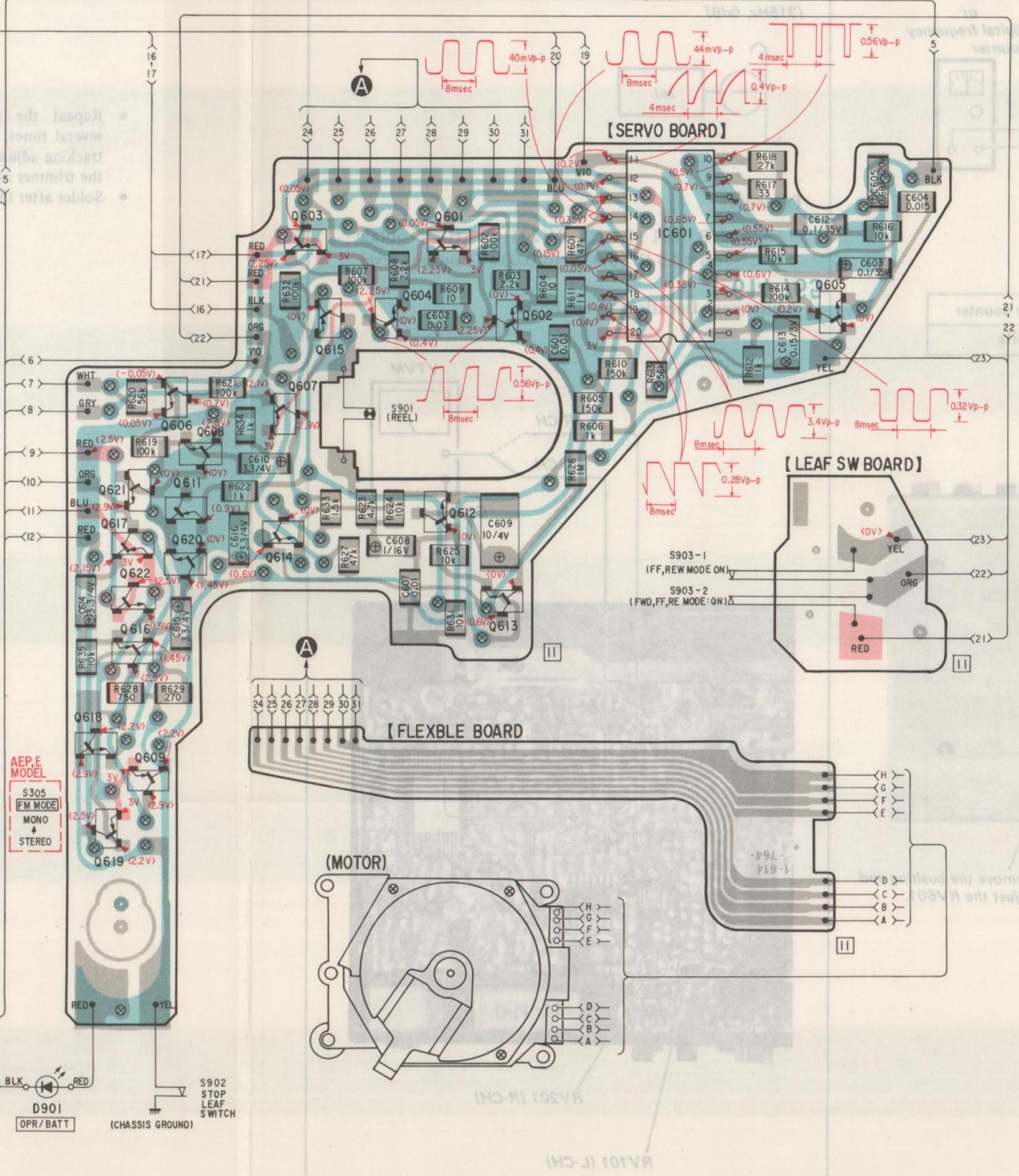
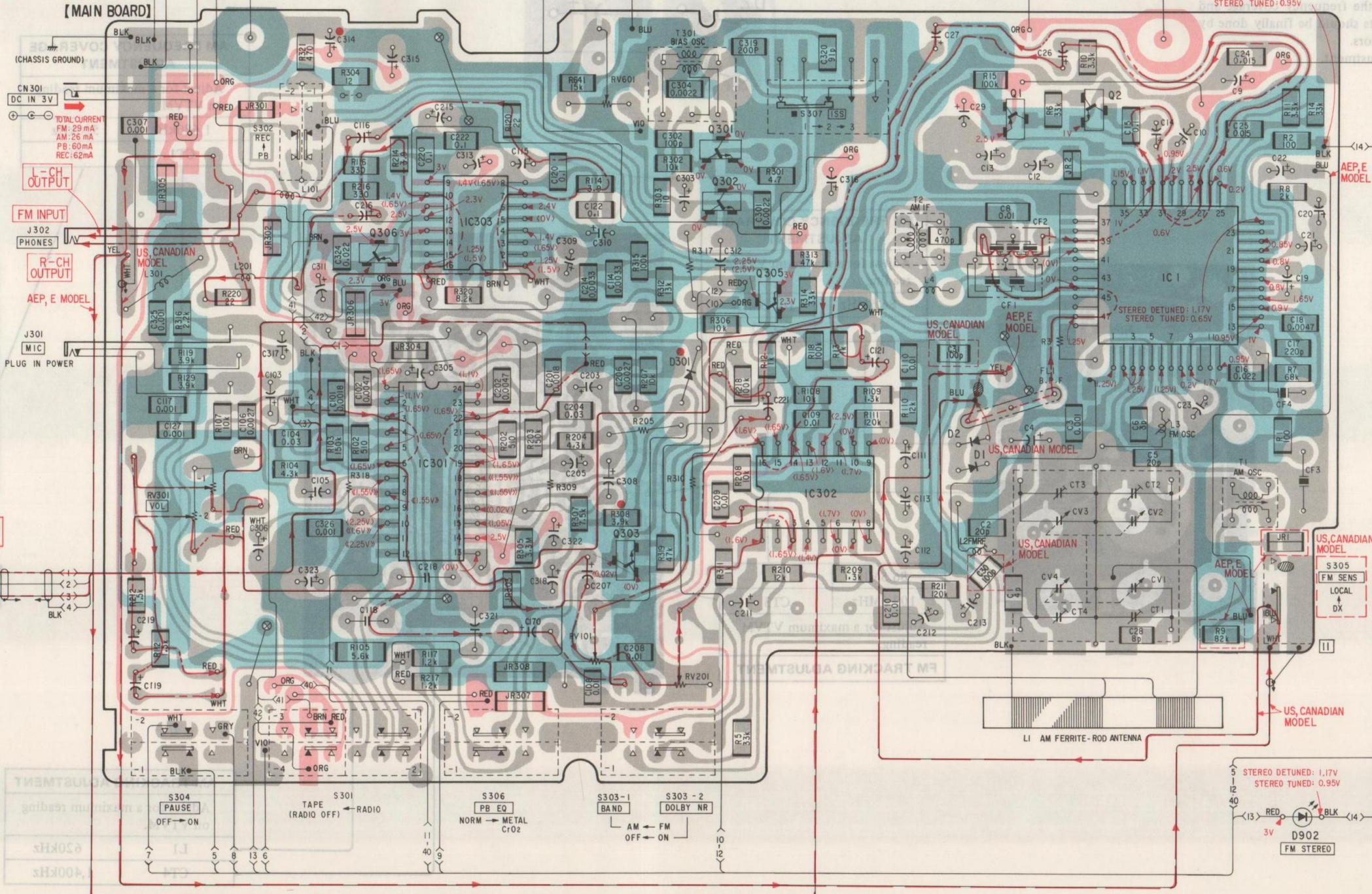


