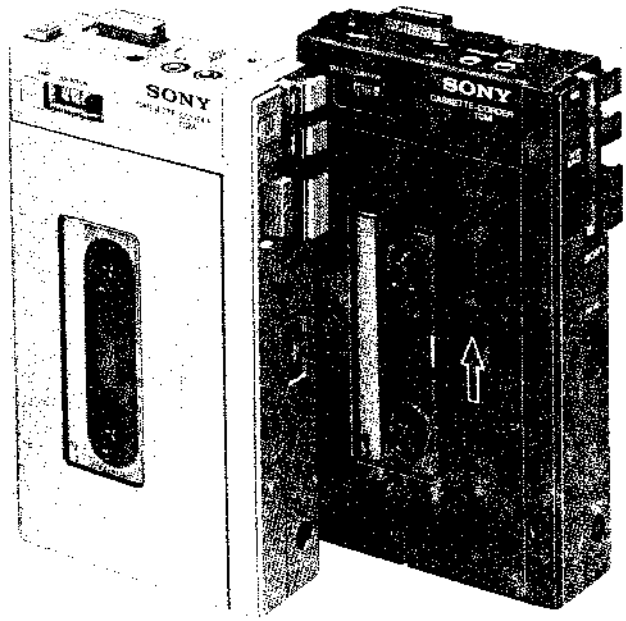
US Model
Canadian Model
AEP Model
E Model



CASSETTE-CORDER

SPECIFICATIONS

Power Requirements:
3 V dc, two batteries size AA (IEC designation R6), or
Optional Sony Rechargeable Battery Pack BP-32
120 V ac, 60 Hz with supplied Sony AC Power Adaptor AC-31 (US, Canadian model)
220 V ac, 50 Hz with Optional Sony AC Power Adaptor AC-35 (AEP model)
110, 120, 220, or 240 V ac, 50/60 Hz with Optional Sony AC Power Adaptor AC-32 (E model)
12 V car battery with optional Sony Car Battery Cord DCC-127A

Power Consumption:
3.7 W (60 Hz) with AC Power Adaptor AC-31 (US, Canadian model)
7 W with Sony AC Power Adaptor AC-35 (AEP model)
6.6 W ac at 50 Hz, 6.2 W ac at 60 Hz with Sony AC Power Adaptor AC-32 (E model)

Power Output:
200 mW (at 10 % harmonic distortion) at dc operation

Recording System:
2-track 1-channel monaural

Tape Speed:
4.8 cm/sec (1 7/8 ips) ± about 50 % with the FAST-PB switch on

Fast Winding Time:
Approx. 2 min. with Sony Cassette C-60

Frequency Response:
30 – 10,000 Hz

Battery Life:
Approx. 4.5 hours of continuous recording with the Built-in Microphone using Eveready Heavy Duty Batteries No. 1215 (US, Canadian model)
Approx. 8 hours of continuous recording with the Built-in Microphone using Eveready Alkaline Batteries No. 830
Approx. 2.5 hours of continuous recording with the Built-in Microphone using Sony Super Batteries SUM-3S (AEP, E model)

Input:
MIC (minijack)
Maximum sensitivity: 0.2 mV (–72 dB)
Impedance: Low-impedance microphone

Output:
EARPHONE (minijack)
Load impedance: 8 Ω earphone or more than 10 kΩ

Other Jack:
Remote control jack

Speaker:
4.5 cm (1 3/4 inches) dia.

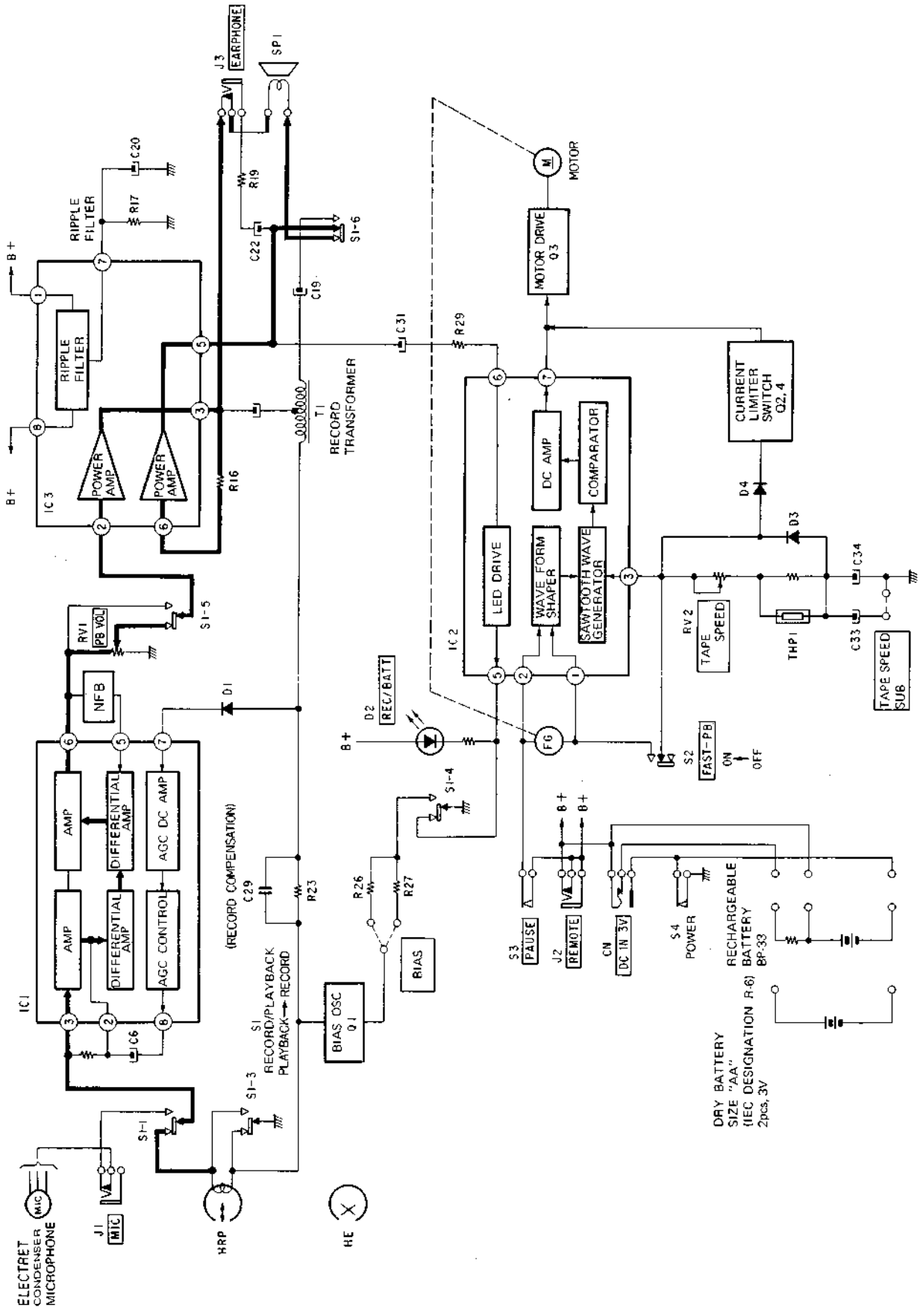
Dimensions:
Approx. 29 (w) x 133.5 (h) x 75.5 (d) mm (1 3/16 (w) x 5 3/8 (h) x 3 (d) inches) not including projecting parts and controls

Weight:
Approx. 400 g, 14 1/8 oz including batteries

0 dB = 0.775 V

SERVICE MANUAL

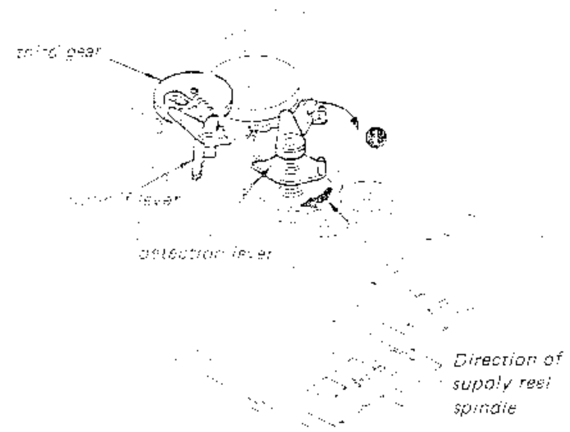
SECTION 1
BLOCK DIAGRAM



SECTION 2
OPERATION DESCRIPTION

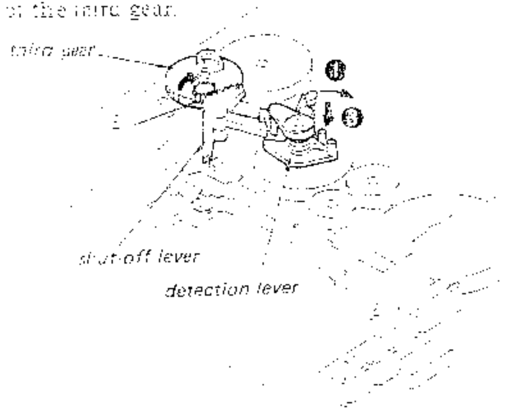
AUTOMATIC SHUT-OFF MECHANISM

- During FWD (or RECORD) operation
  While the supply reel is rotating, the detection lever is always pulled in direction ❶.

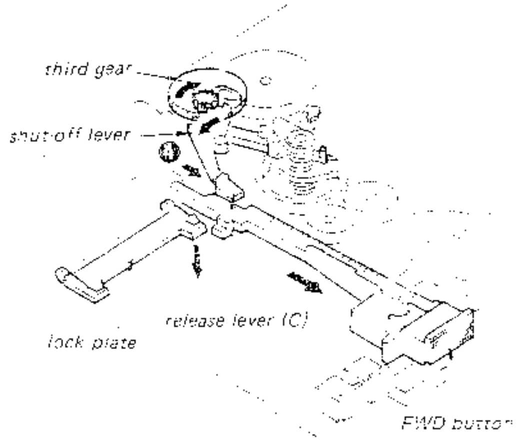


The shut-off lever is repeating the ❷ motion [illegible] third gear rotation.

