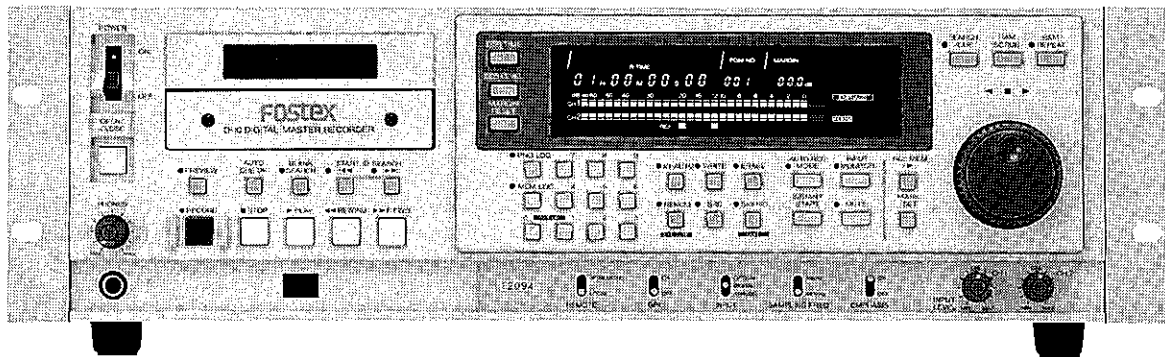


Owner's Manual


Model

D-10

DIGITAL MASTER RECORDER




Fostex



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER(OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION:

POUR ÉVITER LES CHOCs ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

"WARNING"

"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

SAFETY INSTRUCTIONS

1. Read Instructions — All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions — The safety and operating instructions should be retained for future reference.
3. Heed Warnings — All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions — All operating and use instructions should be followed.
5. Water and Moisture — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands — The appliance should be used only with a cart or stand that is recommended by the manufacturer.
7. Wall or Ceiling Mounting — The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat — The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization — The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power Cord Protection — Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. Cleaning — The appliance should be cleaned only as recommended by the manufacturer.
14. Nonuse Periods — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. Object and Liquid Entry — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
16. Damage Requiring Service — The appliance should be serviced by qualified service personnel when:
 - A. The power supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
17. Servicing — The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

D-10

DIGITAL MASTER RECORDER Owner's Manual Supplement for Software Version 1.2*

1st Edition JUN. 1993 8288 318 000
2nd Edition JULY 1993 8288 318 100
3rd Edition MAR. 1994 8288 318 200 (Supplement Ver. 1.2*)

1. Modifications resulting from version-up of Model D-10

The following items have been improved, functions modified or new ones added resulting from version-up (V1.1* -> V1.2*) of the Model D-10 software.

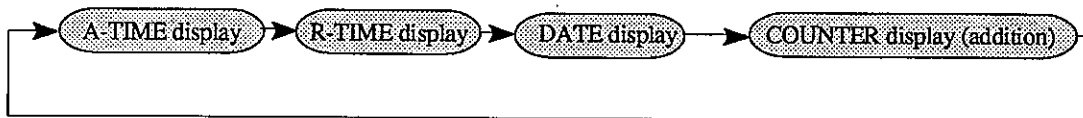
1. Additional functions to the DISP TIME (time display) selecting key.
2. Change in command input to the GPI IN connector.
3. Change in output pulse width at the GPI OUT connector.
4. Addition of "SKIP-STOP/PLAY mode selection" to the SETUP mode.
5. Partial change of the menu display in the SETUP mode.

1-1. Additional functions to the DISP TIME (time display) selecting key

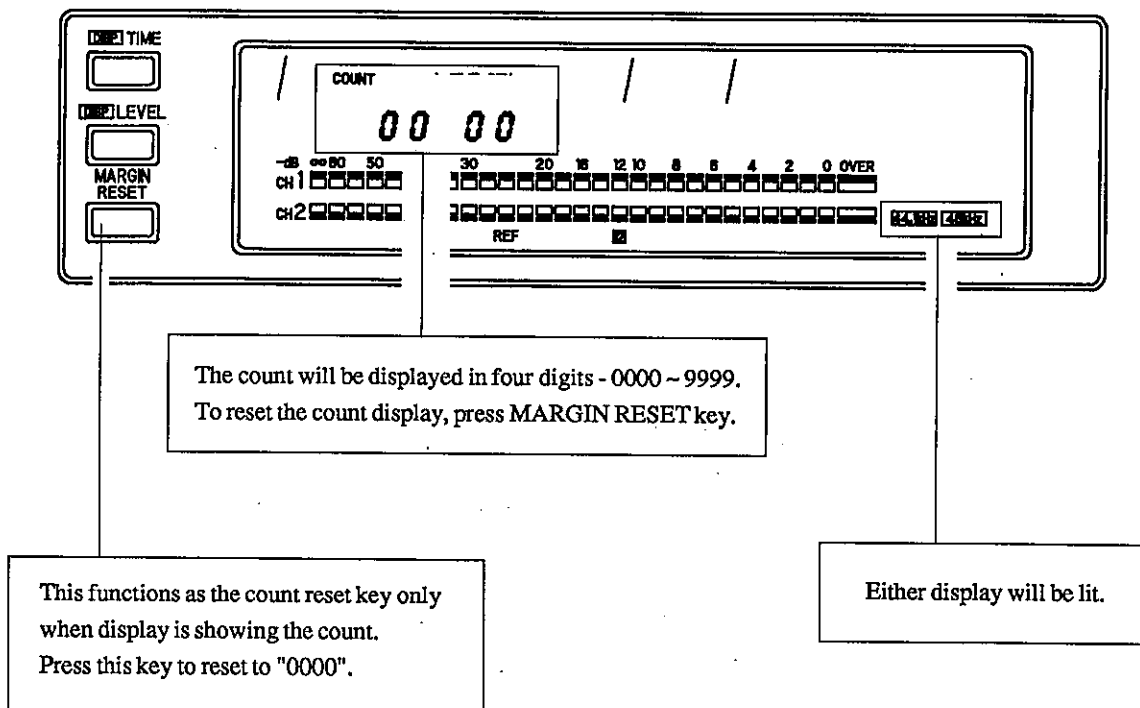
A "Counter function" has been added to the front panel DISP TIME key and its function and display are as follows:

① DISP TIME (time display) selecting key

The normal display mode is selected as follows with each press of this key.



COUNT display (additional function)

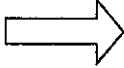


1-2. Change in command input at the GPI IN connector

Command inputs to the rear panel GPI IN connector pins #4 and #5 have been changed as follows:


① GPI IN connector

| Before change | |
|---------------|--------|
| GPI IN | |
| 1 | GND |
| 2 | STOP |
| 3 | PLAY |
| 4 | FFWD |
| 5 | REWIND |




| After change | |
|--------------|----------------|
| GPI IN | |
| 1 | GND |
| 2 | STOP |
| 3 | PLAY |
| 4 | S-ID SEARCH >> |
| 5 | S-ID SERACH << |

Input of S-ID SEARCH >> command (pin #4)

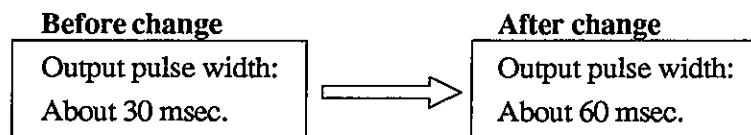
Input of  achieves the same function as the S-ID SEARCH >> key.

Input of S-ID SEARCH << command (pin #5)

Input of  achieves the same function as the S-ID SEARCH << key.

1-3. Change in output pulse width at the GPI OUT connector

As a result of software the version-up, the output pulse width of GPI OUT is changed as follows:



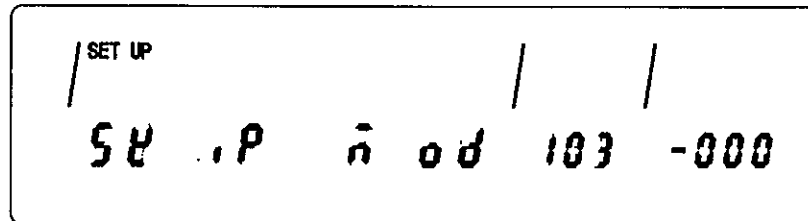
1-4. Addition of "SKIP-STOP/PLAY mode selection" to the SETUP mode

SKIP mode is selected by specifying the setup number as listed below and SKIP operation (SKIP-STOP, SKIP-PLAY) is to be executed at the moment SKIP-ID is detected during tape playback.

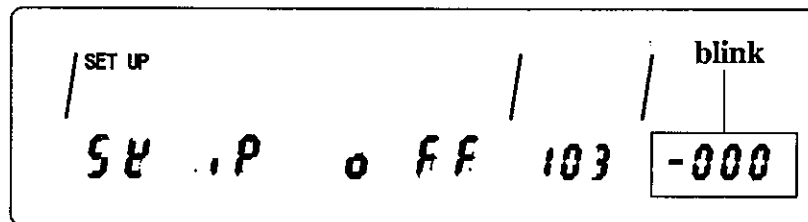
- 000 : SKIP-ID is neglected and playback continued.
- 001 : FWD direction S-ID search is conducted upon detecting SKIP-ID and stopped at head of this S-ID.
- 002 : FWD direction S-ID search is conducted upon detecting SKIP-ID and automatically entered in playback from this S-ID.

Operating Procedures

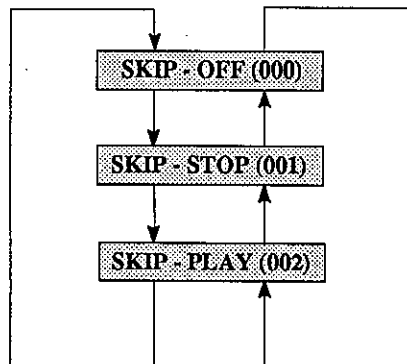
1. Using the JOG dial, display the SKIP-STOP/PLAY mode select menu.
At this point, the presently set number is shown.



2. Next, when the EXECUTE key is pressed, the setup number section will blink.



3. While the number is blinking, select the desired number with the JOG dial.
The select display can be changed as follows by rotating the JOG dial CW or CCW.



4. After a number is selected, press the EXECUTE key again.
This completes selection and the newly set menu is shown.

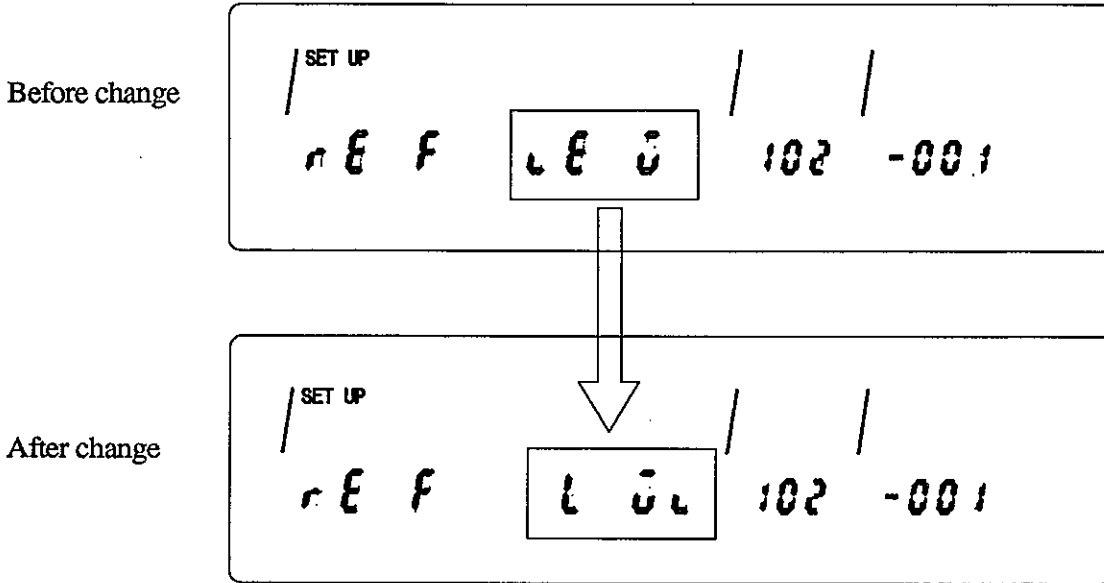
<CAUTION>

During playback in the INSTANT START mode, the actual tape position will be several seconds ahead of the sound played back from the RAM. Therefore, if SKIP operation is executed in the INSTANT START mode, SKIP-ID is shown in the display, then SKIP executed will be delayed by the RAM.

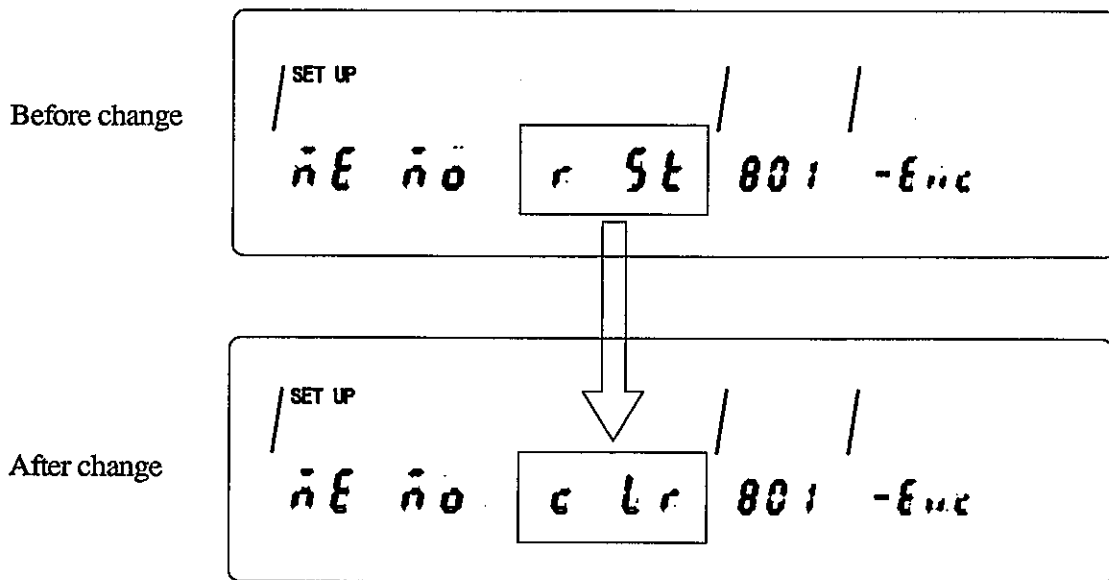
1-5. Partial changes in the SETUP mode menu display (function is not changed)

Each SETUP menu display for the SETUP mode will be changed. There are changes in the display only and no functions will be changed.

1. Select menu for reference level



2. All reset menu for user memory



2. Notes in Model D-10 operation (supplement)

2-1. Notes in handling the Digital In clock deviation of Model D-10

There is no Vari Pitch function in the D-10.

Therefore, if several seconds of digital in containing Vari Pitch is applied to the D-10, "Error Code 16" is generated and all operations denied until power to the D-10 is switched off.

Although this manual explains that the D-10 can comply to 44.056kHz Digital In but this is possible since its clock deviation is -0.1% and thus satisfies the clock deviation tolerance figure (within +/-1%).

For these above reasons, be extremely careful in handling the Digital In clock deviation, as the following conditions must be satisfied.

- ① FS information must be correctly set in the Channel Status Bit at input of the AES/EBU or Consumer Digital In.

<NOTE>

This cannot be connected since Channel Status of the D-20 and D-20B Consumer Modes are always set to 44.1kHz. Therefore, the D-20 and D-20B Digital Out must be set to the AES/EBU mode before operating.

- ② Clock deviation against the Channel Status FS information that is set must be within +/-1%.

2-2. Notes at S-ID recording by the AUTO-ID function

<NOTES>

* If a no sound condition continues for more than one second within 9 seconds after recording the S-ID, then even though there is sound, no S-ID will be recorded at that point.

In DAT, the S-ID recording length is 9 seconds. The following 9 seconds are defined as the time for search operation. Therefore, after recording an S-ID, another S-ID cannot be recorded within 9 seconds of the previous S-ID.

* If the music score contains a low level section such as in classical music, an unnecessary S-ID could be recorded.

In such a case, change the AUTO-ID detecting level in the SETUP mode prior to making the recording.

Table of Contents

| | |
|---|------------|
| Introduction..... | 1 |
| Chapter 1. Outline and Main Features..... | 1-1 |
| Chapter 2. Front and Rear Panels..... | 2-1 |
| 2-1. Front Panel..... | 2-1 |
| 2-2. Display..... | 2-21 |
| 2-3. Rear Panel..... | 2-26 |
| 2-4. Remote Control Section..... | 2-32 |
| Chapter 3. Preliminary Notes..... | 3-1 |
| 3-1. Preliminary Notes..... | 3-1 |
| 3-2. DAT..... | 3-3 |
| 3-3. Setting the Internal Clock..... | 3-11 |
| Chapter 4. Record and Playback..... | 4-1 |
| 4-1. Basic playback..... | 4-1 |
| 4-2. Basic recording..... | 4-3 |
| 4-3. Making the no sound recorded section (REC MUTE)..... | 4-8 |
| 4-4. Continue recording without making a nonrecorded section (BLANK SEARCH)..... | 4-9 |
| 4-5. The AUTO REC mode..... | 4-11 |
| 4-6. Cueing..... | 4-16 |
| 4-7. The search/locate function..... | 4-18 |
| 4-8. The instant start mode..... | 4-25 |
| 4-9. The auto cue up mode..... | 4-33 |
| Chapter 5. Record/Erase of Sub ID..... | 5-1 |
| 5-1. Recording of Start ID/Program No..... | 5-1 |
| 5-2. Record/Erase of Skip-ID..... | 5-12 |
| Chapter 6. Memory Edit Mode..... | 6-1 |
| 6-1. Editing of Memory number/Memory Information..... | 6-1 |

| | |
|---|------------|
| Chapter 7. The Setup Mode..... | 7-1 |
| 7-1. Procedure for Entering the Setup Mode..... | 7-1 |
| 7-2. Execution of each menu..... | 7-4 |
| | |
| Chapter 8. Various Applications..... | 8-1 |
| 8-1. Simple Editing by Connecting Two D-10s..... | 8-1 |
| 8-2. External Sync Driving Using Digital In..... | 8-2 |
| 8-3. Digital Copy Using Optical Digital In..... | 8-3 |
| 8-4. Connection of Event Outputs (GPI) from an Editor..... | 8-4 |
| 8-5. Event system utilizing a Model 4020 Event Controller..... | 8-5 |
| | |
| Chapter 9. Specifications..... | 9-1 |

Introduction

How to read this manual

This manual is written as a guide book to obtain the best results with the Fostex D10 Digital Master Recorder. The primary features and functions, names of each part, and operating methods which are important in understanding the D-10 are covered here. Furthermore, because various precautions and notes on safety, as well as, service instructions are explained in detail, we recommend that this manual be kept handy at all times.

Outline of this Manual

Reading the Table of Contents will give you a rough outline of this manual. However, the following is a brief synopsis of each chapter. Additionally, there is a brief description at the beginning of each chapter.

Chapter 1 outlines the principle and outstanding features of the D-10.

Chapter 2 gives a brief explanation regarding the names of each part, their functions and method of operation. In this chapter we describe the D-10 in terms of its front panel, display, rear panel connectors and remote controller. The chapter is arranged so that fundamental operations of the D-10 can be easily understood by those familiar with professional DAT recorders.

Chapter 3 gives specific instructions regarding installation and operation of the D-10.

Chapter 4 deals with the specifics of recording operations. Topics such as basic operation, using jog/shuttle, search/locate, and other recording techniques will be explained in detail. Read this chapter if you have questions regarding RAM scrub, instant start, auto record, or auto cue up.

Chapter 5 explains how to record and erase sub ID, as well as, the record and erase operations of S-ID and Skip-ID.

Chapter 6 explains memory edit mode, storing of memory number/memory time information, and operation of recall and change.

Chapter 7, Setup mode. In this chapter, setup modes such as the D-10 initial settings are explained.

Various applications of D-10 are explained in **Chapter 8**.

Chapter 9 explains the D-10s specifications. Various specifications and physical dimensions, etc. of D-10 are also explained here.

Contents of this manual

* Many terms related to DAT appear in the explanations of each chapter of this manual. These special terms are expressed by the following abbreviations in the text.

| | |
|-----------------------|------------|
| A time/absolute time | A-Time |
| Sampling frequency | FS |
| Pro R time/PRO R time | Pro R-Time |
| Running time/R time | R-Time |
| Date code | DATE |
| Start ID | S-ID |
| End ID | End-ID |
| Skip ID | Skip-ID |
| Program number | P-No. |

* When expressing switch position names or messages appearing in the display, the panel English letterings itself will be used and enclosed by [].

[Example]

Set the remote switch to [LOCAL].

[A-TIME] will be shown in the display.

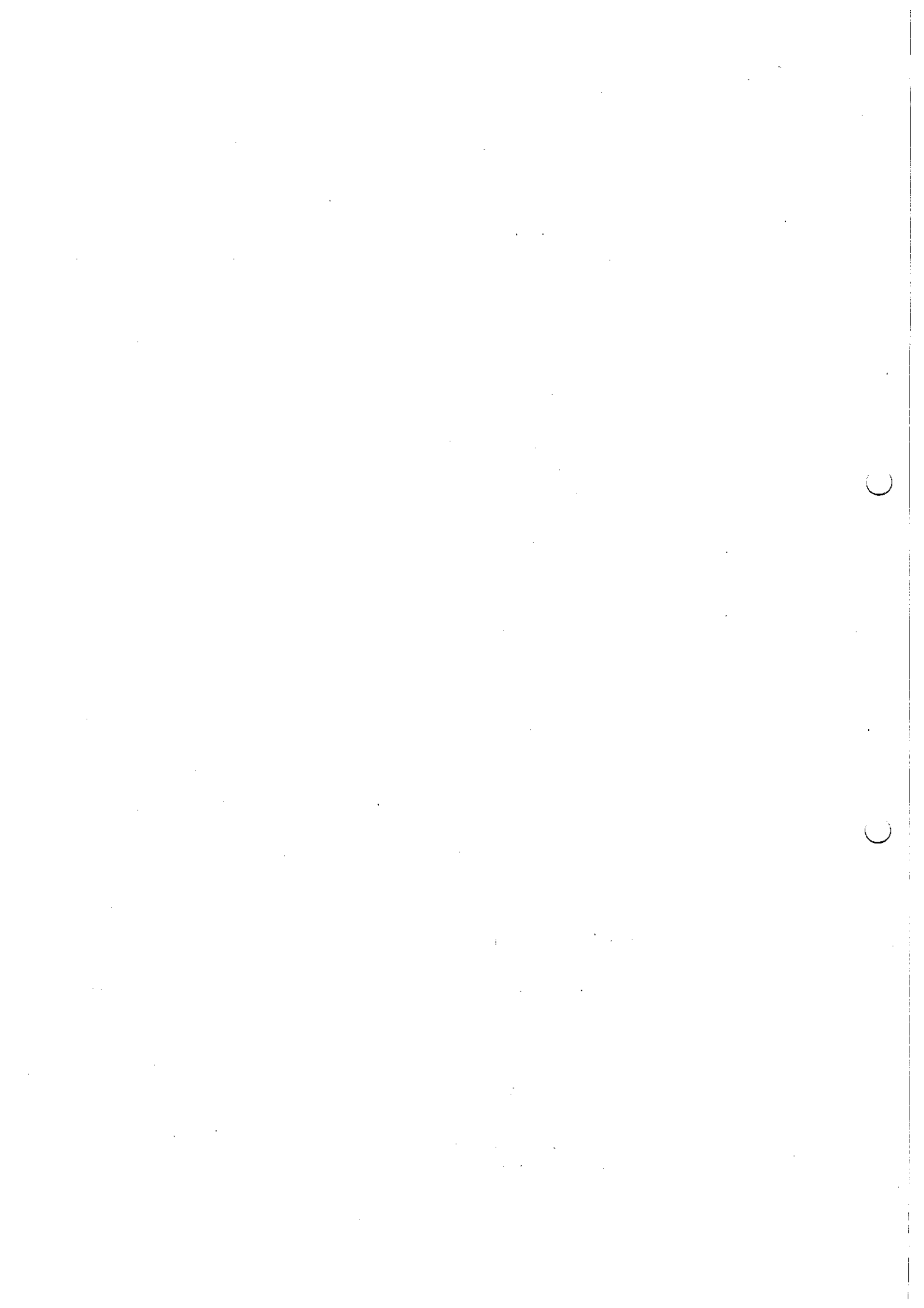
* The LED indicators and operating button lamps will be expressed as "lit," "blink," and "extinguished" and messages shown in the display as "display."

* In conventional analog recorders, it is "sound recording" but in the digital D-10, audio signal recording is referred to as "sound recording" and "record" is for various ID's.

* In this manual, the normal operating process will be expressed as "normal display mode" and editing such as on time data as "memory edit mode."

* In the text, the content following the ◆ mark indicates page number, item, etc. which should be referred to.

* In the text, <NOTE> explains important points to be heeded for correct operation and handling of this recorder.



Chapter 1. Outlines the Principle and Outstanding Features of the D-10.

Outstanding features and functions of the Model D-10 Digital Master Recorder are explained here.

C

C

Chapter 1

1-1. Major Outstanding Features

1-1-1. Outline

The D-10, in addition to performing as a consumer DAT recorder, is a digital master recorder with various functions enabling it to be used as a professional recorder for use in broadcasting stations and post production studios. Additionally, a remote controller is provided to facilitate ease of use.

1-1-2. Outstanding features

* Because the D-10 contains two 4 megabit RAM's cards, instant start and RAM scrub are possible.

* High performance has been achieved by employing a 16 bit delta sigma AD converter (AK5326). This converter is known for its high reliability as a professional AD converter.

* The D-10 complies to both professional and consumer format digital signals. However, instant start is not possible at optical digital out.

* External sync operation using digital signals is possible.

* Using the GPI input/output ports, simplified editing based on A-Time is possible with two D-10s.

* Remote control via an optical controller is standard.

* The head of the recording can be located via headphone monitoring while muting the line out signal (audio mute).

* Write and Erase of S-ID and Skip-ID is possible.

In addition to locating via S-ID and the program number, the D-10 contains a locate function using 100 memory numbers.

* The multi-function display can show the following messages:

- A-TIME
- R-TIME
- DATE
- Margin level

*The multifunction display shows levels in 0.1dB steps (indicates by alternate switching between channels)

- Error rate

* The reference level can be switched to either -20dB or -12dB.

* Professional self illuminating switches.

* Two expansion card slots are provided for future expansion of the D-10's functions.

Chapter 2. Front and Rear Panels

Names and functions of the main unit front panel buttons, keys and switches, method of connecting the rear panel connectors, and also the remote controller included with the main unit, are learned by reading this chapter.

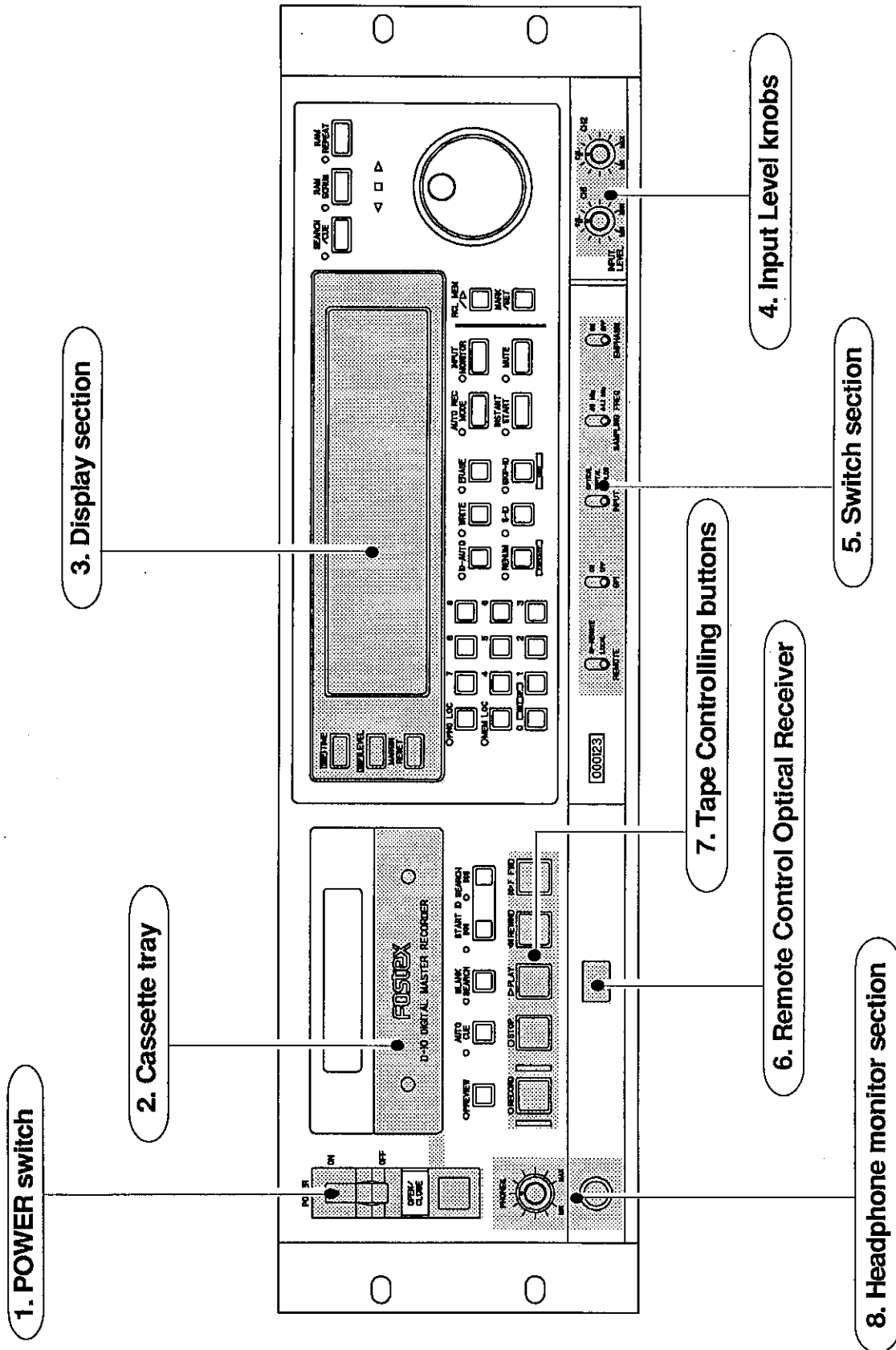
TABLE OF CONTENTS

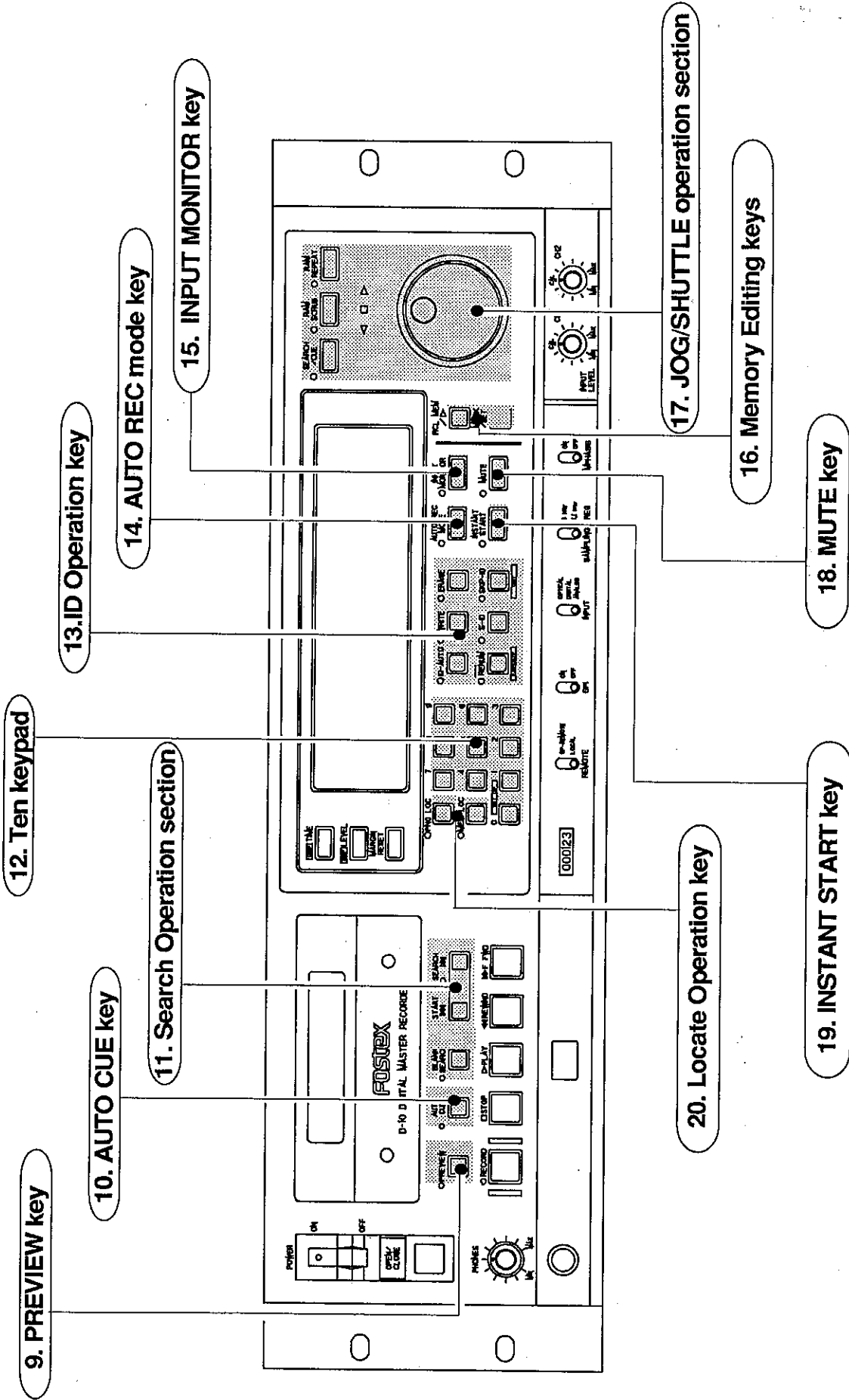
| | |
|---|------|
| 2-1. Front panel..... | 2-1 |
| 1. [POWER] switch..... | 2-3 |
| 2. Cassette tray..... | 2-3 |
| 3. Display section..... | 2-4 |
| 4. Input Level knobs..... | 2-5 |
| 5. Switch section..... | 2-5 |
| 6. Remote Control Optical Receiver..... | 2-7 |
| 7. Tape controlling buttons..... | 2-7 |
| 8. Headphone monitor section..... | 2-9 |
| 9. [PREVIEW] key..... | 2-9 |
| 10. [AUTO CUE UP] key..... | 2-9 |
| 11. Search Operation section..... | 2-10 |
| 12. Ten keypad..... | 2-11 |
| 13. ID Operation key..... | 2-12 |
| 14. [AUTO REC] mode key..... | 2-14 |
| 15. [INPUT MONITOR] key..... | 2-15 |
| 16. Memory Editing keys..... | 2-15 |
| 17. [JOG/SHUTTLE] Operation section..... | 2-17 |
| 18. [MUTE] key..... | 2-19 |
| 19. [INSTANT START] key..... | 2-19 |
| 20. Locate Operation key..... | 2-20 |
| 2-2. Display..... | 2-21 |
| 2-3. Rear panel..... | 2-26 |
| 1. Option Panel..... | 2-27 |
| 2. Power Line connector..... | 2-27 |
| 3. GPI Input and Output connectors..... | 2-28 |
| 4. Analog Input and Output connectors..... | 2-30 |
| 5. Digital Input and Output connectors..... | 2-31 |
| 2-4. Remote Control section..... | 2-32 |

C

C

Chapter 2

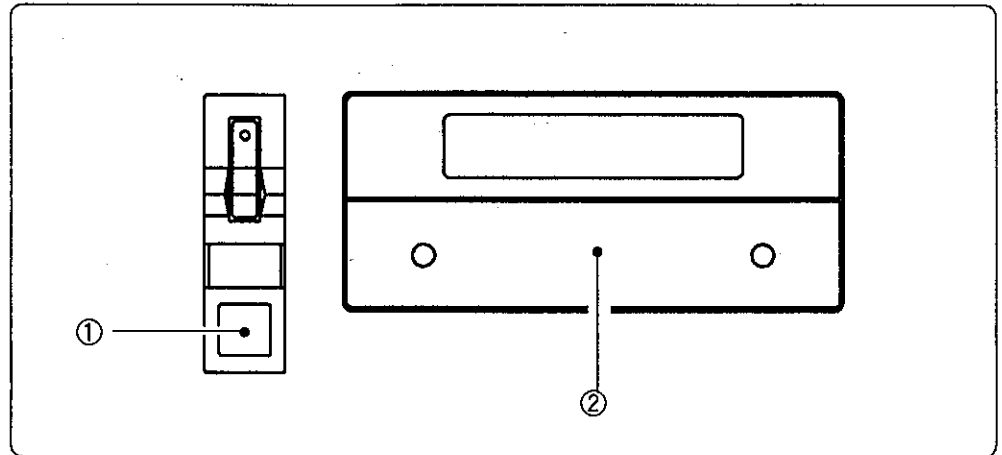




2-1. Front panel

1. [POWER] switch

Switches ON/OFF main power to D-10.



2. Cassette tray

① [OPEN/CLOSE] key

Cassette tray opens or closes with alternate pressing of this key. If the tray is closed with a cassette inserted, the tape will be loaded and the D-10 will enter the pause mode.

<NOTES>

- * If the tray is to be opened with a tape loaded, it must be done in pause or stop mode.
- * When in other than the instant start mode, the recorder will automatically blank search if tape is loaded at a non-recorded section.

◆ Refer to page 4-9, Chapter 4, Section 4-4. for details on blank search.

If the D-10 is in the auto cue mode, this function will be carried out after loading the tape only if a 3 second S-ID exists before and after entering this mode.

◆ Refer to page 4-33, Chapter 4, Section 4-9. AUTO CUE mode, for details.

To close the cassette tray, use the procedure below:

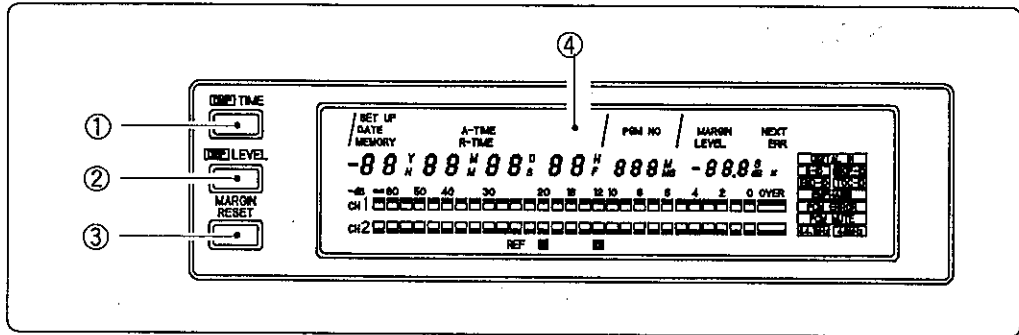
- 1) Press the [PLAY] button (play is entered after the tape is loaded).
- 2) Press the [STOP] button.
- 3) Gently press the front edge of the tray.

② Cassette tray

DAT cassette tape is set here.

◆ Refer to page 3-8, Chapter 3, Section 3-2-4. on loading and unloading the cassette.

3. Display section



① **[DISP TIME] (time display) selector key**

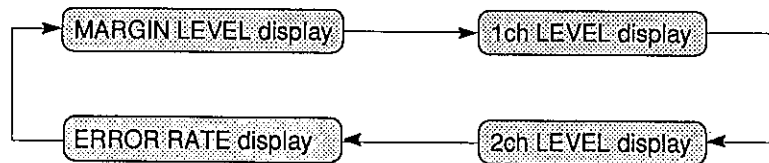
Normal display modes are switched with each pressing of this key as follows:



The recorder will return to normal display mode if this key is pressed when in memory edit mode.

② **[DISP LEVEL] (level display) selector key**

Level indication on the display will cyclically switch with each press of this key as follows:



The recorder will return to any one of the above displays if this key is pressed while [NEXT] is on display.

③ **[MARGIN RESET] key**

If this key is pressed while the margin level is displayed, the margin level will be reset.

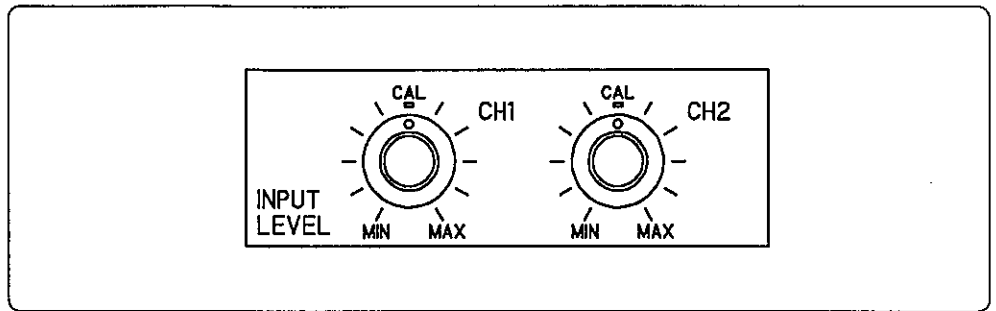
◆ Refer to page 4-5, Chapter 4, Section 4-2-2. for details.

④ **Display**

Time code, audio signal level and the content of various settings will be displayed.

◆ Refer to page 2-21, Chapter 2, Section 2-2. Display for details.

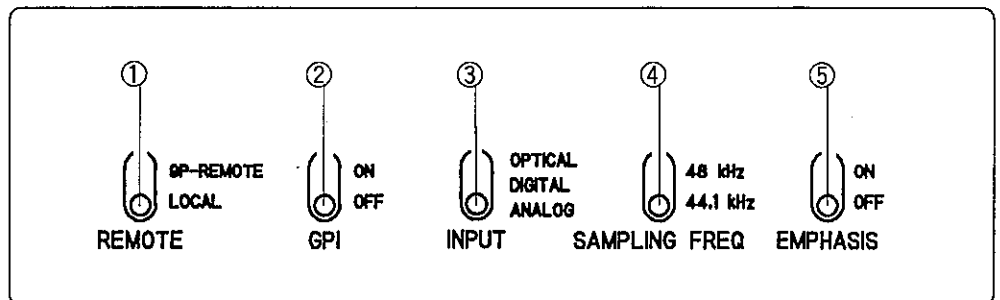
4. Input Level knobs



These knobs control the input level of analog signals. Center click (CAL position) of each knob is the recording reference level position.

◆ Refer to page 4-5, Chapter 3, Section 4-2-2. for details.

5. Switch Section



① [REMOTE] selector switch

This selects from where this recorder will be controlled.

** 9 PIN REMOTE **

Control is possible only from the optional 9 pin remote port. When set to this mode, the main unit buttons for tape transporting will not function (panel lock) but the [DISP TIME] key, [DISP LEVEL] key and the [OPEN/CLOSE] key will be operational.

** LOCAL **

Control is possible via the front panel and the remote controller included with the recorder.

② [GPI] ON/OFF switch

This switches on or off the GPI input/output at the rear panel GPI connector.

<NOTE>

This can be used regardless to which side [REMOTE] is switched.

③ [INPUT] selector switch

This selects whether input to this recorder will be digital, optical or analog.

External Sync by [DIGITAL IN]

The D-10 internal clock can be made to sync with an external equipment digital clock by input of a digital or optical signal (Example: If the recorder synchronizes with external equipment whose sample frequency is 44.056, the D-10 will be played back at the 44.056 sample frequency).

◆ Refer to page 4-6, Chapter 4, Section 4-2-3 for details.

Digital

This selects the input signal applied to the XLR-3 connector in the rear panel digital input section. Upon locking onto the input, [DIGITAL IN] on the display will be lit.

Optical

This selects the input signal applied to the [OPTICAL] connector in the rear panel digital input section. Upon locking onto the input, [DIGITAL IN] on the display will be lit.

Analog

This selects the input signal applied to the XLR-3 connector (balanced) or the RCA connector (unbalanced) in the rear panel analog input section (input at the connectors is switched by the rear panel [BAL-UNBAL] selector).

<NOTE>

If [DIGITAL IN] is blinking regardless to whether this switch is set to digital or optical, the recorder will automatically be in analog input.

④ [SAMPLING FREQ 44.1kHz/48kHz] (sampling frequency) switch**When using the analog input:**

Set sampling frequency for recording (44.1kHz/48kHz). At playback, it will be automatically set to the tape sampling frequency. If the switch setting and tape sampling frequency do not match, [44.1kHz] or [48kHz] in the display will blink.

When using the digital input:

In the digital input mode, the recorder is set to sampling frequency of digital input regardless to the sampling frequency switch setting and tape sampling frequency information. Therefore, it is recommended to use a tape matching in sampling frequency as it cannot be played back if tape sampling frequency and digital input sampling frequency are not matched. When sampling frequency are not matching, [44.1kHz] or [48kHz] will blink in the display.

◆ Refer to page 8-1~, Chapter 8, Section 8-1. for details.

<NOTE>**Digital copying From a D-20 or D-20B to a D-10.**

The D-20 and D-20B consumer format digital output is set to FS 44.1kHz (FS means "sampling frequency") even when reproducing material recorded at FS 48kHz. However the D-10's digital input configuration reads the FS information from the incoming the digital signal and automatically sets the correct FS.

For this reason, if you make dital copy from a D-20 or D-20B to a D-10., we request that you set the D-20/D-20B digital output format to AES/EBU (i.e., dip switch, section B-5 to up/off position.) Otherwise, if the recorded material is FS 48kHz., you will have a servo control situation resulting in activated variable pitch mode. This will result in about an +8.8 percent unstable tape speed.

Please note that you can still make digital copies at FS 44.1kHz. We are recommending this only to prevent accidental copying of FS 48kHz. To avoid any difficulties, we recommend that you do not use the D-20/D-20B consumer format for D-10 digital copying.

⑤ [EMPHASIS] ON/OFF switch**When using analog input:**

This selects whether emphasis at recording will be switched on or off. During playback, the tape emphasis information automatically sets the playback emphasis mode. If the switch setting is different from this, [EMPHASIS] will blink.

When using digital input:

During recording, it is automatically set the same as the digital signal.

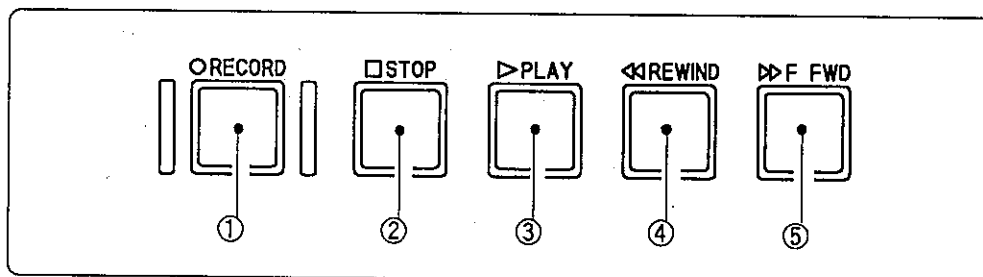
At playback, the tape emphasis information automatically sets the playback emphasis mode. If the emphasis information on the tape is different from the digital input, [EMPHASIS] will blink.

6. Remote Control Optical Receiver

This receives the signal from the remote controller included with the D-10.

◆ Refer to page 2-31, Chapter 2, Section 2-4. Remote Controller for details on the remote controller.

7. Tape controlling buttons



① [RECORD] button

Recording is started by simultaneously pressing this button together with the [PLAY] button. Auto record is entered by pressing this button only in the auto record mode.

<NOTES>

* Record will not operate in the instant start mode. If this is mistakenly selected, the [RECORD] and [PLAY] buttons will fast blink a warning.

* Recording cannot be done if the cassette erase protection hole is open.

◆ Refer to page 3-9, Chapter 3, Section 3-2-5. for details on the cassette erase protection hole.

◆ Refer to page 4-1~, Chapter 4, Record/Playback for details on record button operation.

