SECTION 1

SERVICE INFORMATION
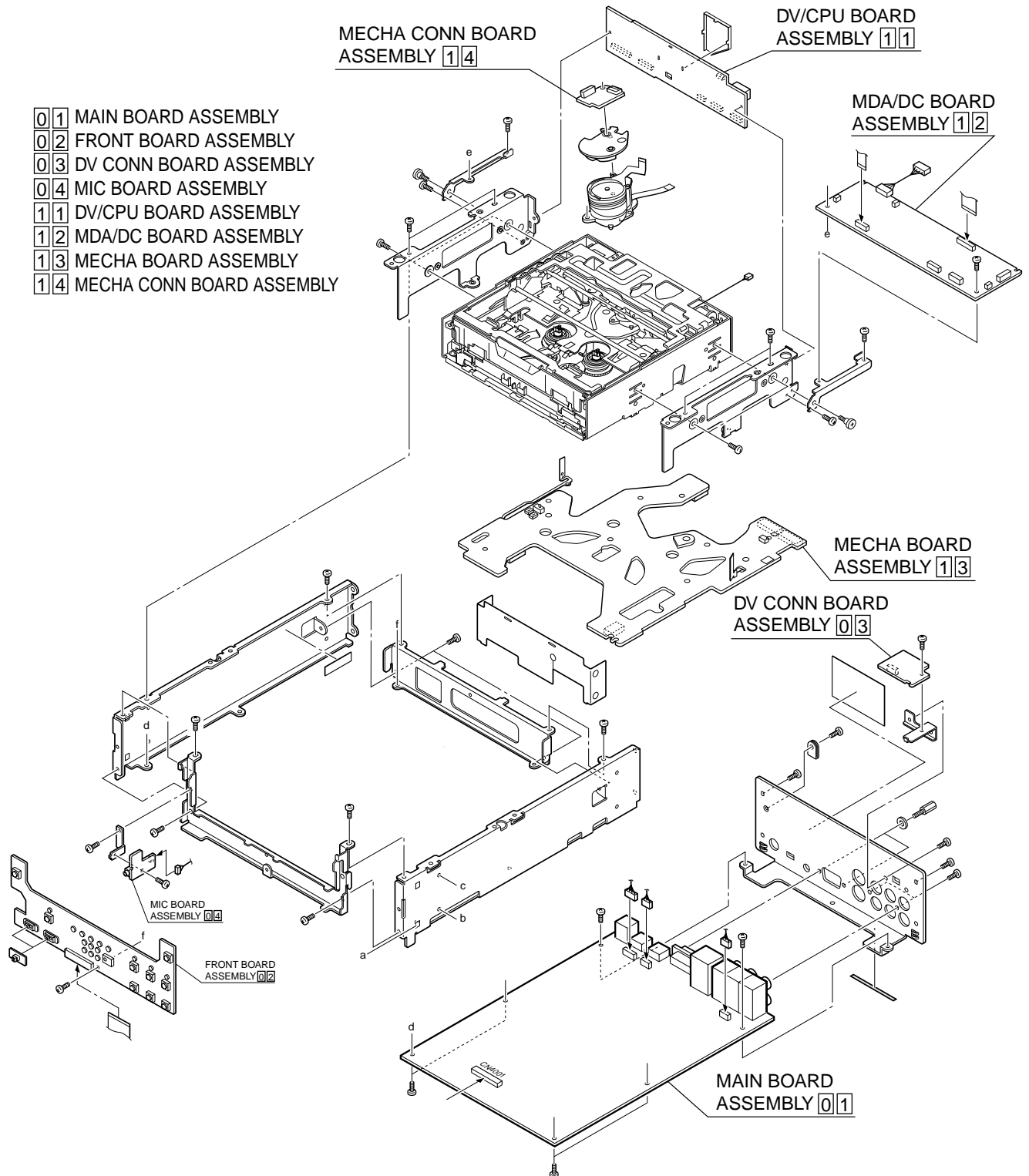
CONTENTS

SECTION 1
SERVICE INFORMATION

1.1 CONSTRUCTION OF THE MAIN BOARD

MECHA CONN BOARD
ASSEMBLY 1 4

DV/CPU BOARD
ASSEMBLY 1 1

MDA/DC BOARD
ASSEMBLY 1 2

0 1 MAIN BOARD ASSEMBLY
0 2 FRONT BOARD ASSEMBLY
0 3 DV CONN BOARD ASSEMBLY
0 4 MIC BOARD ASSEMBLY
1 1 DV/CPU BOARD ASSEMBLY
1 2 MDA/DC BOARD ASSEMBLY
1 3 MECHA BOARD ASSEMBLY
1 4 MECHA CONN BOARD ASSEMBLY

MECHA BOARD
ASSEMBLY 1 3

DV CONN BOARD
ASSEMBLY 0 3

MIC BOARD
ASSEMBLY 0 4

FRONT BOARD
ASSEMBLY 0 2

MAIN BOARD
ASSEMBLY 0 1

1.2 HOW TO REMOVE THE OUTER COVER

1.2.1 Top cover

(1) Remove the four screws ①.
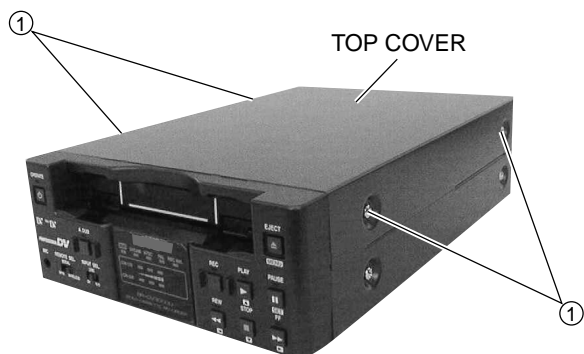(2) Remove the top cover while lifting the rear part of it.

Fig. 1.2.1

1.2.2 Bottom cover

(1) Remove the four screws ②.
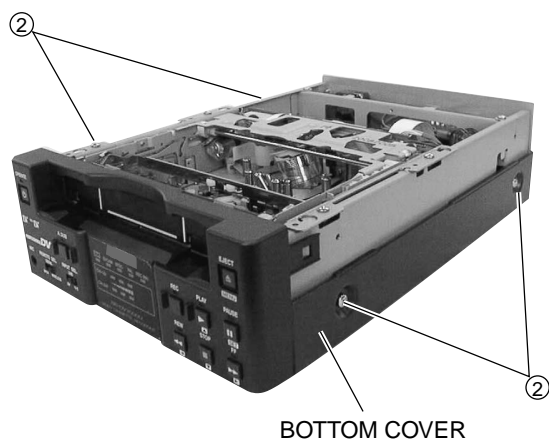(2) Remove the bottom cover while lifting the rear part of it.

BOTTOM COVER

Fig. 1.2.2

1.2.3 Front panel

(1) Remove the top and bottom covers
(2) Remove the front panel while releasing the four hooks ①.