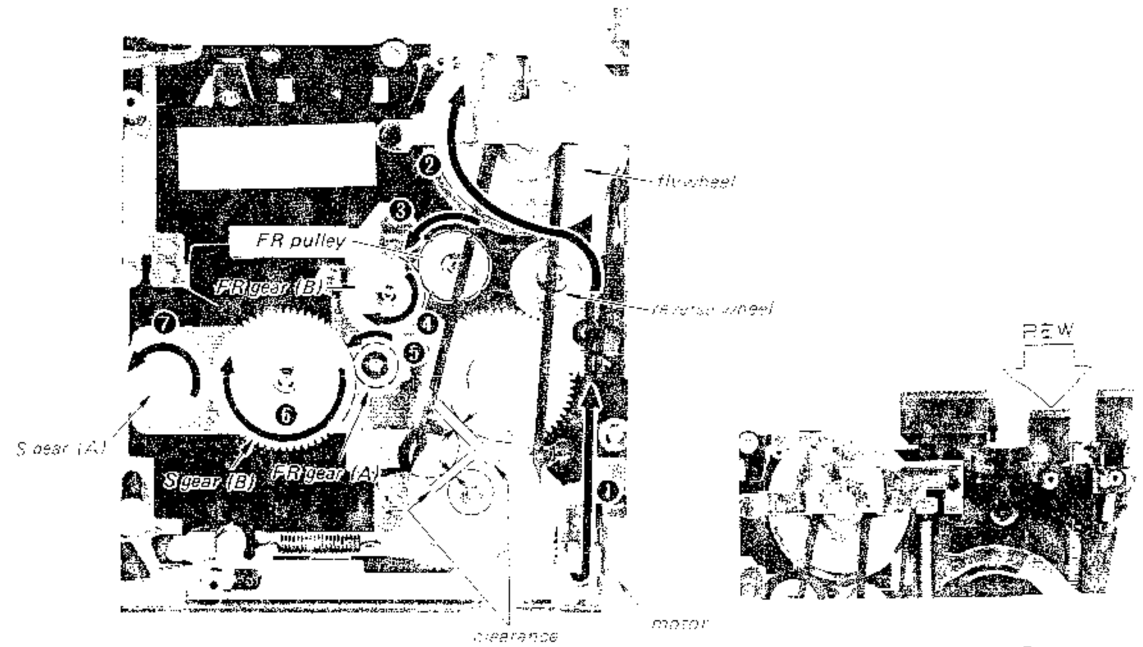
- When the supply reel spindle stops (end of the tape)
  The detection lever is not pulled in direction ❶ but moves in direction ❸ owing to the third gear rotation.
  The teeth of the shut-off lever mesh with the teeth of the third gear.



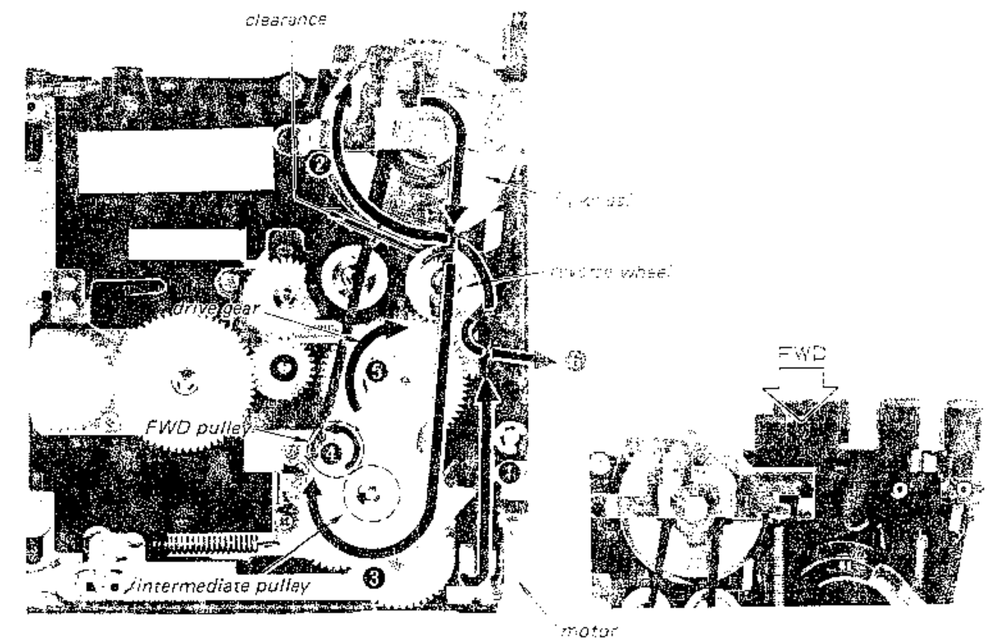
As the third gear turns further, the shut-off lever moves in direction ❹, pushing the release lever (C) and releasing the FWD button.
(RECORD button and FWD button are released in RECORD mode.)



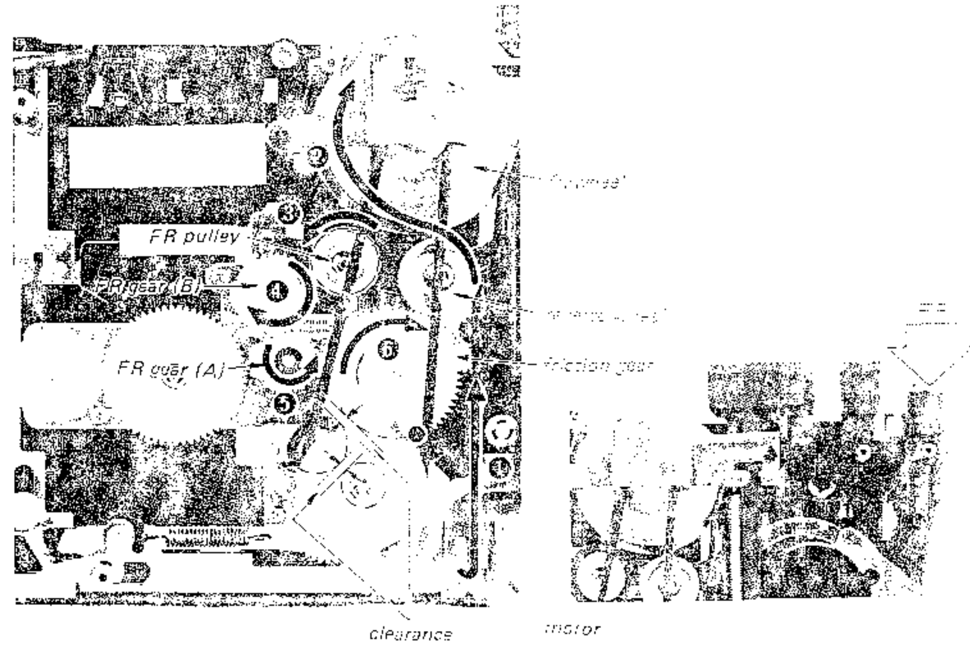
DIRECTION OF ROTATION



❶ Motor rotation → ❷ Flywheel rotation → ❸ FR pulley rotation → ❹ FR gear (B) rotation → ❺ FR gear (A) rotation → ❻ S gear (B) rotation → ❼ S gear (A) rotation followed by supply reel spindle rotation



❶ Motor rotation → ❷ Flywheel rotation → ❸ Intermediate pulley rotation → ❹ FWD pulley rotation → ❺ Drive gear rotation followed by take-up reel spindle rotation → ❻ Tape-counter rotation



❶ Motor rotation → ❷ Flywheel rotation → ❸ FR pulley rotation → ❹ FR gear (B) rotation → ❺ FR gear (A) rotation → ❻ Friction gear rotation followed by take-up reel spindle rotation

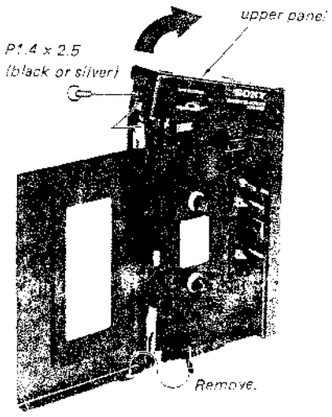
SECTION 3
DISASSEMBLY

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

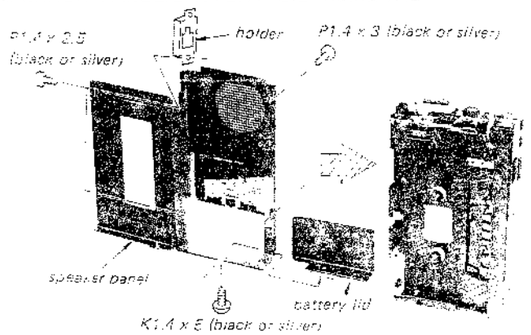
1. REMOVAL

TCM-600 (Panel: Silver)
TCM-600B (Panel: Black)

