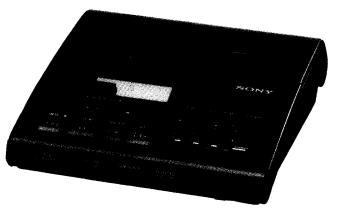
BM-840T

SERVICE MANUAL



US Model Canadian Model AEP Model UK Model

SPECIFICATIONS

(normal position type)

Track system

4-track 2-channel monaural (L channel for electronic index signals, R channel for sound signals)

Tape speed

2.4 cm/s (15/16 in./s), 1.2 cm/s (15/32 in./s)

Fast winding time
Approx. 1 min. 50 sec. (2.4 cm/s) with Sony microcassette MC-60BM

Frequency response

200 - 4.000 Hz (at 1.2 cm/s)

200 - 6,000 Hz (at 2.4 cm/s)

Approx. 5.7 cm (21/4 inches) dia.

Power output

350 mW (at 10% distortion)

Output

EARPHONE (minijack)

for 8 - 300-ohm earphones

CONTROL UNIT connector for foot control unit

Power requirements

DC IN 9 V jack accepts the supplied AC power adaptor for use on

120V AC, 60Hz (US, Canadian model)

220V AC, 50Hz (AEP model)

240V AC, 50Hz (UK model)

Power consumption

14 W (with the supplied AC power adaptor) **Dimensions**

Approx. $200 \times 70 \times 245 \text{ mm} (w/h/d) (7\% \times 2\% \times 9\%)$

including projecting parts and controls

Mass

Approx. 1.2 kg (2 lb 11 oz)

Accessories supplied

AC power adaptor AC-980 (1) Foot control unit FS-85(1)

Design and specifications are subject to change without notice.

Model Name Using Similar Mechanism	BM-850
Tape Transport Mechanism Type	MB-840

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK A OR DOTTED LINE WITH MARK A ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE 🛕 SUR LES DIA-GRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRI-TIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.





SECTION 1 SERVICING NOTES

TABLE OF CONTENTS

<u>Sec</u>	ion <u>Title</u> <u>Page</u>
1.	SERVICING NOTES
	Notes for Repairing2
2.	GENERAL
	Location and Function of Controls3
	Operation Flow Chart4
	Power Connection4
	Setting Up the Unit4
	Transcription5
	Erasing
	Alarm System
3.	CIRCUIT DESCRIPTION
	Microcomputer μ PD75308GF-K63-3B9 (IC109)8
4.	MECHANICAL ADJUSTMENTS14
5.	ELECTRICAL ADJUSTMENTS15
6.	DIAGRAMS
6-1	Printed Wiring Boards
6-2	Schematic Diagram
7.	EXPLODED VIEWS
7-1	Cabinet Section25
7-2	Mechanism Deck Section (1)26
7-3	Mechanism Deck Section (2)27
8.	ELECTRICAL PARTS LIST28

[NOTES FOR REPAIRING]

1. POWER (S101) Switch

The POWER switch is not a switch for turn off the power source. Pay attention when repairing that the electricity is turned on even if the POWER switch is turned STAN-DBY position.

- The states when turn STANDBY position of the POWER switch are as follows.
 - a. LCD (ND901) display will be turned off.
 - b. Motors (M901, 902) will be stopped.
 - c. Plungers (PG901, 902) will be turned off.
 - d. Any key input will be ignored.

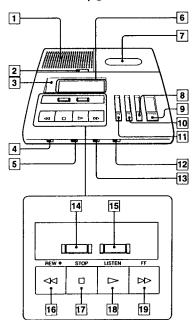
The above items from a to d are controlled by the microcomputer which makes the pin ® of IC109 (microcomputer) become Low level.

GENERAL

This section is extracted from instruction manual.

Location and Function of Controls

For details, refer to the pages indicated in ().



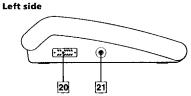
- 1 Built-in speaker
- 2 EJECT button

Press to eject the cassette.

