CF-310S

GEP Model

E Model

FM/SW/MW RADIO CASSETTE-CORDER

SPECIFICATIONS

RADIO SECTION

Circuit:	Superheterodyne
Frequency Ranges:	FM 87.5 ~ 108 MHz (3.43 ~ 2.78 m) SW 3.9 ~ 12 MHz (77 ~ 25 m) MW 530 ~ 1,605 kHz (566 ~ 187 m)
Intermediate Frequencies:	FM 10.7 MHz MW, SW 455 kHz
Antennas:	FM, SW built-in telescopic (5 section, 85 cm long) MW built-in ferrite-rod (10 mm dia x 120 mm)
Current Drain: (at no signal)	FM 54 mA MW, SW 51 mA

TAPE RECORDER SECTION

Track:	Two-track monaural
Tape Speed:	4.8 cm/s ($1\frac{7}{8}$ ips)
Record Bias Frequency:	Approximately 40 kHz
Frequency Response:	80 ~ 8,000 Hz
Record/playback Head:	PP134-36 (250 Ω/1 kHz)
Erase Head:	EBF5-02B (ferrite)
Motor:	D-009G3 (DC governor)
Electret Condenser Microphone:	C-1002A
Automatic Shut-off Mechanism:	Tape-tension-detecting system (record and playback modes)
Input:	MIC (mini) maximum sensitivity: −72 dB (0.2 mV) impedance: for low-impedance microphone
Output:	MONITOR normal level: 0 dB (0.775 V) with 10 kΩ load load impedance: 8 Ω earphone, 10 kΩ or more

GENERAL

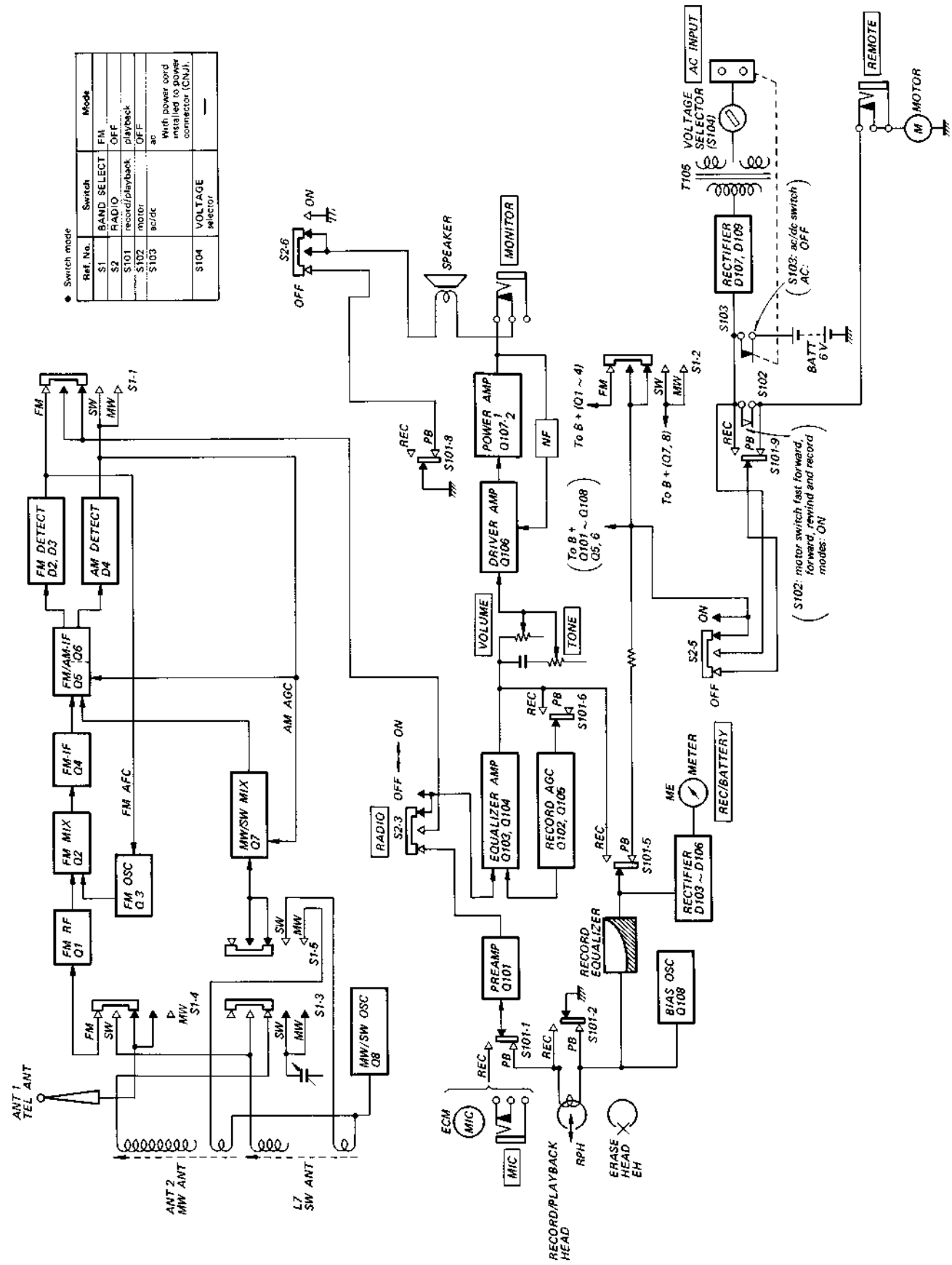
Power Requirements:	AC 100 ~ 110 V, 115 ~ 127 V, 200 ~ 220 V, 230 ~ 250 V, 50/60 Hz DC 6 V Battery size "C" 4 pcs Rechargeable battery BP-16
Battery's Life:	Long-life dry cell Approximately 6 hours in continuous recording (RADIO switch: OFF) Rechargeable battery 8 hours in continuous recording (RADIO switch: OFF) (charging time: approximately 21 hours)
Power Consumption:	AC 7.5 W
Speaker:	9.2 cm ($3\frac{1}{2}$") dia, 8 Ω
Output Power:	1 W
Semiconductors:	1 FET (included in electret condenser microphone), 17 transistors and 16 diodes
Dimensions:	279 (w) x 200 (h) x 81 (d) mm 11 (w) x $7\frac{7}{8}$ (h) x $3\frac{3}{16}$ (d) inches
Weight:	2.5 kg, 5 lb 9 oz (with batteries)
Supplied Accessories:	Power cord (DK-33) Tape cassette (C-30) Earphone (ME-20) Long-Life Batteries (size "C" 4 pcs) Shorting plug (SP-100) Head-cleaning tips Printed matters

SONY®

SERVICE MANUAL

SECTION 1
OUTLINE

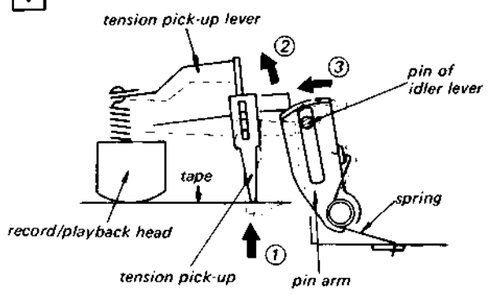
1-1. BLOCK DIAGRAM



1-2. AUTOMATIC SHUT-OFF MECHANISM OPERATION

CF-310S mechanism is designed so that the unit will be shut itself off automatically at tape end in record and playback mode. Operation in playback mode is shown step by step in numerical order.

1



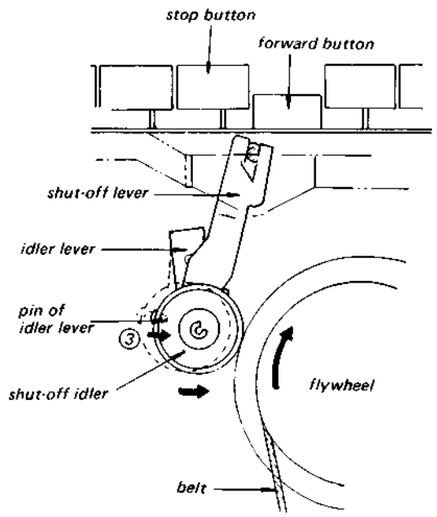
At tape end in playback mode,

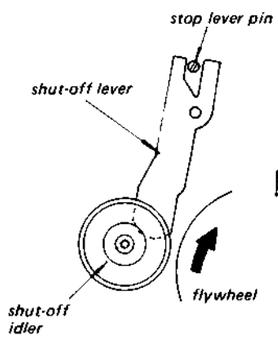
(1) The tension pick-up detects the tape-tension and moves as shown by arrow ①.

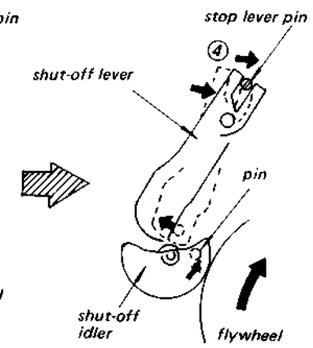
(2) The tension pick-up lever moves as shown by arrow ②, because tension pick-up lever is connected to the tension pick-up.

(3) The spring always pushes the pin-arm, so the pin-arm moves the pin of idler lever as shown by arrow ③.

2



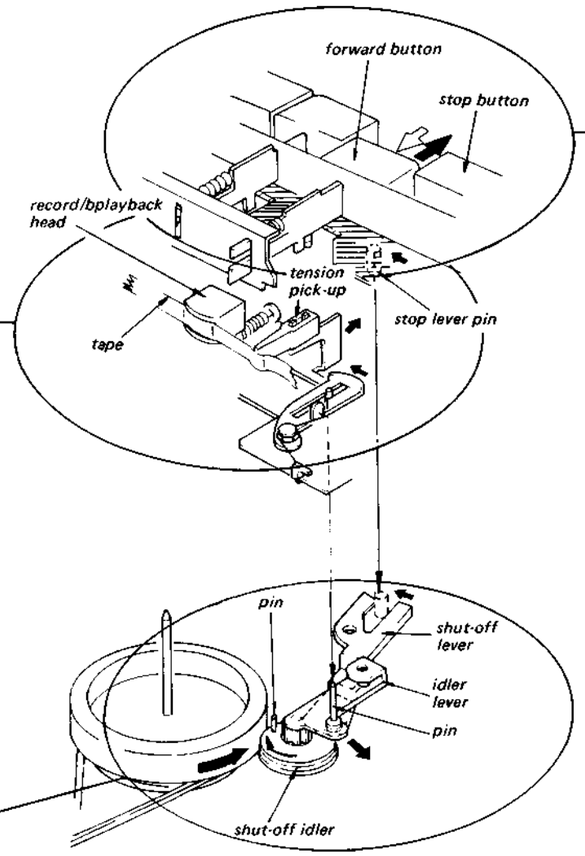




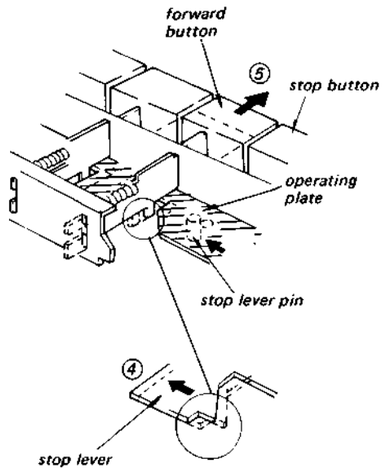
(1) The shut-off idler touches the flywheel, because the pin of idler lever is moved as shown by arrow ③. The shut-off idler rotates.

(2) The pin of rotating shut-off idler pushes the shut-off lever and moves the stop lever pin as shown by arrow ④.

