FOSTEX

D-20 REMOTE CONTROL UNIT

Model 8320

保 存

Operation Manual
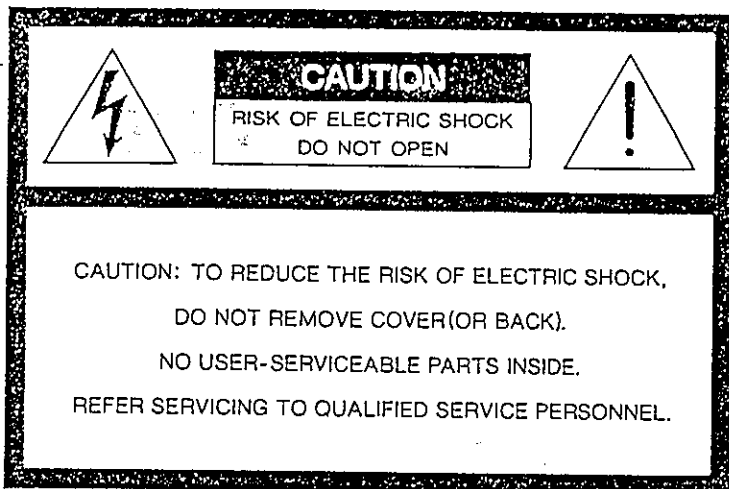
SAFETY INSTRUCTIONS

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.

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.

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.

1989 Sep.

T A B L E   O F   C O N T E N T S

INTRODUCTION

We thank you for purchasing the Fostex Model 8320 Remote Control Unit.

Model 8320 is a remote control unit designed exclusively for connecting to the Fostex D-20 Digital Master Recorder making it possible to record and detect various sub ID, display A-time and SMPTE//EBU time codes, and allow a multitude of auto locate functions, etc.

Before operating it, it is recommended you read through this manual to understand the outstanding features of this recorder which in turn will guide you in utilizing its total function, obtain full performance from it and many years of higjh quality recordings.
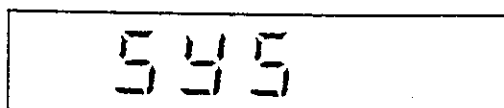
< To Users of D-20 >

This Model 8320 contains the version 2.00 software.

Please read the supplementary pages for detailed informatin on this V2.00

Should any unusual phenomenon occur when the V2.00 equipped Model 8320 is connected to a D-20, please follow operations below to return the Model 8320 to its original setting at shipment from the plant.

a. Enter the system set mode by simultaneously pressing the [STO] and [RCL] keys. The display will then be as follows:

```
 ___  ___  ___
  __|  __|  __|
```
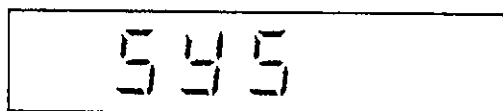
b. The display will be as follows when the [0] key and the [9] key are pressed in order:

```
 ___  ___  ___        ___      ___
 | |  |__  | |    |   |  |   |  |__
```

c. Press the [STO] key. The display will be as follows:

```
 ___  ___  ___
  __|  __|  __|
```

d. Switch off the power to the Model 8320 and then switch it back on.

<IMPORTANT>

When the above procedures are carried out, values that are set up by "SYSTEM SET" will be the same as at shipping from our plant. If necessary, you may reset the Model 8320 to factory specifications using this procedure.

INTELLIGENT CONTROLLER: Model 8320 for D-20 Digital Master Recorder

OUTSTANDING FEATURES

1) Record/playback of Sub-ID
   · START ID AUTO mode: Automatically recorded at REC start.
   · In the MANUAL mode, WRITE, READ, ERASE and EDIT is possible for the START ID, SKIP ID (SHORTENING ID), END ID and PROGRAM NUMBER.

2) LED display of A-time or time code
   · A-time or time code selected by the panel switch is displayed on the 7 segment LED display.

3) Storing time information, locate operation is possible
   · Nine locate memories each for A-time and SMPTE time code.

4) Programmable playback by program number
   · Programmable playback is possible by setup of program numbers up to a maximum of 99 points.

5) Repeat playback
   · Repeat playback is possible beween memory numbers or program numbers.

6) Start-ID search
   · Start-ID can be directly searched by pressing this key.

7) DIP switch setting and memory
   · DIP switches set by the system setting procedure, such as D-20 sync mode, frame number, etc. can be remote controlled (Contains memory backup battery).

8) Full remote control of the transport
   · Transport can be remote controlled in REWIND, FF, REC, REC READY, STOP and PLAY modes.

9) RS-422A compatible 9 pin DATA COM connector
   · DATA COM connector employes protocol for the SONY Audio RS-422A specification.
   For method in utilization of this specification, refer to the Model 8310 Owners Manual for the D-20 IF card.

NOTE: All "Time code" mentioned in this Manual refer to the SMPTE/EBU time code.

2. What is SUB ID?

SUB ID's such as START ID, PROGRAM NUMBER, SKIP ID, END ID, A-time, etc. for convenience in record and playback operation such as locating the music start point, making it indicate the time, in addition to audio data and time code data can be recorded in the DAT cassette tape.

SUB ID's except for A-time, can be re-recorded. Since SUB ID's are recorded in a specified location on the tape separate from audio data, it will not disturb the audio data.

As Model D-20 is the four head type, re-recording the SUB ID will also not disturb the time code.

START ID

As locating to starting point of this signal is accurate, it will be convenient if this is recorded where the recording content changes such as at the start of the music.

START ID is recorded for 300 ±30 frames (about 9 seconds).
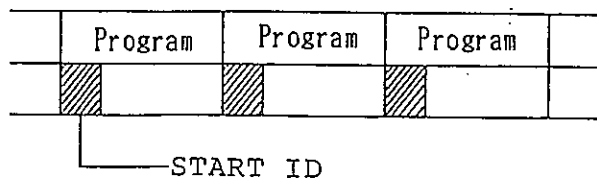
START ID

PROGRAM NUMBER

The signal for numbering the tune and must be located at the same point as the START ID. The desired tune can then be directly located by specifying this number.

PROGRAM NUMBER
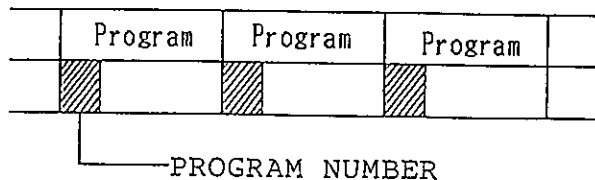
SKIP ID

The tape in playback will be advanced at high speed (skipped) from this signal to the next START ID, then resume normal playback. SKIP ID is recorded for 33 ±3 frames (about one second).

SKIP ID   Skip   START ID
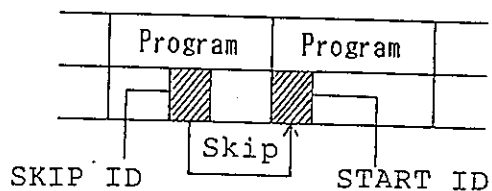
END ID

This is the mark indicating the record end point.

If this END ID is attached, it will allow quick locating of the new starting point at beginning of the next recording session. This END ID will be recorded for 300 ±30 frames (about 9 seconds).

	Program	Program	Unrecorded section

└──────END ID
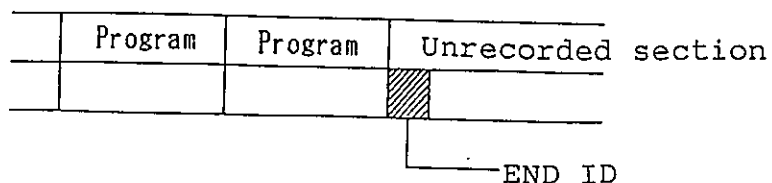
A-time

The tape position indicated by elapsed time from the head of tape.

Elapsed time from head of tape can be checked and tape can be located to the desired position by specifying the point reference to A-time.

3. Connections


```
                                    D-20
        ┌────────────────────────────────────────────┐
        │ ┌──────────┐            ┌──────────────┐    │
        │ │          │            │  IF  CARD    │    │
        │ └──────────┘            │  MODEL 8310  │    │
        │  ROM V2.00              └──────────────┘    │
        └────────────────────────────────────────────┘
                         ↕ DATA COM


                         RS 422 CABLE
                           (ACCESSORY)


                ┌────────────────────┐  DC·      AC ADAPTOR (ACCESSORY)·
                │  Remoto Control Unit│  IN      ┌──────┐
                │                     │══════════│ AD-9 │═════════◁─AC
                │     MODEL 8320      │          └──────┘
                └────────────────────┘
```
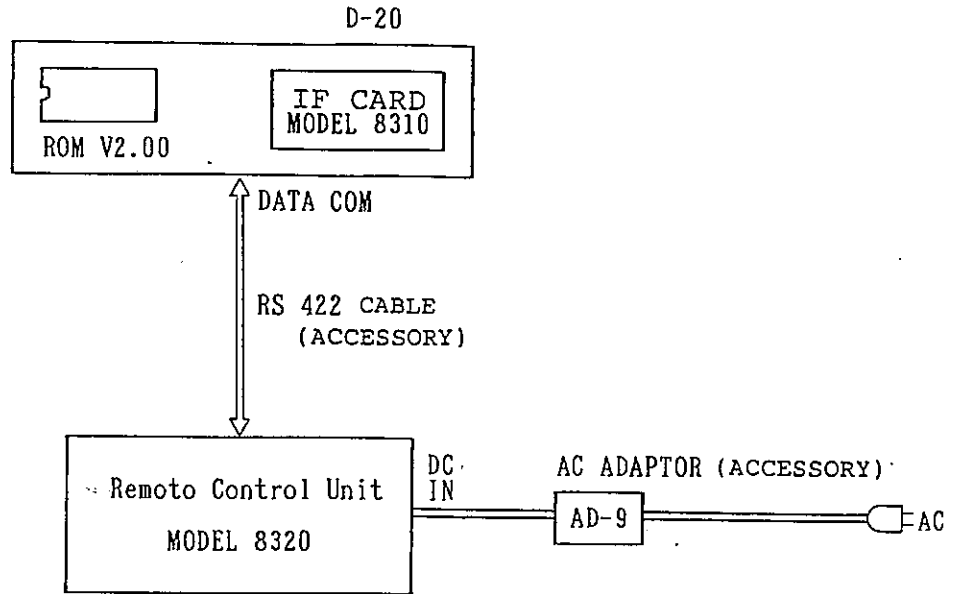
<NOTE> When connecting Model 8320 to Model D-20, set the D-20
        DIP switch C as follows:


```
                        C
              ┌──────────────────────┐
        OFF   │ □    □ □              │
        ON    │    ■                  │
              └──────────────────────┘
                1 2 3 4 5 6 7 8
```

REMOTE CONTROL UNIT MODEL 8320 **FOSTEX**

PROG. No | HOURS | MINUTES | SECONDS | FRAMES

A TIME
TIME CODE

MEM EDIT
SPEED

REC MODE
● NORM
● EDIT
● EMPHASIS

CLOCK
● LOCK
● EXTERNAL
SAMPL FREQ
● 48kHz
● 44.1kHz

SUB ID MON
● START
● SKIP
● END
PCM CHECK
● COR
● ERR

AUDIO
● REPRO ● INPUT ● READY

TIME CODE
● REPRO ● INPUT ● READY

S-ID SEARCH
END
● LOCATE

REWIND F FWD PLAY STOP ● REC

SHIFT
REC MODE
HOLD
CLR
RCL

● V.SPEED 9
● AUTO PLAY 6
● CUE 3
SYSTEM SET

● REPEAT 7
● TIME PROG 4
● ID RSL 1
STO

DISPLAY
TIME

8 5 2 0

●PNO PROG

+ −

ERASE
WRITE
RENUMBER
START-ID
● AUTO
END-ID
SKIP-ID
SKIP PLAY

(1) (2) (11) (12) (13) (14) (15) (16) (3) (4) (5) (6) (7) (8) (9) (10)
(17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30)
(31) (32) (33) (34) (35) (36) (37) (38)

DC IN

㊵ DC IN

㊶ TO D-20

㊷ DATA/COM

8320

㊸ THRU

㊴ POWER

REAR PANEL

4. Names and function of the controls
    [ ] indicates panel lettering.

4-1 FRONT PANEL
  (1) Counter display
      Displays A-time, time code, program number, memory number, tape speed, etc.
  (2) Time type display [A TIME/TIME CODE]
      Time LED in the counter display (1) is lit.
  (3) Memory edit LED [MEM EDIT]
      This is lit when the HOLD key (21) or CLR key (22) is pressed and counter display (1) enters the MEM EDIT mode.
  (4) Speed LED [SPEED]
      This is lit when the counter display (1) is indicating tape speed.
  (5) Record mode LED [REC MODE (NORM/EDIT)]
      Record mode indicating LED. LED for the mode selected by REC MODE key (21) is lit.
  (6) Emphasis LED [EMPHASIS]
      This is lit when the D-20 EMPHASIS is switched ON.
  (7) Clock LED [CLOCK (LOCK/EXTERNAL)]
      This is lit in accordance to the D-20 clock switch.

| D-20 SW | D-20 CLOCK LOCK LED | 8320 CLOCK LED | |
		LOCK	EXTERNAL
I N T	○	○	●
EXT,DIGI	○	○	○
EXT,DIGI	○̇	○̇	○
EXT,DIGI	●	●	○

● : EXTINGUISHED

○ : LIT   (LIGHT   )

○̇ : BLINKS

  (8) Sampling frequency LED [SAMPL FREQ (48kHz/44.1kHz)]
      This is lit in accordance to the D-20 sampling frequency switch.
  (9) Sub ID MON LED [SUB ID MON (START/SKIP/END)]
      This LED blinks at record or erase, and lit at detection of the various sub ID's.
  (10) PCM check LED [PCM CHECK]
      This indicates PCM error of Model D-20. Refer to page 7 - 3 , Model D-20 Owners Manual for details.