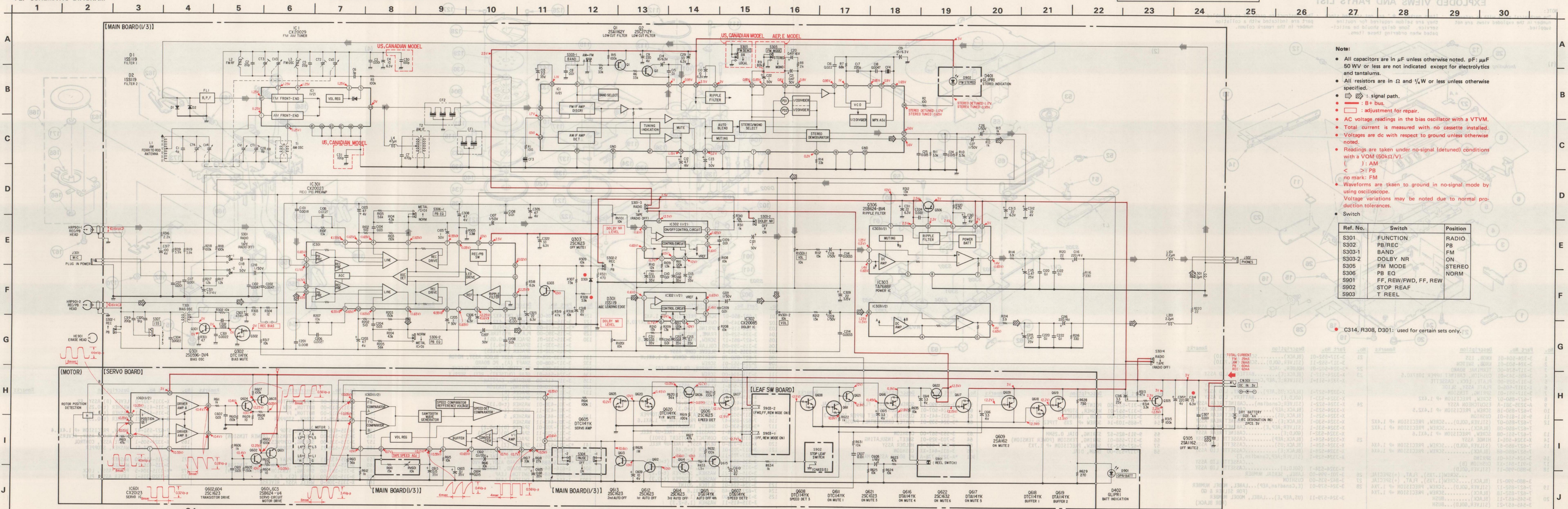
Note:  
• Color code of sleeving over the end of the jacket.



- : parts extracted from the component side.
- : parts extracted from the conductor side.
- ⊗ : Through hole.
- : signal path
- : L-CH signal path
- : R-CH signal path
- : B + pattern
- : component-side pattern.

• C314, R308, D301: used for certain sets only.





- Note:**
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - $\square$  : signal path.
  - $\text{---}$  : B+ bus.
  - $\square$  : 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 (50k $\Omega$ /V).  
( ) : AM  
< > : PB  
no mark: FM
  - Waveforms are taken to ground in no-signal mode by using oscilloscope.
  - Voltage variations may be noted due to normal production tolerances.
  - Switch

Ref. No.	Switch	Position
S301	FUNCTION	RADIO
S302	PB/REC	PB
S303-1	BAND	FM
S303-2	DOLBY NR	ON
S305	FM MODE	STEREO
S306	PB EQ	NORM
S901	FF, REW/FWD, FF, REW	
S902	STOP REAF	
S903	T REEL	

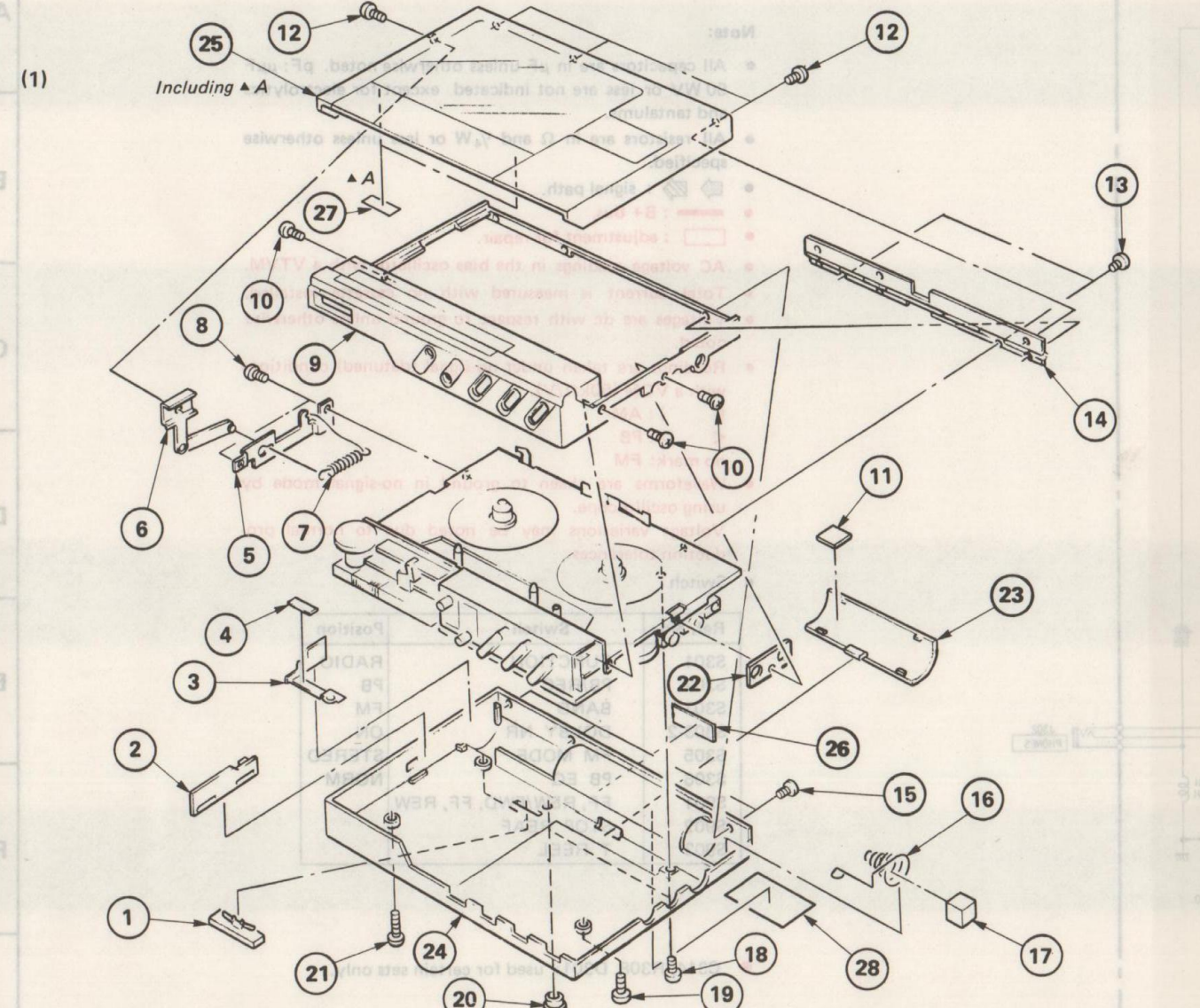
• C314, R308, D301: used for certain sets only.