② [STOP] button

During normal operation, the D-10 enters pause when this button is pressed once. The [STOP] button lamp is lit and the [PLAY] button lamp will blink. If this button is pressed again, the recorder enters stop mode and the [STOP] button lamp only will be lit. Also, when the cassette tray is open, it can be closed by pressing this button.

<NOTE>

The D-10 will not stop if it is in instant start mode.

③ [PLAY] button

In normal operation, when this button is pressed, the lamp will light and the tape will start traveling. If this button is pressed during locate/search, the recorder will enter locate (search) and play, and then enter play after locating or completing the search. To start recording, simultaneously press this with the [RECORD] button. Furthermore, if this button is pressed during record mode, the D-10 will punch out and return to play.

Also, if this button is pressed during instant start mode, the recorder will execute instant start. If the cassette tray is open, pressing this button will close it. If a cassette is in the tray, the tape will be loaded and the recorder will enter play mode.

<NOTE>

If the [INSTANT START] key LED is blinking, instant start cannot be executed and thus the recorder will enter normal playback.

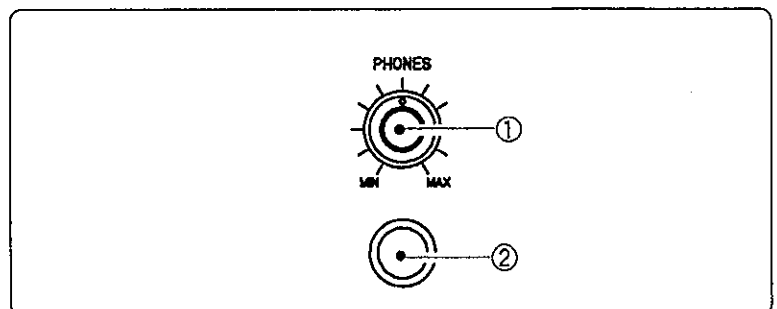
④ [REWIND] button

The recorder enters 5 times normal speed when this button is pressed once and lamps for this button and for play will be lit. If this is pressed again, the D-10 rewinds at high speed and the [REWIND] button only will light. The D-10 alternate between 5 times speed and high speed with each press of this button.

⑤ [F FWD] button

When this button is pressed once, the D-10 enters 5 times normal speed and the [PLAY] button and this button will light. If this is pressed again, the recorder will enter fast forward at high speed and the [F FWD] button only will be lit. The D-10 will alternate between 5 times speed and high speed with each pressing of this button.

8. Headphone monitor section



① [PHONES] knob

Controls the headphone monitor level.

② [PHONES] jack

Plug in the headphone here. Permissible load impedance is 8 Ω to 50 Ω .

9. [PREVIEW] key

This key can be used in the auto record or instant start modes.

In auto record mode

Rehearsal of auto record can be executed.

◆ Refer to page 4-11, Chapter 4, Section 4-5. for details on the auto record mode.

In instant start mode

Rehearsal of instant start can be executed.

◆ Refer to page 4-25, Chapter 4, Section 4-8. for details on the instant mode.

<NOTE>

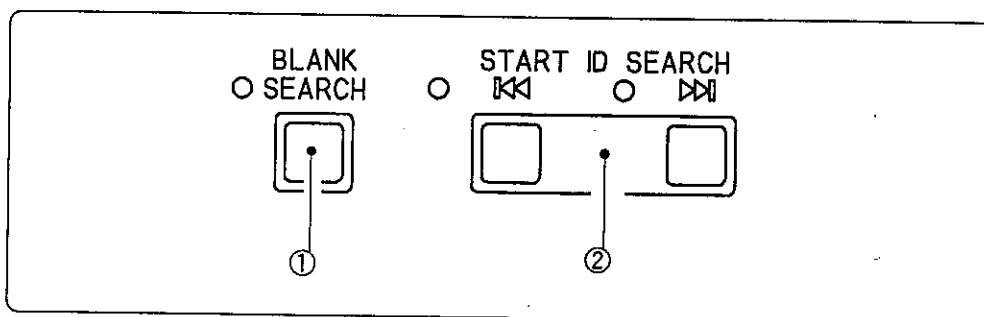
To finish rehearsal, press the [STOP] button or any other tape transporting buttons.

10. [AUTO CUE] key

On or off of the auto cue operation can be switched by pressing this key.

◆ Refer to page 4-33, Chapter 4, Section 4-9. for details on auto cue.

11. Search Operation Section



① [BLANK SEARCH] key

The tapes unrecorded section is found by pressing this key. If End-ID is recorded on the tape, it will pause at two seconds before the End-ID. The LED will be lit during execution and extinguish at completion.

<NOTES>

- * Recording or erasing of the End-ID cannot be done by the D-10.
- * Unrecorded sections less than 9 seconds long cannot be searched in some cases.

◆ Refer to page 4-9, Chapter 4, Section 4-4. for details on blank search.

② [START ID SEARCH] << >> key

<< key

S-ID search is executed in the rewind direction for the number of times this key is pressed. After completing the search, it will pause at a point about one second before the objective S-ID. The LED will be lit during execution and be extinguished upon completion.

>> key

S-ID search is executed in the forward direction for the number of times this key is pressed. After completing the search, it will pause at a point about one second before the objective S-ID. The LED will be lit during execution and be extinguished upon completion.

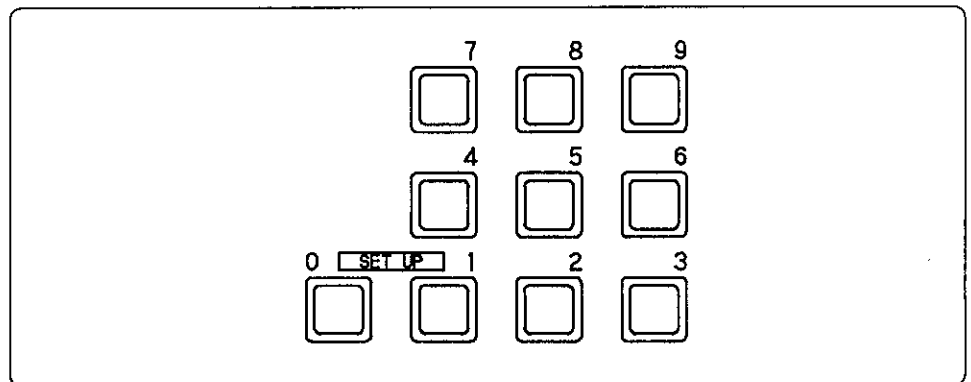
* Instant start from head of S-ID becomes possible if search is executed in the instant start mode. If search is executed while in auto cue mode, the recorder will locate to the sound generating point correctly at before or after the S-ID.

* If search is carried out while in the auto cue mode, it will accurately locate to the sound rise-up point in the vicinity of the S-ID.

* Play is entered after completing search if the [PLAY] button is pressed during search.

◆ Refer to page 5-1~, Chapter 5, Section 5-1. for details on S-ID recorderas

12. Ten keypad



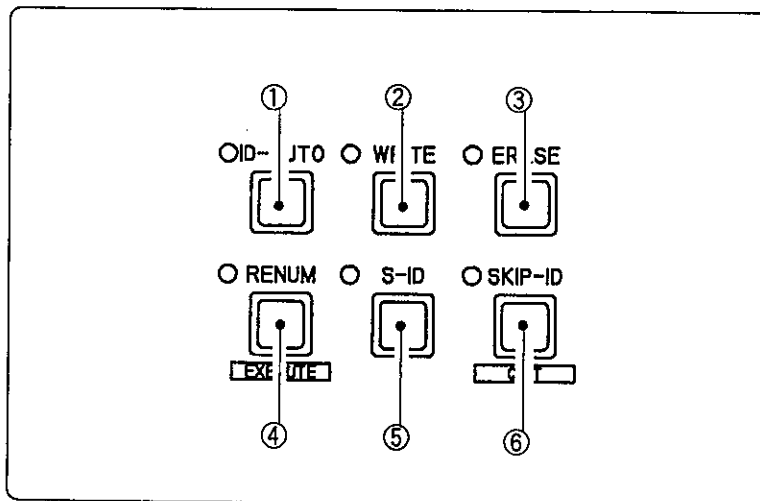
Direct input to the edit point is possible when the display is in the memory edit mode.

When the desired number is input from the ten keypad when in the normal display mode, it will be entered in the [NEXT] display and, at the same time, this number will be displayed. Locate operation and recording of S-ID can be done based on this number. In addition, it will enter the set up mode when "0" and "1" in the 10 key are simultaneously pressed.

◆ Refer to page 4-18, Chapter 4, Section 4-7, and page 6-1~, Chapter 6 regarding memory edit mode for details on ten keypad operation.

◆ Refer to page 7-1~, Chapter 7 Set Up Mode for details on set up mode.

13. ID Operation key

**<NOTE>**

It is necessary for A-Time to be recorded on the tape if recording of a Sub-ID by later recording or renumbering is to be carried out.

Also, since the D-10 is of the two head type, take extreme care as previously recorded sub-code information such as R-Time, date, etc. (not including A-Time) will be erased if record/erase of the Sub-ID and renumbering is carried out.

① [ID-Auto] key

The LED will light and the recorder will enter the ID-Auto mode when this key is pressed. In the ID-Auto mode, after more than one second of no sound from the start of the recording, S-ID recording is automatically started from where a reference level (*) or higher signal is input. If a P-No. is already showing in the [PGM] display section at the start of the recording, it is automatically counted up from this P-No. and recorded. In the [NEXT] display, the newly specified P-No. entered from the numerical keypad is shown in the [NEXT] display and recorded.

(*) Reference level initial setting is -40dB. This figure, however, can be changed in the set up mode.

◆ Refer to page 5-1~, Chapter 5, Section 5-1. Record/Erase of Start ID, and page 7-1~ Chapter 7. Set Up Mode for details.

② [WRITE] key

S-ID/Skip-ID can be recorded if this key is pressed while the [S-ID] key/[Skip-ID] key LED's are lit (ready mode). Also, P-No. will be renumbered if this key is pressed when the [RENUM] key LED is lit. Lighting or blinking of the [WRITE] key LED indicates the following conditions:

| | |
|----------|---|
| Blinking | The recorder is executing write rehearsal of S-ID or Skip-ID. |
| Lit | The D-10 is executing write or renumber of S-ID or Skip-ID. This LED will extinguish at the end of execution. |

◆ Refer to page 5-1, Chapter 5. Record/Erase of Sub ID regarding recording of S-ID and Skip-ID.

③ [ERASE] key

An S-ID/Skip-ID located within 9 seconds beforehand of point where this key had been pressed can be erased if this key is pressed while LED's for the [S-ID]/[Skip-ID] keys are lit (ready mode). The LED will be lit during execution and be extinguished at end of execution.

◆ Refer to page 5-1~, Chapter 5. Record/Erase of sub ID for recording of S-ID, Skip-ID.

④ [RENUM] key, [EXECUTE] key

This key has the following functions in the normal display mode and set up mode:

In the Normal Display Mode :

This functions as the ready key to execute renumber of P-No. Recording of renumbering is executed by switching this key on, and then pressing the [WRITE] key.

◆ Refer to page 5-9, Chapter 5, Section 5-1-5. for details on P-No. renumbering.

Set Up Mode :

Checking the menu and, checking and execution of data is possible by pressing this key.

◆ Refer to page 7-1~, Chapter 7. Set Up Mode for details.

⑤ [S-ID] key

Ready mode for S-ID recording and erasing is entered by pressing this key (LED will be lit). In this condition, the D-10 will record if the [WRITE] key is pressed and, erase if the [ERASE] key is pressed.

<NOTE>

This cannot be selected together with Skip-ID.

◆ Refer to page 5-1~, Chapter 5. Record/Erase of Sub ID for details.

⑥ [Skip-ID] key/[QUIT] key

This key has the following functions in the normal display mode and set up mode:

In the normal display mode:

Ready mode for Skip-ID record/erase is entered by pressing this key (LED will be lit). In this condition, the D-10 will record if the [WRITE] key is pressed and, erase if the [ERASE] key is pressed.

<NOTES>

- * This cannot be selected together with S-ID.
- * The D-10 cannot execute skip play operation.

◆ Refer to page 5-1~, Chapter 5. Record/Erase of Sub ID for details.

Set up mode:

The mode is canceled when this key is pressed.

◆ Refer to page 7-1~, Chapter 7. Set Up Mode for details.

14. [AUTO REC] mode key

Auto record is a function of automatic recording (auto punch in/out) between "memory 0" and "memory 1" of A-Time. For execution of auto record, A-Time must definitely be recorded at the memory 0 point. Auto record mode is entered by pressing this key. In this mode, rehearsal is executed by pressing the [PREVIEW] key, and auto recording executed by pressing the [RECORD] button. These operating conditions are indicated as follows by the LED:

| | |
|---------------|---|
| Lit | The D-10 is executing auto record. |
| Blinking | When set to auto record mode and during rehearsal. |
| Fast blinking | This indicates that A-Time is not written on the tape or that a suitable figure is not input into the memory. |

<NOTES>

- * Normal recording cannot be done when in the auto record mode.
- * If A-Time is not recorded, record A-Time for about 30 seconds in the normal recording mode.
- * Auto record can be executed even though "memory 1" has not been set but be sure its contents is "00:00:00:00."

◆ Refer to page 4-11, Chapter 4, Section 4-5. for details on auto recording.

15. [INPUT MONITOR] key

When this key is pressed, the D-10 will alternately switch between input monitor and tape monitor.

The presently selected monitor is indicated as below by the LED:

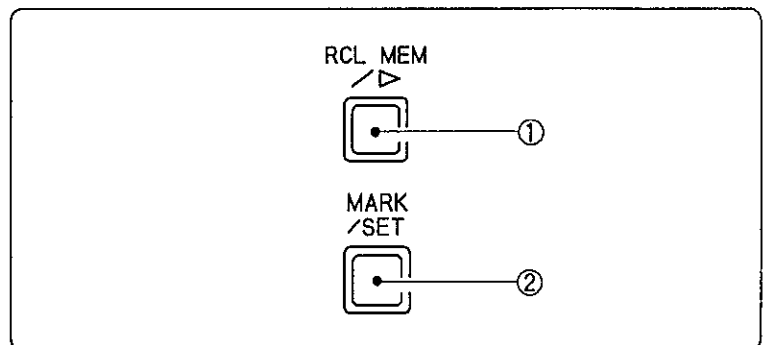
| | |
|--------------|---|
| Lit | Input monitoring is possible. |
| Blinking | Indicates the recorder is in automatic input monitor when in the recording and rehearsal modes. |
| Extinguished | Input cannot be monitored by the repro monitor. |

<NOTES>

* The D-10 will be in input monitor only at stop or pause. Also, when in the play/search cue modes, the recorder automatically changes to tape monitor.

* When loading RAM previously set in the instant start mode, input cannot be monitored for a few moments until the loading of the RAM is completed even though the recorder is in stop or pause mode.

16. Memory Editing keys



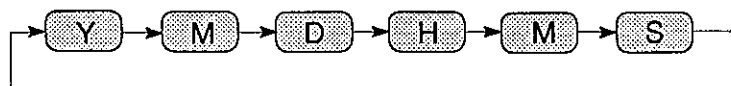
① [RCL MEM] [digit shifting] keys

Normal display mode (A-Time, R-Time display):

When this key is pressed, the recorder enters the memory edit mode simultaneously with indicating content of memory number "0." Also, when this key is pressed after specifying any number from the ten keypad, the D-10 will enter memory edit mode simultaneously with displaying content of the specified memory number.

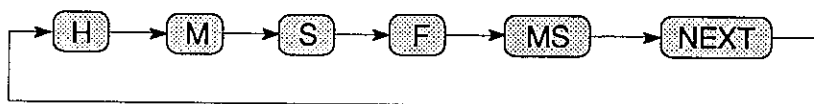
Date Edit mode (DATE display):

When this key is pressed, the internal clock time can be changed. Then, points (digits) which can be changed will shift as follows with each press of this key:



Memory Edit mode:

Time points (digits) possible for editing can be shifted as follows with each press of this key:



The number at the blinking edit point can be changed via the ten keypad input or by input via jog dial manipulation.

- ◆ Refer to page 3-11, Chapter 3, Section 3-3. for details on setting the clock.
- ◆ Refer to page 6-1~, Chapter 6. Memory Edit Mode for details on memory editing.

② **[MARK/SET] key****Normal display mode (A-Time/R-Time display):**

When this key is pressed, the time on the tape which is presently displayed or the time in the played back RAM will be stored in memory number "0" or the lower two digits of the memory number appearing in the [NEXT] display section.

Date Edit mode (date display):

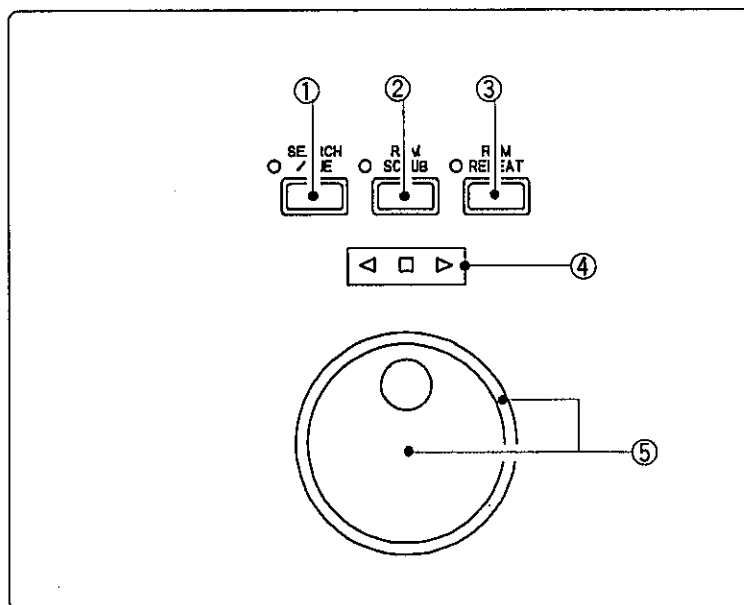
Stores the changed internal clock time.

Memory Edit mode:

When this key is pressed after specifying any number via input from the ten keypad, the edited time is stored in the memory number specified in the [NEXT] display.

- ◆ Refer to page 3-11, Chapter 3, Section 3-3. for details on setting the clock.
- ◆ Refer to page 6-1~, Chapter 6. Memory Edit Mode for details on memory editing.

17. [JOG /SHUTTLE] Operating Section



Because the D-10 has built in RAM, it can accurately search in smaller than frame units.

① [SEARCH/CUE] key

The LED is lit and the recorder will enter into the search/cue mode when this key is pressed. In this mode, playback is possible at 1/2 to 2 times the jog speed and 1/2 to 15 times of the shuttle speed.

<NOTES>

- * In this mode, RAM is not used but tape signal is read in real time.
- * To cancel the mode, press any other tape handling buttons.

◆ Refer to page 4-16, Chapter 4, Section 4-6-1. for details.

② [RAM SCRUB] key

The RAM scrub mode is entered when this key is pressed.

In this mode, playback in jog and shuttle speeds will be at 0 ~ 1 times normal playback.

** Outstanding features of RAM scrub **

Jog can be used for cueing at an accuracy smaller than a frame unit at one time of the playback speed. In shuttle operation, cueing is possible the same as in conventional analog recorders as playback speed can be changed by changing the dial position (rotating angle).

If the LED is lit or blinking, it indicates the following:

| | |
|----------|--|
| Lit | RAM scrub is being executed. |
| Blinking | Audio data is being read into the RAM and RAM scrub is in standby. |

<NOTES>

* To prevent malfunctioning when the LED is blinking, operate RAM scrub after the LED changes to constant lighting.

* At RAM scrub, processing will be in the ± 1.5 second range centered at the point where the key was pressed.

◆ Refer to page 4-17, Chapter 4, Sections 4-6-2. and page ***, Section 4-8. for details on RAM scrub.

③ **[RAM REPEAT] key**

When this key is pressed, the recorder will enter the RAM repeat mode while rehearsing in the instant start mode. The start point can be adjusted in small increments. In this mode, RAM REPEAT playback is carried out for one second from the start point at which the key was pressed. This start point can be moved via jog.

When the LED is lit or blinking, it indicates the following:

| | |
|----------|---|
| Lit | RAM repeat is being executed. |
| Blinking | Audio data is being loaded into the RAM and RAM repeat operation is in standby. |

When play is entered after setting the start point, instant start can be executed from the start point thus set.

Press the [STOP] button to cancel this mode.

◆ Refer to page 4-26~, Chapter 4, Section 4-8-2,3 for details on RAM repeat.

④ **[JOG/SHUTTLE] Indicating lamp**

During execution of search/cue, RAM scrub and RAM repeat, the respective operating conditions will be indicated.

| | |
|---|---|
| ■ | This is lit when the transport or RAM playback is in pause. |
| ◀ | This is lit when cueing in the rewind direction. |
| ▶ | This is lit when cueing in the forward direction. |

⑤ JOG dial (inner dial)

Jog operation of search/cue and RAM scrub, and start point of RAM repeat can be moved via this dial. In the memory edit mode, UP/DOWN input of numbers is possible.

◆ Refer to page 4-16, Chapter 4, Section 4-6. and page 4-25, Section 4-8. and page 6-1, Chapter 6 Memory Edit Mode for details on operation of this dial.

⑥ SHUTTLE dial (outer dial)

Shuttle operation of search/cue and RAM scrub is possible via this dial. In the memory edit mode, the point (digit) possible to edit can be shifted left or right.

◆ Refer to page 4-16, Chapter 4, Section 4-6. and page 4-25, Section 4-8. and page 6-1, Chapter 6 Memory Edit Mode for details on operating this dial.

18. [MUTE] key

Both record mute and audio out mute are possible when this key is pressed. Audio out mute is possible during playback but cueing can be done using the headphone as output only will not be muted.

◆ Refer to page 4-8, Chapter 4, Section 4-3. for details on record mute.

19. [INSTANT START] key

This key toggles the instant start mode on or off.

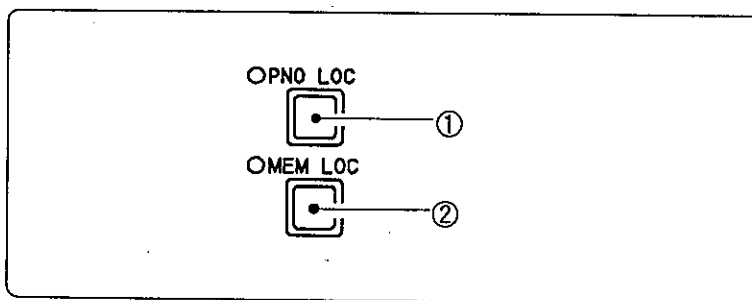
In this mode, lighting or blinking of the LED indicates the following conditions:

| | |
|---------------|---|
| Lit | Instant start can be executed. |
| Blinking | Because audio data is being loaded into the RAM, wait until it changes to constant lighting before carrying out the next operation. |
| Fast blinking | Instant start cannot be executed because A-Time/R-Time are not written on the tape. |

If the [PLAY] button is pressed upon lighting of the LED, instant start is executed.

◆ Refer to page 4-25, Chapter 4, Section 4-8. for details on the instant start mode.

20. Locate Operation key



① [P NO LOC] key

When this key is pressed, locating to S-ID recorded on tape is carried out. If this key is pressed while P-No is shown in the present (program number) display, the recorder will locate to the head of this P-No. Also, if this key is pressed after a new P-No is input via the ten keypad into the [NEXT] display, the D-10 will locate to the head of the specified P-No.

The LED is lit during execution of locate and will be extinguished upon completion.

If the [PLAY] button is pressed while this LED is lit, the recorder will automatically enter playback upon completion of the locate operation.

◆ Refer to page 4-20, Chapter 4, Section 4-7-2. for details on locating P-No.

② [MEM LOC] key

When this key is pressed, the tape is located to the previously set memory number. If this key is pressed when A-Time or R-Time is on the display, the recorder locates to memory "0." If this key is pressed after a new 00 to 99 memory number is input via the ten keypad into the [NEXT] display, the recorder locates to this memory number.

The LED is lit during execution of locate and be extinguished upon finishing it.

If the [PLAY] button is pressed while this LED is lit, the D-10 automatically enters playback after completing the locate operation.

<NOTES>

* If A-Time is shown on the time display, it will locate to the A-Time memory point and, if R-Time is shown on the display, it will locate to the R-Time memory point.

* Locate will not be executed if the DATE is shown on the display.

* If this key is pressed in the memory edit mode, the recorder will locate directly to the edited time.

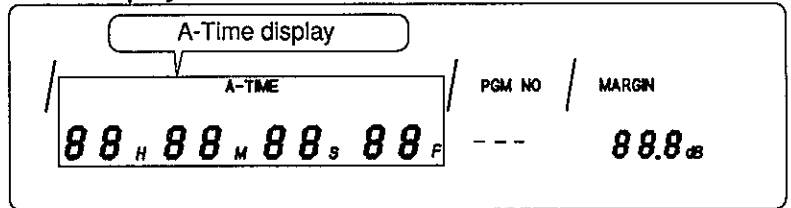
2-2. Display

The D-10 display shows a variety of information such as the time, date, program number, level, etc. Time editing on the display is also possible.

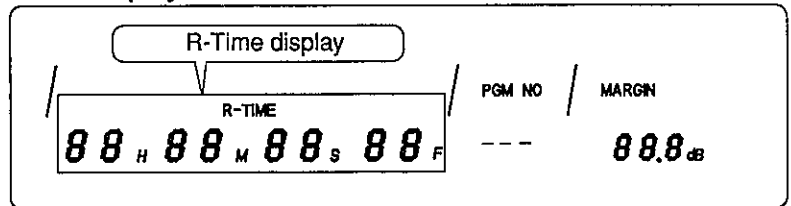
Display of normal display modes

The following can be selected via the [DISP TIME] key:

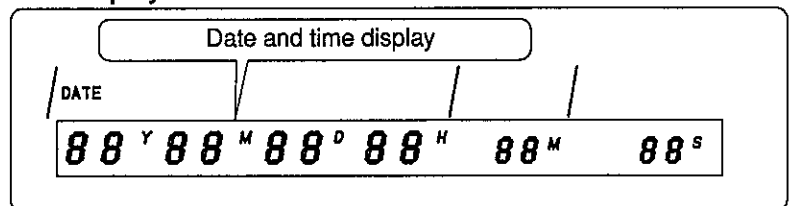
A-TIME display



R-TIME display

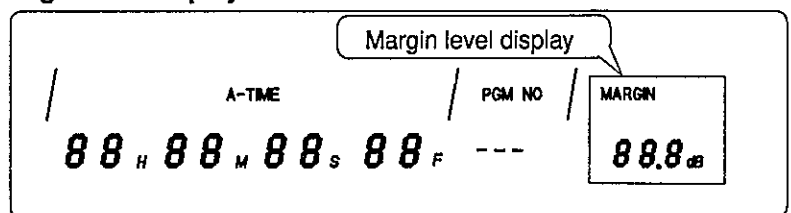


DATE display

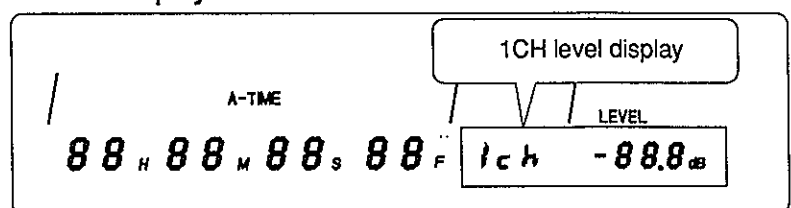


The following can be selected via the [DISP LEVEL] key:

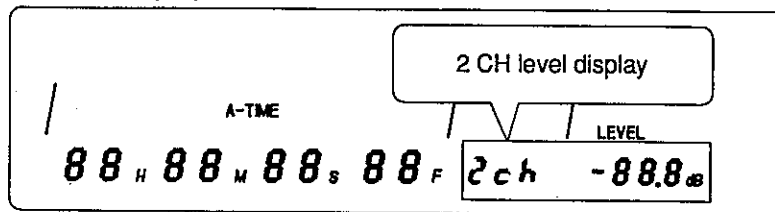
Margin level display



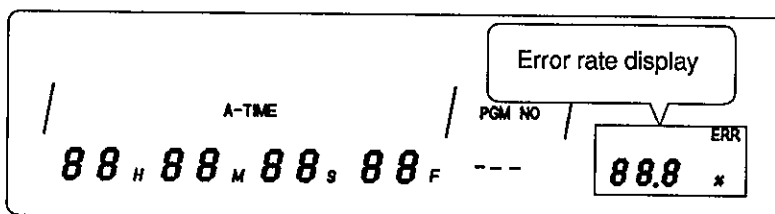
1CH level display



2CH level display

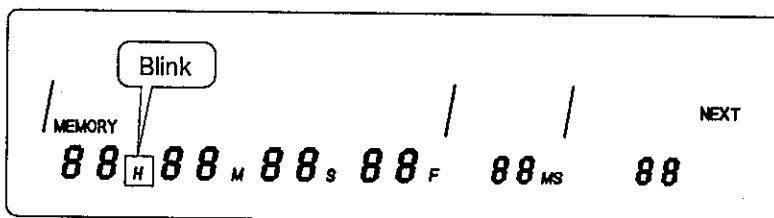


Error rate display



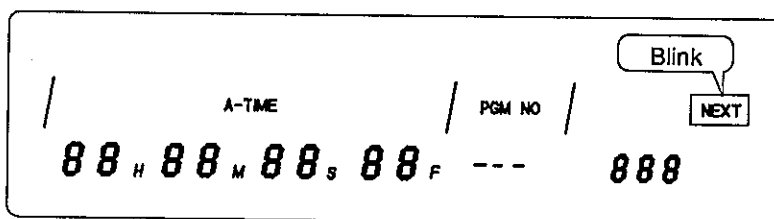
Memory Edit Mode display

When the D-10 is changed from the normal display mode to the memory edit mode, the display will be as follows:



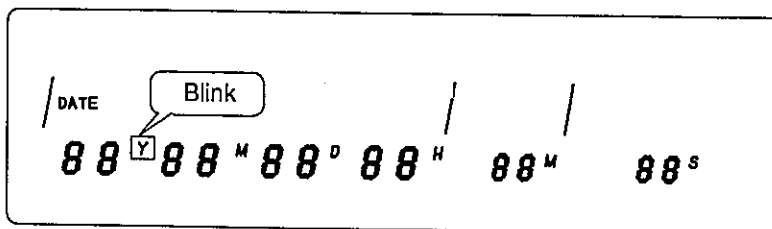
[NEXT] display

It automatically changes to the [NEXT] display when a number is input via the ten keypad (It dose not change to [NEXT] display when date is being display).

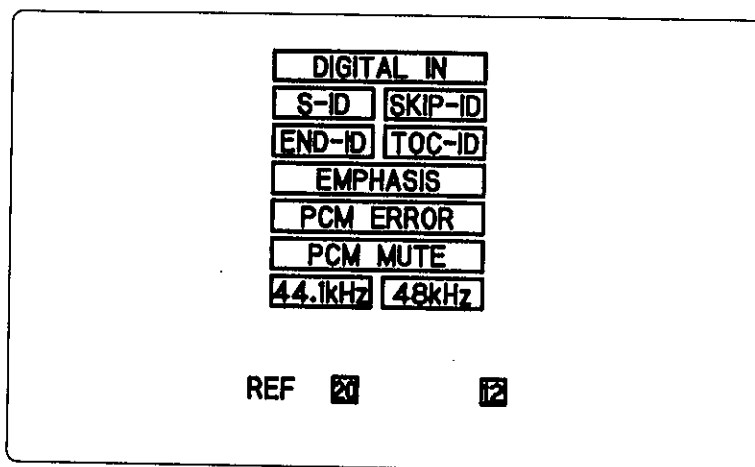


DATE Edit Mode display

When date is being displayd, and when [RCL MEM] key is pressed, it enters date edit mode.



The Message display



DIGITAL IN

This is lit when the input selector switch is set to [DIGITAL] or [OPTICAL] and then locked to the digital signal.

S-ID

Indicates S-ID on the tape. This is also lit during recording of an S-ID.

Skip-ID

Indicates Skip-ID on the tape. This is also lit during recording of a Skip-ID.

END-ID

Indicates END-ID on the tape.

TOC-ID

Displays TOC-ID on the tape.

<NOTE>

In instant start or RAM scrub modes, ID display when reproducing from RAM will be different from the actual recording position.

EMPHASIS

This is lit when emphasis is on and extinguished when off.

When this is blinking during analog input, it indicates that the emphasis information on the tape is not matched with the [EMPHASIS] switch setting.

When this is blinking during digital input, it indicates that the emphasis information on the tape is not matched with emphasis information from the digital input.

In either case, emphasis on the tape is automatically set when in other than record and input monitor.

44.1kHz/48kHz

This indicates the sampling frequency in operation.

When set to analog input, sampling frequency information on the tape will be given priority when in other than the record mode, and is automatically set to sampling frequency from the tape information. However, in the record mode, it is changed according to the sampling frequency switch setting. On the other hand, the recorder will blink if the sampling frequency information on the tape becomes different from the switch setting. When the tape is ejected, the sampling frequency is determined by the switch setting.

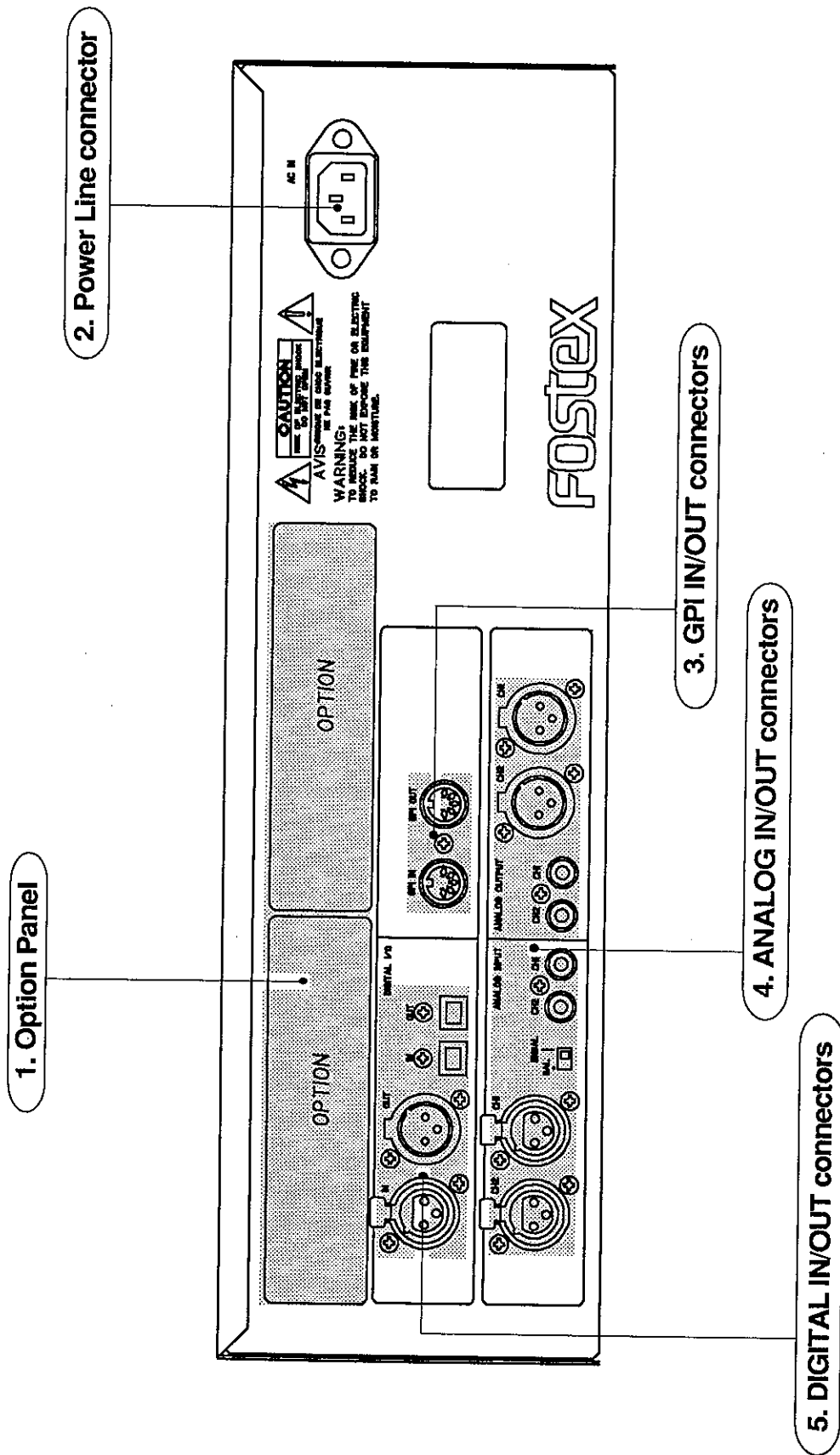
When using digital input, sampling frequency information at the digital input is given priority over the sampling frequency information on the tape and sampling frequency set by the switch will be irrelevant. The tape playback sound will be muted when the digital in sampling frequency information and the tape sampling frequency information are not identical.

REF 20 12

The reference level of the D-10 will be displayed. As shipped from the plant, the reference level is set to -12dB.

MEMO

2-3. Rear panel

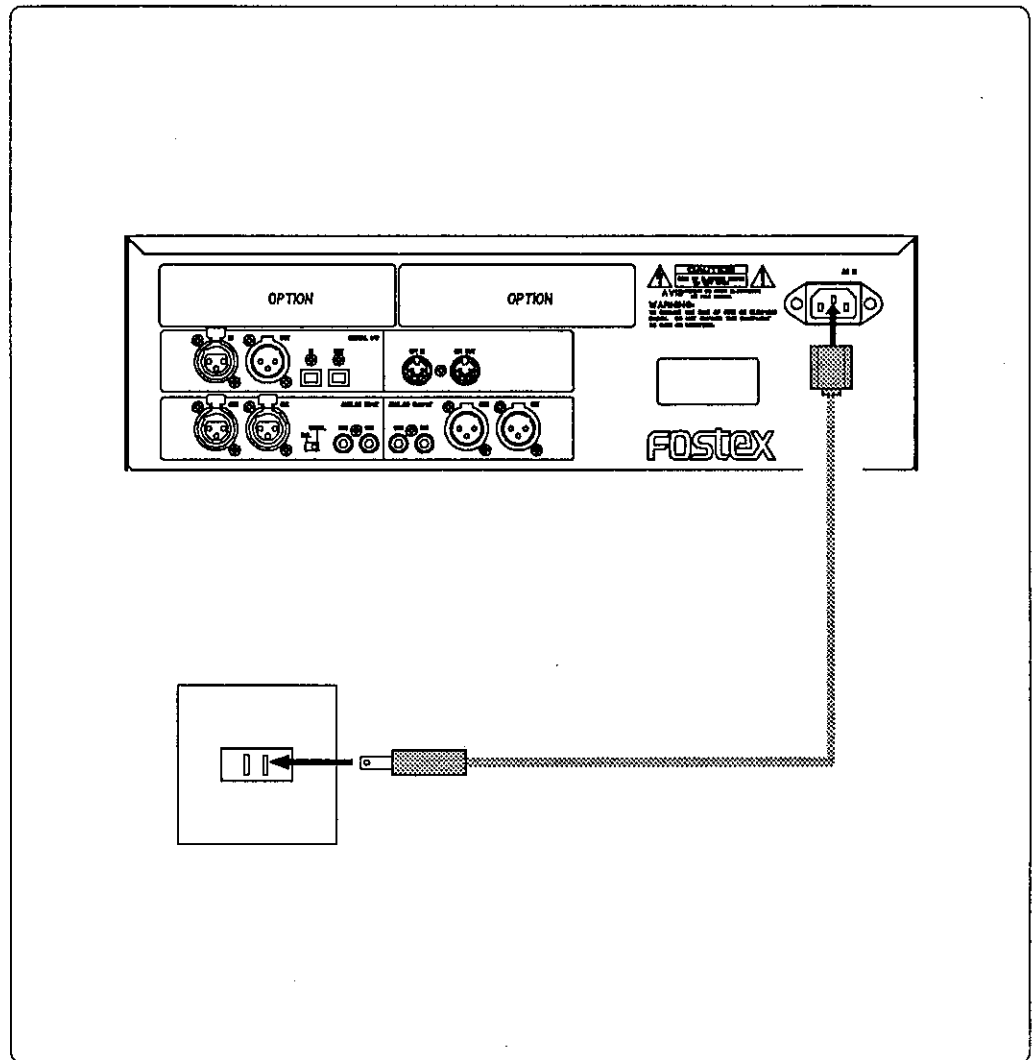


1. Option Panel

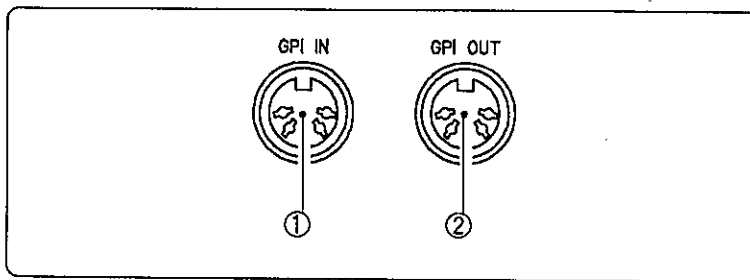
This is the panel for additional options. Do not remove the blank panel.

2. Power Line connector

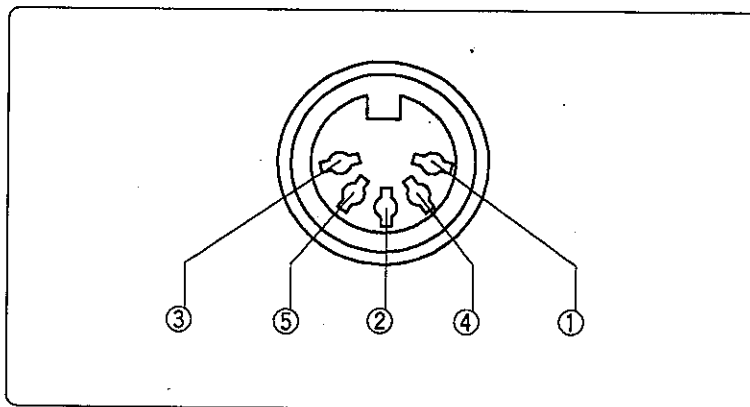
Connect this exclusive power line cable included with D-10 to the wall socket or power outlet.



3. GPI Input/Output connector



Pin assignments of the GPI connector




| GPI IN | | GPI OUT | |
|--------|--------|---------|--------------|
| 1 | GND | 1 | GND |
| 2 | STOP | 2 | EVENT 1 |
| 3 | PLAY | 3 | EVENT 0 |
| 4 | F FWD | 4 | NO CONNECTED |
| 5 | REWIND | 5 | NO CONNECTED |

① GPI IN (GPI input) connector


Connector: DIN 5 PIN

For input of commands.

STOP Command input (#2 pin)

Fulfills the function equivalent to the [STOP] button by pulse input of .


PLAY Command input (#3 pin)

Fulfills the function equivalent to the [PLAY] button by pulse input of .

<NOTE>

When in the instant start mode and the stop command (#2 pin) is at low level, The D-10 will enter rehearsal (preview) of instant start if a play command is input.

Fast Forward Command input (#4 pin)

Fulfills the function equivalent to the [F FWD] button by pulse input of .

Rewind Command input (#5 pin)

Fulfills the function equivalent to the [REWIND] button by pulse input of .

<NOTE>

The command input level must be TTL level low active.

Consequently, use of other than TTL level could cause malfunction or breakdown and thus should not be used.

* Minimum input pulse width: 15msec. (play command is minimum of 5msec.)

② [GPI OUT] connector

Connector: DIN 5 PIN

Event is output at playback and record.

EVENT 1 output (#2 pin)

An approximately 30msec. event is output to the memory "1" time at play or record.

EVENT 0 output (#3 pin)

An approximately 30msec. event is output to the memory "0" time at play or record.

<NOTES>

* These will be output, respectively, in A-Time when [A-TIME] is displayed and in R-Time when [R-TIME] is on the display.

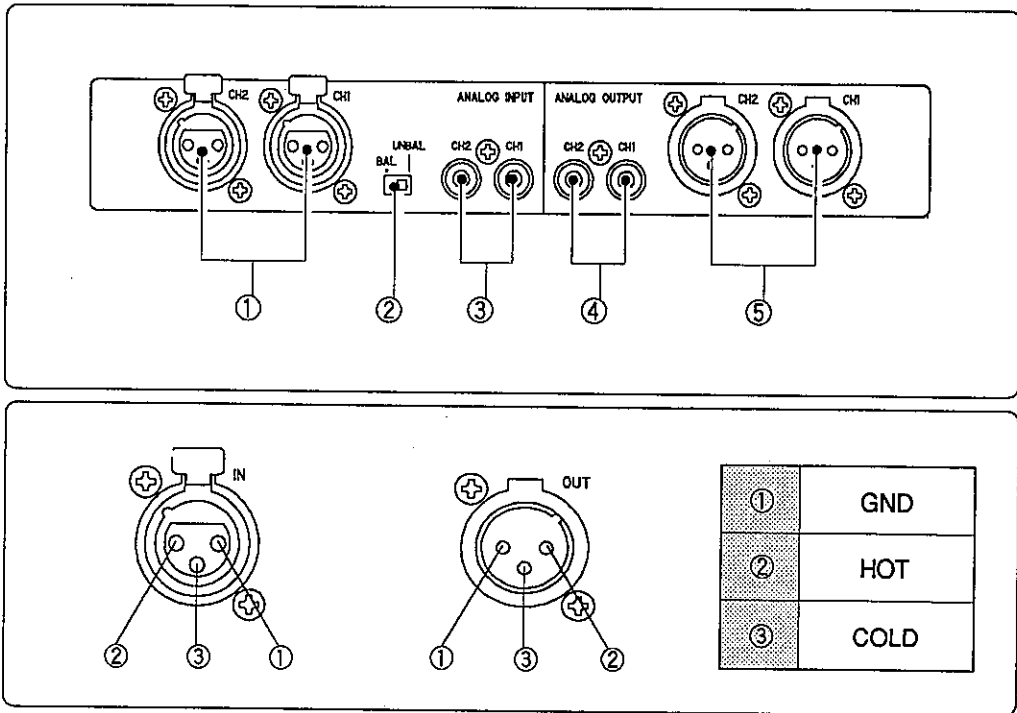
* Output is OPEN COLLECTOR.

When connecting external equipment, use pull up resistors of 1k Ω or higher.

Do not use pull up resistors that are less than 1k Ω as it can result in a breakdown.

◆ Refer to page 8-1, Chapter 8. Various Applications for actual application examples.

4. Analog Input and Output connectors



① [ANALOG INPUT] connector (balanced)

Connector: XLR-3-31 type (#2 pin hot)

Analog audio signals from CH1(L), CH2(R) are input.

Standard input level: +4dBu

② [BAL/UNBAL] (balanced/unbalanced) selector switch

This selects the input connector.

| | |
|-------|--------------------------------------|
| BAL | Selects the XLR-3-31 type connector. |
| UNBAL | Selects the RCA type connector. |

③ [ANALOG INPUT] connector (unbalanced)

Connector: RCA type

Analog audio signals from CH1(L), CH2(R) are input here.

Standard input level: -10dBV

④ [ANALOG OUTPUT] connector (unbalanced)

Connector: RCA type

Analog audio signals from CH1(L), CH2(R) are output here.

Standard output level: -10dBV

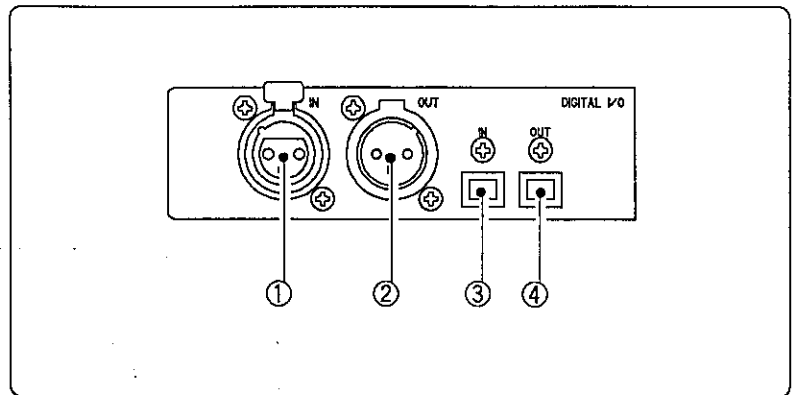
⑤ [ANALOG OUTPUT] connector (balanced)

Connector: XLR-3-32 type (#2 pin hot)

Analog audio signals from CH1(L), CH2(R) are output here.

