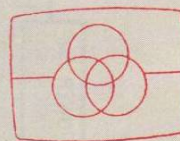


# TC-48

Canadian Model  
E Model  
US Model



Free service manuals  
Gratis schema's

Digitized by

[www.freesevicemanuals.info](http://www.freesevicemanuals.info)

## CASSETTE-CORDER

### SPECIFICATIONS

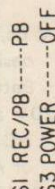
<b>Power Requirements:</b>	6V dc, four batteries size AA (IEC designation R6), Rechargeable Battery Pack BP-23 (optional) 120V ac, 60 Hz with optional Sony AC Power Adaptor AC-9 (Canadian model) or AC-9W (US model) 110, 120, 220 or 240V ac, 50/60 Hz with optional Sony AC Power Adaptor AC-4A (E model) 12V car battery with optional Sony Car Battery Cord DCC-127H	<b>Battery Life:</b>	Approx. 2 hours of continuous recording from the Built-in Microphone with Sony Long-life Batteries size AA
<b>Power Consumption:</b>	6W ac (60 Hz) with Sony AC Power Adaptor AC-9 (Canadian model) or AC-9W (US model) 9.2W ac (50 Hz), 8.9W ac (60 Hz) with Sony AC Power Adaptor AC-4A (E model)	<b>Input:</b>	MIC (minijack) . . . . . 1 sensitivity 0.2 mV (-72 dB) for low impedance microphone
<b>Power Output:</b>	450 mW (max.) at dc operation	<b>Output:</b>	EARPHONE (minijack) . . 1 8 $\Omega$ earphone or load impedance 10 k $\Omega$ or higher
<b>Speaker:</b>	7 cm (2 7/8 inches) dia.	<b>Other Jack:</b>	Remote control jack
<b>Track:</b>	2-track 1-channel monaural	<b>Dimensions:</b>	Approx. 52 (w) x 175 (h) x 111 (d) mm 2 1/8 (w) x 7 (h) x 4 3/8 (d) inches including projecting parts and controls not including hand strap
<b>Fast Forward Rewind Time:</b>	Approx. 2 min. 10 sec. with Sony Cassette C-60	<b>Weight:</b>	Approx. 860 g, 1 lb 15 oz including batteries
<b>Frequency Response:</b>	70-8,000 Hz		0 dB = 0.775 V