Fig.1.2.3

1.3 HOW TO REPLACE THE FUSE
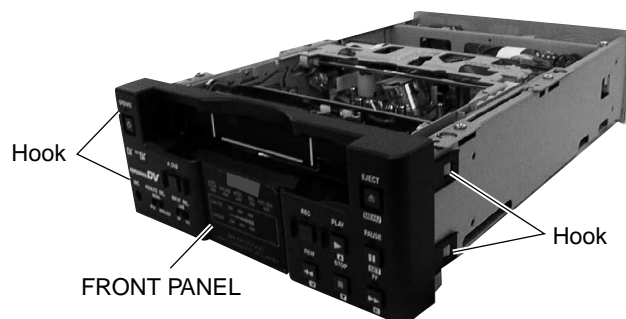
(1) Unplug the DC power cable before replace the fuse.
(2) Remove the top cover.
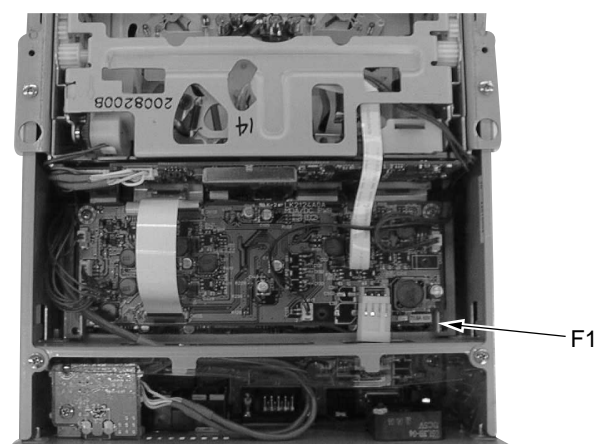(3) Find the fuse F1 on the MDA/DC board.

Fig. 1.3.1

─ CAUTION ─
- Before replacing the fuse, investigate and identify the cause of the blow out to prevent further damage.
- The fuse is an important item for safety . Please be sure to replace it with a fuse that has the specified parts numbers.

1.4 HOW TO EXAMINE THE BOARDS

1.4.1 MAIN board assembly

(1) Remove the bottom cover to examine the B-side of the main board.

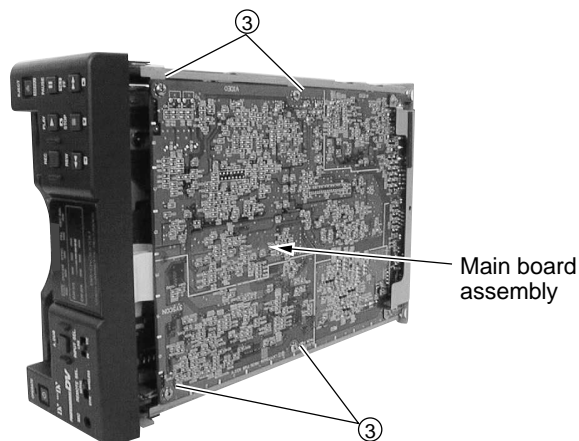**Fig. 1.4.1 (1)**

(2) Remove the four screws ③ to examine the A-side.
(3) Remove the two screws ④ on the rear cover.
(4) Pull down the main board as shown in fig. 1.4.1 (3).
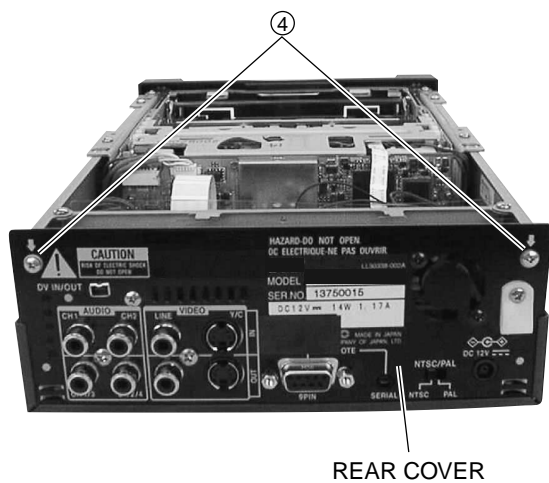
REAR COVER

Fig. 1.4.1 (2)

MAIN board assembly
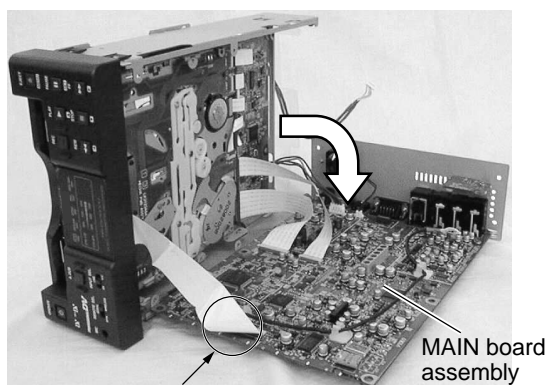
Keep a distance to a minimum from the unit, because this FFC cable may be damaged.

Fig. 1.4.1 (3)

1.4.2 MDA/DC board assembly

(1) Remove the top cover to examine the A-side.
(2) To examine the B-side, pull down the main board as shown in Fig. 1.4.2 (2).

MDA/DC board assembly   DV/CPU board assembly

Fig. 1.4.2 (1)
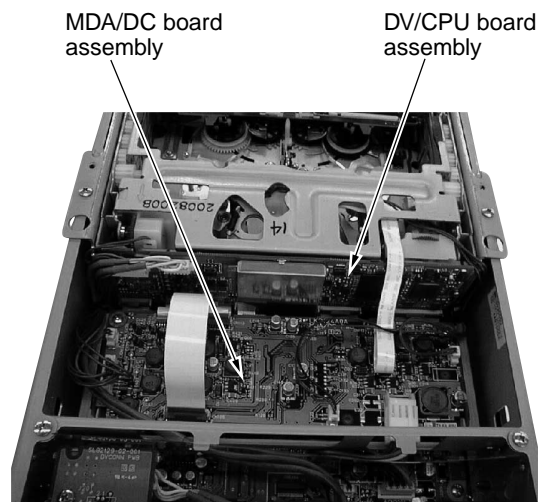
MDA/DC board assembly
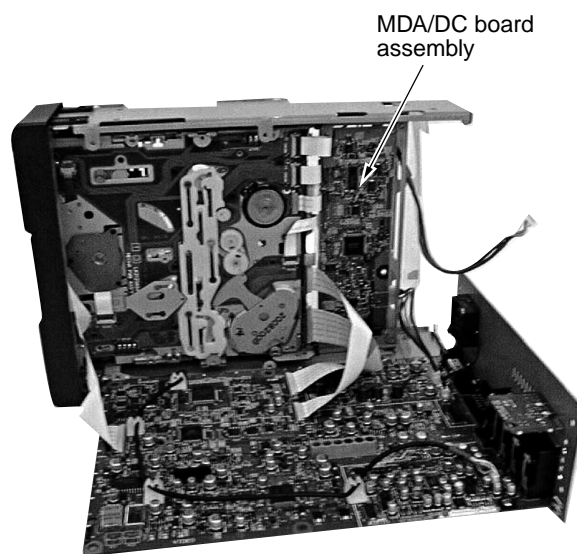
Fig. 1.4.2 (2)

1.4.3 DV/CPU board assembly

(1) Remove the top cover as shown in Fig. 1.4.2 (1) to examine the DV/CPU board.

1.4.4 FRONT board assembly

(1) Remove the front panel to examine the front board.
(2) Remove the screw ⑤ , and pull the board down to examine the B-side.