Standard output level: +4dBu

5. Digital Input and Output connectors



① [DIGITAL INPUT] connector (AES/EBU)

Connector: XLR-3-31 type (#2 pin hot)

AES/EBU format digital audio signals are input here.

② [DIGITAL OUTPUT] connector (AES/EBU)

Connector: XLR-3-32 type (#2 pin hot)

AES/EBU format digital audio signals are output here.

③ [DIGITAL INPUT] (digital audio input) connector (optical)

Connector: Optical connector

Digital audio signals in consumer optical format are input here.

④ [DIGITAL OUTPUT] connector (optical)

Connector: Optical connector

Digital audio signals in consumer optical format are output here.

<NOTES>

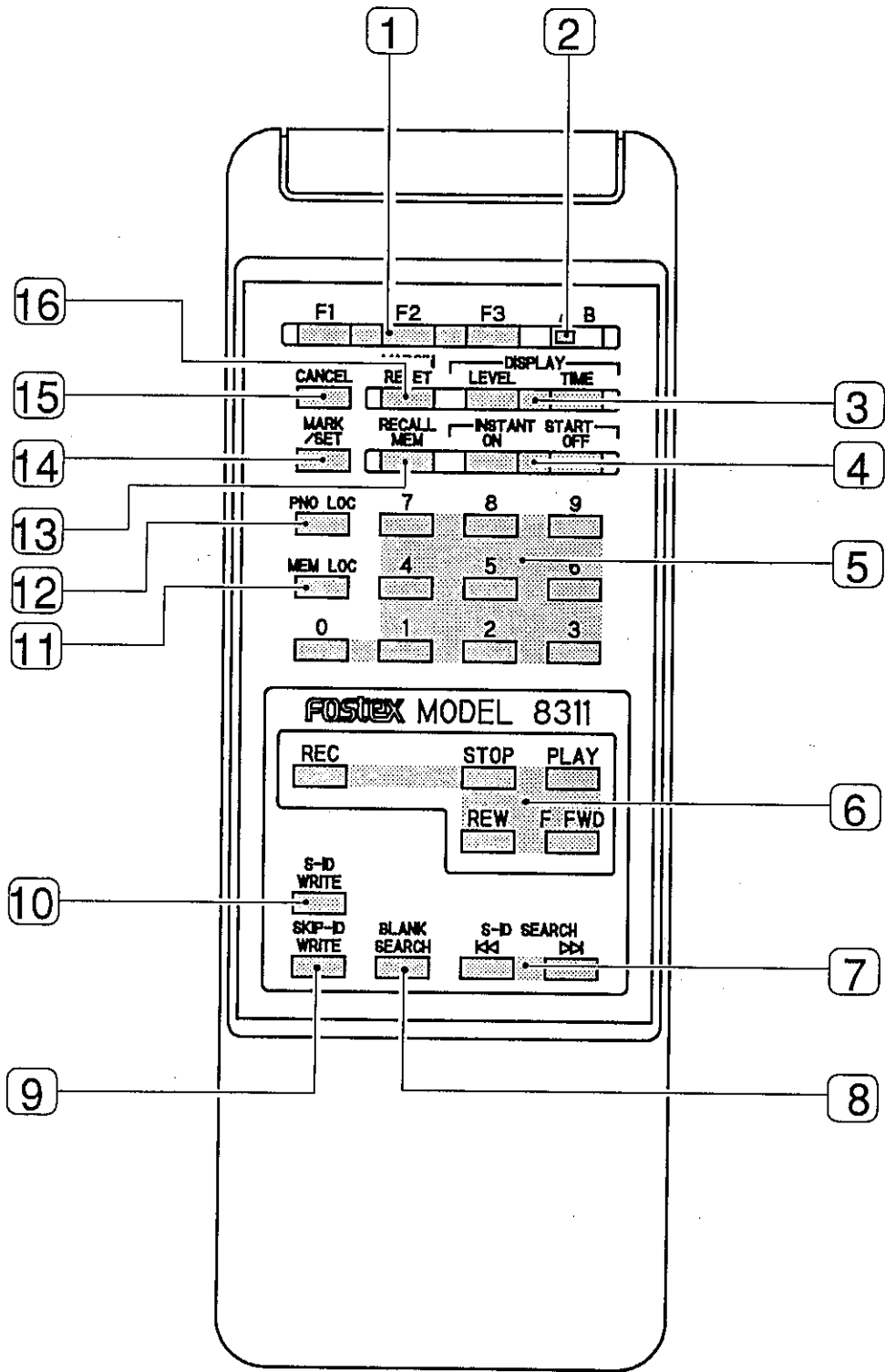
* Dubbing while copying S-ID will be possible if the consumer optical format is used.

* Digital output [OPTICAL] is output without passing through the RAM.

Therefore, if digital output must be obtained via the RAM such as by instant start and RAM scrub, digital output [AES/EBU] must be used.

◆ Refer to page 4-1~, Chapter 4. Record and Playback for details.

2-4. Remote control section



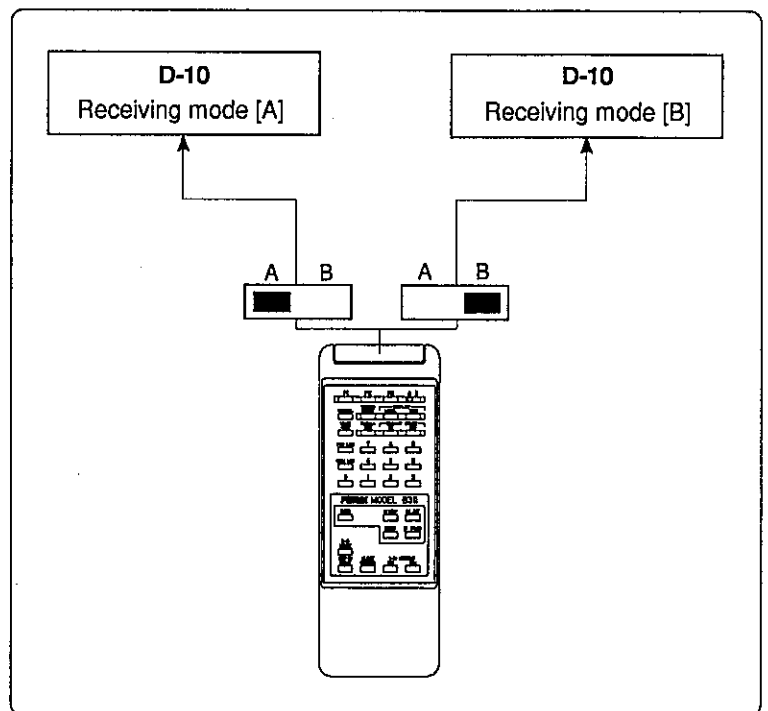
1. Auxiliary keys (F1/F2/F3)

These keys are reserved for future additions.

2. Remote control A/B selector switch

Selects transmitting mode of the remote controller. Receiving mode of the main unit is set via the setup mode.

◆ Refer to page 7-1~, Chapter 7. Setup Mode for details.



3. Display selecting key (TIME-LEVEL)

| | |
|-----------|---------------------------------------|
| TIME key | Selects the display TIME indication. |
| LEVEL key | Selects the display LEVEL indication. |

4. [INSTANT START] ON and OFF keys

Selects ON/OFF of the instant start mode.

5. Ten keypad

These are same as the ten keypad on front panel of the main unit.

<NOTE>

The remote controller has no function of entering the setup mode. Enter the setup mode at the main unit.

6. Tape handling keys (**REC, STOP, PLAY, REWIND, FFWD**)

Controls the tape transporting system.

<NOTE>

When recording from the remote controller, press the [PLAY] button while the [RECORD] button is pressed. It will not record if both buttons are pressed at the same time or if the order is reversed.

7. [**S-ID SEARCH**] key

S-ID is searched in the rewind or fast forward direction.

8. [**BLANK SEARCH**] key

The key for blank search.

9. [**SKIP-ID WRITE**] key

This key is for Skip-ID recording and will function only when the main unit is in the record mode.

◆ Refer to page 5-13, Chapter 5, Section 5-2-1 for details.

10. [**S-ID WRITE**] key

This key is for S-ID recording and will function only when the main unit is in the record mode.

◆ Refer to page 5-3, Chapter 5, Section 5-1-2. for details.

11. [**MEM LOC**] key

Executes the memory locate operation.

◆ Refer to page 4-22, Chapter 4, Section 4-7-3. for details.

12. [**PNO LOC**] key

Executes the P-No locate operation.

◆ Refer to page 4-20, Chapter 4, Section 4-7-2. for details.

13. [**RECALL MEM**] key

This has the same function as the main unit front panel [RCL MEM] key.

◆ Refer to page 4-24, Chapter 4, Section 4-7-4. for details.

14. [MARK/SET] key

This has the same function as the main unit front panel [MARK SET] key.

◆ Refer to page 6-1, Chapter 6. Memory Edit Mode for details on operating this dial.

15. [CANCEL] key

This key is used to cancel the memory edit mode and return to the normal display mode.

◆ Refer to page 6-1, Chapter 6. Memory Edit Mode for details on operating this dial.

16. [MARGIN RESET] key

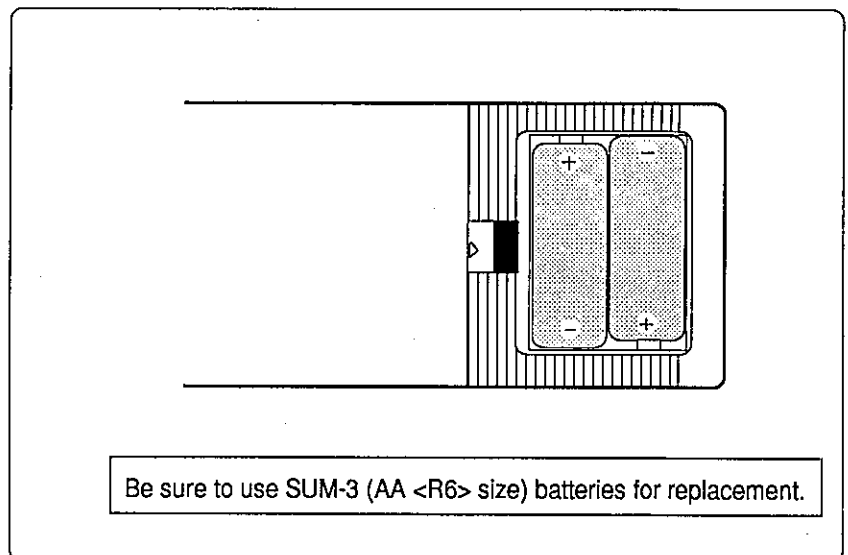
This key resets the display margin level.

How to load the battery

Dry batteries (SUM-3 \times 2) are included with the remote controller package. When using the controller, correctly load the batteries as shown in the schematic by checking the polarity.

<NOTE>

Remove batteries from the remote controller if it is not to be used for long periods. Otherwise, electrolyte leaking from a battery could cause damage.



Memo

A series of horizontal dashed lines for writing.



Chapter 3. Preliminary Notes

Chapter Three explains precautions to be followed before operating the D-10, important DAT techniques which should be understood and the internal clock function.

TABLE OF CONTENTS

| | |
|---|------|
| 3-1. Preliminary Notes..... | 3-1 |
| 3-1-1. Precautions for Installation..... | 3-1 |
| 3-1-2. Notes on Dewing..... | 3-1 |
| 3-1-3. Setting the Internal Clock..... | 3-2 |
| 3-1-4. Notes on Safety..... | 3-2 |
| | |
| 3-2. DAT..... | 3-3 |
| 3-2-1. DAT Specifications..... | 3-3 |
| 3-2-2. A-Time/R-Time..... | 3-6 |
| 3-2-3. The Cassette Tape..... | 3-8 |
| 3-2-4. Loading and Ejecting of the Tape..... | 3-8 |
| 3-2-5. Erase Protect Hole..... | 3-9 |
| 3-2-6. Nonrecorded Section and No recorded Section..... | 3-9 |
| 3-2-7. The Sub ID..... | 3-10 |
| | |
| 3-3. Setting The Internal Clock..... | 3-11 |
| | |
| 3-4. How to Use the Rack Mount Adaptors..... | 3-13 |

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Chapter 3

3-1. Preliminary Notes

3-1-1. Precautions for Installation

Do not use this equipment in the following locations:

- * Extremely hot or cold locations.
- * High humid locations.
- * Dusty locations.
- * Strongly vibrating locations.
- * Near a strong magnetic field.
- * Under direct sunlight or near heating equipment.

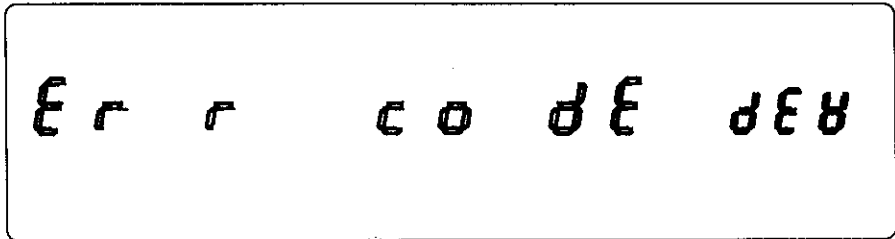
3-1-2. Precautions on Dewing

Like all DAT recorders, if the D-10 is moved abruptly from a cold environment to a warm or humid one, it is possible for moisture to form inside the transport causing "dewing". In this situation, it is possible for the recording tape to adhere to the internal metal surfaces of the transport. This can damage the tape or cause serious recording problems. We advise that, if this is a possibility, that the recorder be brought to where it is to be used and left for a few hours before operation. In this way, the internal metal surfaces of the transport, as well as, the recording head will reach room temperature.

Additionally, if a DAT tape is subject to these same conditions, i.e., brought from a cold to a warm environment without time to reach room temperature, moisture can collect on the tape surface causing the same dewing problems. Therefore, we advise you to be sure that the recording tape is at room temperature before inserting it into the D-10.

If for any reason dew should collect in the D-10, the dew sensor will function. The following error messages will display in the display and the recorder will cease to operate. In this situation, immediately shut down the recorder and let it stand for about two hours or until the recorder is at room temperature.

ERROR DISPLAY



E r r c o d E d E V

*** When the sensor detects dew with no tape in the transport.....**

This error message will be displayed and the recorder will cease functioning.

*** When the sensor detects dew with a tape in the transport....**

This error message is displayed and, at the same time, all lamps of the [OPEN/CLOSE] key as well as the transport control buttons will blink and operation will cease.

3-1-3. Setting the Internal Clock

Nothing is set in the internal clock when the recorder leaves the plant. Set the clock by referring to page 3-11. "Setting the Internal Clock."

3-1-4. Notes on Safety

* When removing the power cord from a wall outlet, always grasp and pull on the plug. Pulling the cord directly is very dangerous and could also break the inner wire.

* Do not pull the plug with wet hands. It is very dangerous as you could receive a serious electrical shock.

* Always make a secure connection between the D-10 and the wall outlet.

* It is very dangerous to use a power cord whose outer sheath is cut or worn. If the cord should be damaged as such, immediately stop using it and replace with a new cord.

* Do not switch off the power with a cassette tape loaded. Make it a rule to switch off power only after removing the cassette.

* It is recommended that you unplug the D-10 if it is not to be used for long periods of time.

* Do not remove any outer covers and touch any internal components. You could receive a dangerous electric shock. Also, it is very easy to damage the internal mechanism and circuits.

* Do not allow any liquids such as water, combustible matter, or metallic objects such as pin plugs to get inside, especially in the transport section. This can cause a major breakdown and is also very dangerous.

* Do not drop or subject the D-10 to strong mechanical shocks. Doing so could damage the inner circuits and panels.

3-2. DAT

3-2-1. DAT Specifications

The D-10 is a professional digital audio recorder which complies to specifications for DAT (Digital Audio Tape System) by the IEC. Consumer DAT specifications consist of the following 4 parts:

Part 1: Dimensions and Characteristics

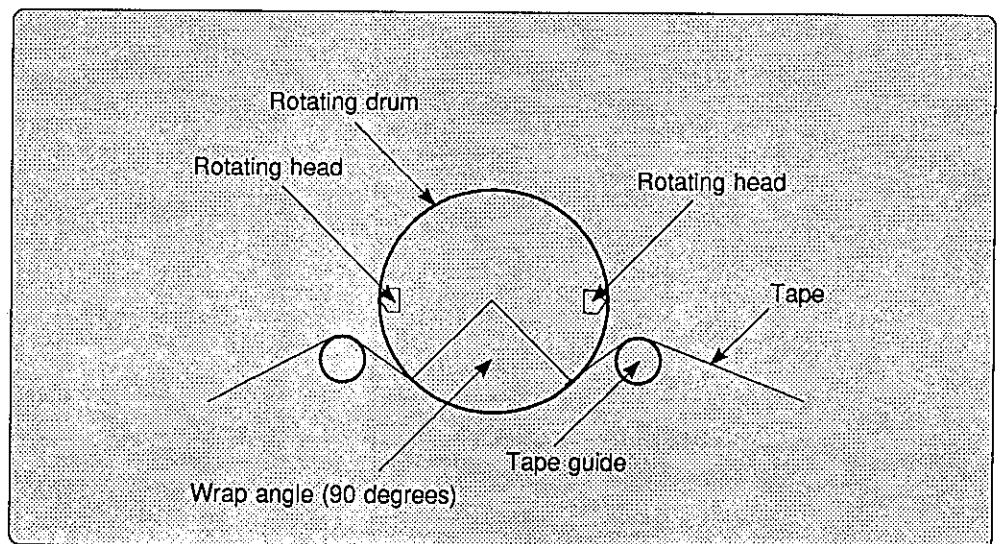
Part 2: DAT Calibration Tape

Part 3: DAT tape properties

Part 4: Methods of Measurement for DAT Recorders

HEAD CONSTRUCTION

In DAT, a rapidly rotating helical scan head is employed, and, together with high density metal tape, DAT recorders maintain a high frequency bandwidth of several MHz for the digital signal. In the D-10, a 2 head drum with a diameter of 30mm and tape wrap angle of 90 degrees is employed.

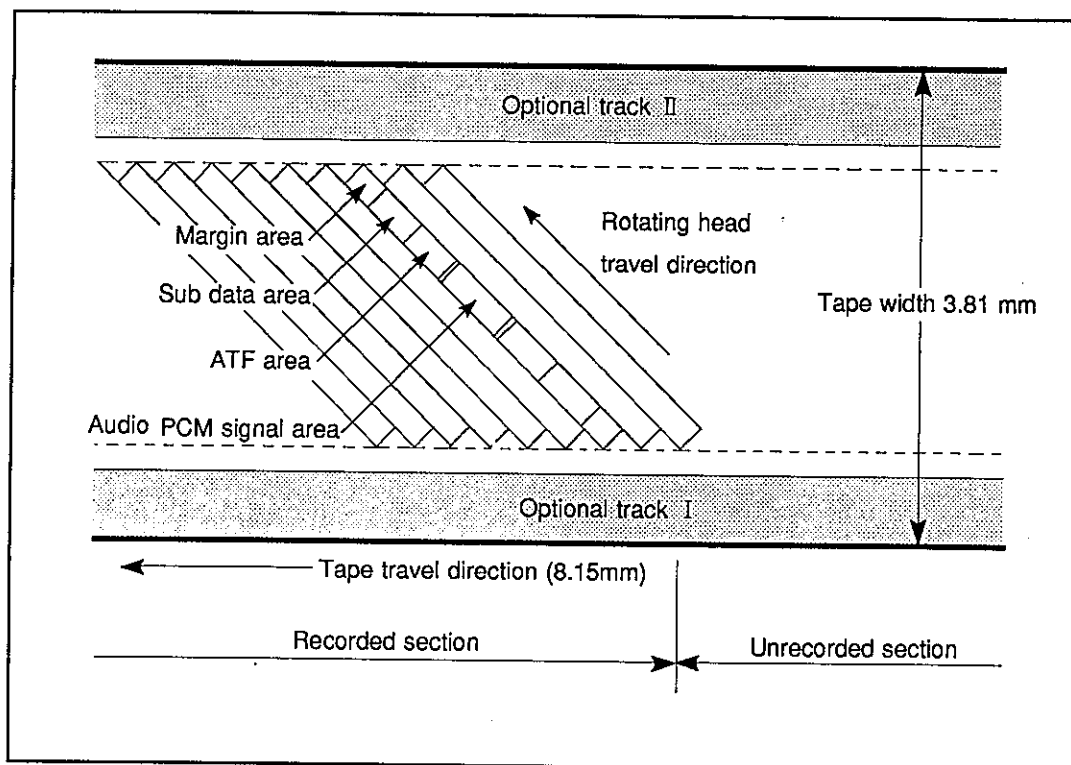


ORDER OF SAMPLING

In consumer DAT, both two channel simultaneous sampling and two channel alternate sampling are approved. Because two channel simultaneous sampling is employed in the D-10, phase difference of about 10μ sec. is created when a tape recorded using two channel alternate sampling is played back.

TRACK FORMAT

As shown below, DAT track format consists of various information blocks recorded on one track. Because of this, various ID and time codes can be recorded without affecting the audio signal. The reasons for providing the sub data and ATF areas are for correcting burst errors, to make it possible to read data during high speed search, for accurate locating, etc.



(1) Audio PC Signal area

In addition to audio signals (L-R mixed) converted to digital data by PCM (Pulse Code Modulation) and main data consisting of error correction codes (Double Reed Solomon code), an ID to identify audio data content are recorded.

(2) Sub Data area

Start-IDs and P-Nos. are recorded in this area, as well as, data other than audio such as A-Time and program numbers. Recording capacity of this area is 4 times that of CD and many future applications can be expected. Time code is also recorded here.

(3) ATF (Automatic Track Finding/Following) area

A tracking signal for accurate tracing by the head at playback is recorded here. This consists of the 130kHz pilot signal and the track identifying signal.

DIGITAL AUDIO INTERFACE

Digital audio interface is a serial self synchronizing transmission specification used between interconnected digital audio equipment and is standardized in IEC 958. This is identical to CP-341 of the EIAJ specification and contains following two formats:

* Professional Use (AES/EBU IEC broadcasting studio use)

* Consumer Use (IEC 958 consumer use)

The broadcasting studio use format is identical to AES/EBU although AES/EBU is usually used. Channel status is different between these two formats in regards to expandability in professional use. Inputs of the D10 complies to both formats and the outputs are fixed to the XLR-3 connector for AES/EBU and the optical output to the consumer use connector. Outputs related to RAM such as instant start is not available at the optical output. Therefore, AES/EBU output is recommended for copying except for those containing S-ID.

CONNECTING SPECIFICATIONS

Following two types are specified in the IEC specifications.

(1) Balanced type:

XLR connector, cable impedance 110 Ω

(2) Unbalanced type:

US pin jack, cable impedance 75 Ω .

Not specified in the IEC specification, the balanced type is used for the AES/EBU format and the unbalanced type for the consumer use format. These are specifically noted in the EIAJ specifications.

3-2-2. A-Time/R-Time

A-Time (Absolute time)

In DAT, absolute time, called A-Time, is automatically recorded on the tape when it is run in the record mode. This A-Time indicates tape position by elapsed time from the head of the tape and, once recorded, cannot be erased. In the D-10, various functions using this A-Time can be done so it is important that the A-Time be continuous for accurate execution of various operations. Therefore, the recording mute function must be used to assure recording continuous A-Time on the tape.

◆ Refer to page 4-8, Chapter 4, Section 4-3. for details on record mute.

R-Time

All DAT recorders operate using R-Time. There are two types of R-Time. These are Consumer and Pro R-Time. Both of these can be displayed. However, it is not possible to write these in the D-10.

Display of Consumer R-Time

R-Time initially used for DAT is displayed.

Pro R-Time

Time code written in IEC format is displayed pseudonymously.

Because this information can be displayed down to frame units, use R-Time together with the RAM scrub function to locate the head of a recording to frame size (smaller than a second) units. However, because there are slight differences between the actual frame and display figures, a few cautions should be kept in mind if the D-10 is used in a post production situation where frame unit accuracy is required.

* Pro R-Time is converted from recorded tape via the IEC format. Pro R-Time is the pack data recorded in the subcode area after the time code has been converted to DAT frame time when recording IEC format time code on DAT. These packs are called pack items of Pro R-Time and Pro Binary. The R-Time display in the D-10 is for display of Pro R-Time.

DAT machines (include D-20B, PD-2 etc.) are provided with IEC time code readers that use the pack information to convert and send out the SMPTE time code. However, the D-10 is only able to read Pro R-Time from the pack. It does not have the capability to process from the binary information.

Therefore, IEC format recorded tape will not read frame addresses correctly so difference will exist in frame numbers. Pro R-Time (as well as Consumer R-Time) is recorded via DAT frame rate rules. That is, one frame = 30 msec, thus creating 33.33 frames every second. This odd and less than 1 (0.33) fractional frame number is converted every 3 seconds so that frame number is changing every 3 seconds, i.e:

0 ~ 32 --> 0 ~ 32 --> 0 ~ 33 --> 0 ~ 32 --> 0 ~ 32 --> 0 ~ 33.....

Consumer R-Time is a one cycle routine recording from the beginning to the end on a DAT tape so that time address information would start from 00:00:00:00. This is called:

* Pack Item 0011b: Continuous time code within one recording by EIAJ CP-2305 and IEC standard but products nowadays would be seldom use these specifications.

The reason for this situation is as follows:

The following is the time code display on the PD-2 and D-10 for an example.

* PD-2 : 30 frame SMPTE time code is displayed as follow.

0 ~ 29 --> 0 ~ 29 -->

* D-10 : Regardless of the frame rate, the time code is displayed repeatedly every 3 seconds as follow.

0 ~ 32 --> 0 ~ 32 --> 0 ~ 33 --> 0 ~ 32 --> 0 ~ 32 --> 0 ~ 33

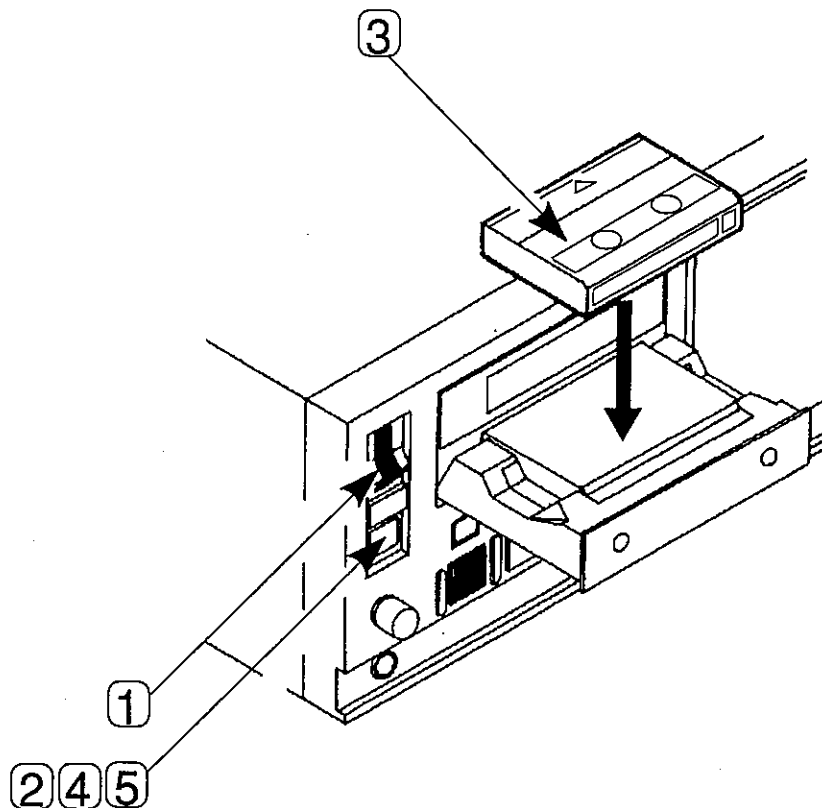
3-2-3. The Cassette Tape

Cassettes developed exclusively for the DAT format are used in the D-10. This cassette is more compact than conventional cassette tapes and can record/playback on one side only.

3-2-4. Loading and Ejecting of the Tape.

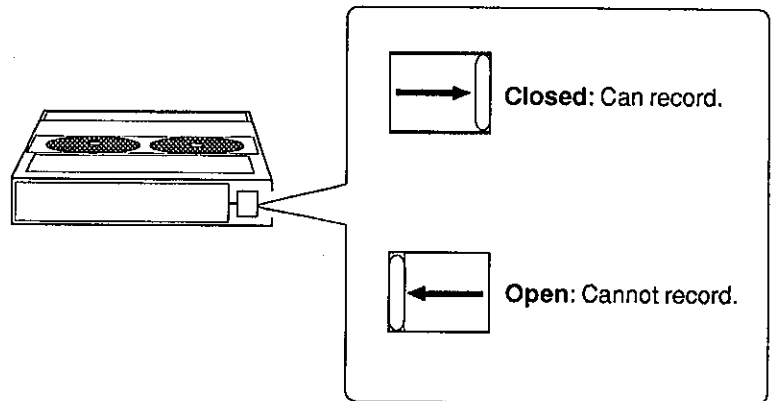
Tape handling in the D-10 is carried out by the following procedures:

1. Switch the power on the D-10.
2. Slide open the cassette tray by pressing the [OPEN/CLOSE] key.
3. Load the cassette tape.
4. Close cassette tray by pressing the [OPEN/CLOSE] key again. In addition, it is also possible to close the tray by pressing either the [STOP] or [PLAY] buttons.
5. To remove the cassette tape, press the [OPEN/CLOSE] key.



3-2-5. Erase Protect Hole

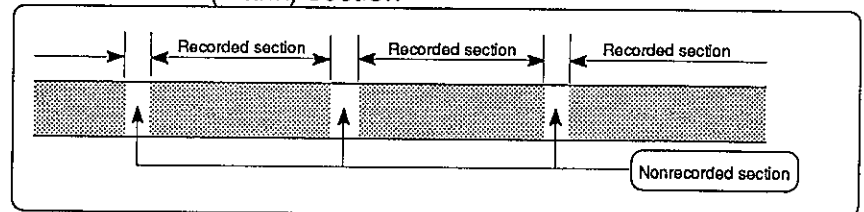
An erase protecting tab is provided in the DAT tape. This is to protect against the accidental erasing of a prerecorded tape. In order not to erase a recorded tape, move the erase protecting tab as shown in the schematic.



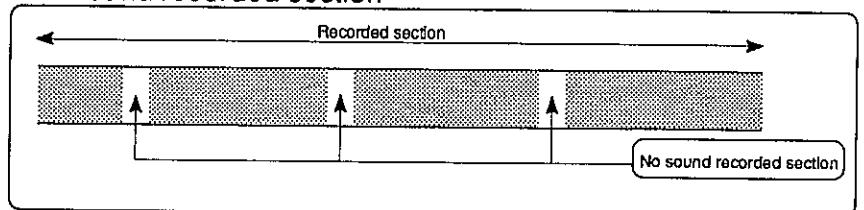
3-2-6. Nonrecorded Section and No Recorded Section.

In conventional analog tape recorders, to insert blank sections in the tape such as between tunes the tape is advanced by play or fast forward (nonrecorded) or recording without sound (no sound recorded). However, in DAT the following difference between "nonrecorded section" and "no sound recorded section" must be understood.

Nonrecorded (blank) section



No sound recorded section



As seen here, for the nonrecorded section and no sound recorded section, there is a clear distinction between a "blank section" made via play or fast forward without entering the record mode and that made by no sound recording. The "blank section" made in analog recorders in either case are the same in terms of "no sound." However, if a "nonrecorded section" is made in a DAT tape, A-Time which is automatically recorded during the record mode will be interrupted or it will require longer time to search for the recording start point. Therefore, in a DAT recorder, it is important not to make a "nonrecorded section" but to make the "blank section" by "no sound recording."

◆ Refer to page 4-8, Chapter 4, Section 4-3. for details on No Sound Recorded Section.

3-2-7. The Sub ID

In DAT recorders, in addition to normal music signals (audio data), various control signals (sub ID) for more convenient control of record/play, etc. can be recorded in the sub data area.

The following are some sub ID examples.

| | |
|-----------------|--|
| Start ID (S-ID) | This is the signal indicating start of the tune and is used to locate the recording start point. |
| Program number | This is the number designated on the S-ID and is used to specify the sound recording and locate to its starting point. |
| Skip ID | If the tape is in the midst of a sound recording, this signal will make it skip to the next sound recording. (NOTE 1) |
| End ID | The signal indicating end of a recording. (NOTE 2) |

<NOTE 1>

The D-10 cannot SKIP-PLAY. However, it can record or erase the Skip-ID.

<NOTE 2>

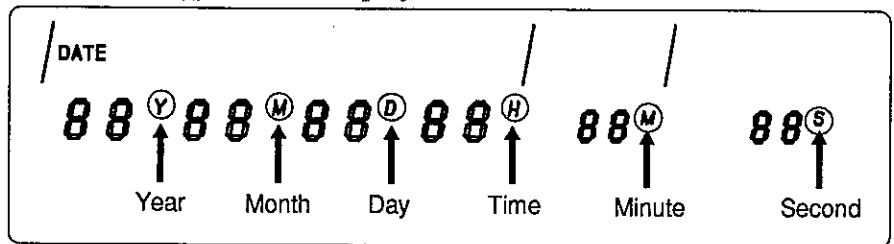
Although the D-10 cannot record or erase an End-ID, it can detect an End-ID recorded on the tape.

3-3. Setting the Internal Clock

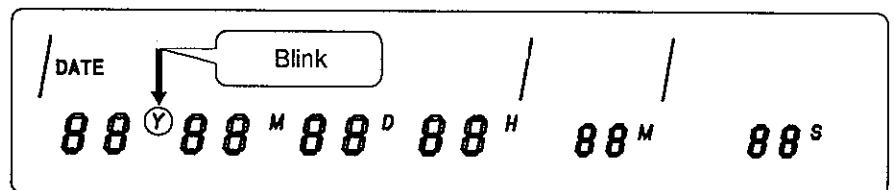
Because the D-10 contains a clock, accurate date and time can be displayed and recording date can be recorded on the tape. Use the following procedure to accurately set the present date and time.

Setting Procedures

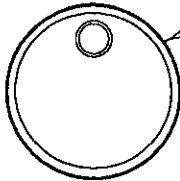
1. Switch on the power to the D-10.
2. Press the [DISP TIME] key and change the display to date. The presently set day and time will appear in the display.



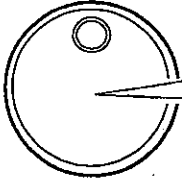
3. Next, press the [RCL MEM] key. When the [RCL MEM] key is pressed, the date edit mode will be entered and the display Y (year) will blink. This blinking area (edit point) indicates that the numbers for this area can be changed.



4. To shift to the point to be changed, either press [RCL MEM] or rotate the shuttle dial. If a two digit number is entered at the edit point, the D-10 will automatically shift to the next edit point. The manner in which the edit point shifts when the [RCL MEM] key is pressed or when the shuttle dial is rotated, will be as follows:

| | |
|--------------|--|
| RCL MEM key | Each time this key is pressed it shifts as follows: → [Y]→[M]→[D]→[H]→[M]→[S] |
| Shuttle dial |  <p>When rotated clockwise and counter clockwise, the edit point shifts, respectively, to the right and left.</p> |
| Ten Keypad | Automatically shifts to the next edit point after two digits are input. |

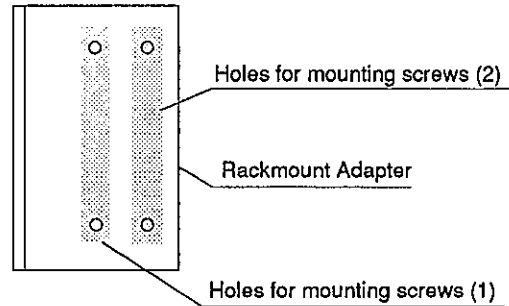
5. Enter the number to be changed by the ten keypad or jog dial.

| | |
|------------|--|
| Ten keypad | Numbers can be entered directly and when two digits are input, the edit point will shift to the next one. |
| Jog dial |  <p data-bbox="1015 432 1334 734">When rotated clockwise, the number will increase and also count up. When rotated counterclockwise, the number will decrease and, at the same time, count down.</p> <p data-bbox="775 772 1305 891"><NOTE> The edit point cannot be shifted via the jog dial.</p> |

6. Upon completing the change, press the [MARK/SET] key to store any changes in memory. When storing is completed, the recorder will return to the [DATE] display.

3-4. How to Use the Rack Mount Adapters

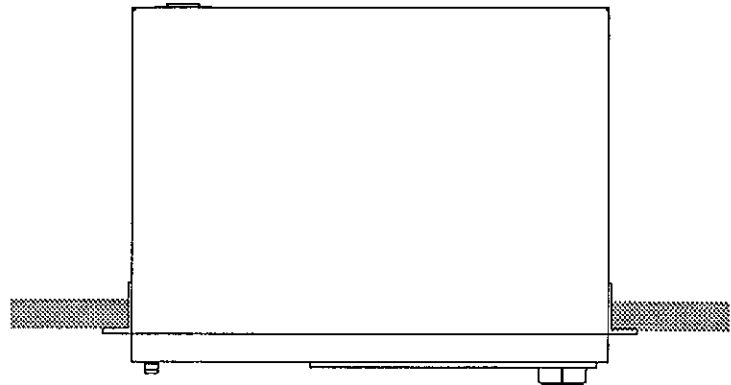
The D-10 is equipped with rack mount adapters as standard equipment. There are two sets of holes on the rack mount adapters. When installing the D-10 in a rack mount configuration, the adapter mounting position can be changed in the following two positions (forward or backward) as shown in the drawing.



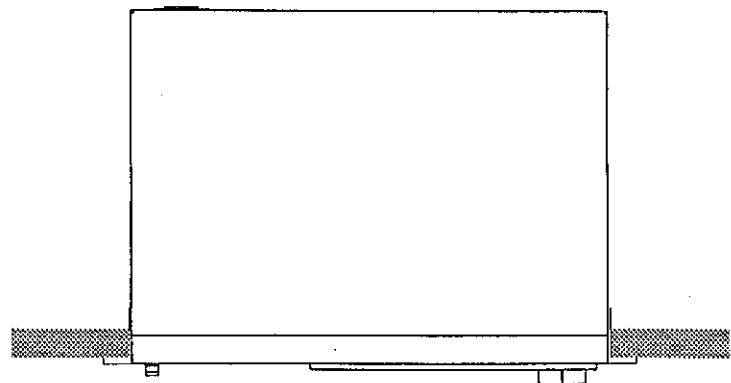
1. When the screw holes (1) are used on the rack mount adapter, the D-10 front panel will protrude from the rack.

<NOTE>

This is how the adapters are installed at the factory.



2. When the screw holes (2) are used on the rack mount adapter, the front panel of the D-10 will be flush with the face of the rack.



Memo

A series of horizontal dashed lines for writing.



Chapter 4. Record and Playback

In this chapter, connecting and operating methods for basic recording and playback by the D-10 and various applications in the auto record mode and instant start mode, auto cue mode will be explained.

TABLE OF CONTENTS

| | | |
|--------|---|------|
| 4-1. | Basic playback | 4-1 |
| 4-2. | Basic recording | 4-3 |
| 4-2-1. | Analog audio recording | 4-3 |
| 4-2-2. | Record level adjusting of the analog audio signal..... | 4-5 |
| 4-2-3. | Digital audio signal recording | 4-6 |
| 4-3. | Making the no sound recorded section (REC MUTE) | 4-8 |
| 4-4. | Continue recording without making a nonrecorded section (blank search) | 4-9 |
| 4-5. | The AUTO REC mode | 4-11 |
| 4-5-1. | Setup of memory "0", memory "1" | 4-12 |
| 4-5-2. | Rehearsal/take of AUTO REC | 4-13 |
| 4-5-3. | Execution of AUTO REC | 4-14 |
| 4-6. | Cueing | 4-16 |
| 4-6-1. | Cueing by the SEARCH/CUE mode | 4-16 |
| 4-6-2. | Cueing by the RAM scrub mode | 4-17 |
| 4-7. | The search/locate function | 4-18 |
| 4-7-1. | S-ID search | 4-18 |
| 4-7-2. | Locate by program number | 4-20 |
| 4-7-3. | Locate by memory number | 4-22 |
| 4-7-4. | Time locate | 4-24 |
| 4-8. | The instant start mode | 4-25 |
| 4-8-1. | instant start procedure | 4-25 |
| 4-8-2. | Executing instant start after moving the start point | 4-26 |
| 4-8-3. | instant start rehearsal using the preview key | 4-27 |
| 4-8-4. | instant start rehearsal using the RAM repeat key | 4-29 |
| 4-8-5. | Locate using instant start | 4-31 |
| 4-9. | The auto cue mode | 4-33 |
| 4-9-1. | S-ID search/P-No locate in the auto cue mode | 4-34 |
| 4-9-2. | When Tape is Loaded in the auto cue mode | 4-35 |

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Chapter 4

4-1. Basic Playback

The following will explain basic playback operations using the D-10.

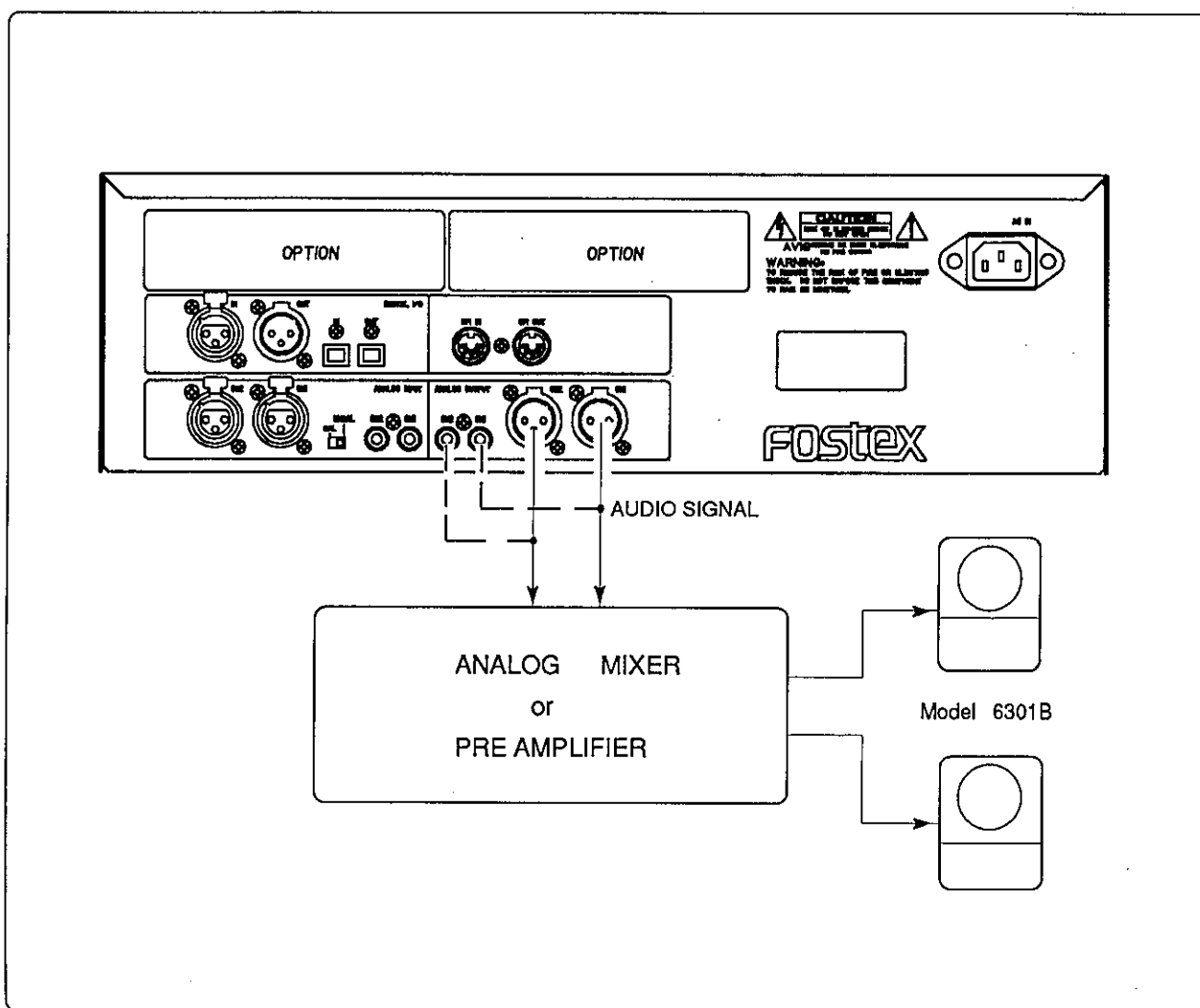
* Connections

Connect as follows to playback prerecorded tapes on the D-10.

<NOTE>

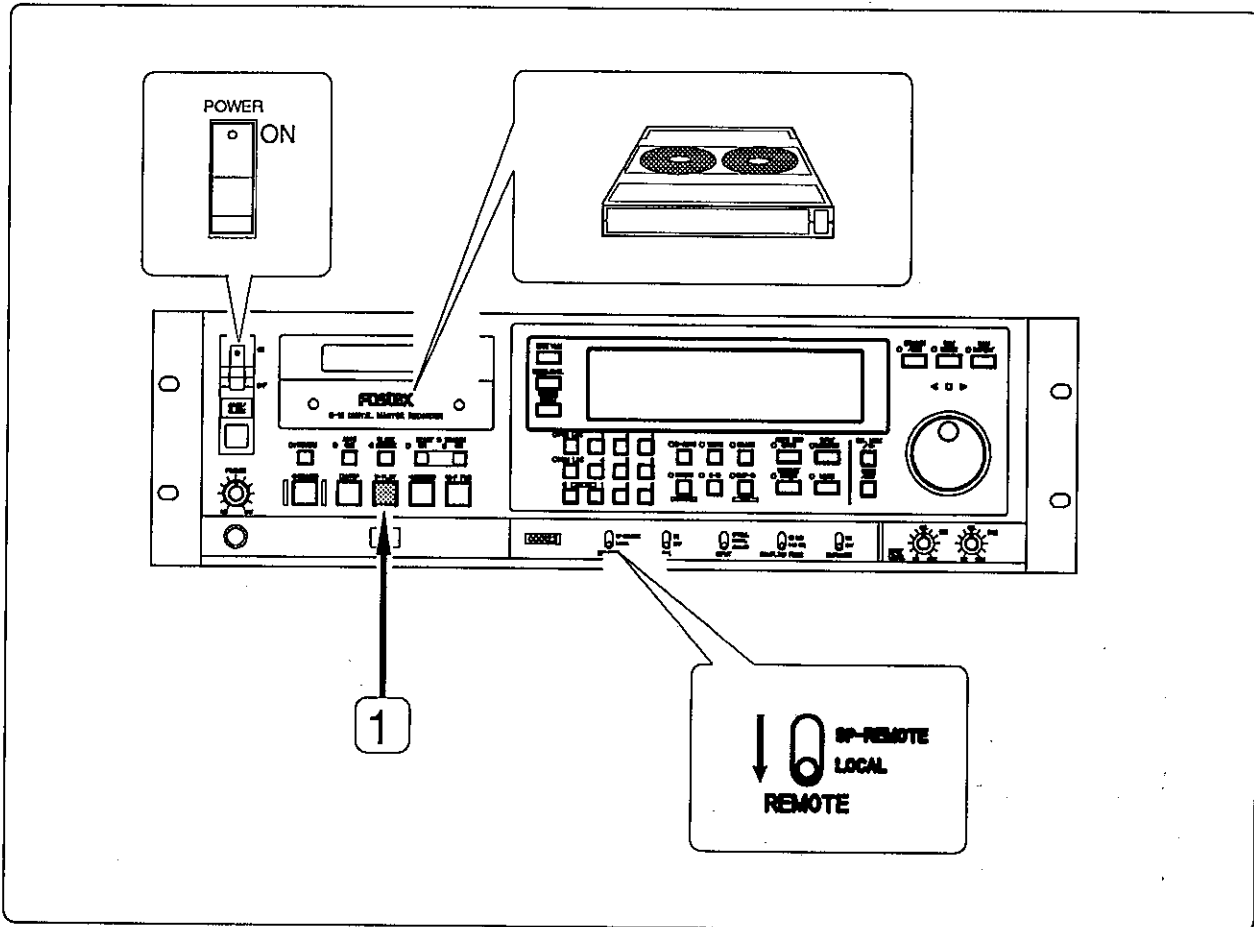
* When interconnecting a D-10 to other equipment, make it a rule to always switch off the power to all equipment including the D-10.