Playback mode



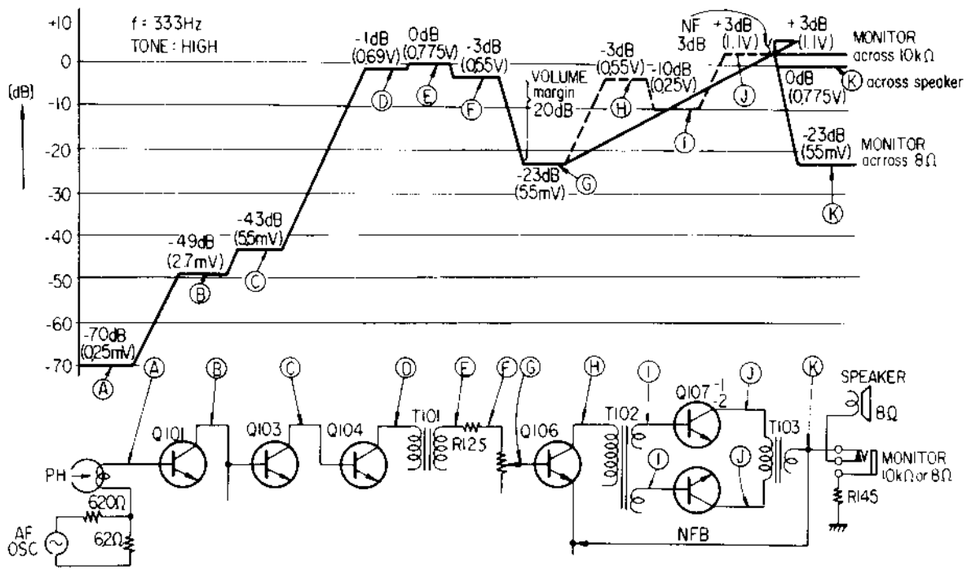
3



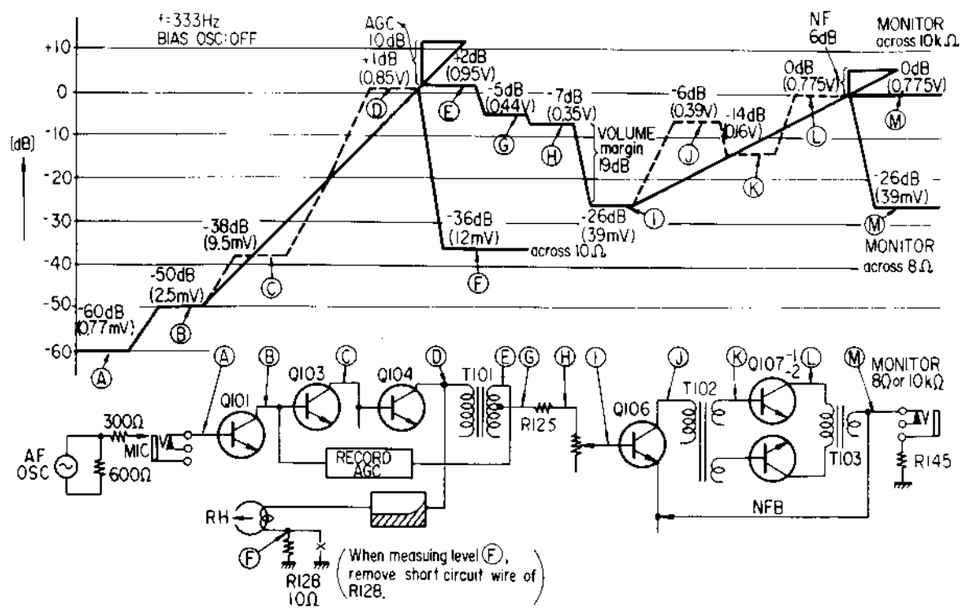
The stop lever pin (operating plate) is moved by the shut-off lever as shown by arrow ④ and releases the forward button.