SECTION 5  
EXPLODED VIEWS AND PARTS LIST

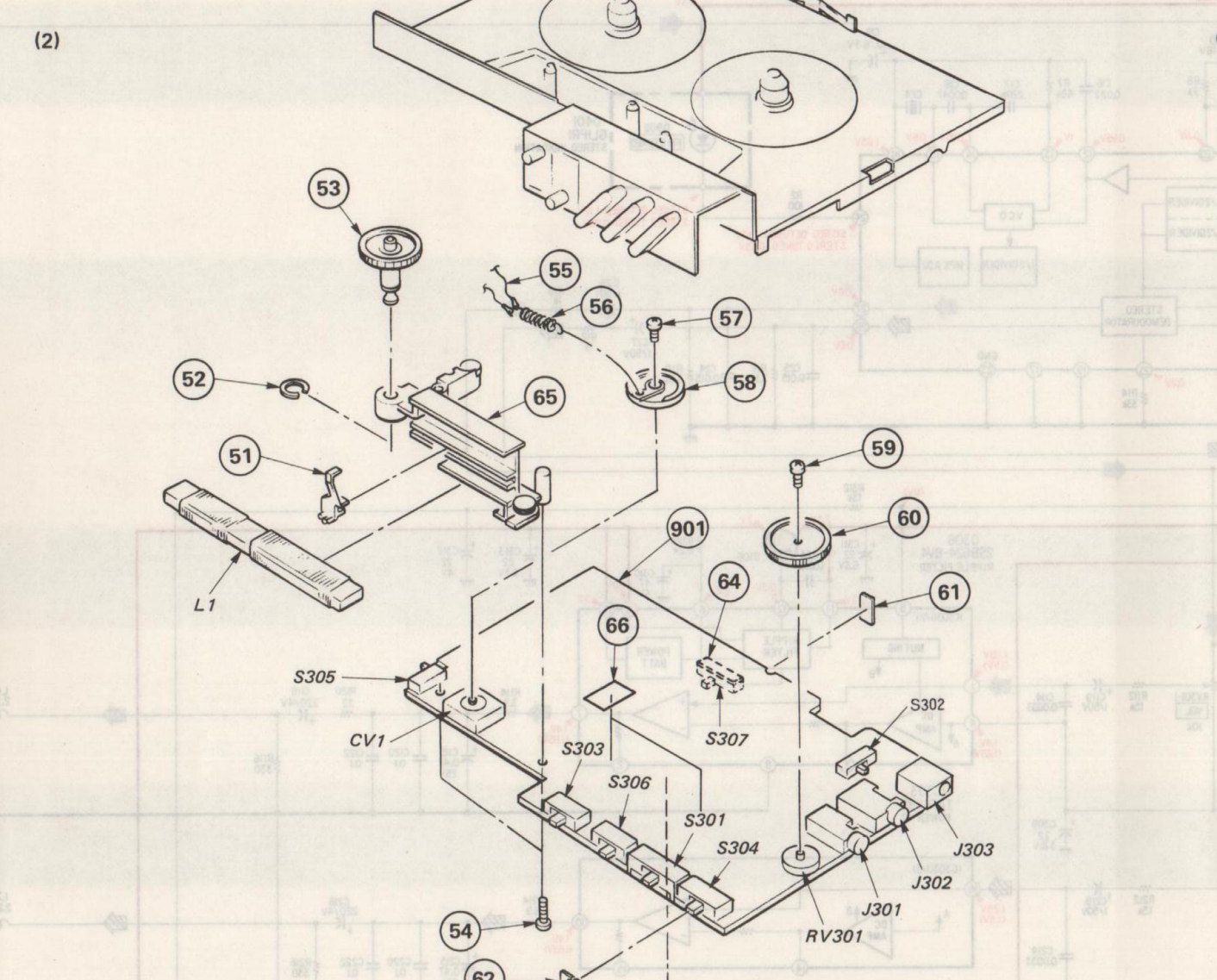
WM-F65 WM-F65

WM-F65 WM-F65

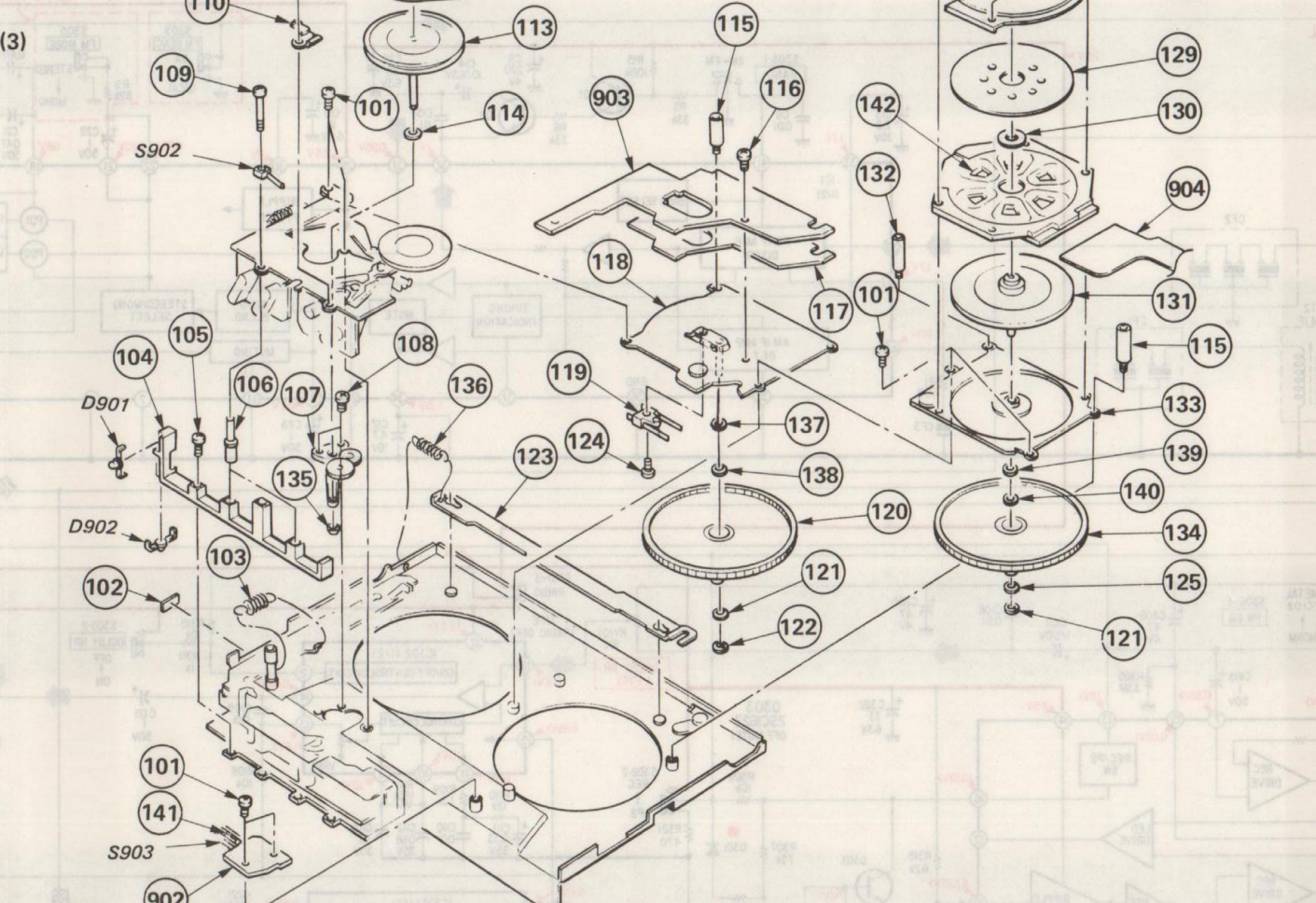
NOTE:  
The mechanical parts with no reference number in the exploded views are not supplied.  
Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
The construction parts of an assembled part are indicated with a collation number in the remark column.



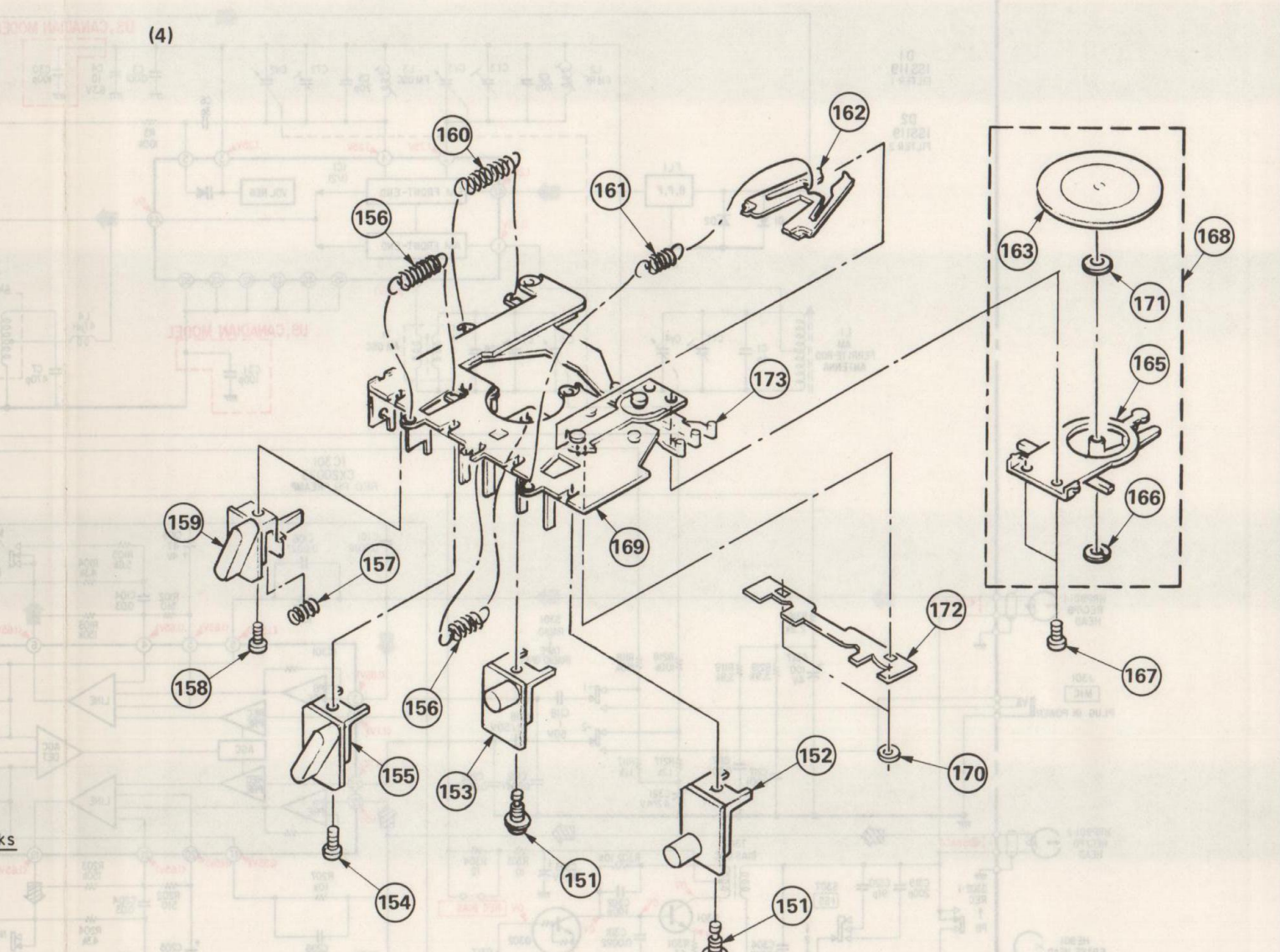
No.	Part No.	Description	Remarks
1	3-324-504-01	KNOB, ISS	
2	3-324-503-01	KNOB, SWITCH	
3	3-317-526-00	TERMINAL BOARD	
4	3-485-343-01	CUSHION, CABINET UPPER 10X7X0.5	
5	3-317-529-00	PLATE, LOCK, CASSETTE	
6	X-3317-505-00	PLATE ASSY, SLIDE	
7	7-627-850-07	SPRING, TENSION	
8	7-627-850-07	SCREW, PRECISION +P 1.4X2	
9	A-3235-381-A	ESCUTCHEON ASSY	
10	7-627-850-18	SCREW, PRECISION +P 1.4X2.5	
11	9-911-815-01	CUSHION	
12	7-627-850-07	(SILVER,GOLD)...SCREW, PRECISION +P 1.4X2	
13	7-627-850-08	(BLACK)...SCREW, PRECISION +P 1.4X2	
14	7-627-850-67	(SILVER,GOLD)...SCREW, PRECISION +P 1.4X4	
15	7-627-850-68	(BLACK)...SCREW, PRECISION +P 1.4X4	
16	3-324-554-01	SPRING	
17	9-911-841-XX	CUSHION (B)	
18	3-880-990-11	(SILVER,GOLD) ...SCREW(1.7X5), FLAT, (+)SPECIAL	
19	7-627-852-17	(SILVER,GOLD)...SCREW, PRECISION +P 1.7X4	
20	7-627-852-18	(BLACK)...SCREW, PRECISION +P 1.7X4	
21	3-545-657-11	(BLACK)...BUSH	
22	3-545-657-21	(SILVER,GOLD)...BUSH	