- [3] ERASE lamp (10)
- 4 POWER switch
- 5 SPEED CONTROL selector (9) OFF/ON
- 6 Display window (15)
- 7 Cassette compartment

When the EJECT button is pressed, the cassette compartment lid opens first, then the cassette holder pops up.

- 8 TONE control
- VOLUME control
- **REVERSE TIME control (8)**
- [1] SPEED control (9)
- 12 AUTO STOP selector (9)
- 13 TAPE SPEED selector
- RESET button (6)
- 15 ERASE button (10)
- 17 STOP
- ► LISTEN
- 19 ►► FF (fast forward)

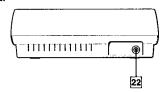


Left side

- 20 CONTROL UNIT connector (5)
- 21 EARPHONE jack (9)

Rear

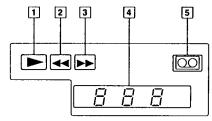
ω



Rear

22 DC IN 9 V (5)

Display Window



1 (listen) indicator

Displayed during playback.

[2] ◀◀ (rewind) indicator

Displayed while the cassette is being rewound.

[3] ▶► (fast forward) indicator

Displayed while the tape is advanced rapidly.

- 4 Tape counter
 5 🔯 (cassette) indicator

The indicator blinks in the following cases:

- The ERASE button is pressed when no cassette is inserted or when the cassette's safety tabs have been removed.
- End of tape
- . The tape is torn while being rewound.

It may be difficult to read the liquid crystal counter display due to the watching angle.

Operation Flow Chart

For details, refer to the pages in ().

: Necessary step ______ : Optional step

Transcription



Connect the AC power adaptor to the unit and to an AC outlet (5).	
+	_
Connect the foot control unit (5).	7
+	_
Set POWER to ON.	7
	_
Insert the dictated cassette (6).	7
+	_
Connect the earphone (9).]
+	_
Set AUTO STOP to OFF.	7
+	_
Set TAPE SPEED to the same position as that used in dictating.	7
+	_
Press ◀◀ REW.	7
When the beginning of the dictated cassette is reached, a beep	ı
tone is heard and the unit automatically shuts off.	J
+	
Keep the right side of the pedal depressed.]
(When the foot control unit is connected.) (9)	ı
or LICTEN	
Press ► LISTEN. (When the BM-840 is used for operation.) (9)	ı
(vvnen die divi-040 is used for operation.) (9)	

Adjust VOLUME and TONE.

Adjust the starting point for playback with the use of REVERSE TIME. (When the foot control unit is used.) (8) Set SPEED CONTROL to ON and adjust SPEED.

After transcribing, stop the tape. Release the pedal. (When the foot control unit is used.) (9)

Press ■ STOP. (When > LISTEN on the BM-840 is pressed to

play back the tape.) (9)

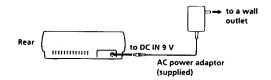
Erase the tape (10).

Power Connection

Note on the AC power adaptor

Use only the AC power adaptor supplied. Do not use any other AC power adaptor.

Porarity of the plug



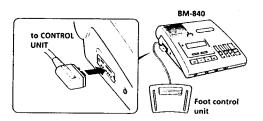
Setting Up the Unit

Note

"000" appears in the tape counter for about 2 seconds after connecting the AC power adaptor, even if the POWER switch is set to STANDBY. It is not a problem.

Connecting the Foot Control Unit (supplied)

For operation, refer to "Transcription" on page 7.



This unit uses only standard Microcassettes.

Non standard cassettes cannot be used because their "L" dimension (see illustration) is different.

Standard

Only standard Microcassettes have a small indentation on side A.

U D U L Approx. 5 mm

Non standard



L Approx.

Notes on the Microcassette

To protect cassettes from accidental erasure

When a recording is made, the previous recording is automatically erased. To prevent erasure, break the cassette tabs.

To reuse a cassette

To record on a cassette with removed tabs, cover each slot with a piece of plastic tape.



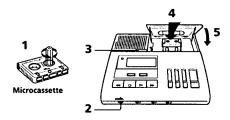




Continued on next page.