# SONY®

## SERVICE MANUAL



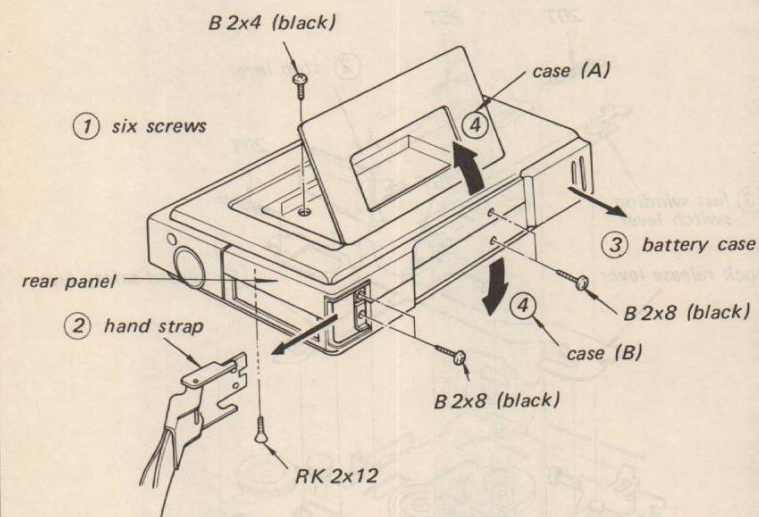
### 1-1. BLOCK DIAGRAM



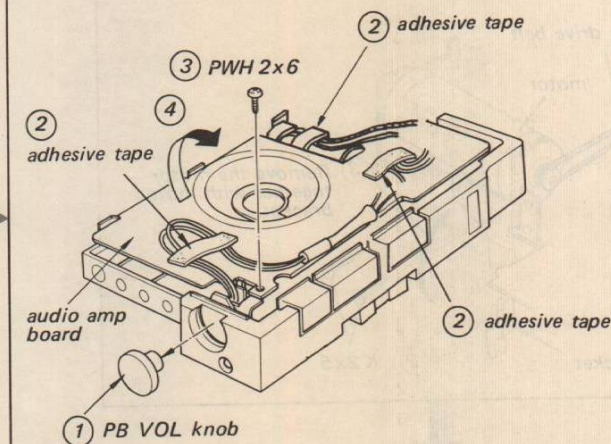


## SECTION 2 DISASSEMBLY

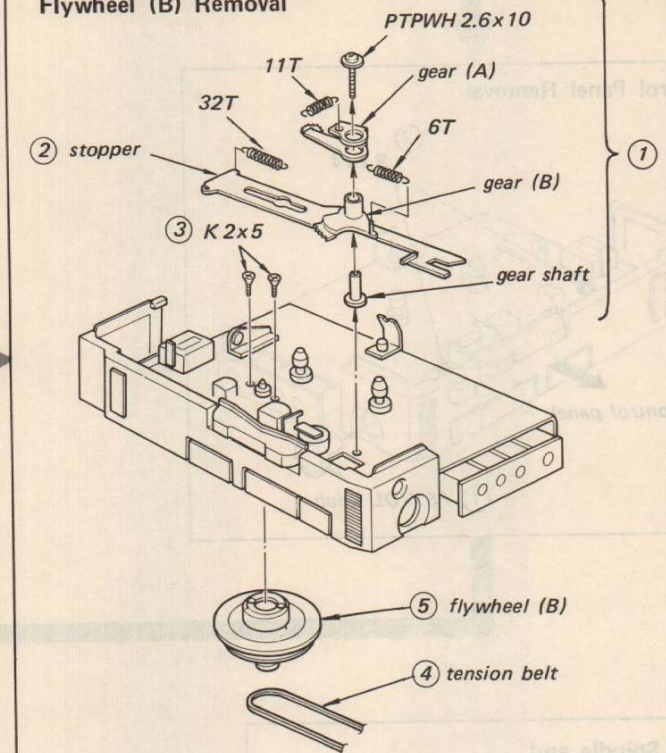
### Case and Rear Panel Removal



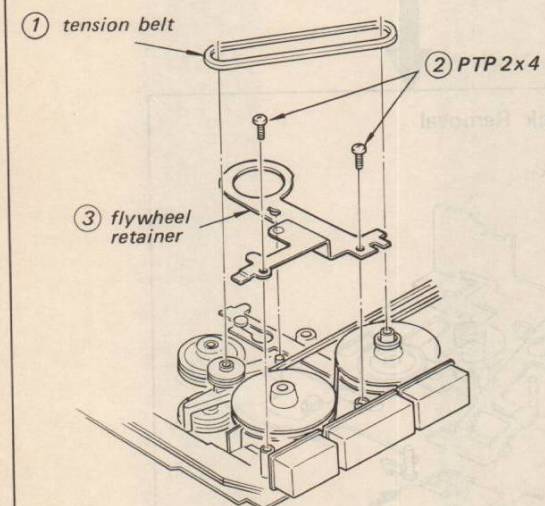
### Audio Amp Board Removal



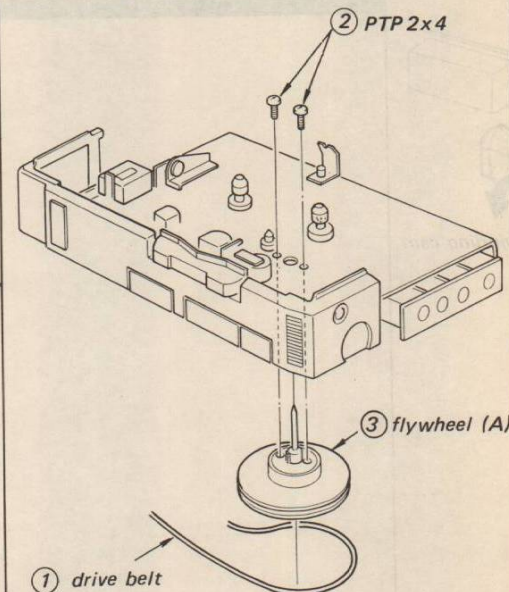
### Flywheel (B) Removal



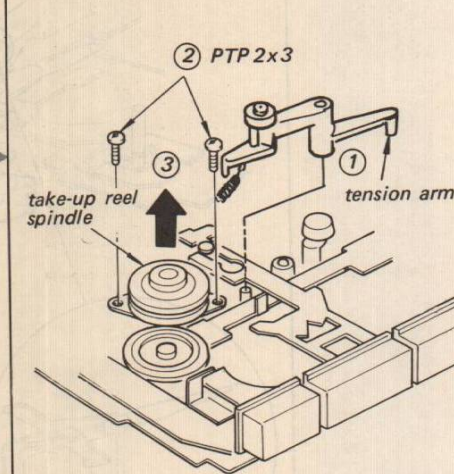
### Flywheel Retainer Removal



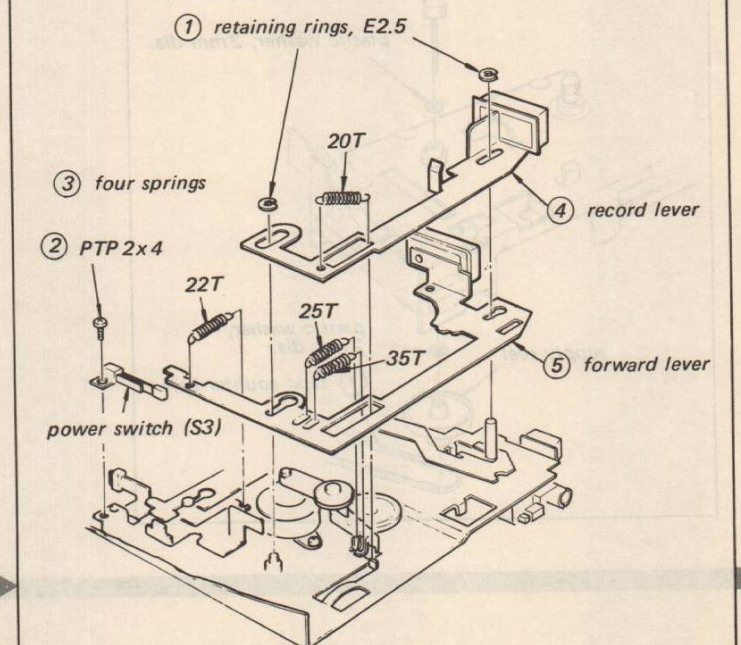
### Flywheel (A) Removal



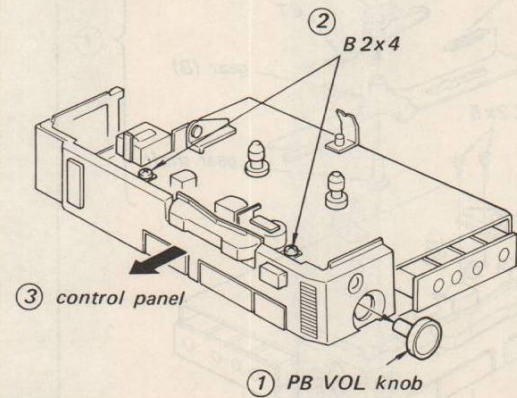
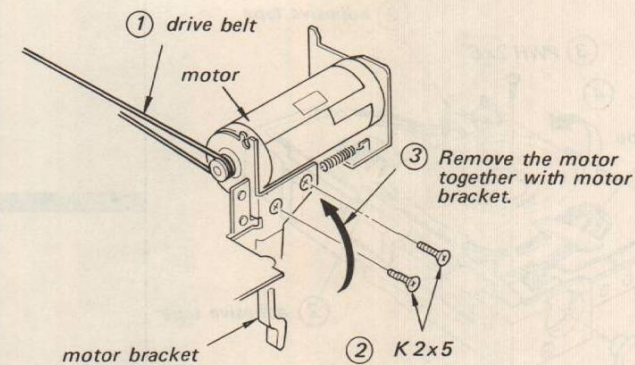
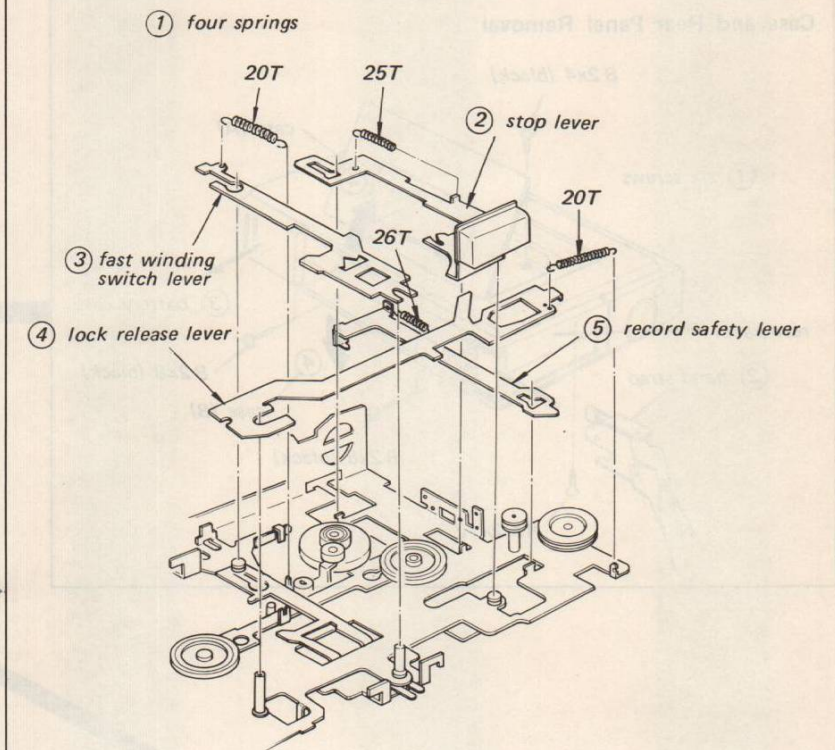
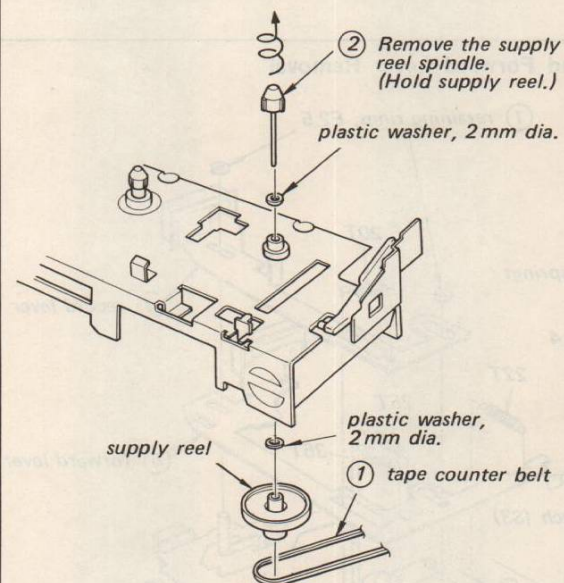
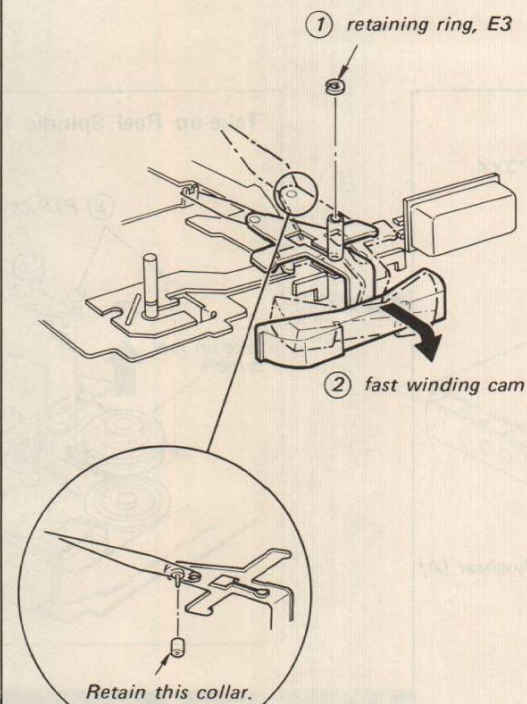
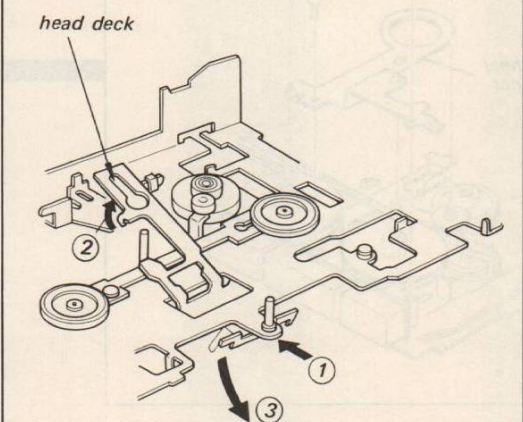
### Take-up Reel Spindle Removal



