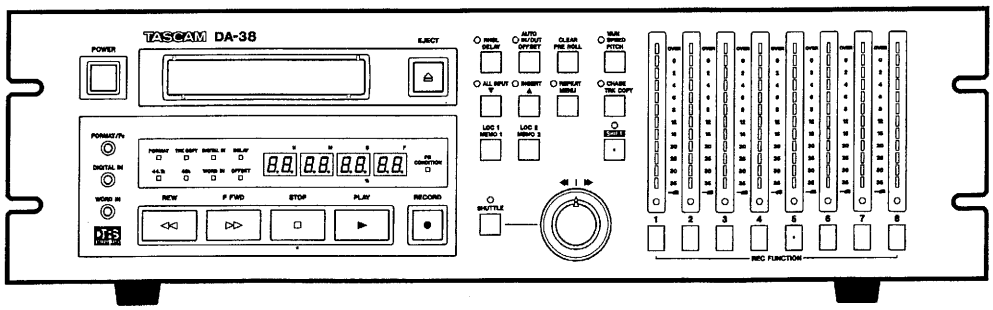
TASCAM

TEAC Professional Division

DA-38

Digital Multitrack Recorder



OWNER'S MANUAL

D00224500A

Important Safety Precautions

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.

The lightning flash with arrowhead symbol, within 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 person.

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.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.

Model number _____

Serial number _____

WARNING: TO PRIVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT (for U.K. Customers)

DO NOT cut off the mains plug from this equipment.
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not provided with a mains plug, or one has to be fitted, then follow the instructions given below:

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	**: EARTH**
BLUE	**: NEUTRAL**
BROWN	**: LIVE**

WARNING: This apparatus must be earthed.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

When replacing the fuse only a correctly rated approved type should be used and be sure to re-fit the fuse cover.

IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.

For U.S.A

TO THE USER

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residental area is likely to cause harmful interference in witch case the user will be required to correct the interference at his own expense.

CAUTION
Changes or modifications to this equipment not expressly approved by TEAC CORPORATION for compliance could void the user's authority to operate this equipment.

For the consumers in Europe

WARNING
This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Pour les utilisateurs en Europe

AVERTISSEMENT
Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prenre des mesures appropriées.

Für Kunden in Europa

Warnung
Dies is eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen versursachen ; in dieasem Fall kann vom Betrieber verlang werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

SAFETY INSTRUCTIONS

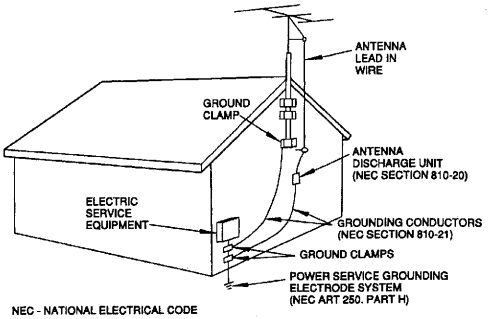
CAUTION:
- **Read all of these Instructions.**
- **Save these Instructions for later use.**
- **Follow all Warnings and Instructions marked on the audio equipment.**

1) Read Instructions — All the safety and operating instructions should be read before the product is operated.
2) Retain Instructions — The safety and operating instructions should be retained for future reference.
3) Heed Warnings — All warnings on the product and in the operating instructions should be adhered to.
4) Follow Instructions — All operating and use instructions shoud be followed.
5) Cleaning — Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6) Attachments — Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7) Water and Moisture — Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
8) Accessories — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
9) A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10) Ventilation — Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11) Power Sources — This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12) Grounding or Polarization — This procuct may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
13) Power-Cord Protection — Power-supply cords shoud 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 product.
14) Outdoor Antenna Grounding — If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

"Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Example of Antenna Grounding as per National Electrical Code, ANSI/NFPA 70



15) Lightning — For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.
16) Power Lines — An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17) Overloading — Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in risk of fire or electric shock.
18) Object and Liquid Entry — Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
19) Servicing — Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
20) Damage Requiring Service — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
a) when the power-supply cord or plug is damaged.
b) if liquid has been spilled, or objects have fallen into the product.
c) if the product has been exposed to rain or water.
d) if the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
e) if the product has been dropped or damaged in any way.
f) when the product exhibits a distinct change in performance – this indicates a need for service.
21) Replacement Parts — When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
22) Safety Check — Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
23) Wall or Ceiling Mouting — The product shoud be mounted to a wall or ceiling only as recommended by the manufacturer.
24) Heat — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

SECTION 1 : INTRODUCTION

Thank you for choosing the TASCAM DA-38 Digital Multitrack Recorder. The DA-38 is a product in the direct line of the worldwide successful DA-88 and was designed to meet the needs of video/film production, broadcast production, recording studios, project studios, and the musician.

Among the important features of DA-38 are the following :

- Menu-selectable machine ID, pre-/postroll time, and others
- Syncing up to 16 units for 128 tracks
- Syncing with the DA-88
- Can be slaved to external word clock
- Shuttling for reel rocking to identify specific points on tape
- 2-point autolocator with or without preroll
- Trial punch in and out
- Crossfade action to ensure seamless punch in and out
- Track delay function to correct the timing discrepancies between tracks
- Digital copy between tracks within one DA-38 or from tracks of one DA-38 to tracks of another
- Can be controlled from the TASCAM RC-848 or RC-808 remote

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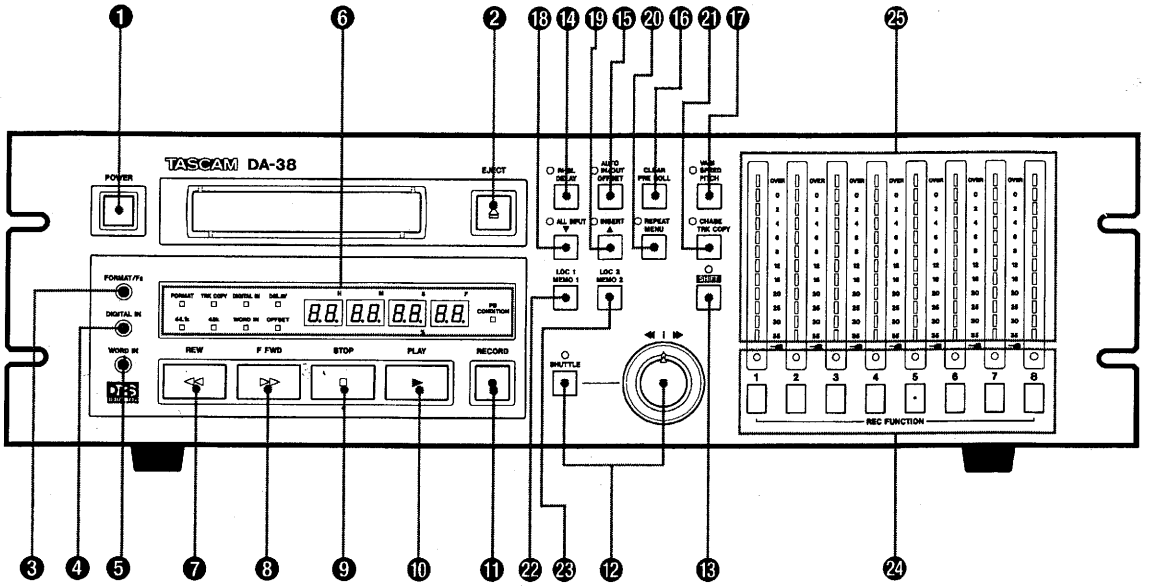
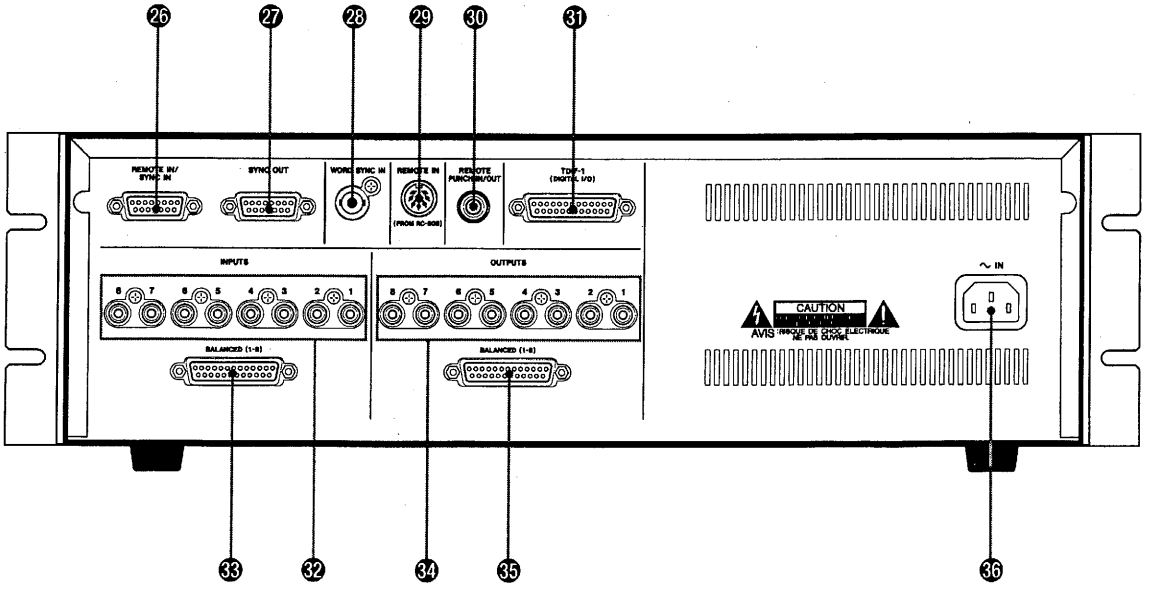
SECTION 2 : GENERAL GUIDE