FRONT board assembly

⑤
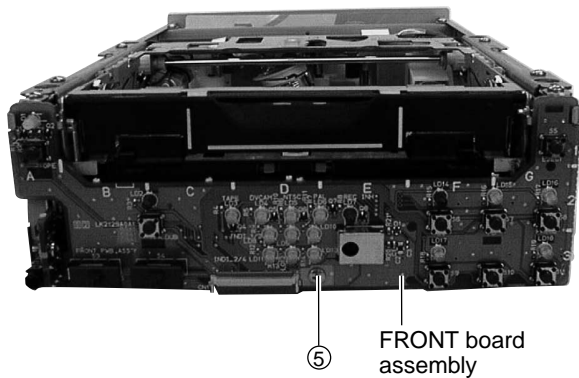
Fig. 1.4.4
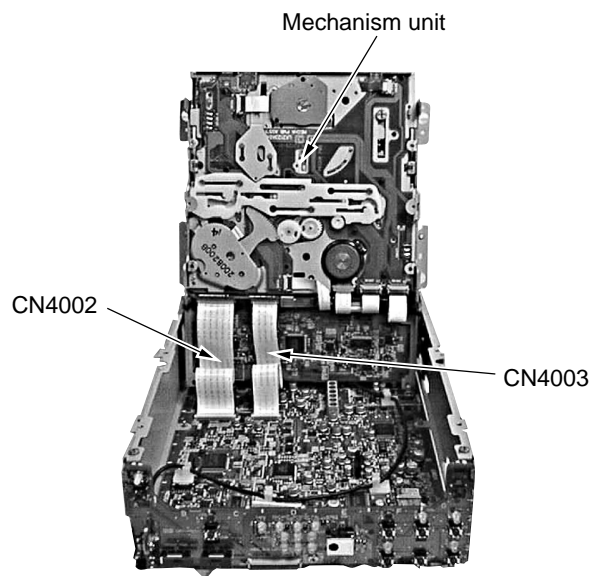
1.5 HOW TO REMOVE THE MECHANISM UNIT

(1) Remove the six screws ⑥ .
(2) Remove the front panel.
(3) Remove the CN111 connector on the MDA/DC board.
(4) Remove the wire that are attached to the DV CONN board.

DV CONN board

CN111

⑥

⑥
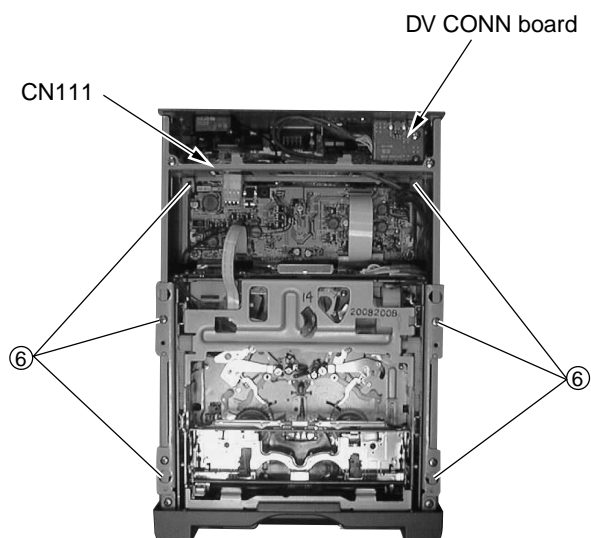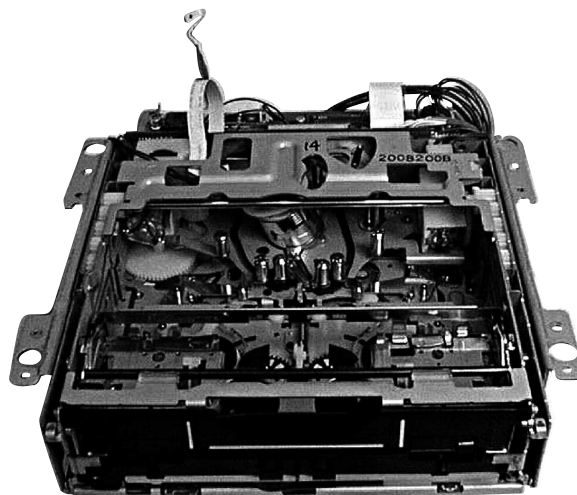
Fig. 1.5.1

(5) Pull up the mechanism unit.
(6) Remove CN4002 and CN4003 (FFC cables connected to the main board).

Mechanism unit

CN4002

CN4003

Fig. 1.5.2

Fig. 1.5.3

1.6 HOW TO REMOVE THE MECHANISM ASSEMBLY

To remove only the mechanism assembly from the mechanism unit.

(1) Remove the shield case on the DV/CPU board and remove the CN107 FPC wire from the drum assembly.

CN107
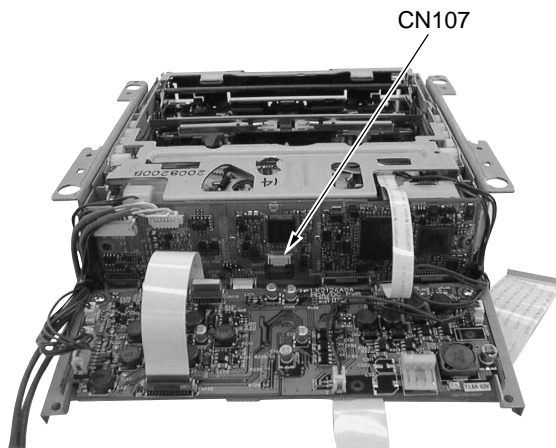
Fig. 1.6.1

(2) Remove the FFC wires that connects the mechanism board, which is mounted on the backs of the mechanism assembly, MDA/DC board, and the DV/CPU board.
(3) Remove the four screws ⑦ on the side.
(4) Remove the mechanism assembly as shown in Fig. 1.6.3.

Fig. 1.6.2

To: CN114
MDA/DC board

To: CN119
MDA/DC board

To: CN117
MDA/DC board
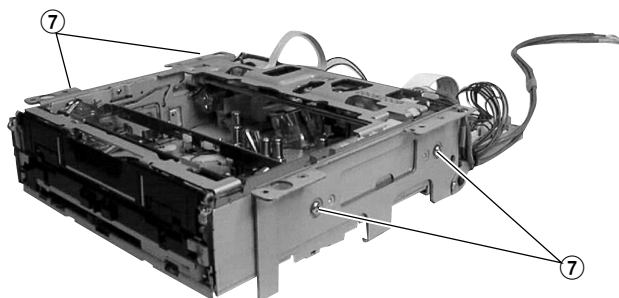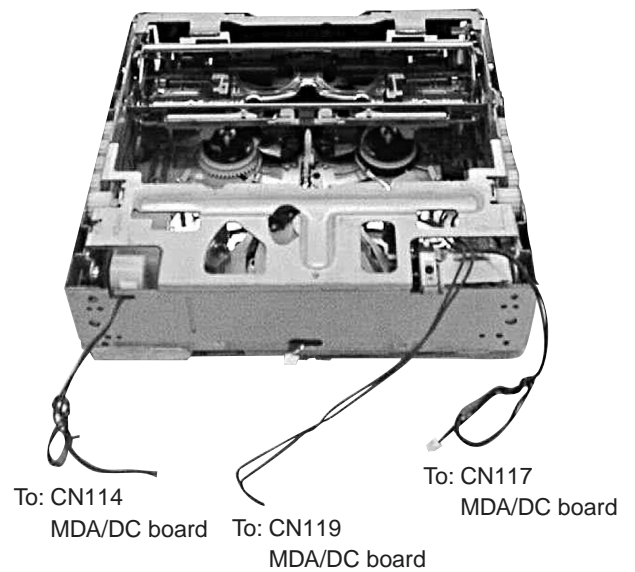
Fig. 1.6.3 Mechanism assembly

For instructions on disassembling each part of the mechanism assembly, please refer to the Section 2.

1.7 HOW TO TAKE OUT THE CASSETTE TAPE IN CASE OF EMERGENCY

An emergency system on this unit enables the cassette tape to be taken out manually.
When a cassette tape is stuck, take it out as described below.