1-3. LEVEL DIAGRAM

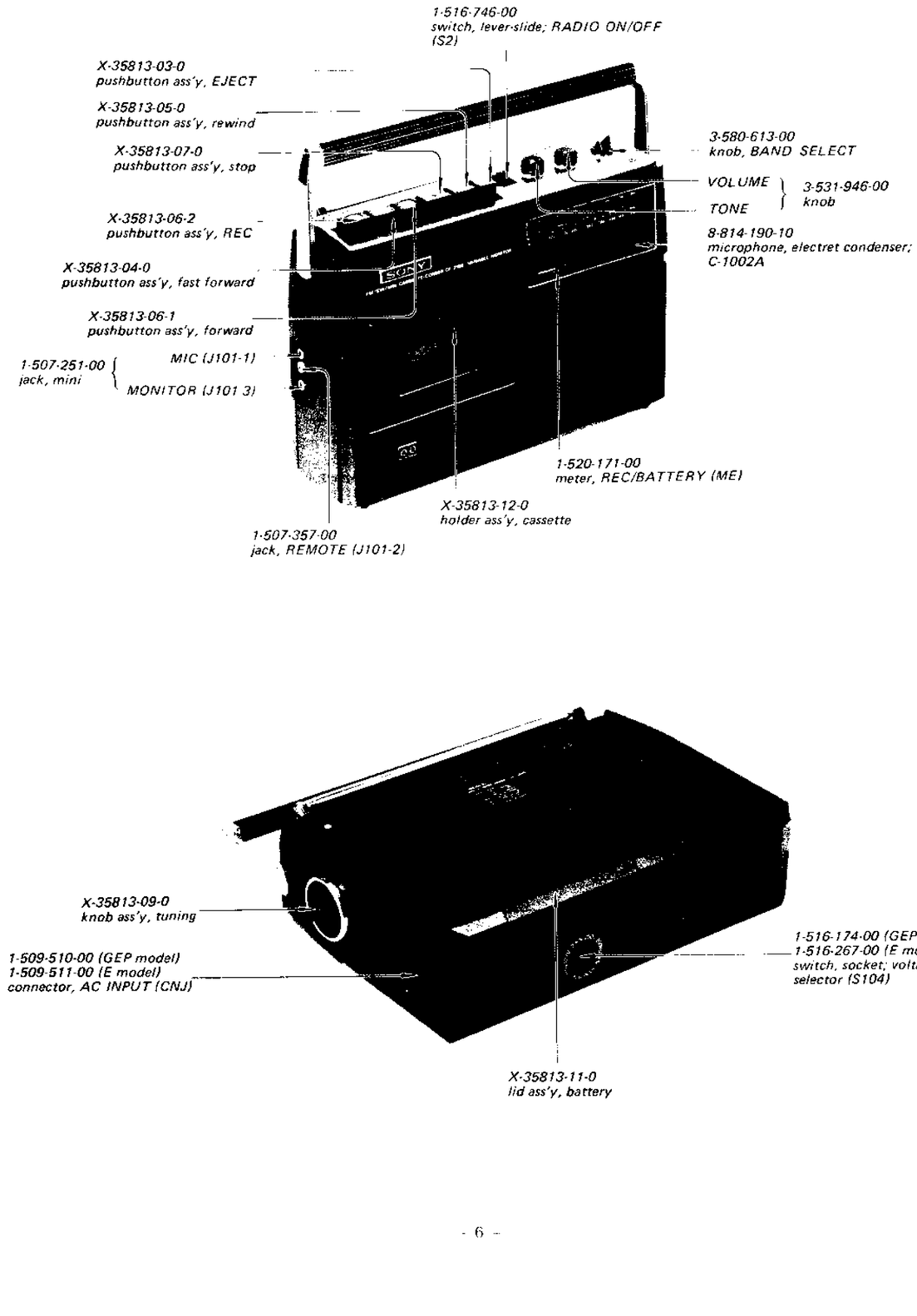
Playback



Record

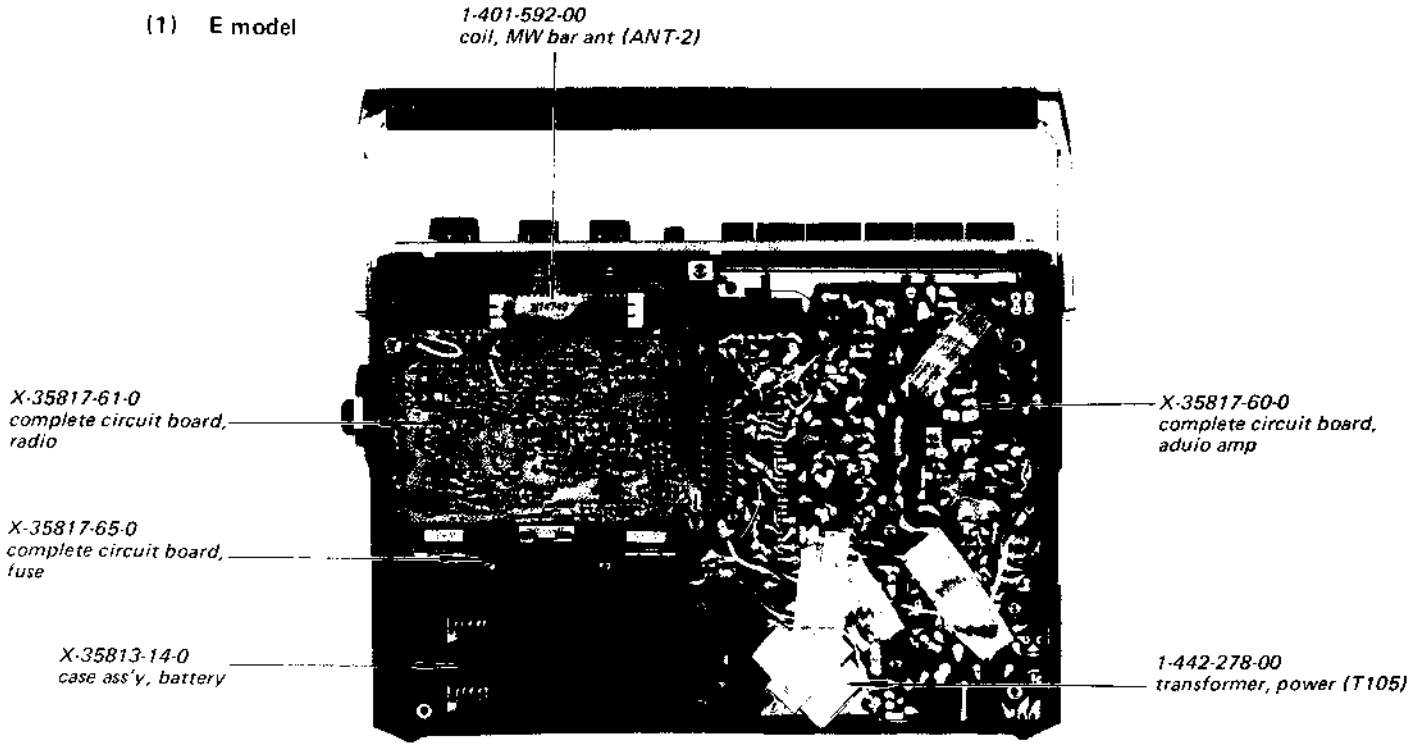


1-4. EXTERNAL VIEWS

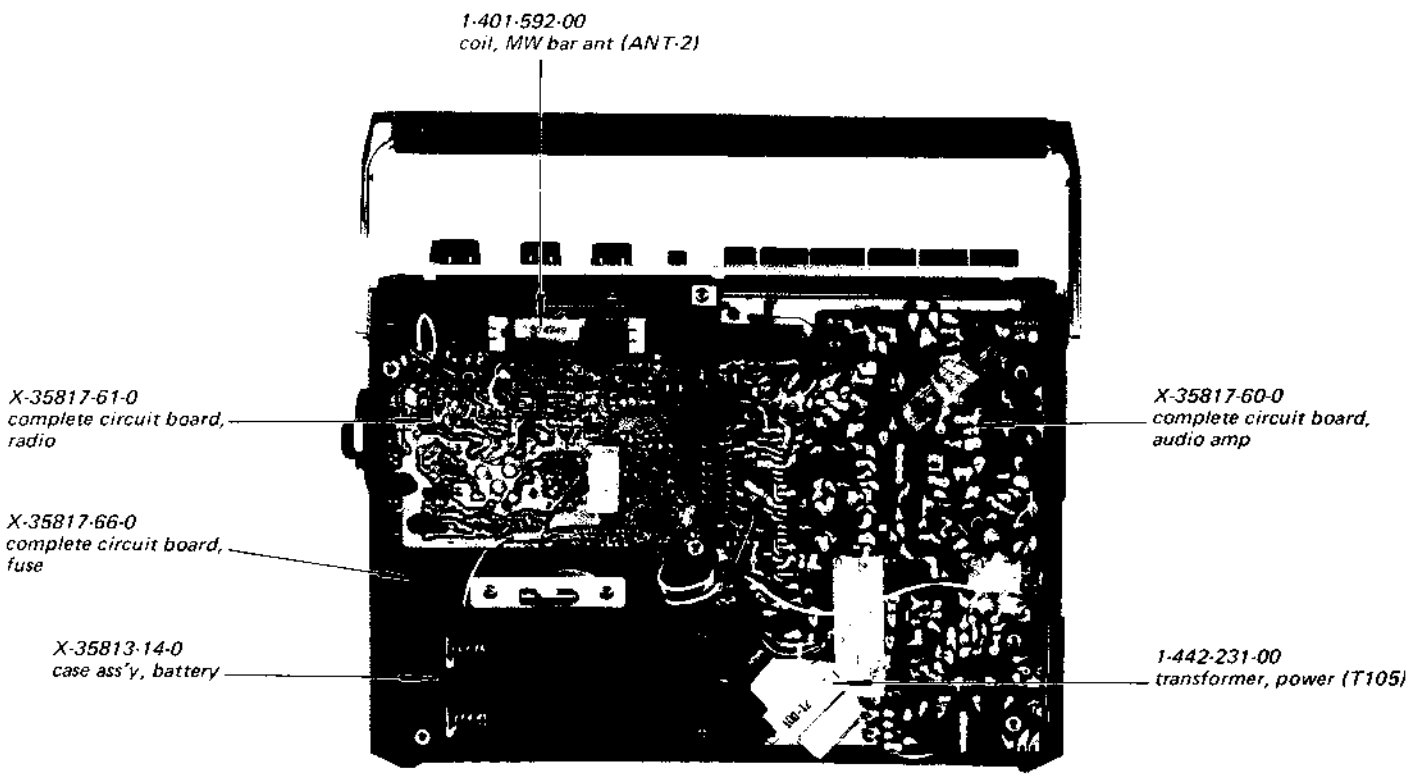


1-5. INTERNAL VIEWS

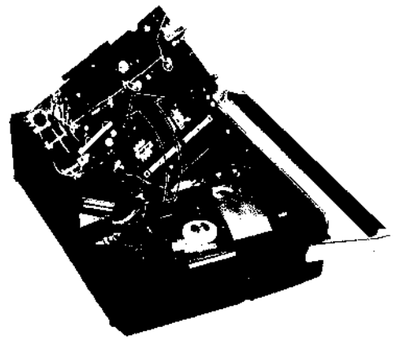
(1) E model



(2) GEP model



③ *Remove the circuit board as shown by arrow.*

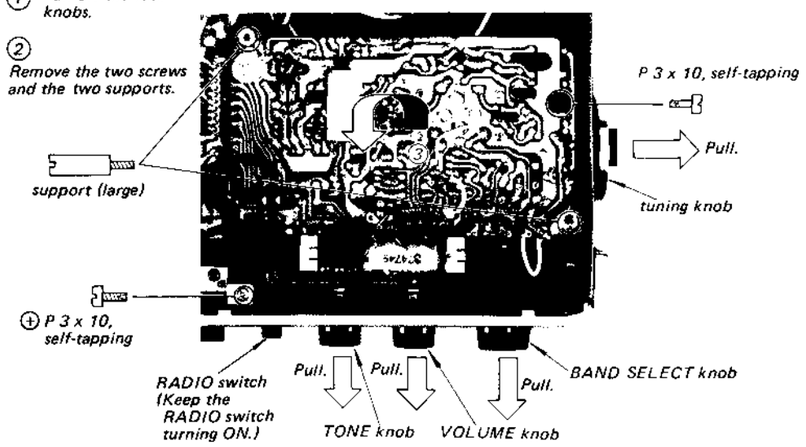


Electrical Adjustments for FM Section

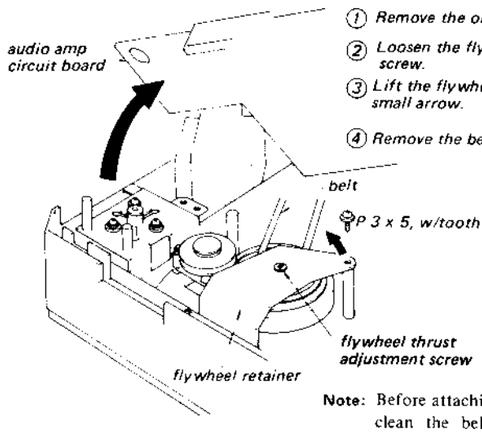
Radio Chassis Removal

① *Pull off the four knobs.*

② *Remove the two screws and the two supports.*



Belt Removal



① *Remove the one screw (P 3 x 5, w/tooth).*

② *Loosen the flywheel thrust adjustment screw.*

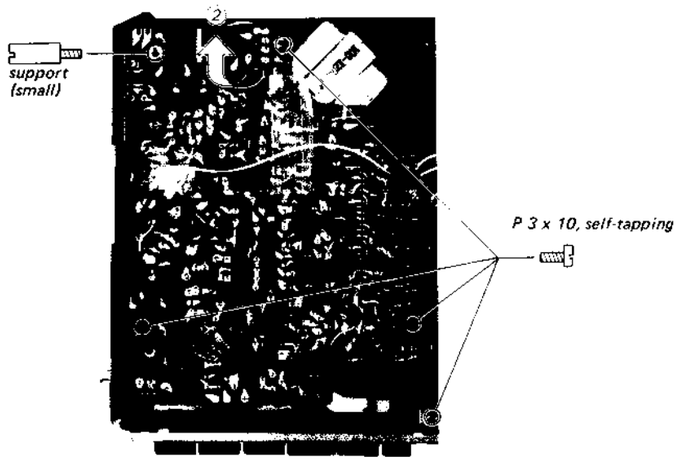
③ *Lift the flywheel retainer up as shown by small arrow.*

④ *Remove the belt.*

Note: Before attaching the belt to the flywheel, clean the belt with alcohol moistened swab.

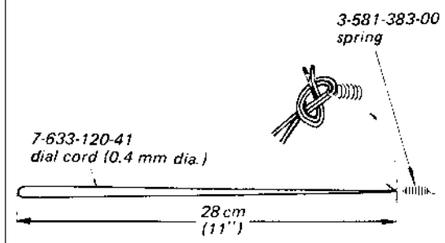
Chassis Removal

① *Remove the four screws and one support*



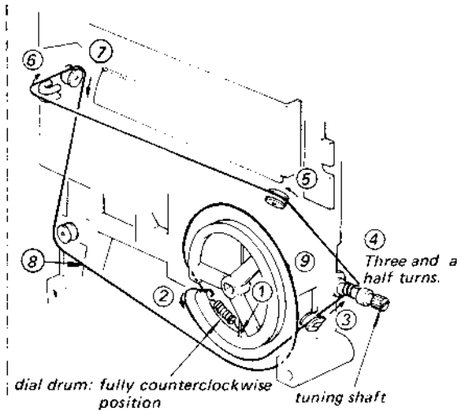
Dial Cord Stringing

1) Dial Cord Assembly



2) Dial Cord Stringing

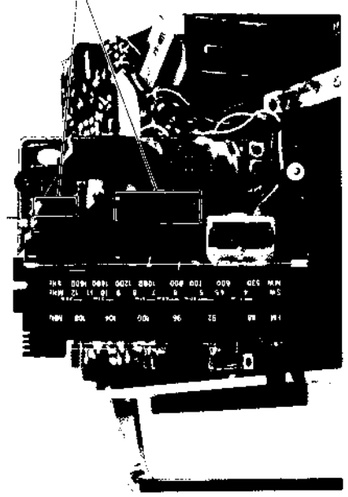
String the dial cord in numerical order.



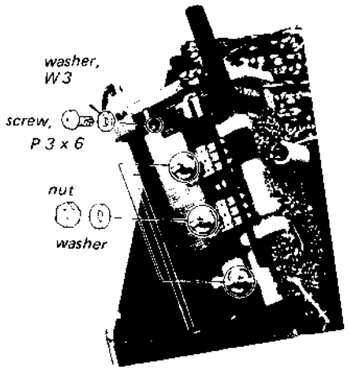
AM IF ALIGNMENT

Radio Circuit Board Removal

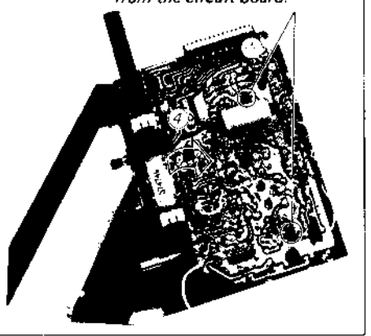
① *Retain the dial drum with cellophane tape or an equivalent tape to hold the dial cord stringing.*



② *Remove the screw, nuts and washers.*



③ *Release the two claws of chassis from the circuit board.*



Note: When removing the circuit board, remove the tuning shaft from dial drum to keep the dial cord stringing.

SECTION 2
DISASSEMBLY

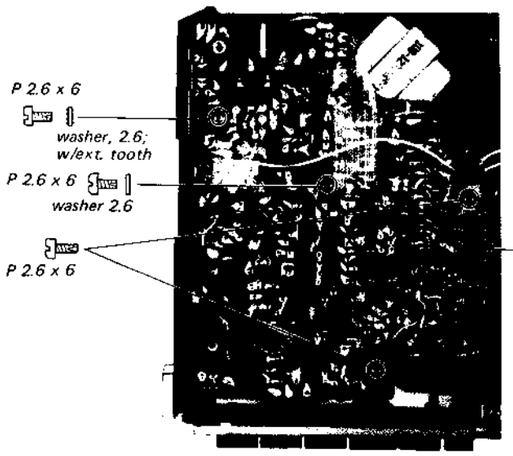
2-1. DISASSEMBLY

Rear Case Removal

Remove the five screws of rear case.
(B 3 x 10, black)

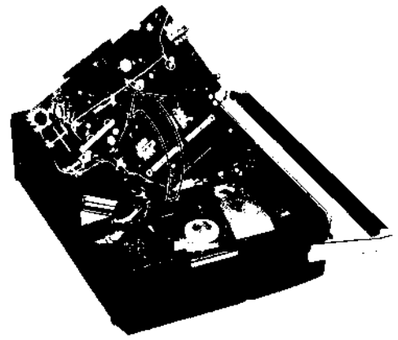
Audio Circuit Board Removal

(1) Remove the four screws and two washers.



(2) Remove the JACK connector from the plug of radio circuit board.

(3) Remove the circuit board as shown by arrow.

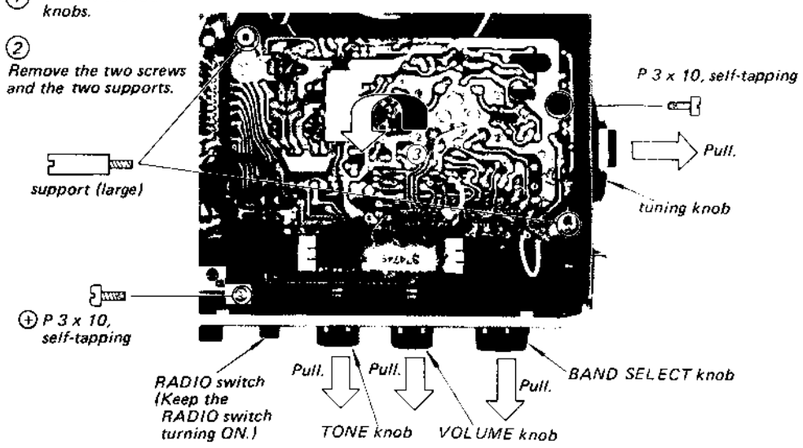


Electrical Adjustments for FM Section

Radio Chassis Removal

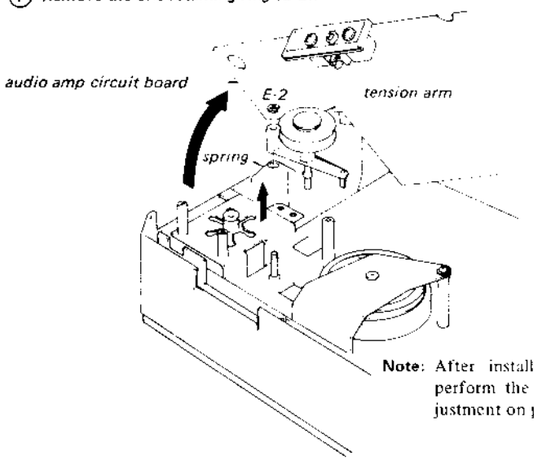
(1) Pull off the four knobs.

(2) Remove the two screws and the two supports.



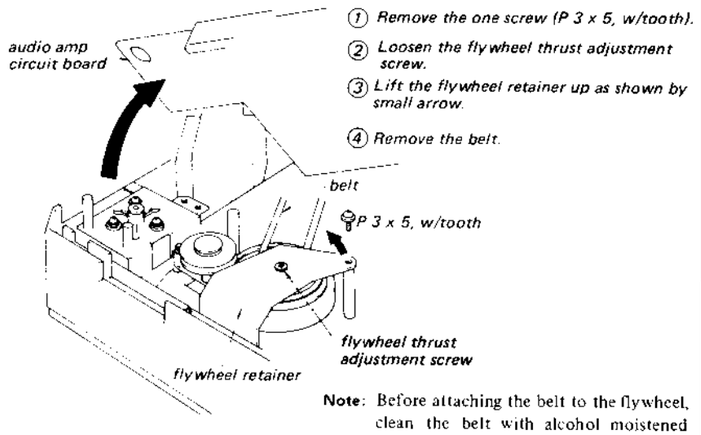
Tension Arm Removal

(1) Remove the one retaining ring (E-2).



Note: After installing the tape-tension arm, perform the tension pulley pressure adjustment on page 13.

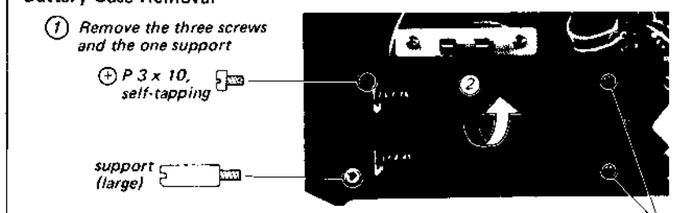
Belt Removal



Note: Before attaching the belt to the flywheel, clean the belt with alcohol moistened swab.