(11) Audio signal selecting key [AUDIO (READY/INPUT/REPRO)]
    The key for selecting the Model D-20 AUDIO READY key,
    AUDIO INPUT key or AUDIO REPRO key. Refer to page 7-2,
    Model D-20 Owners Manual for details.
(12) Time code selecting key [TIME CODE (READY/INPUT/REPRO)]
    The key for selecting the Model D-20 TIME CODE READY key,
    TIME CODE INPUT key and TIME CODE REPRO key.
    Refer to page II-1-4, Model D-20 Owners Manual for
    details.
(13) Start ID search key [S-ID SEARCH]
    Start ID is directly searched both forward and .backward.
    (Refer to Start ID search, page 25.)
(14) End key [END] .
    This key is used for locating to the End ID. (Refer to
    End ID locating, page 24.)
(15) Operating keys [REWIND/F FWD/REC/STOP/PLAY]
    Function of REWIND, F.FWD, REC and STOP keys are same as
    the Model D-20 REWIND, F FWD, REC and STOP buttons.
    Refer to page II-1-1, Model D-20 Owners Manual for
    details.
(16) Locate key [LOCATE]
    When this key is pressed, it enters the locate mode and
    LOCATE LED is lit. (This key can also be used for memory
    of time locate)(Refer to Locating, page 23.)
(17) Display selecting key [DISPLAY]
    Left three digits (PROG No. display) in the counter dis-
    play (1) can be alternately changed between program num-
    ber and tape speed. SPEED LED (4) will light when tape
    speed is on display. Program number is automatically dis-
    played when power is switched on.
    MEM EDIT mode will be cancelled by pressing this key.
(18) Time selecting key [TIME]
    Time indication in the counter display (1) can be alter-
    nately changed between A-time and time code. When A-time
    is on display, the A TIME LED of the time type indicator
    (2) will be lit and, when time code is on display, the
    TIME CODE LED will be lit.
    A-time will be automatically displayed at switch on of
    power.
(19) Plus key/minus key [+/-]
    This is used for increase or decrease of the counter dis-
    play numbers such as at setup of tape speed, at rehearsal
    mode of START ID or SKIP ID and at edit of time.
(20) Shift key [SHIFT]
    The (21) and (24) ∿ (28) keys are shifted to the upper
    function indicated on each key by pressing this key.
    After (21) and (24) ∿ (28) keys enter the shifted mode,
    they automatically return to the non-shift mode. SHIFT
    LED is lit when shifted and extinguished at non-shift.
    This key toggles between shift and non-shift.

(21) Hold key [HOLD]/Record mode key [REC MODE]
    Counter display (1) indication will freeze and enter MEM
    EDIT mode when this key is pressed in the non-shift mode.
    (Refer to page _20_ for details on Time Edit)
    REC MODE key switches between NORMAL and EDIT. Refer to
    page _7-4_, D-20 Manual for details.
(22) Clear key [CLR]
    All time display is cleared from the counter display (1)
    and enter the MEM EDIT mode when this key is pressed.
    This function is used when all time information is to be
    re-entered. (Refer to Editing of Time, page _20_.)
(23) Recall key [RCL]
    It enters the mode to allow recalling information in the
    memory, and the RCL LED is lit, when this key is pressed.
    (Refer to Locating by memory number, page _23_; Operation
    of TIME PROGRAM, page _26_; Operation of PROGRAM NUMBER,
    page _28_.)
    When this is pressed together with the STO key (29), it
    will enter the SYSTEM SET mode. (Refer to Operation of
    system setup, page _29_.)
(24) Variable speed key [V. SPEED]
    Variable speed mode of ±10% range is entered by pressing
    this key in the shift mode and V.SPEED LED will be lit.
    (Refer to Operation of variable speed, page _39_.)
(25) Auto play key [AUTO PLAY]
    It will enter the mode for automatic playback after loca-
    ting, when this key is pressed in the shift mode, and the
    AUTO PLAY LED is lit. (Refer to Locating, page _23_.)
(26) Cue key [CUE]
    CUEing is possible in the 5 times tape speed in REWIND or
    F.FWD modes. CUE mode is entered and by pressing this key
    in the shift mode and the CUE LED is lit. Pressing the
    CUE key again in the shift mode cancels the CUE mode and
    extinguish the CUE LED.
(27) Program play key [REPEAT/TIME PROG/PNO PROG]
    Time program play, program number play and REPEAT modes
    can be setup by pressing these key in the shift mode, and
    each corresponding LED will be lit. Refer to Time Program
    Play, page _26_ and Program Number Play, page _28_.
(28) ID rehearsal key [ID RSL]
    When this key is pressed in the shift mode, it will enter
    the rehearsal mode when recording START ID or SKIP ID,
    and the ID RSL LED is lit.
    (Refer to Record/erase of START ID and PROGRAM NUMBER,
    page _10_ and Record/erase of SKIP ID, page _15_.)

(29) Store key [STO]

It will enter the mode for storing time information at MEM EDITing when this key is pressed and the STO LED is lit.

(Refer to Storing of time information, page _19_; Operation of time program, page _26_; and Operation of PROGRAM NUMBER program, page _28_.)

If this key is pressed together with RCL key (23), it enters the SYSTEM SETUP mode.

(Refer to Operation of system setup, page _29_.)

(30) Ten key/Dot key [0 ∿ 9/ ·]

* Ten key: Used in non-shift mode for input of numbers such as time setting, program number setting, etc.

* Dot key: Used to move the dot at input of time in the counter display (1) or for the last play memory.

(Refer to Storing of time information, page _19_ and Locating by memory number, page _23_.)

(31) Write key [WRITE]

WRITE LED is lit and SUB ID recorded by pressing this key after pressing the desired SUB ID key. WRITE LED will be lit during the write operation.

(Refer to Record and erase of SUB ID, page _10_.)

(32) Erase key [ERASE]

Any SUB ID can be erased by pressing this key after pressing the desired SUB ID key. ERASE LED will be lit during the erase operation.

(Refer to Record and erase of SUB ID, page _10_.)

(33) Start ID auto key [AUTO]

When this key is pressed, it will enter the mode for automatic recording of START ID at start of the recording and the AUTO LED is lit.

(Refer to _____ Page 10 _____)

(34) Start ID key [START-ID]

Used for record and erase of START-ID. START-ID LED is lit at record and erase, and blinks while searching the START-ID at erasing or during the rehearsal mode.

(Refer to Record/erase of START ID and PROGRAM NUMBER, page _10_.)

(35) Skip ID [SKIP-ID]

Used for record and erase of SKIP-ID. SKIP-ID LED is lit at record and erase, and blinks while searching the SKIP ID at erasing or in the rehearsal mode.

(Record/erase of SKIP ID, page _15_.)

(36) End ID key [END-ID]

Used for record and erase of END-ID. END-ID LED is lit at record and erase, and blink while searching the END-ID at erasing.

(Refer to Record/erase of END-ID, page _16_.)

(37) Renumber key [RENUMBER]
    The key for renumbering the PROGRAM NUMBER from tape head
    in order of the START ID's. RENUMBER LED is lit during
    recording of the program number and blink during search
    of the START- ID.
    (Refer to Renumbering of PROGRAM NUMBER, page 14.)
(38) Skip play key [SKIP PLAY]
    If playback mode is entered after pressing this key (SKIP
    -PLAY LED is lit), each time SKIP-ID is detected the tape
    will be advanced in the F.FWD mode (skipped) to the next
    START-ID, then resume playback from this START-ID. When
    pressed again, SKIP-PLAY LED is extinguished and SKIP-
    PLAY mode will be cancelled.
    (Refer to Operation of skip play, page 26.)

4-2 REAR PANEL
  (39) Power switch [POWER]
    This is the main power switch.
  (40) DC IN [DC IN]
    This is the DC input receptacle for the cable from the AC
    adaptor "AD-9" provided with Model 8320.
  (41) TO D-20 connector [TO D-20]
    The data communication connector (9 pin) complying to the
    RS-422A specification. This is connected with the D-20
    data communication connector.
  (42) Data communication connector [DATA COM]
    The data communication connector (9 pin) complying to the
    RS-422A specification. As this employes the SONY Audio
    protocol, Fostex Model D-20 can be remote controlled by
    the editor or VTR complying to this protocol which is
    connected here. By connecting an external equipment to
    this connector, if the control switch (43) is set to
    THRU, this connector and TO D-20 connector (41) will be
    connected and communication becomes possible between D-20
    and external equipments.
    When using this connector, always be sure to switch ON
    power switch (39).
  (43) Control selecting switch [8320/THRU]
    The switch for changing the connection between the D-20
    data communication connector.
    * 8320: Setting for controlling D-20 from this unit.
    * THRU: Setting for controlling D-20 by an external
            equipment. When this switch position is selected,
            the TO D-20 connector (41) of this unit and the
            data communication connector (42) will be connec-
            ted.
    As this switch setting is effective in the power ON state
    power switch (39) should be momentarily switched off
    before changing this switch setting.

5. Operation

5-1 Record and erase of SUB ID
5-1-1 Record and erase of START ID and PROGRAM NUMBER
START ID and PROGRAM NUMBER are recorded simultaneously.

Recording

* If a recording is made from head of tape, a SKIP-ID is automatically recorded at head of tape and the program number will also be recorded simultaneously.

* For automatic recording during the recording mode –
  1. Press the AUTO key (AUTO LED is lit).
  2. Upon entering the recording mode by simultaneous pressing of REC and PLAY keys, START ID will be automatically recorded for 9 seconds and PROGRAM NUMBER will also be recorded (START LED of SUB ID MON (9) will blink during recording).
<<NOTE>> When time code is being recorded, START-ID will not be recorded.

* For recording in desired location during the recording mode –
  1. Enter recording mode by simultaneous pressing REC and PLAY keys.
  2. Press START ID key (START ID LED is lit).
  3. Press WRITE key at desired location, START ID will be recorded for 9 seconds and PROGRAM NUMBER will also be simultaneously recorded (START LED of SUB ID MON (9) will blink during the recording).

* For recording in desired location during playback (effective only in the EDIT mode) –
  1. Extinguish LED of the AUDIO READY key (11) and TIME CODE READY key (12).
  2. Press START ID key during playback (START ID LED is lit).
  3. Press WRITE key at the desired location, START ID will be recorded for 9 seconds and PROGRAM NUMBER will also be simultaneously recorded (START LED of SUB ID MON (9) will blink during the recording).

<Rehearsal Mode>
    Limited only to recording in the desired position during
playback in the edit mode, it is possible to check whether it
is located or not in the desired position and adjusting it in
the rehearsal mode.