* In regards to connecting and operating equipment other than the D-10, please refer to the operating manuals of the respective equipment.



*** Check items before operation**

1. Switch on the power to D-10.
2. Insert a cassette tape.
3. Switch the remote selector to [LOCAL].

**Operating Procedure**

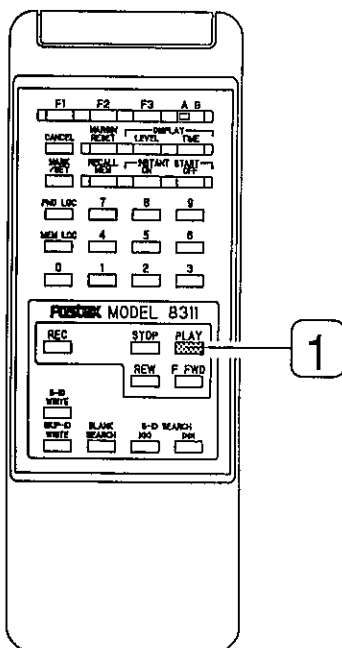
1. Press the [PLAY] button. The [PLAY] button lamp will light and playback of the tape will start.

* When operating via the remote controller, press its [PLAY] button.

<NOTE>

When the tape emphasis/sample frequency information is different from the switch setting, the [EMPHASIS] or [44.1kHz], [48kHz] display will blink but the playback sound characteristic will be automatically adjusted in accordance to the tape information.

◆ Refer to page 8-2, Chapter 8, Various Applications for details on [Playback using DIGITAL IN (external sync playback)].

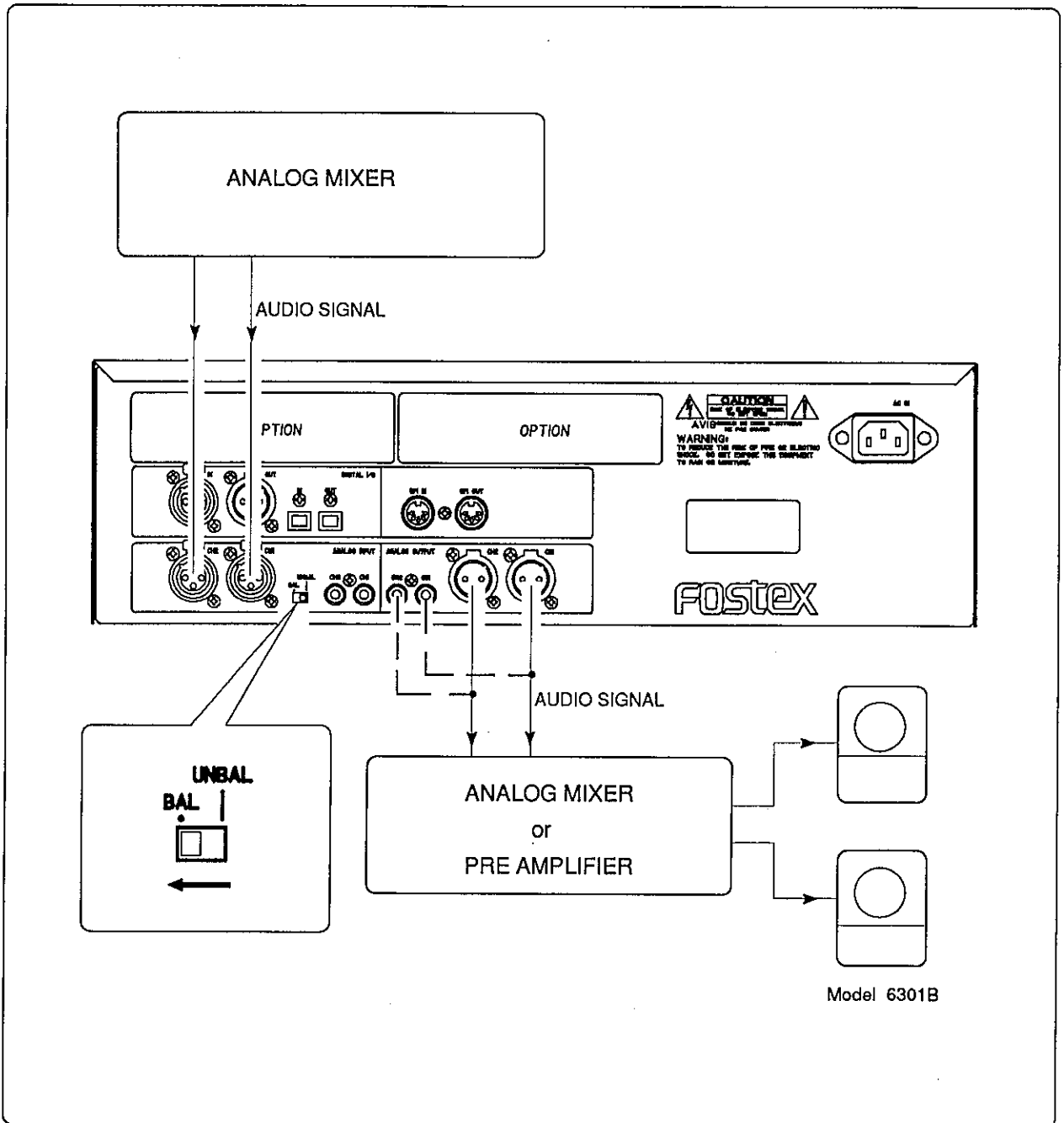


4-2. Basic Recording

4-2-1. Analog Audio Recording

* Connections

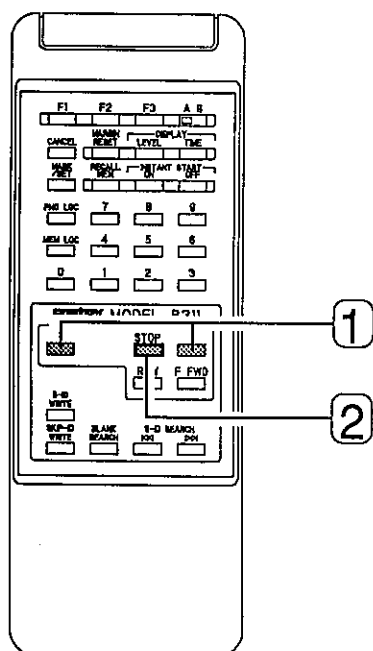
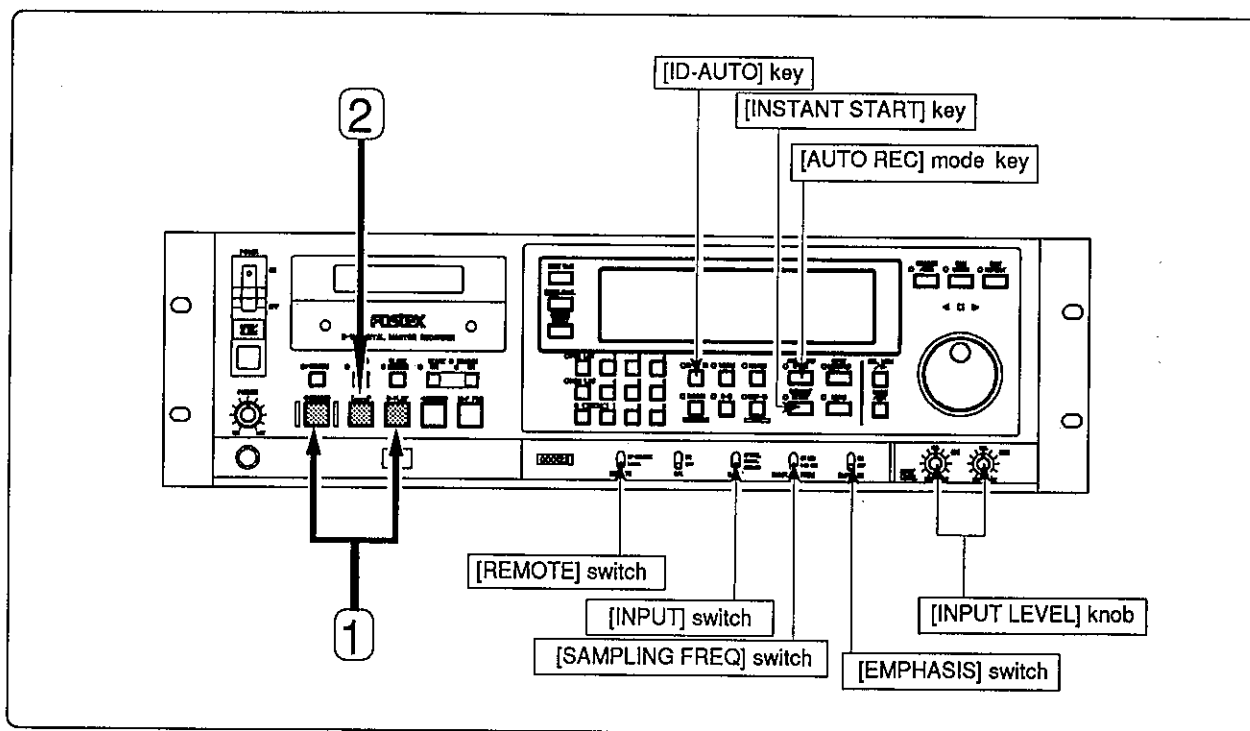
Connections for analog audio recording are as follows.



Model 6301B

* Check items before operating

1. Switch input selector to [ANALOG].
2. Select whether emphasis should be on or off.
3. Select sampling frequency.
4. Set CH1 and CH2 input level knobs to reference point (CAL).
5. Switch [REMOTE] selector to [LOCAL].
6. Check that the [INSTANT START] key LED is extinguished.
7. Check that the [AUTO REC] key LED is extinguished.
8. Switch on the [ID-AUTO] key as necessary (Refer to Chapter 5 Record / Erase of Sub ID for details).



Operating Procedure

1. Upon completing the above setting, simultaneously press the [RECORD] and [PLAY] buttons. Lamps of the [RECORD] and [PLAY] buttons will light and recording will start. The input monitor will automatically be input monitor and the LED of the [INPUT MON] key will blink.

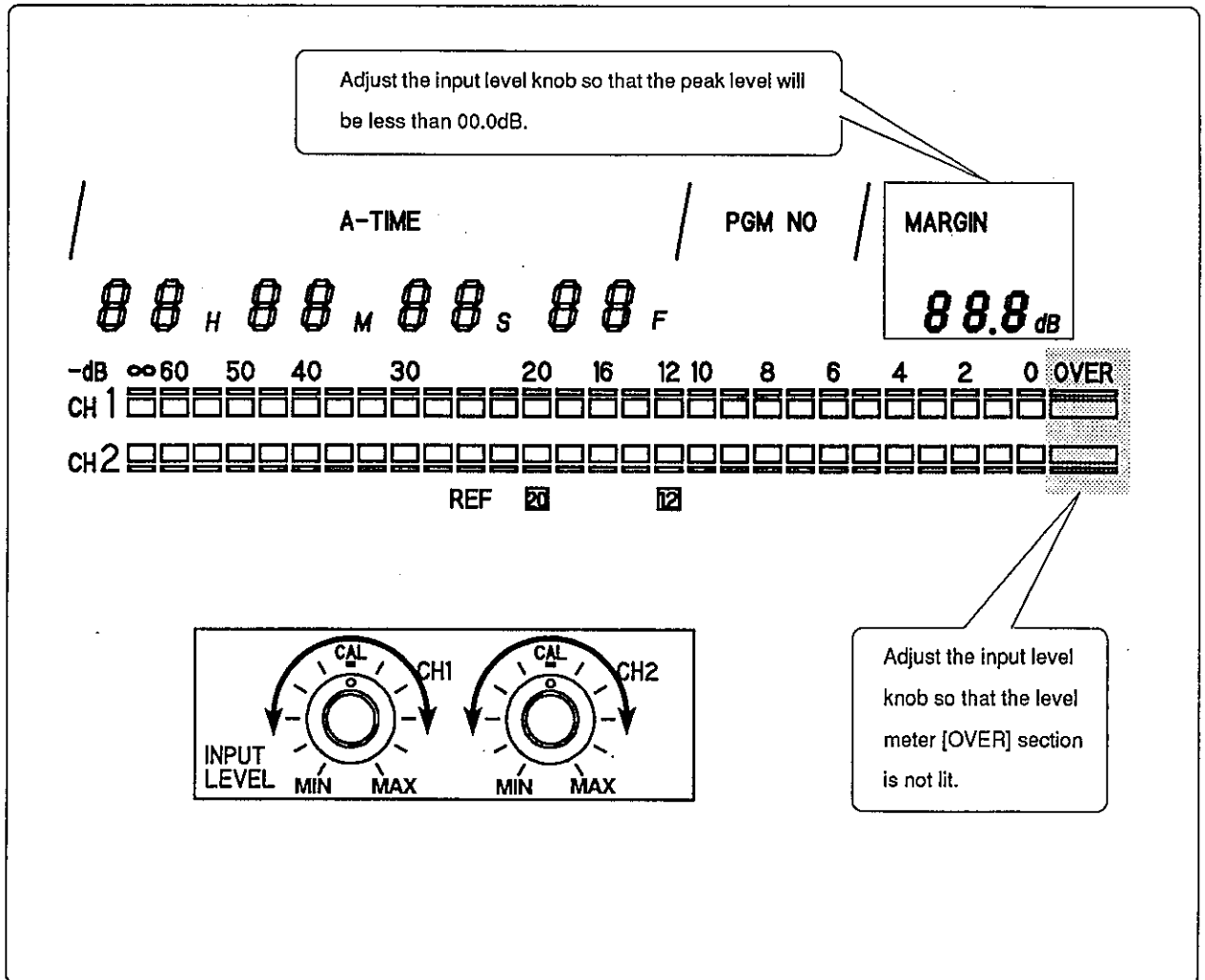
<NOTE>

When operating the D-10 via the remote controller, press the [PLAY] key while holding down the [RECORD] key.

2. Press the [STOP] button to end the recording.

4-2-2. Adjusting Record Level of the Analog Audio Signal

The level meters of the D-10 will hold peak level of the input signals for about two seconds in the display. It can also display the margin, or in other words, how much headroom there is before reaching the maximum permissible level of 0dB.



* The margin display will be renewed each time a signal larger than the presently displayed figure is input and the display figure will also change. This can be used as a substitute for permanent peak hold. The margin level and input level of channel 1 and channel 2 can be checked by switching with the [DISP LEVEL] key.

Important Points When Level Adjusting

* Always adjust the recording level with the input monitor.

* Adjust the [INPUT LEVEL] knob so that the level meter reading of the recording level will not exceed 0dB when a maximum peak figure is input, and, at the same time, so that the margin level will be less than 00.0dB.

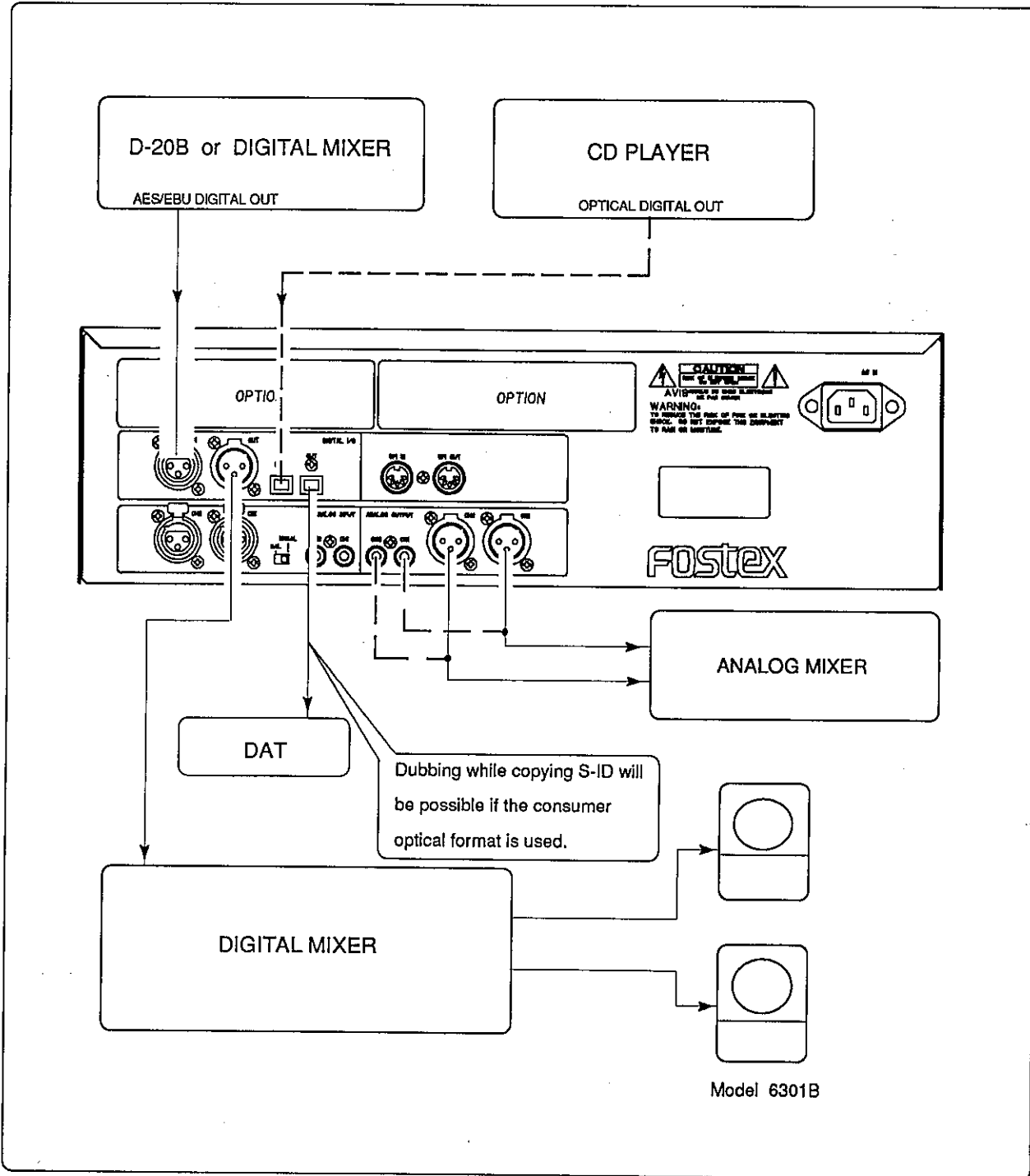
<NOTE>

The sound will be distorted when the input level exceeds 0dB.

4-2-3. Digital Audio Signal Recording

* Connections

To record digital audio signals, the equipment should be connected as shown below.

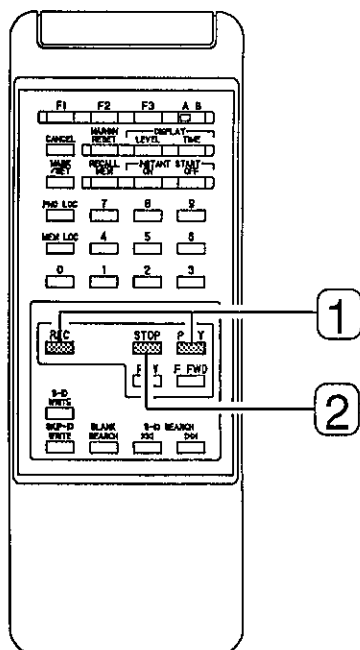
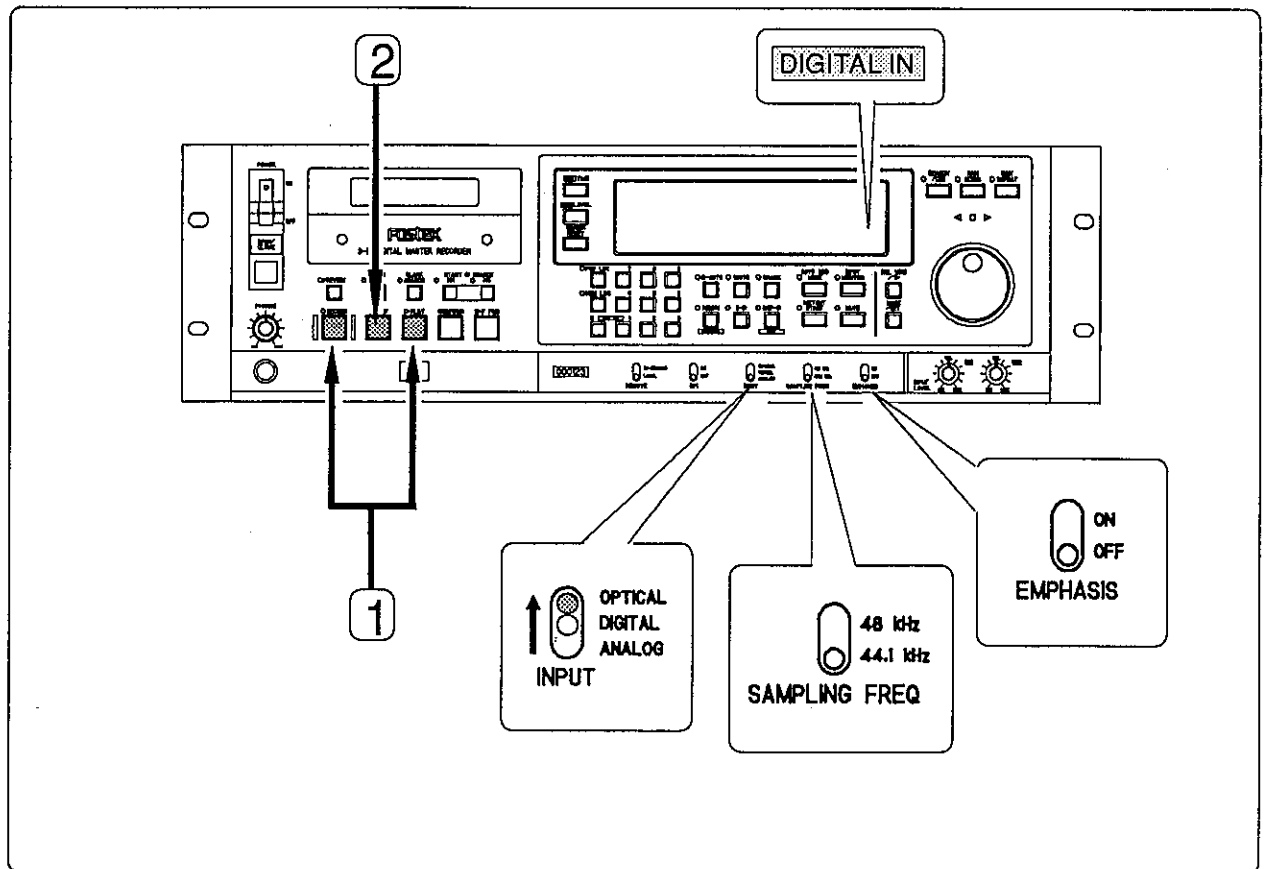


*** Check items before recording**

* Switch input selector to [DIGITAL] or [OPTICAL] and check for [DIGITAL IN] on the display.

<NOTE>

Sampling frequency and emphasis will be automatically set by the digital input information regardless of the switch setting.



Operating Procedure

1. After checking the above setup items, simultaneously press the [RECORD] and [PLAY] buttons. The lamps of both the [RECORD] and [PLAY] buttons will light, recording will start, and the recorder will enter automatic input monitor and the [INPUT MON] key LED will blink.

* When recording digital signals, because it is automatically recorded at the same level as the input digital signal, level adjusting is not necessary on the D-10.

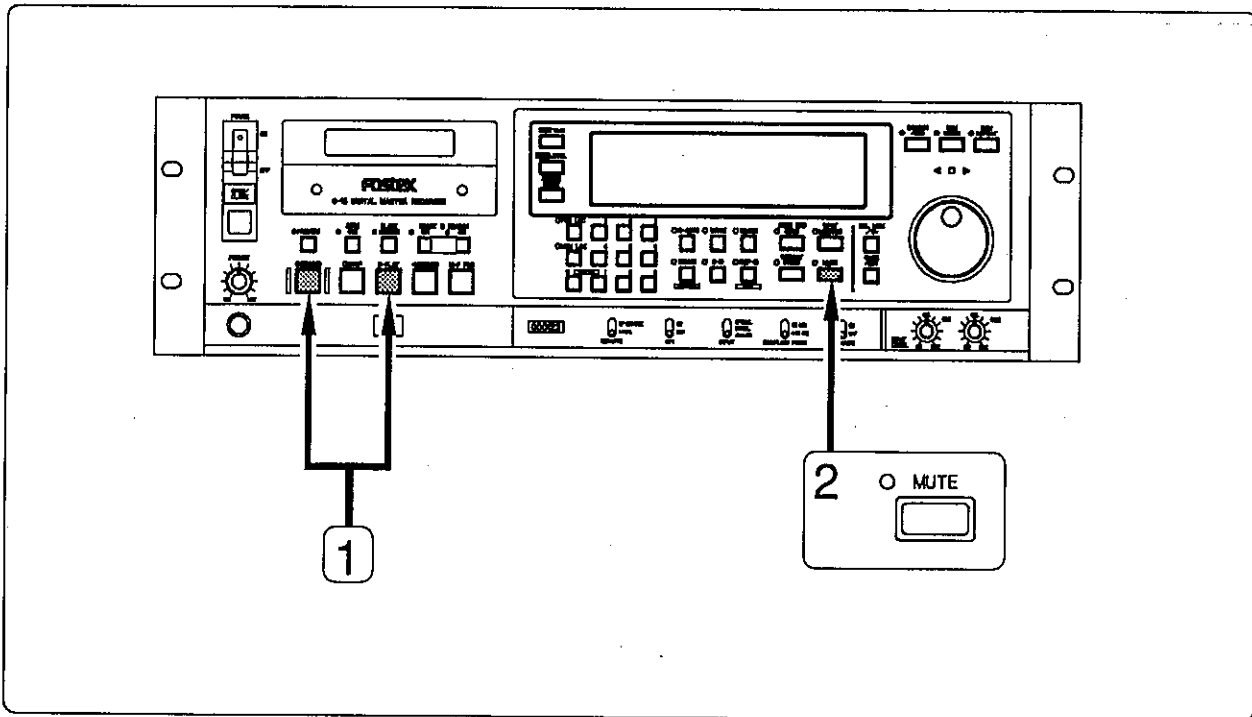
* When operating the D-10 with the remote controller, press the [PLAY] key while holding down the [RECORD] key.

2. Press the [STOP] button to end the recording.

4-3. Making a No Sound Recorded Section (Record Mute)

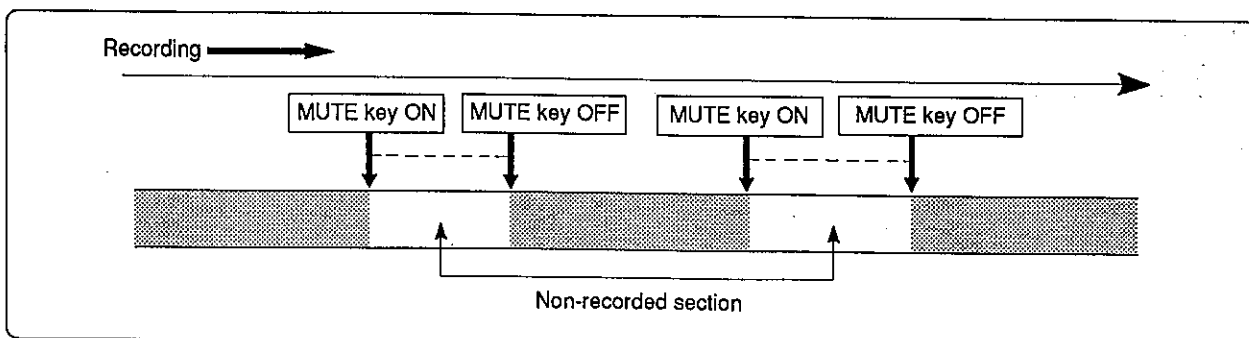
The following record mute is done to make a no sound recorded section while maintaining continuity of A-Time on the tape.

* The following series of operation can be applied to both analog input and digital input.



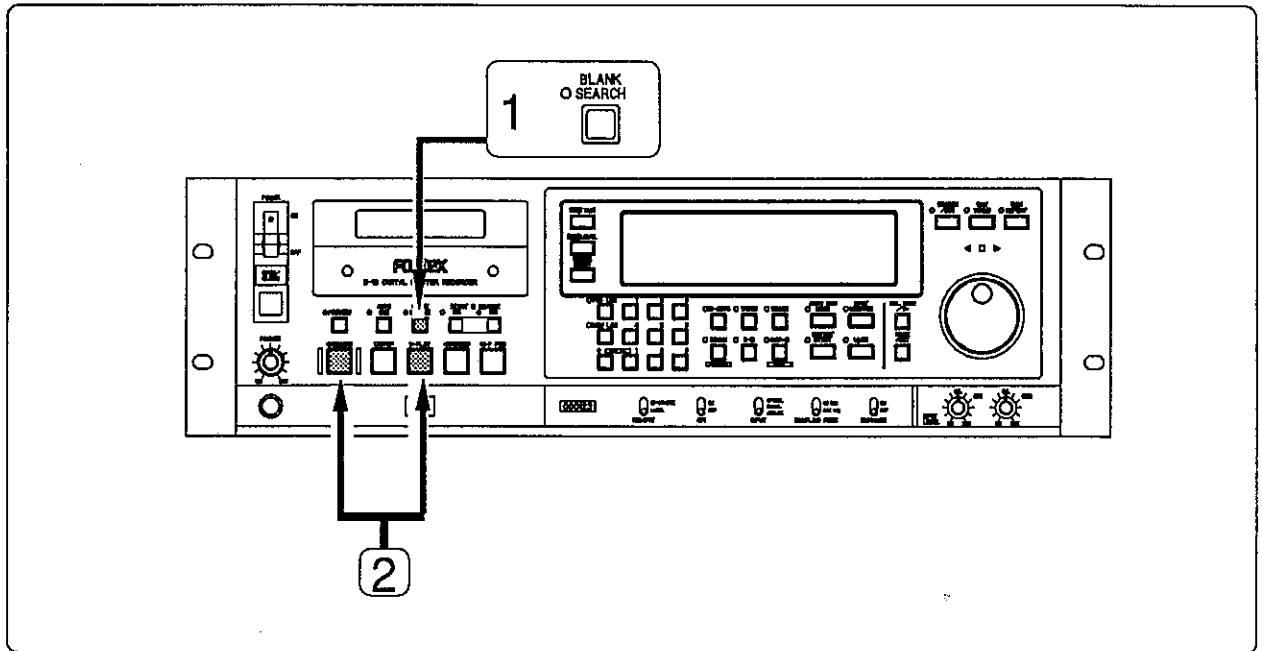
Operating Procedure

1. Start recording by simultaneously pressing the [RECORD] and [PLAY] buttons.
2. While in the record mode, press the [MUTE] key from the point where the no sound recorded section is to be made. The [MUTE] key LED will be lit while the key is held down (during record mute execution). In this way, a no sound recorded section with continuous A-Time can be made.



4-4. Continue Recording (Blank Search) Without Making a Nonrecorded Section (blank)

Blank search is the process of finding the tape recording end position and the End-ID. Using this function when recording, a continuous recording is possible without making non-recorded sections on the tape.



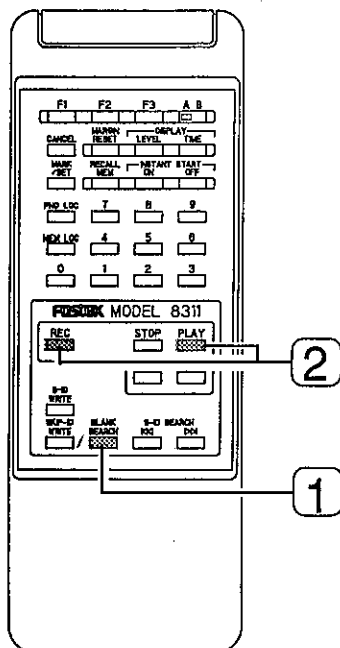
Operating Procedure

1. When the [BLANK SEARCH] key is pressed, the LED will light and the recorder will start searching for the non-recorded section.

* The LED is extinguished after completing this search and the D-10 will enter pause two seconds before the non-recorded section or End-ID.

2. After completing blank search, simultaneously press the [RECORD] and [PLAY] buttons to start recording. This makes it possible to continue recording without making any non-recorded sections.

* If tape is loaded in a non-recorded section (or virgin tape), it will automatically blank search.

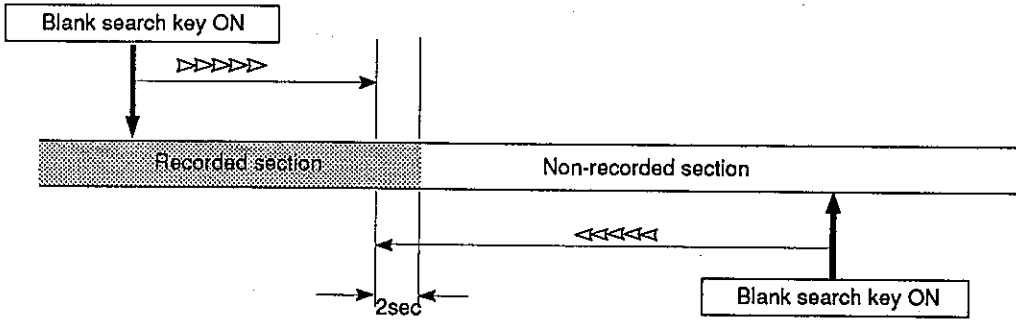


<NOTES>

* As blank search will also be carried out if a cleaning tape is loaded and tape will be rewound to the start, stop tape by pressing the [STOP] button.

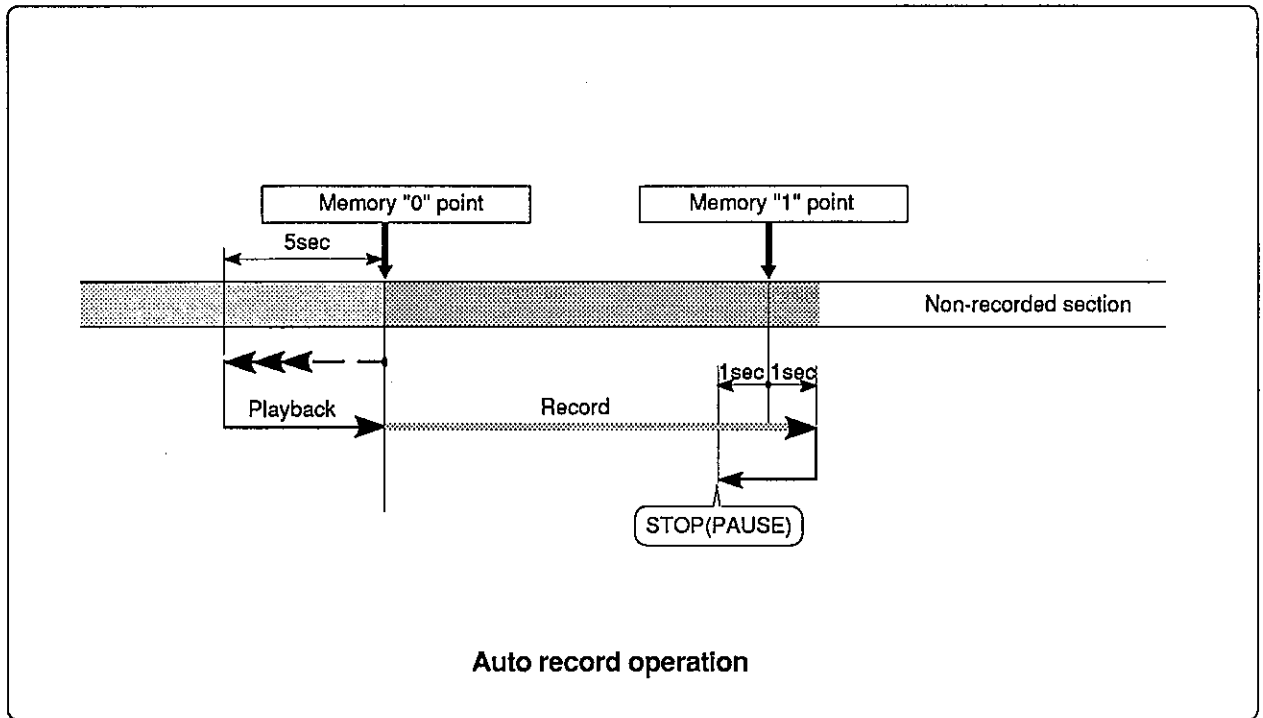
* Blank search cannot be done in the instant start mode.

Blank search operation



4-5. The Auto Record Mode

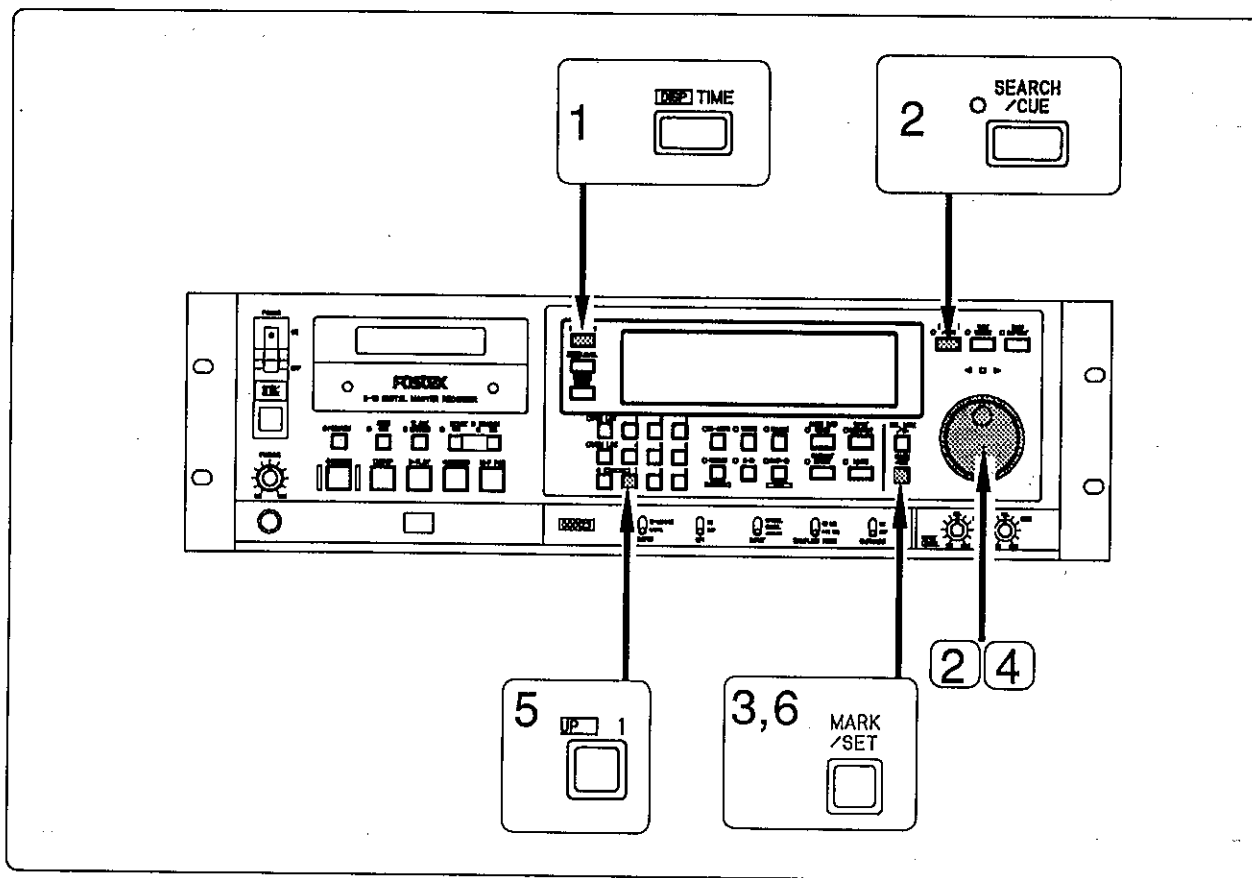
Auto record is the function of automatically recording between A-Time memories "0" and "1" (auto punch in and out).



<NOTES>

- * When the auto record mode is selected, the instant start and auto cue modes are automatically canceled.
- * It is necessary for A-Time to be recorded for more than ten seconds prior to the memory "0" point for execution of auto record.
- * Auto record by the D-10 is for assemble recording only and A-Time continuity, as well as, error rate at the punch out section is not guaranteed.

4-5-1. Setup of Memory "0" and Memory "1"



Operating Procedure

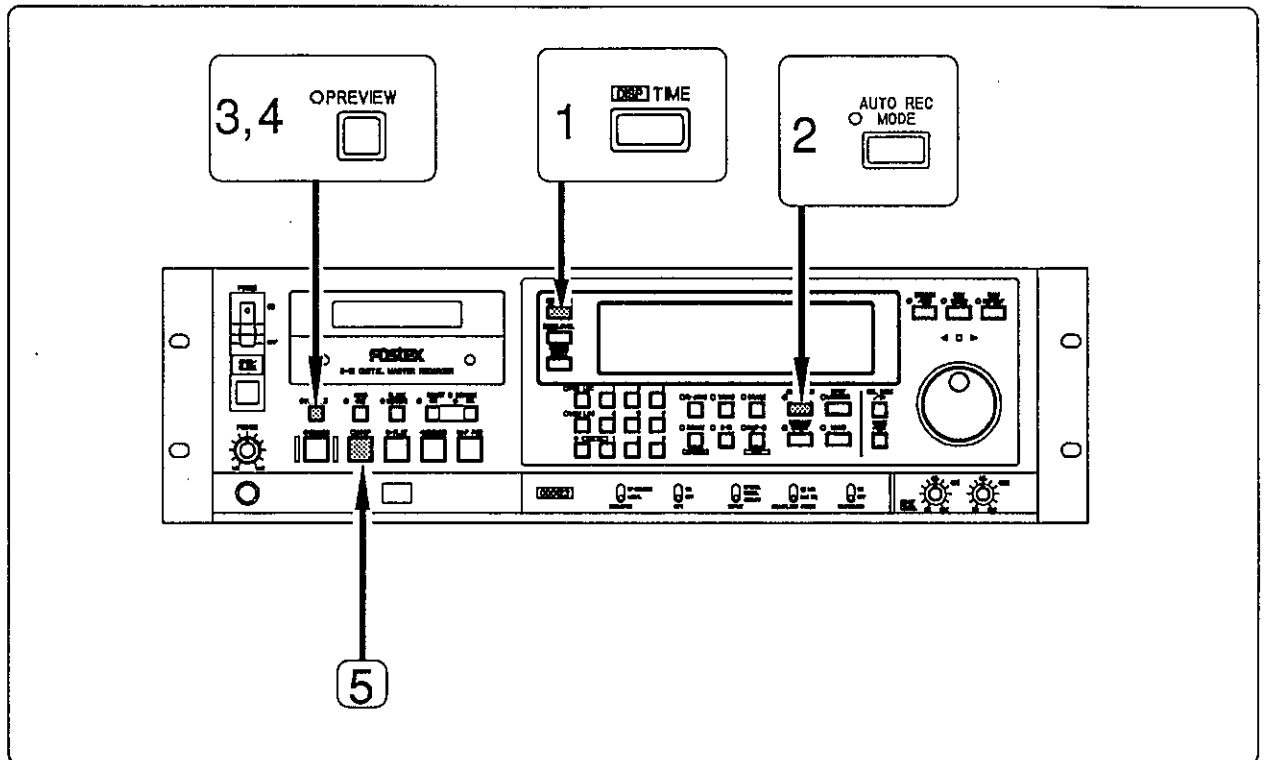
1. Change to A-Time display by pressing the [DISP TIME] key.
2. Search the point for recording using the cueing mode.
3. Press the [MARK/SET] key upon determining that point.
* By the steps up to this point, recording start time (punch in point) is stored in memory "0."
4. Search for the recording end point using same procedure as in above item 2.

* Basically, keep memory at [00 00 00] if there is nothing to input by memory editing.
5. Press No. 1 the [10] key.
[NEXT] will be displayed when this is entered and [001] will be shown in the [NEXT] display section.
6. Press the [MARK/SET] key.
Ending time (punch out point) is thus stored in memory "1."

4-5-2. Rehearsal/Take of Auto Record

Before actually executing auto record, make a rehearsal to check the punch in/out points thus set.

* This rehearsal will not be recorded.

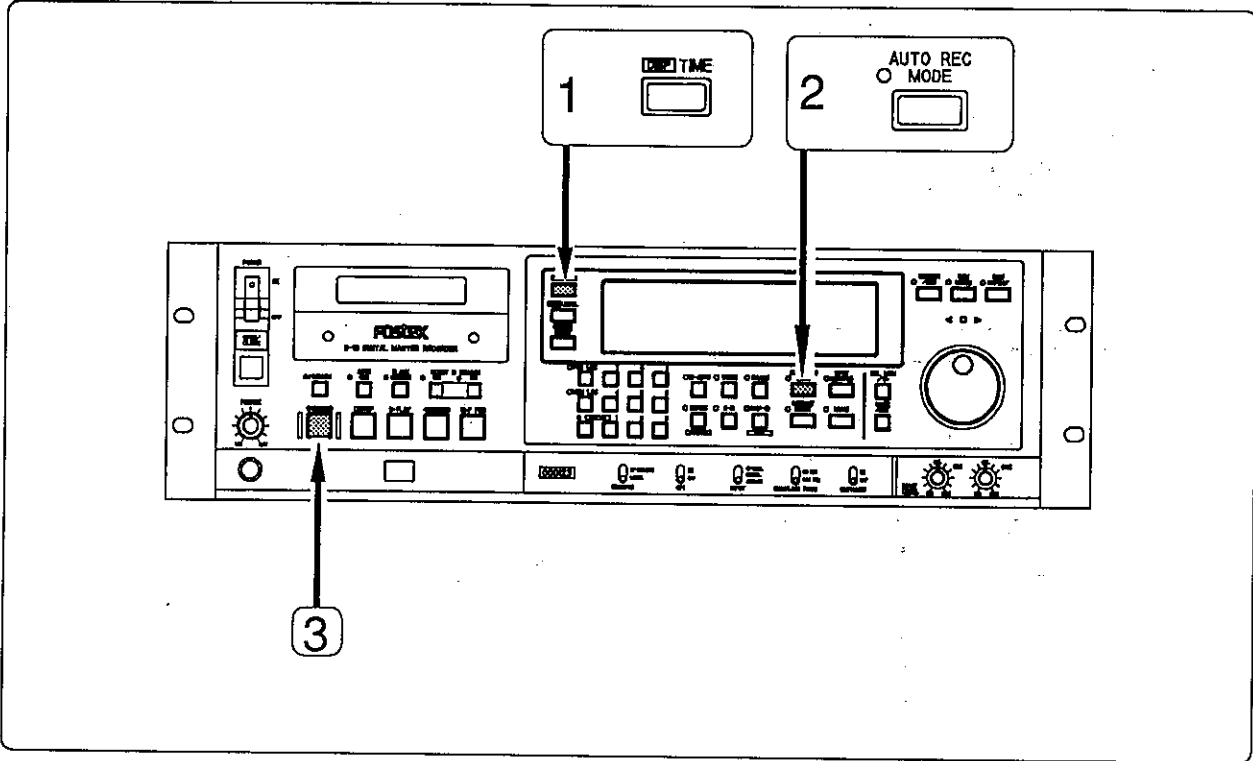


Operating Procedure

1. Change to the A-Time display by pressing the [DISP TIME] key.
 2. Press the [AUTO REC] key and check that its LED blinks (auto record mode standby).
 3. Press the [PREVIEW] key (preview key LED will light). When this key is pressed, tape is located to 5 seconds before the memory "0" point and playback started toward the memory "0" point.
- * In rehearsal, the recorder automatically enters input monitor and pause when it arrives at the memory "0" point. The [INPUT MONITOR] key LED and the [RECORD] button lamp will blink.
4. To repeat rehearsal, press the [PREVIEW] key again.
 5. Press the [STOP] button to end the rehearsal.