Front Panel



Rear Panel



Front Panel

❶ POWER switch
Used to switch on power to the unit.

❷ EJECT key
Press to eject the tape.

❸ FORMAT/Fs switch
When pressed two times, puts the unit into tape format ready mode. During this mode, the switch is used to select a sampling rate. See Section 3.

❹ DIGITAL IN switch
Depending on whether this switch is pressed or not, recording is from the digital input or from the analog input.

❺ WORD IN switch
Used for referencing the unit to external word clock. This switch does not operate when the unit is being used as a slave.

❻ Display window
Ensures smooth interaction between the user and the unit.

FORMAT
When the corresponding key is pressed only once, this indicator blinks. A second press causes the indicator to glow solid, indicating the unit is ready to format a tape.

TRK COPY
This indicator is lit to remind you that a track or tracks will be copied onto other tracks as you enter record mode.

DIGITAL IN
This indicator lights when the unit is switched to record from the digital input.

DELAY
If the output timing of any track is corrected at a menu, this indicator is lit.

44.1k/48k
Either is lit to show the selected sampling rate.

WORD IN
When pressing the corresponding key, this indicator lights to show the unit is referenced to external word clock.

OFFSET
If the unit is used as a slave and an offset is entered, this indicator is lit.

Numeric display
The ABS time and menus are shown here.

PB CONDITION
A persistent error condition in playback triggers this indicator.

❼ REW button
Press to rewind the tape.

❽ F FWD button
Press to fast forward the tape.

- If you press F FWD or REW immediately after powering up or inserting a tape, the unit first configures itself for the reel hub diameter of the tape in use, during which the tape advances at low speeds. This takes several seconds. Therafeter, the transport momentarily goes into stop mode before the tape starts fast-winding.

❾ STOP button
Press to cancel the current transport mode. When pressed while in Chase mode, disables the mode and stops the tape.

❿ PLAY button
Press to begin playback. When pressed while RECORD is held down, begins recording. When pressed durng the autolocation process, causes the tape to start playing after completing autolocation.

⓫ RECORD button
Begins recording when pressed together with PLAY or, if no REC FUNCTION switch is pressed, puts the unit into record ready mode. When pressed during playback, triggers recording.

⓬ SHUTTLE switch and knob
Pressing the switch enables the knob for reel rocking to locate specific points on the tape.

⓭ SHIFT key
Used to shift the following ten keys, #14 to 23, to their lower labelled functions. The associated LED will then blink.

⓮ RHSL or DELAY key
RHSL is for a trial punch-in recording, and DELAY is used to correct the timing of each track.

⓯ AUTO IN/OUT or OFFSET key
AUTO IN/OUT is used to commit a punch-in recording to tape, and OFFSET is used in a master/slave sync system to have the slave unit get synced up to the master with a distance maintained between them.

⑯ CLEAR or PRE ROLL key
CLEAR is used to disable Tape Format Ready, RHSL or AUTO IN/OUT mode. PRE ROLL allows the user to enter an autolocation preroll time, a second press, to enter a punch-in preroll time.

⑰ VARI SPEED or PITCH key
VARI SPEED allows you to enter a pitch change before starting playback. PITCH is simply used to change the current amount of pitch.

⑱ ALL INPUT or ▼ key
When ALL INPUT is pressed, each output is fed directly by the same numbered input (primarily for alignment). The ▼ key is used to enter numbers or switch on/off some functions at menus.

⑲ INSERT or ▲ key
INSERT causes the monitor to switch from tape to input at punch-in point and back to tape at punch-out point. The ▲ key is similar to the ▼ key and used to enter numbers or switch on/off some functions at menus.

⑳ REPEAT or MENU key
REPEAT is used to play user-selected segment over and over again, and MENU is used to have the display show menus.

㉑ CHASE or TRK COPY key
Press CHASE for the unit to keep up with a master unit. A second press disables the Chase mode and stops the tape. TRK COPY is used to copy a track to another track.

㉒ LOC 1 or MEMO 1 key
Press MEMO 1 when entering a punch-in point or an autolocation point. LOC 1 is used to autolocate the unit to a MEMO 1 point.

㉓ LOC 2 or MEMO 2 key
MEMO 2 is used to enter a punch-out point or a second autolocation point, and LOC 2 causes the unit to autolocate to a MEMO 2 point.

㉔ REC FUNCTION switches
Used to select tracks to record on. Also used to select in Track Copy mode the tracks onto which you want to copy or, in Track Delay mode, the tracks the output timing of which you want to adjust.

㉕ Level meters
When recording analog input, adjust the level control on the source unit to keep the peak level as close to 0 dB as possible, without causing overscale reading on the meters.

Rear Panel

A hookup example is shown in Section 1.

㉖ REMOTE IN/SYNC IN connector
For connection of the optional RC-848 remote control unit, or, when the DA-38 is used in a master/slave sync system, the optional PW-88S sync cable is connected here.

㉗ SYNC OUT connector
For connection to another DA-38 by using the optional PW-88S sync cable to set up a master/slave sync system.

㉘ WORD SYNC IN connector
Allows the unit to be slaved to the word clock used by an external unit.

㉙ REMOTE IN connector
Allows the unit to be controlled from the optional RC-808 remote control unit.

㉚ REMOTE PUNCH IN/OUT connector
For connection of the optional RC-30P footswitch.

㉛ TDIF-1 (DIGITAL I/O) connector
This I/O port is for interface to units conforming to the TEAC Digital Audio Interface Format (TDIF-1).

㉜ INPUTS, RCA jacks
For connection of unbalanced analog signals.

㉝ INPUTS, BALANCED (1-8)
This D-sub connector accepts balanced analog signals.

㉞ OUTPUTS, RCA jacks
For connection to the unbalanced inputs of external units.

㉟ OUTPUTS, BALANCED (1-8)
For connection to the balanced inputs of external units.

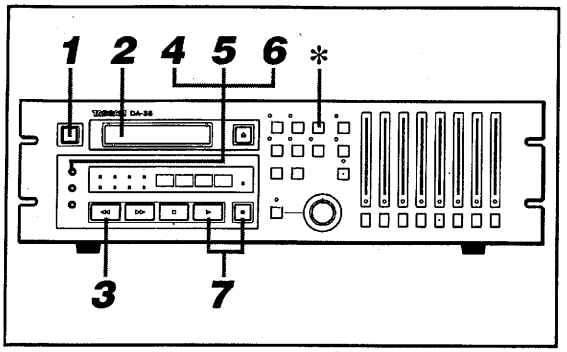
㊱ ~ IN
This is an AC power receptacle.