1. Extinguish the AUDIO READY LED (11) and TIME CODE READY
   LED (12).
2. Press the SHIFT key, then the ID RSL key (ID RSL LED is
   lit).
3. Press the START-ID key during playback (START-ID LED is
   lit).
4. When the WRITE key is pressed at the desired position,
   about 3 seconds from the point the key is pressed will be
   played back repeatedly (rehearsal mode). Head of the START
   ID will be the starting point of repeat playback.
5. Press the DISPLAY key or (+/-) keys and the following will
   be shown.

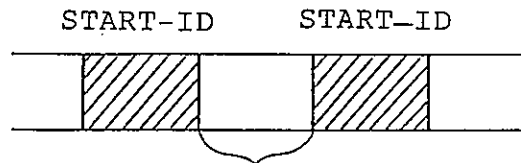| HOURS | MINUTES | SECONDS | FRAMES |

```
r 5 L    - 3.2 8.
```

        Display numbers here are only examples.

6. If there is a difference between the desired location and
   head of the repeat section, this difference is adjusted by
   the +/- keys while listening to playback of the repeat
   section.
   a) Shifting it forward: It is shifted one frame at each
      press of the + key. As the key is pressed the counter
      display right hand 3 digits will show the amount shift-
      ed.
   b) Shifting it backward: Press the - key and the - mark
      will be shown on the counter display, and it will shift
      one frame backward at each press of the - key. As the
      key is pressed, the counter display right hand 3 digits
      will show the amount shifted.

7. Press the WRITE key upon adjusting to the desired loca-
   tion. The counter DISPLAY will return to the original in-
   dication.

* Correcting position of pre-recorded START-ID
   1. Extinguish LED's of the AUDIO READY key (11) and TIME CODE READY key (12).
   2. Press the SHIFT key, then the ID RSL key (ID RSL LED is lit).
   3. Press the START ID key (START-ID LED is lit).
   4. Press the PLAY key, then the WRITE key at the START-ID to be corrected and about 3 seconds from the point where the key was pressed will be played back repeatedly (rehearsal mode). Head of repeat playback is the head of the START-ID.
   5. Adjust the position by referring to page __11__.
   6. Upon adjusting to the desired position, press the WRITE key.

<<NOTE>> 1: Maintain at least 9 seconds between each START ID.

```
        START-ID      START-ID
   ┌──────────────┬────────────────────┐
   │  ////////    │    ////////         │
   └──────────────┴────────────────────┘
              _____/

          at least  9
```

<<NOTE>> 2: Model 8320 will not automatically record the START ID by detecting the audio level.

<<NOTE>> 3: Rehearsal mode is possible only when more than 10 seconds of continuous A-time, respectively, are recorded fore and aft of the start ID head from where rehearsal is to begin. If A-time is not continuous for more than 10 seconds, erase the old start ID and record a new start ID without rehearsal.

<<NOTE>> 4. Adjusting range in the rehearsal mode is a maximum ±3 seconds and 28 frames. If a larger correction is required, erase this START-ID and re-record again.

* Recording a random PROGRAM NUMBER

   1. Press the START ID key during record or playback (If it is
      in the playback mode, extinguish the AUDIO READY key (11)
      and TIME CODE READY key (12) LED's.)
   2. Enter desired program number by the numerical keypad (dot
      blinks).
   3. Press WRITE key at the desired point, then START ID will
      be recorded for 9 seconds and, at the same time, PROGRAM
      NUMBER, entered in above item 2, will be recorded (START
      LED of the SUB ID MON (9) blinks during this recording).

** When a PROGRAM NUMBER is to be recorded in a desired loca-
   tion during record or playback, the number following the
   present PROG. No. on the display, will be recorded unless
   prescribed otherwise.

<<NOTE>> The value which can be used for the program number is
        001. ∿ 799. If any other number is specified in above
        step 2., the following error will be displayed upon
        pressing the WRITE key.
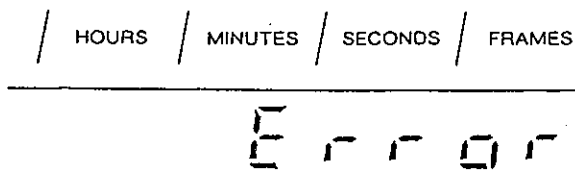
         / HOURS / MINUTES / SECONDS / FRAMES

                       Error

Erase (Effective only in the EDIT mode)

   1. Extinguish the AUDIO READY LED (11) and TIME   CODE   READY
      LED (12).
   2. Press the START ID key while in the STOP or PAUSE mode
      (START—ID LED is lit).
   3. Pressing the ERASE key starts search at 5 times speed in
      rewind, detects the START ID immediately before the objec-
      tive one, erase it, then enter PAUSE mode (START-ID LED
      blinks during search).
      If START ID is not found after 9 seconds (NOTE: 9 seconds
      is the area covered at the constant PLAY speed. It does
      not mean searching for 9 seconds. This apply to explana-
      tions here after.), the operation will be stopped and then
      enter the PAUSE mode.

5-1-2 Renumbering of the PROGRAM NUMBER

   This is the function of renumbering the program numbers,
   disoriented by repeated tape editing, in order of START
   ID's from head of tape (effective only in the edit mode).

* Renumbering of PROGRAM NUMBER from 001
   1. Extinguish the AUDIO READY LED (11) and TIME CODE READY
      LED (12).
   2. Press the RENUMBER key (RENUMBER LED is lit).
   3. Then by pressing the WRITE key, tape will rewind to the
      start and renumber the program number from 001 in sequence
      of the START ID. During this process, START LED of SUB ID
      MON (9) will blink at each renumbering of the PROGRAM
      NUMBER.
   4. Upon detecting the END ID or EOT, renumbering is ended,
      tape rewound to the start and enter PAUSE. If renumbering
      is to be stopped in between, press the STO key (15).

* Renumbering of PROGRAM NUMBER from a particular number
   1. Extinguish the AUDIO READY LED (11) and TIME CODE READY
      LED (12).
   2. Press the RENUMBER key (RENUMBER LED is lit).
   3. Enter the desired program number from the numerical keypad
      (Dot will blink).
   4. Press the WRITE key, tape will be rewound to the start
      point and renumbering begun from the program number enter-
      ed in above step (START LED of SUB-ID MON (9) will blink
      at each renumbering of the program number.).
   5. Upon detecting the END ID or EOT, tape is rewound to the
      head and enter the PAUSE mode. If operation is to be stop-
      ped in between, press the STO key (15).

5-1-3 Record/erase of SKIP ID

<u>Record</u>
* To record at desired location while in the record mode
    1. Press the SKIP ID key (SKIP ID LED is lit).
    2. Press the WRITE key at the desired location and SKIP ID is recorded for about one second from that location.
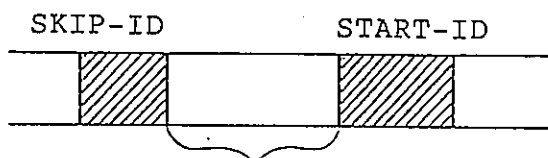

* To record at desired location while in playback (effective only in the EDIT mode)
    1. Extinguish the AUDIO READY LED (11) and TIME CODE READY LED (12).
    2. Press the SKIP ID key (SKIP ID LED is lit).
    3. Press the WRITE key at the desired location and SKIP ID is recorded for about one second.

< Rehearsal Mode >
Limited only to recording in the desired position during playback in the edit mode, it is possible to check whether it is located or not in the desired position and then make adjustments in the rehearsal mode.

1. Extinguish the AUDIO READY LED (11) and TIME CODE READY LED (12).
2. Press the SHIFT key, then the ID RSL key (ID RSL LED is lit).
3. Press the SKIP-ID key (SKIP-ID LED is lit).
4. When the WRITE key is pressed at the desired point, about 3 seconds from the point where the WRITE key was pressed will be played back repeatedly (rehearsal mode). Head of the repeat playback is the head of the SKIP-ID.
5. If there is a difference between the desired point and head of the repeat point, adjust by the same procedure as explained in Page 11. Rehearsal mode.
6. After it is adjusted to the desired point, press the WRITE key again.

<<NOTE>> 1. Provide at least two seconds between SKIP-ID and next START-ID.

MINIMUM 2 SECONDS

2. Rehearsal mode is possible only when more than ten seconds of continuous A-time is recorded from head of the SKIP-ID to be rehearsed. If A-time is not continuous for more than ten seconds, erase the old SKIP-ID and record a new SKIP-ID "without rehearsing."

Erase (Effective only in the EDIT mode)
   1. Extinguish the AUDIO READY LED (11) and TIME CODE READY LED (12).
   2. Press the SKIP ID key (SKIP ID LED is lit) while in the STOP or PAUSE mode.
   3. Press the ERASE key and tape will be searched at 5 times speed at rewind, detect the one beforehand SKIP ID, erase it and enter the PAUSE mode (SKIP-ID LED blinks during search). If the 9 second SKIP-ID is not found, the operation will be stopped and enter the PAUSE mode.

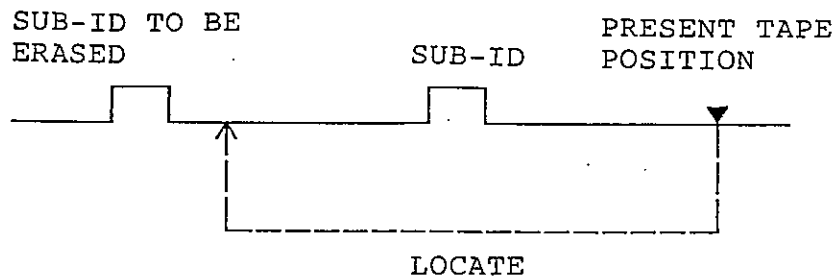5-1-4 Record/erase of END ID

Record
* To record at the desired point while in the record mode
   1. Press the END-ID key upon ending the recording (END-ID LED is lit.).
   2. When the WRITE key is pressed, END ID is recorded for about 9 seconds from the point where WRITE was pressed, rewind tape to head upon finishing it and enter PAUSE (END LED of SUB ID MON (9) will blink while recording).

* To record at desired point during playback (Effective only in the edit mode)
   1. Light the AUDIO READY LED (11) and TIME CODE LED (12).
   2. Press the END-ID key while in playback, then on pressing the WRITE key at the desired point, END-ID is recorded from that point for about 9 seconds and upon finishing it, tape will be rewound to head of the END-ID and enter PAUSE (END LED of SUB ID MON (9) will blink during the recording).

* To record while in the STOP or PAUSE modes
   1. Light the AUDIO READY LED (11) or TIME CODE READY LED (12) (Blinking of AUDIO READY LED (11) is permissible).
   2. Press the END-ID key in the STOP or PAUSE mode (END-ID LED is lit).
   3. When the WRITE key is pressed, END-ID will be recorded for about 9 seconds from the pressed point and upon finishing it, rewind to head of the END-ID and enter the PAUSE mode (END LED of SUB ID MON (9) will blink during the recording).

Erase
* Locate the END ID (refer to Page 24   ), then recording from
  head of the END ID will automatically erase it.

  1. Extinguish the AUDIO READY LED (11) and TIME CODE READY
     LED (12).
  2. Press the END ID key while in the STOP or PAUSE mode (END-
     ID LED is lit).
  3. Then pressing the ERASE key rewinds tape at 5 times speed
     to search and erase the END ID, and then enter the PAUSE
     mode (END-ID LED blinks during search). This operation is
     effective only in the edit mode.
     If END-ID is not found for 9 seconds, search is stopped
     and enters the PAUSE mode.

<<NOTE>> 1. As erasing of SUB ID using the ERASE key apply only
            to SUB ID's located before the present position, be
            sure to move tape behind the SUB ID to be erased by
            the locate mode (Refer to P.23~P.24) before erasing.


```
SUB-ID TO BE                        PRESENT TAPE
ERASED                   SUB-ID     POSITION
      ___                  ___
_____|   |_____|   |_____▼__
         ↑                                   |
         |                                   |
         |_____|

                    LOCATE
```

<<NOTE>> 2. Do not record SUB-ID's during playback in unrecord-
            ed sections of tape as it will cause malfunction.

5-1-5 Relation of SUB-ID with D-20 operation

There are conditions whereby the various SUB-ID's can or cannot be recorded depending on the D-20 operation mode and REC mode as listed below.