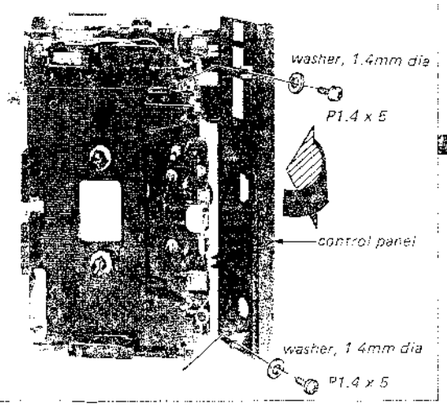
UPPER PANEL REMOVAL



SPEAKER PANEL/BATTERY LID REMOVAL

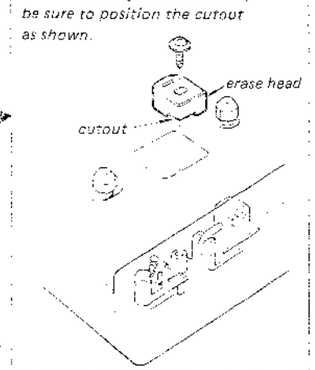


CONTROL PANEL REMOVAL

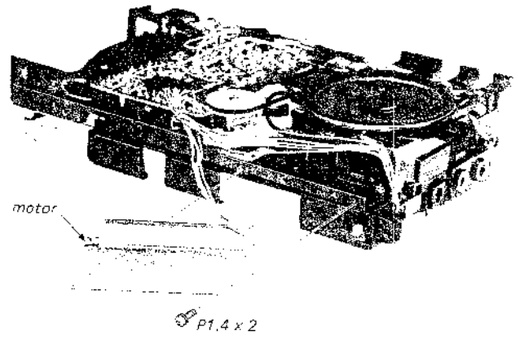


ERASE HEAD

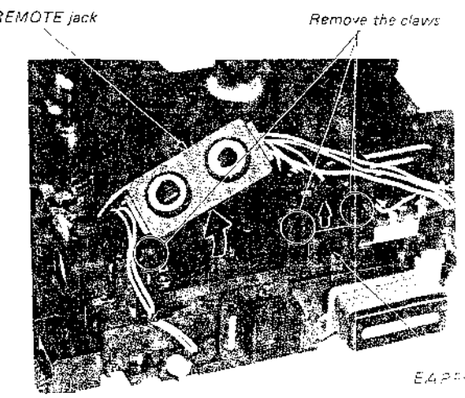
When installing the erase head, be sure to position the cutout as shown.



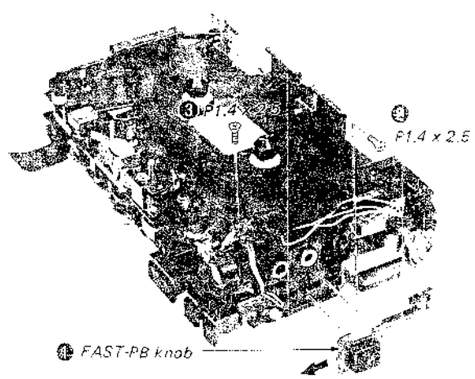
MOTOR REMOVAL



JACK REMOVAL

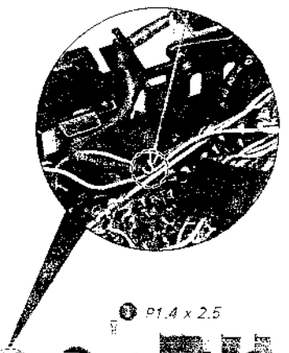


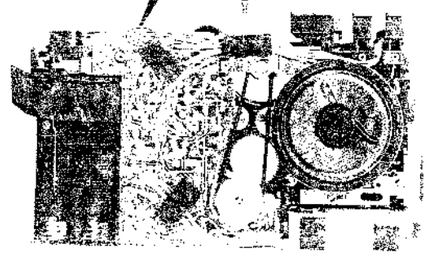
CONTROL PANEL REMOVAL

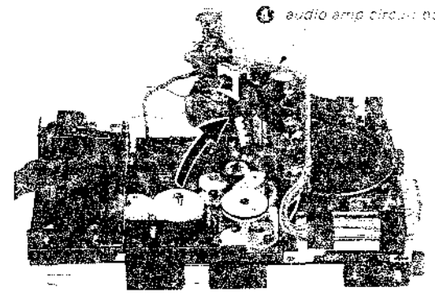


CIRCUIT BOARD REMOVAL

3 *Lift the audio amp board and release the lead wires from the clamp.*

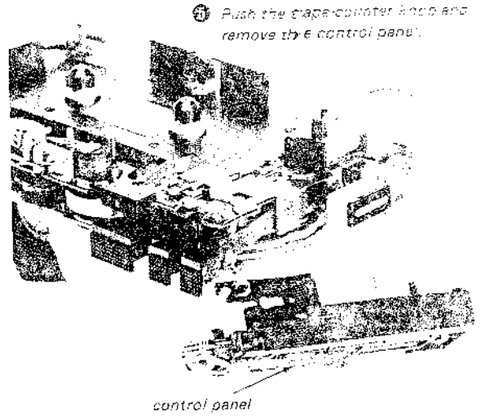




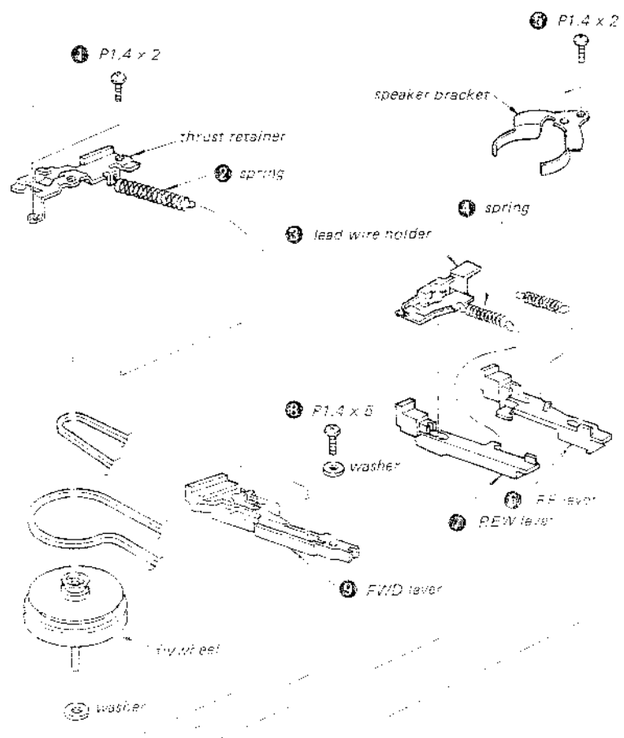


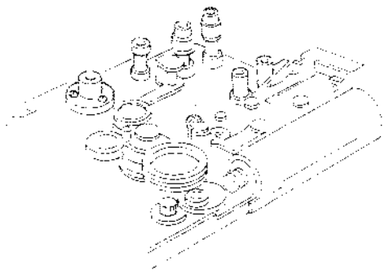
4 *Remove the lead wires from the lead-wire guide.*

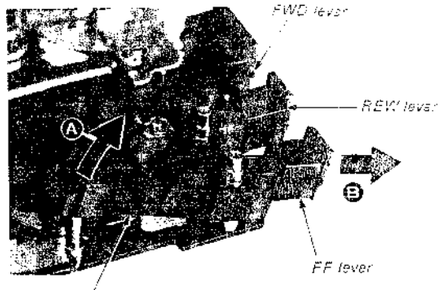
7 *Push the tape-counter knob and remove the control panel.*



FWD, FF, REW LEVER REMOVAL

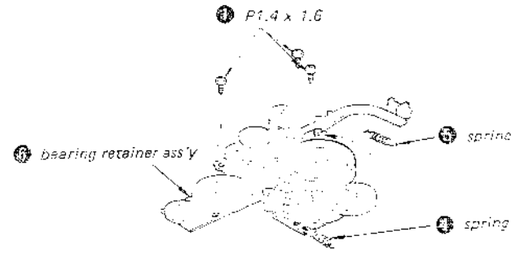


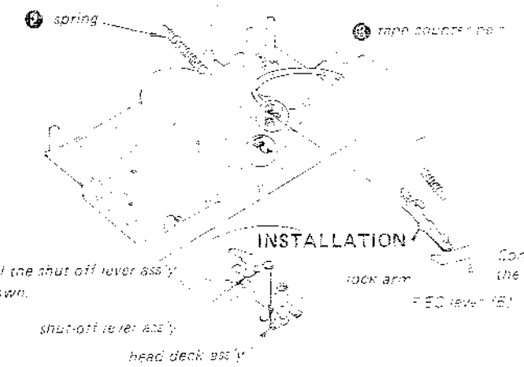




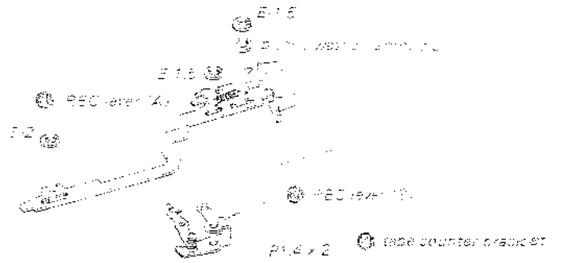
Lift the lever in the arrowed direction (A) and remove it in the arrowed direction (B).

BEARING RETAINER ASS'Y REMOVAL





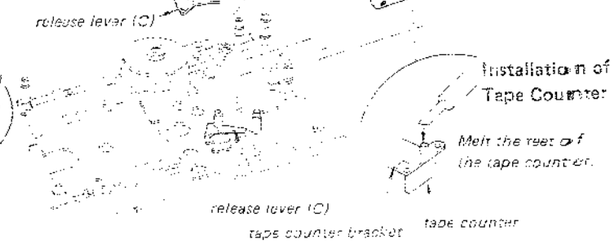
REC LEVER (A, B) AND TAPE COUNTER REMOVAL



Installation of Release Lever (C)

release lever (C)

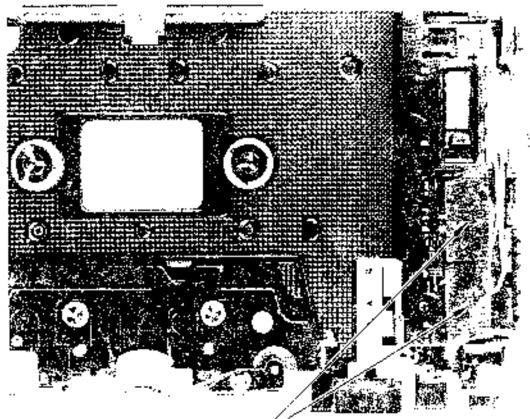
Position the release lever (C) as shown. If the release lever (C) is out of position, the shut-off mechanism does not operate.