No.	Part No.	Description	Remarks
21	3-317-552-01	(BLACK)...SCREW (M1.7X10)	
22	3-317-552-11	(SILVER,GOLD)...SCREW (M1.7X10)	
23	*3-324-502-01	HOLDER, JACK	
24	X-3324-512-1	(BLACK;E)...BATTERY, LID ASSY	
25	X-3324-511-1	(SILVER;E,AEP,Canadian)	
26	X-3324-527-1	(BLACK;US,AEP)...BATTERY, LID ASSY	
27	X-3324-533-1	(GOLD;E)...BATTERY, LID ASSY	
28	X-3324-522-1	(SILVER;Canadian)...CABINET REAR ASSY	
29	X-3324-523-1	(BLACK;AEP)...CABINET REAR ASSY	
30	X-3324-525-1	(BLACK;US)...CABINET REAR ASSY	
31	X-3324-530-1	(BLACK;E)...CABINET REAR ASSY	
32	X-3324-531-1	(SILVER;AEP,E)...CABINET REAR ASSY	
33	X-3324-532-1	(GOLD;E)...CABINET REAR ASSY	
34	X-3324-524-1	(BLACK;AEP)...CASSETTE LID ASSY	
35	X-3324-526-1	(BLACK;US)...CASSETTE LID ASSY	
36	7-627-852-37	SCREW, PRECISION +P 1.7X3	
37	X-3324-528-1	(BLACK;E)...CASSETTE LID ASSY	
38	X-3324-529-1	(SILVER;AEP,Canadian,E) ...CASSETTE LID ASSY	
39	X-3324-534-1	(GOLD;E)...CASSETTE LID ASSY	
40	3-701-999-00	LABEL, SERIAL NUMBER	
41	3-842-935-00	CUSHION	
42	3-324-579-01	(E,Canadian,AEP)...LABEL, MODEL NUMBER (FOR SILVER & GO	
43	3-324-579-11	(US,AEP,E)...LABEL, MODEL NUMBER (FOR BLACK)	



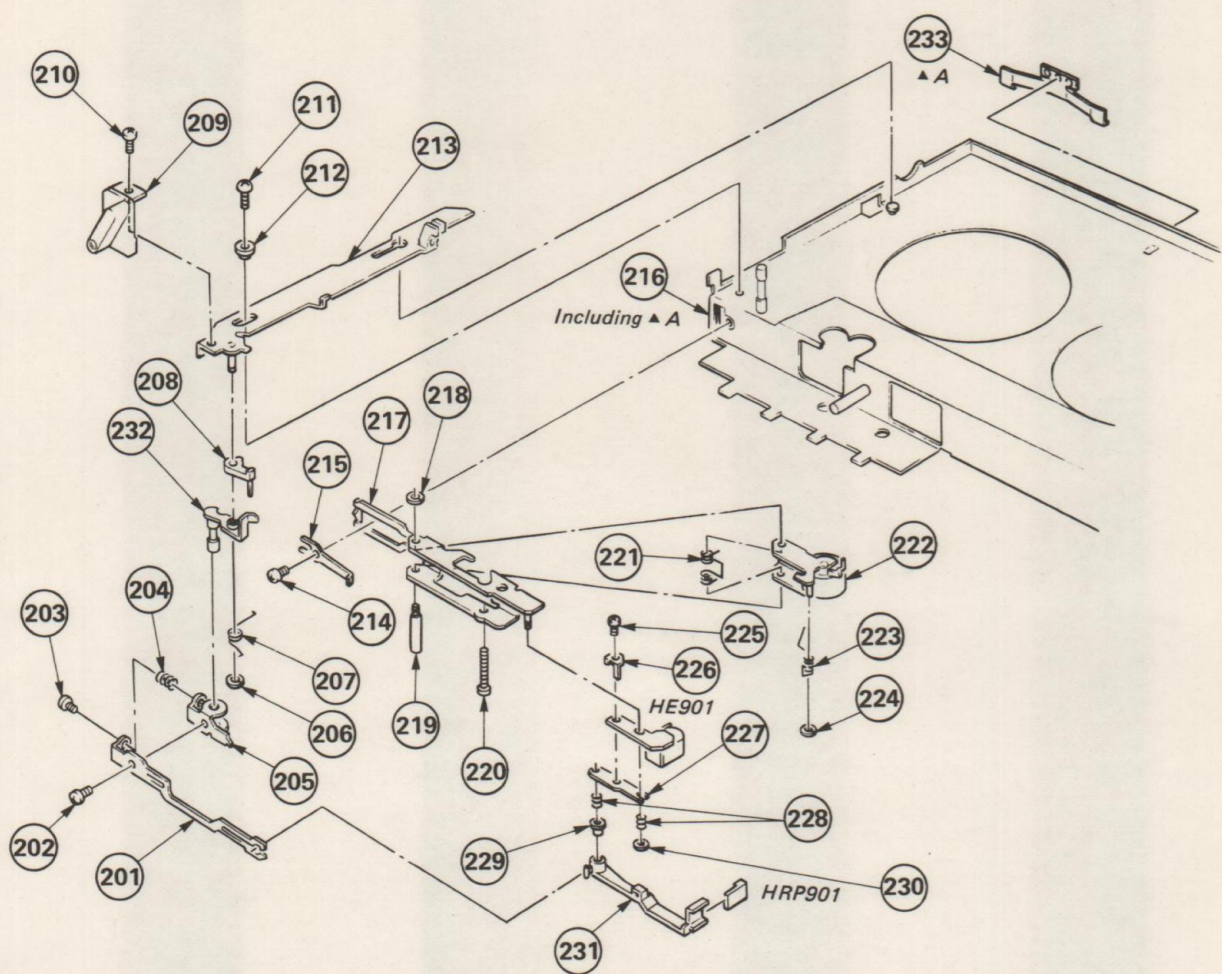
No.	Part No.	Description	Remarks
101	7-627-850-07	SCREW, PRECISION +P 1.4X2	
102	3-485-343-01	CUSHION, CABINET UPPER 10X7X0.5	
103	3-324-519-02	SPRING, TENSION	
104	3-324-529-01	FRAME, BUTTON	
105	7-627-851-17	SCREW, PRECISION +P 1.4X4.5	
106	3-315-399-00	COLLAR, BUTTON	
107	X-3315-343-1	SLEEVE COMP ASSY	
108	7-627-850-78	PRECISION SCREW +P 1.4X1.8	
109	3-324-553-01	SCREW	
110	3-320-420-01	STOPPER, FR LEVER (C)	
111	3-315-404-00	SCREW	
112	3-315-405-00	BELT	
113	X-3317-508-1	FLYWHEEL ASSY	
114	3-315-495-01	WASHER (t=0.25)	
115	3-315-495-11	WASHER (t=0.13)	
116	3-315-495-21	WASHER (t=0.2)	
117	3-315-495-31	WASHER (t=0.3)	
118	3-317-502-00	SHAFT (A), CABINET STOPPER	
119	7-627-850-47	SCREW, PRECISION +P 1.4X1.6	
120	*3-324-530-01	SHEET, INSULATING	
121	X-3324-514-1	CHASSIS ASSY, TAKE-UP REEL	
122	3-315-415-00	CONTACT, OUTSERT (S901)	
123	X-3315-312-00	GEAR ASSY, TAKE-UP REEL	
124	3-317-701-01	WASHER (t=0.45)	
125	3-317-701-11	WASHER (t=0.25)	
126	3-315-384-01	WASHER, STOPPER (t=0.13)	
127	3-315-384-11	WASHER, STOPPER (t=0.25)	
128	3-315-384-21	WASHER, STOPPER (t=0.2)	
129	3-315-384-31	WASHER, STOPPER (t=0.3)	
130	3-324-524-01	SLIDER, JOINT	
131	7-627-850-48	+P 1.4X1.6	
132	3-315-415-00	WASHER (1.5-2.3)	
133	3-315-415-11	WASHER (1.5-2.3)	