D-20 Operation mode	SUB ID REC MODE	START ID AUTO	START ID	SKIP ID	END ID	RENUMBER
STOP/ PAUSE	NORMAL	×	×	×	◎	×
STOP/ PAUSE	EDIT	×	×	×	◎	○
PLAY	NORMAL	×	×	×	×	×
PLAY	EDIT	×	○	○	○	○
REC	NORMAL	◎ (NOTE)	◎	◎	◎	×
REC	EDIT	◎△ (NOTE)	◎	◎	◎	×
FF/ REW	NORMAL	×	×	×	×	×
FF/ REW	EDIT	×	×	×	×	○

(Note) Automatic recording of START-ID is entered immediately at start of the recording mode.

× : Cannot record.
○ : Can record when LED's of both AUDIO READY key (11) and TIME CODE READY key (12) are extinguished.
◎ : Can record only when AUDIO READY LED (11) is blinking or lit; or TIME CODE READY LED (12) is lit.
△ : Cannot record when TIME CODE only is being recorded.

5-2 Storing of time information

Twelve cue memories each for A-time and Time Code can be setup in Model 8320. The memories are numbered 0 ∿ 9 and a dot key for last play memory (*) or a locate key for storing the locate point are provided.

(*) What is last play memory?
> It is the time of the last pressing of the PLAY key and this time is always automatically recorded.

1. Select A-time or time code by the TIME key (Selected time LED (2) will be lit).
2. Enter the MEM EDIT mode (MEM EDIT LED is lit) by pressing HOLD, CLR or RCL key (Refer to P.20∿P.22).
3. Correct the counter display time by referring to pages 20 ∿ 22 .
4. Press STO key (STO LED is lit).
5. When the memory is specified by the numerical keypad, dot key and locate key, the times setup at above item 3 is entered in the respective memories and the counter display is returned to its original indication.
6. If MEM EDIT mode must be cancelled in between, press the DISPLAY key (MEM EDIT LED is extinguished).

<<NOTE>> 1. Time will freeze if the STO key is pressed while tape is running. Although this is not the MEM EDIT mode, if the numerical keypad, dot key and locate key is pressed, the time frozen on the counter display will be entered in the respective memories and the display will return to its original indication.
2. When entering time in above item 3, if figures such as 24H/60M/60S/33F (A-time)/30F (time code) are set up, ERROR, as shown below, will be displayed when the STO key is pressed.

| | HOURS | MINUTES | SECONDS | FRAMES |

$$ Error $$

5-3 Editing of time

　　In　order to correct time indication on the counter　display
at　locating, the display can be cleared and the new　time　re-
entered or input only the digit to be corrected.

* Re-entering of the entire time
    1. Enter MEM EDIT mode by pressing the CLR key (MEM EDIT　LED
       is lit).
    2. As the entire time indication on the counter display　will
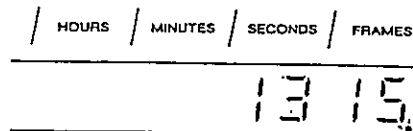   be cleared, enter the time as shown in figure below.

Example) To enter 13H 15M 06S 00F

　1)

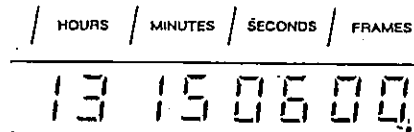| HOURS | MINUTES | SECONDS | FRAMES |
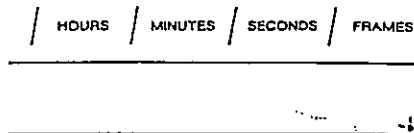
　　When　CLR　key is pressed, time indication on ˙the　counter
display are all cleared and the right end dot˙will blink.

　2)

| HOURS | MINUTES | SECONDS | FRAMES |

13 15

　　The numbers will shift from right to left as "1", "3", "1",
"5" ..... are entered from the numerical keypad.

　3)

| HOURS | MINUTES | SECONDS | FRAMES |

13 150600

　　Enter all the numbers.

* Re-entering only the digit to be corrected
  1. Enter the MEM EDIT mode by pressing the HOLD key (MEM EDIT LED is lit).
  2. As time indication on the counter display will stop, correct as shown below.

Example) To enter 13H 15M 06S 00F

  1)

  | HOURS | MINUTES | SECONDS | FRAMES

  13.10.10.00

  Time will stop when HOLD key is pressed.

  2)

  | HOURS | MINUTES | SECONDS | FRAMES

  13.10.06.00

  (1) Input is possible in the digit of the blinking dot.
      Dot will move in order of FRAMES/SECONDS/MINUTES/HOURS with each press of the dot key.
  (2) Either enter "0", then "6" in the SECONDS frame by the numerical keypad or reduce the number using the "-" key.

  3)

  | HOURS | MINUTES | SECONDS | FRAMES

  13.15.06.00

  Move dot to the MINUTES frame with the dot key and either input "1" and "5" by the numerical keypad or increase the number using the "+" key.

* Re-entering by using memory number to recall the time
   1. Press the the RCL key (RCL LED is lit).
   2. Press the numerical keypad, dot key or LOCATE key (MEM EDIT LED will be lit).
   3. As time stored in memory, of the number specified in above 2, will be shown on the display, correct in same way as explained in previous "Re-entering only the digit to be corrected."

<<NOTE>> Time editing in the 8320 is based on 30 frames (Store and locate operation is also the same) regardless to DIP switch setting of the D-20 itself.
However, numbers will be carried over or vice versa in accordance to the DIP switch frame setting when the +/- keys are used for time editing.

Example) If an attempt is made to locate to the 28th frame in a tape recorded with 24th frames time code, it will locate to the 24th frames.

5-4 Locating

Locating is possible by the following four methods.
* By PROGRAM NUMBER
* By memory number
* By time
* Locating the END ID

5-4-1 Locating by PROGRAM NUMBER

1. Enter the desired PROGRAM NUMBER by the numerical keypad (001 ∿ 799). Dot in the PROG. No. display will blink.
2. When the LOCATE key is pressed (LOCATE LED is lit), the display will return to its original indication and, locate to the position specified by the program number. Also, if LOCATE key is pressed during locating, program number input at above 1 will be shown in the PROG. No. display.
3. If no PROGRAM NUMBER had been recorded, it will PAUSE at the next START ID point.

* Press the SHIFT key, then the AUTO PLAY key (AUTO PLAY LED is lit) if playback is to be entered directly after locating.

<<NOTE>> Numbers which can be used for the program number are 001 ∿ 799. If a number other than 001 ∿ 799 is specified in above item 1, ERROR shown below, will be displayed when the LOCATE key is pressed.

HOURS	MINUTES	SECONDS	FRAMES
		E r r o r	

5-4-2 Locating by memory number

1. Press the RCL key (RCL LED is lit).
2. Press the numerical keypad or dot key to recall the desired time information (MEM EDIT LED is lit).
3. Display will return to its original indication when the LOCATE key is pressed (LOCATE LED is lit) and locate to time of the specified memory number. Locate time will be stored in the LOCATE key. If time locate is executed after this, this memory content will be preserved. Also, if the LOCATE key is pressed while locating, locate time specified in above 2 will be shown on the counter display.

* Press the SHIFT key, then the AUTO PLAY key (AUTO PLAY LED is lit) if playback is to be entered directly after locating.

5-4-3 Locating by time

A)

    1. Enter the MEM EDIT mode by pressing the CLR key (MEM EDIT LED is lit).
    2. Enter the desired time in the counter display by the numerical keypad (Refer to page __20__).
    3. Display will return to its original indication when the LOCATE key is pressed (LOCATE LED is lit) and locate to time position of the specified memory number and locate time will be stored in the LOCATE key. This memory will be preserved after this, until time locate is executed. Also, if the LOCATE key is pressed while locating, time specified in above 2 will be shown on the counter display.

  * Press the SHIFT key, then the AUTO PLAY key (AUTO PLAY LED is lit) if playback is to be entered directly after locating.

  <<NOTE>> At input of time in above item 3, if for example, 24H/60M/60S/33F (A-time) or 30F (time code) is entered, ERROR shown below, will be displayed when the LOCATE key is pressed.

B) If the LOCATE key is pressed when the MEM EDIT LED, STO LED and RCL LED are all extinguished, it will locate to time in the locate memory.

5-4-4 Locating to END ID

    1. Press the END key.
    2. Press the LOCATE key (LOCATE LED is lit) and tape will locate to head of the END ID point.
    * If END ID cannot be found, blank search the tape (Refer to p. 6-3 in D-20 Owners Manual).

5-5 Operation of START ID search

Tape is located by the number of START ID's from the present position.

1. If a tune located before the present position on the tape is to be detected, press the ___◄◄___ key, and if located after the present position, press the ___►►|___ key the desired number of times.

2. The following indication will appear on the PROG. No. display, then return to its original indication after a few moments.

Example 1) When the ◄◄ key   Example 2) When the ►►| key
       is pressed 3 times   is pressed 5 times

PROG. No   PROG. No

    - 3   + 5

3. Tape will be located forward or backward by the number of START-ID's on display.
If the LOCATE key is pressed while in the locating mode, the above indication will appear again in the PROG No. display.

* To directly enter the playback mode after locating, press the SHIFT key, then the AUTO PLAY key (AUTO PLAY LED is lit).

<<NOTE>> If START-ID is searched in the F.FWD direction when the tape present position happens to be immediately before the START-ID or directly on the START-ID, a number one larger than specified by the ___►►|___ key will momentarily appear in the PROG No. display but operation will not be affected.

5-6 Operation of skip play

During playback, when a recorded SKIP-ID is detected, tape will skip over to the next START-ID at high speed, then resume playback from this START-ID.

1. Press the SKIP PLAY key (SKIP PLAY LED is lit).
2. When playback is started, tape will skip in F.FWD mode each time SKIP-ID is detected and resume playback from this START-ID.
3. When the SKIP PLAY key is pressed again, SKIP PLAY LED is extinguished and skip play will be cancelled.

5-7 Operation of time program

Two points among the stored memory numbers can be specified and played back between them.

1. Press the keys in order of RCL, SHIFT and TIME PROG.
2. As the display shown below will appear in the PROG. No. display, enter the desired memory number from the numerical keypad.

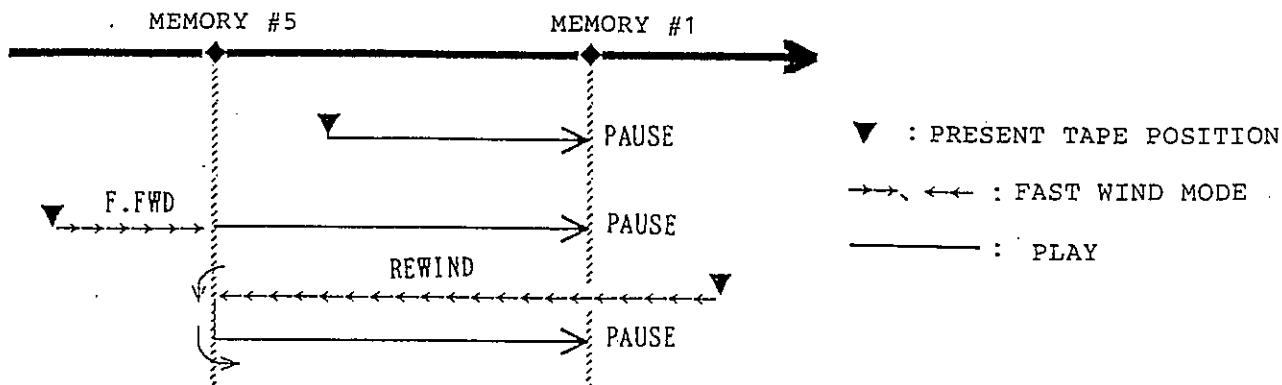Example) Display for playback between memory numbers 1 and 5

PROG. No

1.-5

(1) The younger memory number in memory will appear in the right hand digit.
(2) Memory number whose dot is blinking can be input.
The dot can be moved by the DOT key.

3. Press the STO key and display will return to its original indication.
4. After confirming that TIME PROG LED is lit, press the PLAY key and the memory number will be searched at high speed, and the section between the specified two points will be played back.

** If playback between two points is to be repeated, press the REPEAT key after pressing the SHIFT key, then execute the above procedures.