Setting Up the Unit (continued)

Cassette Insertion



- Take up any slack in the tape.
- Set POWER to ON.
- Press EJECT to open the cassette compartment lid. The cassette holder pops up.
- Insert a cassette into the cassette holder with the side to be played back facing upward. Push the cassette into the holder completely.
- Close the cassette compartment lid.



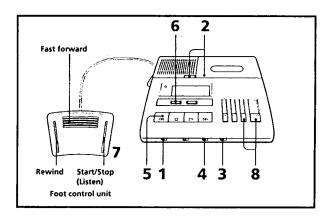
Tape counter: Numerical reference for listening

To reset the tape counter to zero

Press RESET for about a second.

Transcription

Connect the foot control unit. For connection, see page 5.



Erase the tape when transcription is finished.

- Set POWER to ON.
- Insert a dictated cassette. (See page 6.)
- Set AUTO STOP to OFF. Auto stop function is off.
- Set TAPE SPEED to the same tape speed as that used for recording (dictation).
- Press ◀◀ REW to rewind the tape. When the tape reaches the beginning of the dictated cassette, a beep tone is heard and the unit automatically shuts off.
- Press RESET to set the digital tape counter to zero.
- Keep the right side of the foot control unit pedal depressed to listen to the tape.
- 8 Adjust VOLUME and TONE.

To stop the tape

Release the pedal.

To rewind the tape

Keep the left side of the foot control unit pedal depressed.

To rapidly advance the tape

Keep the center top of the foot control unit pedal depressed.

Continued on next page.

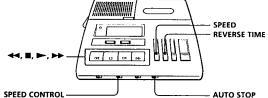
Note

ഗ

The digital tape counter is memorized even if the POWER switch is set to STANDBY or a cassette is being removed.

Transcription (continued)

Convenient Functions



Note

If the electronic index signal is detected while the tape is being rewound with this function, the length of the reverse time may be longer than the setting you have selected.

Auto backspace function

This control operates only when the unit is operated by the foot control

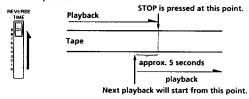
With the use of the REVERSE TIME control, the tape is rewound a little each time it is stopped. Then, the last few recorded words can be reviewed when you resume listening. Adjust the REVERSE TIME control to determine the length of tape to be rewound.

At "9" position, the tape is rewound so that the dictated cassette can be reviewed for about 5 seconds*. At "0" position, the tape stops without being rewound at all.

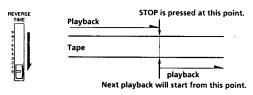
Set the REVERSE TIME control to the desired position and keep the right side of the pedal depressed to listen to the tape.

Measured at some point near the middle of the tape. The reverse time will vary in accordance with the remaining length of the tape.

REVERSE TIME : at "9" position



REVERSE TIME: at "0" position



The tape does not stop at the electronic index signal even if the AUTO STOP switch is set to ON while the ►► FF or ◄◄ REW button is continuously depressed.

Notes

- · When a cassette which was not recorded using a Sony Professional Dictating Machine (BM-577, 850, 890, etc.) is wound rapidly (in fast forward or rewind mode), the switching time of the operation modes may be delayed. In this case, set the AUTO STOP switch to OFF.
- · The electronic index signals do not correspond to the cue signals used for a tape recorder other than Sony Professional Dictating Machine.

AUTO STOP function

With this function, you can locate the recorded cassette and instructions while the unit is in the rewind or fast forward mode without listening to the entire tape.

To activate this function, you need to record the LTR, SEC or E-INDEX signal with a Sony Professional Dictating Machine (BM-577, 850, 890, etc. See the instruction manual of these models for details.).

- Set AUTO STOP to ON.
- Press ◀◀ REW or ▶▶ FF or keep the left side or the center top of the pedal of the foot control unit depressed to rewind or fast forward the tape.

When the AUTO STOP switch is set to ON, the tape automatically stops and a beep tone is heard at each electronic index signal previously recorded on the tape.

Controlling the speed

Set the SPEED CONTROL selector to ON to adjust the speed only by the SPEED control*.