Battery Case Removal

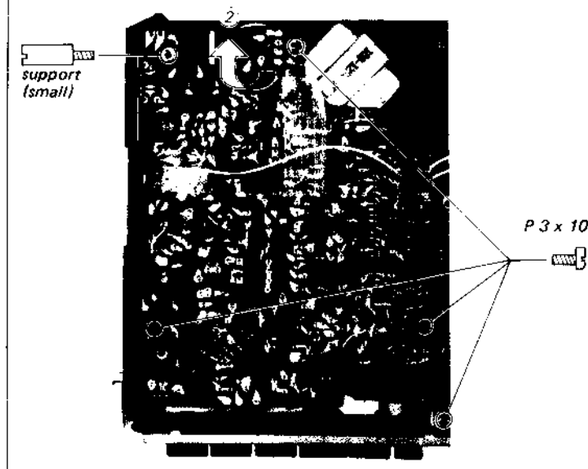
(1) Remove the three screws and the one support



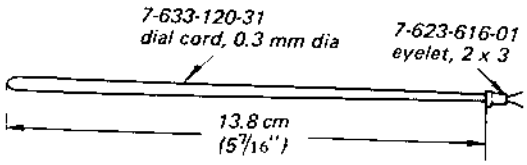
Phote shows E model

Chassis Removal

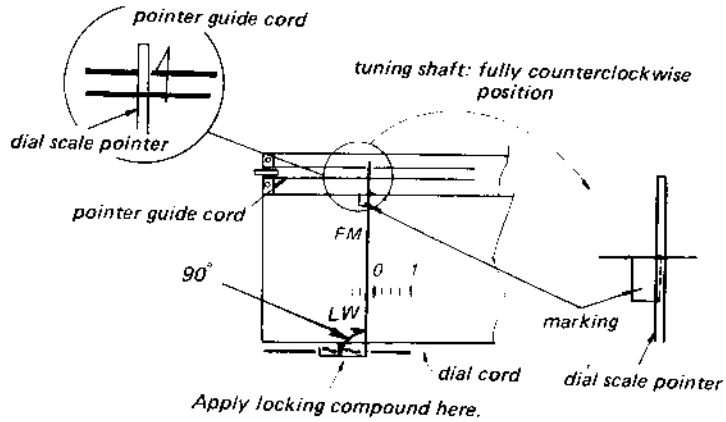
(1) Remove the four screws and one support



3) Pointer Guide Assembly

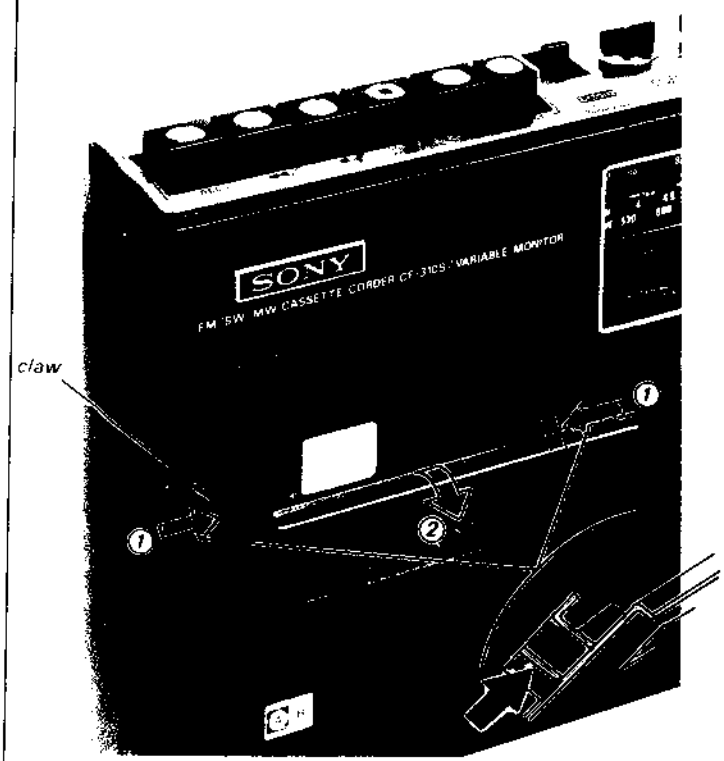


4) Dial Scale Pointer Setting



CASSETTE HOLDER REMOVAL

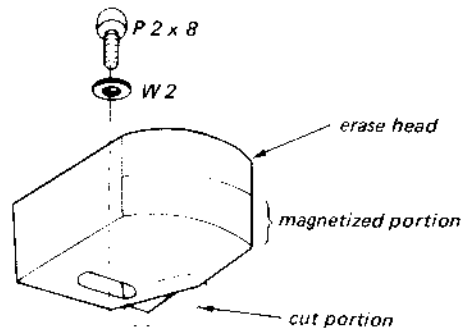
① Push two claws simultaneously as shown by the arrow ①.
② Remove cassette holder as shown by the arrow ②.



2-2. ATTACHMENTS

2-2-1. ERASE HEAD ATTACHMENT

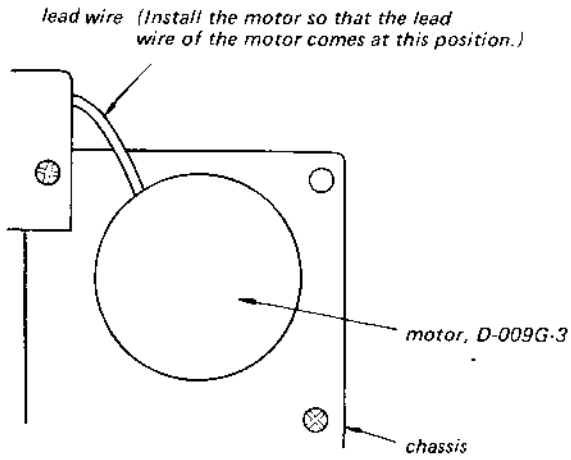
Attach the erase head so that cut portion comes lower side.



SECTION 3
ADJUSTMENTS

2-2-2. MOTOR ATTACHMENT

D-009G-3



3-1. MECHANICAL ADJUSTMENT

Fast Forward and Rewind Torque Adjustment

Before the adjustment, clean the contact portion between the reel spindle and the idler with alcohol moistened swab.

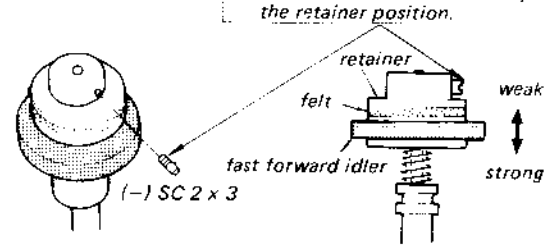
Torque meter	Meter reading
* CQ-201	55 ~ 95 g·cm (0.77 ~ 1.33 oz·inch)
Ordinary torque meter	60 ~ 100 g·cm (0.84 ~ 1.39 oz·inch)

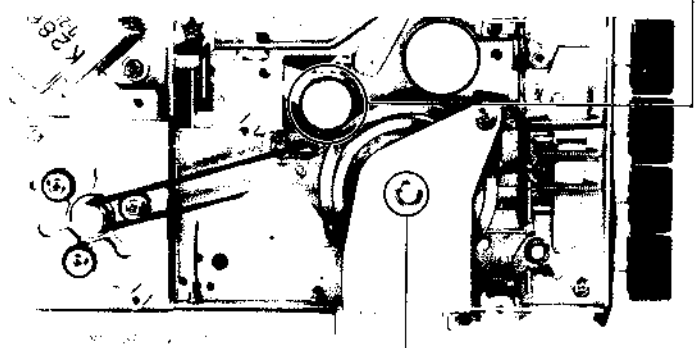
* SONY cassette type torque meter

Model	Part No.
CQ-201	Y-20926-11-1

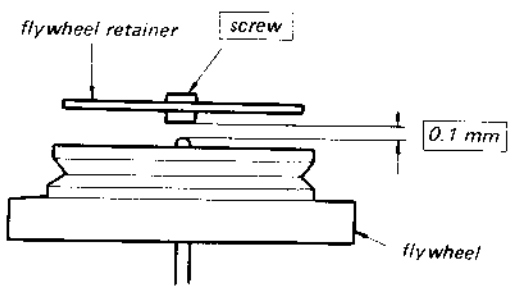
If necessary, adjust as follows:

1. *Remove the locking compound.*
2. *Loosen the set screw and adjust the retainer position.*

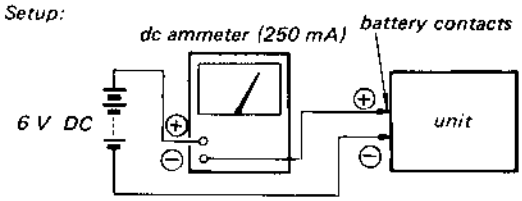




Flywheel Thrust Play Adjustment
– playback mode –



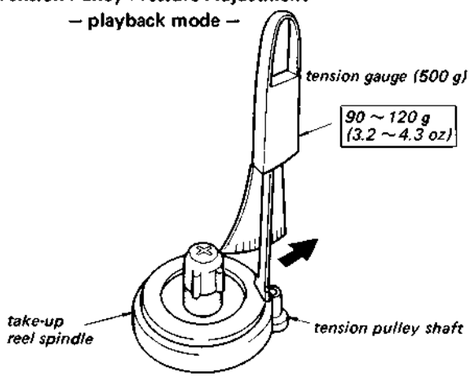
1. *Setup:*



2. *Place the unit horizontally with the flywheel side up.*
3. *Loosen the thrust screw for the sufficient flywheel play.*
4. *Tighten the screw until current suddenly increases, then loosen the screw 60 degrees.*
5. *Apply the locking compound to the screw.*

Note: 1. Wider clearance causes increase of wow and flutter.
2. Narrower clearance causes increase of current drain. The battery's life is shortened.

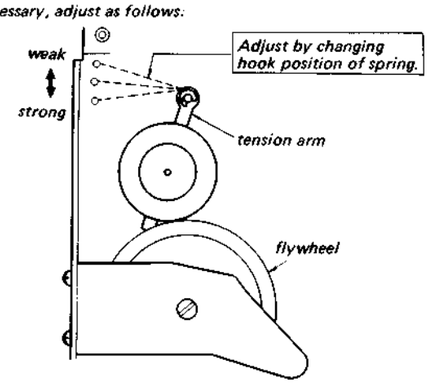
Tension Pulley Pressure Adjustment
– playback mode –



Push the tension pulley shaft away from the take-up reel spindle using a tension gauge, as shown by the arrow. Make the tension pulley return to the take-up reel spindle slowly. The pressure should be measured at the point where the tension pulley shaft just contacts the take-up reel spindle.

Note: Stronger or weaker pressure of the tension pulley shaft causes poor take-up torque in playback mode.

If necessary, adjust as follows:



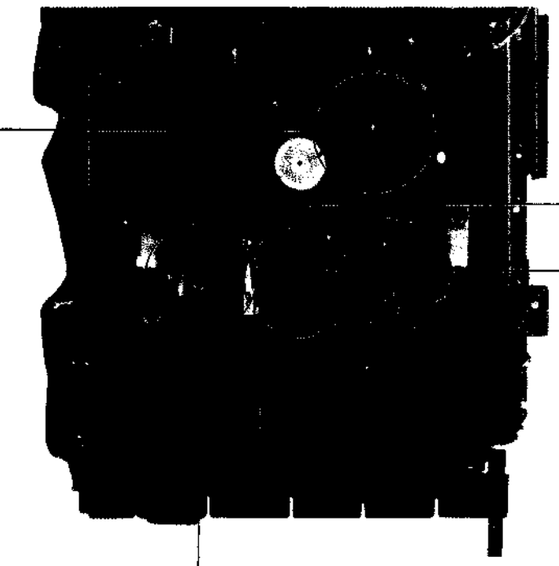
Playback Torque Measurement

Before the adjustment, clean the contact portion between the reel spindle and the tension pulley with alcohol moistened swab.

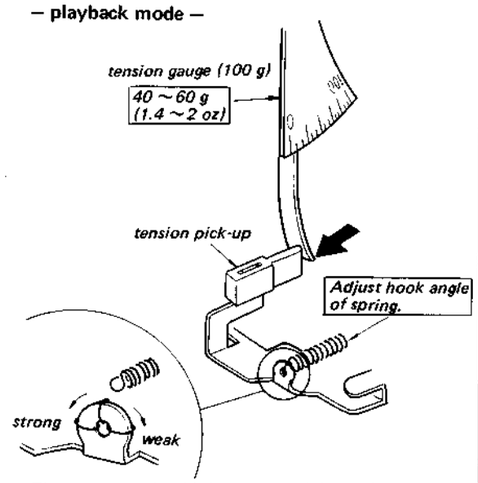
Torque meter	Meter reading
* CQ-101	25 ~ 45 g·cm (0.35 ~ 0.62 oz·inch)
Ordinary torque meter	35 ~ 55 g·cm (0.49 ~ 0.77 oz·inch)

* SONY cassette type torque meter

Model	Part No.
CQ-101	Y-20926-01-1



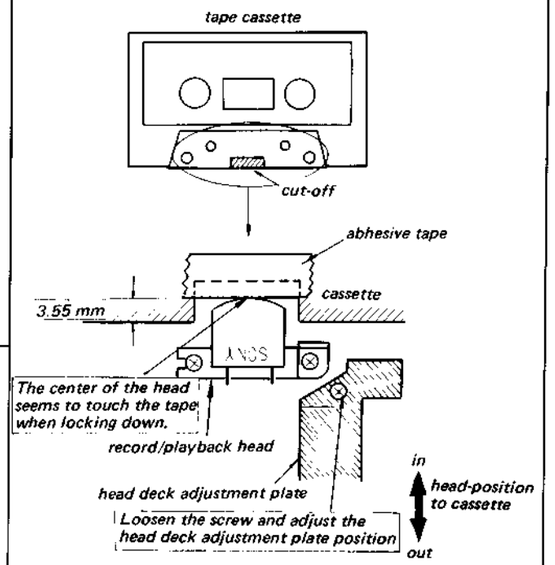
Tension Pick-up Adjustment
– playback mode –



The pressure should be measured just when the tension pick-up starts to move.