<<NOTE>> 1. If the tape present position is between the speci-
fied two points, playback is started from this
position.

```
                MEMORY #5                MEMORY #1
 ━━━━━━━━━━━━━━◆━━━━━━━━━━━━━━━━━━━◆━━━━━━━━━▶

                      ▼━━━━━━━━━━▷ PAUSE      ▼  : PRESENT TAPE POSITION

       F.FWD                                 →→、←← : FAST WIND MODE
     ▼→→→→→→ ━━━━━━━━━━━━━━━▷ PAUSE
                  REWIND                     ━━━━━━ :  PLAY
     ↶ ←←←←←←←←←←←←←←←←←←←←←←←← ▼
     ↳ ━━━━━━━━━━━━━▷ PAUSE
     ↳
```

<<NOTE>> 2. If AUTO RETURN ON is set at SYSTEM SET UP, tape is
automatically rewound to the previous memory time
at the instant time program play is ended, then
enter PAUSE (Refer to SYSTEM SET, page __29__).

<<NOTE>> 3. As the following ERROR will appear and then return
to the EDIT mode display if the same memory number
has been specified in above step 3, specify a dif-
ferent memory number.

HOURS	MINUTES	SECONDS	FRAMES
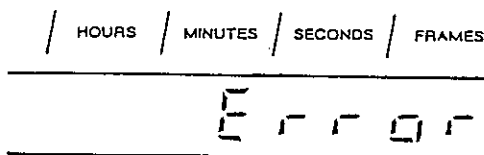
$$E\ r\ r\ o\ r$$

<<NOTE>> 4. If the same time information as stored in the set
memory number is entered, ERROR shown below will be
displayed when the STO key is pressed in above step
3 but the time will be input and then return to the
edit display. As time program PLAY cannot be execu-
ted in this condition, either re-enter the memory
number or renew the time stored in memory.

HOURS	MINUTES	SECONDS	FRAMES

$$E\ r\ r\ o\ r$$
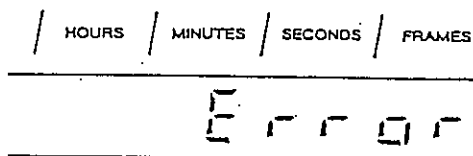
5-8 Operation of P. NUMBER program

A maximum of 99 program numbers can be played back in any order of sequence.

1. The keys are pressed in order of RCL, SHIFT and PNO PROG.
2. As indications shown below will appear in the counter display, enter the desired program numbers.

Example) Playback the program number 003 first.

1)
(Edit Program No.) (Playback order No.) (Program No.)

PROG.No	HOURS	MINUTES	SECONDS	FRAMES

$$003.01. \quad P.028$$

(1) Change the presently displayed Playback Order Number to 1 using the +/- keys.
(2) Let 003 be shown in the Edit Program Number Column using the numerical keypad (dot will blink).
(3) At this point, a previously entered Playback Order No. 1 will be on display in the Program Number Column.

2)
(Edit program No.) (Playback order No.) (Program No.)

PROG.No	HOURS	MINUTES	SECONDS	FRAMES

$$003.01. \quad P.003$$

When the STO key is pressed, 003 entered in the Program Number Column at above Item 1 procedure is momentarily shown in the display and the Playback Order Number will be automatically advanced. At this point, program number 003 has been entered in Playback Order No. 1.

3)

      (Edit program No.) (Playback order No.) (Program No.)

PROG. No   / HOURS / MINUTES / SECONDS / FRAMES

```
 ___ ___ ___   ___ ___       ___ ___ ___ ___
|   |   |   |_|   |   |_     |   |   | ||   |
|___|___|___|_|___|___|_.    |.  |___|_||___|
```

    Program number previously input in Playback Order No. 2
will be displayed again in the Program Number Column.

3. When the desired playback order number is selected with
   the +/- keys to check the program number which was input
   will appear on the display. Re-input the numbers again if
   it is to be corrected.
   When resetting the entire Playback Order No. 1, press in
   order of SHIFT key, CLR key to clear the entire program
   number. The Playback Order No. Column will return to 1 and
   the Program Number Column will display - - -.
4. On finishing all inputs, press the DISPLAY key to return
   the display to its original indication.
5. After checking that PNO PROG LED is lit, press PLAY key
   and tape will be played back in order specified.

* If repeat playback is desired, press in order of SHIFT key,
  REPEAT key (REPEAT LED is lit), then execute the next opera-
  tion.

<<NOTE>> 1. If it is set to AUTO RETURN ON by SYSTEM SET, tape
            is automatically located to the first program num-
            ber at the instant playback ends and then, enter
            the PAUSE mode (Refer to System set, page 29).

         2. When the CLR key is pressed, the Edit Program Num-
            ber Column changes to - - - . Then, if the STO key
            is pressed, that Playback Order No. will be skipped
            at the next playback as if it had not been input.

5-9 Operation of system setup

   Model 8320 will enter the SYSTEM SET mode by simultaneously
   pressing the RCL and STO keys. SYSTEM SET mode have the
   following functions.

   1. D-20 DIP switch setting can be changed.
   2. AUTO RETURN mode can be switched ON/OFF.
   3. Program number write step (Normally, 1 is successively
      added to each START-ID) can be freely set within 1 ∿ 99.

29

4. ROM version of Models D-20, 8310 (I/F card) and 8320 can be shown on the display.

5-9-1 Method of DIP switch setting and selecting priority of Models D-20/8320

A) Setup procedures

Eight bits each in DIP switches A, B and C of D-20 are setup by the following procedures.

1. When the RCL key and STO key are simultaneously pressed, the following will appear on the display to indicate that it has entered the SYSTEM SET mode.

PROG. No   / HOURS /

575

2. Select the Mode Select DIP switch (A, B or C) to be setup.

- Setup of A: When the numerical key is pressed in order of "0", then "1", the counter display will change to the following.

PROG.No | HOURS | MINUTES | SECONDS | FRAMES

```
A       0.1.0.0.0.0.0.0
```

DIP switch No. 8 7 6 5 4 3 2 1

- Setup of B: When the numerical key is pressed in order of "0", then "2", the counter display will change to the following.

PROG.No | HOURS | MINUTES | SECONDS | FRAMES

```
b       1.0.0.0.0.0.0.0
```

DIP switch No. 8 7 6 5 4 3 2 · 1

- Setup of C: When the numerical key is pressed in order of "0", then "3", the counter display will change to the following.

PROG.No | HOURS | MINUTES | SECONDS | FRAMES

```
C       0.0.0.0.0.0.0.0
```

DIP switch No. 8 7 6 5 4 3 2 1

* Left end of each display will show A, B and C, and the 8 number digits indicates ON/OFF of each bit in the mode select DIP switches (0 = OFF, 1 = ON).

3. Select the bit to be changed by the dot key and specify ON/ OFF of each bit by pressing "1" or "0" on the numerical key pad (It will be ON by "1" and OFF by "0". Any other key is ineffective).

4. D-20 will be initialized to the state specified in above step 3 by pressing the STO key. If the above 3 setting is to be cancelled, press the DISPLAY key. In either case, the counter display will return to the step 1 indication.

5. If no other SYSTEM SET is required, press the DISPLAY key to escape from the SYSTEM SET mode. The counter display will return to the indication prior to step 1.

NOTE 1. Lower 4 bits of switch C cannot be specified.
2. DIP switch setting is possible when D-20 is in either the STOP, PAUSE or EJECT mode.
D-20 will be initialized when the DIP switches are setup.
Should an attempt be made to set the DIP switches when D-20 is in other than STOP, PAUSE or EJECT modes, the following ERROR will appear on the counter display.

/ HOURS	/ MINUTES	/ SECONDS	/ FRAMES

Error

B) Setup of D-20/8320 priority at D-20 power switch on
At switch on of power to D-20, priority must be selected as to whether it is to be started by the D-20 main unit mode select DIP switch setting or by the mode select DIP switch memory content of this unit (Model 8320).

<<NOTE>> This procedure will not switch the D-20 mode set to real time. Actual transition of the mode occurs when D-20 power is switched on after this procedure.

1. The following display will appear in the PROG No. display to indicate that it has entered the SYSTEM SET mode when both RCL and STO keys are pressed simultaneously.

PROG. No	/ HOURS /
SYS	

2. Set display to the following indication by pressing the numerical keypad in order of "0", then "4".

PROG.No	/ HOURS	/ MINUTES	/ SECONDS	/ FRAMES
diP Pr			d-20	
diP Pr			8320	

3. Set the counter display right side digits to D-20 or 8320 by pressing the + or - key (Pressing any other than the + or - keys will be ineffective).

4. The indication displayed in above step 3 will be selected by pressing the STO key. To cancel the indication in above step 3, press the DISPLAY key. In either case, the display will return to that in step 1.

5. If another SYSTEM SET is not required, press the DISPLAY key to escape from the SYSTEM SET mode. The counter display will return to the indication prior to step 1.

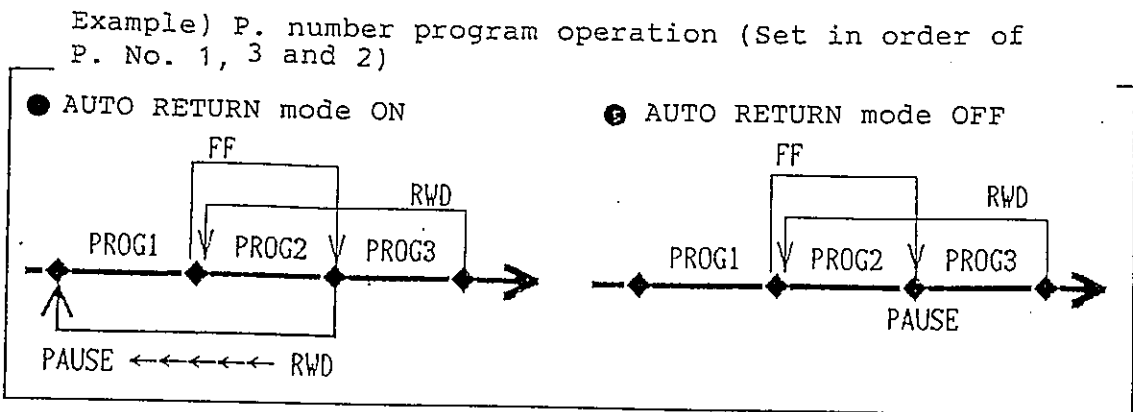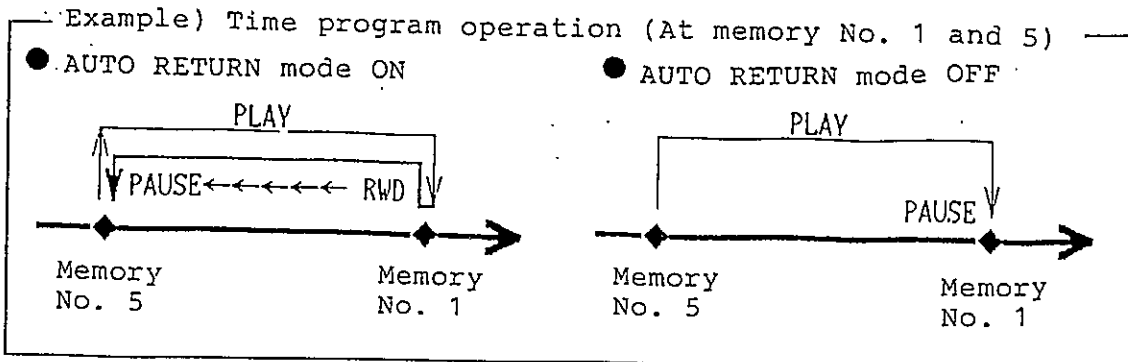<<Precautions when D-20 Priority is selected>>

1: Please note that the content previously stored in the 8320 will be reset if the D-20 power is switched on again (Memory content will be rewritten automatically to the D-20 main unit DIP switch setting at that instant).

2: The mode select DIP switch cannot be initialized and the following will appear on the counter display if automatic blank search is executed with tape in a blank area at switch on of D-20 power or if D-20 is in other than STOP, PAUSE or EJECT modes (PLAY, F.FWD, etc.) at switch on of power to Model 8320.

PROG.No		HOURS	MINUTES	SECONDS	FRAMES
d i P		in it		E r r	

However, if D-20 STOPS after this, the mode select DIP switch will be initialized automatically.