Procedure
1. Gear Ⓐ : Emergency gear for MODE MOTOR
2. Gear Ⓑ : Emergency gear for REEL MOTOR
3. Gear Ⓒ : Emergency gear for HOUSING MOTOR

(1) In order to turn the mode motor, turn the gear Ⓐ (red color) in the direction of the arrow. While turning the gear also push it in to drive loading / unloading.
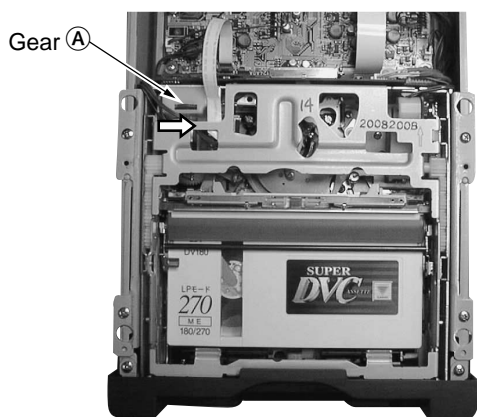
Gear Ⓐ

Fig. 1.7.1

(2) To wind the tape, when the tape is loosened a little, put a screw driver in the emergency gear Ⓑ, which drives the reel. (The drive direction does not matter.)
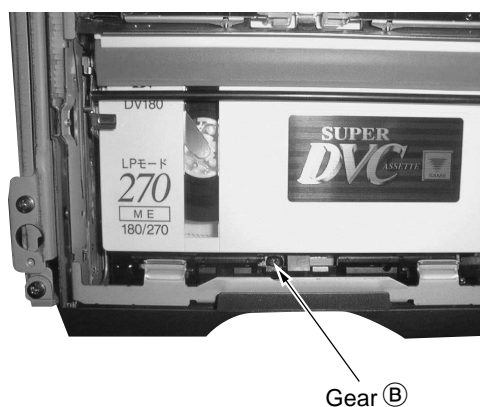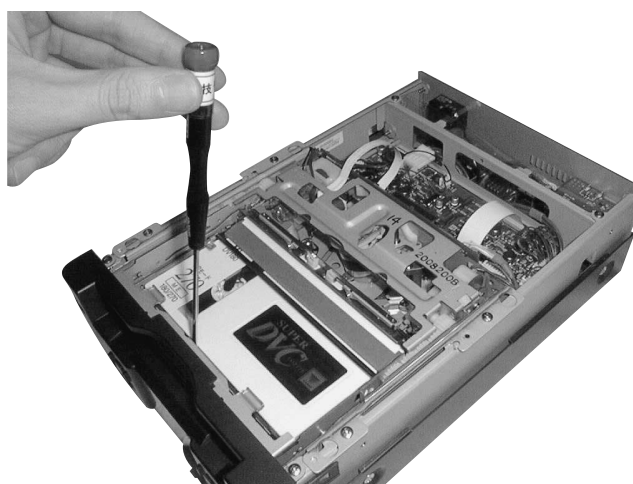
Gear Ⓑ

Fig. 1.7.2

Fig. 1.7.3

(3) Repeat steps (1) and (2) alternately and little by little until the tape is wound completely into the cassette.
(4) Confirm that the tape is completely wound. Then, turn the gear Ⓒ (red color) in the direction of the arrow to eject the cassette housing. Take the cassette out when it comes out of the loading slot.

Gear Ⓒ
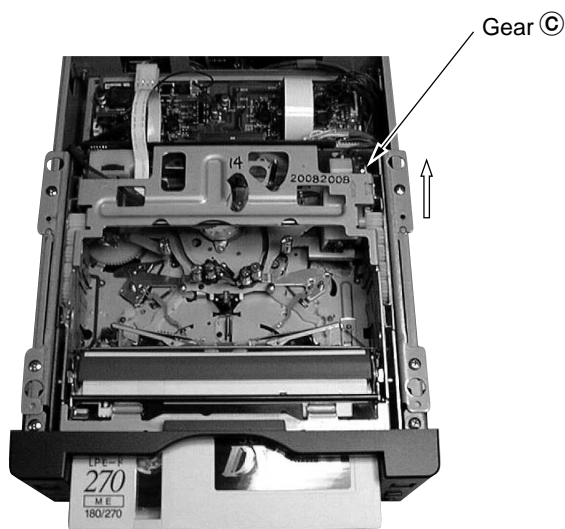
Fig. 1.7.4

1.8 SERVICE MENU

1.8.1 How to display the Service Menu

In no cassette condition, by pressing the MENU button for 2 seconds or longer while keeping either the REC or PLAY button pressed, the first tier of the Service Menu will be displayed on the video monitor . As shown in Table 1.8.1, the Service Menu content that is displayed will dif fer depending on which buttons you press together simultaneously.
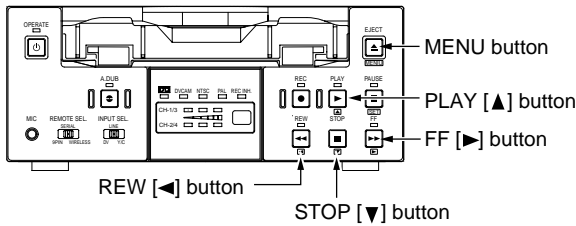
Fig. 1.8.1 (1) Front Panel

Item	Displayed Content	Activation Method	
		REC	PLAY
VTR1 MENU	VCR 1 Menu	○	○
VTR2 MENU	VCR 2 Menu	—	○
DIP SW	DIP SW Menu	—	○
HOUR METER	Hour Meter	—	○
ERROR HISTORY	Warning History	—	○
OTHERS	MENU SAVE etc.	—	○
CPU VERSION	CPU Version	○	—

Table 1.8.1 Service Menu First Tier List

1.8.2 How to operate the Menu

① Press the ▲ or ▼ button on the front panel to move the cursor to the mode you want to change.
② Press the [SET] (or ► button) to select the item.
③ Press the ▲ or ▼ button to change the parameter.
④ When finished making the change, press the [SET] button. The parameter stops blinking when the change has been confirmed. (Returning using the ◄ button or [MENU] button causes the setting to revert to the status prior to the change.)
⑤ When all settings are completed, move the cursor to "P AGE BACK" and press the [SET] button to return to the MENU screen.

* If the ◄ button is pressed when the parameter is not blinking, it returns to the main screen.
* If the [MENU] button is pressed, it returns to the normal screen.


```
      ---MENU---
▷ VTR1..
   EXIT


   CPU VERSION
    SYS              0001
    VTR              0102
```



```
      ---MENU---
▷ VTR1..
   VTR2..
   DIP SW..
   HOUR METER..
   ERROR HISTORY..
   OTHERS..
   EXIT
```

Fig. 1.8.2 (1) Menu Screen
(with REC pressed simultaneously)
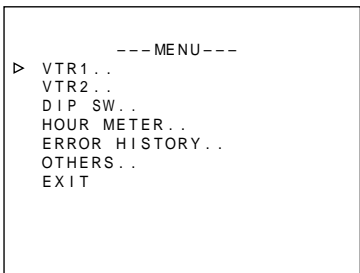
Fig. 1.8.2 (2) Menu Screen
(with PLAY pressed simultaneously)

1.8.3 VTR 1 menu

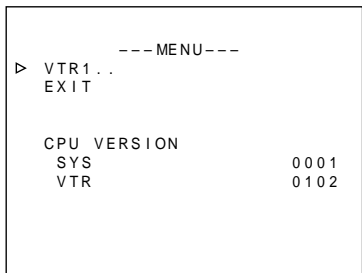| Item	Parameter	
REC REPEAT	OFF	No repeat recording
	2	Repeat recording 2 times
	12	Repeat recording 12 times
	ON	Full repeat recording
FOOT SW LEVEL	LEVEL1	Possible from any mode
	LEVEL2	Possible only from STOP or REC PAUSE mode
MIC REC CH	NORMAL	Record input signal from connected MIC only on CH2 (CH4 : during A.DUB mode)
	CH1-MIX	[No recording mode]. Do not record input signal from connected MIC on CH1/CH2 (No recording on CH3+4 during A.DUB)
	CH2-MIX	Record input signal from connected MIC on CH1/CH2 (CH3/CH4 during A.DUB)
ID 422 (H)	F0	High Device ID (00~FF). First bit is fixed at PAL1, NTSC0
ID 422 (L)	4E	Low Device ID (00~FF)
FF/REW SPEED	x50	Maximum FF/REW speed is regulated to x50
	x75	Maximum FF/REW speed is regulated to x75
	x100	Maximum FF/REW speed is regulated to x100
	MAX	No maximum FF/REW speed regulation
DV DF MASK (PAL only)	OFF	"1" is recorded as per format
	ON	"0" is always recorded

☐ is default setting when shipped from factory.