4-5-3. Execution (take) of Auto Record

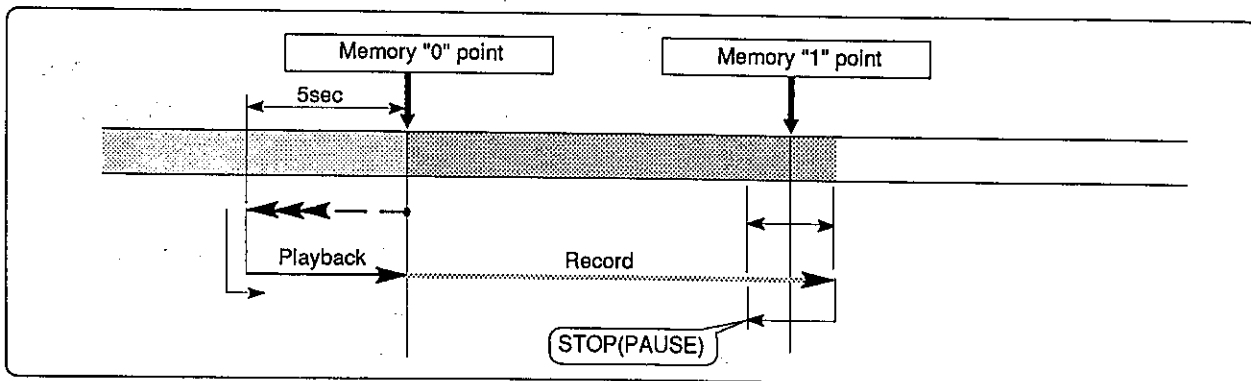
Check by rehearsal to see that auto record is smoothly executed, and then, execute auto record.



Operating Procedure

1. Change to A-Time display by pressing the [DISP TIME] key.
2. Be sure the [AUTO REC] key LED is blinking.
3. Press the [RECORD] button. In the same manner as at rehearsal, the tape will locate to 5 seconds before the memory "0" point, then playback is started.

*The D-10 will automatically enter input monitor at the memory "0" point and recording be carried out ([RECORD] button is lit, [INPUT MONITOR] key LED will blink).



<NOTES>

* To allow recording from the same monitor point as at rehearsal, the monitor sound, at actual auto record, will switch to input monitor at an earlier point. However, since it has been recorded at the same timing as with the sound stored in memory at rehearsal, it will be perfectly recorded with no sound missing.

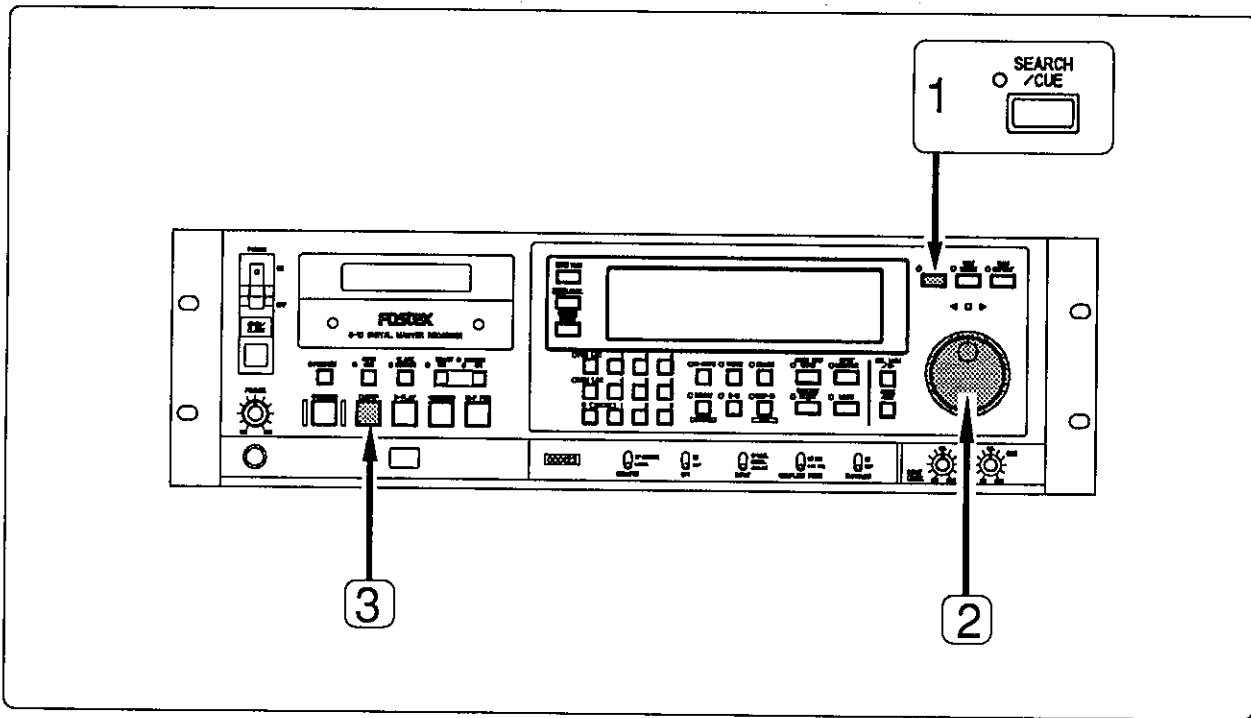
* Rehearsal can be normally carried out if the cassette tape record protection hole is open but if a take is executed, it will not enter the recording mode but enter playback.

4-6. Cueing

Cueing using [SEARCH/CUE] and RAM scrub are explained here.

4-6-1. Cueing by the [SEARCH/CUE] mode

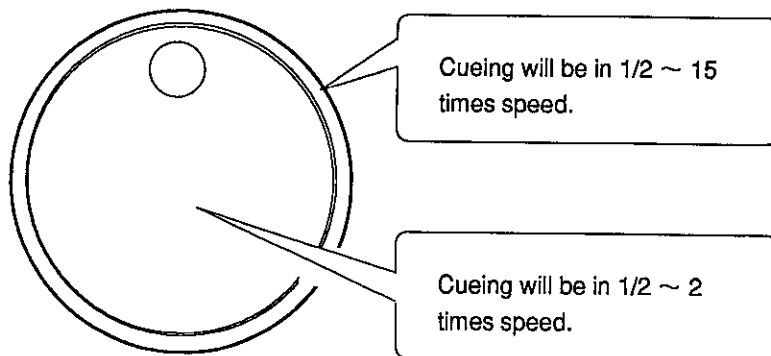
In the search/cue mode, cueing is possible while listening to the tape playback sound in rewind and fast forward directions at $1/2 \sim 2$ times speed or $1/2 \sim 15$ times speed.



Operating Procedure

1. Enter the search/cue mode by pressing the [SEARCH/CUE] key ([SEARCH/CUE] key LED will blink).
2. Start cueing by manipulating the [JOG]/[SHUTTLE] dials.

The [JOG] and [SHUTTLE] dials function as follows:

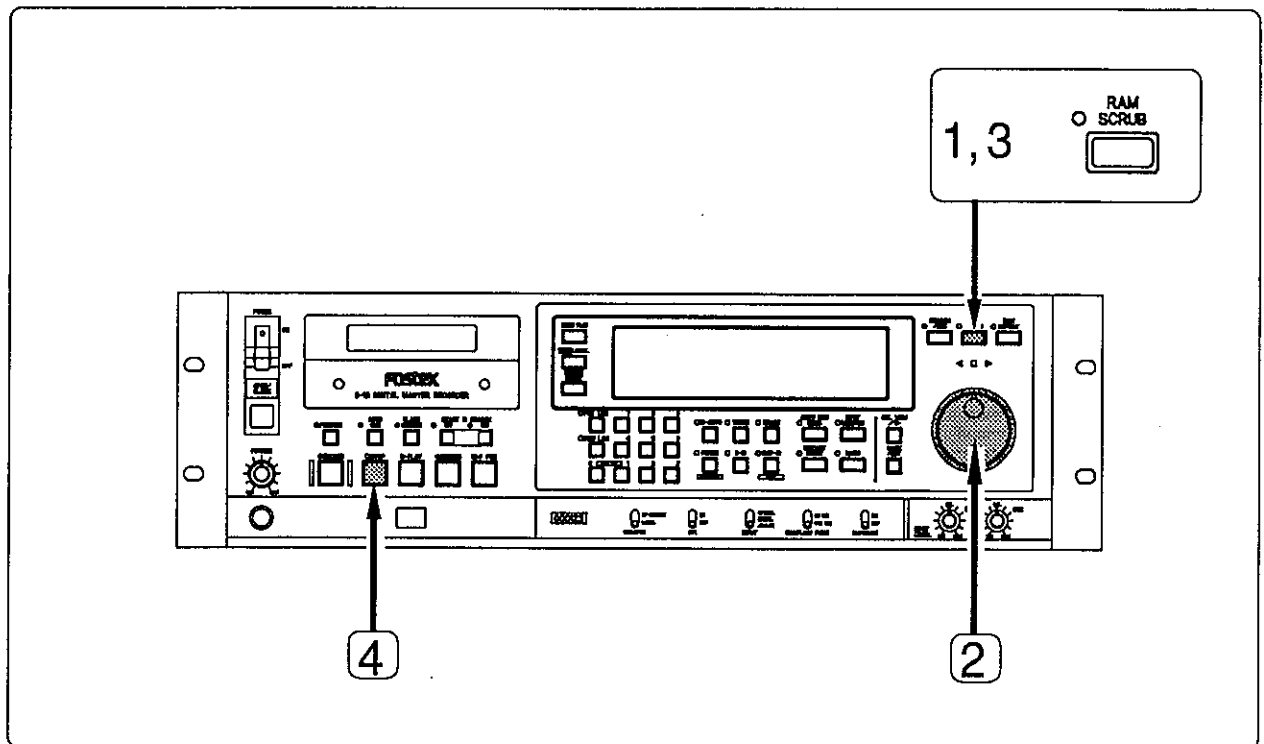


3. To end the search/cue mode, press the [STOP] button or other tape transporting buttons.

4-6-2. Cueing by the RAM Scrub Mode

In the RAM scrub mode, cueing is possible in the rewind and fast forward directions at 1/2 ~ 2 times speed or 1/2 ~ 15 times speed while listening to playback of the sound (*) recorded in the RAM.

* Audio data at the ± 1.5 second point where [RAM SCRUB] key was pressed or 3 seconds before this point will be recorded in the RAM.



Operating Procedure

1. Enter the RAM scrub mode by pressing the [RAM SCRUB] key ([RAM SCRUB] key LED will blink).
2. Start cueing by manipulating the [JOG]/[SHUTTLE] dials (the function of the [JOG]/[SHUTTLE] is the same as in the previous page).

* Outstanding features of RAM scrub

Cueing at less than one frame accuracy at the one time speed is possible via the jog function, Also, cueing is possible at a different playback speed which is determined by the dial position (rotating angle) in the shuttle function.

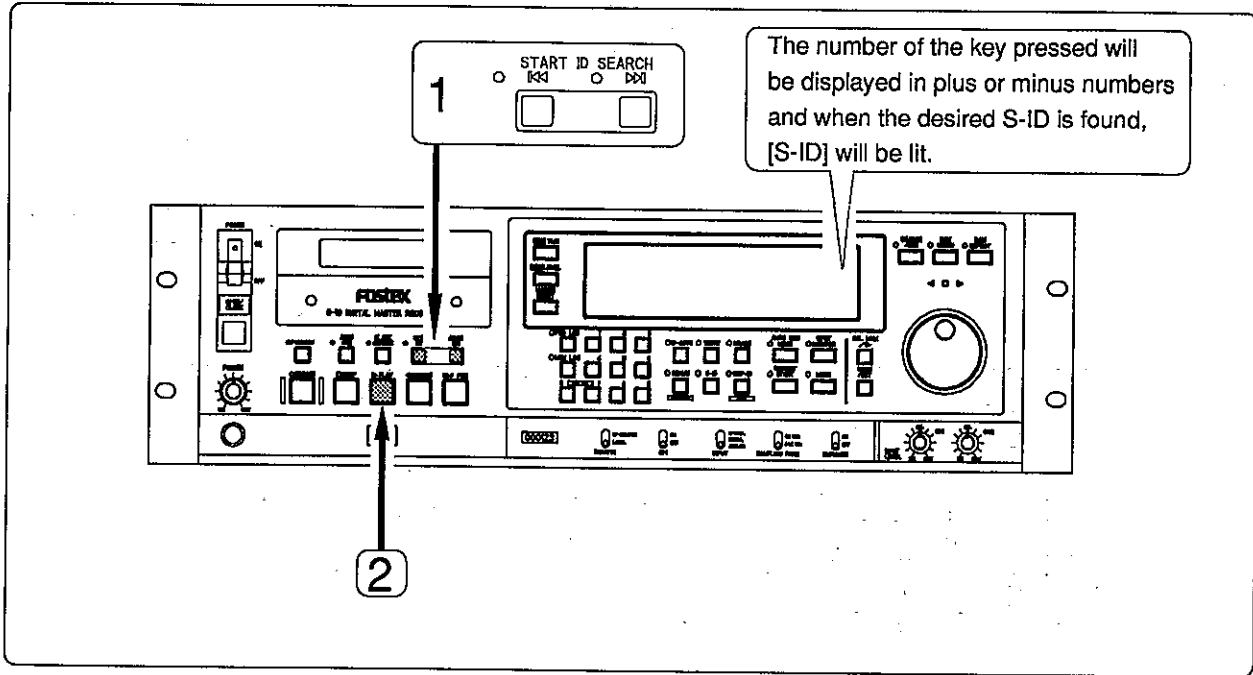
3. If playback capacity of the RAM is insufficient, audio data can be newly reloaded for about ± 1.5 seconds at the point where the [RAM SCRUB] key is pressed again.
4. To end RAM scrub, either press [STOP] or other tape transporting buttons.

4-7. The Search/Locate Function

Search by S-ID and locate by P-No./Mem-No. will be explained below.

4-7-1. S-ID Search

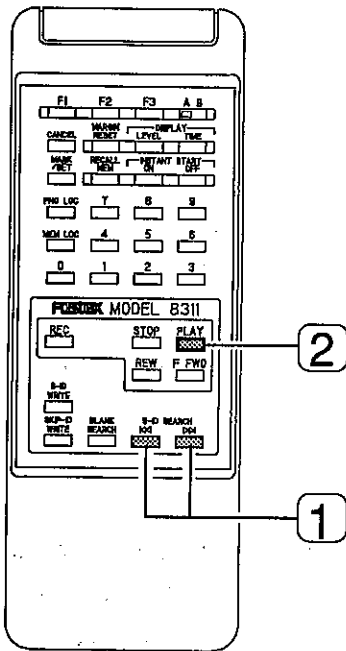
An S-ID recorded on the tape can be found.



Operating Procedure

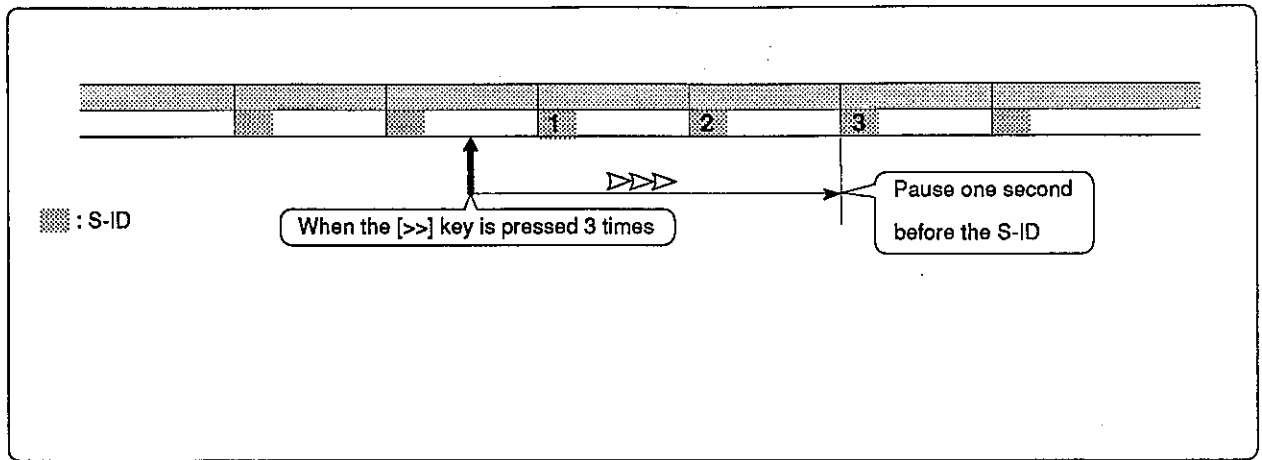
1. Press the [<<] key or [>>] key of the [START ID SEARCH] key for the number of times equal to the number of S-ID's.

| | |
|----------------------------|---|
| When [<<] key is pressed | S-ID for the number of times this key is pressed will be searched in the rewind direction and pause one second before the objective S-ID. |
| When [>>] key is pressed | S-ID for the number of times this key is pressed will be searched in the fast forward direction and pause one second before the objective S-ID. |

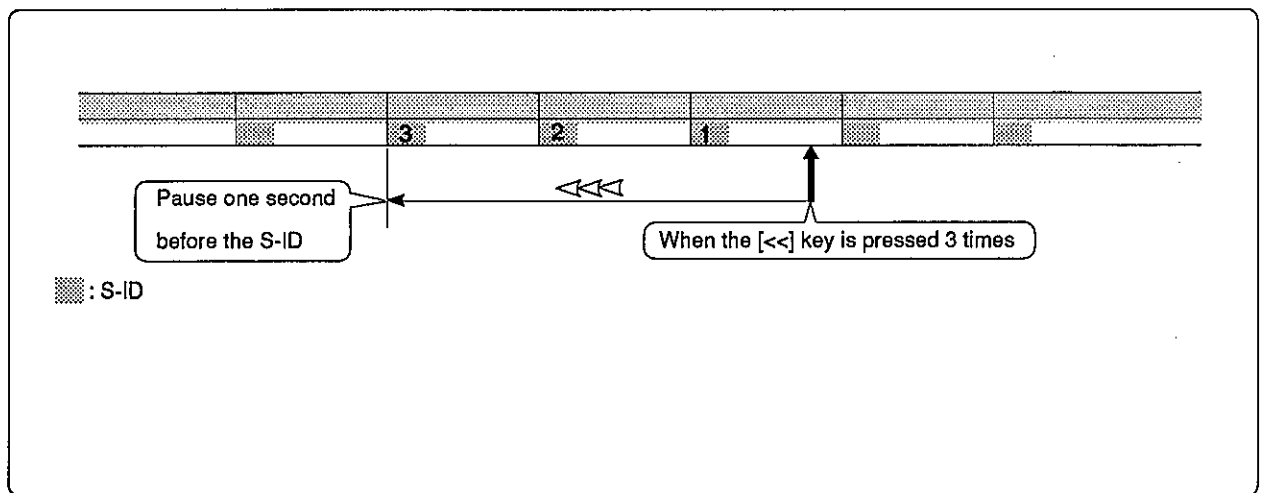


2. If the [PLAY] button is pressed while in the search function, the D-10 will enter play upon completing the search.

Example: When the [>>] key is pressed 3 times.

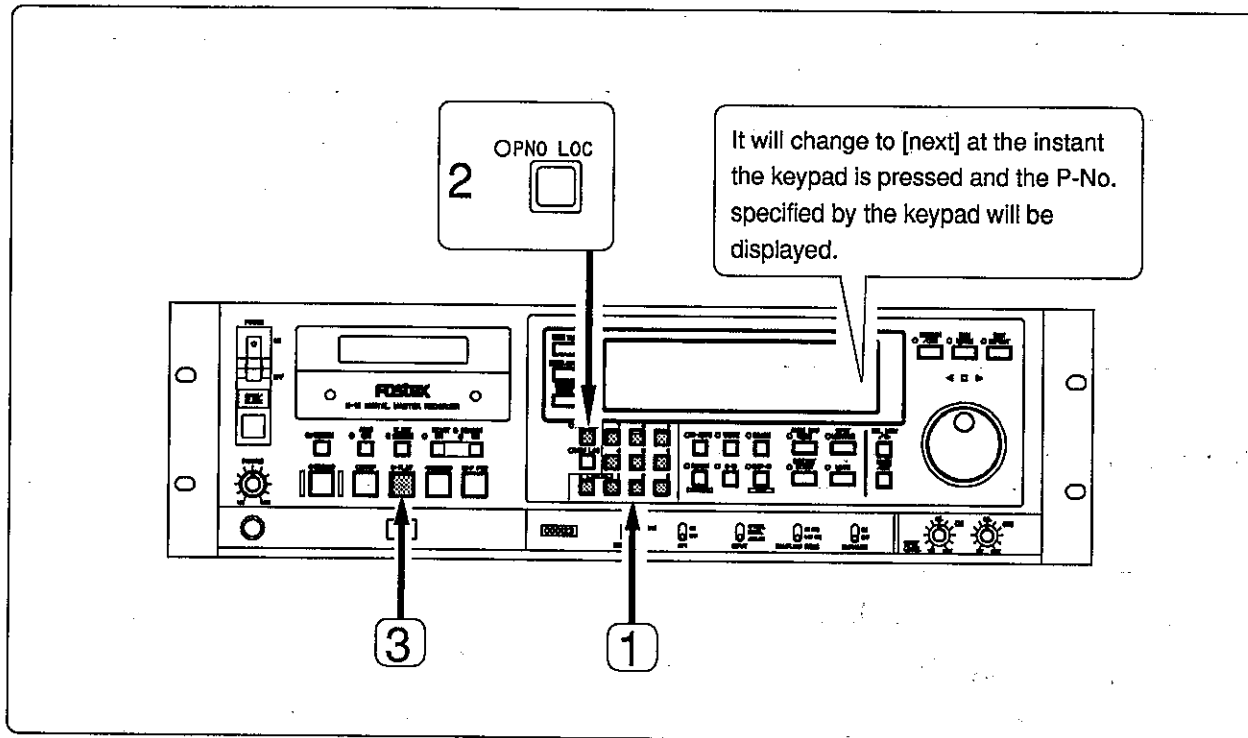


Example: When the [<<] key is pressed 3 times.



4-7-2. Locating Using Program Numbers

The recorder will locate to the P-No. specified in the [NEXT] display.



Operating Procedure

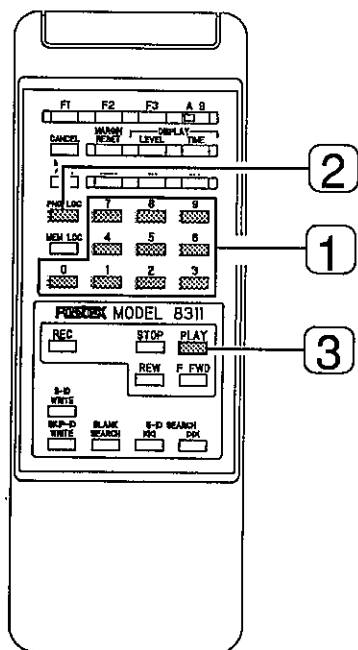
1. The number of the P-No. to be located is specified via the keypad. When the keypad is pressed, the display will change to the [NEXT] display and the number specified from the keypad will be shown in [NEXT] display.

2. Press the [P NO LOC] key. Locate function will be started and pause at one second before the desired P-No (S-ID). To interrupt P-No. locating, press the [STOP] button.

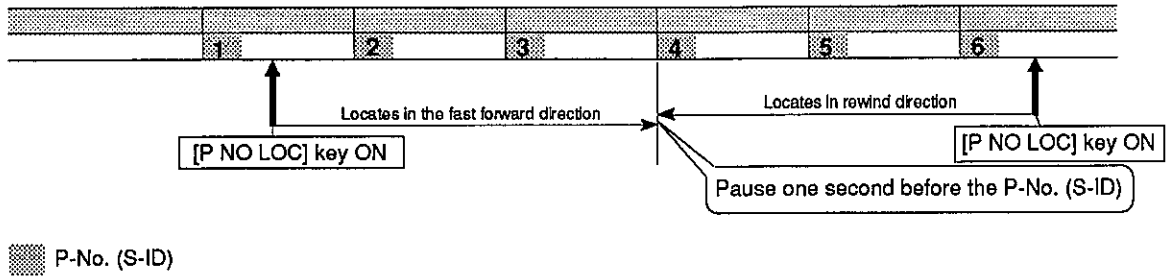
<NOTE>

If the [P NO LOC] key is pressed without specifying a program number from the keypad, the recorder will locate to the program number presently displayed in the PGM section of the display. If [---] is shown in the [PGM] display, tape will run in the rewind direction.

3. If the [PLAY] button is pressed during locating, it will enter play upon completing the locating operation.

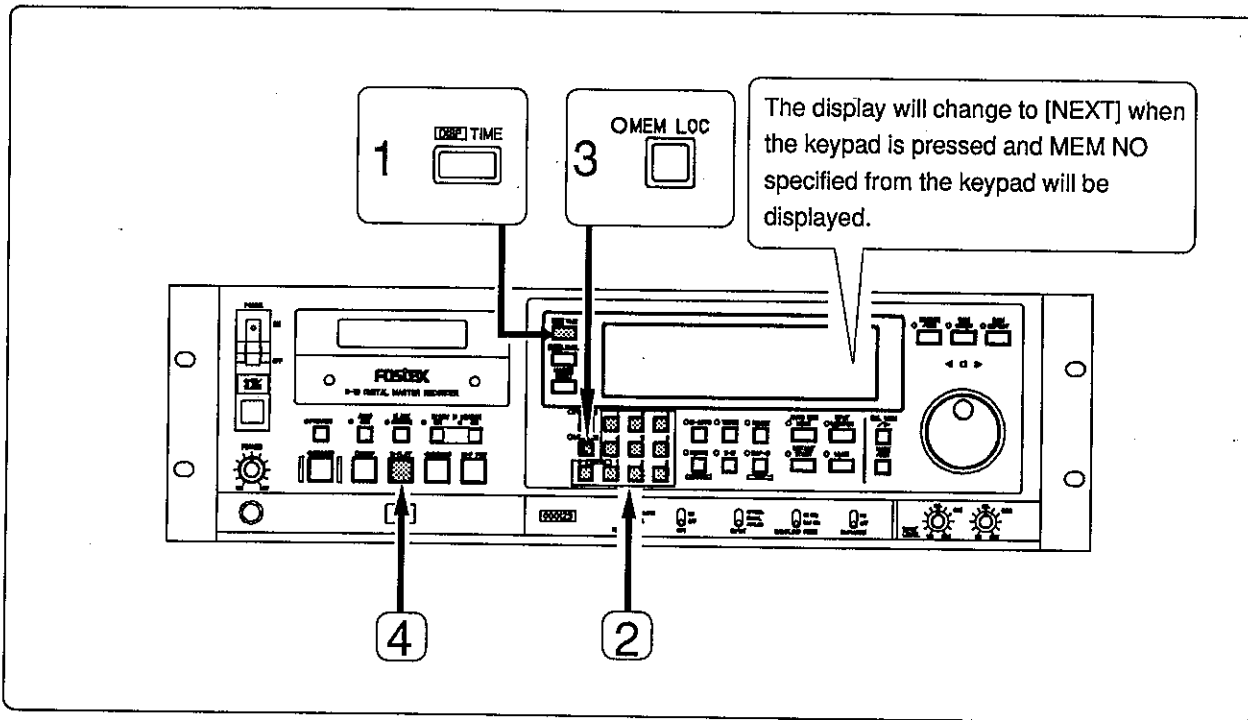


Example: When keypad No. 4, then, the [P NO LOC] key is pressed.



4-7-3. Locating With the Memory Numbers

The tape will locate to the memory number specified in the [NEXT] display.



Operating Procedure

1. Change the display to the desired time locate (A-Time or R-Time). Change the display to A-Time if it should be for A-Time locate or to the R-Time display if it should be for R-Time locate.

2. Specify the memory number to be located from the keypad. The display will change to the [NEXT] display when the keypad is pressed and the number entered will be shown in the [NEXT] display.

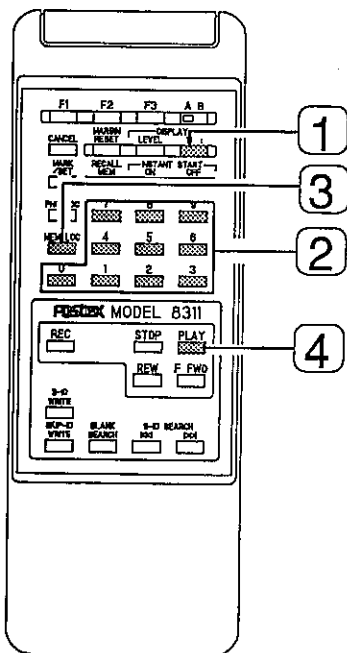
3. Press the [MEM LOC] key. The locate function is started and pause at the objective memory number (A-Time/R-Time).

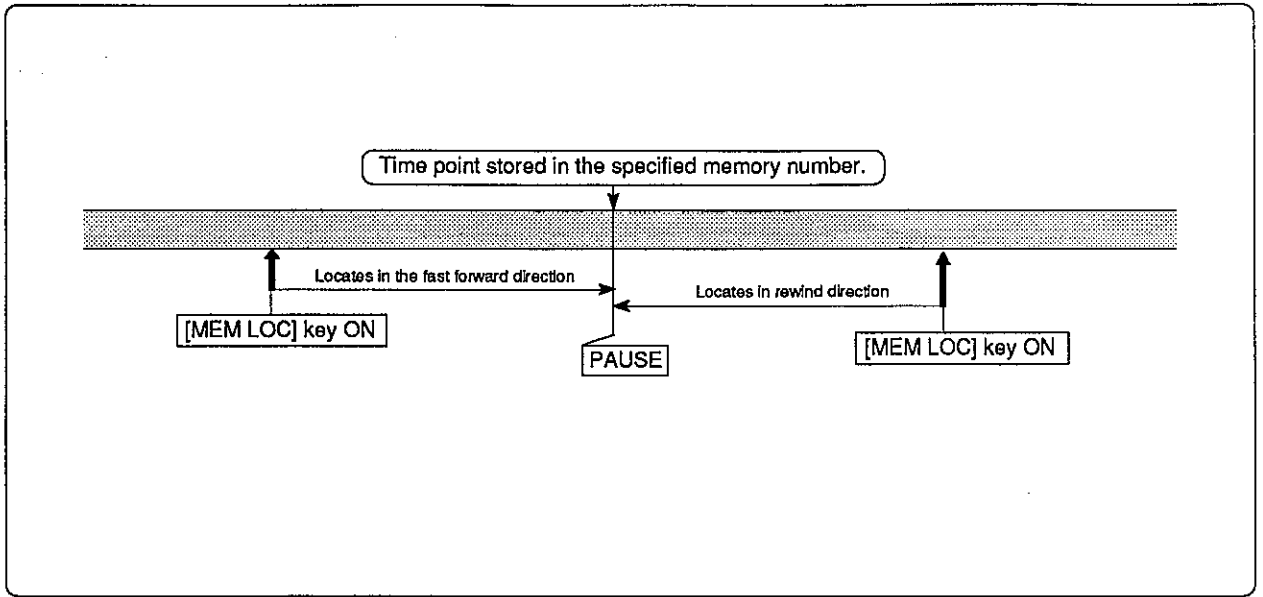
<NOTES>

* If the [MEM LOC] key is pressed without specifying memory number from the keypad, the tape will automatically locate to the time stored in memory number [00].

* Memory numbers can be specified to 00 ~ 99, and 100 or higher numbers will be ignored.

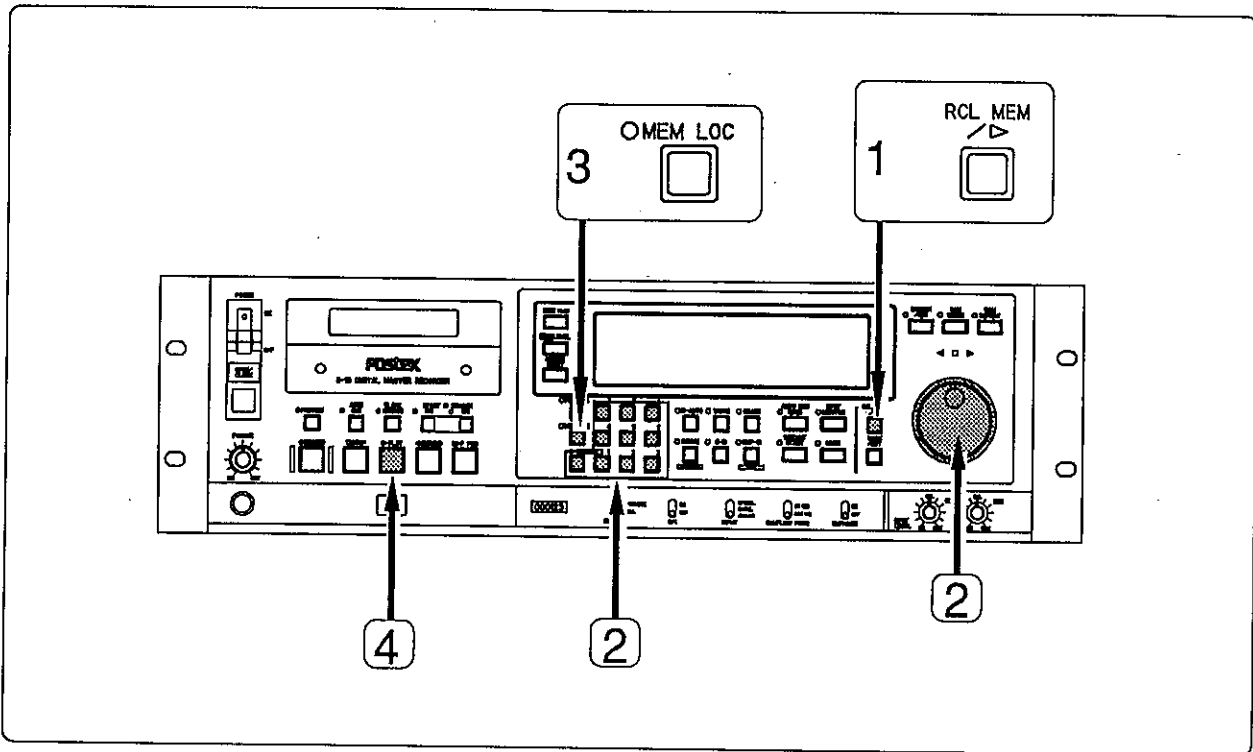
4. If the [PLAY] button is pressed while in the locate mode, will enter play after locating is completed.





4-7-4. Time Locate

The tape is located to specified time.



Operating Procedure

1. With A-Time or R-Time on display, press the [RCL MEM] key to enter the memory edit mode. As a result, the mode will be A-Time locate if the display is A-Time or the R-Time locate if the display is R-Time.

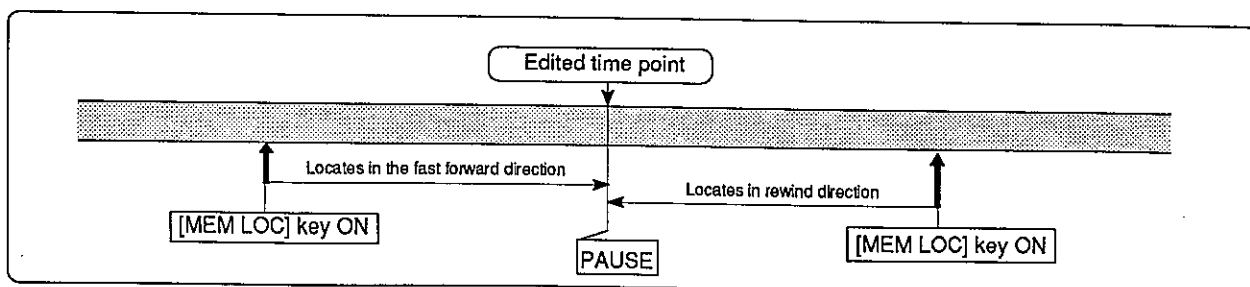
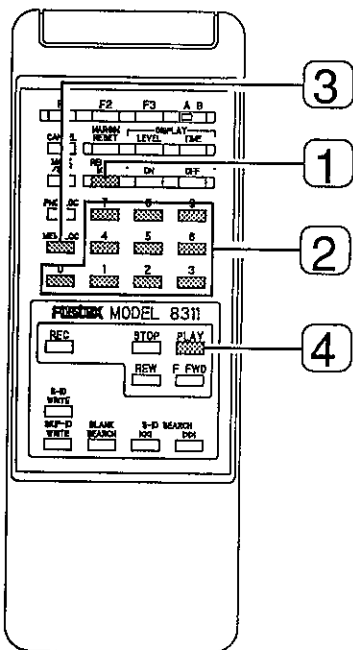
2. Set the desired time figure via the keypad and [JOG]/[SHUTTLE] dials.

◆ Refer to page 6-1, Chapter 6. Memory editing for method in setting the time figure.

3. After setting, press the [MEM LOC] key.

The tape will locate to the specified A-Time or R-Time and pause.

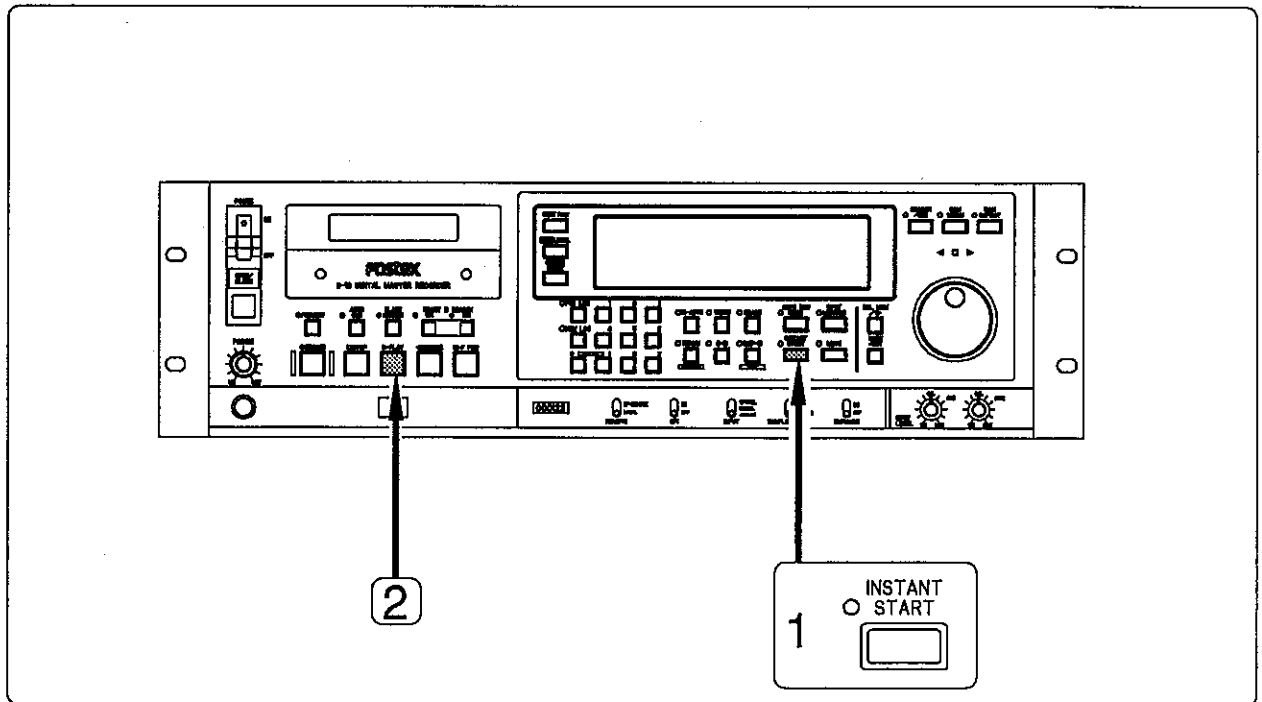
4. If the [PLAY] button is pressed while in the locate mode, the tape will enter play after locating is completed.



4-8. The Instant Start Mode

Instant start is the function of instantaneously playing back the audio data which had been previously recorded in the RAM for the purpose of extensively shortening the rise time of the playback sound.

4-8-1. Instant Start Procedure

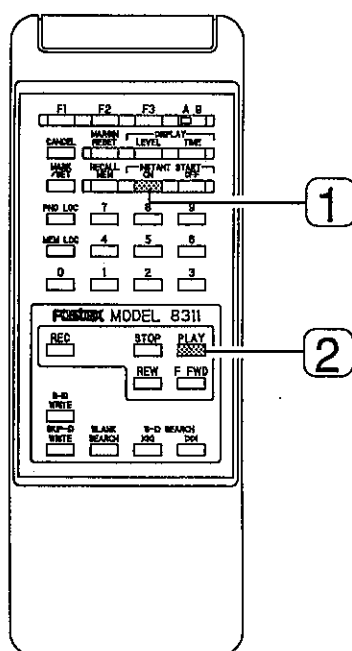


Operating Procedure

1. Enter the instant start mode by pressing the [INSTANT START] key.

When the instant start mode is set, the D-10 will always operate at instant start.

Various conditions of the instant start mode will be indicated by the lighting or blinking of the LED as explained below.



| | |
|------------|---|
| Blinking | The D-10 cannot instant start until the LED is lit as audio data is under recording in the RAM. |
| Lighted | D-10 can instant start. |
| Fast blink | D-10 cannot instant start. |

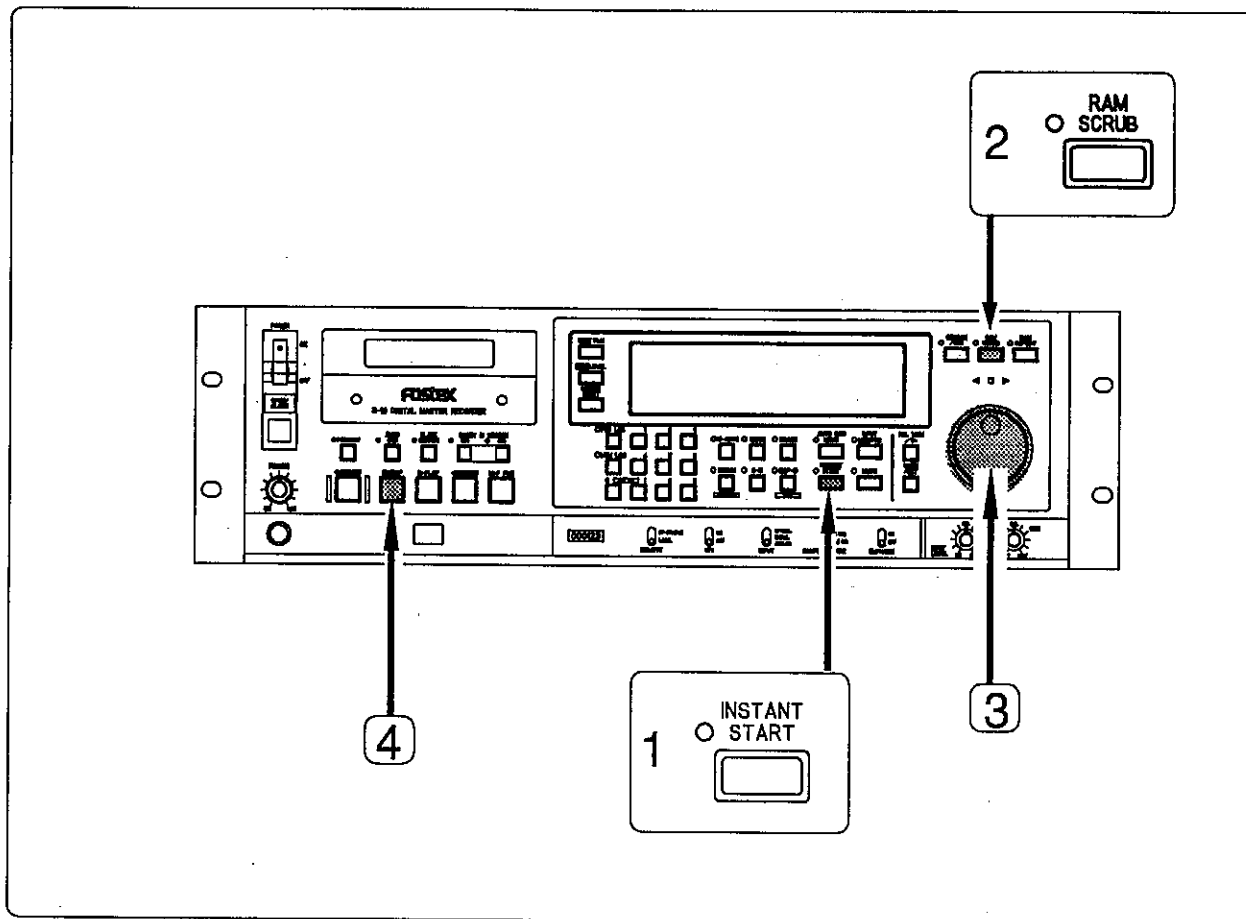
<NOTE>

Instant start will not function unless A-Time or R-Time is recorded on the tape.

2. Press the [PLAY] button.

4-8-2. Executing Instant Start After Moving the Start Point

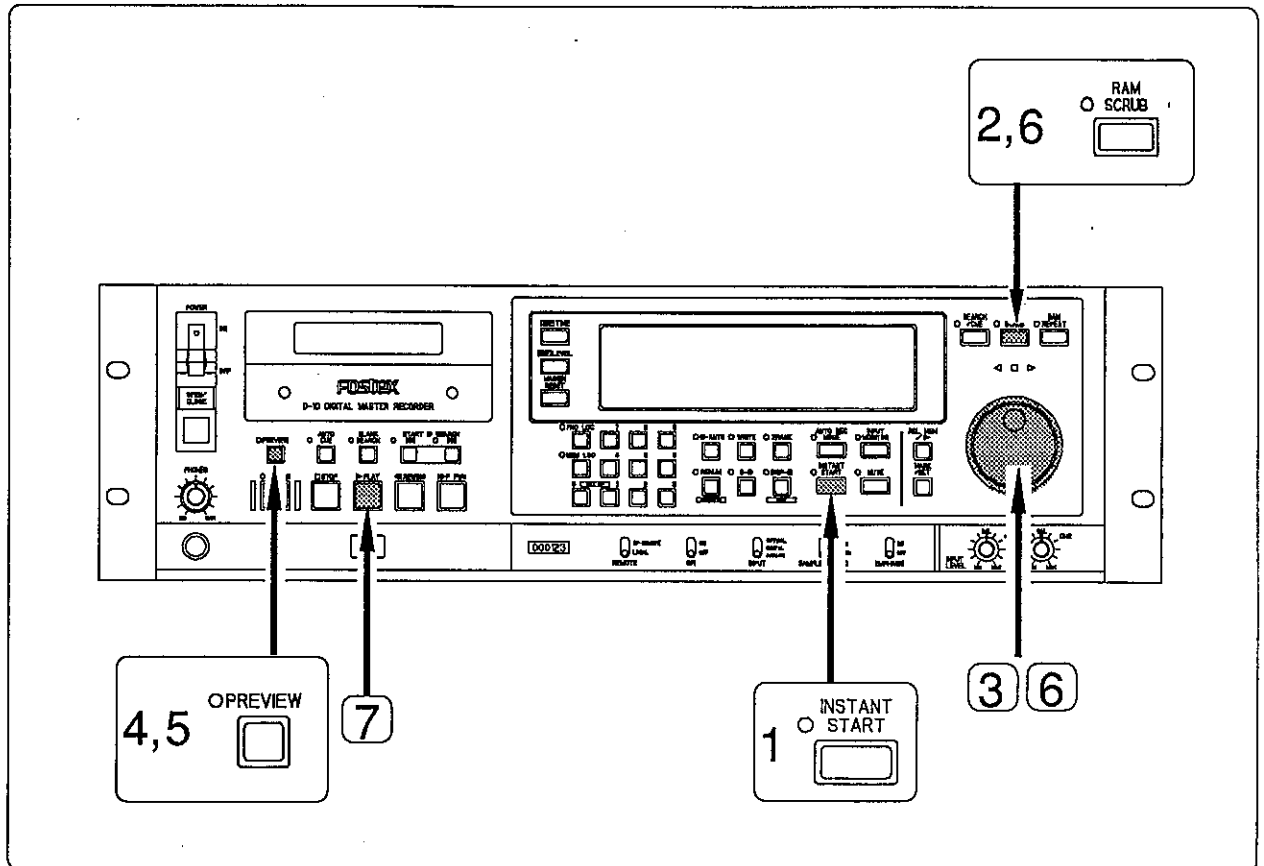
Executing instant start after moving the start point for instant start.