5-9-2 ON/OFF switching of AUTO RETURN mode

AUTO RETURN is the mode of automatically locating tape to the initial position when tape playback by time program or by P. number program has ended.

Example) Time program operation (At memory No. 1 and 5)

● AUTO RETURN mode ON

PLAY
PAUSE ←←←←← RWD
Memory No. 5   Memory No. 1

● AUTO RETURN mode OFF

PLAY
PAUSE
Memory No. 5   Memory No. 1

Example) P. number program operation (Set in order of P. No. 1, 3 and 2)

● AUTO RETURN mode ON

FF
RWD
PROG1   PROG2   PROG3
PAUSE ←←←←← RWD

● AUTO RETURN mode OFF

FF
RWD
PROG1   PROG2   PROG3
PAUSE

1. The following display will appear in the PROG No. display to indicate that it has entered the SYSTEM SET mode when both RCL and STO keys are simultaneously pressed.

PROG. No   / HOURS /

5 5 5

2. Press "1", then "1" again to set the display to the follow-
   ing indication (ON or OFF display of AUTO RETURN).

PROG. No	HOURS	MINUTES	SECONDS	FRAMES

```
Artn        on
```

```
Artn        oFF
```

3. Press the + or - key to set the counter display right side
   to ON or OFF (Keys other than + or - are ineffective).

4. The display of item 3 will be selected by pressing the STO
   key. If the display of item 3 must be cancelled, press the
   DISPLAY key. In either case, the counter display indication
   will return to that of item 1.

5. If any other SYSTEM SET is not required, escape from the
   SYSTEM SET mode by pressing the DISPLAY key. The counter
   display will return to the indication prior to item 1.

5-9-3 Setup of program number writing steps

Program number which is normally increased by one at each START-ID can be freely set within the 1 ~ 99 range.

1. The following will appear on the display to indicate that the SYSTEM SET mode has been entered when RCL and STO keys are pressed simultaneously.
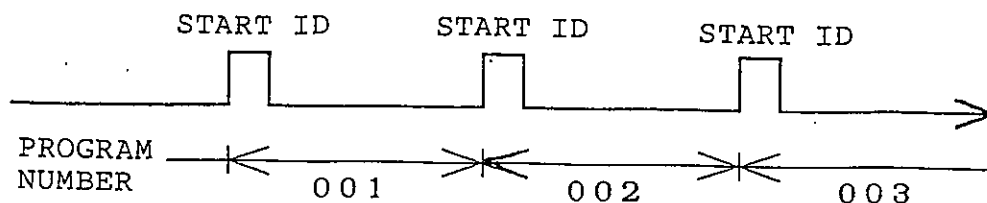
PROG. No / HOURS /

```
5 У 5
```

2. Press the numerical keys in order of "1", "2" to let the display indicate the following (Display of program number writing steps).
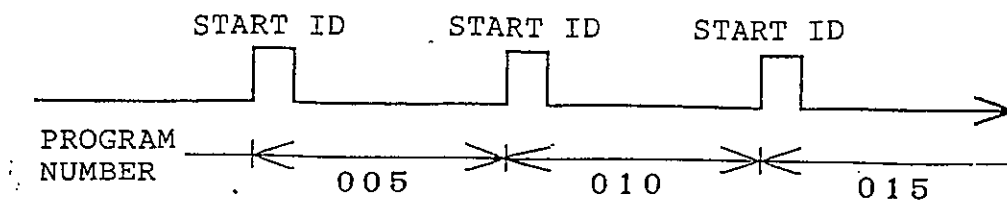
PROG. No / HOURS / MINUTES / SECONDS / FRAMES

```
P n o 5 7 E P          !
```

3. Press the + or - key to change the right side numbers to the desired step number within the 1 ~ 99 range.

4. The display of item 3 will be set by pressing the STO key. If the display of item 3 must be cancelled, press the DISPLAY key. In either case, the counter display indication will return to that of item 1.

5. If no other SYSTEM SET is required, escape from the SYSTEM SET mode by pressing the DISPLAY key. The counter display will return to the indication prior to item 1.

Example 1) When step number is set to 1

```
            START ID      START ID      START ID
              ___           ___           ___
  _____|   |_____|   |_____|   |_____⟩

PROGRAM ____|<_____>|<_____>|<_____
NUMBER         0 0 1          0 0 2          0 0 3
```

Example 2) When step number is set to 5

```
            START ID        START ID       START ID
              ┌─┐             ┌─┐            ┌─┐
──────────────┘ └─────────────┘ └────────────┘ └──────────────────▶
PROGRAM      ─┤◀──────────▶├◀──────────▶├◀──────────────
NUMBER            005           010           015
```
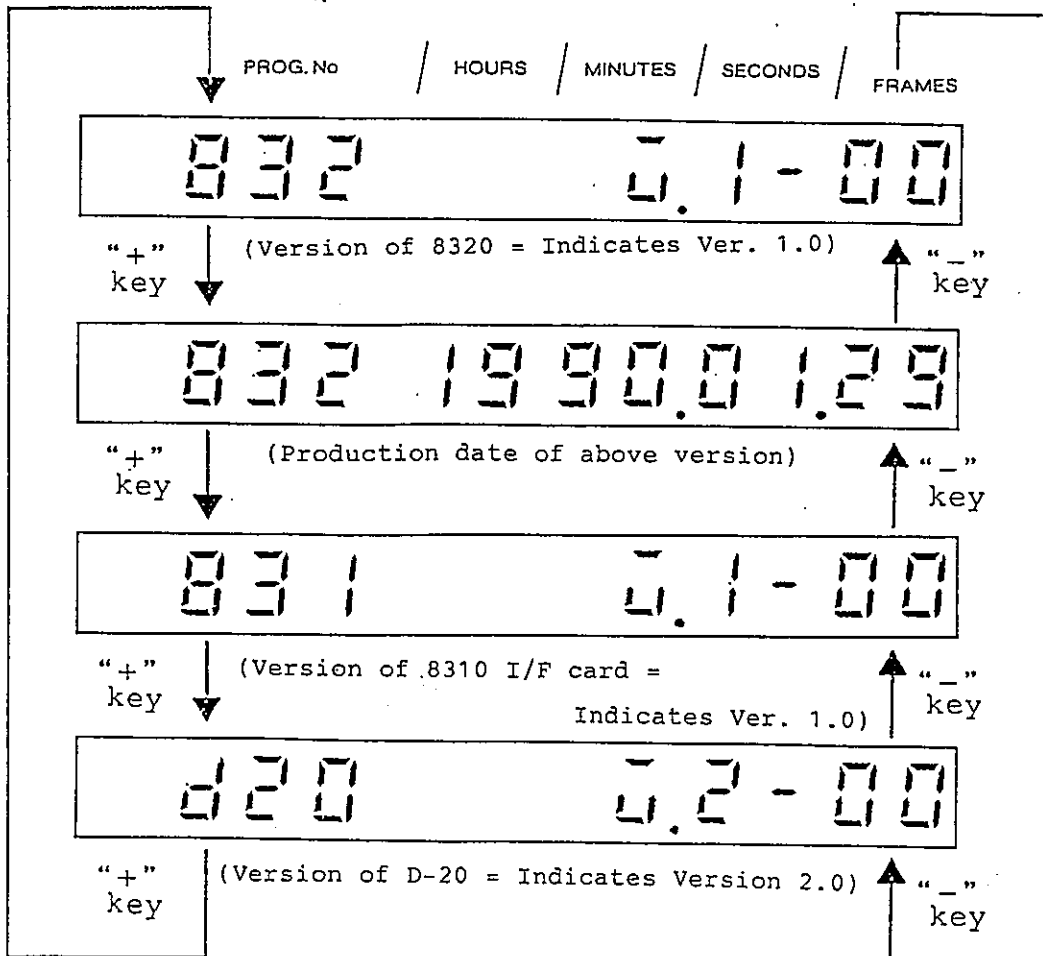
5-9-4 Indicating the version number

ROM version number of Models D-20, 8310 (I/F card) and 8320 can be displayed by the following procedure.

1. The following will appear on the PROG No. display to indi-
   cate that SYSTEM SET mode has been entered when the RCL and
   STO keys are pressed simultaneously.

   PROG.No / HOURS /

   ```
   5 Y 5
   ```
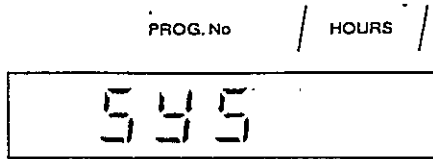
2. Press the numerical keypad in order of "4" and "1", then
   when the + or - key is pressed, the counter display will
   change as shown below to indicate each version number, etc.

   PROG.No / HOURS / MINUTES / SECONDS / FRAMES

   ```
   8 3 2        U. 1 - 0 0
   ```

   "+" key   (Version of 8320 = Indicates Ver. 1.0)   "-" key

   ```
   8 3 2   1 9 9 0. 0 1. 2 9
   ```

   "+" key   (Production date of above version)   "-" key

   ```
   8 3 1        U. 1 - 0 0
   ```

   "+" key   (Version of 8310 I/F card =
                            Indicates Ver. 1.0)   "-" key

   ```
   d 2 0        U. 2 - 0 0
   ```

   "+" key   (Version of D-20 = Indicates Version 2.0)   "-" key

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3. If any other SYSTEM SET is not required, escape from the SYSTEM SET mode by pressing the DISPLAY key twice. Counter display will then return to the indication prior to item 1.

5-10 Operation of variable speed

   Tape speed can be controlled ±10% in 0.1% steps.

1. Press the SHIFT key (SHIFT LED will be lit).
2. V. SPEED LED is lit and entered in the variable speed mode when the V. SPEED key is pressed. Speed indications referenced to normal tape speed as 0%, will be shown on the PROG No. display and tape will be transported at this speed.
3. Tape speed can be freely set over a ±10% range by pressing the + or - key.
4. To cancel the V. SPEED mode, press the SHIFT key, then the V. SPEED key (V. SPEED LED is extinguished). The PROG No. display will automatically return to its original indication.

* + key will increase tape speed, and - key decrease it.
* As the variable speed data setup here is stored in memory, it will run at this tape speed when the VARI SPEED mode is selected again (It will be the same when power is switched OFF and ON again.).

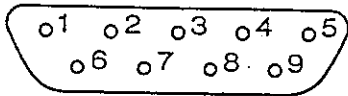## 6. Various specifications

6-1 Connectors

Pin assignments of DC IN, TO D-20 and DATA COM connectors are as follows.
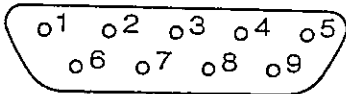
DC IN (XLR-4)
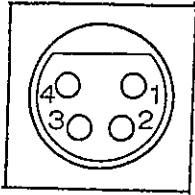
1	GND
2	NC
3	NC
4	+9V

TO D-20 (D-SUB 9 pin), equivalent to RS-422A

1	Frame ground	6	Receive common
2	Receive A	7	Receive B
3	Transmit B	8	Transmit A
4	Transmit common	9	Frame ground
5	Spare		

DATA COM (D-SUB 9 pin), equivalent to RS-422A

1	Frame ground	6	Transmit common
2	Transmit A	7	Transmit B
3	Receive B	8	Receive A
4	Receive common	9	Frame ground
5	Spare		

* A and B are defined as follows:
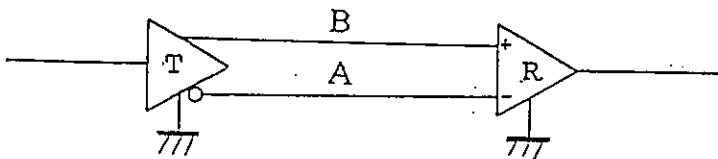
A < B : "1" (MARK)

A > B : "0" (SPACE)