Table 1.8.3 VTR 1 Menu Setting Item List

1.8.4 VTR 2 menu

Item	Parameter	
LONG PAUSE	OFF	Disables long pause function
	ON	Enables long pause function
REC MODE	SP	SP recording
	LP	LP recording (Do not change since performance cannot be guaranteed)
LP WARNING	OFF	LP INH not displayed (Enables playback with LP mode) (Do not change since performance cannot be guaranteed)
	ON	LP INH displayed (Disables playback with LP mode)
TEST SIGNAL	OFF	Output color bars only. Do not output any other TEST signals.
	ON	Use BARS button of a attached wireless controller reception to trigger output TEST signal, rotating in this order: Color bars → Color bars (rotate per track) → Grayscale → Grayscale (rotate per track) → Multi burst (Y signal only) → Multi burst (Y and C signals) → 100% white → Red → Black burst
TEMP THRESHOLD	220	Threshold of rising temperature warning display, 00~255 (220 [DCh] = internal temperature approx. 60°C). Refer to item "TEMP" in table 1.8.7 (1)
BATT. SHUT DOWN	10.5	Voltage value to carry out power OFF operation (Set at OFF, 10.0~12.0 in increments of 0.1)
BATT. ALARM	11.0	Voltage value to trigger display of battery alarm warning (Set at 10.0~12.0 in increments of 0.1)

☐ is default setting when shipped from factory.

Table 1.8.4 VTR 2 Menu Setting Item List

1.8.5 DIP switch menu

Sets the DIP SW. (All status are set to "OFF" or "0" when shipped.)

Item	Parameter	Default setting at factory
DIP SW 1/3		
DIP SW – 0	1: Displays error rate monitor and CPU port information	0
DIP SW – 1	ON: Disables warning detection	OFF
DIP SW – 2	Change prohibited	OFF
DIP SW – 3	ON: Disables DEW warning	OFF
DIP SW – 4	Change prohibited	OFF
DIP SW – 5	Change prohibited	OFF
DIP SW – 6	Change prohibited	0
DIP SW – 7	Change prohibited	OFF
DIP SW 2/3		
DIP SW – 8	Change prohibited	OFF
DIP SW – 9	Change prohibited	OFF
DIP SW – 10	ON: Displays error rate solely for audio block on the error rate monitor screen	OFF
DIP SW – 11	Change prohibited	OFF
DIP SW – 12	Change prohibited	OFF
DIP SW – 13	Change prohibited	OFF
DIP SW – 14	Change prohibited	OFF
DIP SW – 15	Change prohibited	OFF
DIP SW 3/3		
DIP SW – 16	Change prohibited	OFF
DIP SW – 17	Change prohibited	OFF
DIP SW – 18	Change prohibited	OFF
DIP SW – 19	Change prohibited	OFF
DIP SW – 20	Change prohibited	OFF
DIP SW – 21	Change prohibited	OFF
DIP SW – 22	Change prohibited	OFF
DIP SW – 23	Change prohibited	OFF

☐ is default setting when shipped from factory

Table 1.8.5 DIP SW Menu Setting Item List

Error Rate Monitor

By setting DIP SW-0 to "1", the error rate value is displayed in position [15] on the monitor screen.
The error rate value is always Viterbi ON mode, with CH-1 shown in the upper row, and CH-2 shown in the lower row and total AUDIO/VIDEO.
When the error rate increases, a warning message "HEAD CLEANING REQUIRED" is displayed. The detection threshold for display is when the error rate value is over 4,500 (one-channel AV total) for 7 seconds consecutively.
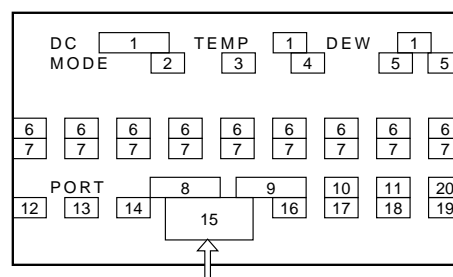

Error Rate Display Value

Fig.1.8.5 DIP SW-0 Display Screen

1.8.6   HOUR METER menu

Displays and resets the various types of hour meters.
When the parameter is set to "CLEAR" and the SET button is pressed, the hour meter is cleared.

Item	Parameter		Time duration/number of times display is possible
DRUM	Time display H	Displays the drum hour meter (for drum maintenance)	000000~999999
	CLEAR	Resets the drum hour meter	Time duration
TOTAL DRUM	Time display H	Displays the total drum hour meter	000000~999999
			Time duration
POWER	Time display H	Displays the power hour meter	000000~999999
	CLEAR	Resets the power hour meter	Time duration
CAPSTAN	Time display H	Displays the capstan hour meter	000000~999999
	CLEAR	Resets the capstan hour meter	Time duration
REEL FWD	Time display H	Displays the reel forward direction running hour meter	000000~999999
	CLEAR	Resets the reel forward direction running hour meter	Time duration
REEL REV	Time display H	Displays the reel reverse direction running hour meter	000000~999999
	CLEAR	Resets the reel reverse direction running hour meter	Time duration
LOADING	Number display	Displays the number of times a tape was loaded	000000~999999
	CLEAR	Resets the number of times a tape was loaded	Number of times (events)
EJECT (MINI)	Number display	Displays the number of times a mini cassette was ejected	000000~999999
	CLEAR	Resets the number of times a mini cassette was ejected	Number of times (events)
EJECT (STD)	Number display	Displays the number of times a standard cassette was ejected	000000~999999
	CLEAR	Resets the number of times a standard cassette was ejected	Number of times (events)
FWD/REV	Number display	Displays the number of FWD/REV switchings	000000~999999
	CLEAR	Resets the number of FWD/REV switchings	Number of times (events)
FF/REW	Number display	Displays the number of FF/REW switchings	000000~999999
	CLEAR	Resets the number of FF/REW switchings	Number of times (events)
CLEANER	Number display	Displays the number of times the cleaner was activated	000000~999999
	CLEAR	Resets the number of times the cleaner was activated	Number of times (events)

☐ is default setting when shipped from factory

Table 1.8.6 HOUR METER Menu Setting Item List

1.8.7 ERROR HISTORY menu

It can display 4 errors that have occurred in the past.

Initially, when there is no error history in the memory, the first error to occur will be logged in the first position (HISTORY-1). The second and third errors to occur will be logged in (HISTORY-2) and (HISTORY-3). All subsequent errors will be overwritten in (HISTORY-4).

The fourth and subsequent errors are set to overwrite in order to prevent the user from repeatedly attempting to use a malfunctioning unit and thereby erasing any record of the initial cause error. Be sure to clear the error history before returning a repaired unit to the customer.