No.	Part No.	Description	Remarks	
126	3-317-706-01	SCREW (M1.4X2.3)		
127	3-315-485-01	SCREW (M1.4X2.3), PRECISION		
128	*3-315-419-00	PLATE, SHIELD		
129	3-315-390-00	PLATE, HYSTERESIS		
130	3-315-332-01	SPACER (t=0.05)		
131	3-315-332-11	SPACER (t=0.1)		
132	3-315-332-21	SPACER (t=0.125)		
133	A-3133-205-A	WHEEL ASSY BLOCK ASSY, MOTOR		
134	3-317-508-00	SHAFT (A), PC BOARD		
135	A-3133-206-A	RIVETING ASSY, MOTOR SLEEVE		
136	3-324-546-01	GEAR (OUTSERT), REEL, SUPPLY		
137	3-315-417-00	BUSHING, CAPSTAN		
138	3-324-520-01	SPRING, TENSION		
139	3-317-703-01	SPACER (E)		
140	3-317-703-11	SPACER (E)		
141	3-701-438-01	WASHER (t=0.13)		
142	3-701-438-11	WASHER (t=0.25)		
143	3-701-443-01	WASHER, 5		
144	3-317-702-01	SPACER (D)(t=0.2)		
145	3-317-702-11	SPACER (D)(t=0.05)		
146	3-317-702-21	SPACER (D)(t=0.1)		
147	*3-317-577-01	SPACER (Z)		
148	1-462-225-11	COIL, MOTOR (STATOR)		
149	*1-614-766-11	PC BOARD, LEAF SW		
150	*A-3215-688-A	PC BOARD ASSY, SERVO		
151	1-614-764-11	PC BOARD, FLEXIBLE		
152	S902	1-570-168-12	SWITCH, LEAF	
153	S903	1-554-586-00	SWITCH, LEAF	
154	3-315-432-11	BUTTON, PLAY		
155	3-315-341-00	SPRING, TENSION (POWER TENSION)		
156	3-315-331-00	SPRING, COMPRESSION		
157	3-305-528-21	SCREW, STOPPER		
158	3-315-395-00	SCREW, BUTTON		
159	3-315-513-00	BUTTON, REW		
160	3-317-512-00	BUTTON, FF		
161	3-305-528-11	SCREW, STOPPER		
162	7-627-551-47	SCREW, PRECISION +P 1.4X1.4		
163	A-3125-002-A	WHEEL BLOCK ASSY, REVERSE		
164	X-3324-505-1	PLATE ASSY, CONTROL		
165	3-315-384-41	WASHER, STOPPER		
166	3-315-307-00	LEVER (B) ASSY, FR		
167	3-315-414-00	WASHER (t=0.25)		
168	3-315-414-11	WASHER (t=1.88)		
169	3-315-414-21	WASHER (t=0.13)		
170	3-315-416-00	WASHER		
171	3-315-416-21	WASHER		
172	*X-3315-304-5	PLATE ASSY, LOCK		
173	X-3320-316-1	LEVER ASSY, PLAY		



(5)



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:μuF.  
 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...