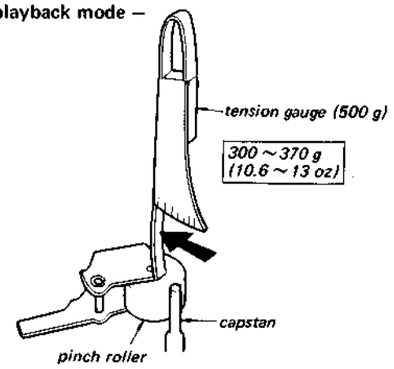
Note: 1. If the pressure of the tension pick-up is weak, the shut-off mechanism will be operated during the tape travel.
2. If the pressure is strong, the mechanism does not operate even if the tape travel is finished.
3. After the adjustment, apply the locking compound to the hook of spring.

Head Deck Position Adjustment
– playback mode –



Note: 1. If the center of the head is less than 3.55 mm into the cassette, the following troubles occur:
1) The tape does not perfectly contact the head.
2) The shut-off mechanism may not operate because the tape can not push the tension pick-up strongly enough to operate the shut-off mechanism.
2. After the adjustment, apply the locking compound to the screw.

Pinch Roller Pressure Measurement
– playback mode –



Push the pinch roller away from the capstan using a tension gauge as shown by the arrow. Make the pinch roller return to the capstan slowly. The pressure should be measured at the point where the pinch roller just contacts the capstan.

Note: 1. Weaker pressure causes increase of wow and flutter.
2. Stronger pressure causes increase of current drain.

3-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with alcohol moistened swab:
   - Record/playback head
   - Erase head
   - Capstan
   - Pinch roller
   - Rubber belts
   - Idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring a head demagnetizer close to the erase head, and do not use the magnetized screwdriver for adjusting).
3. After the adjustments, apply locking compound to the adjusted parts.
4. The adjustments should be performed in the order listed in this service manual.
5. The adjustments should be performed with rated power supply voltage unless otherwise specified.

TAPE RECORDER SECTION

Test Equipment/Tools Required

audio oscillator (af osc)
VTVM
resistors 600 Ω, 10 kΩ
digital frequency counter
or speed checker (SONY LFM-30)
attenuator (600 Ω)
SONY test tapes
- P-4-A81 (6.3 kHz, −10 dB)
- P-4-L81 (333 Hz, 0 dB)
- SPC-4 (1 kHz, 0 dB)
- WS-48 (3 kHz, 0 dB)

blank tape cassette (completely erased)
- SONY CS-10

wow meter

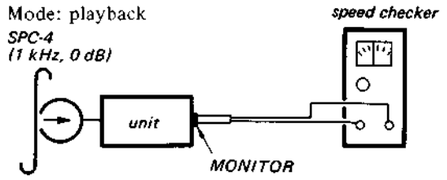
1. Tape Speed Adjustment

Settings:

RADIO switch:	OFF
VOLUME control:	mechanical mid
Power source:	6 V DC

Procedure:

1. Mode: playback

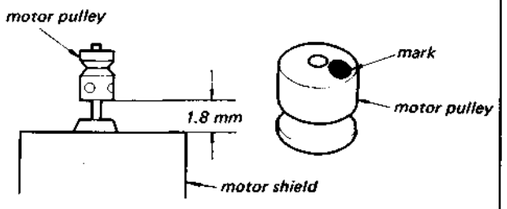


Specification:

speed checker	digital frequency counter
−3 ~ + 3 %	970 ~ 1,030 Hz

Difference between beginning and end of tape should be within 1 % (10 Hz).

2. If necessary, replace motor pulley.



Part No.	Mark	Diameter	Speed
3-581-327-11	red	10.8 mm	faster ↕ slower
3-581-327-01	none	10.7 mm	
3-581-327-21	black	10.6 mm	

Note: When replacing the belt, install it without twist. If not, wow and flutter may increase.

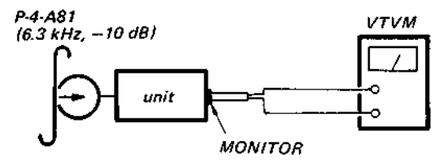
2. Record/playback Head Azimuth Adjustment

Settings:

RADIO switch:	OFF
TONE control:	HIGH
VOLUME control:	mechanical mid

Procedure:

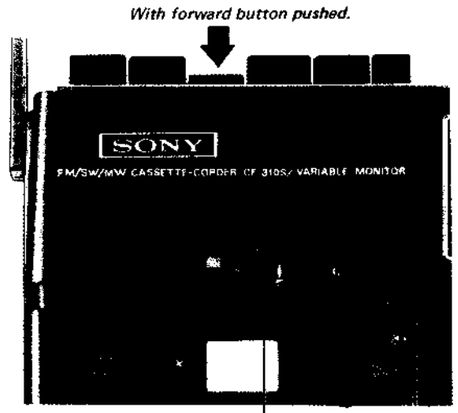
1. Mode: playback



2. Turn the adjustment screw for the highest VTVM reading.

Note: Several peaks may appear, take the highest.

Adjustment Location:



Note: Remove the cassette holder for azimuth adjustment. (See Page 9).

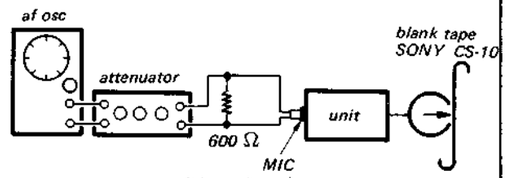
3. Record Bias Adjustment

Settings:

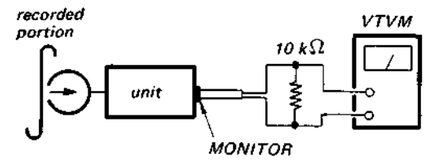
RADIO switch:	OFF
TONE control:	mechanical mid

Procedure:

1. Mode: record

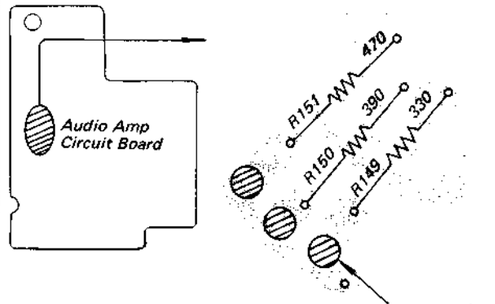


2. Mode: playback



Recorded signal	VTVM reading
333 Hz	Adjust VOLUME control for −10 dB (0.25 V)
150 Hz	6 dB allowable range (150 Hz 333 Hz 6 kHz)
6 kHz	

If necessary, adjust by changing the pattern connection.



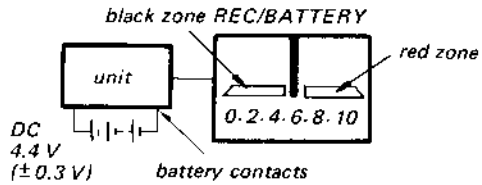
R149, 150, 151 connections

Connect	Resistance value (Ω)	6 kHz level
R149	330	decrease ↕ increase
R150	390	
R151	470	

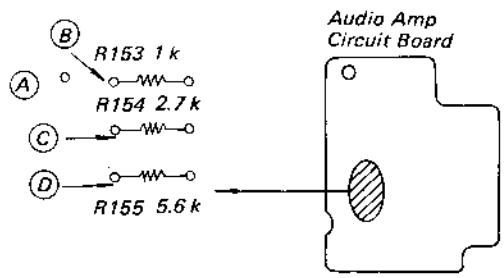
4. REC/BATTERY Meter Check

Settings:

RADIO switch:	ON
VOLUME control:	MIN
Power Source:	4.4 V DC (± 0.3 V)



1. Mode: playback
   Select the resistance value by changing pattern connection to place the pointer of REC/BATTERY meter at center as shown above.



Pattern Connections

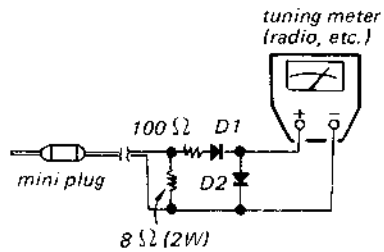
①	A-B, A-C, A-D	= 642 Ω
②	A-B, A-C	= 729 Ω
③	A-B, A-D	= 848 Ω
④	A-B	= 1 kΩ (standard)
⑤	A-C, A-D	= 1.82 kΩ
⑥	A-C	= 2.7 kΩ
⑦	A-D	= 5.6 kΩ

RADIO SECTION

Test Equipment/Tools Required:

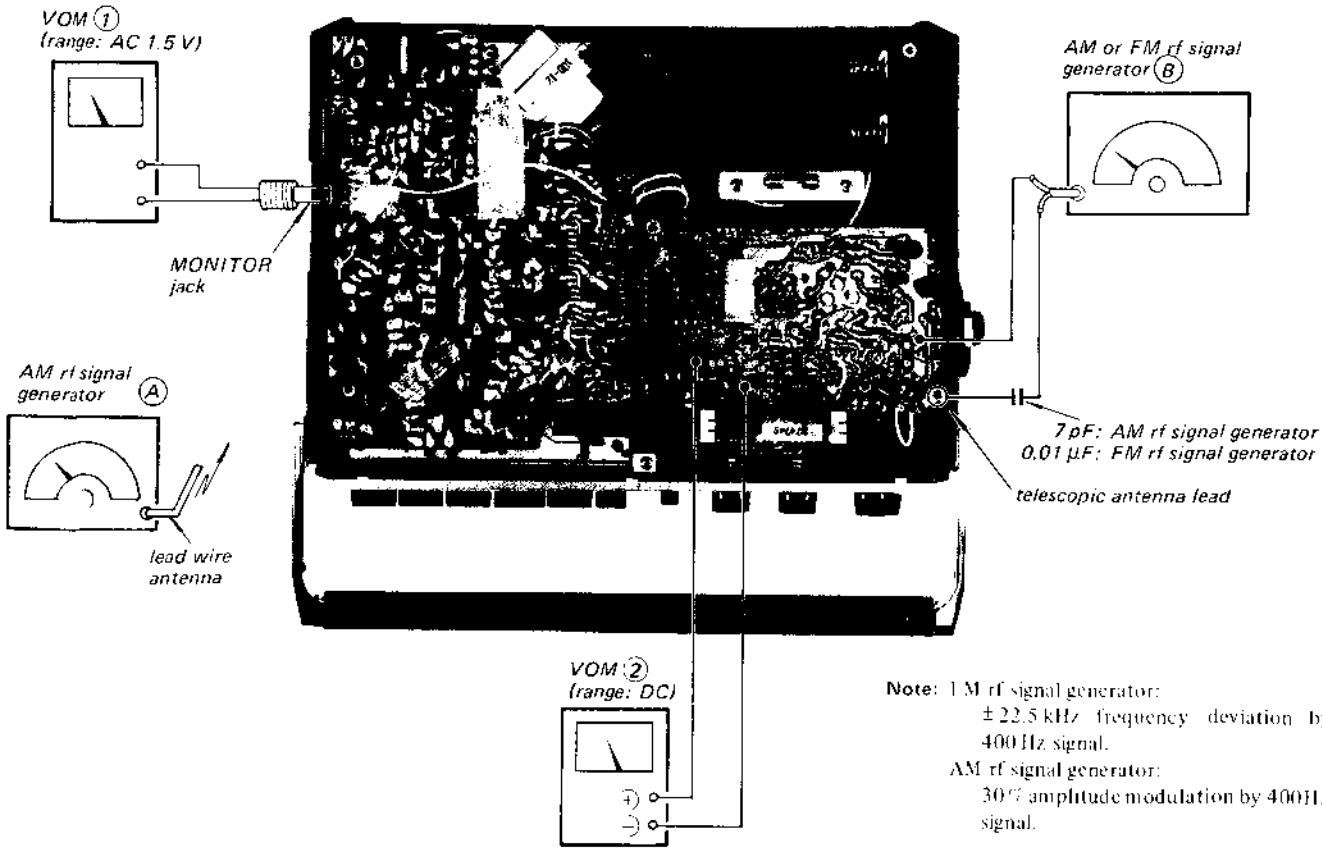
AM rf signal generator
FM rf signal generator
VOM
lead wire antenna
8 Ω, 2W resistor

Note: Instead of VOM (range: 0.5 ~ 5 V AC), a simple test equipment shown below can be used.



D1, D2: germanium diode or power germanium transistor (2SB495, etc.)

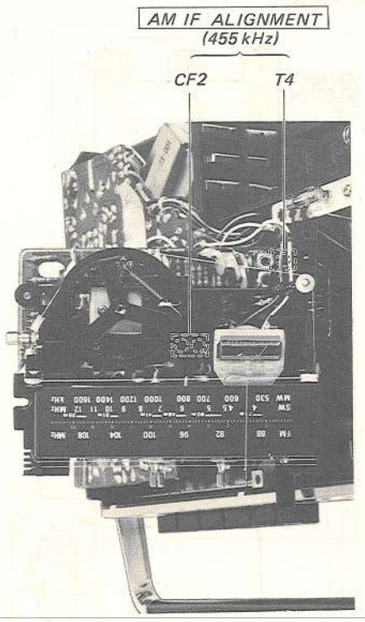
Test Setup

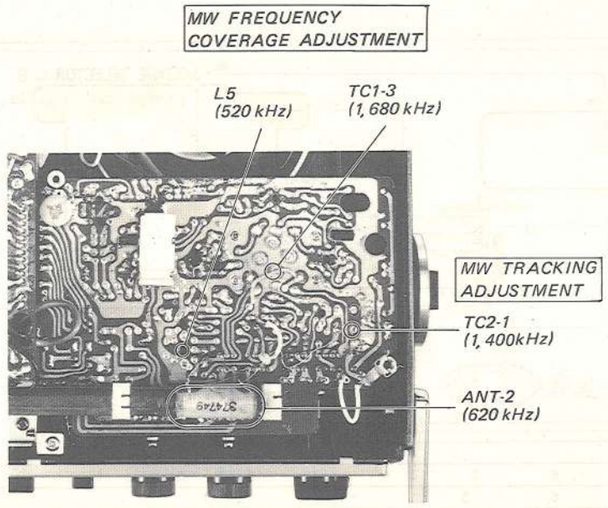


Note: 1 M rf signal generator:
±22.5 kHz frequency deviation by 400 Hz signal.
AM rf signal generator:
30% amplitude modulation by 400 Hz signal.