When resetting ERROR HISTORY, set the parameter for "CLEAR" to "EXECUTE", and press the [SET] button.
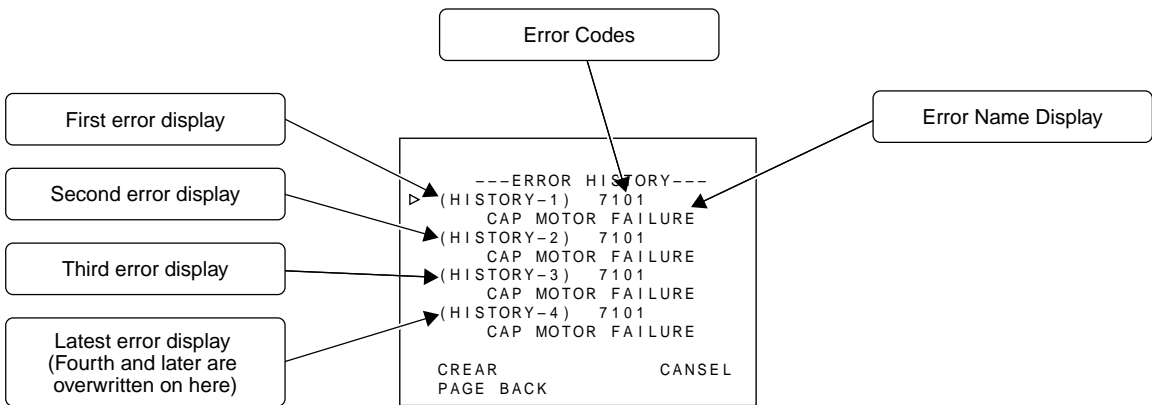

Fig. 1.8.7 (1) ERROR HISTORY

(1) MECHANISM INFO (Detailed information when error occurs)

Move the cursor to the error code on the "ERROR HISTORY" screen, and press the [SET] button (or ▶ button) to display the MECHANISM INFO screen as it was at the time of the error, you can check the details of the malfunction.
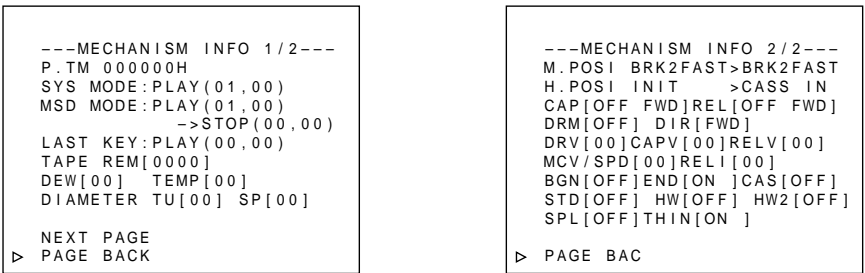

Fig. 1.8.7 (2) MECHANISM INFO Display Screen

Item	Content	Displayed Content
P.TM	POWER HOUR METER	Power hour meter is display.
SYS MODE	SYSCON CPU mode when error occurred PLAY (03, 00) ⇧ ⇧ MODE DATA │ Parameter	SFF/SREW parameter is speed display. (Refer to Fig. 1.8.7 (2) Speed parameter) Parameters of other modes are irrelevant. EJECT (01) : Eject ADUB (0B) : Audio Dub
MSD MODE	MSD CPU mode and target mode when error occurred PLAY (01, 00) ⇧ ⇧ MODE DATA │ Parameter	STOP (02) : Stop ADBP (0C) : Audio Dub Pause PLAY (03) : Play REC (13) : Rec STL (04) : Still RECP (14) : Rec Pause FF (05) : FF DVRC (15) : DV Rec REW (06) : Rew DVRP (16) : DV Rec Pause SFF (07) : Search Fwd POFF (1A) : Power Off SREW (08) : Search Rev NDEF (1F) : During initial operation
LAST KEY	Final Key code when error occurred PLAY (E7, 01) ⇧ ⇧ MODE DATA │ Parameter	SFF/SREW parameter is speed display (See Fig. 1.8.7(2)) Other parameters are 01: ON, 00: OFF REC (E0) : Rec SFF (EB) : Search Fwd RECP (E1) : Rec Pause SREW (EC) : Search Rev DVRP (E2) : DV Rec Pause STOP (F0) : Stop ADUB (E5) : Audio Dub EJECT (F1) : Eject ADBP (E6) : Audio Dub Pause HWUP (F2) : Housing Up PLAY (E7) : Play HWDN (F3) : Housing Down STL (E8) : Still POFF (F4) : Power Off FF (E9) : FF DVRC (F5) : DV Rec REW (EA) : Rew PON (FA) : Power on
TAPE REM	TAPE REMAIN	Displays tape remaining in minutes ([FFFF] : not detected)
DEW	DEW sensor A/D intake value	DEW detects (at low temp. [13], at normal temp [CD]) DEW off (at low temp. [12], at normal temp [99])
TEMP	Temperature sensor A/D intake value The value "49" [5°C] is threshold of detecting low temperture. The value "DC" [60°C] is the threshold of displaying "OVER HEATING" message.	Temperature is displayed in hexadecimal value. -10°C ➡ [22] 20°C ➡ [7C] 50°C ➡ [CC] - 5°C ➡ [2D] 25°C ➡ [8C] 55°C ➡ [D4] 0°C ➡ [3A] 30°C ➡ [9C] 60°C ➡ [DC] 5°C ➡ [49] 35°C ➡ [AA] 10°C ➡ [59] 40°C ➡ [B7] 65°C ➡ [E1] 15°C ➡ [6A] 45°C ➡ [C2] 70°C ➡ [E6]
DIAMETER	Displays wound tape diameter (Take-up, Supply)	[00]—[FF] : 0mm-82mm (Diameter) ([00] is non-detected)
M. POSI	Mechanism position and target mechanism position	[2ULD], [ULD2BRK], [BRK], [BRK2FAST], [FAST], [FAST2STP], [STP], [STP2SRH], [SRH], [SRH2], [INIT]("2" is the meaning of "TO". It means transition. Refer to section 2, Mechanism Timing Chart.)
H. POSI	Housing position and target housing position	[EJECT], [EJECT2IN], [CASS IN], [RELEASE](Release the SUP reel lock.) [INIT](For the intake and eject operation, refer to section 8.2.3.)
CAP	Capstan status	[ON] : Rotate [FWD/REV]: Direction display [OFF] : Stop
REL	Reel status	[ON] : Rotate [FWD/REV]: Direction display [OFF] : Stop
DRM	Drum status	[ON] : Rotate [OFF] : Stop
DIR	Direction of tape running (Direction of target)	[FWD/REV] : Direction display
DRV	Drum control voltage	[00-FF] : 0—3V
CAPV	Capstan control voltage	[00-FF] : 0—3V
RELV	Reel control torque value	[00-FF] : 0—3A

Item	Content	Displayed Content
MCV/SPD	Loading/cassette housing control voltage (when error code 4xxx and error code 3xxx is displayed.)	[00-FF] : 0—8V (Displays mode motor control voltage during error code 3xxx) [00-FF] : 0-11V (Displays cassette motor control voltage during error code 4xxx)
	Tape speed (When the code excepting error code 4xxx and error code 3xxx is displayed.)	[00-FA] : 0—25X (FF is displayed when the speed is faster than this.) "Tape speed" is a function to convert the hexadecimal value into a decimal value, and no speed parameter of the tape. (ex. FAh = 250 → The speed is 25.0X.)
RELI	Reel current (Cassette housing motor current during housing-related warning)	[00-FF] : 0—1.2A
BGN	Begin sensor	[ON] : Leader tape detected [OFF] : Magnetic tape detected
END	End sensor	[ON] : Trailer tape detected [OFF] : Magnetic tape detected
CAS	Cassette SW status	[OFF] : No cassette [ON] : Cassette detected (STD/MINI)
STD	Standard cassette SW status	[OFF] : Mini cassette tape inserted [ON] : STD cassette tape inserted
HW, HW2	Housing SW/Housing 2SW status	(see table below)
SPL	SUP Lock SW status (during loading)	[ON] : Normal operation (TU side tape winding) [OFF] : Lock release (Tape begin detected, Supply side tape winding mode)
THIN	Thin tape detection	[ON] : THIN [OFF] : NORMAL