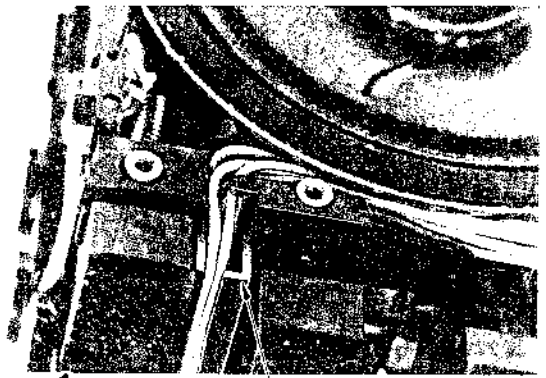


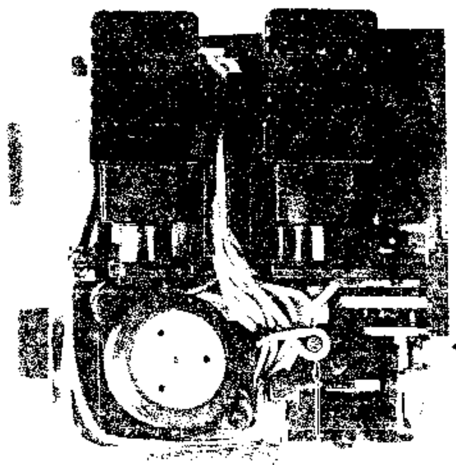
Installation of Tape Counter

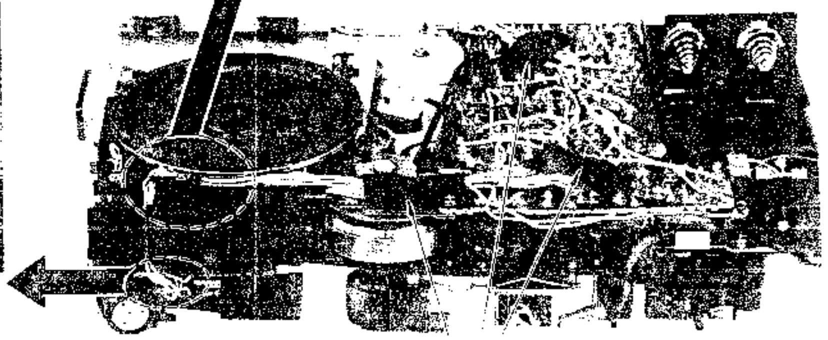
Melt the rivet of the tape counter.

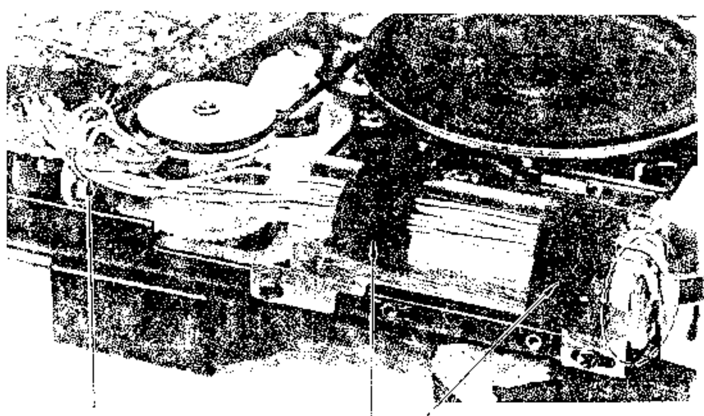
2. WIRING ARRANGEMENT

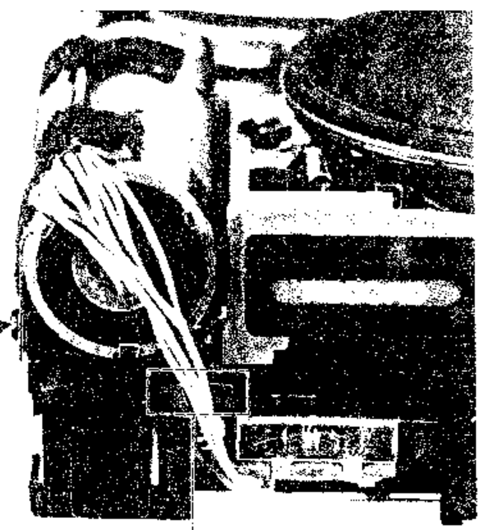












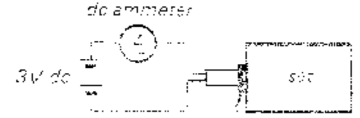
SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENTS

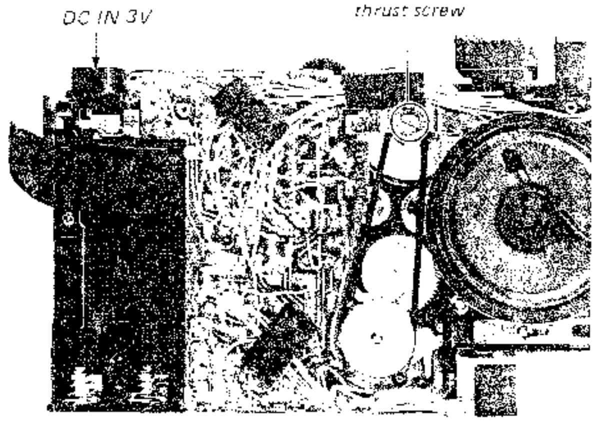
PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   - record/playback head
   - erase head
   - capstan
   - pinch roller
   - 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 a suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Flywheel Thrust Play Adjustment
– playback mode –



1. Turn the thrust screw counterclockwise until the screw tip is detached from the flywheel shaft.
2. Gradually turn the thrust screw clockwise to the position where the current suddenly increases.
3. Then, turn the thrust screw counterclockwise about 1/4 turn from the position obtained in step 2.
4. Secure the thrust screw with locking compound.



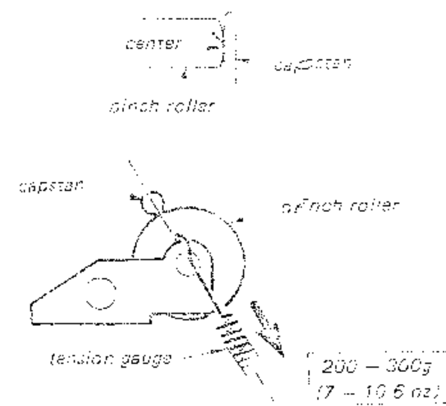
Torque Measurement

Power Supply Voltage: 3V dc

SONY torque meter	FWD	FF, CUE, REW/REVIEW	Back tension
CQ-101A 102A 103A	25 – 45g·cm (0.35 – 0.62 oz·inch)	——	5g·cm (0.07 oz·inch) or less
CQ-201A	——	55g·cm (0.76 oz·inch) or more	——

Pinch Roller Pressure Adjustment
– playback mode –

1. [illegible]
2. [illegible]



4-2. ELECTRICAL ADJUSTMENTS

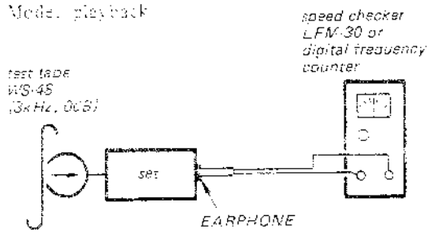
Tape Speed Adjustment

Setting:

Power Supply Voltage: 3V dc
Playback Speed: normal speed

Procedure:

1. Mode: playback



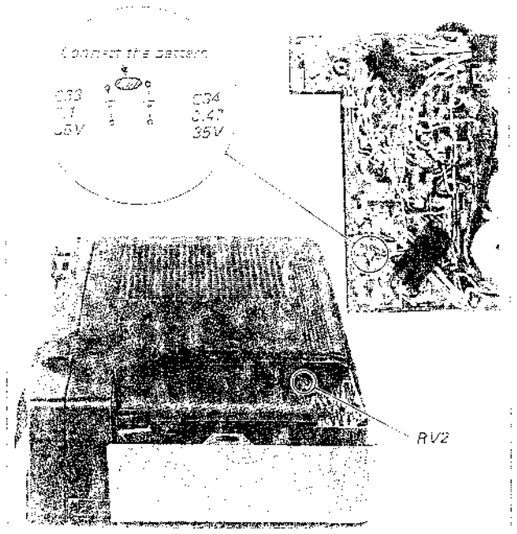
Adjust RV2 to obtain the specified values below.

Specifications:

Speed checker	Digital frequency counter
4.5	2,985Hz – 3,015Hz

Frequency difference between beginning and end of tape should be within 7% (60Hz).

If necessary, change the pattern.



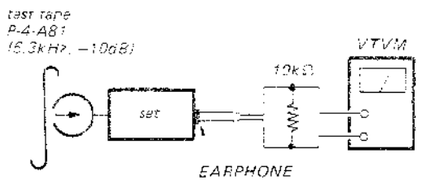
Record/playback Head Azimuth Adjustment

Setting:

Power Supply Voltage: 3V dc

Procedure:

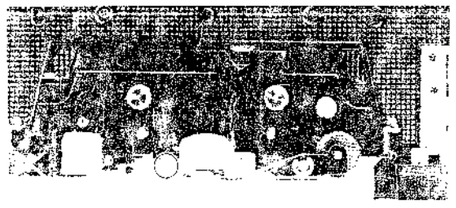
1. Mode: playback



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

Note: Several peaks may appear, take the highest.