6-2 Specifications

* Input/output connectors
  1) DATA COM   : Connector - RS-422A equivalent (9 pin)
                       (For external connections)
  2) TO D-20   : Connector - RS-422A equivalent (9 pin)
                       (For D-20 connection)
* DC input   : Connector - XLR-4, +9V
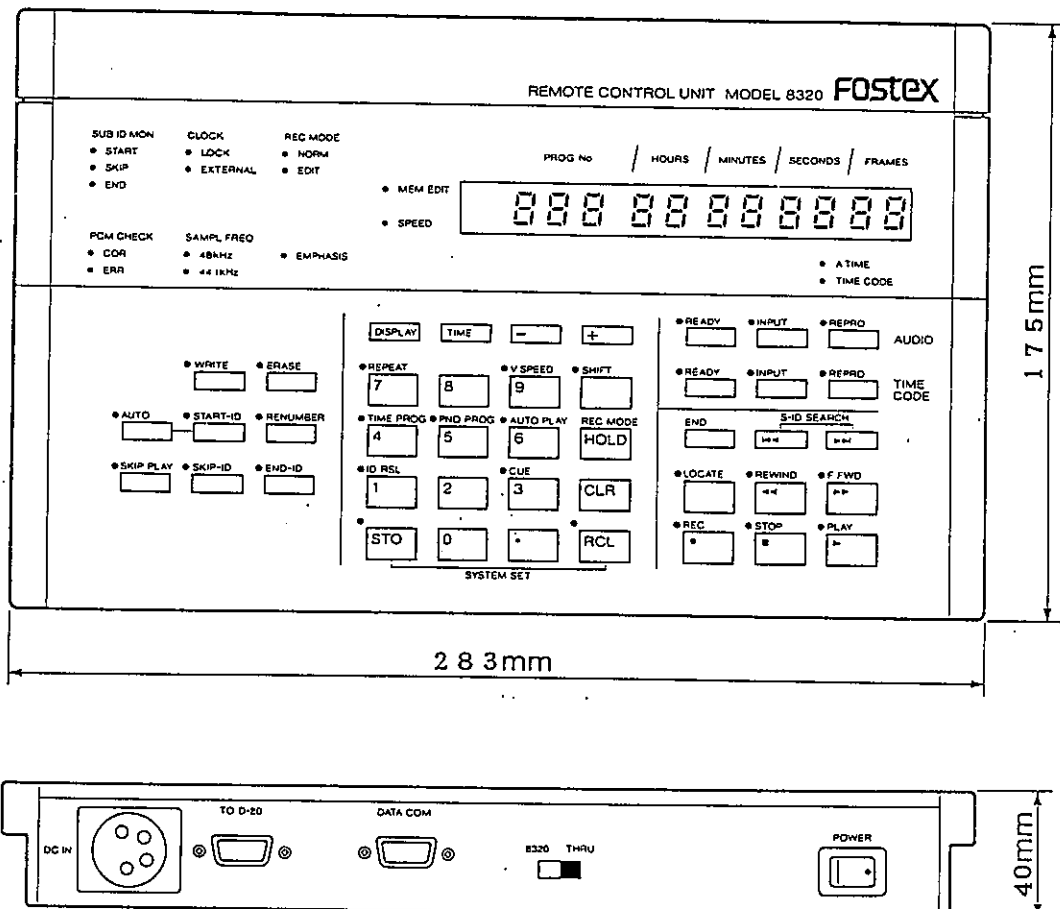* Selector switch   : 8320/THRU
* Power line/power
    consumption   : 100V AC, 50/60Hz, 7VA (At use of the
                       exclusive AC adaptor "AD-9")
* Physical
    dimensions   : 283(W) x 40(H) x 175(D) mm
                       (Can be mounted on 19" rack
                                      with an adaptor)
* Weight   : About 1.1kg.

  · Specification and appearance subject to change
    without notice for improvement.

6-3 Physical dimensions

Model 8320
REMOTE CONTROL UNIT
Owner's Manual Supplement
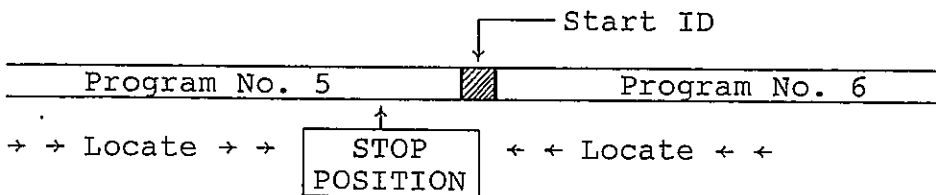### for Software Version 1.10

• The software version number is now 1.10 and the following two
  points have been improved.

1. The entire mode select DIP switch "C" of Model D-20 can now
   be setup from the remote controller side. In version 1.00,
   the lower 4 bits (1 ∿ 4) could not be setup.

```
                         C
                 1 2 3 4 5 6 7 8
         OFF  ┌─┬──────────────┐
              │ □ □ □ □ □ □ □ □ │
         ON   └─┴──────────────┘
                 └─────┬─────┘
```
              These can now be setup.
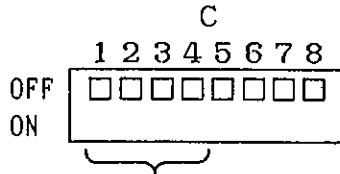
2. After searching by "Program No." or "Start ID," the speci-
   fied Program No. can now be indicated by blinking when the
   transport is stopped. This will change to constant light
   upon subsequently entering the PLAY mode.

   Example: When searching for Program No. 6

```
                                    ┌──── Start ID
                                    ↓
  ─────────────────────────────────────────────────────────────
        Program No.  5          ▨      Program No.  6
  ─────────────────────────────────────────────────────────────
                                 ↑
  ⇢ ⇢ Locate ⇢ ⇢    ┌──────────┐    ⇠ ⇠ Locate ⇠ ⇠
                    │   STOP   │
                    │ POSITION │
                    └──────────┘
```

               * It locates to this point and
                 P. No. "6" is indicated by blinking.

Model 8320

REMOTE CONTROL UNIT

Owners Manual Supplement
for Software Version 2.00

The following functions have been added in version upgrade V2.00. These additional functions are written exclusively for the D-20B. For this reason, operation of this software on the D-20 recorder is not guaranteed. Please note that when a V2.00 equipped Model 8320 is connected to a D-20, the functions will be as explained in the operating manual.

1. Chase function
2. Offset function
3. Generator set function
4. Display of user bits
5. Mode select of system set 71 chase
6. System set 13 shuttle speed set
7. Addition of JOG mode
8. Display of system set 48 device data

Because key functions for chase, offset, gen set, repeat, and user bits display have been changed, we recommend the use of the overlay sheet when operating this equipment.

Notes on Connections

At inter-connecting Model 8320 (V2.00) and D-20B, follow notes below for correct operation.

1. Set the D-20B setup data to "E0-01".

2. When setting the shuttle and jog speed for system set 13, 14, and 15, set it close to the initial figures to prevent possible malfunction.

3. In regards to Jog operation:

3-1. Jog keys [◄◄] and [►►◄] must be used only in STOP or PAUSE modes.

3-2. Low speed jog will function as follows as the D-20B do not comply.

(1) While the [◄◄] or [►►◄] key is pressed, the display counter will be advanced or retarded a maximum of about one second.

(2) The still command is transmitted from the Model 8320 when the [◄◄] or [►►◄] key is released and after the D-20B receives the still command, the D-20B will wait for approximately one second whether or not another command will come.

(3) If the [◄◄] or [►►◄] key is pressed during this wait time, the D-20B will advance or retard one frame with each press. If a different command is received, it will be executed.

1

(4)   After receiving the last still command, if no other command is received for approximately one second, the D-20B will locate to the figure set by above (1) (2). This figure must be at least 6 frames or the D-20B will not locate.

Setting System Set 77, Initial Setup

Whether using the overlay sheet or not, system set 77, "Initial Set", must be set as follows:

Without overlay sheet:	Set to "INITIAL SET MODE 0".
With overlay sheet:	Set to "INITIAL SET MODE 1".

1. Connect the D-20B and Model 8320 by following the above information.

2. When power is switched on to the Model 8320 and D-20B, the display will be as follows:

PROG. No / HOURS / MINUTES / SECONDS / FRAMES

```
     L i n E      o F F
```

PROG. No / HOURS / MINUTES / SECONDS / FRAMES

```
  o P n   0 0  0 0  0 0  0 0
```

3. Next, when the [RCL] and [STO] keys are pressed at the same time, the Model 8320 will enter the SYSTEM SET mode and the display will be as follows:

PROG. No / HOURS / MINUTES / SECONDS / FRAMES

```
  S Y S
```
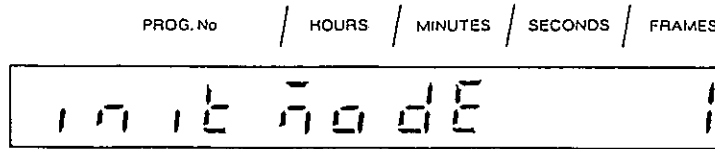
4. The D-20B will then enter the INITIAL SET mode and the display will be as follows (indicates MODE 0) when the keypad number [7] is pressed twice.

PROG. No / HOURS / MINUTES / SECONDS / FRAMES

```
  i n i t  n o d E          0
```

2

5. To change MODE 0 to MODE 1, press the [+] , [-] key. To return to MODE 0, press the [-] key. You may also use the [1] or [0] key on the 10 key keypad for this operation.

```
 ı n ı t   ñ o d E            ı
```

6. To store this information, make the above selection and press the [STO] key. This returns the display to number 3 above.

7. To cancel SYSTEM SET in either 4 or 5 above, simply press the [DISPLAY] key. This returns the display to number 3 above.

8. Mode setup in above 6 will not change regardless to OFF/ON of POWER and will start up by the mode last set before POWER OFF.

   < NOTE >

   The power must be turned off/on whenever setting the mode.
   In doing so, the internal setting will be changed to verify the mode set, check the time LED
   as shown below:

Time LED lit:	MODEL 0.
Time LED blinking :	MODEL 1

1. Additional Functions by Version Upgrade 2.00

< Effective only MODE 1 >

The following key functions will change as follow in MODE 1.
Please use the overlay sheet included with Model 8320.

[TIME PROG] key ⟶ [CHASE] key (Chase function)
[PNO PROG] key ⟶ [OFFSET] key (Offset function)
[REPEAT] key ⟶ Cannot be used.

■ 1-1. Chase function

(1)   When the [SHIFT] key, and then, the [4] key are pressed in that order, CHASE command will be transmitted to the D-20B after sending the offset data.

(2)   The chase LED will blink when the D-20B enters chase and will be lit when the D-20B enters lock.

(3)   Press the [STOP] key to cancel (interrupt) the chase operation.

■ 1-2. Offset Function

(1)   When the [SHIFT] key, and then, the [5] key are pressed in that order, offset data will be displayed and then be possible to edit. In doing so, the following subframe (1/80 FRAME) will be shown as below in the program number display section.


```
PROG. No   / HOURS / MINUTES / SECONDS / FRAMES
```

(2)   After editing, when the [STO] key is pressed, offset data is transmitted to the D-20B simultaneously to storing it in the D-20B memory.

(3)   When a chase operation (1) is carried out and then edited by the [+] and [-] keys during chase lock (chase LED lit), offset data will be sequentially transmitted and the chase operation can be confirmed in real time.

(4)   The offset LED will be extinguished when offset data is "0" and lit when in other then "0".

(5)   To return to the original display, press either the [DISPLAY] or [SHIFT] key, and then, the [5] key are pressed in that order.

---

2. Additional Functions by Version Upgrade 2.00

< The following functions regardless if MODE 0 or 1 is selected >
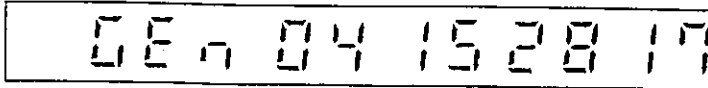
The following key functions wil change as follows.

[8] key [GEN SET] Kkey (Generater set function)
[2] key [U-BIT] key (Display of User bits)

4

■ 2-1. "Generator set" Function

(1) When the [SHIFT] key, and then the [8] key are pressed in that order, the following generator time will be shown in the time display. The time LED will be lit in MODE 0 and blink in MODE 1.
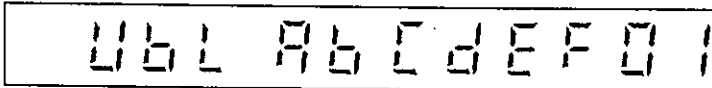
PROG. No | HOURS | MINUTES | SECONDS | FRAMES

GEn 04 15 28 17

(2) Next, to edit, press either the clear [CLR] or [HOLD] key. Please refer to "5-3. Editing of Time" in the main text for further information on the method of editing.