HW, HW2 displayed content:

HW SW	HW2 SW	Housing status
[OFF]	[ON]	–
[ON]	[OFF]	EJECT (Initial position)
[OFF]	[OFF]	Cassette intake
[ON]	[ON]	Ejecting Mini cassette

Table 1.8.7 (1) MECHANISM INFO content

Parameter	Speed	Parameter	Speed
00	x 0	82	x 1.08
1F	x 0.03	83	x 1.11
40	x 0.10	84	x 1.12
53	x 0.20	85	x 1.16
61	x 0.30	91	x 2.00
6D	x 0.50	A9	x 5.00
7A	x 0.80	BD	x 9.00
7B	x 0.84	C0	x 10.0
7D	x 0.90	C4	x 12.0
7F	x 0.96	CC	x 15.0
80	x 1.00	D3	x 20.0
81	x 1.04		

Table 1.8.7 (2) Speed parameter

(2) Error code description

Error code	Display	Content of occurrence	Method of detection	Detected signal
0201	CONDENSATION ON DRUM	DEW detected	If DEW sensor detects condensation	IC302 (MSD) –detects voltage of pin 318
3200	LOADING FAILURE	Does not load	If mechanism position does not move in loading direction within 5 seconds	IC302-pin354 Rotary encoder output is detected
3300	UNLOADING FAILURE	Does not unload	If mechanism position does not move in unloading direction within 5 seconds	IC302-pin354 Rotary encoder output is detected
	No display	Does not intake	If intake is not completed within 5 seconds (Perform ejects without warning)	IC302 (MSD) –pin 84, CASSETTE SW is not detected within 5 seconds
4100	CASSETTE EJECT FAILURE	Does not eject	If eject is not completed within 5 seconds	IC302 (MSD) –pin 26, HOUSING SW is not detected within 5 seconds
5605	DEFECTIVE TAPE	Tape abnormality during intake	If begin and end sensor are ON after intake	IC302 (MSD) –pin 278, START sensor and pin 297, END sensor are both detected
5606	DEFECTIVE TAPE	Tape tear during unloading	If reel FG is excessive during unloading	IC302 (MSD) –pin 75, TU REEL FG is detected
5607	DEFECTIVE TAPE	Tape tear during loading	If reel FG is insufficient during loading	IC302 (MSD) –pin 75, TU REEL FG is detected
5608	DEFECTIVE TAPE	Tape tear on the loading side	If only supply side reel does not rotate during FWD/REV	IC302 (MSD) –pin 72, SUP REEL FG is not detected
5609	DEFECTIVE TAPE	Tape tear during slack takeup	If tape slack takeup is not completed within 10 seconds	IC302 (MSD) –pin 75, TU REEL FG and pin 72, SUP REEL FG are both detected
5702	TAPE END DET. ERROR	End sensor malfunction	If trailer tape sending is not completed within 3 seconds	IC302 (MSD) –pin 297, END sensor is detected for over 3 seconds
5802	TAPE BEGIN DET. ERROR	Begin sensor malfunction	If leader tape sending is not completed within 3 seconds	IC302 (MSD) –pin 278, START sensor is detected for over 3 seconds
7001	DRUM MOTOR FAILURE	Drum motor does not rotate	If drum motor does not rotate for over 4 seconds	IC302 (MSD) –pin 55, DRUM FG is not detected for over 4 seconds
7101	CAP MOTOR FAILURE	Capstan motor does not rotate	If capstan motor does not rotate for over 2 seconds	IC302 (MSD) –pin 56, CAP FG is not detected for over 2 seconds
7202	SUPPLY REEL FAILURE	SUP reel does not rotate	If SUP reel does not rotate for over 3 seconds	IC302 (MSD) –pin 72, SUP REEL FG is not detected for over 3 seconds
7203	SUPPLY REEL FAILURE	SUP side tape slack	If only SUP reel does not rotate during REV	IC302 (MSD) –pin 72, SUP REEL FG is not detected
7302	TAKE UP REEL FAILURE	TU reel does not rotate	If TU reel does not rotate for over 3 seconds	IC302 (MSD) –pin 75, TU REEL FG is not detected for over 3 seconds
7303	TAKE UP REEL FAILURE	TU side tape slack	If only TU reel does not rotate during FWD	IC302 (MSD) –pin 75, TU REEL FG is not detected
7305	TAKE UP REEL FAILURE	Tape slack during unloading	If TU reel FG is insufficient during unloading	IC302 (MSD) –pin 75, TU REEL sensor is detected
7401	REEL MOTOR FAILURE	Reel motor does not rotate	If reel motor does not rotate for more than 4 seconds during reel drive mode	IC302 (MSD) –pin 91, REEL FG is not detected for over 4 seconds

Table 1.8.7 (3) Error Code Contents

1.8.8 OTHERS menu

Item	Parameter
MEMORY SW LOAD	`OFF` Standard setting
	START Menu SW information is loaded from a store aria.
MEMORY SW SAVE	`OFF` Standard setting
	START Menu SW information is saved to a store aria.
ALL RESET	`CANCEL` Standard setting
	I,U,E,EC Resets all EEP-ROM data to default settings except adjustment data, hour meter data, and IEEE1394 ID data.
	Default settings differ by market region.
	I: for Japan, U: for USA, E: for EU, EC: for China
MEM.EDIT	Contents of the EEP-ROM can be edited directly
	ADR: Address (0-03FF) display
	DATA: Display of data embedded in address shown by ADR
	`Operation procedure`
	1 Press the ▲ or ▼ button to move the cursor to MEM or EDIT.
	② Press the ▶ button to make the ADR parameter blink.
	③ Press the ▲ or ▼ button to select the ADR parameter you want to edit. (Pressing ▲ or ▼ while keeping the "A.DUB" button pressed will cause it to count up or down in increments of 10.)
	④ Press the ▶ button to make the DATA parameter blink.
	⑤ Press the ▲ or ▼ button to make changes in the DATA parameter.
	⑥ Press the [SET] button and confirm the DATA parameter. (The parameter stops blinking)
	(NOTE)
	The EEPROMs store important data for the system and careless rewriting may make normal operation of the system impossible. Do not use this function for purposes other than the IEEE1394 ID date that is described.
OPERATION CHECK	`CANCEL` Standard setting
	EXECUTE Enters the OPERATION check mode. All LEDs turn on. By operating the relevant buttons and slide switches, the operation of the buttons and LEDs can be checked as shown in the following list.
	To exit from this mode, turn OPERATE to OFF.
REAR SER. SEL	`SERIAL` REAR terminal is used as the SERIAL REMOTE terminal.
	TCCS REAR terminal is used as the TCCS terminal (factory use)
	By pressing REC + ADB simultaneously while powering up, the forced TCCS mode is engaged.