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-3215-778-A	PC BOARD ASSY, MAIN			
902	*1-614-766-11	PC BOARD, LEAF SW			
903	*A-3215-688-A	PC BOARD ASSY, SERVO			
904	1-614-764-11	PC BOARD, FLEXIBLE			
C1	1-163-221-00	CERAMIC CHIP 4PF	0.25PF	50V	
C2	1-163-234-00	CERAMIC CHIP 20PF	5%	50V	
C3	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C4	1-124-435-00	ELECT 10MF	20%	6.3V	
C5	1-163-234-00	CERAMIC CHIP 20PF	5%	50V	
C6	1-163-220-11	CERAMIC CHIP 3PF	0.25PF	50V	
C7	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	
C8	1-163-031-00	CERAMIC CHIP 0.01MF	5%	50V	
C9	1-124-434-00	ELECT 220MF	20%	4V	
C10	1-124-435-00	ELECT 10MF	20%	6.3V	
C12	1-124-461-11	ELECT 4.7MF	20%	16V	
C13	1-124-437-00	ELECT 2.2MF	20%	35V	
C14	1-124-435-00	ELECT 10MF	20%	6.3V	
C15	1-163-038-00	CERAMIC CHIP 0.1MF	25V		
C16	1-163-033-00	CERAMIC CHIP 0.022MF	10%	25V	
C17	1-163-125-00	CERAMIC CHIP 220PF	5%	50V	
C18	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C19	1-124-435-00	ELECT 10MF	20%	6.3V	
C20	1-124-461-11	ELECT 4.7MF	20%	16V	
C21	1-124-465-00	ELECT 0.47MF	20%	50V	
C22	1-124-438-00	ELECT 1MF	20%	50V	
C23	1-124-438-00	ELECT 1MF	20%	50V	
C24	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V	
C25	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V	
C26	1-124-438-00	ELECT 1MF	20%	50V	
C27	1-124-438-00	ELECT 1MF	20%	50V	
C28	1-163-091-00	CERAMIC CHIP 8PF	0.25PF	50V	
C29	1-131-386-00	TANTALUM 33MF	20%	6.3V	
C30	1-163-181-00	(US,Canadian)...CAP,CHIP CERAMIC 100PF			
C31	1-163-181-00	(US,Canadian)...CAP,CHIP CERAMIC 100PF			
C101	1-163-012-00	CERAMIC CHIP 0.0018MF	10%	50V	
C102	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C103	1-124-432-00	ELECT 47MF	20%	4V	
C104	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C105	1-124-438-00	ELECT 1MF	20%	50V	
C106	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V	
C107	1-124-438-00	ELECT 1MF	20%	50V	
C108	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V	
C109	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V	
C110	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V	
C111	1-131-344-00	TANTALUM 0.33MF	10%	35V	
C112	1-131-346-00	TANTALUM 0.68MF	10%	35V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C113	1-131-341-00	TANTALUM 0.1MF	10%	35V	
C114	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C115	1-127-504-00	ELECT(SOLID) 0.47MF	20%	25V	
C116	1-124-434-00	ELECT 220MF	20%	4V	
C117	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C118	1-124-499-11	ELECT 1MF	20%	50V	
C119	1-124-438-00	ELECT 1MF	20%	50V	
C120	1-163-038-00	CERAMIC CHIP 0.1MF	25V		
C121	1-124-438-00	ELECT 1MF	20%	50V	
C122	1-163-038-00	CERAMIC CHIP 0.1MF	25V		
C201	1-163-012-00	CERAMIC CHIP 0.0018MF	10%	50V	
C202	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C203	1-124-432-00	ELECT 47MF	20%	4V	
C204	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C205	1-124-438-00	ELECT 1MF	20%	50V	
C206	1-163-014-00	CERAMIC CHIP 0.0027MF	10%	50V	
C207	1-124-438-00	ELECT 1MF	20%	50V	
C208	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C209	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V	
C210	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V	
C211	1-131-344-00	TANTALUM 0.33MF	10%	35V	
C212	1-131-346-00	TANTALUM 0.68MF	10%	35V	
C213	1-131-341-00	TANTALUM 0.1MF	10%	35V	
C214	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V	
C215	1-127-504-00	ELECT(SOLID) 0.47MF	20%	25V	
C216	1-124-434-00	ELECT 220MF	20%	4V	
C217	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C218	1-124-499-11	ELECT 1MF	20%	50V	
C219	1-124-438-00	ELECT 1MF	20%	50V	
C220	1-163-038-00	CERAMIC CHIP 0.1MF	25V		
C221	1-124-438-00	ELECT 1MF	20%	50V	
C222	1-163-038-00	CERAMIC CHIP 0.1MF	25V		
C301	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V	
C302	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C303	1-124-432-00	ELECT 47MF	20%	4V	
C304	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V	
C305	1-124-432-00	ELECT 47MF	20%	4V	
C306	1-131-385-00	TANTALUM 22MF	20%	6.3V	
C307	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C308	1-124-432-00	ELECT 47MF	20%	4V	
C309	1-131-391-00	TANTALUM 22MF	10%	3.15V	
C310	1-124-432-00	ELECT 47MF	20%	4V	
C311	1-131-385-00	TANTALUM 22MF	10%	6.3V	
C312	1-124-430-00	ELECT 22MF	20%	4V	
C313	1-131-385-00	TANTALUM 22MF	10%	6.3V	
C314	1-131-384-00	TANTALUM 15MF	10%	6.3V	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C315	1-124-434-00	ELECT 220MF	20%	4V	
C316	1-124-436-00	ELECT 3.3MF	20%	25V	
C317	1-124-433-00	ELECT 100MF	20%	4V	
C318	1-124-430-00	ELECT 22MF	20%	4V	
C319	1-163-124-00	CERAMIC CHIP 200PF	5%	50V	
C320	1-163-116-00	CERAMIC CHIP 91PF	5%	50V	
C321	1-124-432-00	ELECT 47MF	20%	4V	
C322	1-131-386-00	TANTALUM 33MF	10%	6.3V	
C323	1-131-385-00	TANTALUM 22MF	10%	6.3V	
C324	1-163-033-00	CERAMIC CHIP 0.022MF	5%	50V	
C325	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C326	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C601	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C602	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V	
C603	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V	
C604	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V	
C605	1-135-087-21	TANTAL. CHIP 0.68MF	20V		
C607	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V	
C608	1-135-091-00	TANTAL. CHIP 1MF	50V		
C609	1-135-104-00	TANTAL. CHIP 10MF	4V		
C610	1-135-103-00	TANTAL. CHIP 3.3MF	10%	4V	
C612	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V	
C613	1-135-071-21	TANTAL. CHIP 0.15MF	35V		
C614	1-135-103-00	TANTAL. CHIP 3.3MF	10%	4V	
C615	1-135-103-00	TANTAL. CHIP 3.3MF	10%	4V	
C616	1-135-103-00	TANTAL. CHIP 3.3MF	10%	4V	
CF1	1-567-177-00	FILTER, CERAMIC			
CF2	1-567-166-00	FILTER, CERAMIC			
CF3	1-567-166-00	FILTER, CERAMIC			
CF4	1-567-164-00	VIBRATOR, CERAMIC			
CN301	1-507-850-00	JACK, EXTENTION POWER			
CV1	1-151-453-00	CAP, TUNING, POLYETHYLENE			
D1	8-719-911-19	DIODE 1S5119			
D2	8-719-911-19	DIODE 1S5119			
D301	8-719-911-19	DIODE 1S5119			
D901	8-719-912-24	DIODE GL-1PR1 (OPR/BATT)			
D902	8-719-912-24	DIODE GL-1PR1 (FM STEREO)			
FL1	1-235-171-00	FILTER, BAND PASS			
R1	1-216-025-00	METAL CHIP 100 5% 1/10W			
R2	1-216-025-00	METAL CHIP 100 5% 1/10W			
R3	1-247-879-00	CARBON 100K 5% 1/6W			
R5	1-216-085-00	METAL CHIP 33K 5% 1/10W			
R6	1-216-085-00	METAL CHIP 33K 5% 1/10W			
R7	1-216-093-00	METAL CHIP 68K 5% 1/10W			
R8	1-216-056-00	METAL CHIP 2K 5% 1/10W			
R9	1-216-095-00	(E)...METAL CHIP 82K 5% 1/10W			
R10	1-216-061-00	METAL CHIP 3.3K 5% 1/10W			
R11	1-216-061-00	METAL CHIP 3.3K 5% 1/10W			
R12	1-216-049-00	METAL CHIP 1K 5% 1/10W			
R13	1-216-049-00	METAL CHIP 1K 5% 1/10W			
R14	1-216-085-00	METAL CHIP 33K 5% 1/10W			
R15	1-216-097-00	METAL CHIP 100K 5% 1/10W			
R102	1-216-042-00	METAL CHIP 510 5% 1/10W			
R103	1-216-101-00	METAL CHIP 150K 5% 1/10W			
R104	1-216-064-00	METAL CHIP 4.3K 5% 1/10W			
R105	1-216-216-00	METAL CHIP 5.6K 5% 1/8W			
JR306	1-216-296-00	METAL CHIP 0 5% 1/8W			
JR307	1-216-296-00	METAL CHIP 0 5% 1/8W			
JR308	1-216-296-00	METAL CHIP 0 5% 1/8W			
L1	1-402-064-11	ANTENNA, FERRITE-ROD (MM)			
L2	*1-422-210-11	COIL, AIR-CORE (FM RF)			
L3	1-422-225-11	COIL, AIR-CORE (FM OSC)			
L4	1-410-029-11	MICRO INDUCTOR 47UH			
L101	1-408-555-00	MICRO INDUCTOR 2.2UH			
L201	1-408-555-00	MICRO INDUCTOR 2.2UH			
L301	1-408-555-00	MICRO INDUCTOR 2.2UH			
Q1	8-729-216-22	TRANSISTOR 2SA1162			
Q2	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q301	8-729-159-64	TRANSISTOR 2SD596			
Q302	8-729-900-52	TRANSISTOR DTC114YK			
Q303	8-729-100-67	TRANSISTOR 2SC1623-L7			
Q305	8-729-216-22	TRANSISTOR 2SA1162			
Q306	8-729-162-44	TRANSISTOR 2SB624B4V			
Q601	8-729-162-				