Adjustment Location:



record/playback head

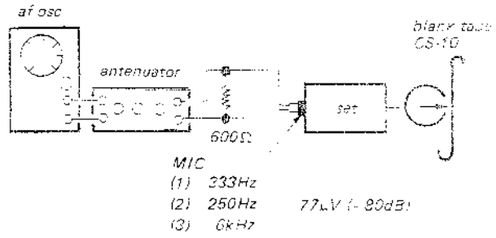
Record Bias Adjustment

Setting:

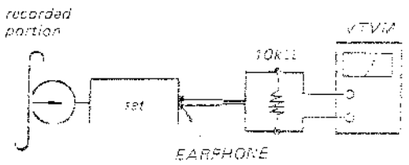
Power Supply Voltage: 3V dc

Procedure:

1. Mode: record



2. Mode: playback

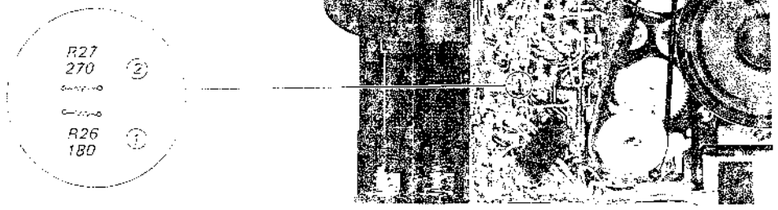


Recorded signal	VTVM reading
333Hz	adjust PB VOL control (RV1) for 0.25V (–12dB)
250Hz 6kHz	should be 0.17V to 0.35V (–15dB to –9dB)

If necessary, change the pattern connection (① and ②).

Pattern Connection	High Frequency Level
① and ②	down
②	↑
③	up

Adjustment Location:



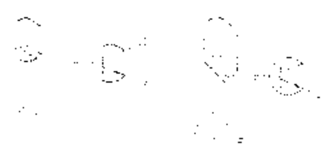
SECTION 5 DIAGRAMS

5-1. MOUNTING DIAGRAM

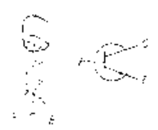
– Conductor Side –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

Q1, 2, 4: 2SC1364 (2SC633A)



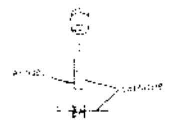
Q3: 2SC1474



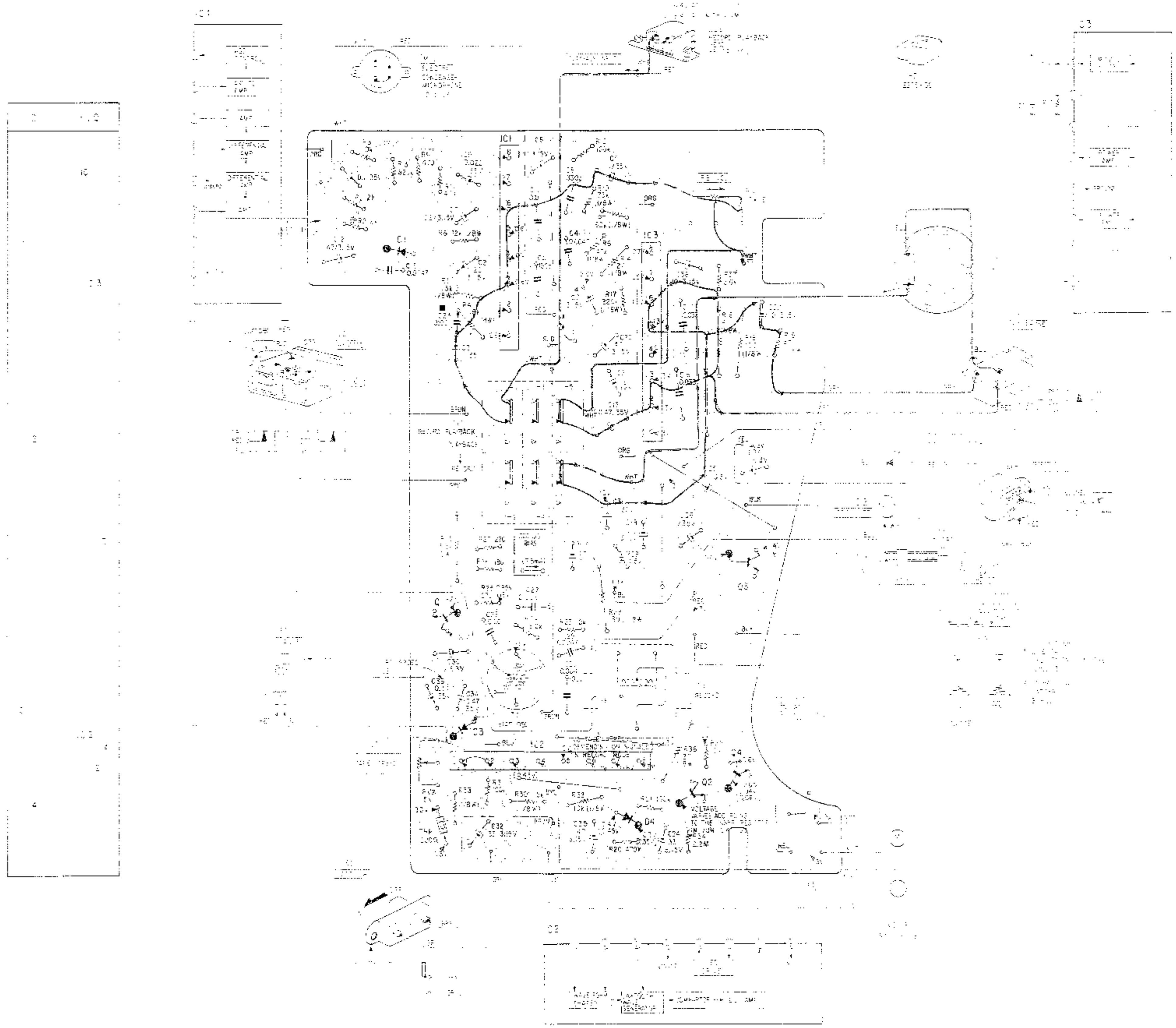
IC1: CX182
IC2: CX183
IC3: CX184

D1 – 4: 1S1555 (1T40)
D3: 1T22AM (1T22)

D2: TLR109



Note:
- ▩ : part mounted on the conductor side.
- : ⊕ + pattern
- ——→—— : signal path (playback mode)
- Total current is measured with no cassette installed.
- In using an electret condenser microphone with a red mark on the side of the case, connect R2 shown by in parallel with R1.

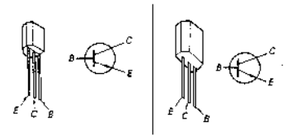


SECTION 5
DIAGRAMS

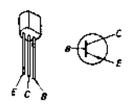
5-1. MOUNTING DIAGRAM
— Conductor Side —

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

Q1, 2, 4: 2SC1364 (2SC633A)

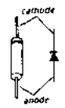


Q3: 2SC1474

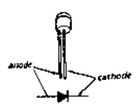


IC1: CX182
IC2: CX183
IC3: CX184

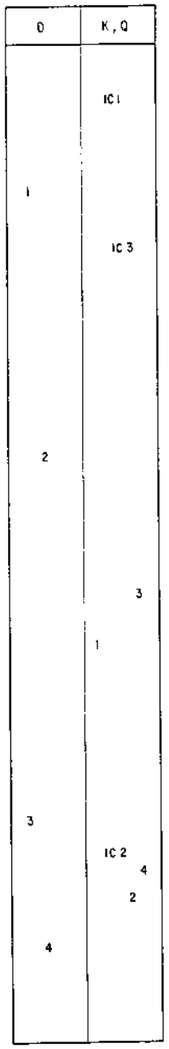
D1, 4: 1S1555 (1T40)
D3 : 1T22AM (1T22)