**Operating Procedure**

1. Check that the [INSTANT START] key LED is lit.
2. Press the [RAM SCRUB] key ([RAM SCRUB] key LED is lit).
3. Change the start point by manipulating the [JOG]/[SHUTTLE] dials.
4. Press the [PLAY] button. Instant start is executed from this newly changed start point.

4-8-3. Rehearsal of Instant Start by the [PREVIEW] Key

Rehearsal is carried out from the newly changed start point by using RAM scrub.



Operating Procedure

1. Check to see that the [INSTANT START] key LED is lit.

2. Press the [RAM SCRUB] key ([RAM SCRUB] key LED will be lit).

* If the [RAM SCRUB] key is pressed once more while the [RAM SCRUB] key LED is lit, audio data for ± 1.5 seconds centered around the point where the key was pressed can be newly recorded in the RAM.

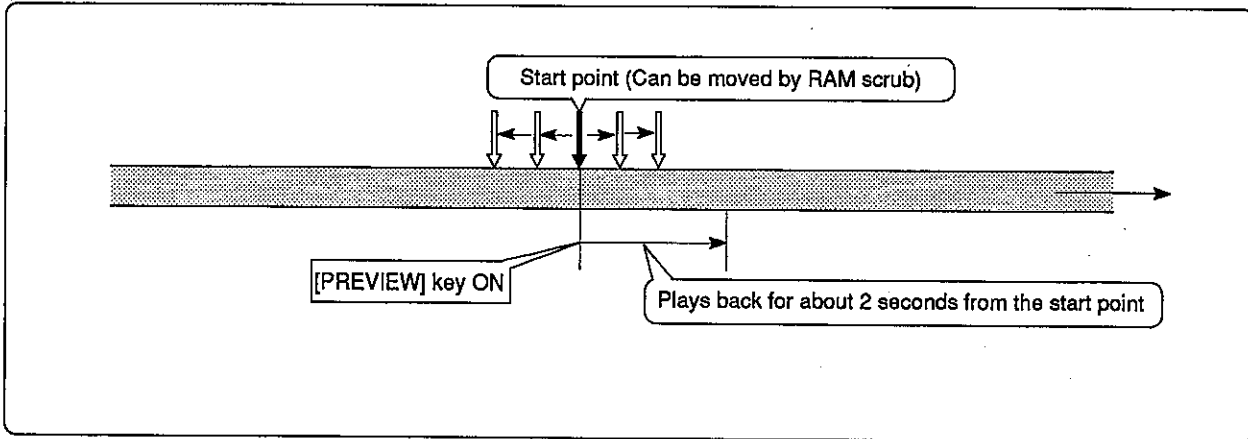
3. Change the start point by manipulating the [JOG]/[SHUTTLE] dials.

4. Press the [PREVIEW] key.

Playback is started for about two seconds from the newly changed start point (rehearsal).

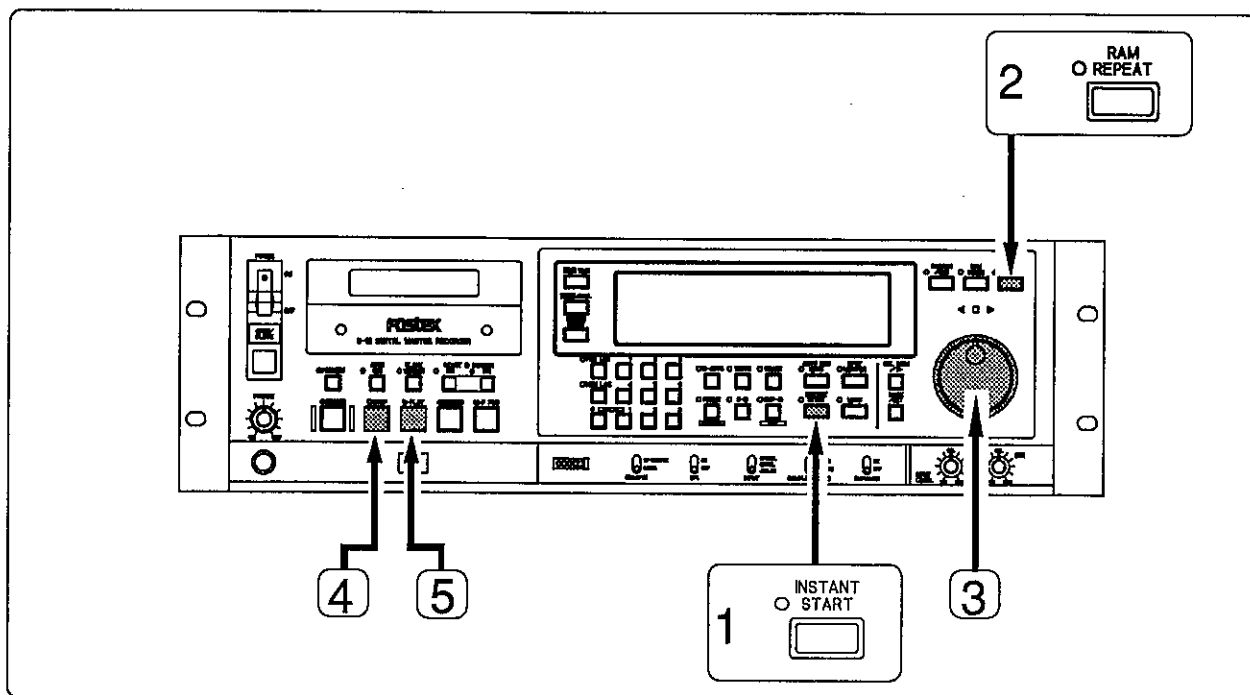
5. If rehearsal is to be repeated once more, press the [PREVIEW] key again.

6. If the start point must be moved again, use RAM scrub and repeat item one above 1 ~ 5. steps.
7. After finishing rehearsal, press the [PLAY] button to execute instant start.

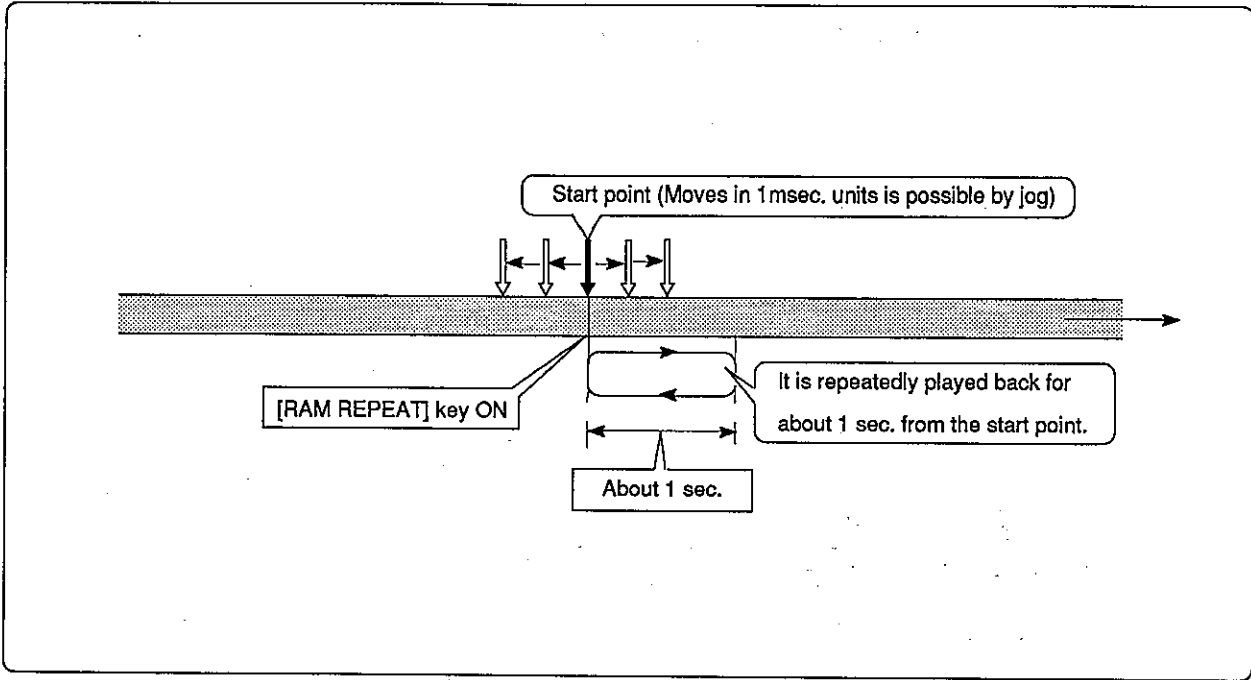


4-8-4. Trimming of Instant Start via the [RAM REPEAT] key

Repeated rehearsal is possible by moving the instant start point in 1msec. units using the [RAM REPEAT] key.

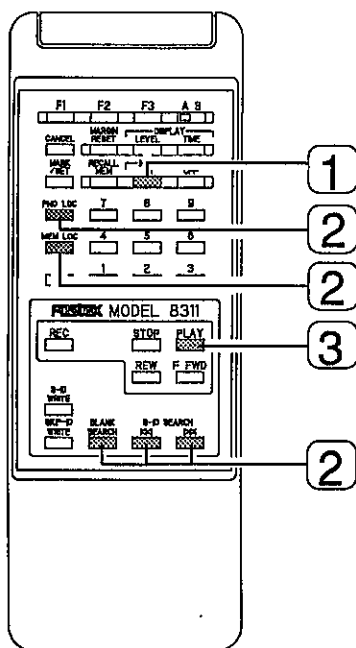
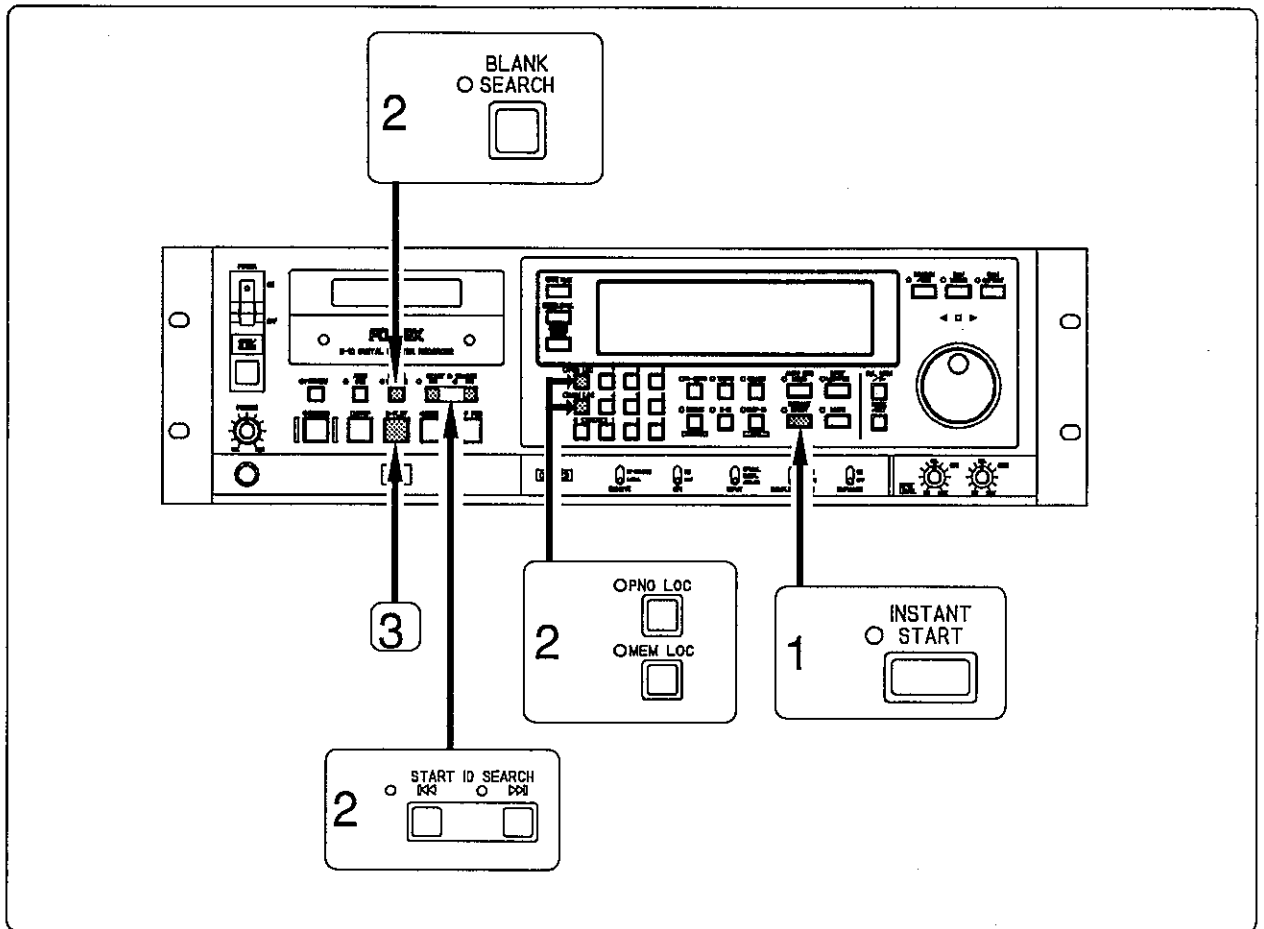
**Operating Procedure**

1. Check to see that the [INSTANT START] key LED is lit.
2. Press the [RAM REPEAT] key ([RAM REPEAT] key LED will be lit).
Using the point where the key was pressed as the start point, one second RAM playback will be repeated.
3. Using the [JOG] dial, this start point is moved in 1msec. units to setup a new start point.
4. After setting the start point, press the [STOP] button to cancel the repeat mode. Rehearsal is ended by the procedures up to this point.
5. Press the [PLAY] button after completing the rehearsal. Instant start can now be executed from the newly set start point.



4-8-5. Locating Using Instant Start

After completing search/locate in the instant start mode, instant start is possible from the search/locate point.



Operating Procedure

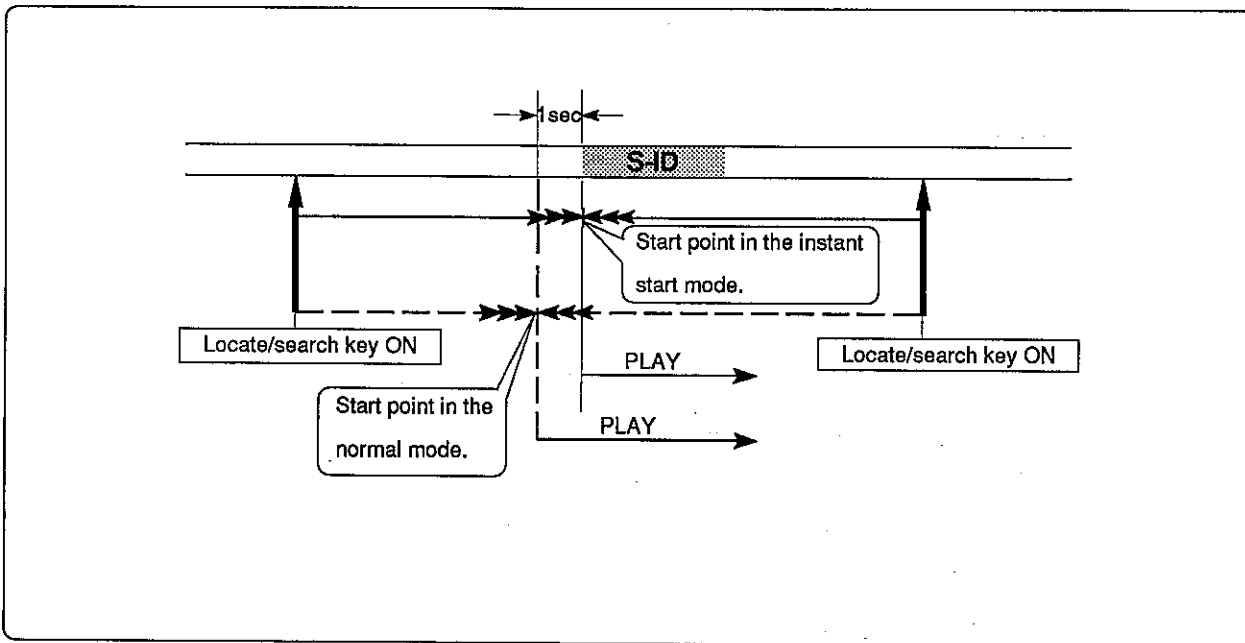
1. Check to see that the [INSTANT SATRT] key LED is lit.

2. Start search/locate.

◆ Refer to page 4-18, Chapter 4, Section 4-7. for explanation on search/locate method.

3. If the [PLAY] button is pressed during search/locate, the recorder will enter play upon completion of search/locate.

Difference between the normal mode and search/locate in the instant start mode.



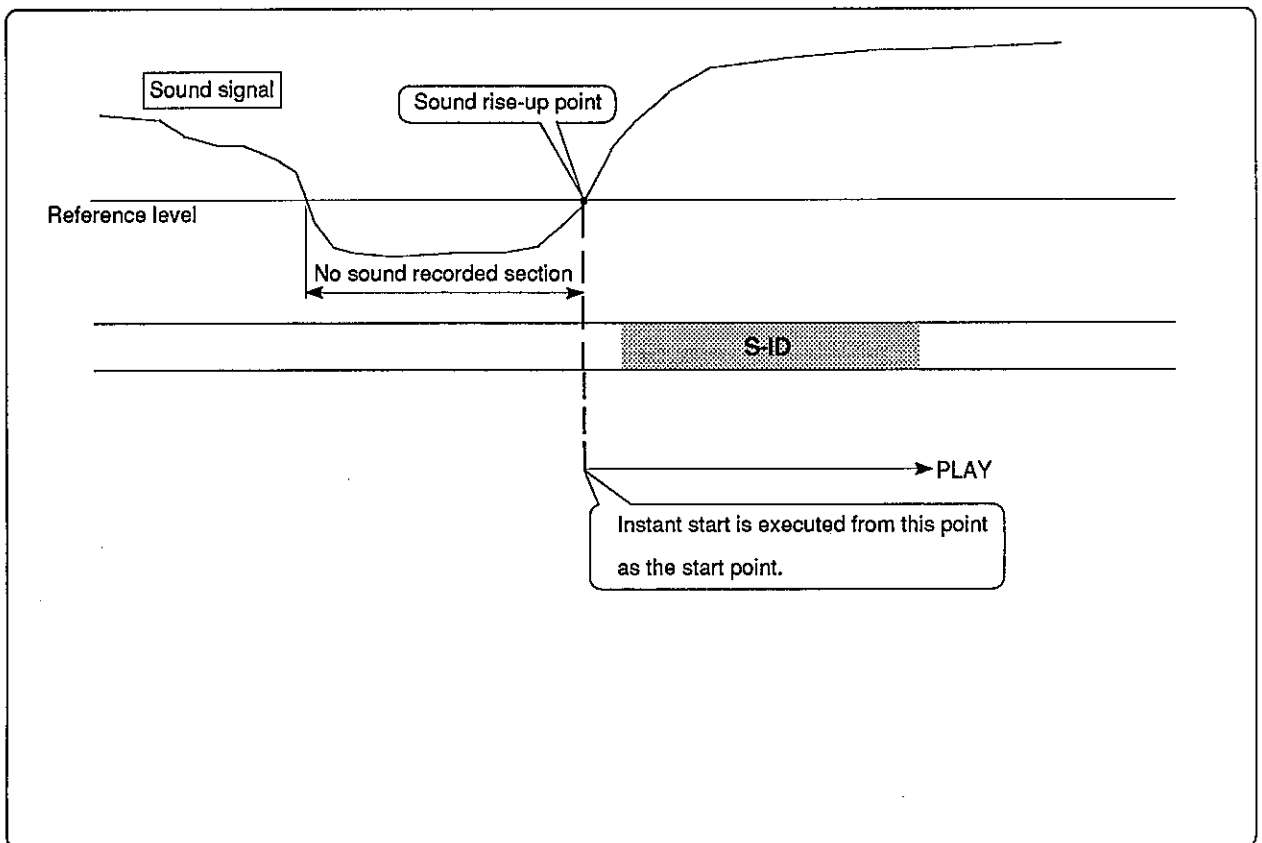
4-9. Auto Cue Mode

Auto cue is the function in which the sound rise-up point (*) following the no sound section located near a S-ID, is found automatically. This makes it possible to instant start from this sound rise-up point.

* The sound rise-up point

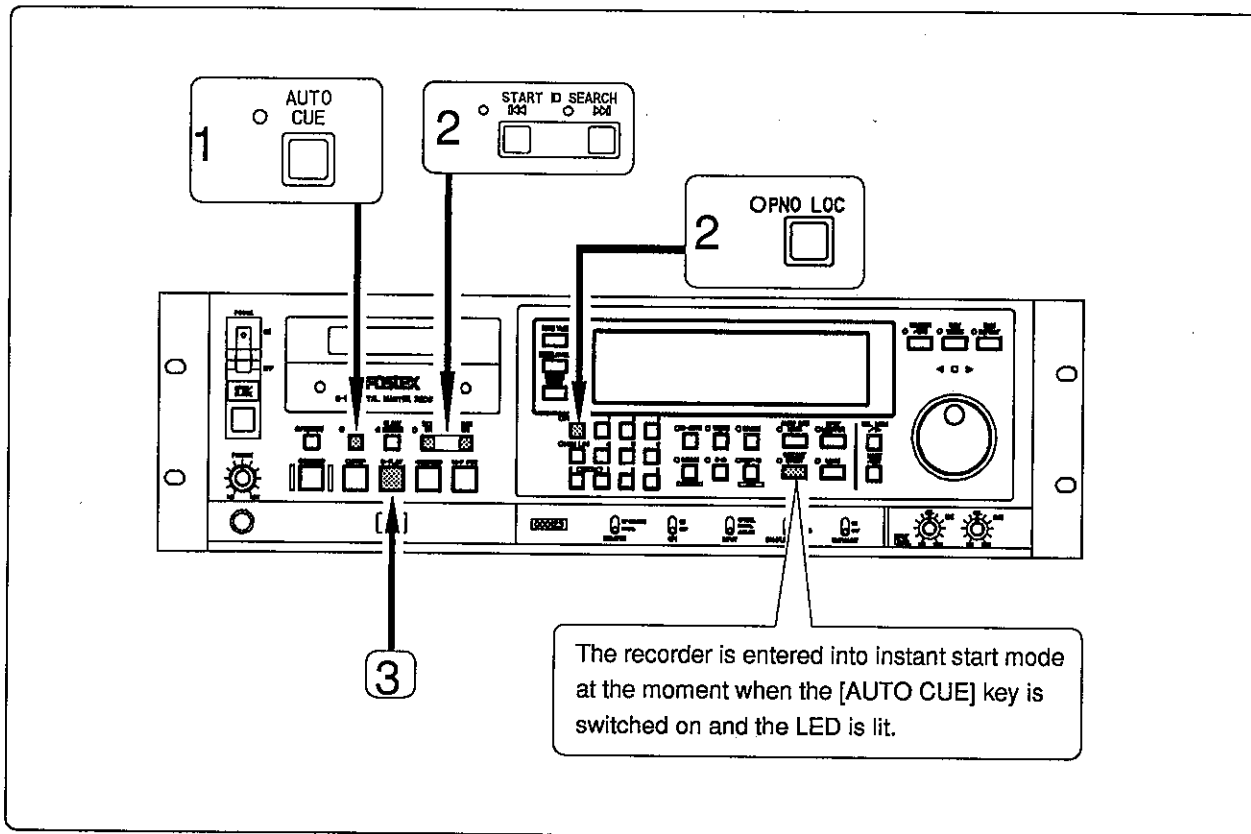
Succeeding a no sound recorded section of more than one second, the section where a signal higher than the reference level is recorded is called the sound rise-up point. Initial setting of this reference level is -40dB but it can be changed via the setup mode.

◆ Refer to page 7-1~. "Chapter 7. The setup mode" for details.



4-9-1. S-ID Search/P-No. Locate in the Auto Cue Mode

Sound rise-up point near the S-ID is searched. It is then possible to instant start.

**Operating Procedure**

1. Press the [AUTO CUE] key and check to see that the LED is lit.

The recorder will enter the instant start mode and the [INSTANT START] key LED will be lit.

2. Execute S-ID search or P-No. locate.

Upon completing search/locate, the sound rise-up point near the S-ID will be found and the recorder will prepare for instant start.

◆ Refer to page 4-18, Chapter 4, Section 4-7. Search/Locate for details on search/locate operation.

3. After checking that the [INSTANT START] key LED is lit, press the [PLAY] button. Instant start can be executed from the sound rise-up point that had been search/located.

4-9-2. When Tape is Loaded in the Auto Cue Mode

When tape is loaded in the auto cue mode, if there is an S-ID near where the tape is loaded, instant start will be possible from the sound rise-up point located near the S-ID. If no S-ID is found, the recorder will be ready for instant start from the loaded position.

<NOTE>

If the recorder is loaded in a non-recorded section, blank search will not be carried out but the recorder will pause in the loaded position.

Memo

A series of horizontal dashed lines for writing.



Chapter 5. Record/Erase of Sub ID

Writing or erasing of the Sub-ID such as Start-ID, program number, Skip-ID, etc., indispensable for DAT function, are explained in this chapter.

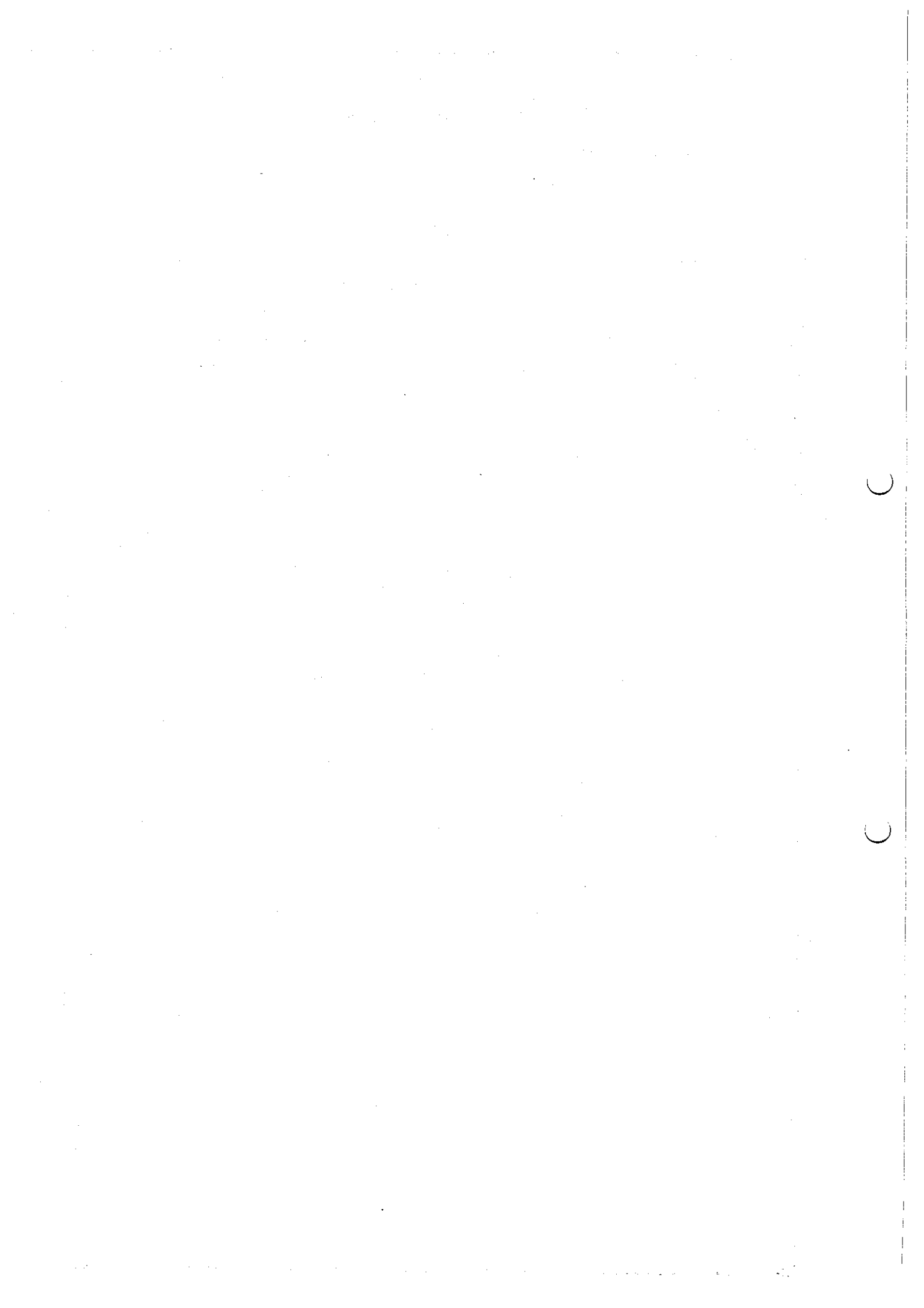
<NOTE>

It is necessary for A-Time to be recorded on the tape if recording of the Sub-ID by later recording or renumbering is to be carried out.

Also, since the D-10 is of the two head type, take extreme care as previously recorded sub-code information such as R-Time, date, etc. (not including A-Time) will be erased if record/erase of the Sub-ID and renumbering is carried out.

TABLE OF CONTENTS

| | |
|--|------|
| 5-1. Recording of Start ID/Program No..... | 5-1 |
| 5-1-1. Automatic Recording of S-ID/P No. During a Recording..... | 5-2 |
| 5-1-2. Recorded of S-ID/P No. at a Random Point During a Recording..... | 5-3 |
| 5-1-3. Recording of new S-ID/P No. during playback of a prerecorded tape..... | 5-5 |
| 5-1-4. Recording of S-ID/P No. at the Cueing Point..... | 5-7 |
| 5-1-5. Re-recording of Continuous P No. (renumbering function) From the Head of the tape..... | 5-9 |
| 5-1-6. Erasing S-ID/P No..... | 5-11 |
| 5-2. Record/Erase of Skip-ID..... | 5-12 |
| 5-2-1. Recording of Skip-ID at any Point During a Recording..... | 5-13 |
| 5-2-2. Record a New Skip-ID During Playback of a Prerecorded Tape..... | 5-14 |
| 5-2-3. Recording of a Skip-ID at the Cueing Point..... | 5-16 |
| 5-2-4. Erasing the Skip-ID..... | 5-18 |



Chapter 5

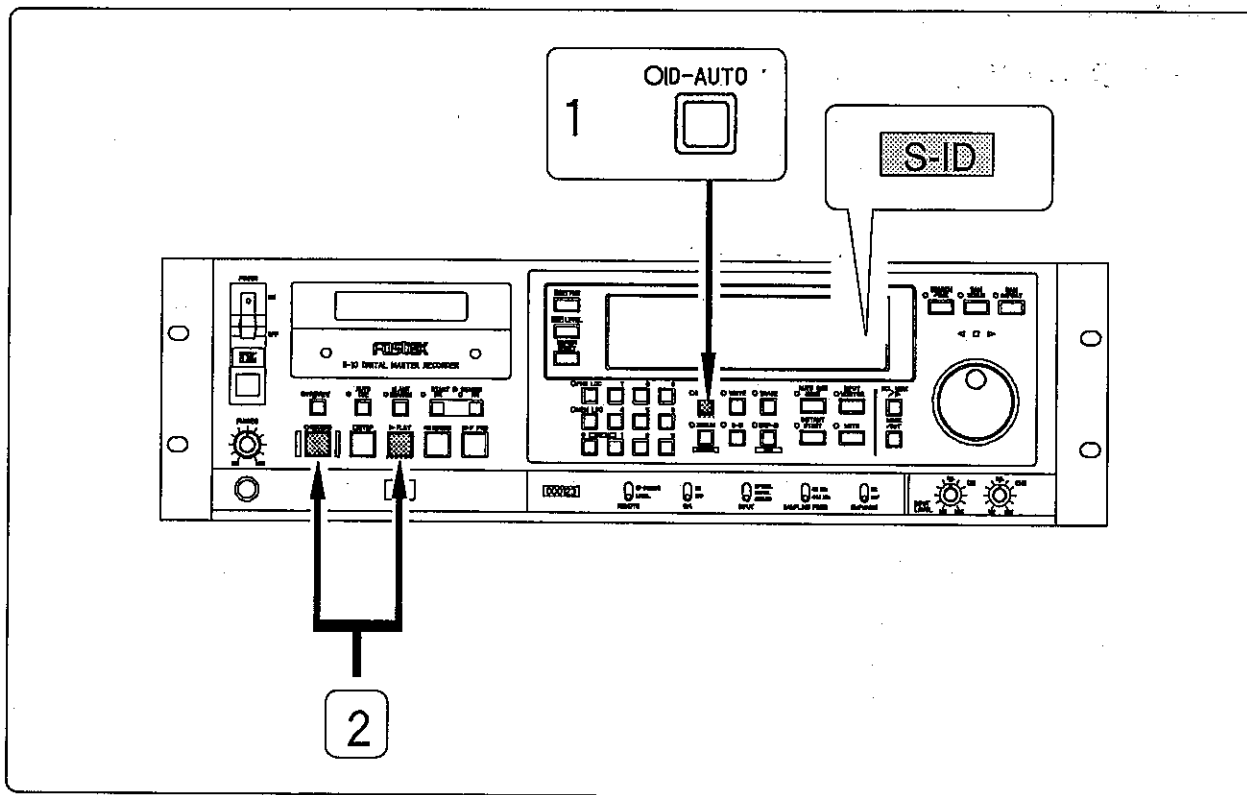
5-1. Recording of Start ID/Program No.

Procedures in recording the Start ID and P-No. will be explained in the following.

The D-10 can record a S-ID via the following 5 methods:

1. Automatic recording of S-ID/P-No. while in the recording mode.
2. Record a S-ID/P-No. in any desired point while in the recording mode.
3. Record a new S-ID/P-No. during playback of a prerecorded tape.
4. After locating the head of a prerecorded tape via cueing, record S-ID/P-No. in that position.
5. Re-record a continuous P-No. from tape head (renumbering function).

5-1-1. Automatic Recording of S-ID/P-No. During a Recording



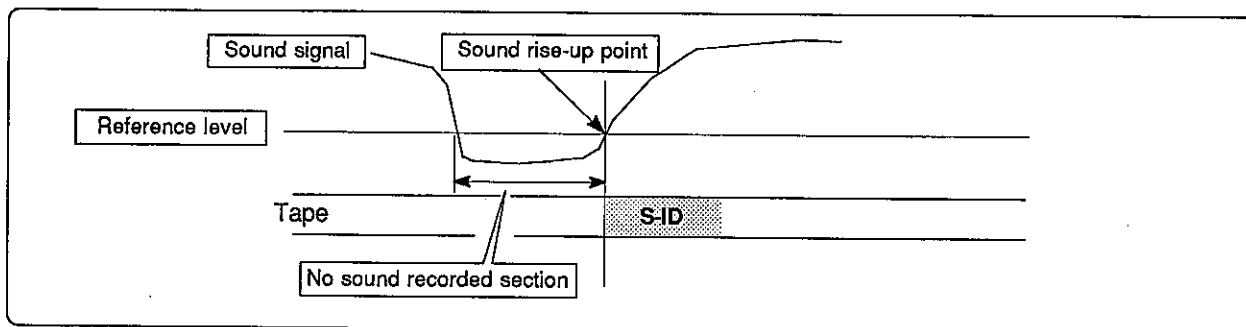
Operating Procedure

1. Press the [ID-AUTO] key ([ID-AUTO] key LED will light).

2. Start recording by simultaneously pressing the [RECORD] and [PLAY] buttons.

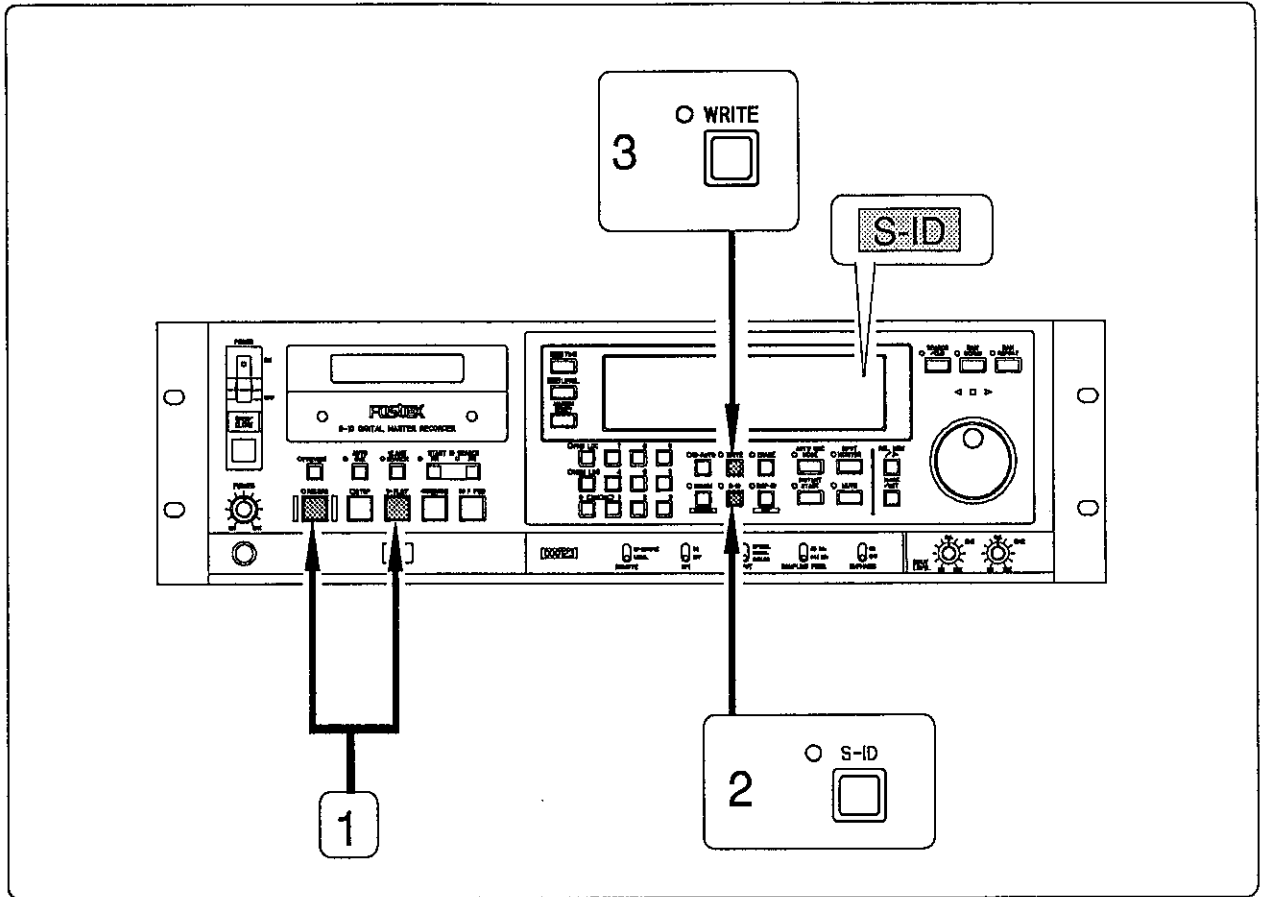
During recording, after more than one second of no sound recording elapses, an S-ID will automatically record when a signal higher than the reference level is input.

[S-ID] will be shown in the display during recording of an S-ID and extinguished upon completion of this recording.



* If a program number is already shown in the [PGM] display at the start of the recording, P-No's automatically counted up from this will be recorded. If a new number is specified from the numerical keypad in the [NEXT] display section, this specified number will be recorded as the specified program number.

5-1-2. Record of S-ID/P-No. at a Random Point During a Recording



Operating Procedure

1. Start recording by simultaneously pressing the [RECORD] and [PLAY] buttons.

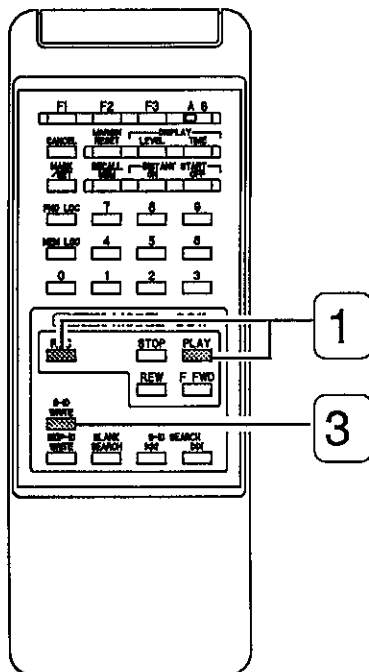
2. Press the [S-ID] key ([S-ID] key LED will be lit).

* This process is not necessary in the remote controller.

3. Upon arriving at the desired point for recording the S-ID, press the [WRITE] key.

* S-ID will be recorded at the position where the [WRITE] key is pressed.

* When using the remote controller, press the [S-ID WRITE] key.

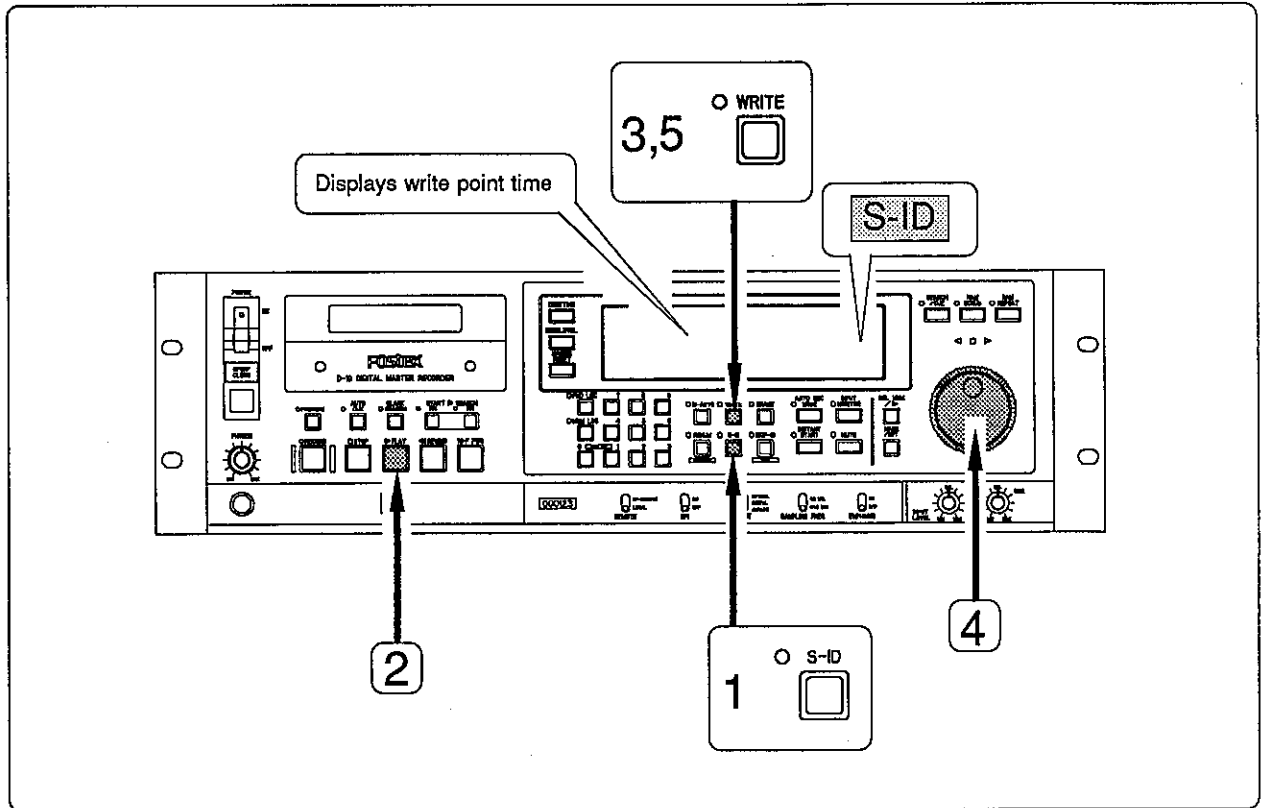


| | |
|---------------------------|--|
| During execution of write | [WRITE] key LED is lit. [S-ID] key LED is lit. [S-ID] is lit. |
| After completion of write | [WRITE] key LED is extinguished. [S-ID] key LED is extinguished. [S-ID] is extinguished. |

* If a program number is already shown in the [PGM] display section at the start of the recording, program number's automatically counted up from this will be recorded. If a new number is specified from the numerical keypad in the [NEXT] display section, this number will be recorded as the program number.

5-1-3. Recording of new S-ID/P-No. during playback of a prerecorded tape

* This can be executed even though the [ID-AUTO] key is on (LED is lit).



Operating Procedure

1. Press [S-ID] key ([S-ID] key LED is lit).
2. Start playback by pressing the [PLAY] button.
3. Press the [WRITE] key once upon reaching the point where an S-ID is to be recorded. The [WRITE] key LED will blink, the time when the key was pressed will be shown in the display, and playback for about 2 seconds from this time will be repeatedly played back (rehearsal).

* The [RECORD] button will blink during repeated playback.

* During this condition, if the [WRITE] key is pressed twice, an S-ID can be recorded without rehearsal. An S-ID can also be recorded in the stop position.

4. The position (time) for recording can be changed by manipulating the [JOG] dial.

5. After completing rehearsal, an S-ID can be recorded if the [WRITE] key is pressed again.

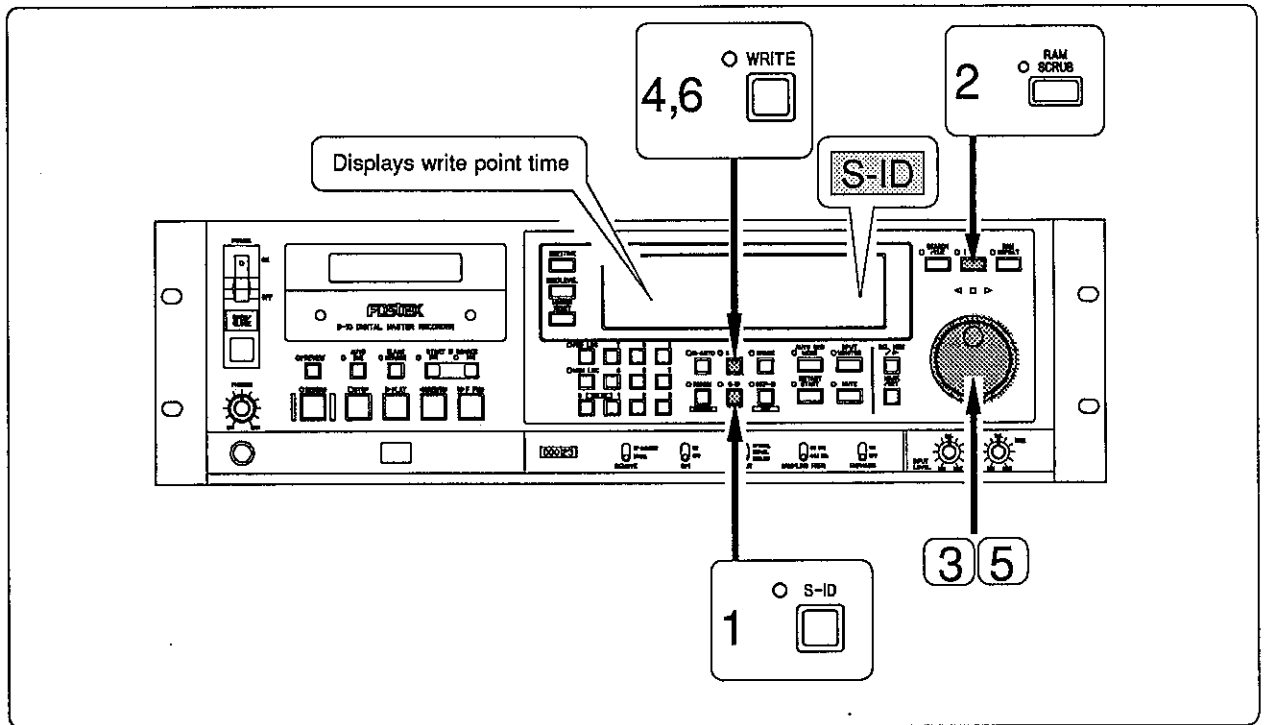
| | |
|------------------------|--|
| During write | [WRITE] key LED is lit. [S-ID] key LED is lit. [S-ID] is lit. |
| At completion of write | [WRITE] key LED is extinguished. [S-ID] key LED is extinguished. [S-ID] is extinguished. |

<NOTES>

- * This cannot be executed if A-Time is not recorded on the tape.
- * If record/erase of S-ID is executed, the previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.
- * If an S-ID already exists at the point where the [WRITE] key was initially pressed, the editing point will be moved to the head of this S-ID.
- * This will not operate if the cassette erase protection hole is open.
- * This series of operation are not possible via the remote controller.
- * This will not operate when in instant start mode.