SECTION 3 : FORMATTING A TAPE

Audio can be recorded while formatting a tape (discussed later). But it's wise of you to format the tape from the beginning all the way to the end before recording audio.

The tape formatting process writes sub-code data such as ABS time and setup data such as ATF (Automatic Track Finding) signal onto a non-audio section of the tape.

3-1. How to Format a Tape (basic operation)



1 Switch power ON.

You'll notice that a machine ID number ("id. no. 1" for example) and other indications appear on the display.

See Section 7 for an explanation of the machine ID number.

2 Insert a new Hi8 tape into the DA-38.

"- - LOAd - -" will appear on the display to show that the tape is being loaded.

IMPORTANT

- *The DA-38 is designed to operate only with Hi8 video tapes. You cannot use any other tapes.*
- *The DA-38 automatically ejects tapes thinner than 8.5 µm : 150-minute or longer tapes.*

3 Press REW to rewind the tape all the way to the beginning.

When the beginning is reached, "bot" (beginning of tape) will appear on the display.

4 Press the FORMAT/Fs switch.

The FORMAT indicator will start blinking on the display.

- Unless you perform the next step (5) within five seconds, the formatting mode is disabled and the FORMAT indicator turns off. Should this occur, press the FORMAT/Fs switch again.

5 While the FORMAT indicator is blinking, press the FORMAT/Fs switch once more.

The FORMAT indicator will glow solid to show that the unit is ready to format the tape.

* If you want to cancel the format ready mode at this stage, press CLEAR and the FORMAT LED turns off.

6 The FORMAT/Fs switch now acts as a sampling rate selection switch, so press the switch until the required rate shows on the display.

NOTE

If a digital signal is fed into the DA-38 (as indicated by the DIGITAL IN indicator lit on the display), the unit is automatically switched to operate at an incoming sampling rate, and the Fs switch does not operate.

7 To start formatting the tape, hold RECORD and press PLAY.

The RECORD button will light up. When the tape is formatted all the way to the end, it will automatically rewind, stopping at "00000000".

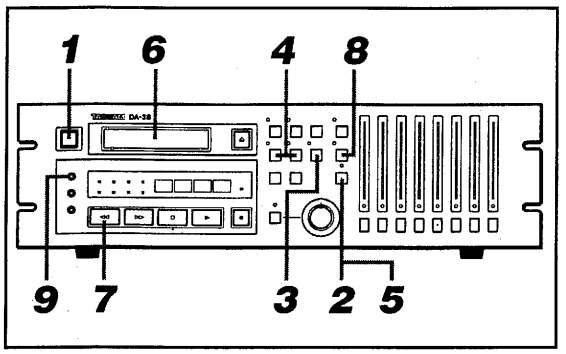
Suggestion : You can record audio on a track selected by the REC FUNCTION switch while at the same time the tape is formatted.

IMPORTANT

- *Be sure to format the tape from beginning to end in one continuous stroke. Do not interrupt the format process.*
- *When a tape is being formatted, any transport controls do not operate except for STOP.*
- *When a tape is being formatted, you cannot change the sampling rate. (This is also true when audio recording is in progress.)*
- *When the display shows a negative ABS time, audio cannot be recorded, as confirmed by a blinking RECORD LED.*

3-2. Real-time, Simultaneous Tape Format

In some cases, when recording a live concert using multiple DA-38s for instance, you may want to format tapes while at the same time you record audio on them, for later master/slave sync play.



Follow these steps to perform the real-time, simultaneous tape format :

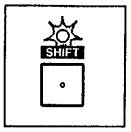
- Hook up a mutiple DA-38 sync system a basic example of which is shown in Section 7.

1 Switch power ON.

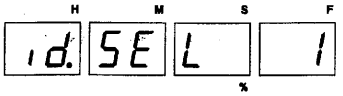
A machine ID number ("id. no. 1" for example) and other indications will appear on the display.

Assigning a machine ID number to each of the DA-38s (steps 2 through 5)

2 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



3 By repeatedly pressing MENU, access an ID selection menu, which looks like this:



4 Enter the desired machine ID number by pressing the ▲ and ▼ keys.

- Enter "1" on the DA-38 you intend to use as the master machine.
- Enter other numbers ("2" to "16") on each of the slave DA-38s.

> ***IMPORTANT***
>
> *Assign a different number to each of the DA-38s.*

5 Press SHIFT and the display will be switched back to show the ABS time.

6 Insert a new Hi8 tape into each of the DA-38s.

The display will show "--LOAd--" while the tape is being loaded.

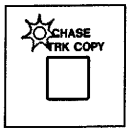
Speaking of Remembering :

- The DA-38 is designed to operate only with Hi8 video tapes. You cannot use any other tapes.
- The DA-38 automatically ejects tapes thinner than 8.5 µm : 150-minute or longer tapes.

7 Press REW to rewind the tape all the way to the beginning.

When the beginning is reached, "bot" will appear on the display.

8 Press CHASE on each of the slave DA-38s to put them into sync mode and the associated LED starts blinking.

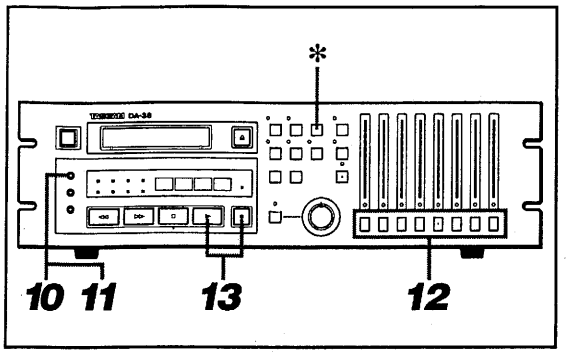


9 Press the FORMAT/Fs switch on all of the DA-38s.

The FORMAT indicator will start blinking on the display of every DA-38.

- If you don't perform the next step within 5 seconds, the tape format mode will be disabled and the FORMAT indicator will turn off. Should this occur, press the FORMAT key again.

SECTION 3 : FORMATTING A TAPE



10 Press the FORMAT switch once more on every DA-38.

The FORMAT indicator will glow solid to show that the unit is ready to format the tape.

* If you want to cancel the tape format ready mode at this stage, press CLEAR, and the FORMAT indicator will turn off.

11 The FORMAT/Fs switch now acts as a sampling rate selection switch, so press the switch until the required rate shows on the display.

IMPORTANT

It is imperative that all the slave machines are referenced to the same sampling rate as the master. Check to see one and the same sampling rate indicator is lit on all the units' displays.

- If you select a different rate from the one selected on the master unit, "E. CLOC" will appear on that slave's display.

NOTE

When recording from the digital input, the DA-38 is automatically switched to operate at an incoming sampling rate. Your selection is overridden and the Fs switch does not operate.

12 Put the tracks to record on into Record Ready mode by pressing the tracks' associated REC FUNCTION switches. Their LEDs will start blinking.

13 On the master DA-38, hold RECORD and press PLAY, and both the audio recording process and the tape formatting process will start on all the DA-38s (RECORD LED lit).

When the end of the tapes is reached, they will automatically rewind, stopping at "00000000".

IMPORTANT

- *Let the tape run until the end is reached even if audio recording is complete at an intermediate point of the tape. Interrupting the tape format process results in ABS time discontinuities, making proper operation impossible.*
- *The tapes you intend to use for synchronization also must be formatted from the beginning all the way to the end in one continuous stroke. Tapes which were formatted in multiple strokes or were recorded in Assemble mode and in consequence formatted in multiple strokes could lead to unstable synchronization when they transit from one formatted section to the next formatted section. Such tapes must be re-formatted from beginning to end if you want to use.*
- *During the tape formatting process, any transport controls do not operate except for STOP.*
- *You cannot change the sampling rate during the formatting/recording process.*
- *When the display shows a negative ABS time, audio cannot be recorded, as indicated by a blinking RECORD button.*

SECTION 4 : RECORDING

This section of the manual provides information on basic recording procedures, punch-in/out procedure and others.