MW, AM IF

AM rf signal generator connection Ⓐ.



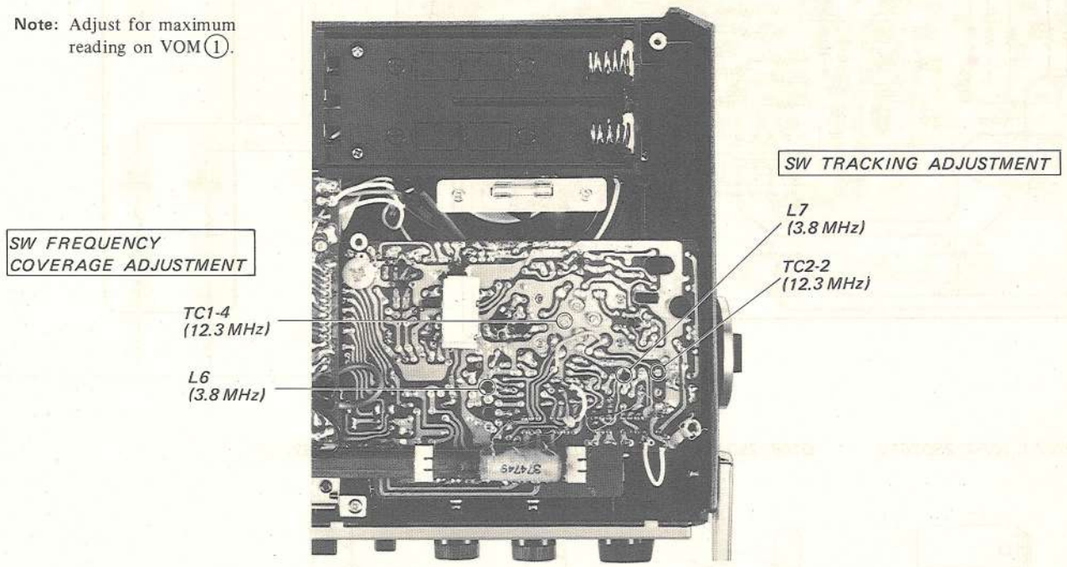


Note: 1. Adjust for maximum reading on VOM Ⓘ.
2. After the adjustments fix the coil ANT-2 with wax.

SW

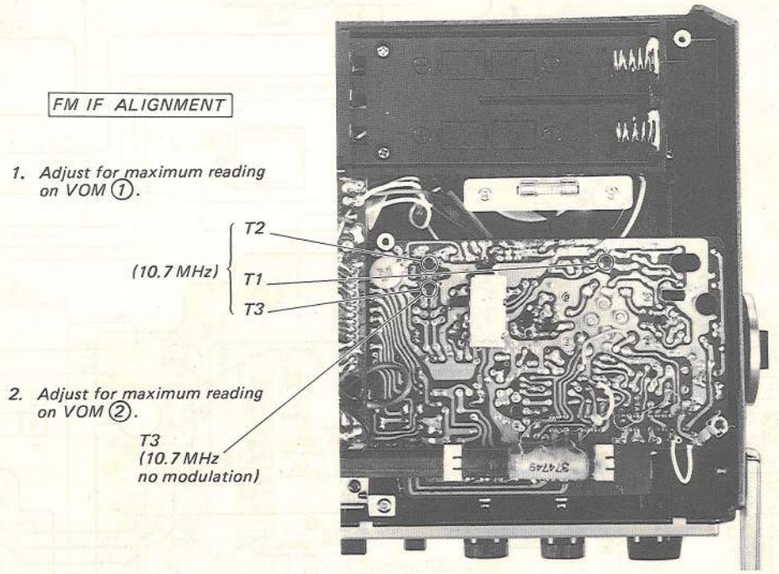
AM rf signal generator connection Ⓑ.

Note: Adjust for maximum reading on VOM Ⓘ.



FM IF

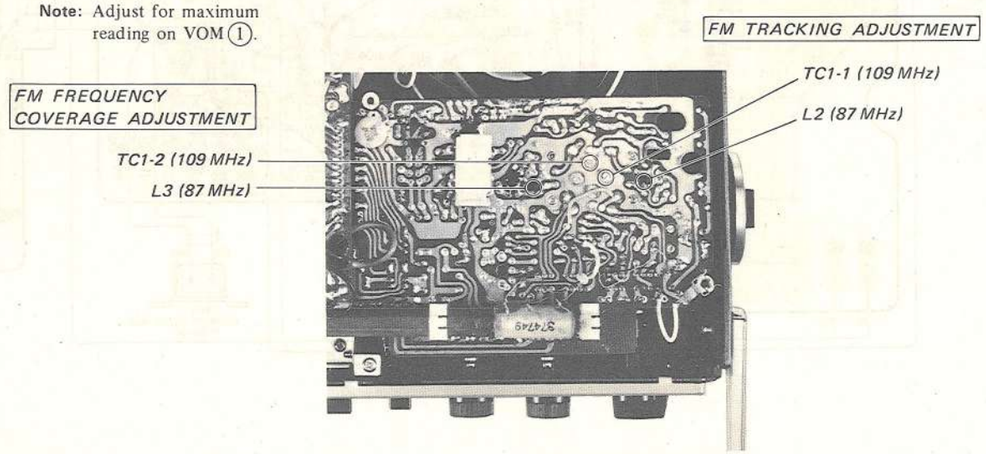
FM rf signal generator connection Ⓑ.



FM

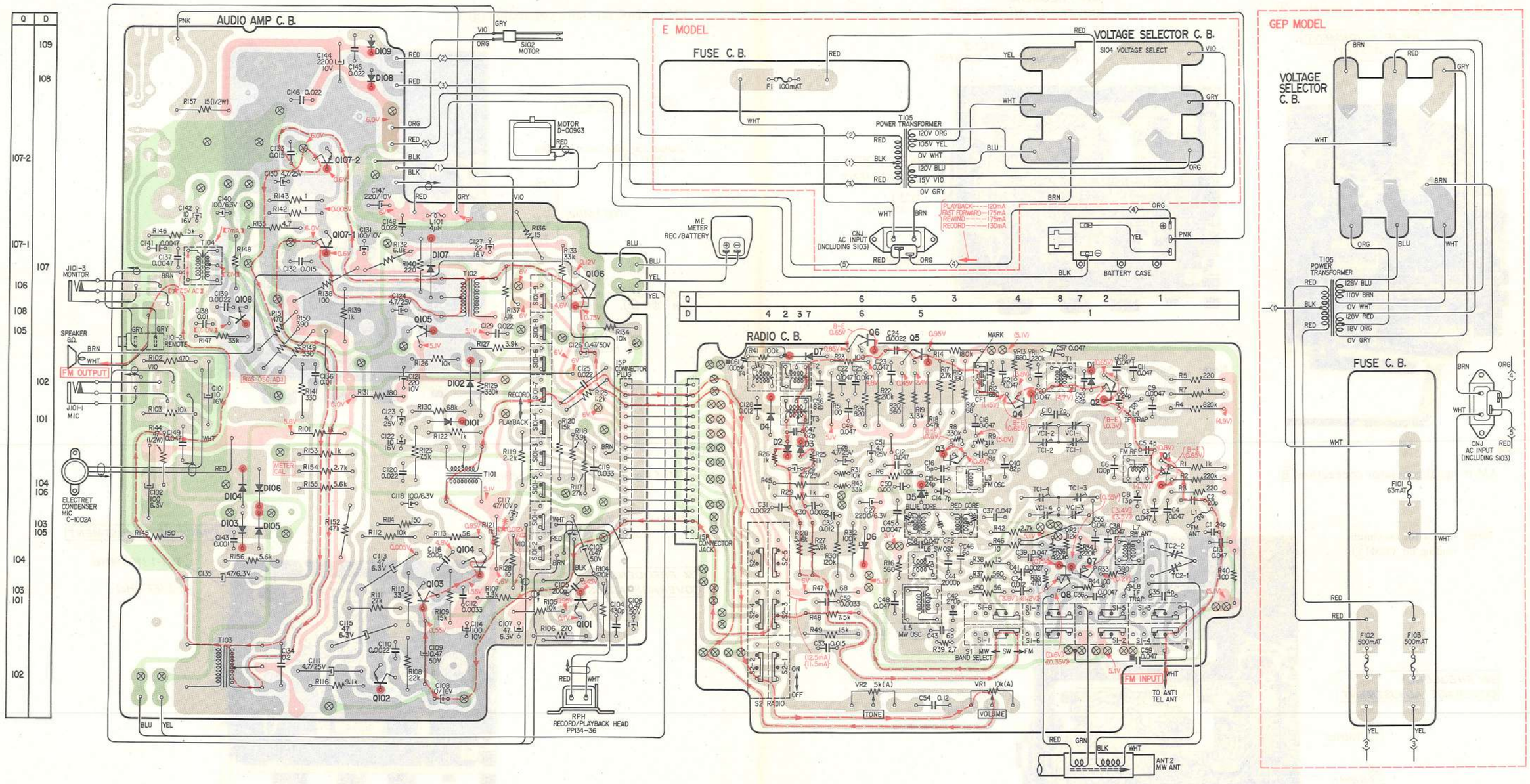
FM rf signal generator connection Ⓑ.

Note: Adjust for maximum reading on VOM Ⓘ.



SECTION 4
DIAGRAMS

4-1. MOUNTING DIAGRAM
– Conductor Side –



Note:
- : B+ pattern
- : printed jumper conductor
- ←--- : FM signal path

● DC RESISTANCE
Resistances are out-of-circuit values.

T101, 102: 70Ω / 300Ω
T103: 1.9Ω / 0.23Ω

Q1, 8: 2SC839J
Q2, 4, 5, 7: 2SC839F
Q3, 6: 2SC839H
Q101: 2SC900E

Q102, 103: 2SC945P
Q104 ~ 106: 2SC945Q

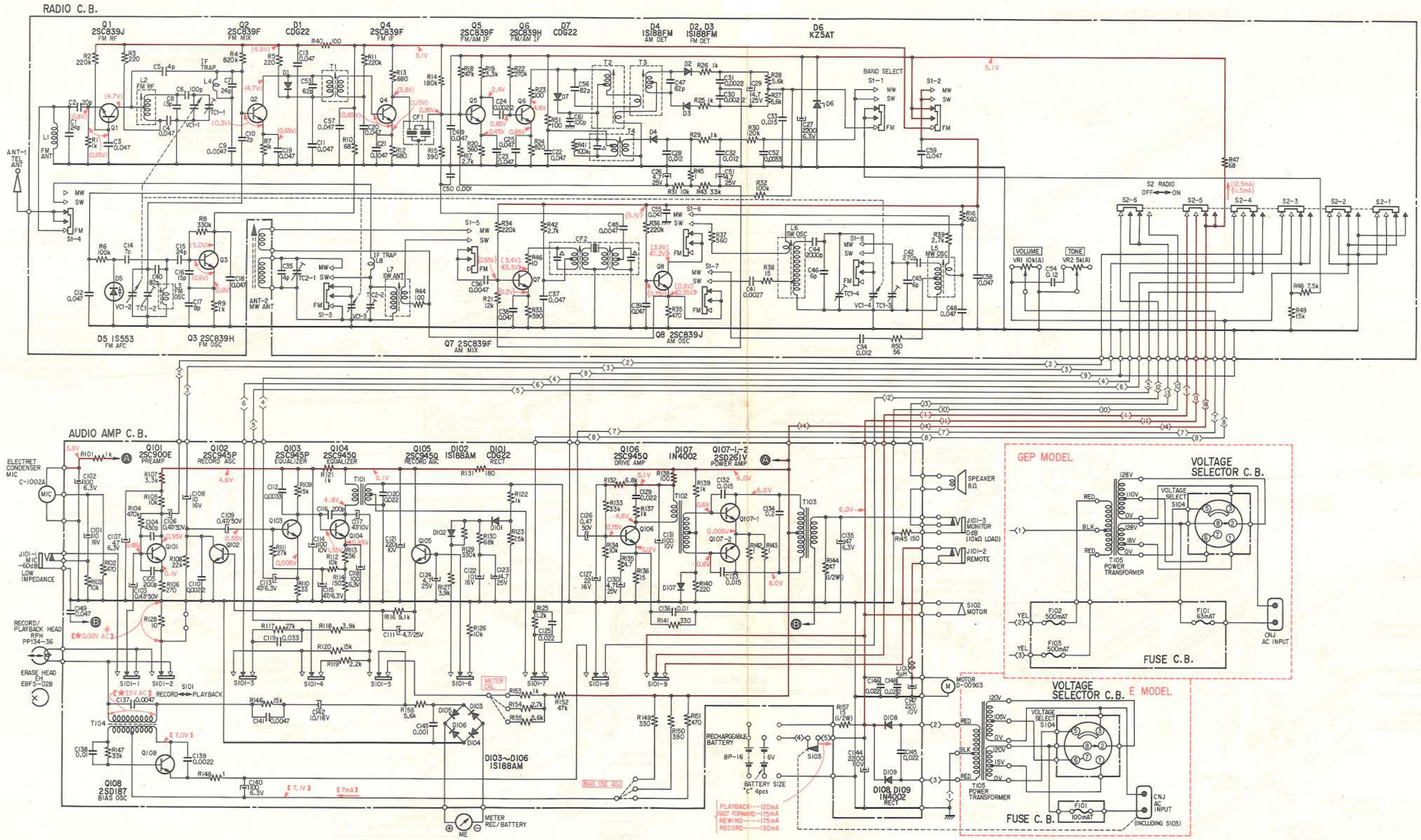
Q107-1, 107-2: 2SD261V

Q108: 2SD187

D1, 7, 101: CDG22
D2 ~ 4: 1S188FM
D6: KZ5AT
D102 ~ 106: 1S188AM
D107 ~ 109: 1N4002

D5: 1S553

4-2. SCHEMATIC DIAGRAM



Note:

- C.B.: circuit board
- All capacitors are in μF unless otherwise noted. p = μμF
- All resistors are in Ω, ¼ W, unless otherwise noted. k = 1000
- △ indicates internal components.
- ⏚ indicates chassis ground.