### Record and Forward Lever Removal





**Control Panel Removal****Motor Removal****Stop Lever, Switch Lever, Lock Release Lever and Record Safety Lever Removal****Supply Reel Spindle and Supply Reel Removal****Fast Winding Cam Removal****Head Deck Removal**



## SECTION 3 ADJUSTMENTS

### 3-1. MECHANICAL ADJUSTMENTS

#### PRECAUTION

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

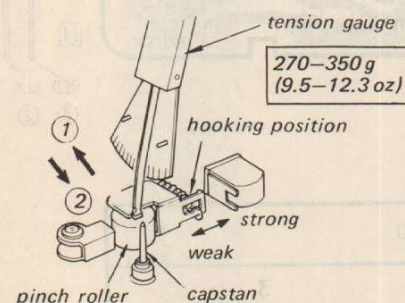
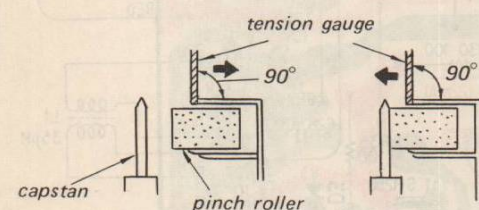
record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply a suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

#### Pinch Roller Pressure Adjustment

##### — Playback Mode —

**Note:** This adjustment can be made with the cassette lid opened.

- Push the tension gauge.
- Slowly return the pinch roller and read the tension gauge just when the pinch roller starts to rotate.
- If necessary, change the hooking position.

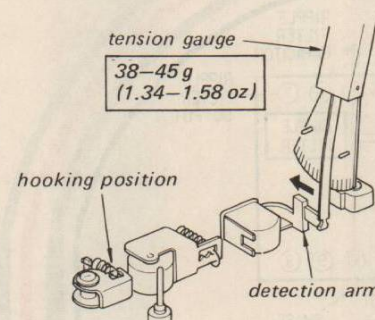


#### Shut-off Spring Adjustment

##### — Playback Mode —

**Note:** This adjustment can be made with the cassette lid opened.

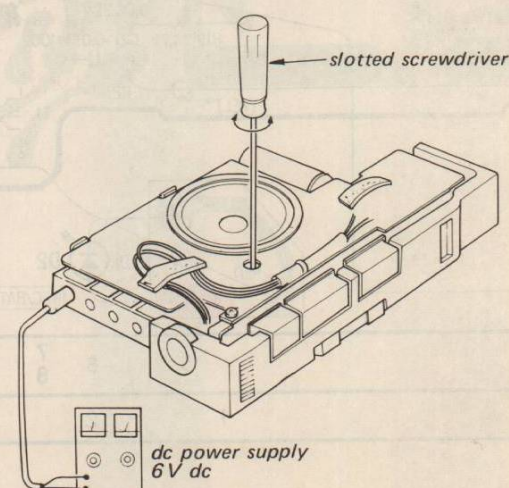
- Push the detection arm with a tension gauge and read the tension gauge just when the shut-off mechanism operates.
- If necessary, change the hooking position.



#### Flywheel Thrust Play Adjustment

##### — Playback Mode —

- Place the set horizontally reel-spindle-side-down.
- Loosen the thrust screw.
- Carefully turn the thrust screw clockwise until current suddenly increases. Then loosen the thrust screw 1/4 turn.
- Secure the thrust screw with a suitable locking compound.



### 3-2. ELECTRICAL ADJUSTMENTS

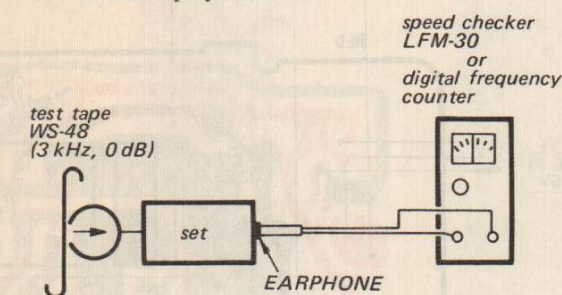
#### Tape Speed Adjustment

##### Setting:

PB VOL control: mechanical mid  
Power supply voltage: 6 V dc

##### Procedure:

- Mode: playback



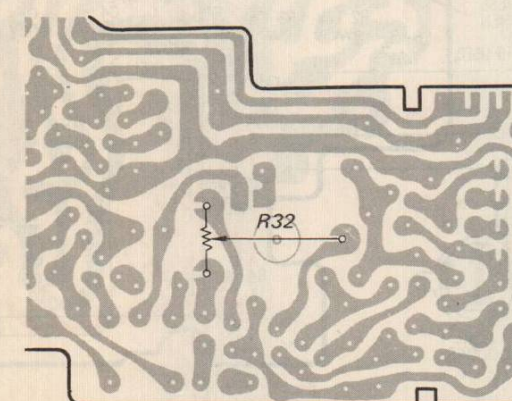
Adjust R32 to obtain the specified values below.