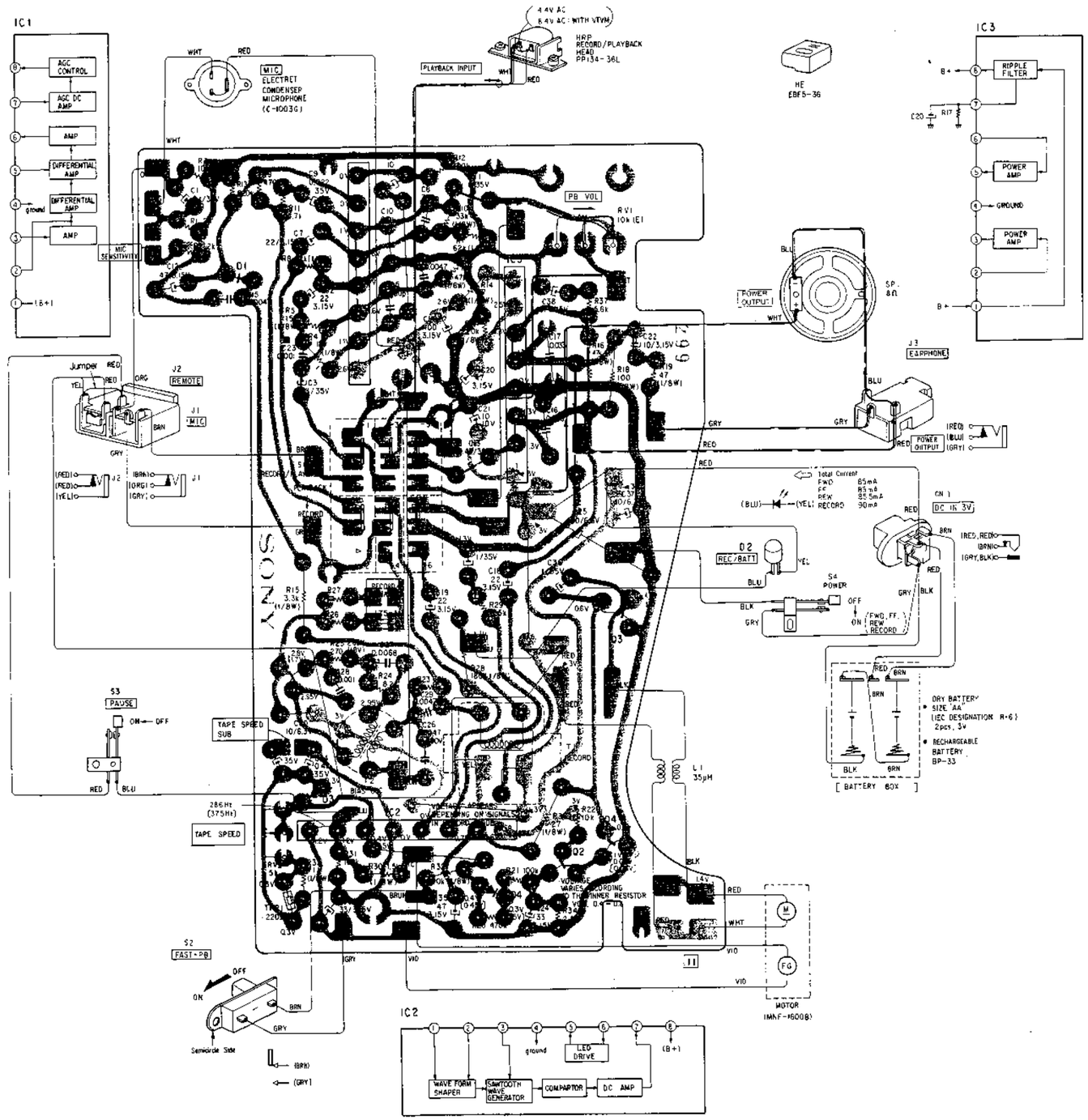


D2: TLR109

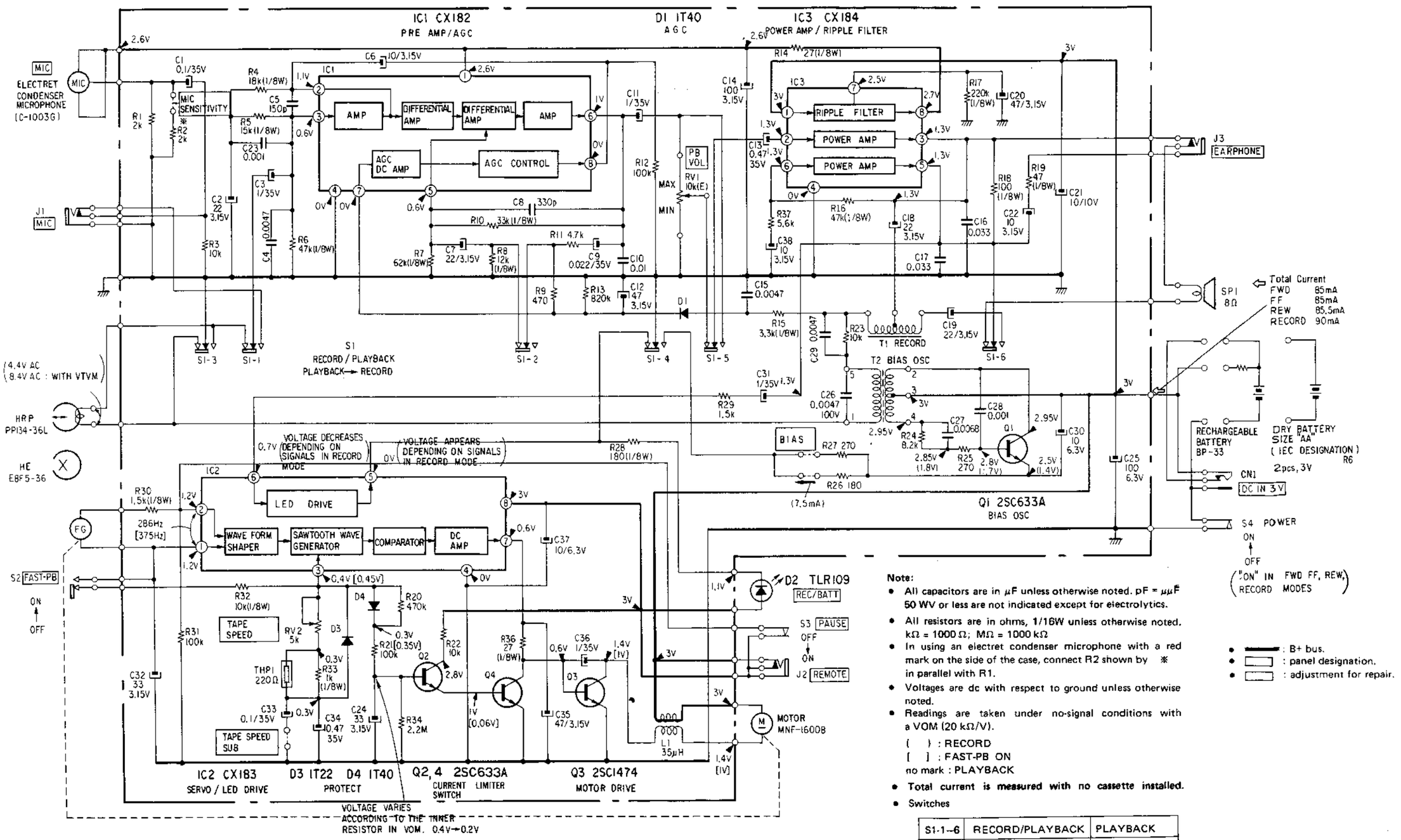


Note:
- ■ : part mounted on the conductor side.
- : B + pattern
- ——►—— : signal path (playback mode)
- Total current is measured with no cassette installed.
- In using an electret condenser microphone with a red mark on the side of the case, connect R2 shown by ※ in parallel with R1.





5-2. SCHEMATIC DIAGRAM



Note:

- All capacitors are in μF unless otherwise noted. pF = μμF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/16W unless otherwise noted. kΩ = 1000 Ω; MΩ = 1000 kΩ
- In using an electret condenser microphone with a red mark on the side of the case, connect R2 shown by ※ in parallel with R1.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (20 kΩ/V).

  ( ) : RECORD
  [ ] : FAST-PB ON
  no mark : PLAYBACK
- **Total current is measured with no cassette installed.**
- Switches

S1-1~6	RECORD/PLAYBACK	PLAYBACK
S2	FAST-PB	OFF
S3	PAUSE	OFF
S4	POWER	ON in FWD, FF, REW, RECORD mode

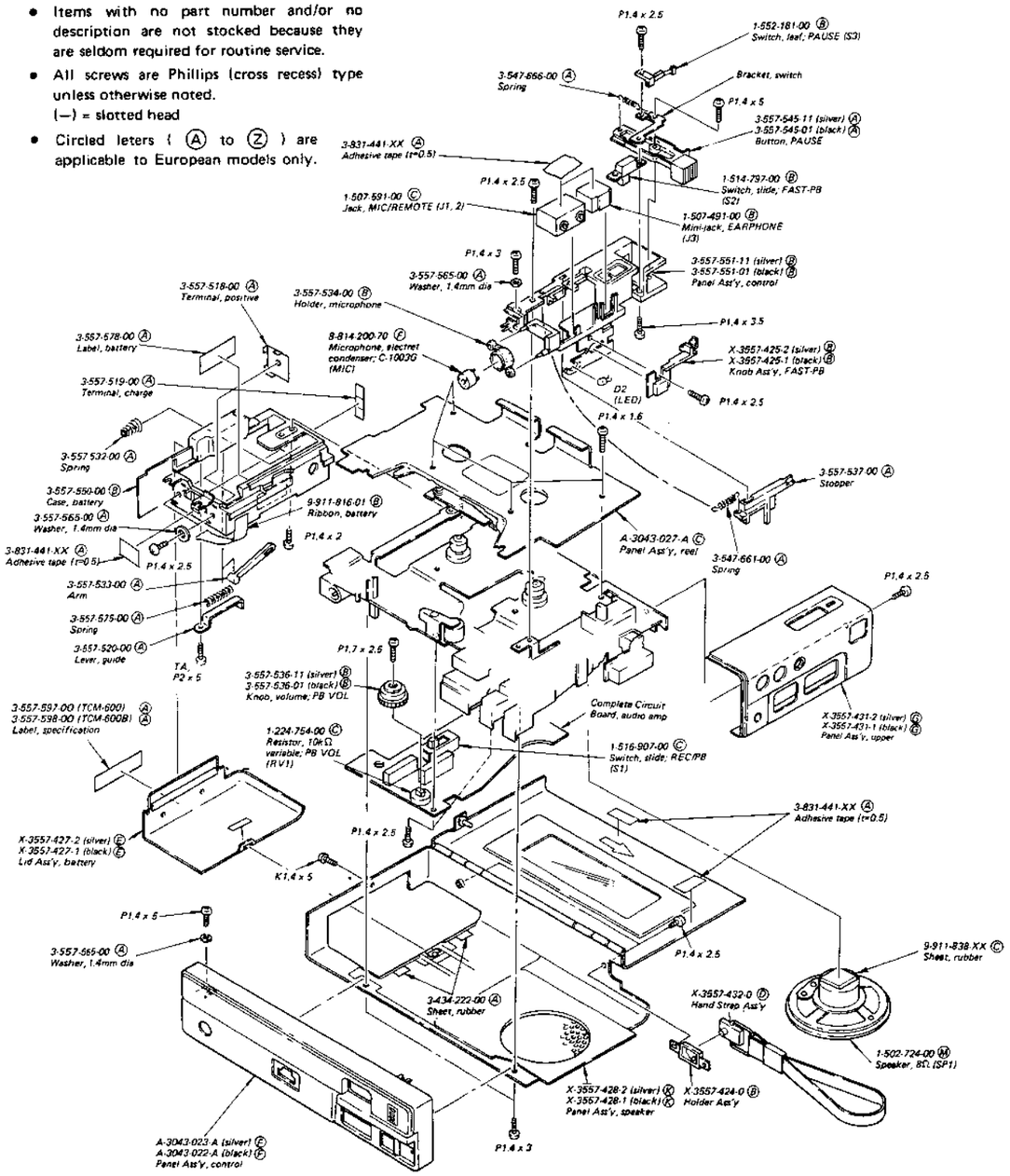
- ▬ : B+ bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.