(3) When the [STO] key is pressed, after editing, generator time data will be transmitted to the D-20B and the EDIT mode canceled. This, however, is effective only when the D-20B "GEN ON" LED is lit.

(4) To return to the original display, press the [SHIFT] key, and then, the [8] key.
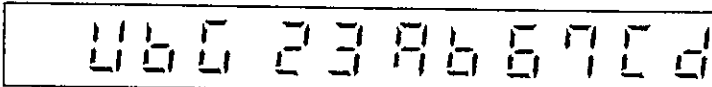
■ 2-2. Display of USER BITS

(1) If the [SHIFT] key, and then, the [2] key is pressed in that order, "LTC UBIT" data will be displayed in the time display. The time display will be lit in MODE 0 and be blinked in MODE 1.

(2) Next, if the [-] key is pressed, the "GENERATOR UBIT" data will be displayed. Pressing the [+] key will display the "LTC UBIT" data.

PROG. No | HOURS | MINUTES | SECONDS | FRAMES

UbL Ab CdEF 01

PROG. No | HOURS | MINUTES | SECONDS | FRAMES

UbG 23 Ab 67 Cd

(3) The "GENERATOR UBIT" data editing mode may be entered by pressing either the **[CLR]** or **[HOLD]** key. Please refer to "5-3. Editing of Time" in the main text for information on the method of editing.

(4) If the **[STO]** key is pressed after editing, generator time data will be transmitted to the D-20B. However, this is effective only when the D-20B "GEN ON" LED is lit.

(5) To return to the original display, press the **[SHIFT]** key and the **[2]** key in that order.

■ 2-3. Mode selecting to SYSTEM SET 71 CHASE

(1) When the **[RCL]** and **[STO]** keys are pressed simultaneously, the system set mode is entered and the following will be displayed:

PROG.No		HOURS	MINUTES	SECONDS	FRAMES
5 4 5					

(2) When the keypad **[7]** and **[1]** keys are pressed in that order, chase mode set is entered and the following will be displayed.

(3) The right side indication in the display counter can be changed to "LOCK 1" or "CHASE 2" by the **[+]** , **[-]** key or the **[2]**, **[1]** keys.

PROG.No		HOURS	MINUTES	SECONDS	FRAMES
C H 5			L O C H		1

PROG.No		HOURS	MINUTES	SECONDS	FRAMES
C H 5			C H A 5 E		2

(4) When the **[STO]** key is pressed, the indication in above (3) will be selected. To cancel, press the **[DISPLAY]** key. In both cases, the display will return to item (1) above display.

< NOTE >

When chase is carried out from the D-20B main unit, the Model 8320 chase mode set will be ineffective. It will be determined by the D-20B digital switch settings.

6

■ **2-4. System Set 13 Shuttle Speed set**

FF and REW which was fixed to 5 times speed in the old version may now be set to any speed.

(1)   System set mode is entered by simultaneously pressing the [**RCL**] and [**STO**] keys.

	PROG. No	/ HOURS	/ MINUTES	/ SECONDS	/ FRAMES
	5 Y 5				

(2)   Shuttle speed set mode is entered by pressing the [**1**] and [**3**] on the 10 key keypad in that order.

	PROG. No	/ HOURS	/ MINUTES	/ SECONDS	/ FRAMES
	5 t L	5 P E E d	7 0		

(3)   You may edit the display counter right side (FRAMES) figure (hexadecimal display) with either the [+] , [-] key or the keypad.

(4)   When the [**STO**] key is pressed, the indication in the above (3) will be selected. To cancel this, press the [**DISPLAY**] key. In either case, the display will return to that of the above (1).

Speed data are indicated in hexadecimal and may be obtained by the following calculation:

$$\text{TAPE SPEED} = 10^{(N/32-2)}$$

Initial figure is 56h (about 5 times speed).

Please note that the controlled device may not operate by the set figure if the Model 8320 does not comply to this set figure.


■ **2-5. Addition of the Jog Mode**

As long as the [◄◄] or [►►] are pressed, the Model 8320 will be at low speed. When they are released it will be at still picture. If these keys are pressed simultaneously with either [**FF**] or [**REW**] key, the Model 8320 will be in high speed jog. This jog mode is convenient when advancing in frame steps when connected to a VCR. However, it must be understood that operation by control from the VCR/VTR/HDD, etc. is not neccessarily guaranteed due to various factors between the interconnected equipmemnts.

In the Jog mode, following key function will change as follows.

```
S-ID SEARH [  ◄◄  ], [  ►►|  ] keys  ──────►  [JOG] key
```
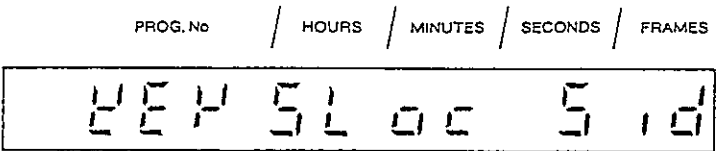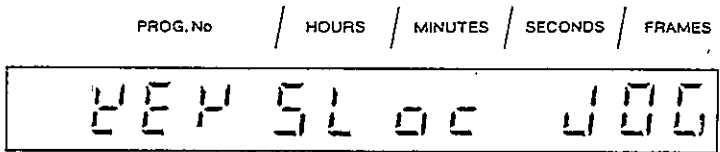
■ **2-5-1. Key Selecting of SYSTEM SET 14 S-ID SEARCH**

(1) Enter the SYSTEM SET mode by simultaneously pressing the [RCL] and [STO] keys, and the following will displayed:

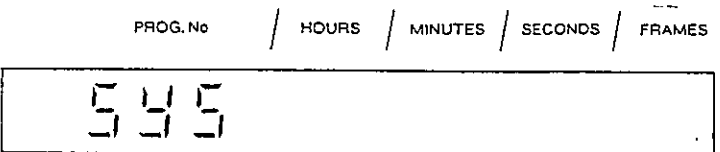PROG.No   / HOURS / MINUTES / SECONDS / FRAMES

```
5 4 5
```
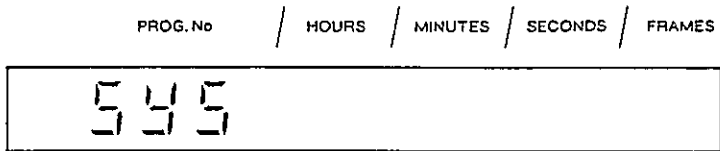
(2) Press keypad [1], and then, [4] in order to enter the S-ID SEARCH KEY SELECT mode and the display will be as follows:

(3) Set the display counter right side display to S-ID or JOG by pressing the [+] or [-] key.

PROG.No   / HOURS / MINUTES / SECONDS / FRAMES

```
kEY SL oc JOG
```

PROG.No   / HOURS / MINUTES / SECONDS / FRAMES

```
kEY SL oc Sid
```

(4) When the [STO] key is pressed, item (3) above display will be selected. To cancel this, press the [DISPLAY] key. In either case, it will return to item (1) above display.

■ **2-5-2. SYSTEM SET 15 JOG LOW SPEED SET**

(1) Enter the SYSTEM SET mode by pressing the [RCL] and [STO] keys simultaneously, and the display will be as follows:

PROG.No   / HOURS / MINUTES / SECONDS / FRAMES

```
5 4 5
```

(2)   Enter the JOG LOW SPEED SET mode by pressing the keypad [1] and [5] keys in that order and the display will be as follows.

PROG. No	HOURS	MINUTES	SECONDS	FRAMES
JOG SPdL				11

(3)   Set the display counter right hand side (FRAMES) display (hexadecimal display) to edit by the [+] , [-] key or using the 10 key pad.

(4)   When the [STO] key is pressed, the display in above (2) will be selected. To cancel it, press the [DISPLAY] key. In either case, it will return to the above (1) display.

Speed data are displayed in hexadecimal and may be obtained by the following calculation.

$$\text{TAPE SPEED} = 10^{(N/32-2)}$$

The initial figure is 11h (about 1 frame/sec. 30 frame).
Please note that the controlled device may not operate by the set figure if the Model 8320 does not comply to this set figure.

2-5-3. SYSTEM SET 16 JOG HIGH SPEED SET

(1)   Enter the SYSTEM SET mode by simultaneously pressing the [RCL] and [STO] keys, and the display wil be as follows:

PROG. No	HOURS	MINUTES	SECONDS	FRAMES
SYS				

(2)   Enter the JOG HIGH SPEED SET mode by pressing the keypad [1] and [6] keys in that order, and the display will be as follows:

PROG. No	HOURS	MINUTES	SECONDS	FRAMES
JOG SPdH				31

(3)   Set the display counter right hand side (FRAMES) display (hexadecimal display) to edit by pressing either the [+] , [-] key or using the 10 key pad.

(4)   When the [STO] key is pressed, the display in above (3) will be selected. To cancel it, press
        the [DISPLAY] key. In either case, it will return to above (1) display.

Speed data will be displayed in hexadecimal which may be obtained using the following
calculation.

$$\text{TAPE SPEED} = 10^{(N/32-2)}$$

The initial figure is 31h (about 10 FRAME/sec., 30 FRAME). Please note that the controlled device
may not operate by the set figure if the Model 8320 does not comply to this set figure.

■ 2-6. Display of System Set 48 DEVICE DATA

(1)   Enter the SYSTEM SET mode by pressing the [RCL] and [STO] keys simultaneously, and
        the display will be as follows:

PROG. No   / HOURS / MINUTES / SECONDS / FRAMES

```
  5 4 5
```

(2)   Enter the DEVICE DISPLAY mode by pressing the keypad [4]and then [8] keys in that order,
        and the display will be as folows:

PROG. No   / HOURS / MINUTES / SECONDS / FRAMES

```
  d E U            F 0  1 0
```

(3)   Press [DISPLAY] and the Model 8320 will return to the above (1) display.

3. Changes in Model 8320 Specifications When Connecting to the D-20B

■ 3-1. AUDIO key [AUDIO READY/INPUT/REPRO)]

[READY] key

This key controls AUDIO SAFE/READY. The function (and AUDIO READY LED) will change cyclically with each press of the key as shown below.
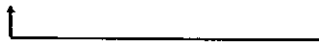
```
Normally:
        Safe (LED OFF) → Ready (LED ON) → Mute Record Ready (LED BLINK)
              └─────────────────────────────────────┘
```

```
Audio Record:
        Ready (LED ON) → Mute Rec Ready (LED BLINK)
              └───────────────────────┘
```

> *< NOTES >*
>
> *1. In the MUTE RECORD mode for recording audio, DATA ALL "0" will be mute recorded.*
> *2. In the NORMAL mode, TIME CODE READY will also operate at the same time.*

[INPUT] key

When this key is pressed, the Model 8320 will be in audio input monitor and the LED will be lit. This LED will occasionally be lit, as well as the Repro LED, at audio record in the EDIT mode. This is an indication that the Model 8320 is in the cross fade INPUT MONITOR mode by affect of the AUTO E-E mode of D-20 and D-20B recorders.

[REPRO] key

Repro monitor is entered by pressing this key. The repro LED will light.

■ 3-2. TIME CODE key [TIME CODE (READY/INPUT/REPRO)]

[READY] key

TIME CODE READY will cycle on/off with each press of this key. The LED will be lit when this key is switched on. In the NORMAL mode, the audio ready LED will light at the same time.

> *< NOTE >*
>
> *In the REPRO mode, the operation may not be changed even if this key is pressed.*

[INPUT] key

This key changes the D-20/D-20B time code output to INPUT. The associated LED will be lit. This LED will light occasionally during record in the EDIT mode. This is an indication that it is in input monitor by affect of the AUTO E-E mode only during RECORD mode.

> *< NOTE >*
>
> *In the D-20B, although it may be switched to input monitor, the Model 8320 time code display will remain at repro ime code. To monitor the time code in a D-20B, refer to the items in SHIFT" and "GENERATOR".*

[REPRO] key

By pressing this key, the time code output will switch to repro monitor and the LED will light.

■ 3-3. Err LOCAL Display

The Model 8320 will display "ERR LOCAL" when the D-20B REMOTE switch is set to LOCAL. Correct this by setting the D-20B **REMOTE** switch to REMOTE.

■ 3-4. Line Off Display

The Model 8320 will display "LINE OFF" if the D-20B is not connected to the Model 8320's input or the D-20B power is not switched on.