##### Specification:

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

Frequency difference between beginning and end of tape should be within 2% (±60 Hz).

##### Adjustment Location:



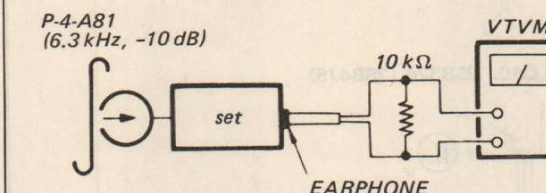
#### Record/playback Head Azimuth Adjustment

##### Setting:

PB VOL control: mechanical mid  
Open the cassette lid.

##### Procedure:

- Mode: playback

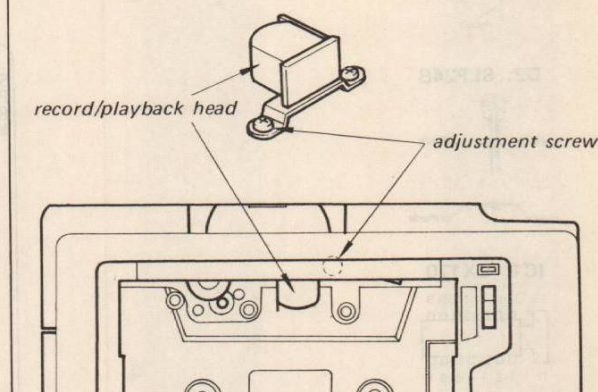


- Turn the adjustment screw for the highest VTVM reading.

**Note:** Several peaks may appear, take the highest.

- After the adjustment, secure the screw with a suitable locking compound.

##### Adjustment Location:





## 4-1. MOUNTING DIAGRAMS

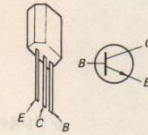
— Conductor Side —

## • Replacement Semiconductors

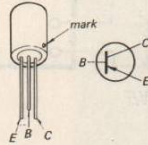
For replacement, use semiconductors except in ( ).

Q1: 2SC632A (2SC631A)

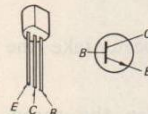
Q2-9: 2SC634A (2SC633A)



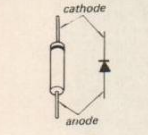
Q10: 2SB324 (2SB475)



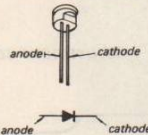
Q11: 2SC1474



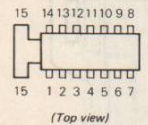
D1, D3: 1S1555 (1T40)



D2: SLP24B

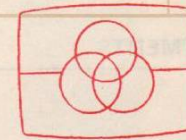


IC1: CX170



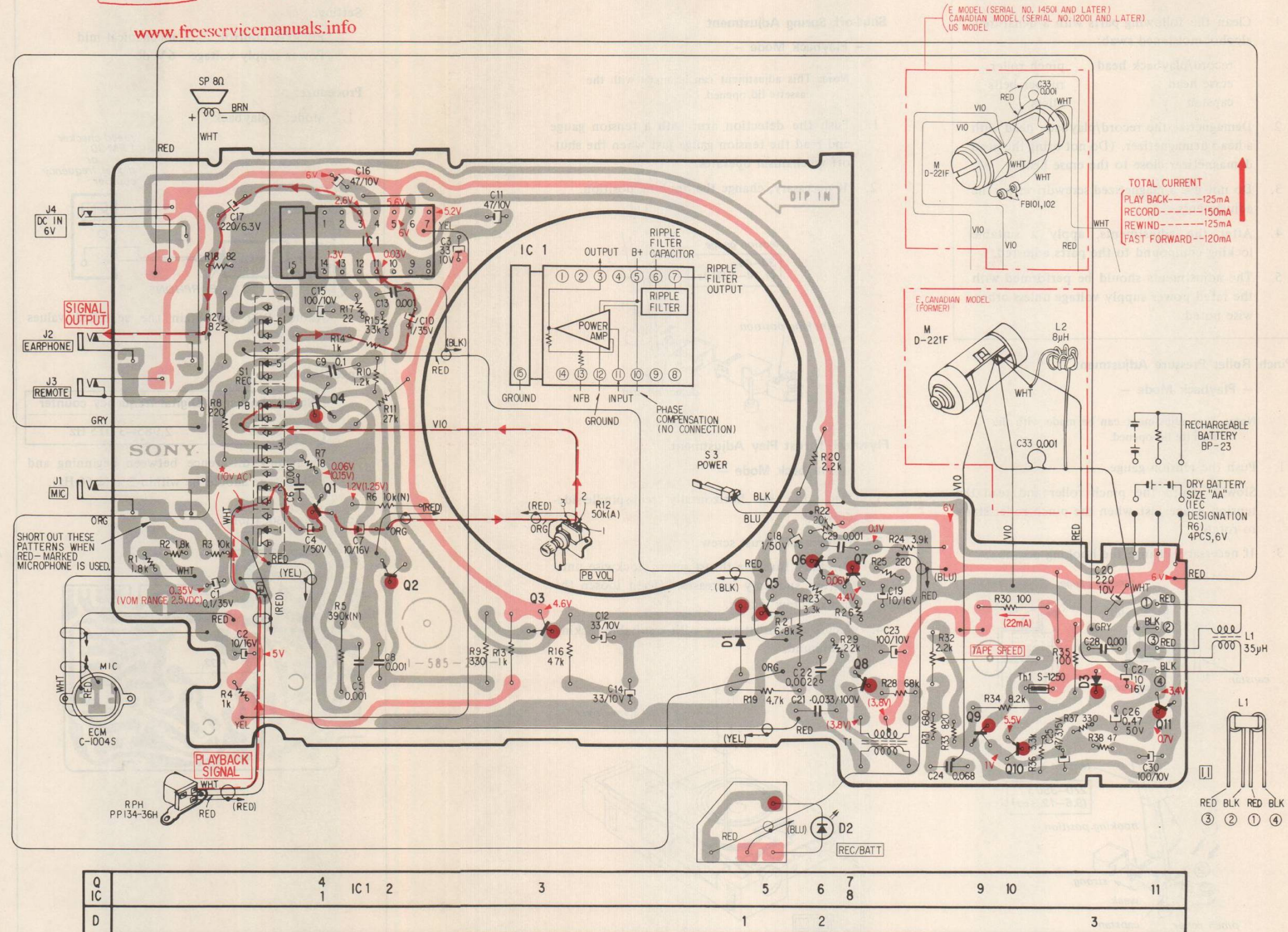
## Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- : B+ pattern.
- : signal path.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
- ( ): record
- no mark: common
- AC voltage readings indicated by \* in the bias oscillator circuit are taken with a VTVM.