4-1. Recording Analog Input (basic operation)

There are three ways to start recording. Use whichever one is most suitable to you.

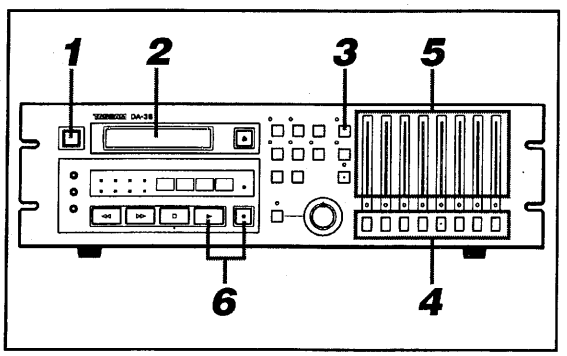
- Hold RECORD and press PLAY.
- Press REC FUNCTION.
- Press an optional RC-30P footswitch.

They are explained in that order in the following.

- When recording on a newly formatted tape, rewind it all the way to the beginning and allow a blank leader of 30 seconds or more of ABS time before the beginning of recording. Recordings close to the beginning or the end could cause drop outs. Also, create a recorded blank trailer at the end of recording; and before continuing recording, rewind the tape to the recorded blank trailer.
- When recording live concerts or others you have no chance of retaking, it is wise of you to clean the heads in advance.

(1) Using RECORD and PLAY

Hook up the DA-38(s) and other devices by referencing to a hook-up example shown in Section 1 if necessary.



WARNING

Make all connections with power OFF.

1 When your system is all hooked up, turn on each DA-38.

A machine ID number ("id. no. 1" for example) and other indications will appear on each DA-38's display.

2 Insert a pre-formatted new Hi8 tape into each DA-38.

While the tape is being loaded the display will show "- -LOAd- -".

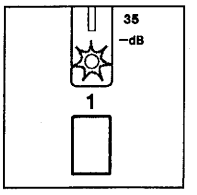
IMPORTANT NOTICES

- *The DA-38 is designed to operate only with Hi8 video cassette tapes. You cannot use any other tapes.*
- *We recommend that you use pre-formatted new (blank) Hi8 tapes for new recordings.*
- *Do not use a tape once used in any different machines from the DA-38 or DA-88 : a tape used for video recording for example.*
- *If the tape in use is write-protected, a "rEc inh i" message will appear on the display (in step 6 below). If you want to use this tape, open the write-protect tab. If you try to record on a write-protected tape, the DA-38 goes into Play mode.*
- *The DA-38 automatically ejects tapes thinner than 8.5 µm : 150-minute or longer tapes.*

3 Check to see that VARI SPEED is not enabled on any DA-38, as indicated by the associated LED turned off.

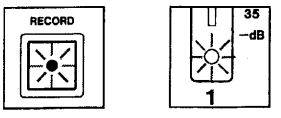
Recording at variable speeds is referred to in Section 5, paragraph 5-3.

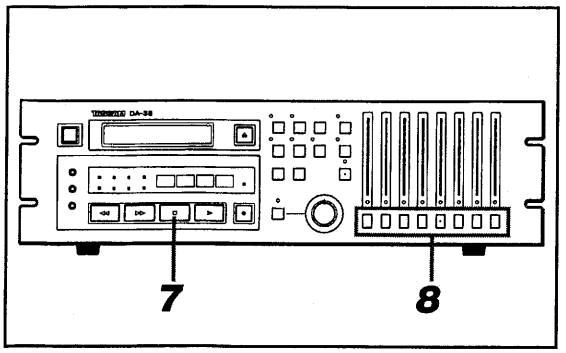
4 Put the tracks to record on into Record Ready mode by pressing the corresponding REC FUNCTION switches. The associated LEDs will start blinking.



5 Adjust the output level of the source unit or of the mixer in use as high as possible, without causing overscale reading on any DA-38's meter.

6 To start recording, hold RECORD and press PLAY.





Suggestion : *Each time you start recording, that point is automatically stored into memory, erasing the previous one. You can program the DA-38 to punch in at that point, as discussed later, page 4 • 7, paragraph (4).*

7 To terminate recording, press STOP.

Suggestion : *Each time recording is stopped, that point is automatically stored into memory, erasing the previous one. You can program the DA-38 to punch out at that point, as discussed later, page 4 • 7, paragraph (4).*

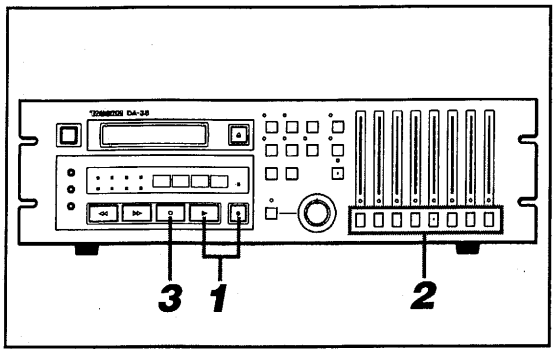
When you have the DA-38 drop out of record to rewind or fast-forward too, that point is saved.

8 To prevent the tracks from accidentally erasing, press the tracks' associated REC FUNCTION switches off.

NOTES

- *You cannot change the sampling rate when recording is in progress.*
- *If you start a new recording at the same time as the tape format from the end of the existing recording ("assemble"), the tape is recorded and formatted at the previous sampling rate. When preparing to record from the end of the previous take and to continue to format the tape, first rewind the tape to a formatted silence section. Avoid starting recording and formatting from a non-recorded and unformatted blank section.*

(2) REC FUNCTION-triggered Recording

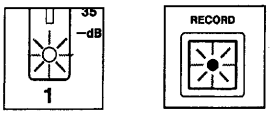


- For the hookup, refer to a diagram shown in Section 1 if necessary.
- Understand the Important Notices on the previous page.
- Adjust the mixer's level controls or the output level of the source unit so high as possible without causing overscale reading on the DA-38's meter.
- Perform steps 1 through 3 under the paragraph, Using RECORD and PLAY.

Then, follow these steps.

1 Making sure that all the REC FUNCTION switches are released, hold RECORD and press PLAY. The tape will start playing and the RECORD button will start blinking.

2 Press the REC FUNCTION switch for the track(s) you want to record on. The pressed REC FUNCTION switches' associated LEDs will light solidly, and the RECORD button the same.



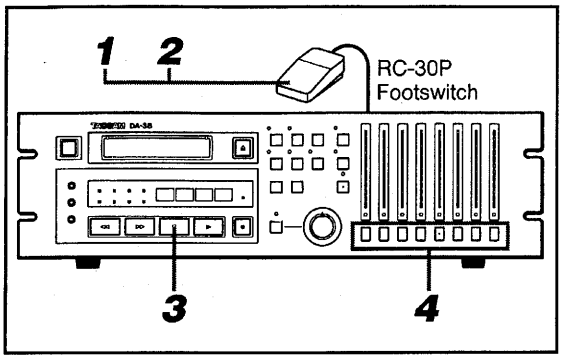
- If the tape is write-protected, the deck goes into Play mode.

3 To stop recording, press STOP.

(3) Footswitch-controlled Recording

If you are recording alone and are too busy playing an instrument to push the switches, the use of the optional remote footswitch (RC-30P) is really handy.

This method of recording is recommended especially for punching in and out of record. The punch-in/out procedure is explained later, under the corresponding heading.



- Plug the RC-30P footswitch into the REMOTE PUNCH-IN/OUT jack on the rear of the DA-38. For other connections, refer to a hookup example shown in Section 1.

- Perform steps 1 through 5 under the paragraph, Using RECORD and PLAY.

Then, proceed as follows :

1 Press the footswitch and the tape will start playing.

2 To start recording, press the footswitch once more.

- If the tape is write-protected, the DA-38 does not go into Record mode, and remains in Play mode.