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description, Quantity, Unit, Remarks. Lists electrical components like metal chips, carbon, and switches.

ELECTRICAL PARTS

Table with columns: Ref.No., Part No., Description, Quantity, Unit, Remarks. Lists electrical components like metal chips, switches, and coils.

ACCESSORY & PACKING MATERIAL

Table with columns: Part No., Description. Lists accessories like microphones, cases, manuals, and tape.

Table with columns: Part No., Description, Quantity, Unit, Remarks. Lists various electronic components like capacitors, resistors, and semiconductors.

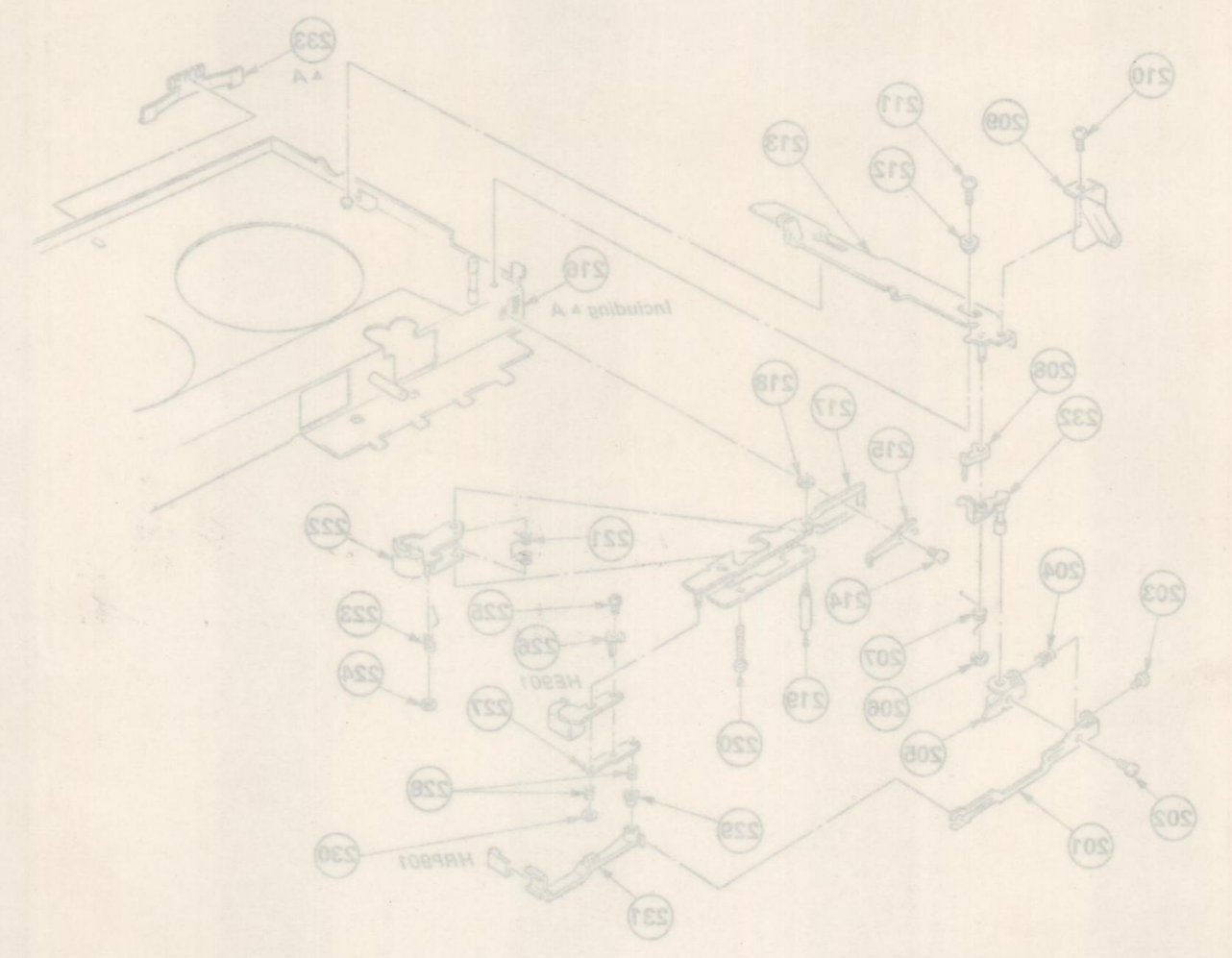


Table with columns: Part No., Description, Quantity, Unit, Remarks. Lists parts corresponding to the diagram callouts.

## SERVICE MANUAL

### SUPPLEMENT

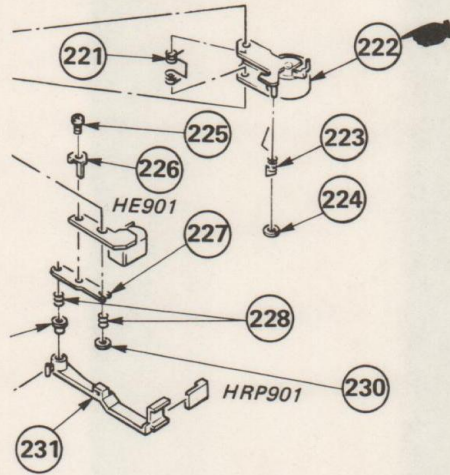
File this supplement with the service manual.

*US Model  
Canadian Model  
AEP Model  
E Model*

**Subject:** Pinch roller part No. addition

No. 1  
November, 1985

P29      222      X-3320-311-1      PINCH LEVER ASSY



# FM/AM STEREO CASSETTE CORDER SONY®

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