- Voltages are DC with respect to ground unless otherwise noted. Readings taken under no-signal conditions with a VOM (20 kΩ/V). Readings in [ ] are in record mode.
  ( ): FM [ ]: SW
  ≪ ≫: MW { }: SW and MW
  Voltage variations may be noted due to normal production tolerances.

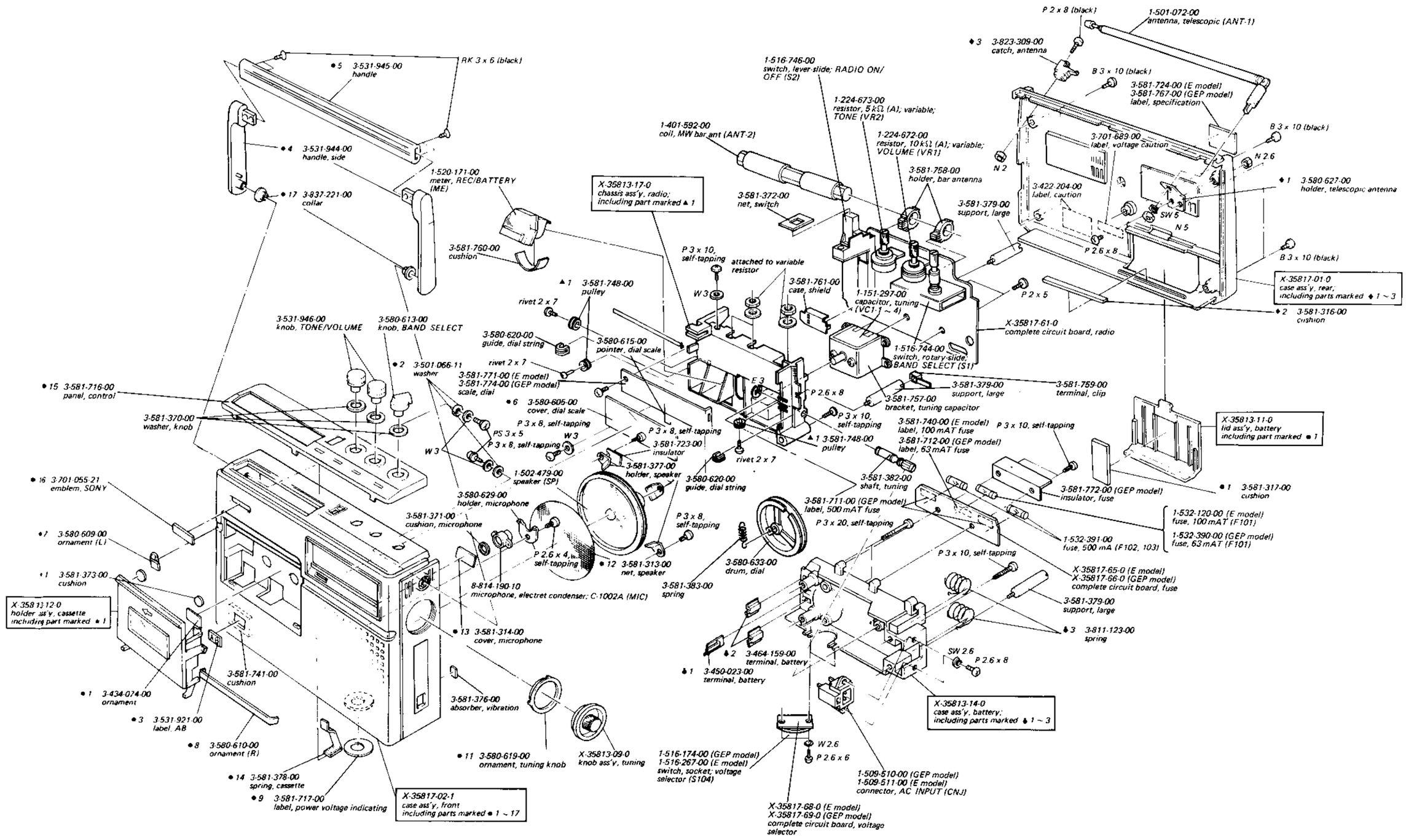
- Switch Mode

Ref. No.	Switch	Mode
S1	BAND SELECT FM/SW/MW	FM
S2	RADIO ON/OFF	OFF
S101	record/playback	playback
S102	motor	OFF
S103	AC/DC (included in CNJ)	DC
S104	voltage select	–

- ★: When performing record level measurement, disconnect black wire across R128. After measurement, reconnect the wire.
- ⊕: indicates through-hole
- ★: AC voltage readings on bias oscillator circuit taken with a VTVM.
- ■: mounted on conductor side.
- —: B+ circuit

SECTION 5
EXPLODED VIEWS

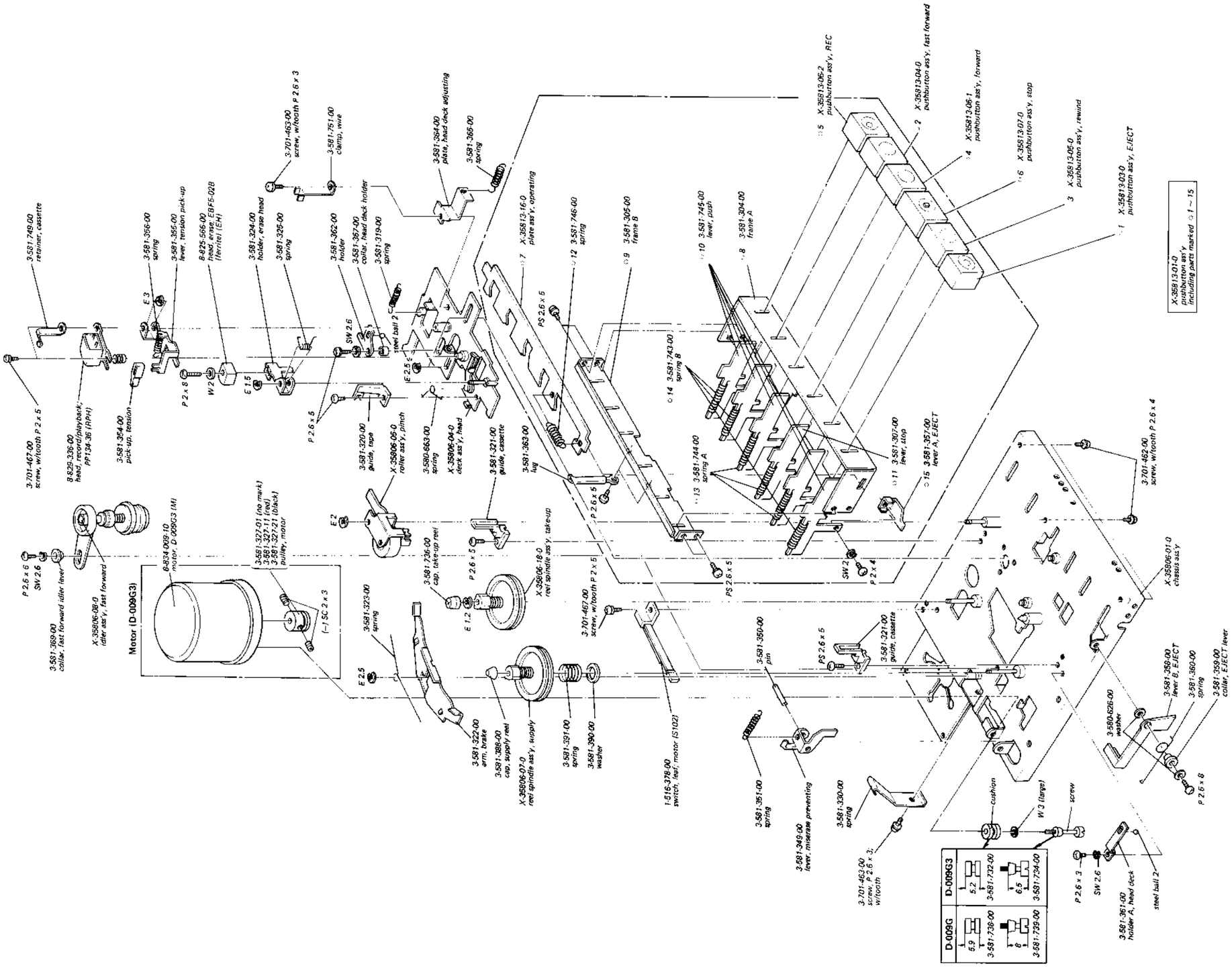
5-1. EXPLODED VIEW (1)



Note:

- ○ Items without part number and description are not available.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (−) = slotted head

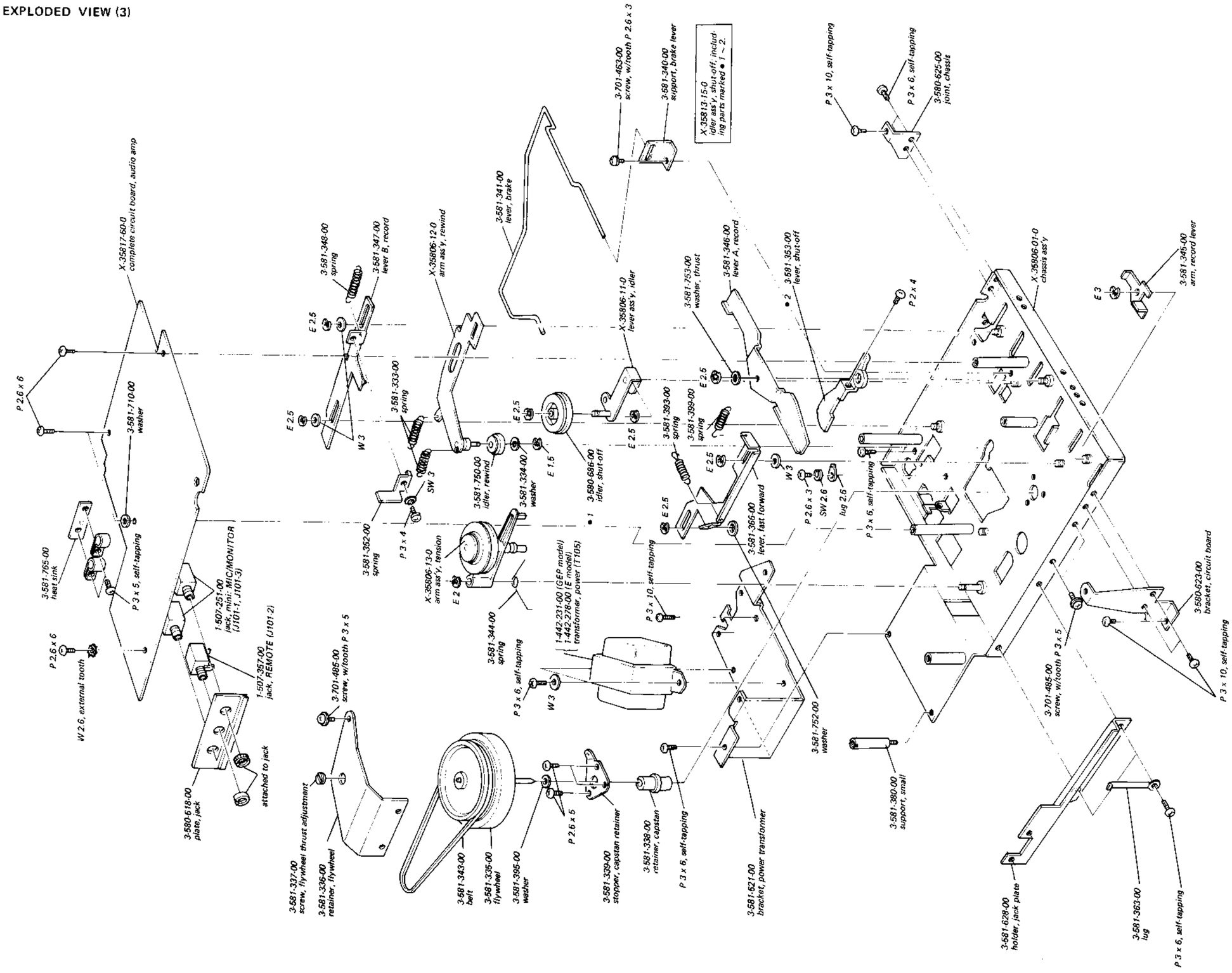
5-2. EXPLODED VIEW (2)