Free service manuals  
Gratis schema's

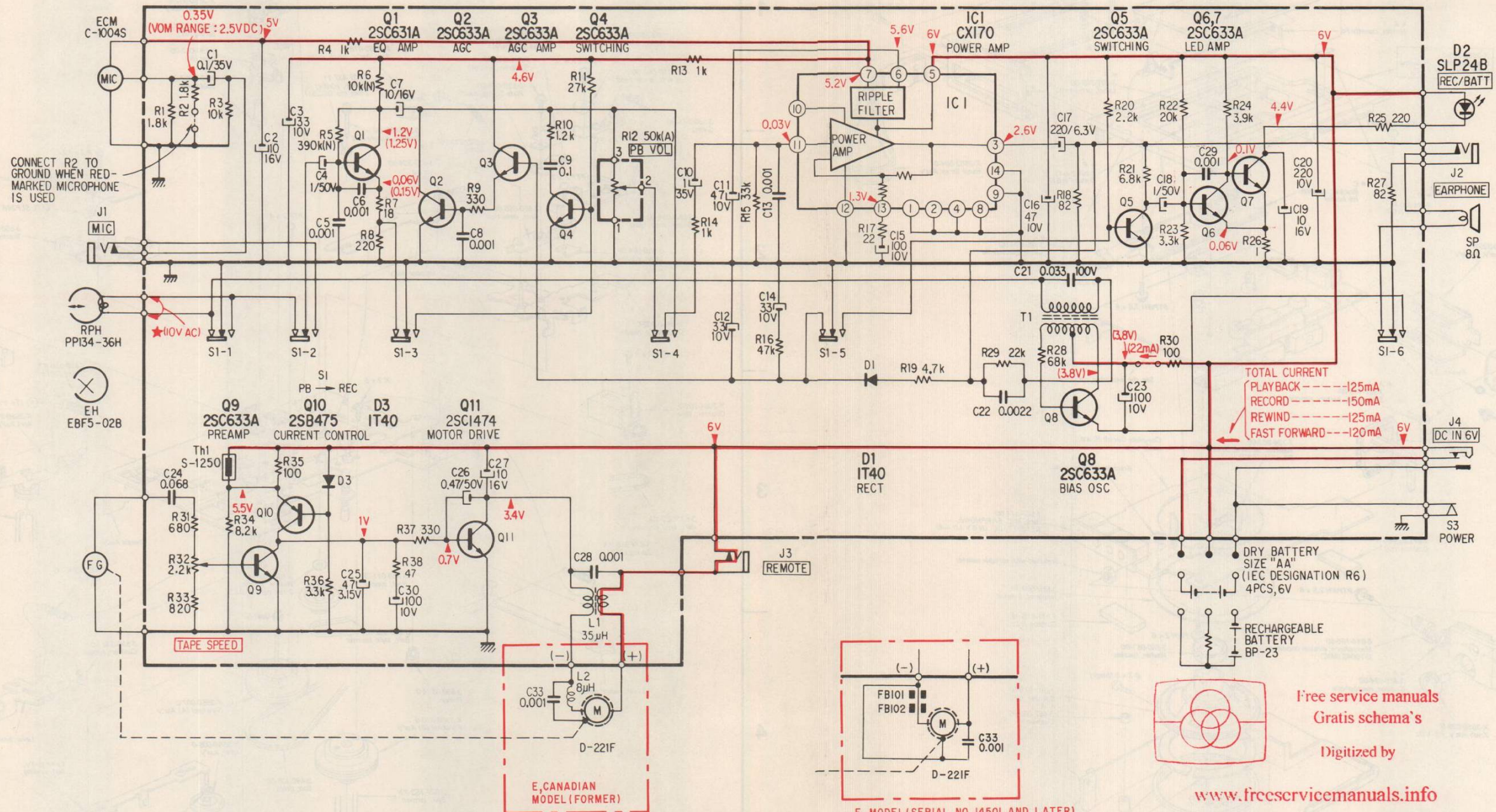
Digitized by

www.freeservicemanuals.info

E MODEL (SERIAL NO. 14501 AND LATER)  
CANADIAN MODEL (SERIAL NO. 12001 AND LATER)  
US MODELTOTAL CURRENT  
PLAY BACK-----125mA  
RECORD-----150mA  
REWIND-----125mA  
FAST FORWARD-----120mAE, CANADIAN MODEL  
(FORMER)RECHARGEABLE BATTERY  
BP-23  
DRY BATTERY  
SIZE "AA"  
(IEC  
DESIGNATION  
R6)  
4PCS, 6VL1  
RED BLK RED BLK  
③ ② ① ④