3 To stop recording, press STOP.

4 To insure against accidental erasure, press the REC FUNCTION switches off.

Suggestion : *The DA-38 remembers both the record start point and the end point ; and you can program the unit to drop into and out of record at those points. For details, see page 4 • 7, paragraph (4).*

4-2. Recording Digital Input

The procedure is similar to that for Recording Analog Input, with these exceptions :

- Press the DIGITAL IN switch. The indicator DIGITAL IN will light on the display.

- In the most cases, the DA-38 is referenced to the same clock as the source digital unit, so :

  - Plug the clock from the source unit into the WORD SYNC IN jack on the rear of the DA-38.

  - Press the WORD IN switch. The indicator WORD IN will light on the display to show that the DA-38 is slaved to the external clock.

- When recording from the digital input, there is no need of adjusting the recording level.

IMPORTANT

- *If either of two sampling rate indicators blinks on the display, it indicates that a different sampling rate than the one present on the tape is coming in. Then, re-format the tape with the correct sampling rate, or use another tape.*

- *An "E. d io" warning appears on the display if your digital source (DA-38/DA-88) or digital interface unit (IF-88AE/IF-88SD) is not connected to the DA-38 by using the optional PW-88D cable.*

4-3. Punch In/Out Editing

This section of the manual provides information on rehearsal or trial punch in/out and actual punch in/out procedures.

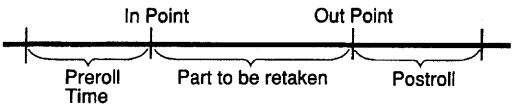
Quite often, it becomes apparent that the recorded material contains a mistake or could be improved. One obvious way to correct this problem is to re-record the entire track, but, if the mistake is minor, this is not practical or necessary. You can use the technique known as Punch-in or Insert recording. This provides a way to re-record only a small part of a track, thus covering the mistake, or to record additional material on a blank section of a track, augmenting the original material.

For smooth punch-ins (dropping into record) and punch-outs (dropping out of record) we recommend you the use of the optional RC-30P footswitch. This streamlines the process and you can control the timing of punching in and out with ease. Especially if you are recording alone and are busy playing an instrument, it is really handy.

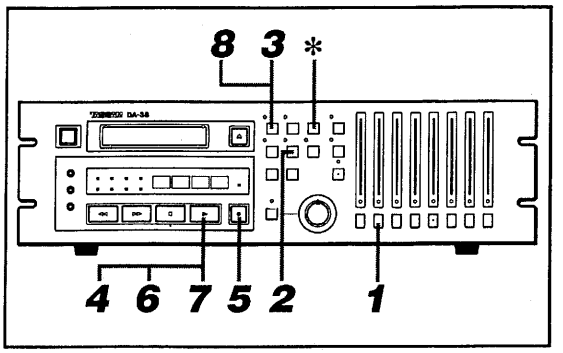
The DA-38 has a Rehearsal function, allowing you to make a trial punch in without actually recording on to tape. And, when you are ready, you can use an Auto Punch-in/out function to have the deck actually drop into record and drop out to play exactly at pre-selected points.

The DA-38 ensures seamless punch-ins and outs with a built-in crossfade action. The crossfade time defaults to 10 milliseconds. If you want to change this time, refer to paragraph 4-4.

Let's say we've discovered a small error on track 2, here's how to fix it.



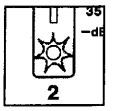
(1) Rehearsal



- Plug the mic or instrument as required into channel 2.

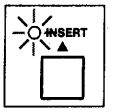
1 Press the track 2's REC FUNCTION switch.

The associated LED will start blinking to show that track 2 is record-enabled.



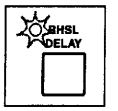
2 Press the INSERT switch.

The associated LED will light to show that an Insert Monitor mode is enabled.



3 Press the RHSL switch.

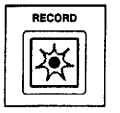
The associated LED will start blinking to show that the unit is in Rehearsal Ready mode.



4 Press PLAY to start playing the tape.

5 When the point you want to punch in the retake is reached, press RECORD.

That point is saved to memory ; the monitor is switched from tape to input; and the RECORD button is blinking.



6 When the point where you want to punch out of record is reached, press PLAY.

That point is saved to memory ; and the RHSL LED that was blinking glows solid to show that the unit is now in Rehearsal mode.

After about 3 seconds of play (this post-roll time is adjustable, as discussed later), the tape will rewind, automatically stopping at a point about 5 seconds lower than the punch-in point (this pre-roll time also is adjustable, as discussed later).

7 To cycle over a sequence punching in and out, press PLAY.

During Rehearsal mode, the monitor is automatically switched from tape to input at the punch-in point and, at the punch-out point, reverts to tape.

* If you decide to exit the Rehearsal mode, press CLEAR. The RHSL LED will then turn off.

8 Repeat the rehearsal as many times as necessary. If you are not satisfied with the current punch-in and out point settings, first exit the rehearsal mode by pressing RHSL, then go back to step 3. Consider also the possibilities explained under the next paragraph, (2) Setting Punch In and Out Points.

- Auto Play Function : If you press PLAY during the autolocate process after postroll, the PLAY button will start brinking to show that the DA-38 will automatically start playing when completing autolocation.

  If you are using the optional RC-848 remote control unit and press its AUTO PLAY key, the trial punch-in will automatically repeat over and over.

- If you are using the optional RC-30P footswitch, press the footswitch in step 7, instead of PLAY.

(2) Setting Punch In and Out Points

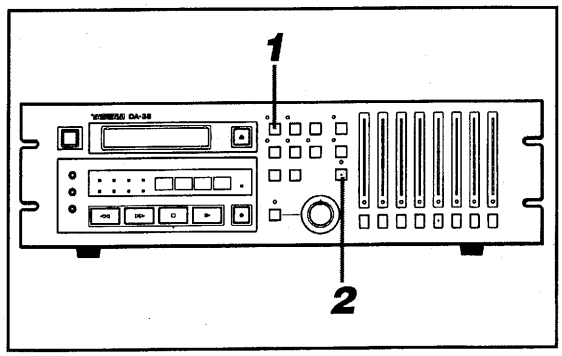
You can set the punch in and out points in any of three ways :

A. Perform a trial punch-in recording in Rehearsal mode, as explained above.
B. Key in the desired points at menus in Rehearsal mode.
C. Perform a normal recording (as explained earlier, the point you start recording from and the point you stop recording are automatically stored into memory as punch in and out points).

Punch in and out points you select by Method A or C can be recalled from memory onto the display, and you can trim them to frame accuracy (Method B). Also, if the necessary punch in and out points are known to you in advance, you can directly enter them at menus.

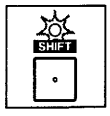
Follow these steps to control the punch in and out points from menus :

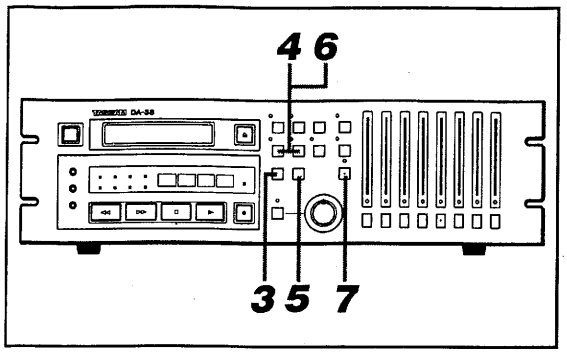
> ***NOTE***
>
> *Each time you enter a punch in or out point, it overwrites the previous one.*



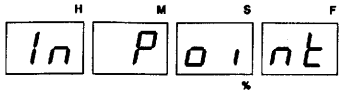
1 Check to see that the RHSL LED is lit. If it isn't, press the RHSL key two times and the LED will light.

2 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



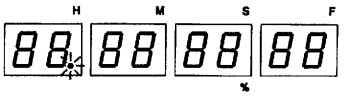


3 Press MEMO 1 and the display will momentarily read like this before indicating the current punch in point.

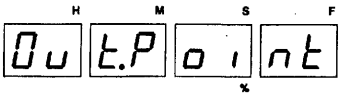


4 You'll notice that a period is blinking in the hours column to show that you can key in the desired number of hours using the ▲ and ▼ keys.