The tape can be played back at a speed faster or slower than normal. When the SPEED CONTROL selector is set to OFF, the tape moves at the normal speed regardless of the position of the SPEED control.

 Tape speed can be changed in the range of approximately -10% to +50% with the use of the SPEED control.

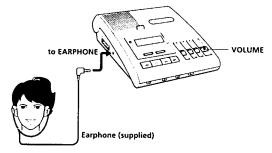
Tape transport operation

To	BM-840	Foot control unit				
Rewind	Press	Keep the left side of the pedal depressed.				
Stop	Press STOP.	Release the pedal.				
Listen	Press ► LISTEN.	Keep the right side of the pedal depressed.				
Fast forward	Press ►► FF.	Keep the top center of the pedal depressed.				

Private listening

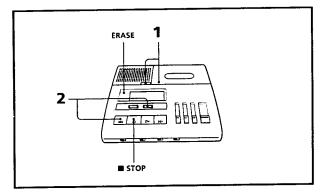
Connect the supplied earphone to the EARPHONE jack located on the left side of the unit. Adjust VOLUME if required.

The sound will be heard through the earphone and speaker sound will be disconnected.



Erasing

The recording can be erased rapidly.



- 1 Insert the cassette with the side to be erased up. (See page Be sure not to rewind the tape after transcribing. The end portion of the dictated cassette to be erased should be positioned at the playback head.
- Keep ERASE pressed and then press ◀◀ REW. The ERASE lamp lights up and ◀◀ appears on the display window. The portion of the tape being rewound is erased.



To stop the tape Press ■ STOP.

Alarm System

An alarm sounds and an indication appears on the display window in the following situations.

Alarm system	Situation	To release alarm system			
When you press ERASE ●. → A beep is heard and blinks.	No cassette is inserted. The cassette's safety tabs have been removed.	First, release the button, then Insert a cassette. Insert a new cassette or cover the safety slot.			
The unit shuts off. → A long beep is heard and blinks.	End of tape The tape is torn while being rewound.	Rewind the tape. Insert a new cassette.			
The unit shuts off. → A short beep is heard.	 When the AUTO STOP switch is set to ON, an electronic index signal is detected while the tape is wound rapidly (in fast forward or rewind mode). 	Alarm stops automatically.			

SECTION 3 CIRCUIT DESCRIPTION

[MICROCOMPUTER μ PD75308GF-K63-3B9 (IC109)]

1. Terminal Description

Pin No.	Pin Name	Usage	Voltage, Remarks			
1-3	S12-S14	Not used	Open			
4-12	S15-S23	LCD segment output				
13	KOUT 0	Key scan output	3.8V			
14	KOUT 1	Key scan output	3.8V			
15	KOUT 2	Key scan output	3.8V			
16	KOUT 3	Key scan output	3.8V			
17		Not used	Open			
18	HU-MIC-OUT	Not used	Open			
19	TEL-MIC-OUT	Not used	Open			
20		Not used	Open			
21	COM 0	LCD common output				
22	COM 1	LCD common output				
23	COM 2	LCD common output				
24		Not used	Open			
25	LCD-BIAS	Output for LCD outer resistance	5.2V			
26	V _{LCD0}	Power source for LCD drive	2.6V			
27	V _{LCD1}	Power source for LCD drive	1.7V			
28.	V _{LCD2}	Power source for LCD drive	0.8V			
29	ERASE-OUT	Erase control output	At Fast-Erase: 0V At the other: 5.8V			
30	BIAS-OUT	Not used	Open			
31	FWD-PG-OUT	FWD solenoid output	At FWD: 0V At the other: 5.8V			
32	FWD-PG- KICK-OUT	FWD solenoid kick output	In an instant of FWD: At the other mode 5.8V 80ms At the other: 5.8V			
33	VSS	GND	0V			
34	BRK-PG-OUT	Brake solenoid output	Finish the FF/REW: 5.8V FF/REW mode At the other mode			
35	REW-MOTOR- OUT	REW-motor-output	At REW: 0V At the other: 5.8V			
36	FF-MOTOR- OUT	FF-motor-output	At FF: 0V At the other: 5.8V			
37	A-OFF-OUT	Motor Auto-off output	Motor Auto-off (after three minutes after STOP): 2.1V At the other: 0V			
38	POWER SW-IN	POWER switch input	At ON: 5.2V At STANDBY: 0V			
39	TAB-IN	TAB (erase proof) detection switch input	Cassette with TAB: 0V			
40		Not used	Open			
41	CUE-1-IN	CUE-1 input	Refer to page 10 for LTR/SEC Detection.			
42	EAR-J-IN	Not used	Connected to GND.			
43	TR	T reel signal input	Refer to page 13 for Detection of T Reel.			