## 4-2. SCHEMATIC DIAGRAM



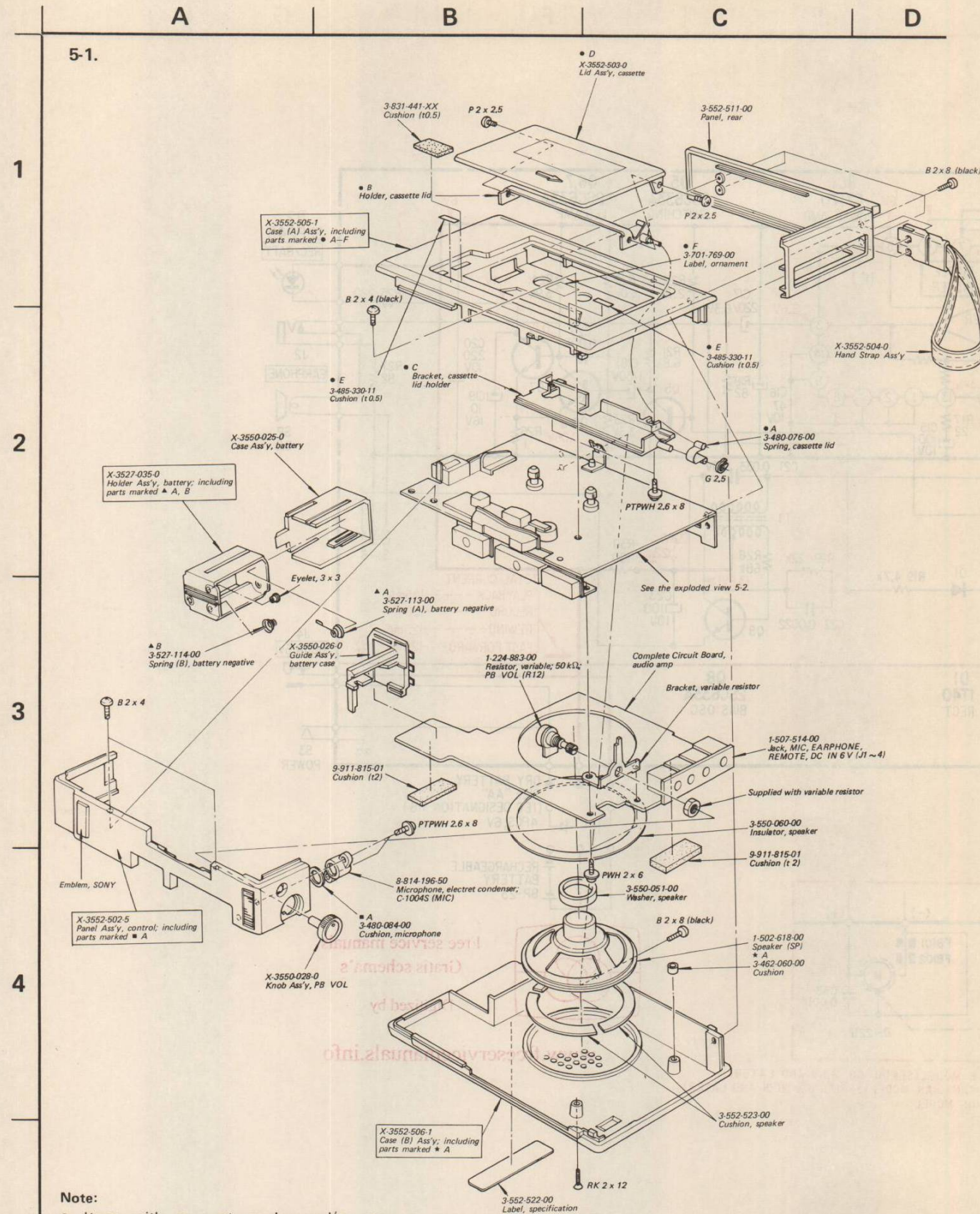


## SECTION 5

### EXPLODED VIEWS

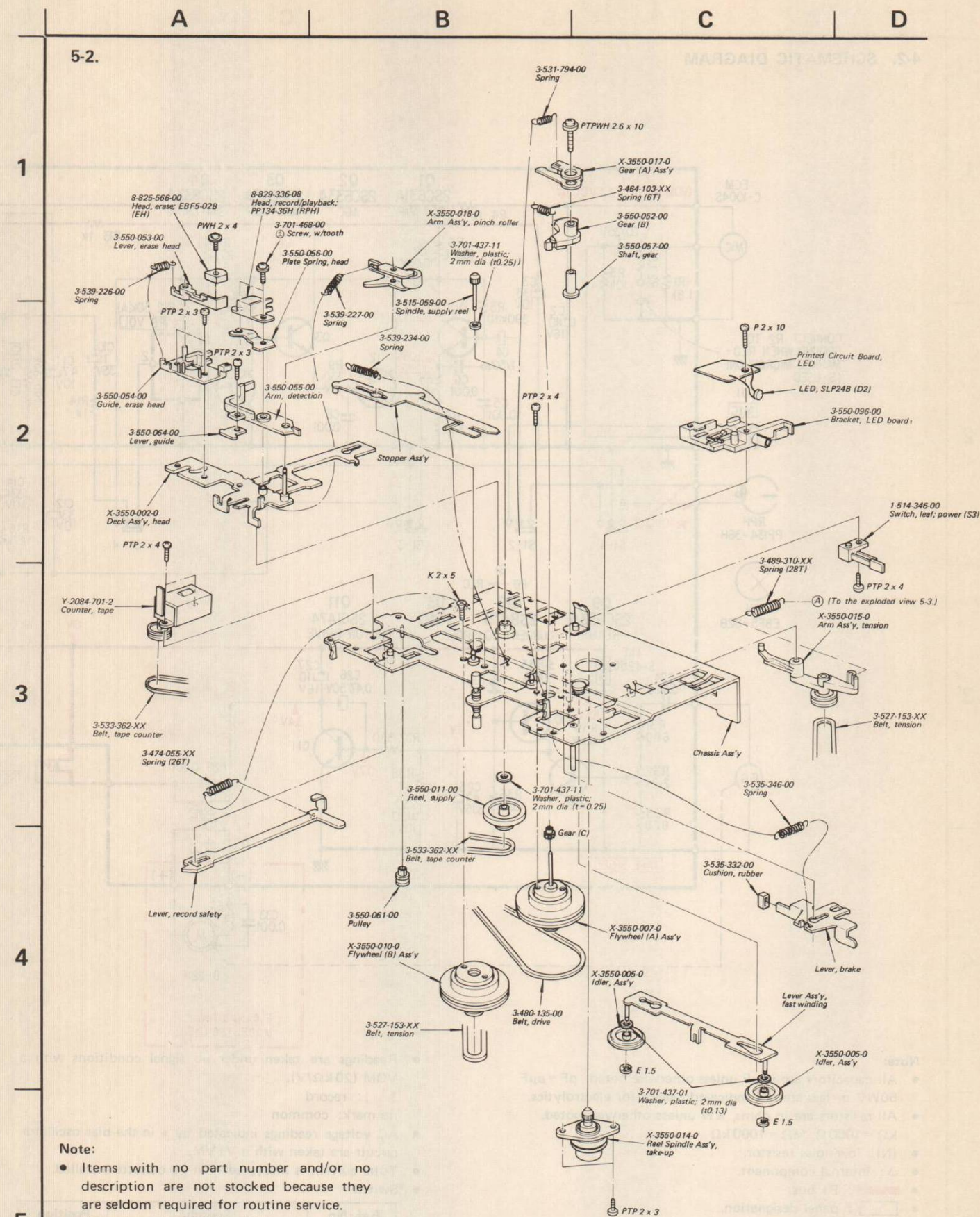
**TC-48** It's free **TC-48**

## All over the world



**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



**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
- (□□T) shows the number of coils in spring.



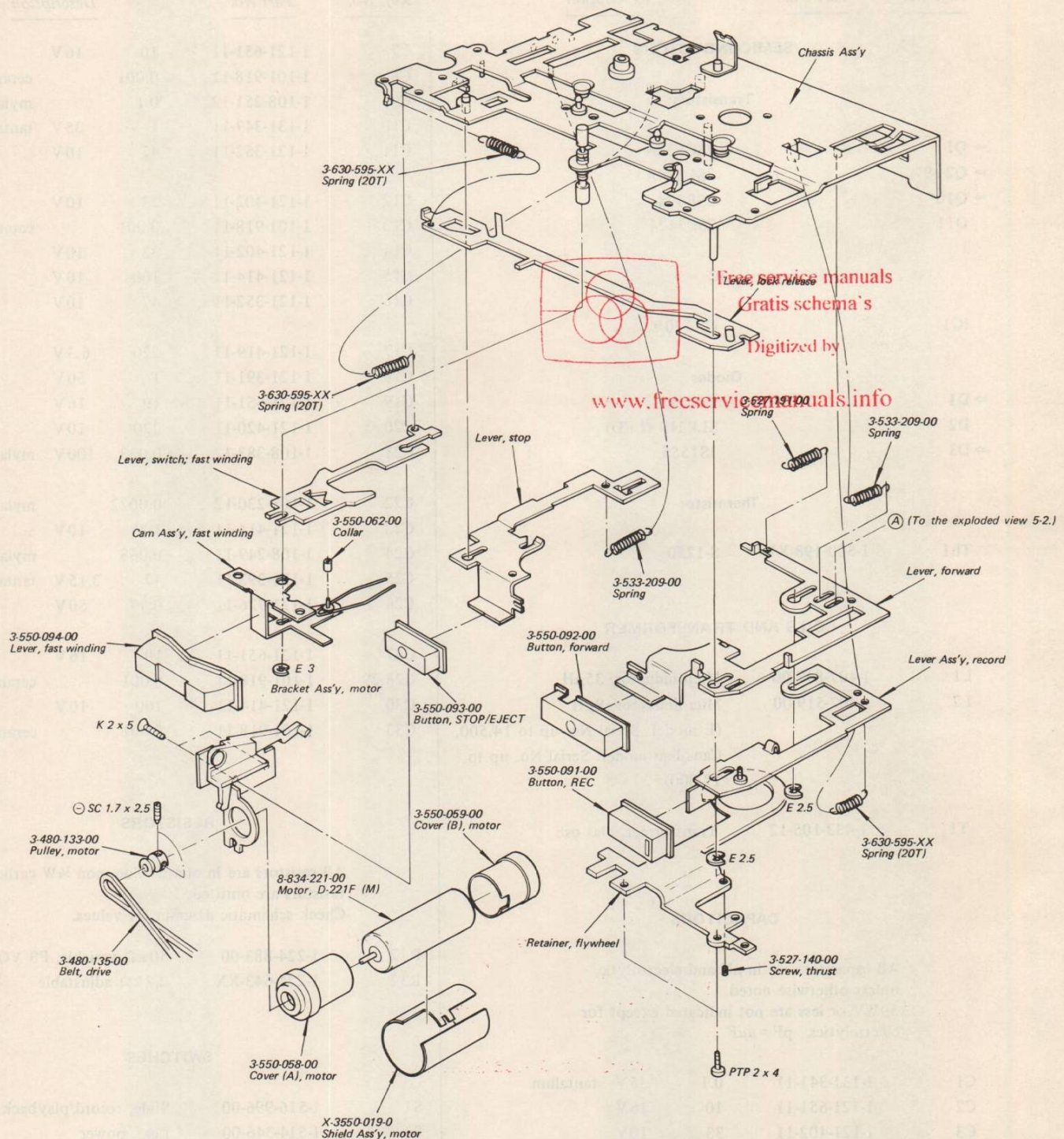
A

B

C

D

5-3.

**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
- (□□T) shows the number of coils in spring.



SECTION 6  
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
<b>SEMICONDUCTORS</b>					
<b>Transistors</b>					
⇒ Q1	2SC632A		C7	1-121-651-11	10 16V
⇒ Q2-9	2SC634A		C8	1-101-918-11	0.001 ceramic
⇒ Q10	2SB324		C9	1-108-251-12	0.1 mylar
Q11	2SC1474		C10	1-131-347-11	1 35V tantalum
			C11	1-121-352-11	47 10V
			C12	1-121-402-11	33 10V
			C13	1-101-918-11	0.001 ceramic
			C14	1-121-402-11	33 10V
			C15	1-121-414-11	100 10V
			C16	1-121-352-11	47 10V
			C17	1-121-419-11	220 6.3V
			C18	1-121-391-11	1 50V
			C19	1-121-651-11	10 16V
			C20	1-121-420-11	220 10V
			C21	1-108-383-12	0.033 100V mylar
			C22	1-108-230-12	0.0022 mylar
			C23	1-121-414-11	100 10V
			C24	1-108-249-11	0.068 mylar
			C25	1-131-393-11	47 3.15V tantalum
			C26	1-121-726-11	0.47 50V
			C27	1-121-651-11	10 16V
			C28,29	1-101-918-11	0.001 ceramic
			C30	1-121-414-11	100 10V
			C33	1-101-918-11	0.001 ceramic
			<b>RESISTORS</b>		
			All resistors are in ohms. Common ¼W carbon resistors are omitted. Check schematic diagram for values.		
			R12	1-224-883-00	50 kΩ variable, PB VOL
			R32	1-224-643-XX	2.2 kΩ adjustable
			<b>SWITCHES</b>		