- Each time you press MEMO 1, the blinking period moves to the next column (H, M, S, then F).
- When no period in any column is blinking, the hours, minutes, seconds and frame number change all at once as you press the ▲ or the ▼ key.
- To clear the display to "00000000", hold the ▼ or the ▲ key and press the other.
- You can enter any time from zero up to 23 hours, 59 minutes, 59 seconds, and 33 frames.

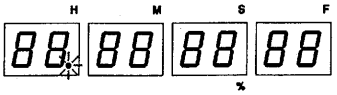


5 Make sure that the entered punch in point is correct, then press MEMO 2 and the display will momentarily read like this before indicating the current punch out point.



6 You'll notice that a period is blinking in the hours column, so enter the desired hours using the ▲ and ▼ keys.

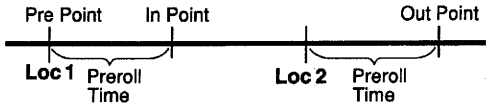
- Each time you press MEMO 2, the blinking period moves to the next column (H, M, S, then F).
- When no period in any column is blinking, the hours, minutes, seconds and frame number change all at once as you press the ▲ or the ▼ key.
- To clear the display to "00000000", hold the ▼ or the ▲ key and press the other.
- You can enter any time from zero up to 23 hours, 59 minutes, 59 seconds, 33 frames.



7 To exit the punch in/out point setting mode, press SHIFT. The display will be switched back to show the ABS time.

To audition the entered points :

- Pressing the LOC 1 key autolocates the tape to a point 5 seconds (or user selected time) lower than the entered punch in point, then press PLAY.
- Pressing the LOC 2 key autolocates the tape to a point 5 seconds (or user selected time) lower than the entered punch out point, then press PLAY.



Speaking of remembering :

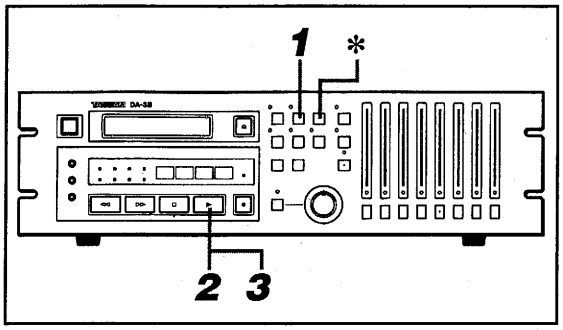
The double function keys in the center of the unit offer the upper black-labelled functions when the SHIFT LED is turned off.

When the SHIFT LED is blinking, they offer the lower blue-labelled functions.

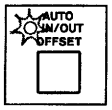
(3) Auto Punch In and Out

When you perform the following steps, the original take is permanently lost. Repeat the rehearsal until you are sure your performance and the in/out points are correct.

The DA-38 has an Auto punch in/out function and it drops into and out of record exactly at the same points as during rehearsal. Also, an Auto check function offers a prompt audition of your retake.



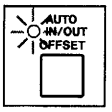
1 Press the AUTO IN/OUT key and the associated LED will start blinking to show that the unit is in Auto punch-in/out ready mode.



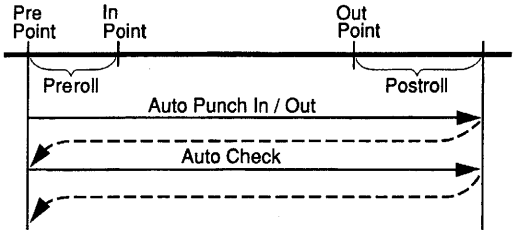
* To exit the auto punch in/out mode, press CLEAR and the AUTO IN/OUT LED will turn off.

2 Press PLAY to start the programed punch-in/out sequence.

After 3 seconds (or user selected time) of postroll, the AUTO IN/OUT LED will glow solid and the tape will rewind, stopping at a point 5 seconds (or user selected time) lower than the punch-in point.



3 Press PLAY to audition the result ("auto check").



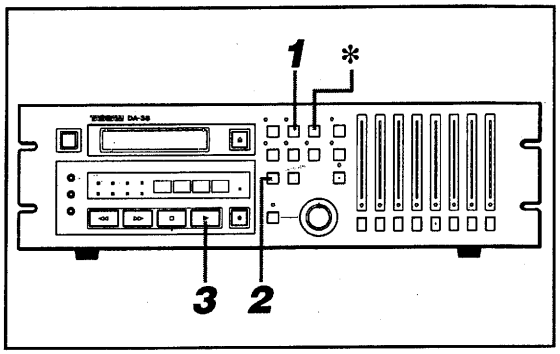
4 If you are not satisfied with your performance and want to try again, re-do from step 1.

Autolocation

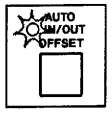
- Pressing the LOC 1 key autolocates the tape to a point 5 seconds (or user selected time) lower than the punch in point.
- Pressing the LOC 2 key autolocates the tape to a point 5 seconds (or user selected time) lower than the punch out point.

(4) Punch In and Out at Points Captured on the Fly

As mentioned earlier, when you start recording (with RECORD + PLAY or with the optional footswitch), and terminate recording, the start and the end points are automatically saved to memory, so you can have retakes be punched in and out at those memory points (without passing through rehearsal).



1 Press AUTO IN/OUT and the associated LED will start blinking to show that the unit is in Auto punch-in/out mode.



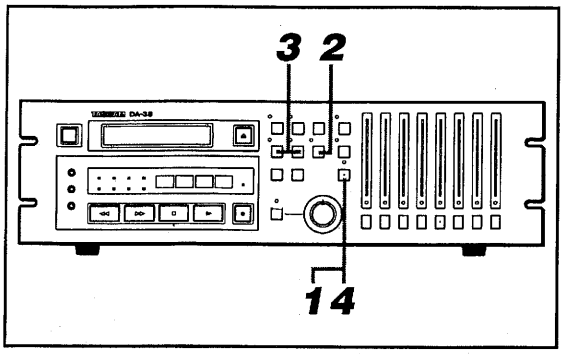
2 Press LOC 1 and the tape will rewind, stopping at a point 5 seconds (or user selected time) lower than the point the original take started from.

* To exit the auto punch-in/out mode, press CLEAR and the AUTO IN/OUT LED will turn off.

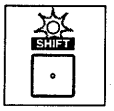
3 Press PLAY and, after preroll, the selected tracks will automatically drop into and out of record at the same points as the previous take. After postroll, the AUTO IN/OUT LED will glow solid and the tape will rewind, stopping at a point 5 seconds (or user selected time) lower than the point where the unit dropped into record.

4-4. Crossfade Time Setting

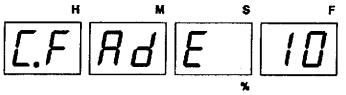
Seamless punch in and out of record is ensured by a crossfade action which is factory preset to 10 milliseconds. You can change this time up to 90 ms at a menu, in 10 ms steps.



1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU to access a crossfade menu, which looks like this :

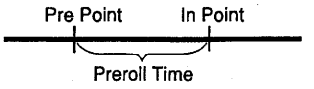


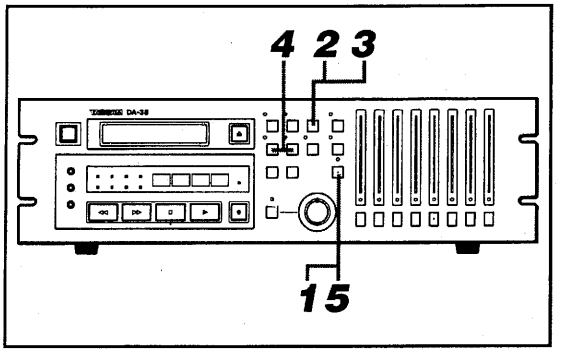
3 Enter the desired time using the ▲ and ▼ keys.