Pin No.	Pin Name	Usage	Voltage, Remarks			
44	DICT-IN	Not used	Connected to VDD.			
45	CUE-2 IN	Not used	Connected to VDD.			
46	LTR-OUT	Not used	Open			
47	REC-OUT	Not used	Open			
48	HU-LED-OUT	Not used	Open			
49	ALM-OUT	Alarm output	At alarm oscillating: JJJ I 5.2V 2.05kHz			
50	KIN 0	key scan input	5.2V			
51	KIN 1	key scan input	5.2V			
52	KIN 2	key scan input	5.2V			
53	KIN 3	key scan input	5.2V			
54	VDD	Positive power source terminal of the microcomputer	5.2V			
55	TEL-J-IN	Not used	Connected to GND.			
56		Not used	Open			
57	NC	Not used	Connected to VDD			
58	X 1	Input for clock oscillation	 			
59	X 2	Input for clock oscillation	√			
60	HU-LIS-IN	Not used	Connected to VDD.			
61	BS-IN	HU-BS key input	At BS key in of the foot control unit (FS-85): 0.1V At the other: 5.1V			
62	PB-OUT	Playback control output	At LISTEN: 5.2V At the other: 0V			
63	MUTE-OUT	Amplifier mute output	At LISTEN: 5.2V At the other: 0V			
64	FS-IN	HU-FS key input	At FS key input of the foot control unit (FS-85): 0.1V At the other: 5.1V			
65	PR-IN	Foot switch LISTEN key input	At LISTEN key input of the foot control unit (FS-85): 0.1V At the other: 5.1V			
66	SEC-IN	Not used	Connected to VDD.			
67	LTR-IN	Not used	Connected to VDD.			
68	RESET	Microcomputer reset input	Normal: 5.2V RESET: 0V			
69-80	S 0—S11	Not used	Open			

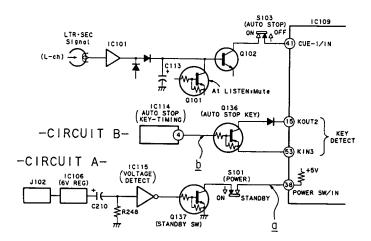
• Auto Stop of the BM-840T

For the Auto Stop function of the BM-840T, when either LTR or SEC signal is detected during FF and REW modes, then tape is stopped and an alarm is activated.

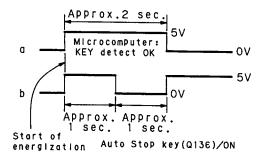
1. Description of Circuit Configuration

When the AC adaptor is inserted, the microcomputer (IC109) is set to a mode that does not allow Auto Stop. To cope with this, the circuit A is used (regardless of POWER switch ON/OFF setting) to energize the IC which is then forced to be set in the same state as that when the POWER switch is on for approx. 2 seconds. Then, the circuit B is used to turn on the Auto Stop key (Q136) to set the IC to a mode that Auto Stop is allowed. Thus, the actual Auto Stop is turned ON/OFF with the switch S103.