			S1	1-516-996-00	Slide, record/playback
			S3	1-514-346-00	Leaf, power
			<b>COILS AND TRANSFORMER</b>		
L1	1-407-847-00	Microinductor, 35μH			
L2	1-407-519-00	Microinductor, 8μH (E model: Serial No. up to 14,500, Canadian model: Serial No. up to 12,000)			
T1	1-433-105-12	Transformer, bias osc			
			<b>CAPACITORS</b>		
			All capacitors are in μF and electrolytic unless otherwise noted. 50WV or less are not indicated except for electrolytics. pF = μμF		
C1	1-131-341-11	0.1 35V tantalum			
C2	1-121-651-11	10 16V			
C3	1-121-402-11	33 10V			
C4	1-121-391-11	1 50V			
C5,6	1-101-918-11	0.001 ceramic			

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

Ref. No.	Part No.	Description
<b>MISCELLANEOUS</b>		
EH	8-825-566-00	Head, erase; EBF5-02B
FB101,102	1-543-040-00	Bead, ferrite (E model: Serial No. 14,501 and later, Canadian model: Serial No. 12,001 and later, US model)
J1-4	1-507-514-00	Jack, MIC, EARPHONE, REMOTE, DC IN 6V
M	8-834-221-00	Motor, D-221F
MIC	8-814-196-50	Microphone, electret condenser; C-1004S
RPH	8-829-336-08	Head, record/playback; PP134-36H
SP	1-502-618-00	Speaker

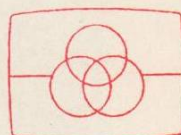
## ACCESSORIES AND PACKING MATERIALS

Part No.	Description
1-504-059-11	Earphone, ME-20H
1-506-309-00	Plug, shorting; SP-100
1-528-027-00	Battery, SUM-3S (US model)
2-224-236-00	Bag, plastic; set
3-552-516-00	Sheet, protection
3-552-525-00	Carton (US model)
3-552-527-00	Carton (E model)
3-552-528-00	Carton (Canadian model)
3-701-624-00	Bag, plastic
3-770-328-21	Manual, instruction (US model)
3-770-328-51	Manual, instruction (E, Canadian model)
3-793-828-11	Card, caution; cassette
8-893-512-00	Tape, demonstration; CD-807