4 To exit the menu mode, press SHIFT. The display will be switched back to show the ABS time.

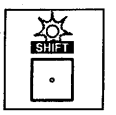
4-5. Preroll Time Setting

The DA-38 is factory preset to offer 5 seconds of preroll up to punch in points. You can change the time up to 59 minutes 59 seconds, in 1 second steps, if you want to, as follows :





1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press PRE ROLL. The time now appearing on the display is an autolocation preroll time and not for punch-in. (Autolocation preroll time is explained in Section 6)

3 Press PRE ROLL once more and the display will now show the current punch-in preroll time, like this :

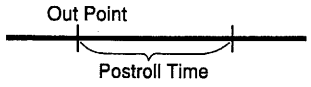
4 Enter the desired preroll time using the ▲ and ▼ keys.

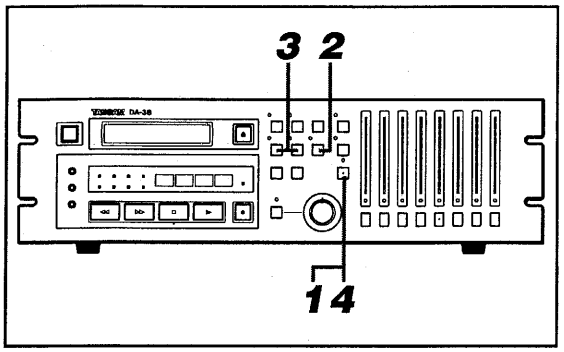
If you hold the ▼ key and press the ▲ key, the display is cleared to the factory preset ("Pr.0005.rh").

5 Press SHIFT to exit the preroll time setting mode and switch the display back to show the ABS time.

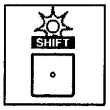
4-6. Postroll Time Setting

The DA-38 is factory preset to play for 3 seconds after dropping out of record. You can change the time up to 59 minutes 59 seconds at a menu, in 1 second steps.

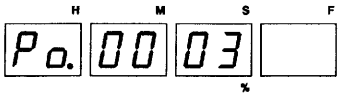




1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU to access a postroll menu, which looks like this :



3 Enter the desired postroll time using the ▲ and ▼ keys.

4 Press SHIFT to exit the menu mode and switch the display back to show the ABS time.

4-7. Copying Tracks

The DA-38 has a track matrix and you can assign any sources (tracks or inputs as discussed below) to any locations, that is, to any tracks. So, for instance, you can record input 1 on track 2 and copy track 8 to track 5, simultaneously.

Here is an outline of the track copy procedure :

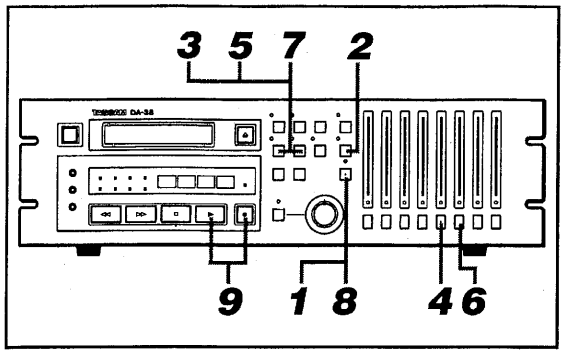
TRK COPY
↓
Target track selection (REC FUNCTION)
↓
Source selection (▲ / ▼)
↓
RECORD + PLAY

PRECAUTIONS

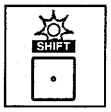
- *When the track copy function is disabled ("trcP. oFF" as the dispay reads), you cannot proceed to specify tracks or inputs.*
- *Even if a source and a target track are specified, the track is not recorded unless the track's REC FUNCTION switch is pressed on.*
- *Similarly, even if a source and a target track are specified, the source is not fed to the track when the track copy function is disabled ("trcP. oFF").*

(1) Copying in Stereo Pairs

As an example, let's copy tracks 3 and 4 to tracks 5 and 6 in stereo.

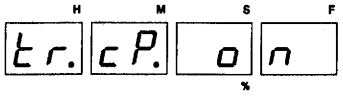


1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.

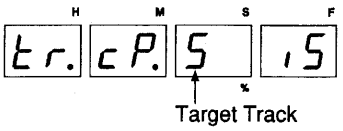


2 Press the TRK COPY key and the display will read "tr.cP. oFF".

3 Press the ▲ or ▼ and the "tr.cP. oFF" will change to "tr.cP. on" to show that the track copy function is activated, the TRK COPY LED being lit.



4 You have to specify target tracks before source tracks. So press the REC FUNCTION switch of track 5 (one of the target tracks in our example). The track's LED will start blinking and the display will change to look like this :



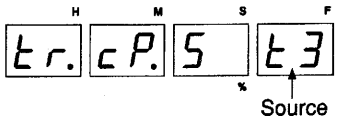
5 Now, let's proceed with source track selection.

Each time you press the ▲ key, the rightmost display will change in sequence, like this (" ,5" for input, and "t " for track) :

,5→,6→,7→,8→t 1→t2→t3→t4→
t5→t6→t7→t8→ ,1→,2→,3→,4

The ▼ key generates them in reverse order.

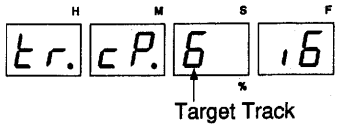
Since track 3 is one of the source tracks in our example, have the display show "t3", like this :



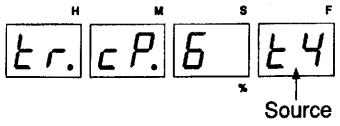
- If you hold the ▲ or the ▼ key and press the other, the display is switched back to show the default source selection (" ,5" in our example).

6 In a similar way, let's specify another target/source pair.

To specify track 6 as a target track, press the track's REC FUNCTION switch, and the associated LED will start blinking while the display will change to look like this :



7 Specify track 4 as a source track by means of the ▲ and ▼ keys.



8 To exit the track copy setting mode, press SHIFT. The display will be switched back to show the ABS time. The TRK COPY LED remains lit.

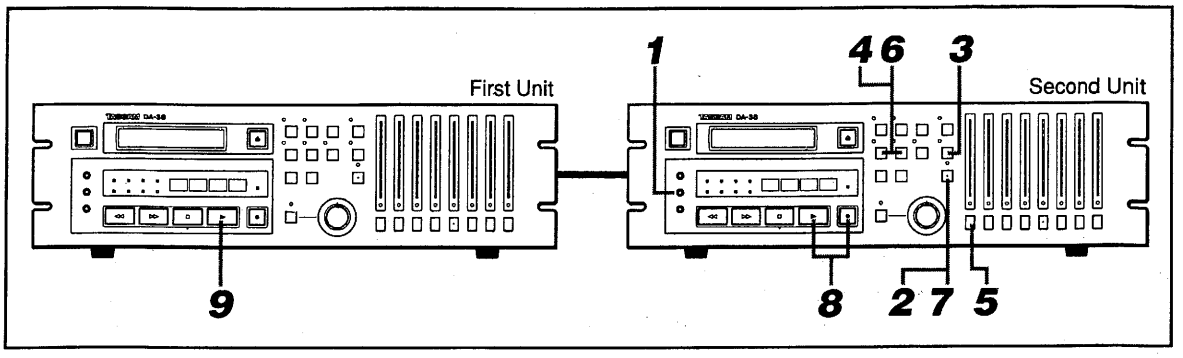
9 To start copying, hold RECORD and press PLAY.

Track 3 is copied to track 5, and track 4 to track 6.

- If you are using two DA-38s, you can copy tracks of one unit to tracks of another (discussed below) while at the same time you can copy tracks within one unit (as discussed above).

(2) Copying Tracks of One DA-38 to Tracks of Another

As an example, let's copy track 2 of first unit to track 1 of second unit.



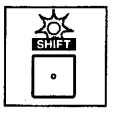
- Hook up a two DA-38 sync system. If necessary, refer to Section 7.

- Be sure to connect the units by using the optional PW-88D dubbing cable.

> ***WARNING***
>
> *Make all connections with power OFF.*

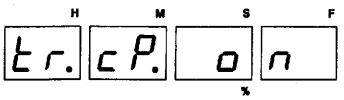
1 Press the DIGITAL IN switch on the second unit. The indicator DIGITAL IN will light on the display.