SECTION 6
EXPLODED VIEWS

6-1.

Note:

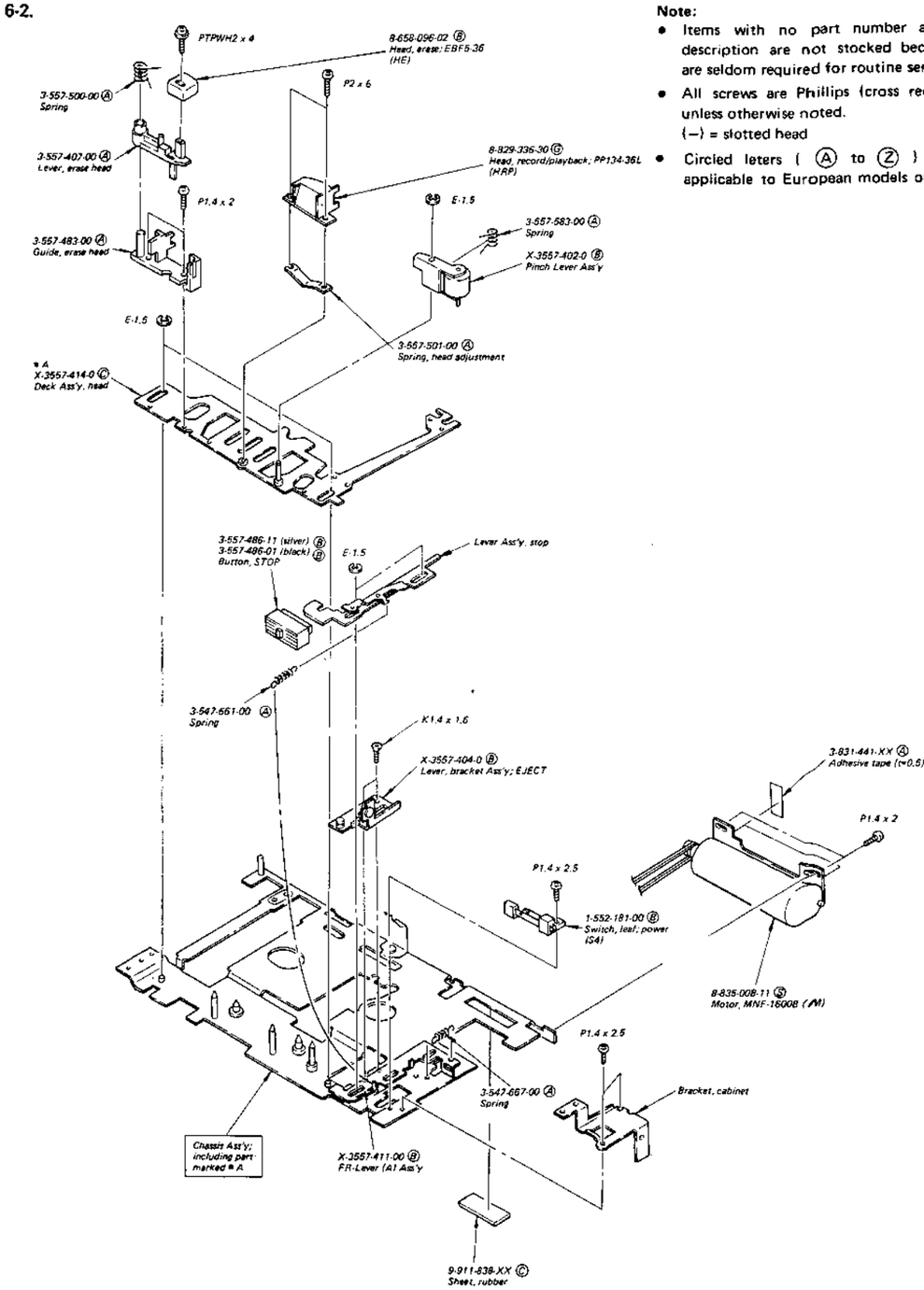
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled leters (Ⓐ to Ⓩ) are applicable to European models only.



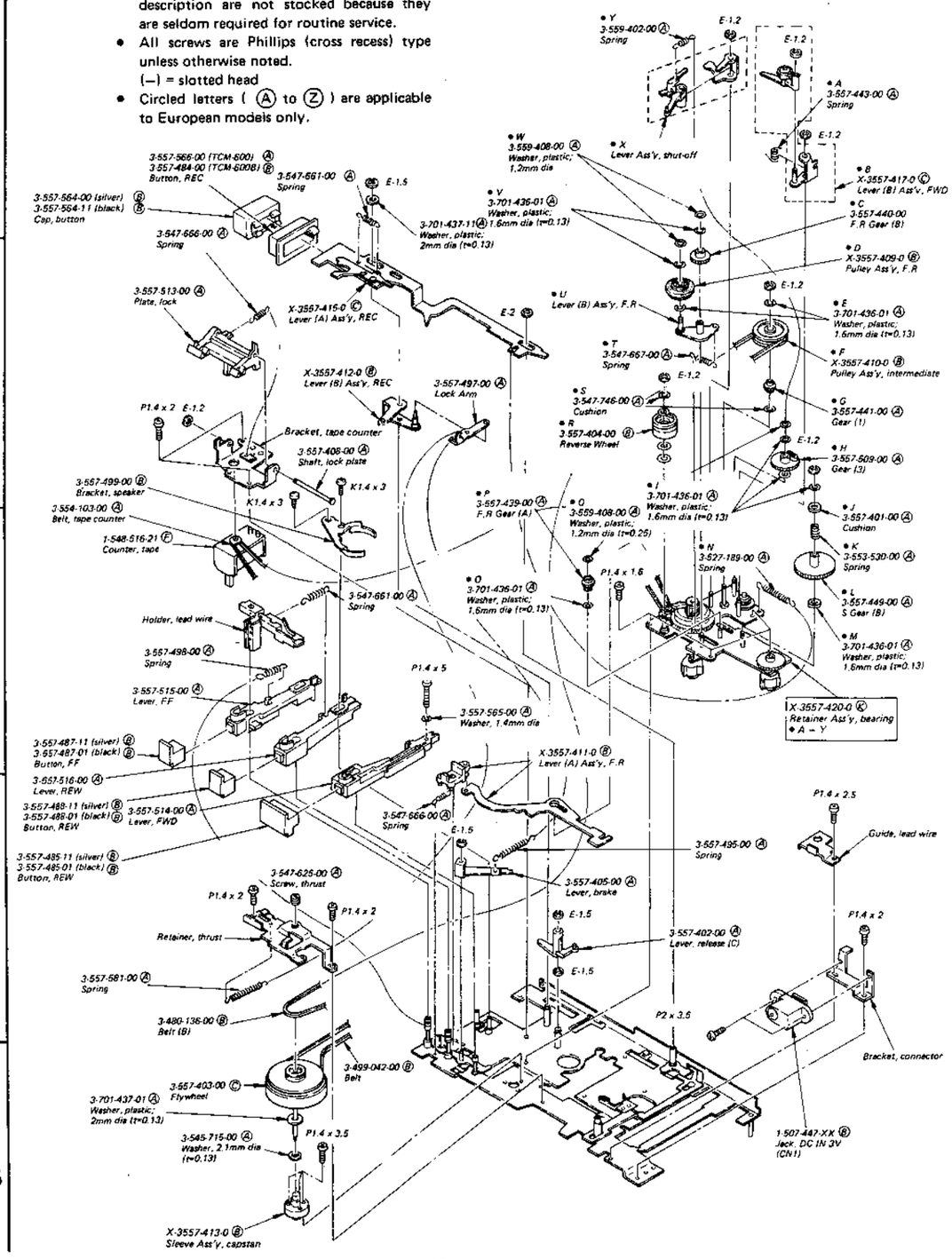
6-2.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled leters (Ⓐ to Ⓩ) are applicable to European models only.



6-3. **Note:**
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 7
ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*		
		SEMICONDUCTORS		
		Transistors		
Q1, 2	8-726-377-00	Ⓑ 2SC1364		
Q3	8-760-333-10	Ⓑ 2SC1474		
Q4	8-726-377-00	Ⓑ 2SC1364		
		ICs		
IC1	8-751-820-00	Ⓕ CX182		
IC2	8-751-830-00	Ⓔ CX183		
IC3	8-751-840-00	Ⓕ CX184		
		Diodes		
D1	8-719-815-55	Ⓐ 1S1555		
D2	8-719-810-09	Ⓑ TLR109		
D3	8-719-622-11	Ⓐ 1T22AM		
D4	8-719-815-55	Ⓐ 1S1555		
THP	1-800-535-00	Ⓑ Thermistor, positive		
		COIL		
L1	1-407-847-00	Ⓑ Microinductor, 35μH		
		TRANSFORMERS		
T1	1-427-411-00	Ⓒ Record		
T2	1-433-191-00	Ⓒ OSC		
		CAPACITORS		

All capacitors are in μF and tantalum unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. pF : μμF