ACCESSORIES AND PACKING MATERIALS	
Part Name	Part No.
Cartridge, M-100	1-504-000-01
Mag. bracket, M-100	1-504-000-02
Battery, 210-22 (12 model)	1-504-000-03
Bag, plastic	1-504-000-04
Sheet, for battery	1-504-000-05
Cartridge, M-100	1-504-000-06
Cartridge, M-100	1-504-000-07
Cartridge, M-100	1-504-000-08
Cartridge, M-100	1-504-000-09
Bag, plastic	1-504-000-10
Manual, instruction (12 model)	1-504-000-11
Manual, instruction	1-504-000-12
Cartridge, M-100	1-504-000-13
Cartridge, M-100	1-504-000-14
Cartridge, M-100	1-504-000-15
Cartridge, M-100	1-504-000-16
Cartridge, M-100	1-504-000-17
Cartridge, M-100	1-504-000-18
Cartridge, M-100	1-504-000-19
Cartridge, M-100	1-504-000-20
Cartridge, M-100	1-504-000-21
Cartridge, M-100	1-504-000-22
Cartridge, M-100	1-504-000-23
Cartridge, M-100	1-504-000-24
Cartridge, M-100	1-504-000-25
Cartridge, M-100	1-504-000-26
Cartridge, M-100	1-504-000-27
Cartridge, M-100	1-504-000-28
Cartridge, M-100	1-504-000-29
Cartridge, M-100	1-504-000-30
Cartridge, M-100	1-504-000-31
Cartridge, M-100	1-504-000-32
Cartridge, M-100	1-504-000-33
Cartridge, M-100	1-504-000-34
Cartridge, M-100	1-504-000-35
Cartridge, M-100	1-504-000-36
Cartridge, M-100	1-504-000-37
Cartridge, M-100	1-504-000-38
Cartridge, M-100	1-504-000-39
Cartridge, M-100	1-504-000-40
Cartridge, M-100	1-504-000-41
Cartridge, M-100	1-504-000-42
Cartridge, M-100	1-504-000-43
Cartridge, M-100	1-504-000-44
Cartridge, M-100	1-504-000-45
Cartridge, M-100	1-504-000-46
Cartridge, M-100	1-504-000-47
Cartridge, M-100	1-504-000-48
Cartridge, M-100	1-504-000-49
Cartridge, M-100	1-504-000-50
Cartridge, M-100	1-504-000-51
Cartridge, M-100	1-504-000-52
Cartridge, M-100	1-504-000-53
Cartridge, M-100	1-504-000-54
Cartridge, M-100	1-504-000-55
Cartridge, M-100	1-504-000-56
Cartridge, M-100	1-504-000-57
Cartridge, M-100	1-504-000-58
Cartridge, M-100	1-504-000-59
Cartridge, M-100	1-504-000-60
Cartridge, M-100	1-504-000-61
Cartridge, M-100	1-504-000-62
Cartridge, M-100	1-504-000-63
Cartridge, M-100	1-504-000-64
Cartridge, M-100	1-504-000-65
Cartridge, M-100	1-504-000-66
Cartridge, M-100	1-504-000-67
Cartridge, M-100	1-504-000-68
Cartridge, M-100	1-504-000-69
Cartridge, M-100	1-504-000-70
Cartridge, M-100	1-504-000-71
Cartridge, M-100	1-504-000-72
Cartridge, M-100	1-504-000-73
Cartridge, M-100	1-504-000-74
Cartridge, M-100	1-504-000-75
Cartridge, M-100	1-504-000-76
Cartridge, M-100	1-504-000-77
Cartridge, M-100	1-504-000-78
Cartridge, M-100	1-504-000-79
Cartridge, M-100	1-504-000-80
Cartridge, M-100	1-504-000-81
Cartridge, M-100	1-504-000-82
Cartridge, M-100	1-504-000-83
Cartridge, M-100	1-504-000-84
Cartridge, M-100	1-504-000-85
Cartridge, M-100	1-504-000-86
Cartridge, M-100	1-504-000-87
Cartridge, M-100	1-504-000-88
Cartridge, M-100	1-504-000-89
Cartridge, M-100	1-504-000-90
Cartridge, M-100	1-504-000-91
Cartridge, M-100	1-504-000-92
Cartridge, M-100	1-504-000-93
Cartridge, M-100	1-504-000-94
Cartridge, M-100	1-504-000-95
Cartridge, M-100	1-504-000-96
Cartridge, M-100	1-504-000-97
Cartridge, M-100	1-504-000-98
Cartridge, M-100	1-504-000-99
Cartridge, M-100	1-504-000-100

MISCELLANEOUS	
Part Name	Part No.
Head, main, F-100	1-504-000-01
Head, main, F-100	1-504-000-02
Head, main, F-100	1-504-000-03
Head, main, F-100	1-504-000-04
Head, main, F-100	1-504-000-05
Head, main, F-100	1-504-000-06
Head, main, F-100	1-504-000-07
Head, main, F-100	1-504-000-08
Head, main, F-100	1-504-000-09
Head, main, F-100	1-504-000-10
Head, main, F-100	1-504-000-11
Head, main, F-100	1-504-000-12
Head, main, F-100	1-504-000-13
Head, main, F-100	1-504-000-14
Head, main, F-100	1-504-000-15
Head, main, F-100	1-504-000-16
Head, main, F-100	1-504-000-17
Head, main, F-100	1-504-000-18
Head, main, F-100	1-504-000-19
Head, main, F-100	1-504-000-20
Head, main, F-100	1-504-000-21
Head, main, F-100	1-504-000-22
Head, main, F-100	1-504-000-23
Head, main, F-100	1-504-000-24
Head, main, F-100	1-504-000-25
Head, main, F-100	1-504-000-26
Head, main, F-100	1-504-000-27
Head, main, F-100	1-504-000-28
Head, main, F-100	1-504-000-29
Head, main, F-100	1-504-000-30
Head, main, F-100	1-504-000-31
Head, main, F-100	1-504-000-32
Head, main, F-100	1-504-000-33
Head, main, F-100	1-504-000-34
Head, main, F-100	1-504-000-35
Head, main, F-100	1-504-000-36
Head, main, F-100	1-504-000-37
Head, main, F-100	1-504-000-38
Head, main, F-100	1-504-000-39
Head, main, F-100	1-504-000-40
Head, main, F-100	1-504-000-41
Head, main, F-100	1-504-000-42
Head, main, F-100	1-504-000-43
Head, main, F-100	1-504-000-44
Head, main, F-100	1-504-000-45
Head, main, F-100	1-504-000-46
Head, main, F-100	1-504-000-47
Head, main, F-100	1-504-000-48
Head, main, F-100	1-504-000-49
Head, main, F-100	1-504-000-50
Head, main, F-100	1-504-000-51
Head, main, F-100	1-504-000-52
Head, main, F-100	1-504-000-53
Head, main, F-100	1-504-000-54
Head, main, F-100	1-504-000-55
Head, main, F-100	1-504-000-56
Head, main, F-100	1-504-000-57
Head, main, F-100	1-504-000-58
Head, main, F-100	1-504-000-59
Head, main, F-100	1-504-000-60
Head, main, F-100	1-504-000-61
Head, main, F-100	1-504-000-62
Head, main, F-100	1-504-000-63
Head, main, F-100	1-504-000-64
Head, main, F-100	1-504-000-65
Head, main, F-100	1-504-000-66
Head, main, F-100	1-504-000-67
Head, main, F-100	1-504-000-68
Head, main, F-100	1-504-000-69
Head, main, F-100	1-504-000-70
Head, main, F-100	1-504-000-71
Head, main, F-100	1-504-000-72
Head, main, F-100	1-504-000-73
Head, main, F-100	1-504-000-74
Head, main, F-100	1-504-000-75
Head, main, F-100	1-504-000-76
Head, main, F-100	1-504-000-77
Head, main, F-100	1-504-000-78
Head, main, F-100	1-504-000-79
Head, main, F-100	1-504-000-80
Head, main, F-100	1-504-000-81
Head, main, F-100	1-504-000-82
Head, main, F-100	1-504-000-83
Head, main, F-100	1-504-000-84
Head, main, F-100	1-504-000-85
Head, main, F-100	1-504-000-86
Head, main, F-100	1-504-000-87
Head, main, F-100	1-504-000-88
Head, main, F-100	1-504-000-89
Head, main, F-100	1-504-000-90
Head, main, F-100	1-504-000-91
Head, main, F-100	1-504-000-92
Head, main, F-100	1-504-000-93
Head, main, F-100	1-504-000-94
Head, main, F-100	1-504-000-95
Head, main, F-100	1-504-000-96
Head, main, F-100	1-504-000-97
Head, main, F-100	1-504-000-98
Head, main, F-100	1-504-000-99
Head, main, F-100	1-504-000-100



Free service manuals

Gratis schema's

Digitized by

www.freeservicemanuals.info

**Sony Corporation**

© 1977

— 18 —