5-1-4. Recording of S-ID/P-No. at the Cueing Point

The position in which a recording is to be made is found by cueing (such as by RAM scrub) and an S-ID/P-No. is recorded in that position.



Operating Procedure

1. Press the [S-ID] key ([S-ID] key LED is lit).
2. Press the [RAM SCRUB] key ([RAM SCRUB] key LED is lit).
3. Search for the position to record with the [JOG] dial.
4. After determining the recording position, press the [WRITE] key once. The [WRITE] key LED will blink and playback (rehearsal) will repeat from the position determined by the [JOG] dial. The [RECORD] button lamp will blink during the repeated playback.

* If the [WRITE] key is pressed twice, an S-ID can be recorded without rehearsal.

5. The [JOG] dial is used to move the recording position again.
6. After setup is completed, if the [WRITE] key is pressed again, an S-ID can be recorded.

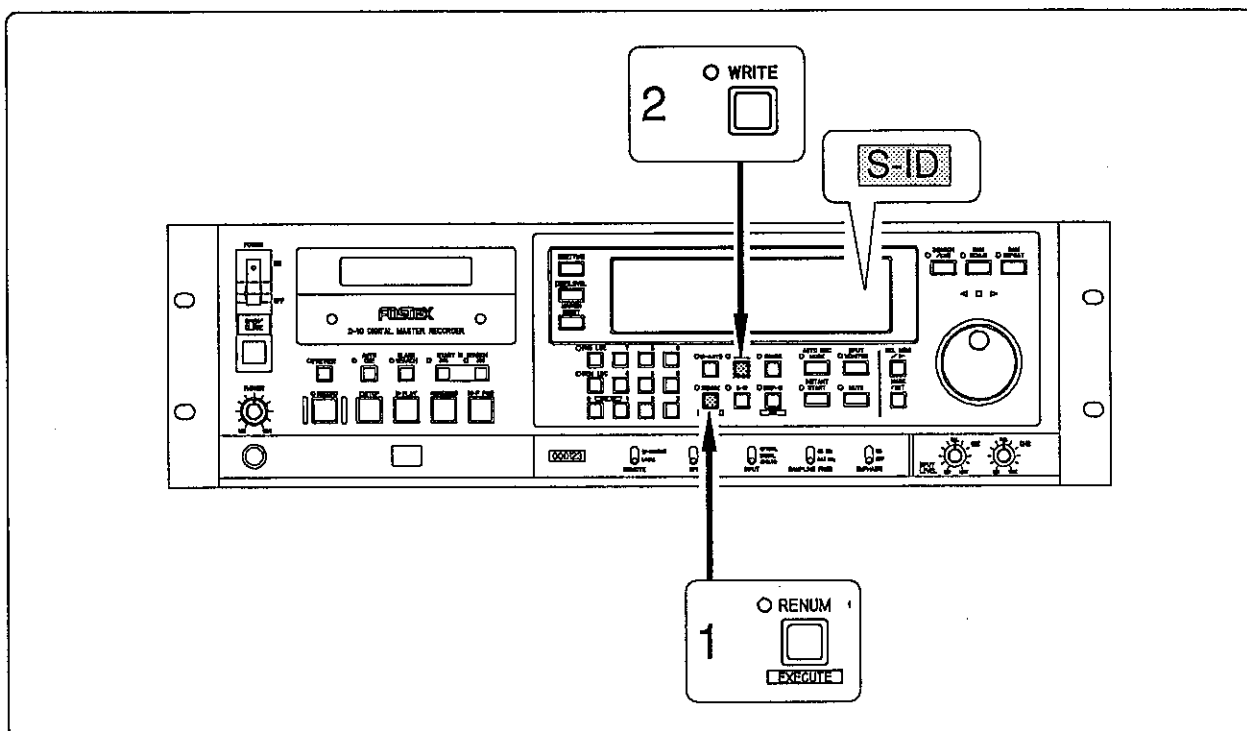
| | |
|------------------------|--|
| During write | [WRITE] key LED is lit. [S-ID] key LED is lit. [S-ID] is lit. |
| At completion of write | [WRITE] key LED is extinguished. [S-ID] key LED is extinguished. [S-ID] is extinguished. |

<NOTES>

- * This cannot be executed if no A-Time is recorded on the tape.
- * If record/erase of S-ID is executed, the previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.
- * If an S-ID already exists at the point where the [WRITE] key was initially pressed, the editing point will be moved to the head of this S-ID.
- * This will not operate if the cassette erase protection hole is open.
- * This series of operation are not possible via the remote controller.
- * This will not operate when instant start mode.

5-1-5. Re-recording of Continuous P-No. (renumbering function) From the Head of the Tape

If the continuity of P-No. has been disturbed by editing, etc. or an S-ID is recorded and a P-No. not recorded, a continuous P-No. can be re-recorded (renumbered) from head of tape.



Operating Procedure

1. Press the [RENUM] key while the transport is stopped or in pause ([RENUM] key LED is lit).

2. Press the [WRITE] key.

The recorder will enter the renumbering operation and a continuous P-No. will be re-recorded with S-ID at head of tape as [001].

| | |
|------------------------|--|
| During write | [WRITE] key LED is lit. [RECORD] button is lit. |
| At completion of write | [WRITE] key LED is extinguished. [RECORD] button is extinguished. [RENUM] key LED is extinguished. |

<NOTES>

* This function cannot be executed if A-Time is not recorded on the tape.

* If renumbering is executed, previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.

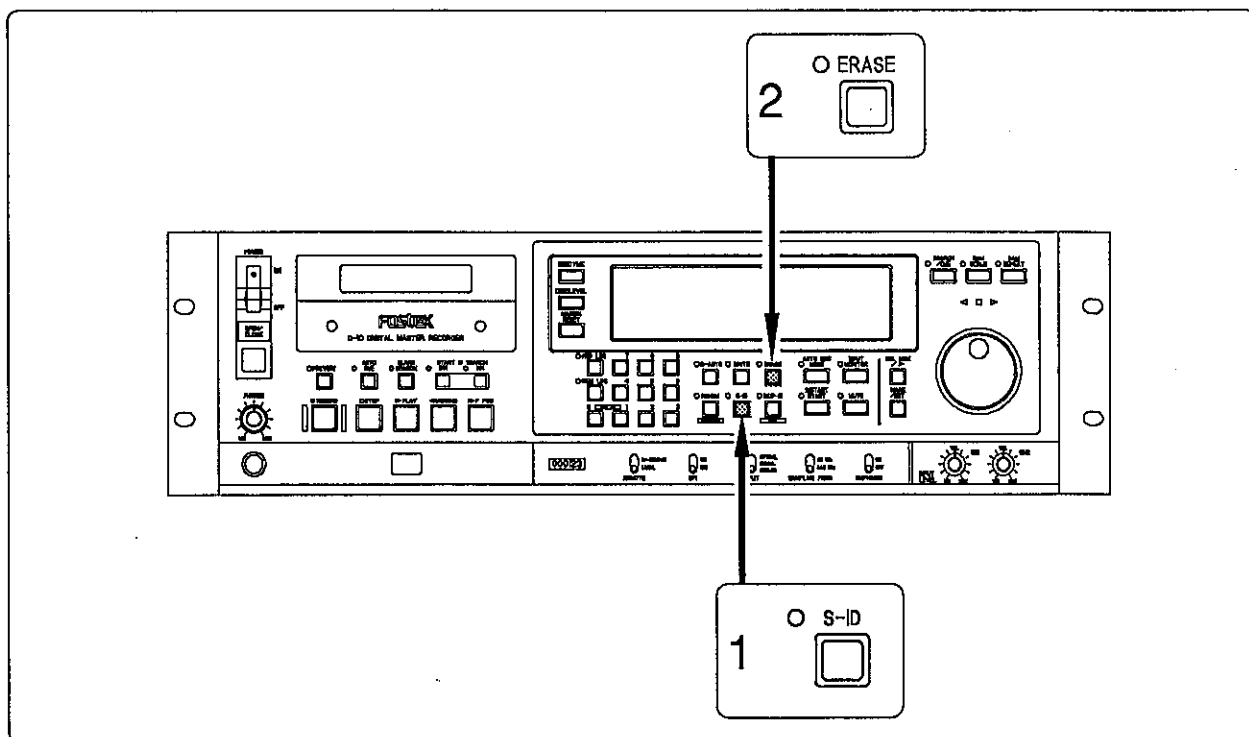
* In renumbering S-ID near 0 ~ 10 seconds of the A-Time, its position could drift and thus lose continuity of the A-Time. Therefore, it is recommended to record S-ID, more than 10 seconds later from the start for the initial program, or in considering the reliability of the tape, more than one minute later from the start.

* This series of operation cannot be executed from the remote controller.

* This will not operate when in instant start mode.

5-1-6. Erasing S-ID/P-No.

Unnecessary S-ID/P-No. can be erased.

**Operating Procedure**

1. Press the [S-ID] key while the transport is in the stop or pause mode ([S-ID] key LED will be lit).

2. Press the [ERASE] key.

When this key is pressed, the transport will search for an S-ID/P-No. located within about 9 seconds (300 frames) from the stopped position in the rewind direction and erase it.

| | |
|------------------------|---|
| During erase | [ERASE] key LED is lit. [RECORD] button is lit. |
| At completion of erase | [ERASE] key LED is extinguished. [RECORD] button is extinguished. [S-ID] key LED is extinguished. |

<NOTES>

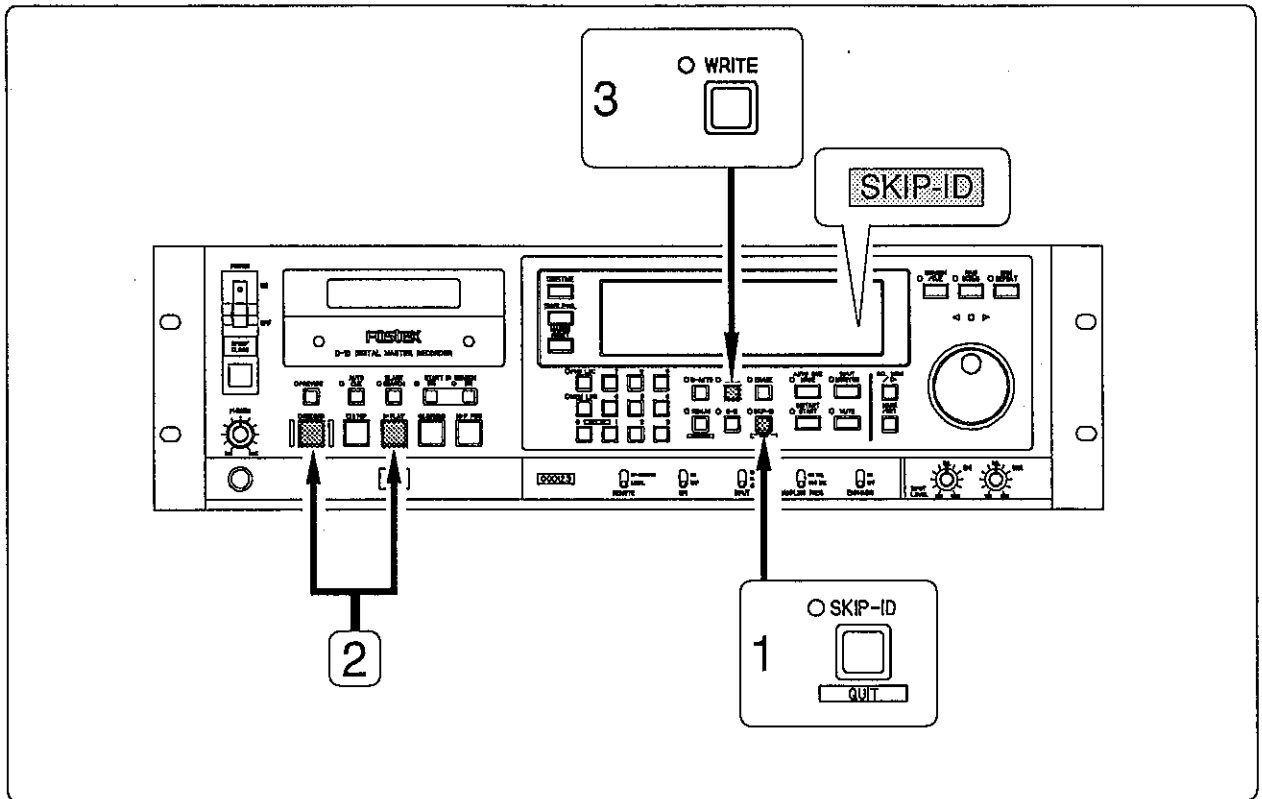
- * This function cannot be executed if A-Time is not recorded on the tape.
- * If record/erase of S-ID is executed, previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.
- * This operation cannot be executed from the remote controller.
- * This will not operate when in instant start mode.

5-2. Record/Erase of Skip-ID

The D-10 can record/erase a Skip-ID via the following three methods.

- 1.** Record a Skip-ID in any position during the recording process.
- 2.** Record a new Skip-ID during playback of a prerecorded tape.
- 3.** After locating the head of a prerecorded tape by cueing, record a Skip-ID in that position.

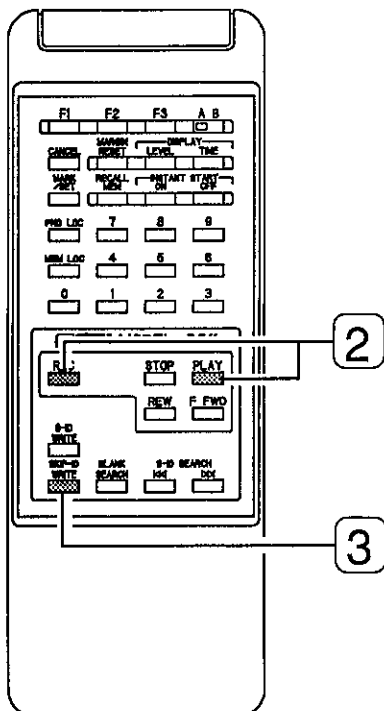
5-2-1. Recording of Skip-ID at Any Point During a Recording



Operating Procedure

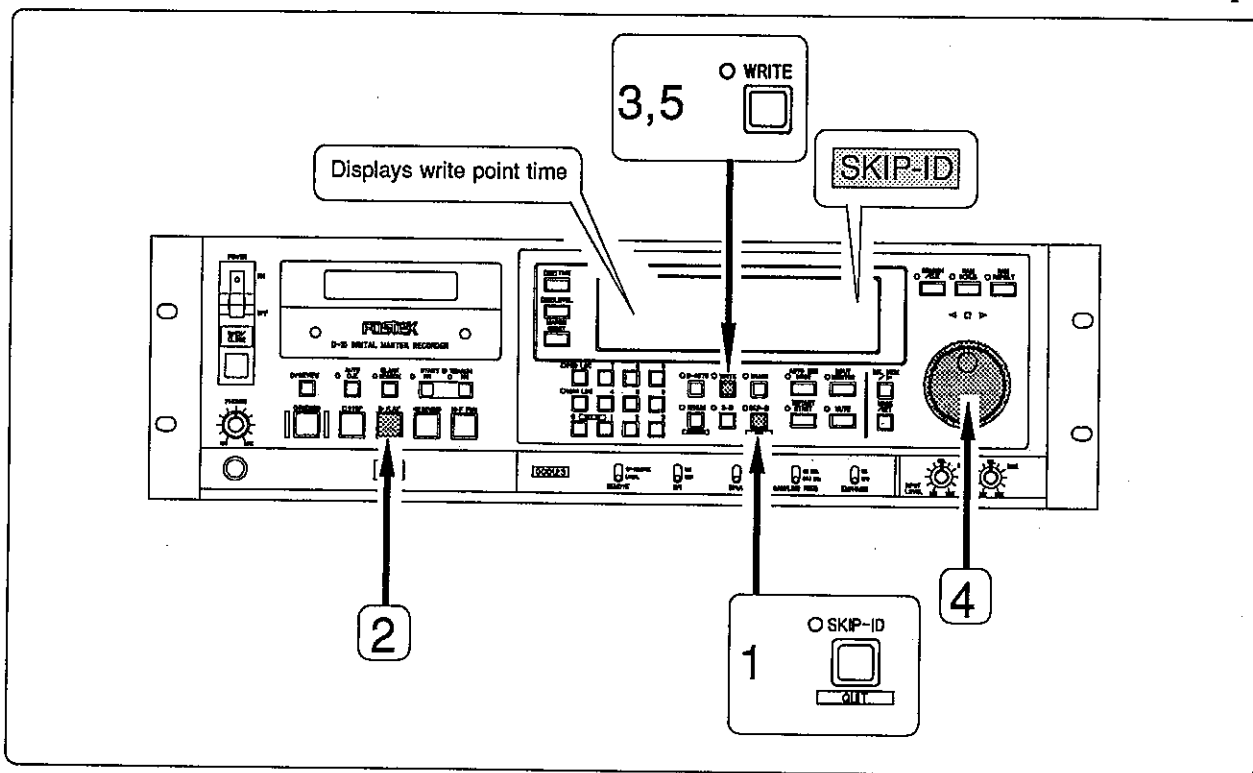
1. Press the [SKIP-ID] key ([SKIP-ID] key LED is lit).
2. Start recording by simultaneously pressing the [RECORD] and [PLAY] buttons.
3. Press the [WRITE] key upon arriving at the point where Skip-ID is to be recorded. If the remote controller is used, press the [SKIP-ID WRITE] key.

* Skip-ID is recorded at the point where the [WRITE] key is pressed.



| | |
|------------------------|--|
| During execution | Write key LED is lit. [SKIP-ID] is lit. |
| At completion of write | Write key LED is extinguished. [SKIP-ID] is extinguished. |

5-2-2. Record a New Skip-ID During Playback of a Prerecorded Tape



Operating Procedure

1. Press the [SKIP-ID] key ([SKIP-ID] key LED will light).
2. Start playback by pressing the [PLAY] button.
3. Press the [WRITE] key once when the tape arrives at the position where the Skip-ID is to be recorded.
After this, the [WRITE] key LED will blink, the time at which this key was pressed will be shown in the display, and about 2 seconds up to this displayed time will be repeatedly played back.

* The [RECORD] button will blink during repeated playback.

* If the [WRITE] key is pressed twice, a Skip-ID is recorded without rehearsal.

4. The point (time) to be recorded can be changed via the [JOG] dial.

5. After completing rehearsal, a Skip-ID can be recorded if the [WRITE] key is pressed again.

| | |
|---------------------------|--|
| During execution of write | [WRITE] key LED is lit. [SKIP-ID] key is lit. [SKIP-ID] is lit. |
| At completion of write | [WRITE] key LED is extinguished. [SKIP-ID] key LED is extinguished. [SKIP-ID] is extinguished. |

<NOTES>

- * This cannot be executed if no A-Time is recorded on the tape.

- * If record/erase of a Skip-ID is executed, the previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.

- * If a Skip-ID already exists near the point where it is to be recorded, this Skip-ID must be erased in advance.

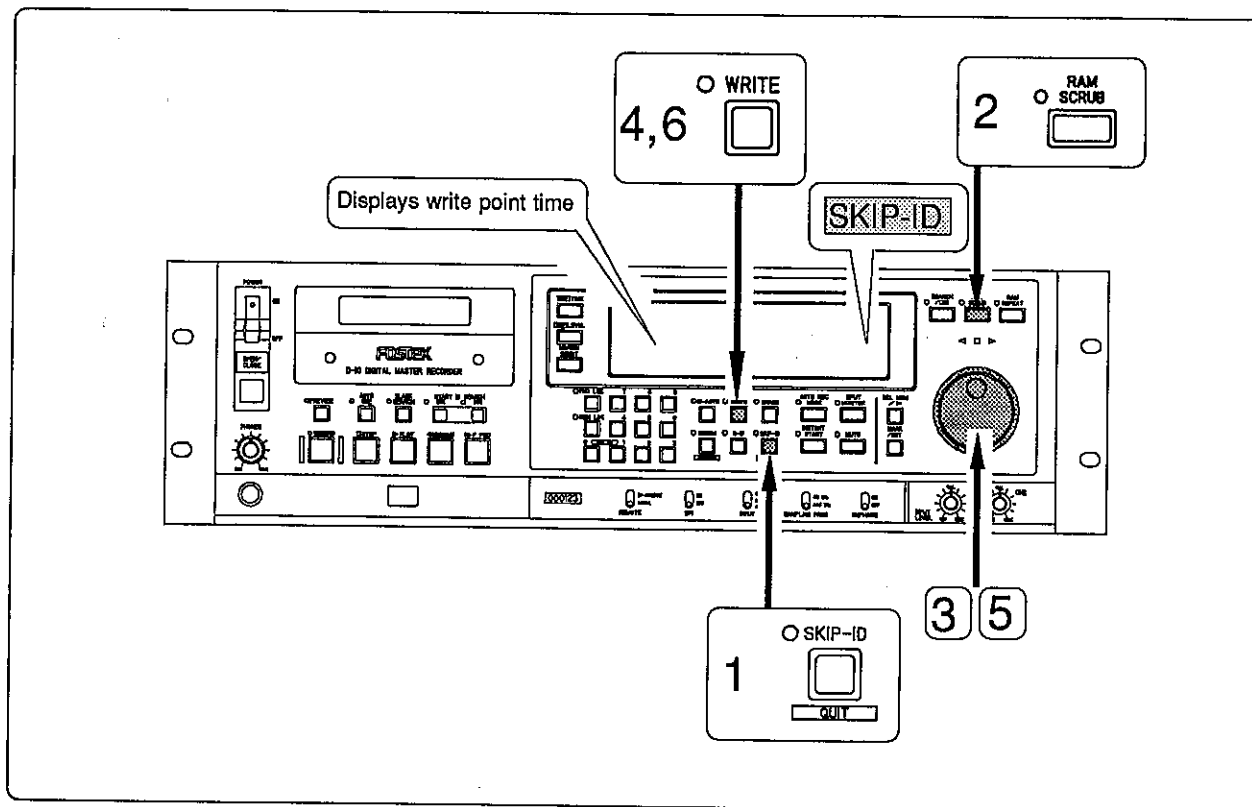
- * This will not operate if the cassette erase protection hole is open.

- * This operation cannot be executed from the remote controller.

- * This will not operate when in instant start mode.

5-2-3. Recording of a Skip-ID at the Cueing Point

Find the position at which a recording is to be made by RAM scrub and cueing and record a Skip-ID in that position.

**Operating Procedure**

1. Press the [SKIP-ID] key ([SKIP-ID] key LED is lit).
2. Press the [RAM SCRUB] key ([RAM SCRUB] key LED is lit).

3. Find position for recording with the [JOG] dial.

4. After determining the recording point, press the [WRITE] key once. The [WRITE] key LED will blink and playback (rehearsal) will be repeated from the point determined via the [JOG] dial. The [RECORD] button lamp will blink during repeated playback.

*If the [WRITE] key is pressed twice, a Skip-ID can be recorded without rehearsal.

5. The [JOG] dial can be used to again move the recording position.

6. A Skip-ID will be recorded if the [WRITE] key is pressed again after completing the setup,

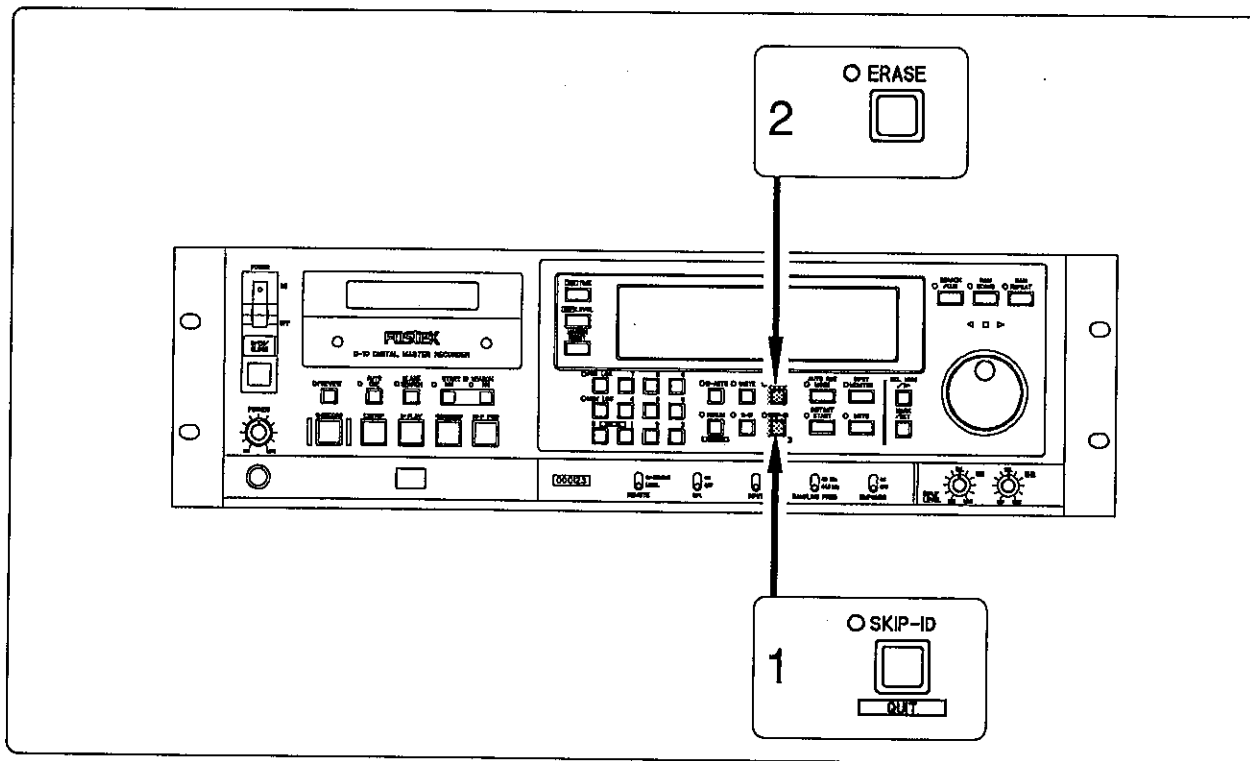
| | |
|------------------------|--|
| At execution of write | [WRITE] key LED is lit. [SKIP-ID] key LED is lit. [SKIP-ID] is lit. |
| At completion of write | [WRITE] key LED is extinguished. [SKIP-ID] key LED is extinguished. [SKIP-ID] is extinguished. |

<NOTES>

- * This cannot be executed if A-Time is not recorded on the tape.
- * If record/erase of Skip-ID is executed, the previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.
- * If Skip-ID already exists near the point where it is to be recorded, this Skip-ID must be erased in advance.
- * This operation cannot be executed from the remote controller.
- * This will not operate when in instant start mode.

5-2-4. Erasing the Skip-ID

Unnecessary Skip-IDs can be erased.



Operating Procedure

1. Press the [SKIP-ID] key while the transport is in the stop or pause modes ([SKIP-ID] key LED is lit).

2. Press the [ERASE] key.

When this key is pressed, the transport will search for Skip-ID's located within about 9 seconds (300 frames) from the stopped position in the rewind direction and erase it.

| | |
|------------------------|--|
| During erase | [ERASE] key LED is lit. [RECORD] button is lit. [SKIP-ID] key LED is lit. |
| At completion of erase | [ERASE] key LED is extinguished. [RECORD] button is extinguished. [SKIP-ID] key LED is extinguished. |

<NOTES>

* If record/erase of Skip-ID is executed, previously recorded R-Time, date, etc. and other back data and Sub-ID will be erased.

* This will not operate when in instant start mode.

Chapter 6. Memory Edit Mode

Method of editing the memory number and memory information are explained here.

TABLE OF CONTENTS

| | |
|--|-----|
| 6-1. Editing of Memory Number/Memory Information..... | 6-1 |
| 6-1-1. Specifying the Memory Number and Storing It..... | 6-1 |
| 6-1-2. Checking (recall) Time Information of the Specified Memory Number..... | 6-3 |
| 6-1-3. Changing the memory number/time data..... | 6-5 |

C

C

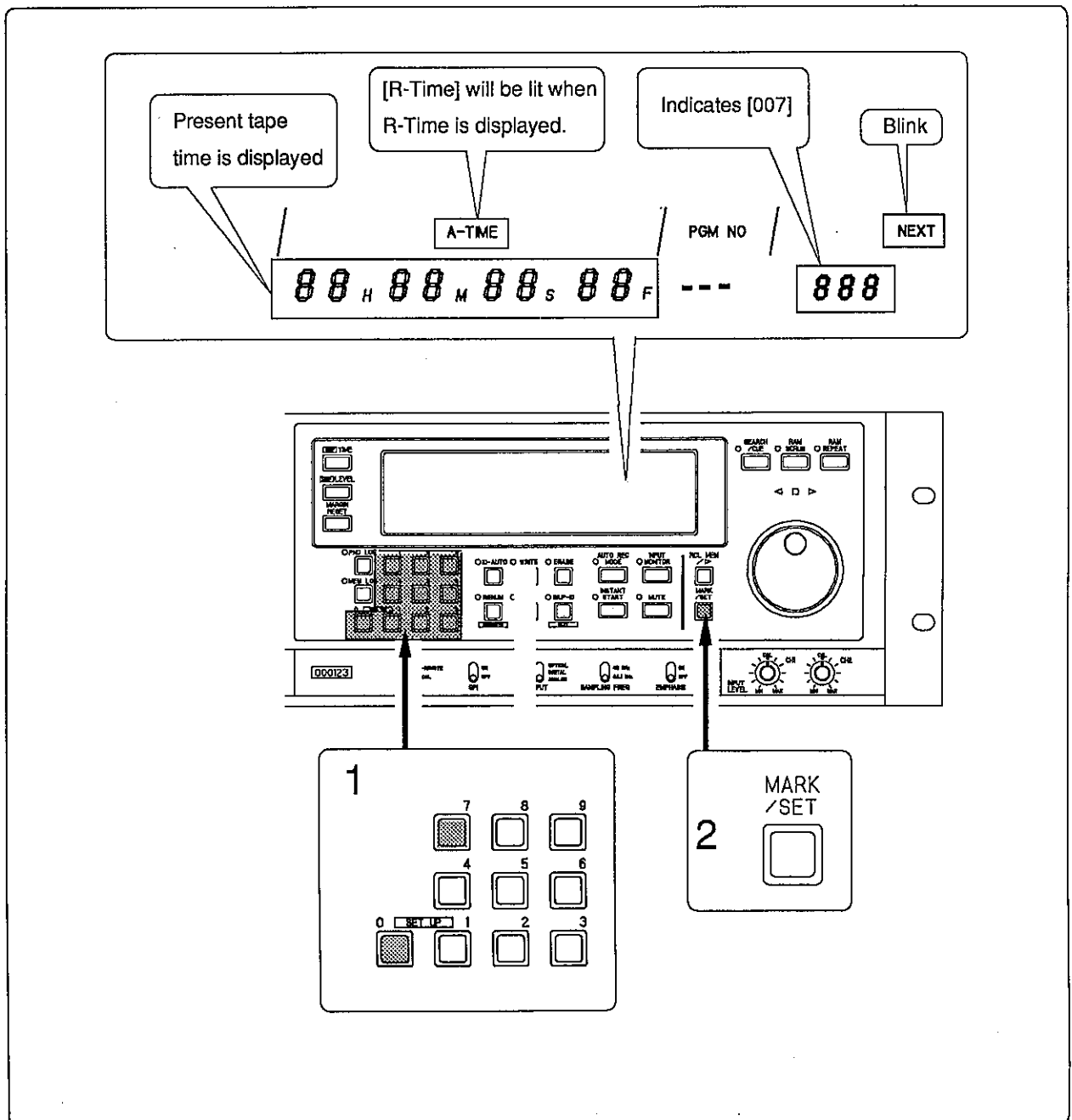
Chapter 6

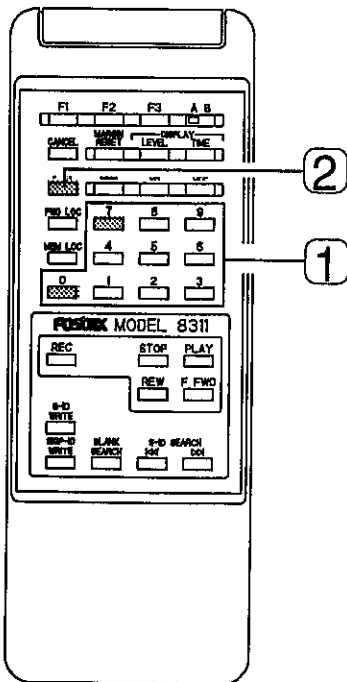
6-1. Editing of Memory Number/Memory Information

Except for the date, when time information such as A-Time or R-Time is shown in the display, this time information can be stored in any memory by specifying its number. If A-Time is on display, the A-Time information and, if R-Time is on display, the R-Time information will respectively be stored in the memory. 100 memory numbers can be set from "00" to "99."

6-1-1. Specifying the Memory Number and Storing It

A desired time is stored in memory number "07" (as an example) when the transport is in stop or pause or running (in play or record play).





Operating Procedure

1. Press [0], then [7] of the numerical keypad.

[NEXT] will appear in the display and [007] will be shown below the [NEXT] display.

<NOTE>

Although three digits can be input below the [NEXT] display, the hundreds digit will be ignored. Therefore, if [234] is input, the memory number will be [34].

2. Next, press the [MARK/SET] key.

Because the time display will continuously advance even though [NEXT] is on display when the tape is running, press the [MARK/SET] key when the desired time is shown.

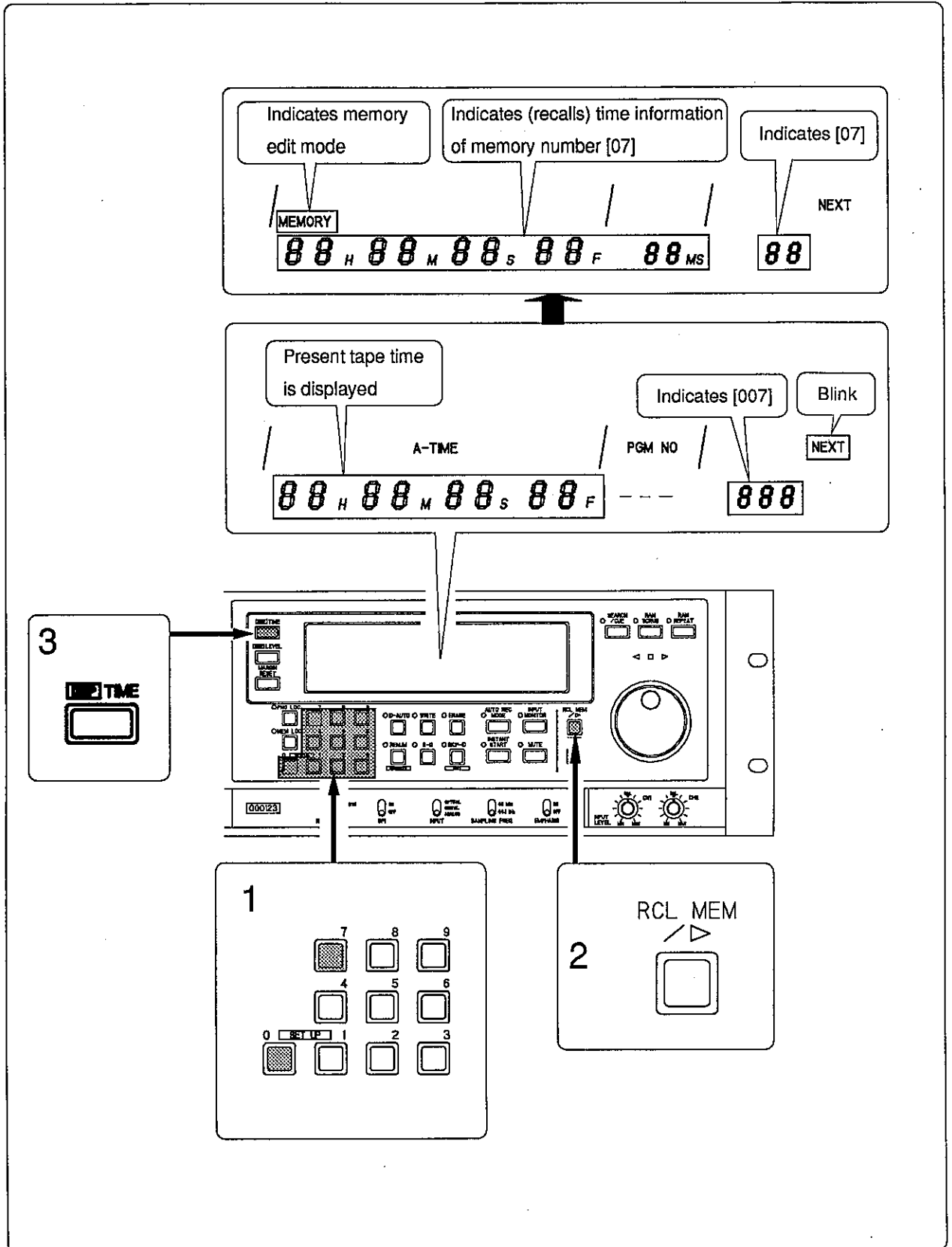
In this way, the desired time is stored in memory number "07" and the display will return to what it was before the appearance of [NEXT] in the display. If storing is to be interrupted prior to pressing the [MARK/SET] key, press the [DISP LEVEL] key. When this key is pressed, the [NEXT] display will change to [MARGIN] on the normal display. In the remote controller, this can be done via the [CANCEL] key.

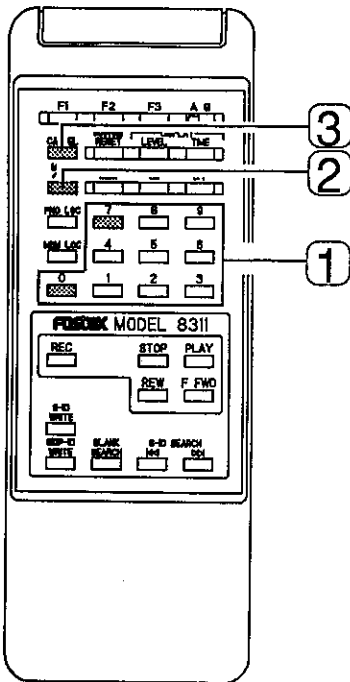
<NOTE>

If the [MARK/SET] key is pressed without any input from the numerical keypad, it will be automatically stored in memory number "00."

6-1-2. Checking (recall) Time Information of the Specified Memory Number

Time information stored in the memory number can be reconfirmed (Example: Time information in memory number "07" can be recalled).





Operating Procedure

1. Enter [0], then [7] in this order from the numerical keypad when anything other than the date is on the display. [NEXT] will be displayed when these numbers are input and [007] will be shown below the [NEXT] display.

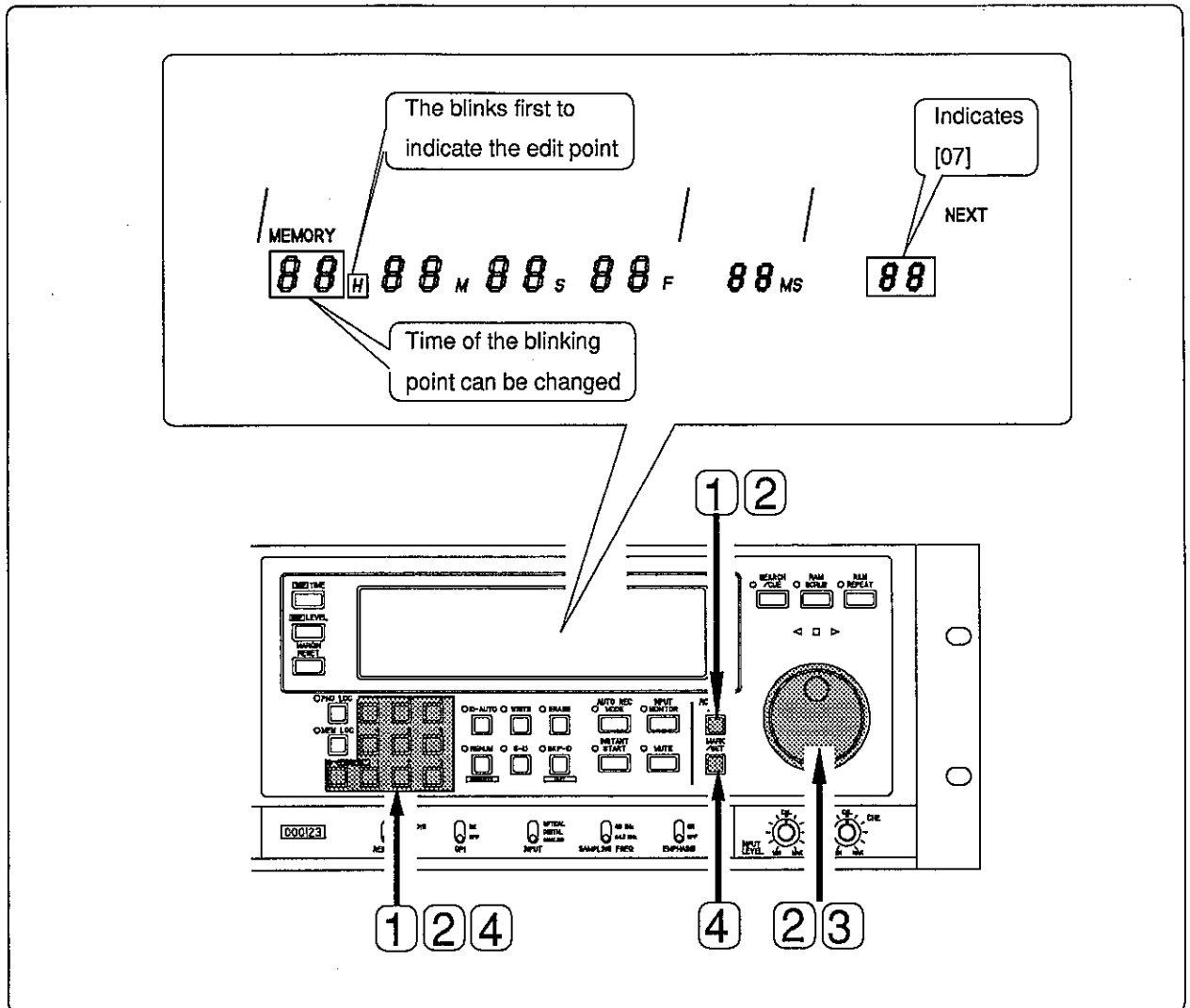
2. Press the [RCL MEM] key.

When this key is pressed, simultaneously with displaying the time information of the memory number [07], the recorder will enter the memory edit mode. Through these procedures, time information of the memory number [07] can be confirmed.

3. After confirming the time information, press the [DISP TIME] key to return to the normal display mode. In the remote controller, this can be done via the [CANCEL] key.

6-1-3. Changing the memory number/time data

The previously set memory number or time data can be changed and stored again,



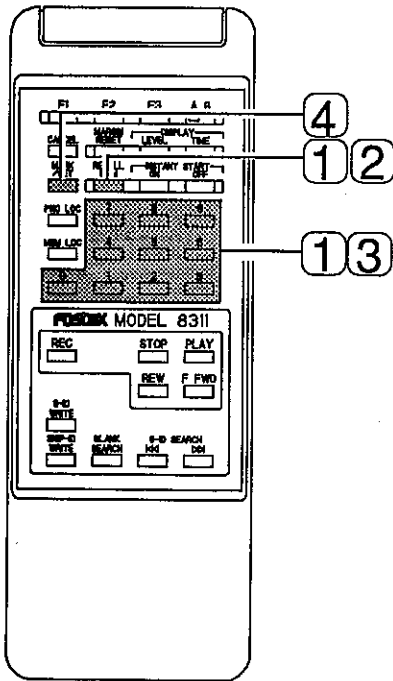
Operating Procedure

1. Specify the memory number (Example: [07]) to be changed by the same procedures as one and two in previous 6-1-2 operating procedure and recall the number. The display will change to the memory edit mode when the [07] time information is recalled and the [H] will blink first. (This blinking indicates the point which can be changed).

2. Input the number to be changed or move the point.

The point is moved as follows:

| | |
|----------------|--|
| Keypad | After input of two digits, the point is automatically moved. |
| [RCL MEM] key | Each time the key is pressed, it sequentially moves to the right as follows: <div style="text-align: center;"> </div> |
| [SHUTTLE] dial | The point will move to the right when rotated clockwise and in the reverse direction when rotated counterclockwise. |



3. After determining the point to be changed, input a new number. Numbers are input by the following methods.

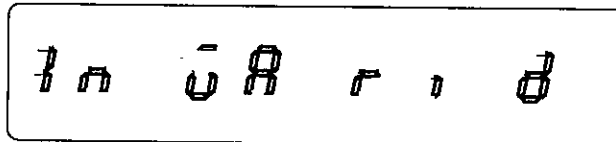
| | |
|------------------|---|
| Numerical keypad | Directly enter the desired number. |
| [JOG] dial | The number will increase when rotated clockwise and the time will be counted up (input is limited to 00 ~ 99 in the [NEXT] section). The number will be decreased when rotated counter clockwise and time will be count down (Input is limited to 00 ~ 99 in the [NEXT] section). |

4. After entering the new number, press the [MARK/SET] key to store it.

<NOTES>

- * If the memory number only is changed, memory number and data stored prior to the change will remain intact and will not be changed.
- * The edit point will not be moved even though two digits are input by the jog dial.
- * When time figures at the edit point are to be changed, if numbers not used for time figures (*) are input and stored, the following error message will be shown for about one second and return to the memory edit display prior to this input.

Error message



(*) Although numbers 00 ~ 99 can be input from the numerical keypad and jog dial, there are limitations in the numbers effective for time (Example: time=24, minute/second=60).