C1	1-131-341-11	Ⓑ 0.1	35V	
C2	1-131-391-11	Ⓑ 22	3.15V	
C3	1-131-347-11	Ⓑ 1	35V	
C4	1-161-030-11	Ⓐ 0.0047		boundary layer
C5	1-102-108-11	Ⓐ 150p		ceramic
C6	1-131-389-11	Ⓓ 10	3.15V	
C7	1-131-391-11	Ⓑ 22	3.15V	
C8	1-102-112-11	Ⓐ 330p		ceramic
C9	1-131-398-11	Ⓑ 0.022	35V	
C10	1-161-032-11	Ⓐ 0.01		boundary layer
C11	1-131-347-11	Ⓑ 1	35V	
C12	1-131-393-11	Ⓑ 47	3.15V	
C13	1-131-345-11	Ⓑ 0.47	35V	
C14	1-131-395-11	Ⓑ 100	3.15V	
C15	1-161-030-11	Ⓐ 0.0047		boundary layer
C16, 17	1-161-035-11	Ⓐ 0.033		boundary layer
C18, 19	1-131-391-11	Ⓑ 22	3.15V	
C20	1-131-393-11	Ⓑ 47	3.15V	
C21	1-131-377-11	Ⓑ 10	10V	
C22	1-131-389-11	Ⓓ 10	3.15V	
C23	1-161-026-11	Ⓐ 0.01		boundary layer
C24	1-131-392-11	Ⓑ 33	3.15V	
C25	1-131-177-11	Ⓒ 100	6.3V	
C26	1-108-373-12	Ⓐ 0.0047	100V	mylar
C27	1-161-031-11	Ⓐ 0.0068		boundary layer
C28	1-161-026-11	Ⓐ 0.001		boundary layer
C29	1-161-030-11	Ⓐ 0.0047		boundary layer
C30	1-131-383-11	Ⓑ 10	6.3V	
C31	1-131-347-11	Ⓑ 1	35V	
C32	1-131-392-11	Ⓑ 33	3.15V	
C33	1-131-341-11	Ⓑ 0.1	35V	
C34	1-131-345-11	Ⓑ 0.47	35V	
C35	1-131-393-11	Ⓑ 47	3.15V	
C36	1-131-347-11	Ⓑ 1	35V	
C37	1-131-383-11	Ⓑ 10	6.3V	
C38	1-131-389-11	Ⓓ 10	3.15V	

- ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

RESISTORS

All resistors are in ohms. Resistors in the list are carbon type unless otherwise noted. Check schematic diagrams for their values.

R1, 2	1-209-767-11	Ⓐ 2k	1/16W
R3	1-209-781-11	Ⓐ 10k	1/16W
R4	1-246-798-11	Ⓐ 18k	1/8W
R5	1-246-797-11	Ⓐ 15k	1/8W
R6	1-246-803-11	Ⓐ 47k	1/8W
R7	1-246-865-11	Ⓐ 62k	1/8W
R8	1-246-796-11	Ⓐ 12k	1/8W
R9	1-209-764-11	Ⓐ 470	1/16W
R10	1-246-801-11	Ⓐ 33k	1/8W
R11	1-209-773-11	Ⓐ 4.7k	1/16W
R12	1-210-115-11	Ⓐ 100k	1/16W
R13	1-211-689-11	Ⓐ 820k	1/16W
R14	1-246-764-11	Ⓐ 27	1/8W
R15	1-246-789-11	Ⓐ 3.3k	1/8W

Ref. No.	Part No.		Description	
R16	1-246-803-11	Ⓐ	47k	1/8W
R17	1-246-811-11	Ⓐ	220k	1/8W
R18	1-246-771-11	Ⓐ	100	1/8W
R19	1-246-767-11	Ⓐ	47	1/8W
R20	1-210-844-11	Ⓐ	470k	1/16W
R21	1-210-115-11	Ⓐ	100k	1/16W
R22, 23	1-209-781-11	Ⓐ	10k	1/16W
R24	1-209-779-11	Ⓐ	8.2k	1/16W
R25	1-210-363-11	Ⓐ	270	1/16W
R26	1-210-360-11	Ⓐ	180	1/16W
R27	1-210-363-11	Ⓐ	270	1/16W
R28	1-246-774-11	Ⓐ	180	1/8W
R29	1-209-766-11	Ⓐ	1.5k	1/16W
R30	1-246-785-11	Ⓐ	1.5k	1/8W
R31	1-210-115-11	Ⓐ	100k	1/16W
R32	1-246-796-11	Ⓐ	10k	1/8W
R33	1-246-783-11	Ⓐ	1.0k	1/8W
R34	1-211-697-11	Ⓐ	2.2M	1/16W
R36	1-246-764-11	Ⓐ	27	1/8W
R37	1-209-775-11	Ⓐ	5.6k	1/16W
RV1	1-224-754-00	Ⓒ	10k, variable; PB VOL	
RV2	1-226-073-00	Ⓒ	5k, adjustable	

SWITCHES

S1	1-516-907-00	Ⓒ	Slide, REC/PB
S2	1-514-797-00	Ⓑ	Slide, FAST-PB
S3	1-552-181-00	Ⓑ	Leaf, PAUSE
S4	1-552-181-00	Ⓑ	Leaf, POWER

JACKS

J1, 2	1-507-591-00	Ⓒ	MIC, REMOTE
J3	1-507-491-00	Ⓑ	EARPHONE
CN1	1-507-447-XX	Ⓑ	DC IN 3V

MISCELLANEOUS

HE	8-658-096-02	Ⓑ	Head, erase; EBF5-36
HRP	8-829-336-30	Ⓖ	Head, record/playback; PP134-36L
M	8-835-008-11	Ⓩ	Motor, MNF-1600B
MIC	8-814-200-70	Ⓕ	Microphone, C-1003G
SP1	1-502-724-00	Ⓗ	Speaker 8Ω
	1-548-516-21	Ⓕ	Counter, tape

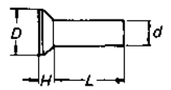
• Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

ACCESSORIES & PACKING MATERIALS

Part No.		Description
X-3557-432-0	Ⓓ	Hand Strap Ass'y
X-3701-105-0	Ⓐ	Tip Ass'y, cleaning
1-463-191-00		Adaptor, AC power; AC-31 (TCM-600/600B: US model)
1-463-201-00		Adaptor, AC power; AC-31 (TCM-600: Canadian model)
1-504-059-11	Ⓒ	Earphone, ME-20H
1-506-309-00		Plug, shorting; SP-100 (TCM-600B: US model)
1-528-027-11		Battery, size "AA", (IEC designation R6) (TCM-600: E model)
1-534-237-23	Ⓔ	Cord, connection; RK-64H (TCM-600: Canadian, AEP, E, US model) (TCM-600B: AEP model)
3-557-568-00	Ⓐ	Spacer
3-557-570-00	Ⓑ	Cushion (TCM-600B: US, AEP model) (TCM-600: US, AEP, E model)
3-559-425-00		Cushion (TCM-600: Canadian model)
3-557-584-00	Ⓐ	Plate, partition (TCM-600B: US, AEP model) (TCM-600: US, AEP, E model)
X-3557-434-0		Carton (TCM-600: Canadian model)
3-557-592-00	Ⓒ	Carton (TCM-600: US, AEP, E model)
3-557-595-00	Ⓑ	Carton (TCM-600B: US, AEP model)
3-557-599-00	Ⓘ	Case, carrying
3-701-613-00	Ⓐ	Bag, plastic
3-701-614-00	Ⓐ	Bag, plastic
3-701-620-00		Bag, plastic; AC Adaptor (TCM-600/600B: US model) (TCM-600: Canadian model)
3-701-624-00	Ⓐ	Bag, plastic
3-770-586-11	Ⓒ	Manual, instruction (TCM-600/600B: AEP model)
3-770-586-21		Manual, instruction (TCM-600: US model)
3-770-586-21 3-794-285-31		Manual, instruction (TCM-600: Canadian model)
3-770-586-51		Manual, instruction (TCM-600: E model)
3-770-587-21		Manual, instruction (TCM-600B: US model)
3-793-828-11	Ⓐ	Leaflet, cassette-corder
8-893-512-00	Ⓕ	Tape, demonstration; CD-807 (TCM-600B: AEP model) (TCM-600: US, Canadian, AEP model)

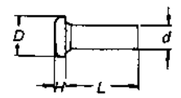
DIMENSIONS OF SCREWS

Flat-countersunk-head screw



Part No.	Description	d (mm)	L (mm)	H (mm)	D (mm)	Color
7-627-451-13	K 1.4 x 2.5	1.4	2.5	0.45	2	silver
7-627-451-23	K 1.4 x 3	1.4	3	0.45	2	silver

Pan-head screw



Part No.	Description	d (mm)	L (mm)	H (mm)	D (mm)	Color
7-627-551-03	P 1.4 x 1.6	1.4	1.6	0.5	2	silver
7-627-551-13	P 1.4 x 2	1.4	2	0.5	2	silver
7-627-551-19						black
7-627-551-33	P 1.4 x 5	1.4	5	0.5	2	silver
7-627-551-39						black
7-627-551-43	P 1.4 x 1.4	1.4	1.4	0.5	2	silver
7-627-551-53	P 1.4 x 3	1.4	3	0.5	2	silver
7-627-551-63	P 1.4 x 3.5	1.4	3.5	0.5	2	silver
7-627-551-69						black
7-627-552-63	P 1.7 x 4.5	1.7	4.5	0.5	2.5	silver
7-627-553-53	P 2 x 4.5	2	4.5	0.6	3	silver
7-627-850-09	P 1.4 x 2	1.4	2	0.8	2.5	black
7-627-850-29	P 1.4 x 3	1.4	3	0.8	2.5	black
7-627-850-43	P 1.4 x 1.6	1.4	1.6	0.8	2.5	silver
7-627-850-53	P 1.4 x 3.5	1.4	3.5	0.8	2.5	silver
7-627-850-63	P 1.4 x 4	1.4	4	0.8	2.5	silver
7-627-851-03	P 2 x 3.5	2	3.5	1	3.5	silver
7-627-852-09	P 1.7 x 2.5	1.7	2.5	0.9	3	black
7-627-852-13	P 1.7 x 4	1.7	4	0.9	3	silver

9-954-654-12

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