2. Circuit Configuration



3. Waveform Just After Energization (With POWER switch OFF)

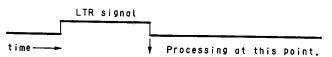


4. Discrimination When the Auto Stop Switch Mode: ON

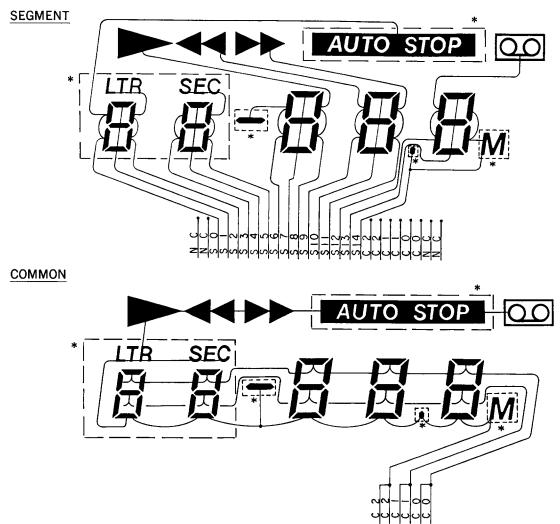
	At FF/REW	
CUE-2	H (all the time)	
CUE-1	L (Detection of LTR or SEC signal.)	Н
Judgement by microcomputer	AUTO STOP (Discrimination of LTR or SEC signal.)	no signal

- L(Low) and H(High) levels are input levels to the microcomputor CUE-1 and CUE-2.
- 5. After detection of the LTR/SEC signal, Auto Stop processing will be performed.

ex.)



• LCD (ND901) Connection Diagram

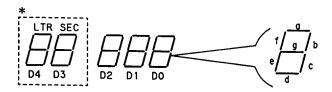


Note)

*: For BM-840T, these segments are not used.

• LCD Display Map

1. Segment output



	C109 n No.	Pin Name (*)	COM 0	COM 1	COM 2
	12	S23 (S14)	Counter D0-b	Counter D0-c	"●" (dot) and "M"
	11	S22 (S13)	Counter D0-a	Counter D0-g	Counter D0-d
	10	S21 (S12)	Counter D0-f	Counter D0-e	٥٥
	9	S20 (S11)	Counter D1-b	Counter D1-c	▶ (FF)
	8	S19 (S10)	Counter D1-a	Counter D1-g	Counter D1-d
	7	S18 (S9)	Counter D1-f	Counter D1-e	◄ (REW)
	6	S17 (S8)	Counter D2-b	Counter D2-c	▶(FWD)
	5	S16 (S7)	Counter D2-a	Counter D2-g	Counter D2-d
	4	S15 (S6)	Counter D2-f	Counter D2-e	- (minus sign)
*	3	S14 (S5)	Counter D3-b	Counter D3-c	"SEC"
*	2	S13 (S4)	Counter D3-a	Counter D3-g	Counter D3-d
*	1	S12 (S3)	Counter D3-f	Counter D3-d	(not used)
*	80	S11 (S2)	Counter D4-b	Counter D4-c	"LTR"
*	79	S10 (S1)	Counter D4-a	Counter D4-g	Counter D4-d
*	78	S9 (S0)	Counter D4-f	Counter D4-e	"AUTO STOP"

- * : For BM-840T, these segments are not used.
- (*): The segment name in parenthesis represents that of ND901.

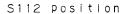
• Key-scan • Matrix

The pin No. and the pin name stand for those of the microcomputer (IC109).

	Output	(Pin No.)			
_	_	13	14	15	16
Tomost		(Pin Name)	17.01100 -		
Input		KOUT 0	KOUT 1	KOUT 2	KOUT 3
(Pin No.)	(Pin Name)				
50	KIN 0	RESET (S108)	ERASE (S110)	Not used	Not used
51	KIN 1	FF (S107)	REW (S106)	LISTEN (S105)	STOP (S104)
52	KIN 2		L		
02	111110	(Pin ① of S112)	(Pin ② of S112)	(Pin ③ of S112)	(Pin 4) of S112)
53	KIN 3	not used	not used	Q136(AUTO STOP KEY)	TAPE SPEED 1.2/2.4 (S113)

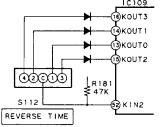
- Hard is controlled by Low active (Low is input with turning on each switch.)
- TAPE SPEED is 2.4cm/s at Low.