Within OPERATION CHECK:

Button	LED display contents	
OPERATE	Power ON/OFF SW	
EJECT	Cassette tape LED goes out	
STOP	All except OPERATE LED go out	
FF	FF LED goes out	
PLAY	PLAY LED goes out	
REW	REW LED goes out	
PAUSE	PAUSE LED goes out	
REC	REC LED goes out	
A.DUB	A.DUB LED goes out	
INPUT SELECT	DV	Rch LED comes on, Lch LED comes on
	LINE	Rch LED comes on, Lch LED goes out
	Y/C	Rch LED goes out, Lch LED comes on
REMOTE/LOCAL	9PIN	DV CAM LED comes on, REC INH LED goes out
	SERIAL	DV CAM LED goes out, REC INH LED comes on
	WIRELESS	DV CAM LED comes on, REC INH LED comes on
NTSC/PAL(REAR)	NTSC	NTSC LED comes on, PAL LED goes out
	PAL	NTSC LED goes out, PAL LED comes on

□ is default setting when shipped from factory

Table 1.8.8 OTHERS Menu Setting Items List

1.8.9 CPU version menu

Displays version of SYSCON CPU and MSD (VCR) CPU.

```
          –––MENU–––
 ▷ VTR1..
   EXIT


   CPU VERSION
     SYS            0001  ←——— CPU version
     VTR            0102
```

Firmware version

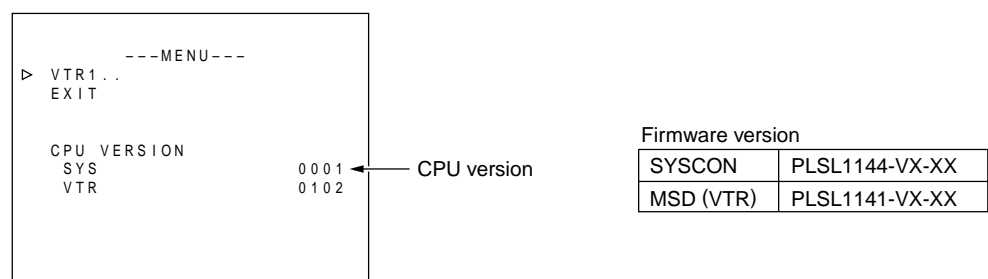| SYSCON	PLSL1144-VX-XX
MSD (VTR)	PLSL1141-VX-XX

Fig. 1.8.9 CPU Version Display

1.8.10 EEP-ROMS

(1) EEP-ROMS and stored data

AG-DV2500 is equipped with two EEP-ROMS for the purpose of data stored, and their contents are as per the following list. When the circuit board or EEP-ROM is replaced, there will be no data in the EEP-ROM. When the unit is powered up, and the SYSCON CPU or MSD CPU recognizes that there is no data in the EEP-ROM, it automatically writes initial data into the EEP-ROM to initialize it. The memory data shown in Table 1.8.10 will all be reset back to default settings, so it will be necessary to perform necess ary adjustments and settings again.

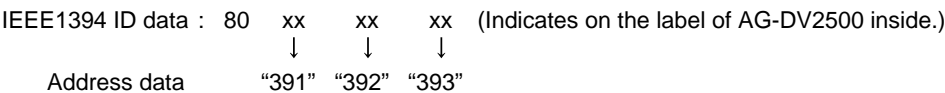| EEP-ROM	Circuit board name	Memory data content
IC301	DV/CPU circuit board (MSD CPU) MAIN circuit board	• Adjusted data (DVC section: Adjustment menu No. 100-121) • IEEE1394 ID data • HOUR METER data
IC2003	(SYSCON CPU)	• Adjusted data (VCR section: Adjustment menu No. 200-274) • User menu and Service menu settings data • ERROR HISTORY

Table 1.8.10 EEP-ROM Memory Data Content

(2) IEEE1394 ID setting method

IEEE1394 equipped units have an ID, as defined by the IEEE1394 standard, stored in the internal EEP-ROM (IC 301). At the time of production, the ID assigned for each individual unit are written into the EEP-ROM, and a sticker bearing the ID is affixed inside the unit. When the EEP-ROM (DV/CPU board assembly) or DV/CPU board assembly is replaced, the ID needs to be set again.

Procedure for setting IEEE1394 ID

The ID is an 8 digit, hexadecimal code, with 1 high Byte being the model code, and 3 low Bytes being individual to the unit. The model code is automatically initialized, so only the lower 3 Bytes of individual code need to be set manually. Go from Service Menu → OTHERS Menu → MEM. EDIT (Memory Edit) to select the address in the ID data section and make the setting directly. The 3 low Byte address is as follows. Make the setting while confirming the ID printed on the label (ID: 80xxxxxx) pasted on the inside of the AG-DV2500 (See Fig. 1.8.10).

```
IEEE1394 ID data :  80    xx     xx     xx   (Indicates on the label of AG-DV2500 inside.)
                            ↓      ↓      ↓
Address data            "391"  "392"  "393"
```

Setting procedure

(1) Press the ▲ or ▼ button to move the cursor to MEM. EDIT.
(2) Press the ▶ button to make the ADR parameter blink.
(3) Press the ▲ or ▼ button to select ADR parameter "391".
(4) Press the ▶ button to make the DATA parameter blink.
(5) Press the ▲ or ▼ button to set ADR = "391" for the ID.
(6) Press the [SET] button to confirm the DATA parameter.
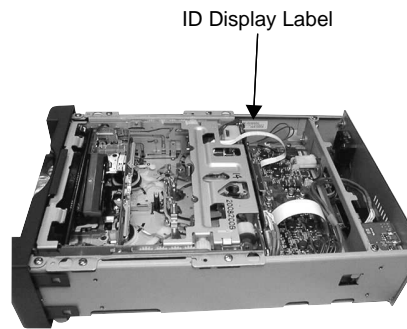(7) In the same manner, select ADR parameter "392" and "393" to set the ID data.

Fig. 1.8.10 ID Label Attachment Position

1.8.11 Real-time clock

The IC2002 (RS5C314) on the MAIN circuit board is a CMOS real-time clock IC that sends time/calendar data to the CPU via serial transmission. When power is not being supplied to the BT2001, there is a secondary battery (3V) to backup the IC2002. By charging for 4 hours, it provides 3 months of backup. When power is being supplied, AL3V is sent through D2002 to the IC2002 8pin, and through D2003 the BT2001 enters a state of being charged. When external power supply (AL3V) ceases, BT2001 is discharged through D2002 and the current is sent to the IC2002 8pin, resulting in a state of backup.
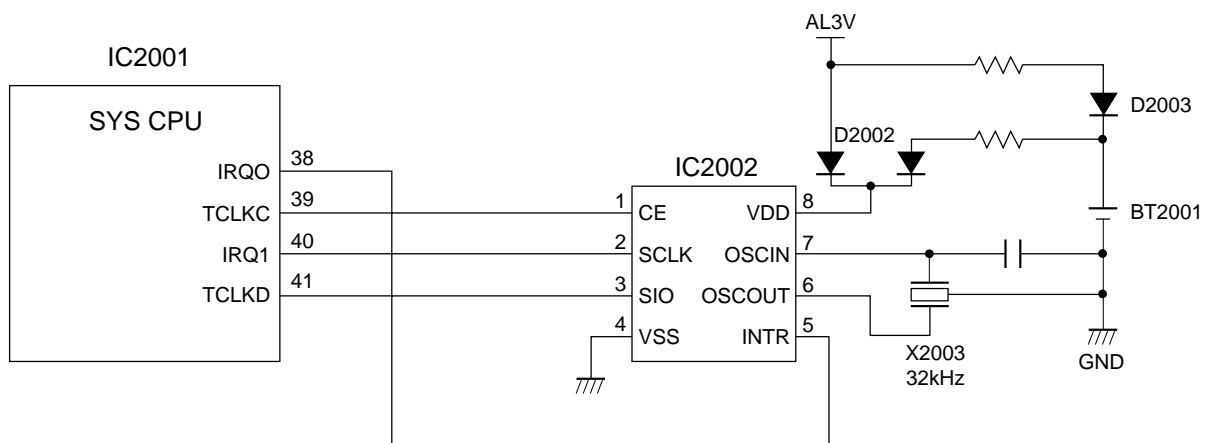

Fig. 1.8.11 Real-time Clock Circuit