Note:

- ○ Items without part number and description are not available.
- ○ All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

5-3. EXPLODED VIEW (3)



Note:

- Items without part number and description are not available.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (-) = slotted head

SECTION 6

ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*
	COMPLETE CIRCUIT BOARDS	
	X-35817-60-0	Audio Amp
	X-35817-61-0	Radio
	X-35817-65-0	Fuse (E model)
	X-35817-66-0	Fuse (GEP model)
	X-35817-68-0	Voltage Selector (E model)
	X-35817-69-0	Voltage Selector (GEP model)
	SEMICONDUCTORS	
	Transistors	
Q1		2SC839J
Q2		2SC839F
Q3		2SC839H
Q4, 5		2SC839F
Q6		2SC839H
Q7		2SC839F
Q8		2SC839J
Q101		2SC900E
Q102, 103		2SC945P
Q104 ~ 106		2SC945Q
Q107		2SD261V
Q108		2SD187
	Diodes	
D1		CDG22
D2 ~ 4		1S188FM
D5		1S553
D6		KZ5AT
D7		CDG22
D101		CDG22
D102 ~ 106		1S188AM
D107 ~ 109		1N4002
	COILS	
L1	1-405-530-00	FM Ant
L2	1-425-887-00	FM rf
L3	1-425-886-00	FM Osc
L4	1-425-885-00	I-F Trap
L5	1-405-690-00	MW Osc
L6	1-405-689-00	SW Osc
L7	1-401-628-00	SW Ant
L8	1-407-825-00	I-F Trap
ANT-2	1-401-592-00	MW Bar Ant
L101	1-407-824-00	Choke, 4 μH
	TRANSFORMERS	
T1	1-403-930-00	FM IFT
T2	1-403-932-00	FM IFT
T3	1-403-931-00	FM IFT
T4	1-403-929-00	AM IFT
T101	1-423-203-00	Input
T102	1-423-203-00	Driver
T103	1-427-375-00	Output
T104	1-405-634-00	Bias Osc
T105	1-442-278-00	Power (E model)
	1-442-231-00	Power (GEP model)

CAPACITORS

All capacitors are in μF and ceramic type unless otherwise indicated. 50 or less working volts are omitted except for electrolytic type. (elect = electrolytic, p = $\mu\mu$F)

C1	1-102-960-11	24 p
C2	1-102-958-11	20 p
C3, 4	1-101-006-11	0.047
C5	1-102-937-11	4 p
C6	1-102-973-11	100 p
C7	1-102-960-11	24 p
C8	1-102-950-11	13 p
C9	1-101-003-11	0.0047
C10	1-102-939-11	2 p
C11 ~ 13	1-101-006-11	0.047
C14	1-102-944-11	7 p
C15	1-102-960-11	24 p
C16	1-102-951-11	15 p

Ref. No.	Part No.	Description		
C17	1-102-945-11	8 p		
C18 ~ 23	1-101-006-11	0.047		
C24	1-101-002-11	0.0022		
C25	1-101-006-11	0.047		
C26	1-123-961-11	4.7	25 V	elect
C27	1-123-078-11	2200	6.3 V	elect
C28	1-105-514-12	0.012		mylar
C29	1-123-961-11	4.7	25 V	elect
C30, 31	1-101-002-11	0.0022		
C32	1-105-514-12	0.012		mylar
C33	1-105-515-12	0.015		mylar
C34	1-105-514-12	0.012		mylar
C35	1-102-937-11	4 p		
C36	1-105-509-12	0.0047		mylar
C37 ~ 39	1-101-006-11	0.047		
C40	1-102-971-11	82 p		
C41	1-105-506-12	0.0027		mylar
C42	1-103-711-11	270 p		polystyrol
C43	1-102-943-11	6 p		
C44	1-103-732-11	2000 p		polystyrol
C45	1-101-003-11	0.0047		
C46	1-102-943-11	6 p		
C47	1-101-886-11	62 p		
C48, 49	1-101-006-11	0.047		
C50	1-101-001-11	0.001		
C51	1-123-961-11	4.7	25 V	elect
C52	1-105-507-12	0.0033		mylar
C53	1-101-886-11	62 p		
C54	1-105-526-12	0.12		mylar
C55	1-101-006-11	0.047		
C56	1-102-971-11	82 p		
C57 ~ 59	1-101-006-11	0.047		
C61	1-102-973-11	100 p		
C101	1-119-357-11	10	16 V	elect
C102	1-119-197-11	100	6.3 V	elect
C103	1-119-366-11	0.47	50 V	elect
C104	1-102-823-11	430 p		
C105	1-102-977-11	200 p		

Ref. No.	Part No.	Description		
C106	1-121-951-11	0.47	50 V	elect
C107	1-121-979-11	47	6.3 V	elect
C108	1-121-968-11	10	16 V	elect
C109	1-119-366-11	0.47	50 V	elect
C110	1-105-505-12	0.0022		mylar
C111	1-119-363-11	4.7	25 V	elect
C112	1-105-507-12	0.0033		mylar
C113	1-119-343-11	47	6.3 V	elect
C114	1-121-976-11	100	10 V	elect
C115	1-119-343-11	47	6.3 V	elect
C116	1-102-977-11	200 p		
C117	1-121-975-11	47	10 V	elect
C118	1-121-980-11	100	6.3 V	elect
C119	1-105-519-12	0.033		mylar
C120	1-105-517-12	0.022		mylar
C121	1-121-977-11	220	10 V	elect
C122	1-121-968-11	10	16 V	elect
C123, 124	1-121-961-11	4.7	25 V	elect
C125	1-105-517-12	0.022		mylar
C126	1-121-951-11	0.47	50 V	elect
C127	1-121-990-11	22	16 V	elect
C128		----------		
C129	1-105-517-12	0.022		mylar
C130	1-121-961-11	4.7	25 V	elect
C131	1-121-976-11	100	10 V	elect
C132, 133	1-105-515-12	0.015		mylar
C134	1-101-798-11	0.2		
C135	1-119-343-11	47	6.3 V	elect
C136	1-105-513-12	0.01		mylar
C137	1-105-509-12	0.0047		mylar
C138	1-105-513-12	0.01		mylar
C139	1-105-505-12	0.0022		mylar
C140	1-121-980-11	100	6.3 V	elect
C141	1-105-509-12	0.0047		mylar
C142	1-121-968-11	10	16 V	elect
C143	1-105-501-12	0.001		mylar
C144	1-123-074-11	2200	10 V	elect
C145, 146	1-101-005-11	0.022		

Ref. No.	Part No.	Description
C147	1-121-977-11	220 10V elect
C148	1-101-005-11	0.022
C149	1-101-006-11	0.047
VC1-1 ~ 4	1-151-297-00	Tuning
TC1-1 ~ 4	1-141-172-00	Trimmer
TC2-1 ~ 2	1-141-172-00	Trimmer

RESISTORS

All resistors are in Ω. ¼ W, ± 5 % carbon type resistors (except special type) are omitted. Check the schematic diagram for the resistance values. (k = 1000)

R144	1-244-841-11	47 ½W
R157	1-244-829-11	15 ½W
VR1	1-224-672-00	10k (A), variable; VOLUME
VR2	1-224-673-00	5k (A), variable; TONE

SWITCHES

S1	1-516-744-00	Rotary-slide, BAND SELECT
S2	1-516-746-00	Lever-slide, RADIO ON/OFF
S101	1-516-377-00	Slide, record/playback
S102	1-516-378-00	Leaf, motor
S103	———	Included in AC INPUT connector
S104	1-516-174-00	Socket, voltage selector (GEP model)
	1-516-267-00	Socket, voltage selector (E model)

JACKS

J101-1	1-507-251-00	Mini, MIC
J101-2	1-507-357-00	REMOTE
J101-3	1-507-251-00	Mini, MONITOR
CNJ	1-509-510-00	Connector, AC INPUT (GEP model)
	1-509-511-00	Connector, AC INPUT (E model)
	1-507-484-00	Connector, JACK
	1-508-771-00	Connector, PLUG

CERAMIC FILTERS

CF1	1-527-184-11	Red
	1-527-184-12	Blue
	1-527-184-13	Orange
	1-527-184-14	Black
	1-527-184-15	White
CF2	1-403-164-00	

MISCELLANEOUS

EH	8-825-566-00	Head, erase; EBF5-02B
F101	1-532-120-00	Fuse, 100mAT (E model)
	1-532-390-00	Fuse, 63mAT (GEP model)
F102, 103	1-532-391-00	Fuse, 500mAT (GEP model)
M	8-834-009-10	Motor, D-009G3
ME	1-520-171-00	Meter, REC/BATTERY
MIC	8-814-190-10	Microphone, electret condenser; C-1002A
RPH	8-829-336-00	Head, record/playback; PP134-36
SP	1-502-479-00	Speaker
TEL ANT	1-501-072-00	Antenna, telescopic
	1-533-103-00	Holder, fuse

ACCESSORIES & PACKING MATERIALS

Part No.	Description
X-3701-018-2	Tip, head cleaning
1-504-034-12	Earphone, ME-20
1-506-309-00	Plug, short; SP-100
1-528-026-00	Battery, size "C"
1-534-830-00	Cord, power; DK-33
3-580-630-00	Cushion
3-581-739-00	Carton
3-581-740-00	Label, fuse (E model)
3-701-627-00	Bag, polyethylene
3-701-639-00	Bag, polyethylene
3-701-683-00	Card, voltage (E model)
3-701-684-00	Card, voltage (GEP model)
3-780-355-51	Manual, instruction (E model)
3-780-695-00	Manual, instruction (GEP model)
3-793-010-20	Booklet, tape talk
3-793-408-11	Leaflet
3-793-455-21	Tag, caution
8-890-205-00	Tape, C-30

SECTION 7

HARDWARE

Part No.	*Description*
	SCREWS
All screws are Phillips (cross recess) type unless otherwise indicated. (−): slotted head	
7-621-255-28	P 2.6 x 10
7-621-255-42	P 2 x 6
7-621-255-58	P 2 x 8
7-621-259-14	P 2.6 x 3
7-621-259-45	P 2.6 x 5
7-621-259-48	P 2.6 x 6
7-621-259-59	P 2.6 x 8
7-621-259-68	P 2.6 x 10
7-621-305-35	(−) F 2 x 5
7-628-146-01	P 3 x 5
7-682-126-00	(−) SC 2 x 3
7-682-147-01	P 3 x 6
7-682-549-05	B 3 x 10 (black)
7-682-646-01	PS 3 x 5
7-682-654-05	PS 2.6 x 5
7-685-104-01	P 2 x 6, self-tapping
7-685-145-01	P 3 x 6, self-tapping
7-685-147-01	P 3 x 10, self-tapping
7-685-151-01	P 3 x 20, self-tapping
7-685-164-01	P 3 x 8, self-tapping

Part No.	*Description*
	WASHERS
7-623-105-01	2
7-623-107-11	2.6
7-623-108-11	3
7-623-207-21	2.6, spring
7-623-212-21	5, spring
7-623-407-01	2.6, w/ext. tooth
	RETAINING RINGS
7-624-101-01	E 1.2
7-624-102-01	E 1.5
7-624-104-01	E 2
7-624-105-01	E 2.5
7-624-106-01	E 3
7-684-021-00	Nut 2
7-684-022-00	Nut 2.6
7-684-025-00	Nut 5
	MISCELLANEOUS
7-623-616-01	Eyelet, 2 x 3
7-625-208-80	Rivet, R 2 x 8
7-633-120-31	Dial Cord, 0.3 mm dia.
7-633-120-41	Dial Cord, 0.4 mm dia.
7-671-112-01	Steel Ball, 2

Hardware Nomenclature

P – Pan Head Screw

PS – Pan Head Screw with Spring Washer

K – Flat Countersunk Head Screw

B – Binding Head Screw

RK – Oval Countersunk Head Screw

T – Truss Head Screw

R – Round Head Screw

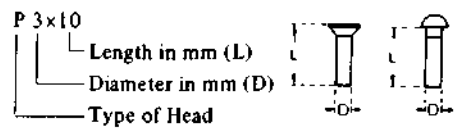
F – Flat Fillister Head Screw

SC – Set Screw

E – Retaining Ring (E Washer)

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

– Example –



When ordering replacement parts, use PART NUMBERS listed in Parts List or shown in EXPLODED VIEWS. Parts List reference numbers should not be used.

Sony Corporation

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