Refer to the following figure for the key matrix of S112.

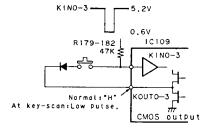


O:0N

				0	1	2	3	4	5	6	7	8	9
Between	С	and	1		0		0		0		O		O
Between	C	and	2			0	0			0	0		
Between	С	and	3					O	O	O	О		
Between	С	and	4									O	Ō
			-					_					



Key-scan is controlled by Low active.



• Detection of T Reel

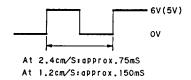
Pin ② of IC111 (Pin ③ of IC109): T reel

Waveform condition:

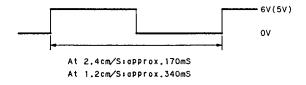
- Tape MC-60 is used.
- The period is different by the tape position.
- (): Voltage of IC109 port.

FWD:

T reel at the tape TOP:

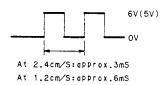


T reel at the tape END:

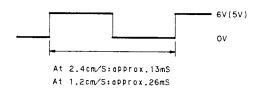


REW:

T reel at the tape TOP:

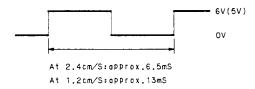


T reel at the tape END:



FF:

Nearly constant regardless of the tape position:



SECTION 4 MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcoholmoistened swab:

playback head

pinch roller

erase head

rubber belts

capstan

- Demagnetize the playback head with a head demagnetizer
- 3. Do not use a magnetized screwdriver for the adjustment.
- 4. After the parts adjustments, apply suitable locking compound to the parts adjusted.
- 5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

Mode	Micro cassette type torque meter	Meter reading
Forward	CQ-103M	5 to 16g•cm (0.069 to 0.222oz•inch)
Fast Forward, Rewind	CQ-201M	35 to 100g·cm (0.49 to 1.39 oz·inch)

Tape Tension Measurement

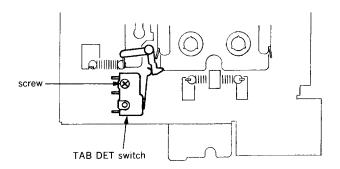
Micro cassette type tension meter	Meter reading
CQ-403M	more than 30g (more than 1.06oz)

TAB DET Switch Position

Adjust the screw for following position.

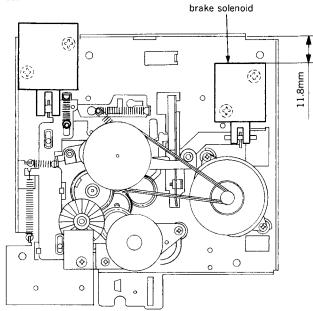
When inserting the cassette with the tabON

When inserting the cassette without the tabOFF



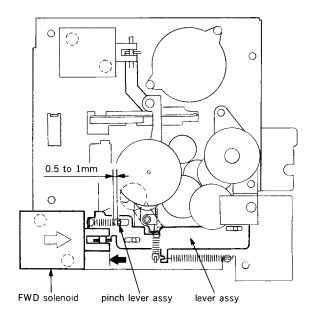
Brake Solenoid Position Adjustment

Adjust the screw so that clearance between the brake solenoid and the chassis is approximately 11.8mm as illustrated.



FWD Solenoid Position Adjustment

- When pulling FWD solenoid fully with the hand, adjust the FWD solenoid installing screw so that clearance between pinch lever assy and lever assy is approximately 0.5 to 1mm.
- 2. After adjustment, confirm that the pinch roller press against the capstan in FWD mode.



SECTION 5 ELECTRICAL ADJUSTMENTS

PRECAUTION

- 1. Demagnetize the playback head with a head demagnet-
- Do not use a magnetized screwdriver for the adjustment.
- After the parts adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be perfored with the rated 4.power supply voltage unless otherwise noted.
- The adjustments should be performed in the order given in this service manual. (As a rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
- Switches and controls should be set as follows unless otherwise specified.