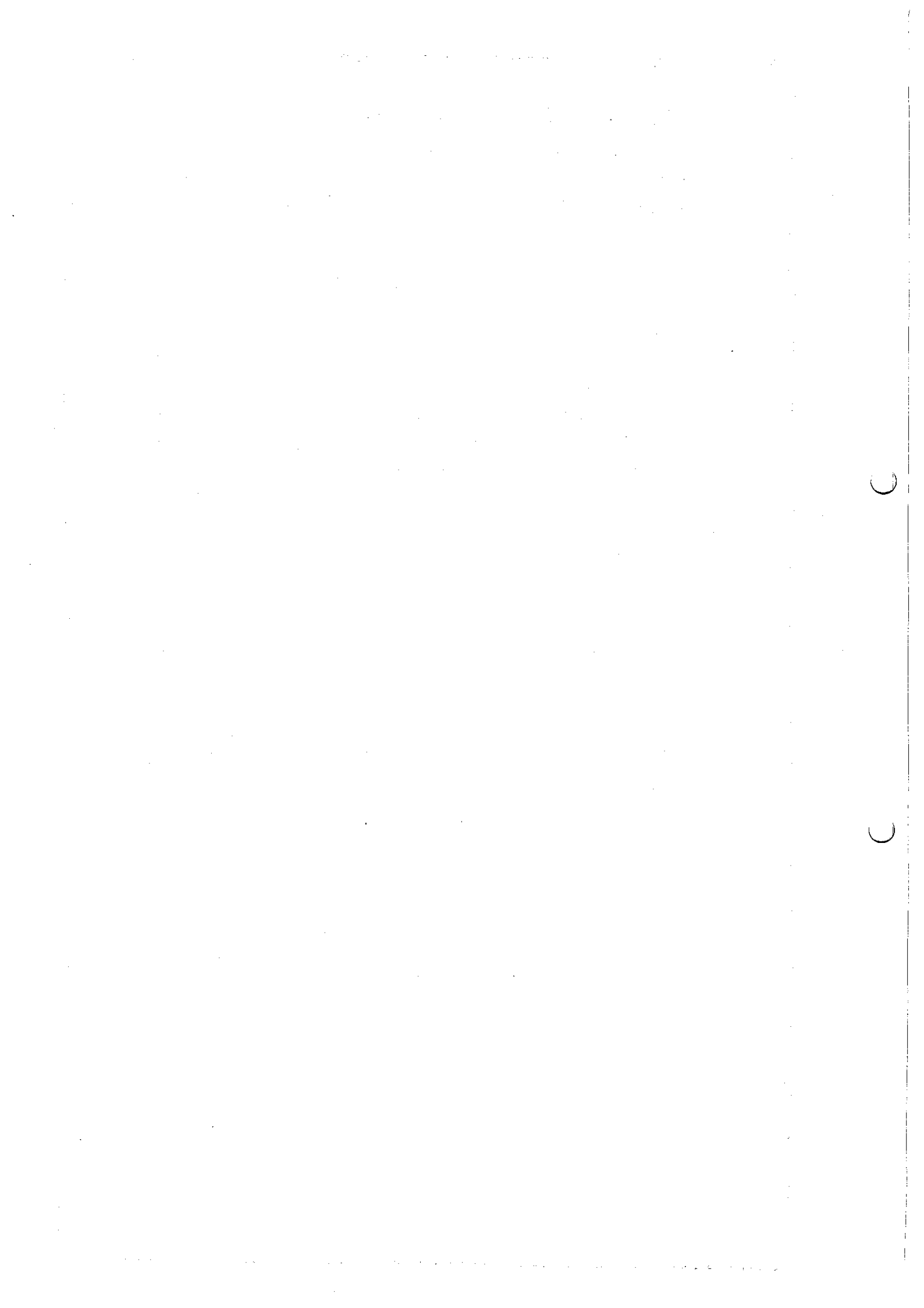
This refers, respectively, to larger than 24 for hours and 60 for minutes and seconds.

Chapter 7. The Setup Mode

The D-10 setup mode is explained here. In the setup mode, initial setup procedures such as checking the D-10 software version, selecting the remote controller, ALL RESET of memory data, and etc. will be explained.

TABLE OF CONTENTS

| | |
|--|-----|
| 7-1. Procedure for Entering the Setup Mode..... | 7-1 |
| 7-2. Execution of each menu..... | 7-4 |
| 7-2-1. Confirmation of the software version..... | 7-4 |
| 7-2-2. Remote control selection..... | 7-5 |
| 7-2-3. Selecting the reference level..... | 7-6 |
| 7-2-4. Setting the Auto Cue and Auto ID Detecting Level..... | 7-7 |
| 7-2-5. All Reset of the User Memory..... | 7-8 |



The Setup Mode

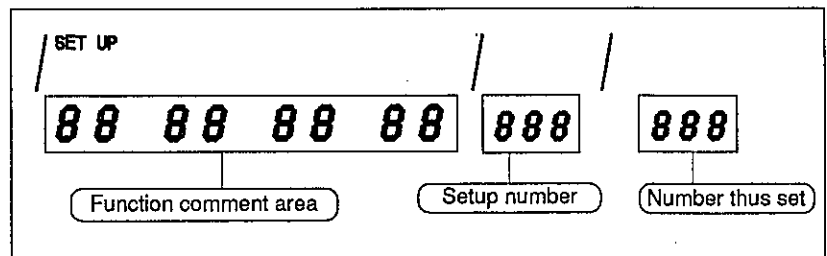
The following functions are possible in the setup mode.

1. Confirmation of the software version.
2. Selection of the optical remote control.
3. Setup of the reference level.
4. Setup of detecting level of auto cue and auto ID.
5. All reset of the user memory.

7-1. Procedure for Entering the Setup Mode

[0] and [1] of the numerical keypad are simultaneously pressed to enter from the normal mode to the setup mode.

The display will then change to the setup mode and any one of the previous setup menu will be displayed.



| | |
|---|---|
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| | |

| | |
|---|---|
| A | A |
| b | b |
| C | C |
| c | c |
| d | d |
| E | E |
| F | F |
| G | G |
| g | g |
| H | H |
| i | i |

| | |
|---|---|
| J | J |
| K | K |
| L | L |
| l | l |
| M | M |
| n | n |
| O | O |
| P | P |
| q | q |
| r | r |
| S | S |

| | |
|---|---|
| s | s |
| T | T |
| t | t |
| u | u |
| V | V |
| W | W |
| X | X |
| y | y |
| - | - |
| - | - |
| - | - |

The displays are the seven segment type and express the following:
Each menu will be displayed as shown below.

1. Software version confirmation menu

```

/SET UP
0E rS 10 n 881 -c h e
  
```

2. Remote control select menu

```

/SET UP
rE n o tE 101 -888
  
```

3. Select menu for the reference level

```

/SET UP
rE F lE o 102 -001
  
```

4. Setup of the auto cue and auto ID detecting level

```

/SET UP
AU t o l o l 201 -000
  
```

5. Memory all reset menu

```

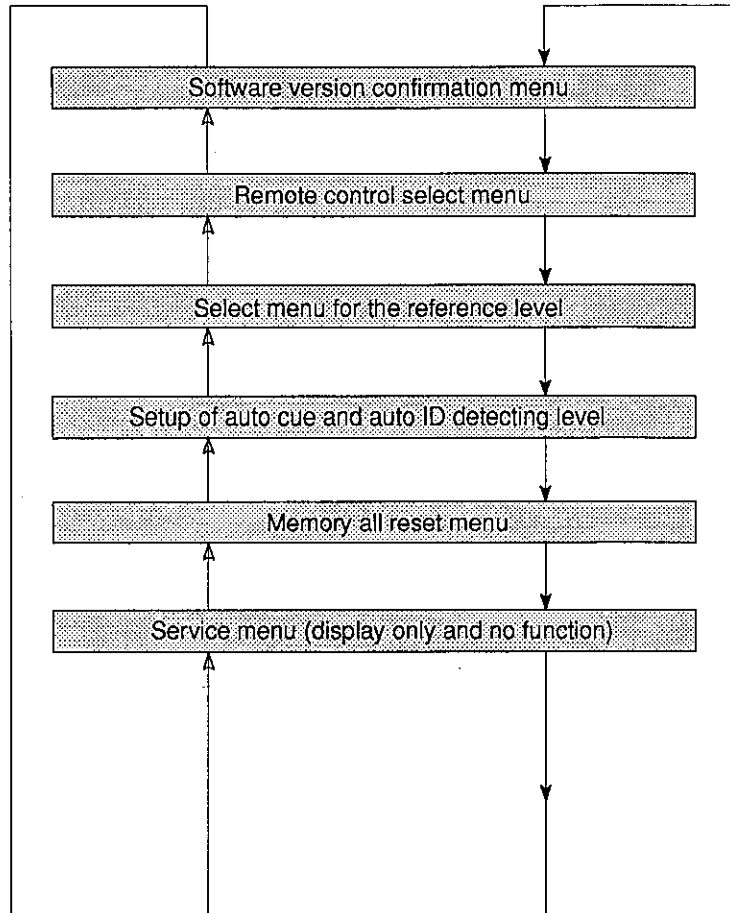
/SET UP
nE n o r S t 801 -E n c
  
```

6. Service menu (display only and no function)

```

/SET UP
SE r o i c E 900 -E n c
  
```

The [JOG] dial can be used to switch the setup menu shown in the display. The menu display will change as follows when the [JOG] dial is rotated clockwise or counter clockwise.



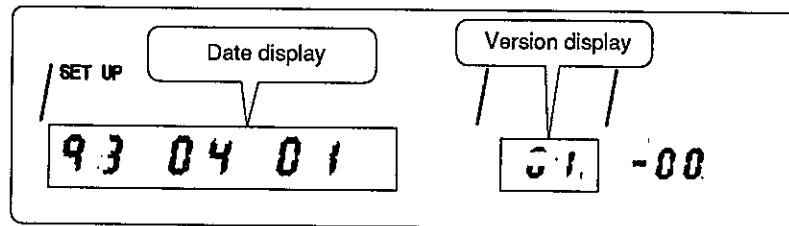
7-2. Execution of each menu

7-2-1. Confirmation of the software version

The D-10 software version number can be checked by following procedures.

Operating Procedure

1. Display the software confirmation menu by rotating the [JOG] dial.



2. Next, When the [EXECUTE] key is pressed, the content of this version can be checked as it appears in the display.

* To return to original menu, press the [QUIT] key

* To return to the display prior to entering the setup mode -
[After conducting above Step 2, press the [QUIT] key twice.]

7-2-2. Remote control selection

Whether or not remote controllers A or B should be accepted can be selected by specifying the function number.

Function numbers and content are:

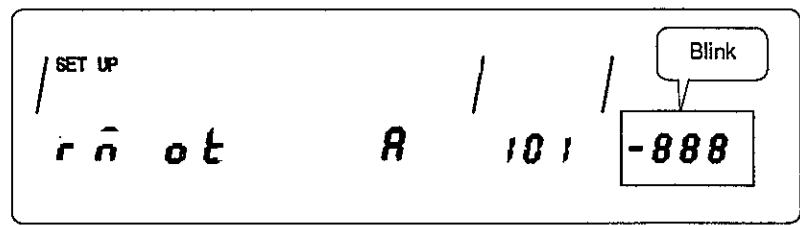
000: Selects remote A. (Initial setup figure)

001: Selects remote B.

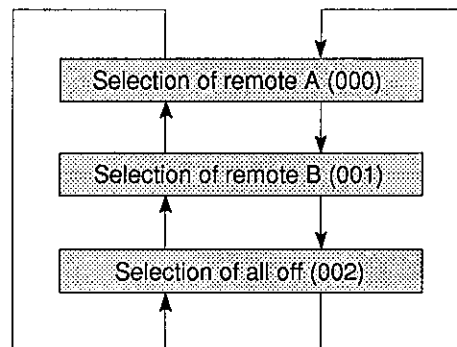
002: Selects all off.

Operating Procedure

1. Display the remote control select menu by manipulating the [JOG] dial. The presently set function number will be shown.
2. Then, when the [EXECUTE] key is pressed, display will change as shown below and the function number will blink.



3. Change the select display with the [JOG] dial while this function number is blinking. The display can be changed as shown below when the [JOG] dial is rotated clockwise or counter clockwise.



4. After selection, press the [EXECUTE] key. This completes setup and the set menu will be displayed.

* In order to return to the display prior to entering the setup mode - Press the [QUIT] key.

7-2-3. Selecting the reference level

In the following, the reference level of the D-10 can be selected.

The following two reference levels can be selected:

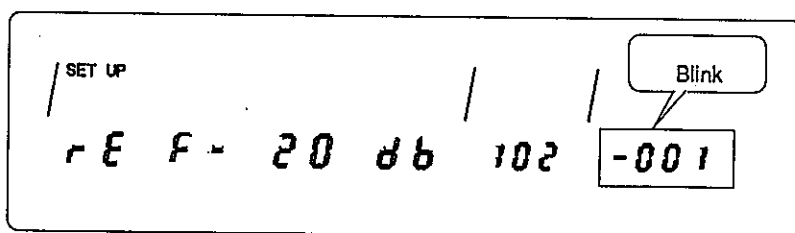
Function numbers and content are:

000 : Selects -12dB. (Initial setup figure)

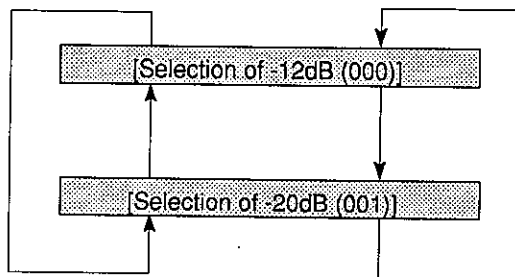
001 : Selects -20dB.

Operating procedure

1. Display the reference level select menu by manipulating the [JOG] dial.
2. Next, when the [EXECUTE] key is pressed, the display will change as shown below and the set number section will blink.



3. While in this blinking state, manipulate the [JOG] dial and change the select display. The select display can be changed as follows by rotating the [JOG] dial clockwise or counter clockwise.



4. After selecting, press the [EXECUTE] key. The display will then show the setup menu.

* In order to return to the display prior to entering the setup mode - Press the [QUIT] key.

7-2-4. Setting the Auto Cue and Auto ID Detecting Level

In the following process, the reference level will be set for the purpose of determining the sound startup point which is necessary when D-10 executes the auto cue mode and writing of the auto ID.

Four different reference levels can be set: -55dB, -40dB, -30dB and -20dB.

Below are listed the setup numbers for each reference level.

000: -40dB (Initial setup figure)

001: -20dB

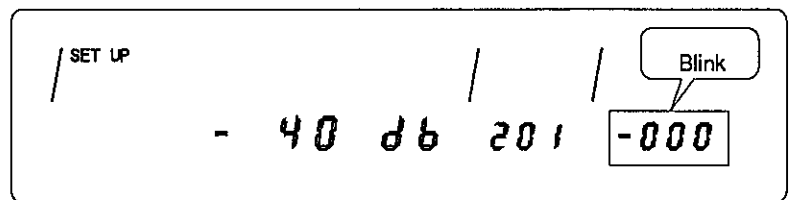
002: -30dB

003: -40dB

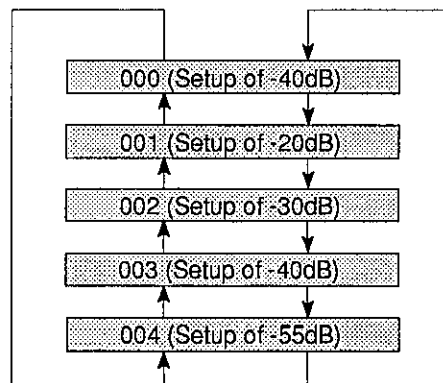
004: -55dB

Operating Procedure

1. Display the [AUTO CUE/AUTO ID] detecting level setup menu by manipulating the [JOG] dial. The presently set reference level setup number will be displayed.
2. Next, when the [EXECUTE] key is pressed, the display will change as shown below and the setup number section will blink.



3. Change the setup number in the blinking section using the [JOG] dial. The setup numbers can be changed as follows by rotating the [JOG] dial.



4. After completing the setup, press the [EXECUTE] key again and the display will show the newly set menu.

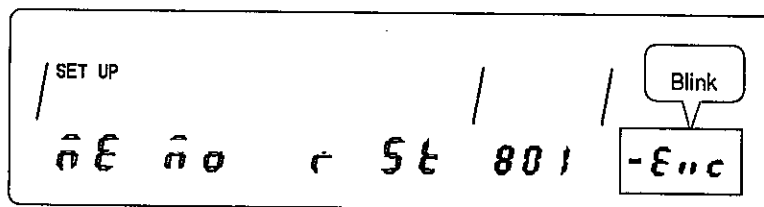
* To return to the display prior to entering the setup mode - Press the [QUIT] key.

7-2-5. All Reset of the User Memory

Here time memory and setup memory can be reset.

Operating Procedure

1. Display the all reset menu by manipulating the [JOG] dial.
2. Next, press the [EXECUTE] key. Then, the setup number section [Exc] in the display will blink as shown below:



3. While this is blinking, press the [EXECUTE] key again. All data in the users memory will be reset, blinking will cease and return to the menu display.

* To return to the display prior to entering the setup mode -
Press the [QUIT] key.

Chapter 8. Various Applications

Various D-10 application methods are explained based on actual interconnecting schematics.

TABLE OF CONTENTS

| | |
|--|-----|
| 8-1. Simple Editing by Connecting Two D-10s..... | 8-1 |
| 8-2. External Sync Driving Using Digital In..... | 8-2 |
| 8-3. Digital Copy Using Optical Digital In..... | 8-3 |
| 8-4. Connection of Event Outputs (GPI) From an Editor..... | 8-4 |
| 8-5. Event system utilizing a Model 4020 Event Controller..... | 8-5 |

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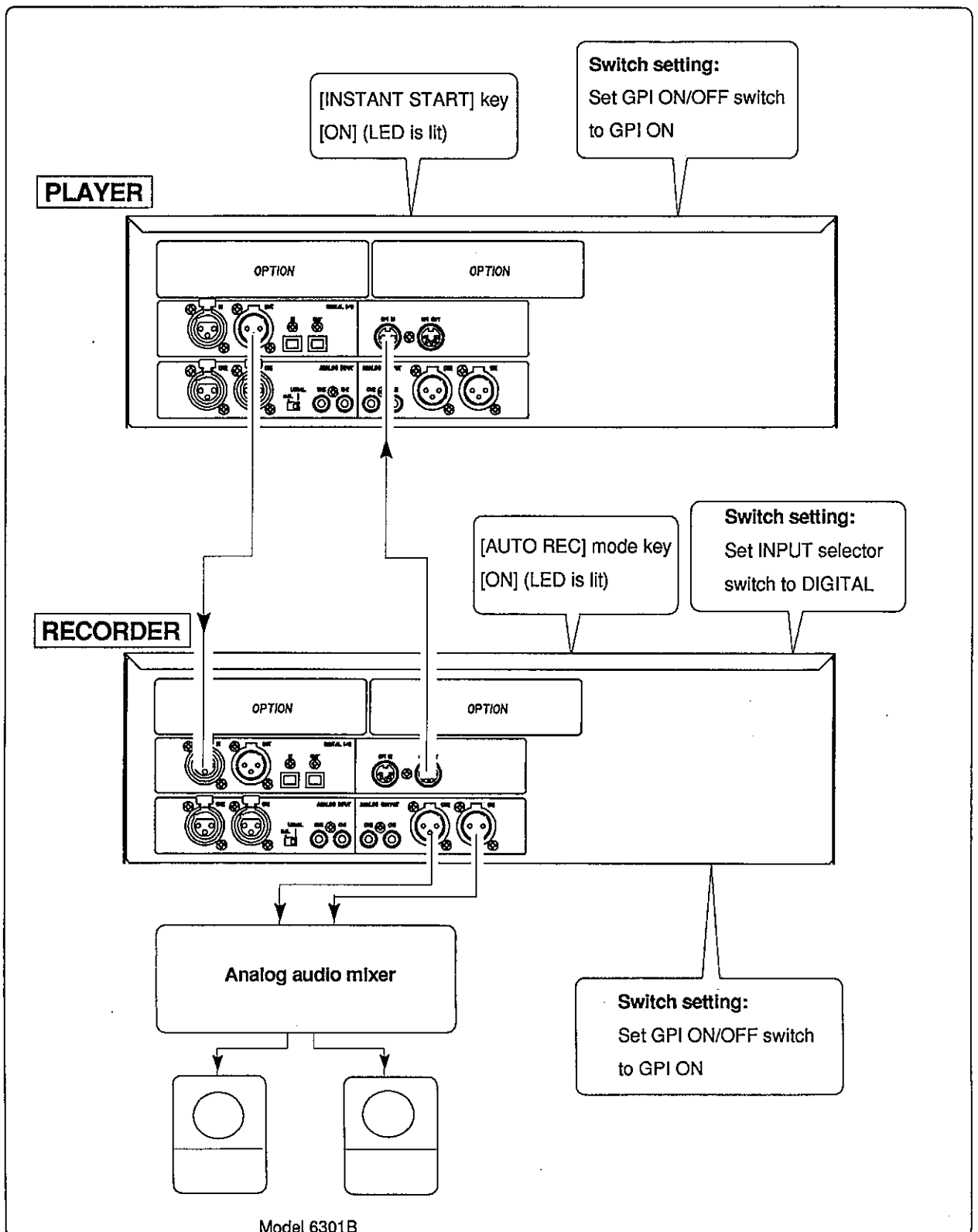
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8-1. Simple Editing by Connecting Two D-10s

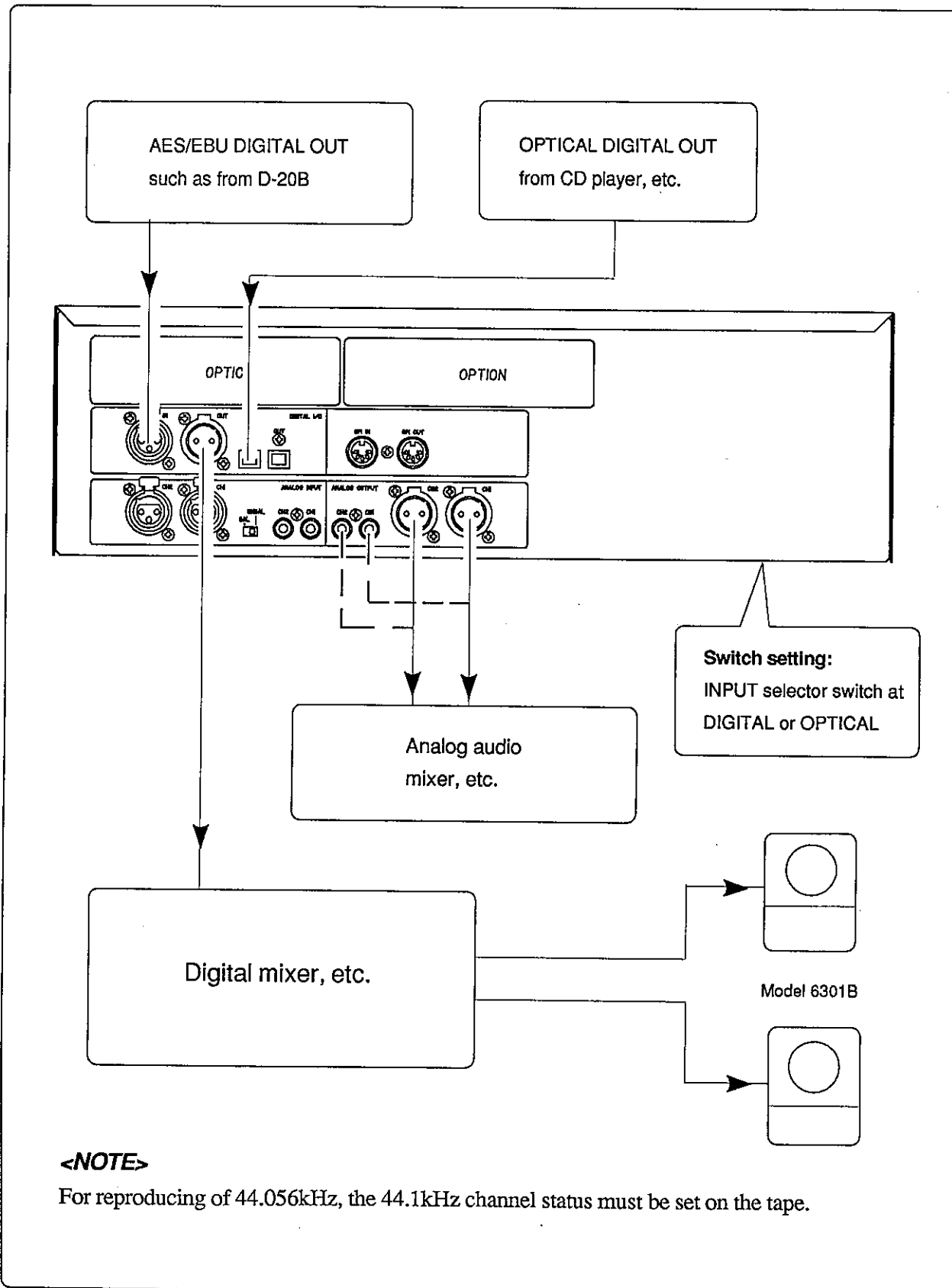
Simultaneously with the start of recording from the memory "0" point of the recorder in the auto record mode, EVENT 0 (GPI) is output and the player will instant start. Editing of sound in DAT frame units is thus possible.

Also, editing of sound in higher accuracy will be possible if the start of a tune is located accurately beforehand such as by RAM scrub.



8-2. External Sync Driving Using Digital In

By input of digital out from other digital equipment to the D-10, it can be driven by an external sync signal (example: External sync driving is possible even at 44.056kHz).

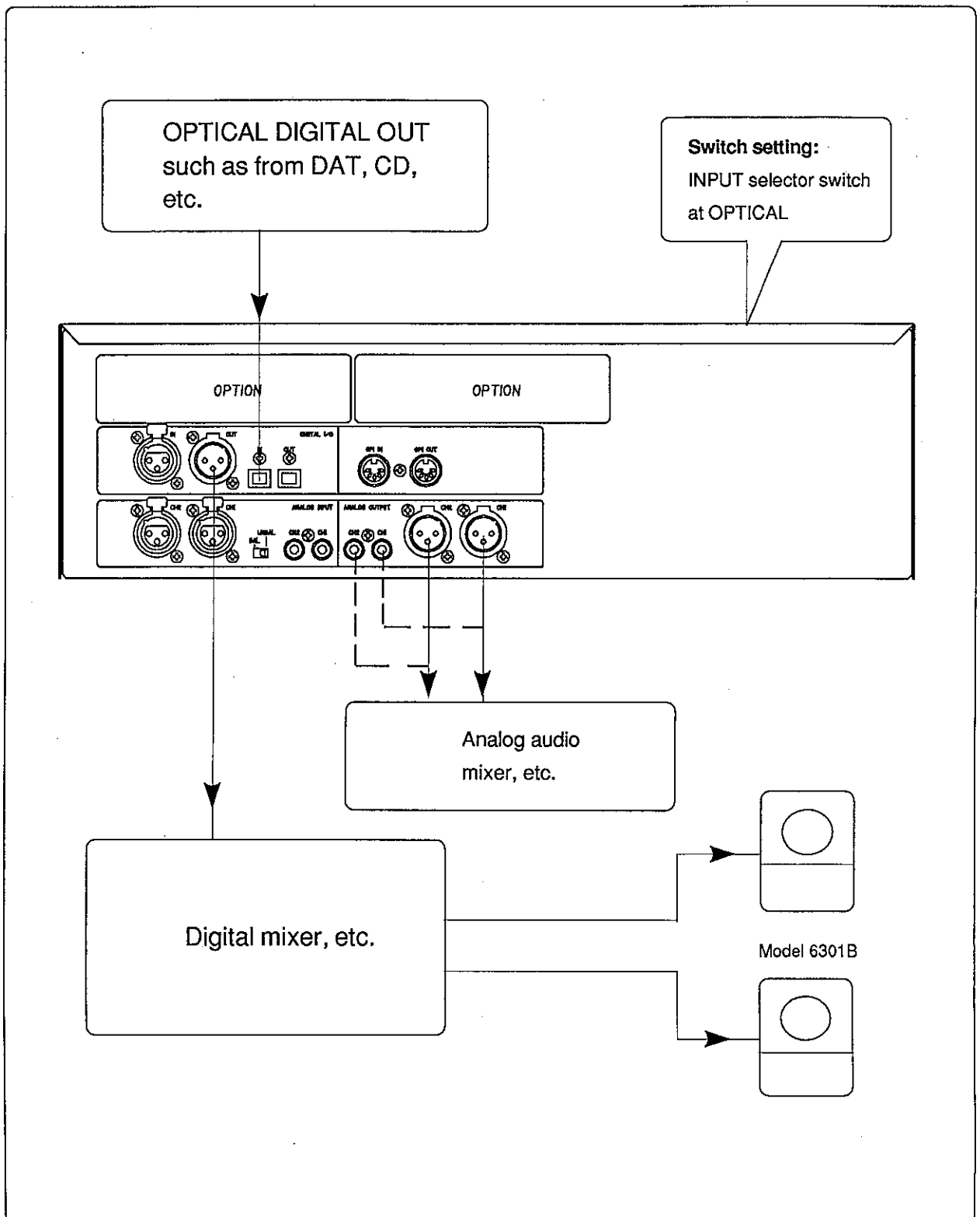


8-3. Digital Copy Using Optical Digital In

When optical digital input is used, digital copy including the S-ID between DATs can be done..

<NOTE>

Sampling frequency and emphasis will be automatically set by the digital signal information.

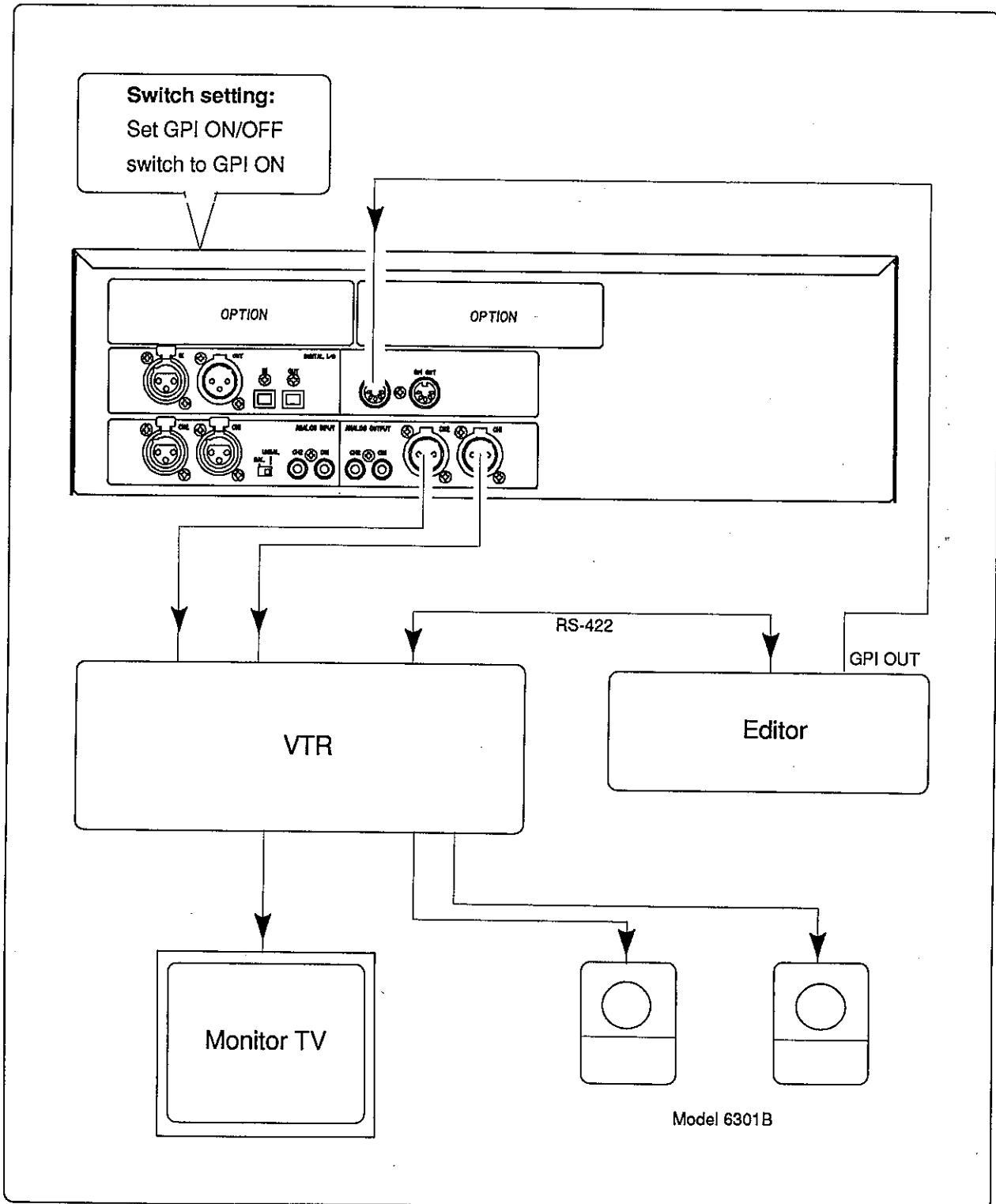


8-4. Connection of Event Outputs (GPI) From an Editor

In the following, sound editing into a VTR by editor control using the event outputs from an editor will be explained.

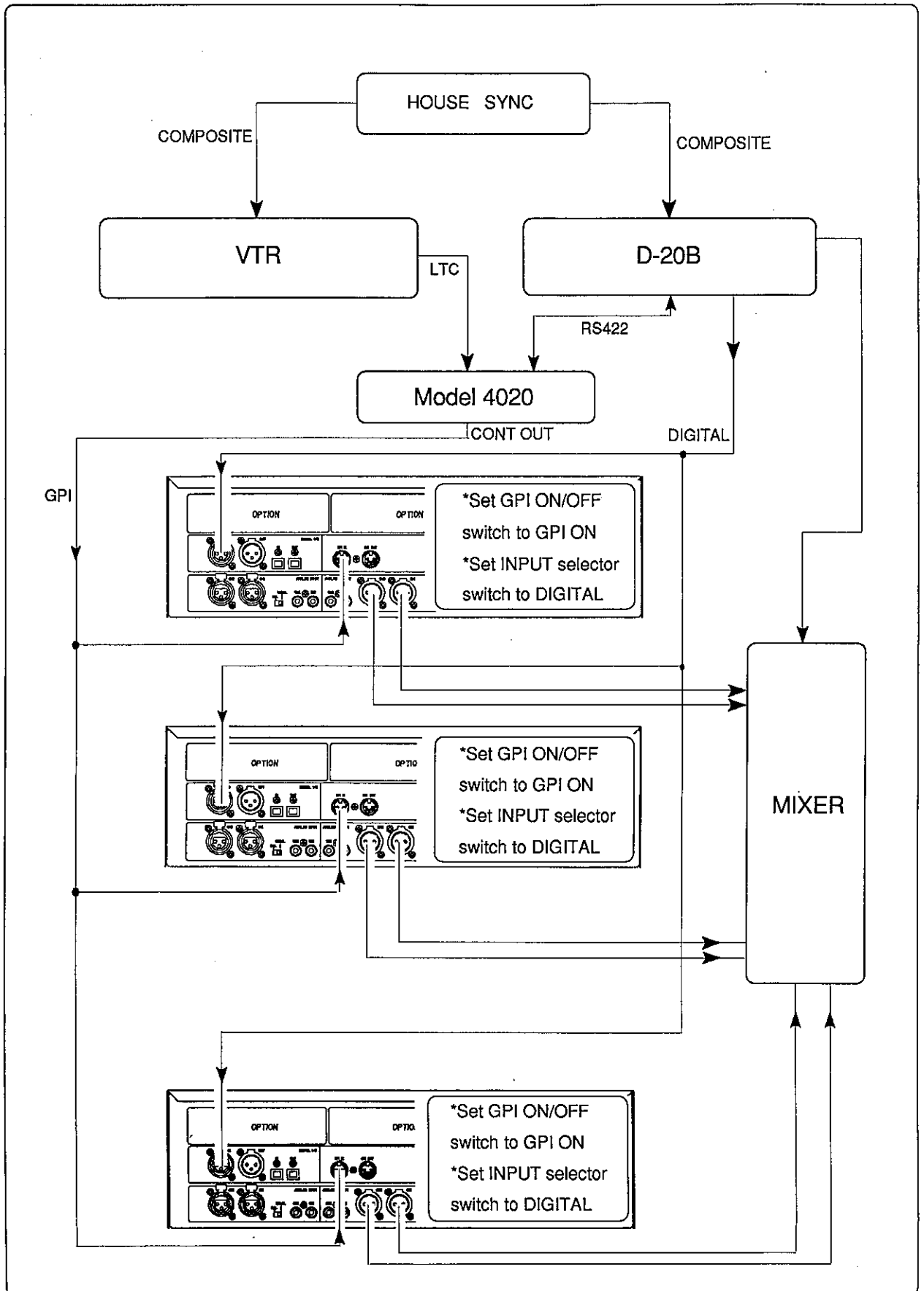
* More efficient editing can be done by utilizing functions such as instant start and auto cue.

* This GPI connector can also be used for fader starting.



8-5. Event system utilizing a Model 4020 Event Controller

The D-20B and a D-10 is controlled by the 4020 using VTR time code.



Using VTR time code as the reference, the 4020 will control the D-20B via the RS-422, and the D-10 via the GPI output [CONT OUT]. Using this arrangement, the various equipment connected can be operated at any time in play or stop modes from the 4020.

Here, the D-20B is externally synchronized to the house sync signal. Using this setup, each piece of equipment connected can be operated in the play or stop modes.

<NOTES>

* Be sure to use the tape with the same sampling frequency as with the sampling frequency input to the digital input.

* For reproducing of 44.056kHz, the 44.1kHz channel status must be set on the tape.

Chapter 9. Specifications

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Chapter 9.

Specifications

GENERAL

| | |
|-----------------------|--|
| * Recording Format | IEC DIS DAT Standard, Part 1 |
| * Recording Tape | Digital Audio Tape |
| * Number of channels | Audio × 2 |
| * Recording time | 120 minutes (T-120 tape) |
| * Head Composition | Rotating 2 head (amorphous ferrite) composite type φ30mm, 2000rpm |
| * Error Correction | Double Encoded Reed Solomon code |
| * Track Pitch | 13.6 μm |
| * Sampling Frequency | 48kHz, 44.1kHz |
| * Modulation type | 8-10 conversion |
| * Transmission Rate | 2.4Mbit/sec |
| * Quantization | 16 bit linear |
| * Emphasis | 50 μsec/15 μsec |
| * Copy Guard | Not provided |
| * Power Supply | 120VAC 60Hz (AC inlet type) 230V \sphericalangle 50/60Hz (AC inlet type) 240V \sphericalangle 50Hz (AC inlet type) |
| * Power Consumption | 28W |
| * Physical Dimensions | 482(W) x 133(H) x 317(D)mm |
| * Weight | Approx. 7.5kg |

MECHANICAL

| | |
|-----------------------------------|---|
| * Motor Construction | 2DD 4 Motors |
| * Tape Speed | 8.15mm/sec., 12.225mm/sec (automatic switching) |
| * Fast Wind Time | Approx. 50 seconds (T-120 tape) |
| * Search Speed, Fastwind Speed | Max. 250 times |
| * Loading System | Tray type, internal tape visible |
| * Search Speed | 1/2, 1, 2, 3, 5, 9, 11, 15, 25 ~ 250 times |

MEMORY REPRODUCING

| | |
|------------------|---------------------------|
| * RAM | 8M bit 5sec. (48kHz Max.) |
| RAM Search Speed | 0 ~ 1 times |

ELECTRICAL CHARACTERISTICS

| | |
|-----------------------------|--|
| * R/P Frequency Response | 20Hz ~ 20kHz, ± 0.5 dB |
| * S/N Ratio | Higher than 92dB (Emphasis Off) |
| * Dynamic Range | Higher than 92dB (Emphasis Off) |
| * Total Harmonic Distortion | Less than 0.05% (1kHz, +4dBu) |
| * Channel Separation | Better than 80dB (1kHz) |
| * Wow and Flutter | Less than +/- 0.002% WTD/peak |
| * Standard Recording Level | -20dB/-12dB (switchable) (0dB=16bit full scale level): Default (-12dB) |
| * Meter Display | FL fluorescent tube, 28 segment, 7 seg. x 14 digits |

INPUT OUTPUT CONNECTORS

| | |
|---|--|
| * Analog Audio Inputs (XLR-RCA selectable) | |
| (XLR-3 type) | |
| Reference Input Level | +4dBu/10k Ω (balanced) |
| (RCA type) | |
| Reference Input Level | -10dBV/10k Ω (unbalanced) |
| * Analog Audio Outputs | |
| (XLR-3 type) | |
| Reference Output Level | +4dBu/600 Ω or higher (balanced) |
| (RCA type) | |
| Reference Output Level | -10dBV/10K Ω or higher (unbalanced) |
| * Headphone Output (6 ϕ stereo phone jack) | |
| Max. Output Level | 50mW (at 32 Ω) |
| Output Load Impedance | 8 Ω or more |
| * Digital Inputs | |
| (XLR-3 type) | |
| Input Format | Comply to AES/EBU specifications |
| (OPTICAL) | |
| Input Format | Comply to IEC consumer (optical type) |
| * Digital Outputs | |
| (XLR-3 type) | |
| Output level | Comply to AES/EBU specifications |
| (OPTICAL) * RAM playback is not available. | |
| Output Format | |
| Output Level | Comply to IEC Consumer (opticaltype) |

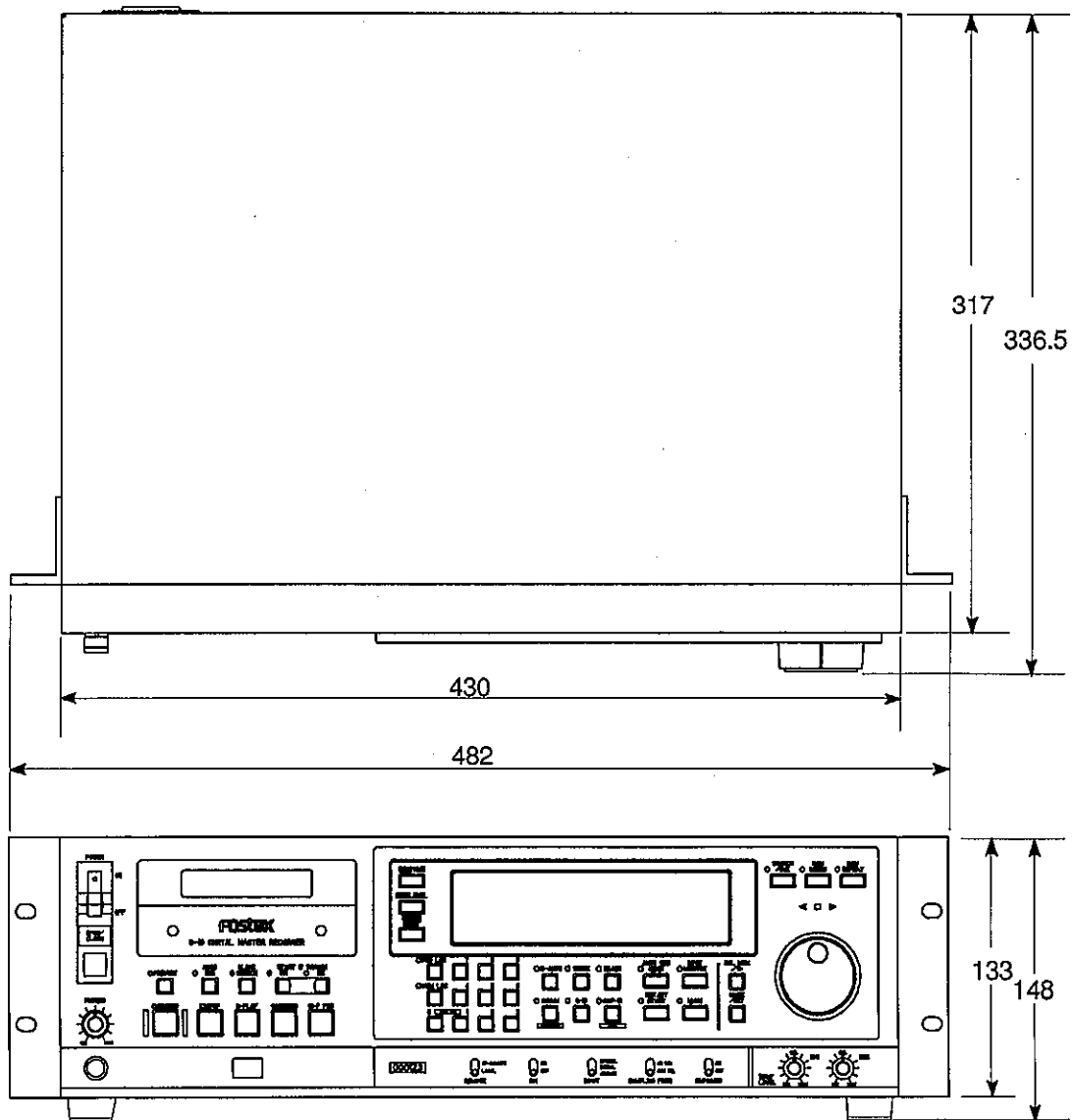
* GPI Input (DIN 5PIN type)

PLAY, STOP, FWD, RWD, RAM
REHEARSAL (TTL level)

* GPI Output (DIN 5PIN type)

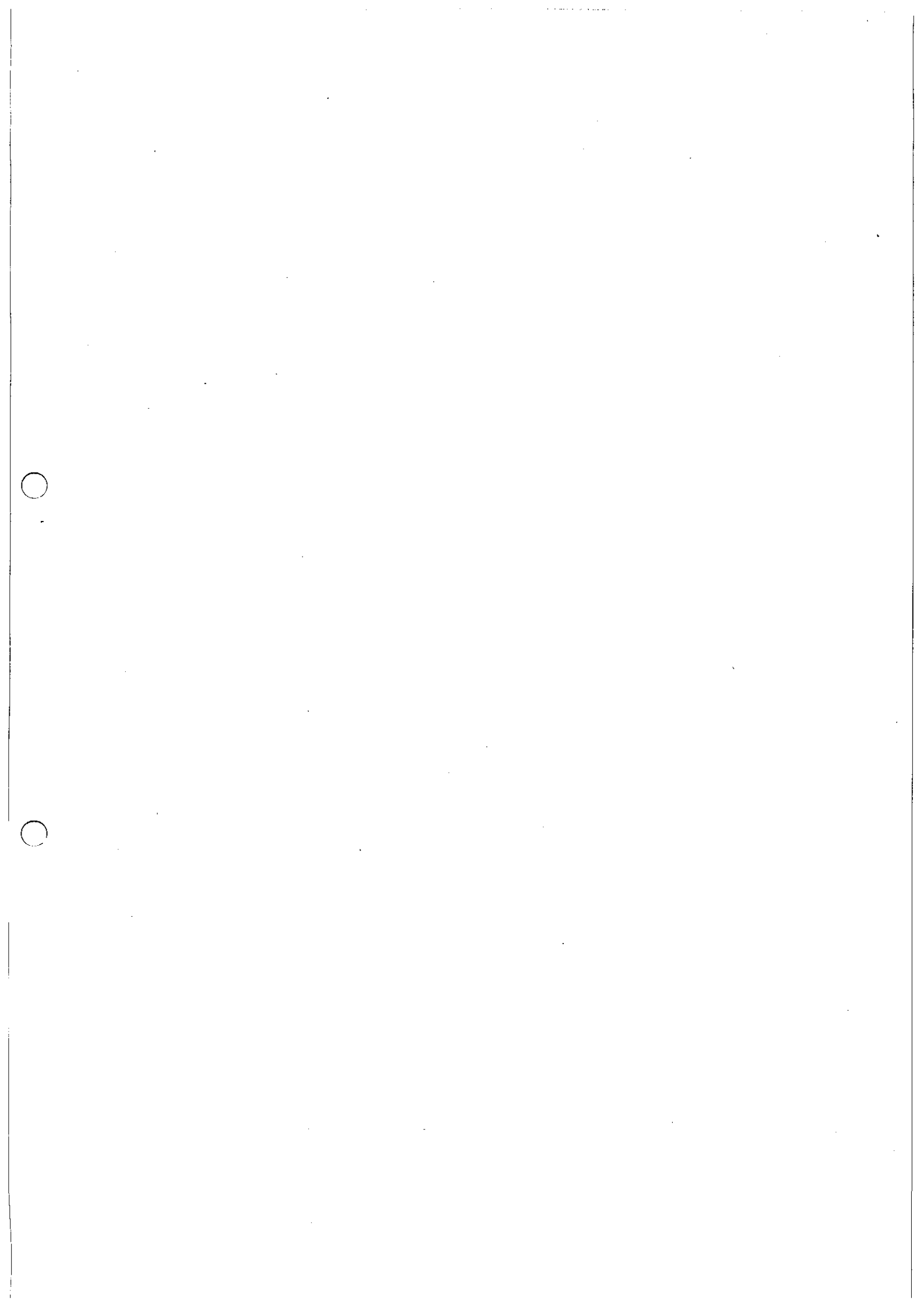
EVENT 0, EVENT 1 (TTL level)

** Specifications subject to change without notice.*



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