POWER switch

: ON

SPEED CONTROL switch: OFF : OFF

AUTO STOP switch

: max.(+)

TONE control

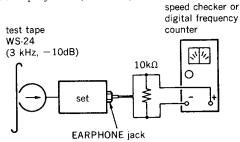
TAPE SPEED switch

: 2.4

Tape Speed Adjustment

Setup:

Mode: playback (LISTEN)



Procedure:

1. SPEED CONTROL switch: OFF

TAPE SPEED switch: 2.4

Adjust RV105 for specified reading on speed checker or digital frequency counter.

Adjustment Values:

Speed checker	Digital frequency counter
0 to +1%	3,000 to 3,030Hz

2. SPEED CONTROL switch: OFF

TAPE SPEED switch: 1.2

Adjust RV104 for specified reading on speed checker or digital frequency counter.

Perform 2.4cm/s normal speed adjustment before 1.2cm/s normal speed adjustment.

Adjustment Values:

Speed checker	Digital frequency counter
0 to +1%	1,500 to 1,515Hz

3-1. SPEED CONTROL switch: ON

TAPE SPEED switch: 2.4 SPEED control: max. (+)

Adjust RV106 for specified reading on speed checker or digital frequency counter.

Adjustment Values:

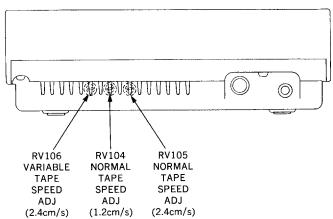
Speed checker	Digital frequency counter
+63.3 to +66.7%	4,900 to 5,000Hz

3-2. Confirm that the reading on digital frequency counter is specification value as shown below.

SPEED control (RV103)	TAPE SPEED (S113)	Frequency counter
max.	2.4cm	more than 4,500Hz
	1.2cm	more than 2,250Hz
min.	2.4cm	less than 2,700Hz
	1.2cm	less than 1,350Hz

Adjustment Location: main board

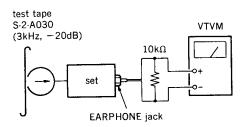
-rear side-



Playback Head Azimuth Adjustment

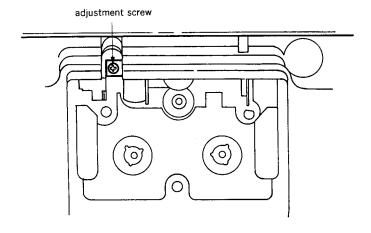
Procedure:

1. Mode: Playback (LISTEN)



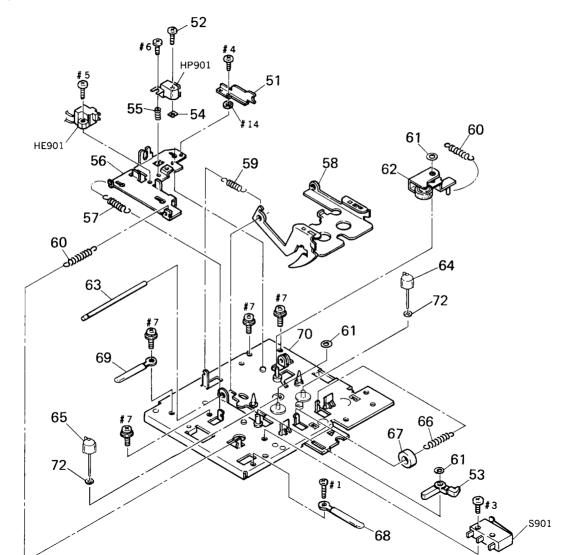
- 2. Turn the adjustment screw to obtain the maximum reading on VTVM.
 - Adjustment should be finished with the screw in tightening direction.
- 3. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location: playback head



7-1. CABINET SECTION 12 13 SP901 14 21 10 #12 🖔 #15 15 not supplied #8 16 LED901 ∦ 12 ND901 -25 #12 26 18 22 3 **#**13 #138 #11 20 19 #11 20 MB-840 J# 11

7-2. MECHANISM DECK SECTION (1) (MB-840)



7-3. MECHANISM DECK SECTION (2) (MB-840)