2 Press SHIFT on the second unit. The associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.

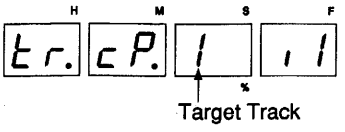


3 Press the TRK COPY key on the second unit. The display will read "tr.cP. oFF".

4 Press the ▲ or the ▼ key on the second unit to change the "oFF" display to "on".



5 Press the REC FUNCTION switch for track 1 on the second unit. The associated LED will start blinking and the display will change to look like this :



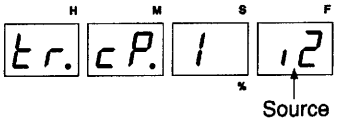
6 Select input 2 by means of the ▲ and ▼ keys. (Remember, tracks of the first unit are 'inputs' to the second unit.)

Each time you press the ▲ key, the rightmost display will change in sequence, like this (" i " for input, and "t " for track) :

i 1→ i2→ (...)→ i7→ i8→ t 1→ t2→ (...)→ t8

The ▼ key generates them in reverse order.

- If you hold the ▲ or the ▼ key and press the other, the display is switched back to show the default source selection (" i 1" in our example).



7 Press SHIFT on the second unit to exit the track copy setting mode. The SHIFT LED will turn off and the display will be switched back to show the ABS time.

8 Hold RECORD and press PLAY on the second unit.

9 Press PLAY on the first unit.

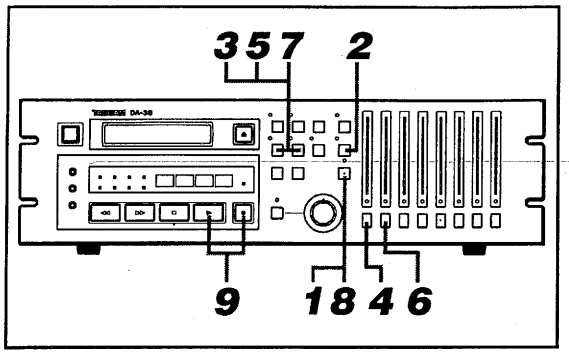
Track 2 of the first unit is copied to track 1 of the second unit.

- You can also copy tracks of a DA-38 to other tracks of the same unit (discussed in the previous paragraph) while at the same time making a digital copy between two DA-38s.

(3) Using the Track Copy Capability as a Patch Bay

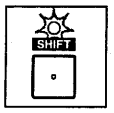
The track copy capability allows you to select sources and tracks to record on, so you can record a specific input to any tracks without going to the trouble of repatching the input.

As an example, let's record analog input 2 to track 1, and analog input 1 to track 2.



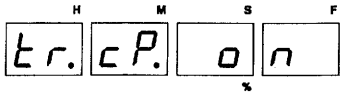
- Check to see that the DIGITAL IN indicator is not lit on the display. If it is, press the DIGITAL IN switch to turn off the indicator.

1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.

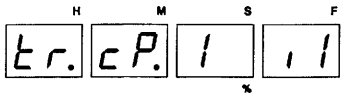


2 Press the TRK COPY key and the display will reads "tr.cP. oFF".

3 Press either the ▲ or the ▼ key to activate the track copy function ; the "oFF" display will change to "on", like this :



4 Press the REC FUNCTION switch for track 1 and " / " will show in the seconds column, like this :



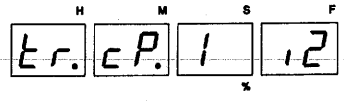
5 Select input 2 (the source to record on track 1 in our example) by means of the ▲ and ▼ keys.

Each time you press the ▲ key, the rightmost display will change in sequence like this (" 1" for input, and "t " for track) :

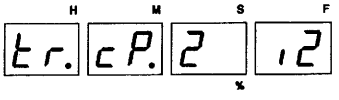
1 → 2 → (...) → 17 → 18 → t 1 → t 2 → (...) → t 8

The ▼ key generates those options in reverse oder.

- If you hold either the ▲ or the ▼ key and press the other, the dispslay will be switched back to show the default selection (" 1" in our example).

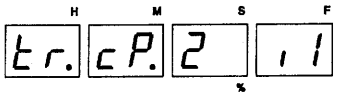


6 Press the REC FUNCTION switch for track 2. The associated LED will start blinking and "2" will show in the seconds column, like this :



7 Select input 1 (the source to record on track 2 in our example) by means of the ▲ and ▼ keys.

Go on to the next step when the display looks like this :



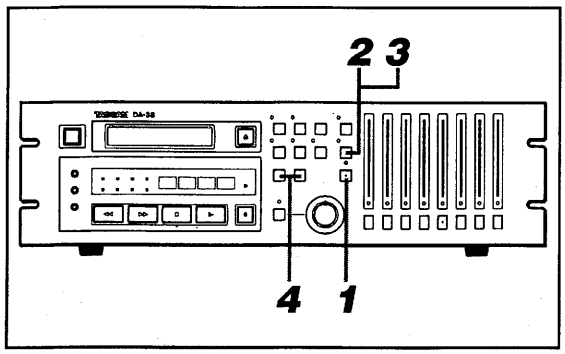
8 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

9 Hold RECORD and press PLAY to start recording.

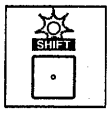
Input 1 is recorded on track 2 and input 2 on track 1.

- If, for example, you select input 2 in step 7, analog input 2 is recorded on tracks 1 and 2.

(4) To Switch Off the Track Copy Mode



1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.

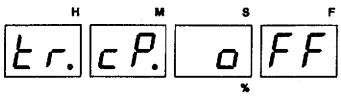


2 Press the TRK COPY key and the display will show the last track copy setting ("tr.cP.2 1 1" for example).

Depending on the last setting, the display will read "tr.cP. on" at this stage. If this is the case, skip to step 4.

3 Press the TRK COPY key once more and the display will read "tr.cP on".

4 Press either the ▲ or the ▼ key to change the "on" display to "oFF".



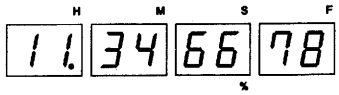
(5) Track Copy Settings Backed Up

Your settings for track copy are automatically saved to a backup memory and are not erased when turning off power : they become the default.

Also, if you press and hold the TRK COPY key (for 1 second or more), the display will show the current track copy settings as follows :

Display	Setting for
• The tens of hours column	Track 1
• The units of hours column	Track 2
• The tens of minutes column	Track 3
• The units of minutes column	Track 4
• The tens of seconds column	Track 5
• The units of seconds column	Track 6
• The tens of frames column	Track 7
• The units of frames column	Track 8

A solidly lit period in any columns indicates a track of the DA-38, and an extinguished period indicates an input. For example :



In this case, track 1 is selected by the user as the source of track 2, and input 6 as the source of track 5, the remaining tracks being left alone.

4-8. Dithering the Re-quantization Noise

The DA-38 has a 18 bit A/D converter, a quantizer for changing analog data into its digital equivalent.

The DA-38 can also receive digital data of up to 24 bits, but it records and plays using 16 bit patterns, which means that it is necessary to further convert the 18 or 24 bit data into 16 bit data, a process called re-quantization.

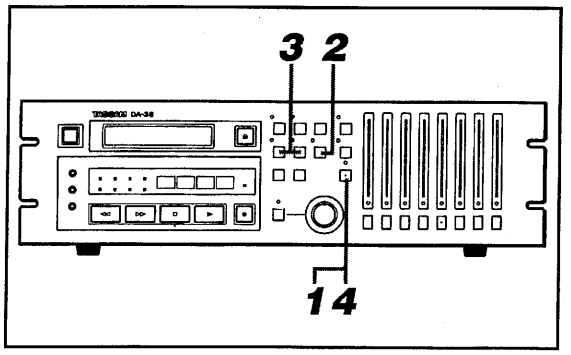
The simplest solution may be rounding of the data, which neglects data past the 16th bit.

This rounding may produce noise correlated to the original input signal, because of the difference in resolution between 18/24 bit data and 16 bit data.

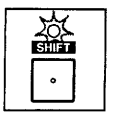
The dithering process overcomes re-quantization noise by masking it with a low-level random signal (a kind of noise).

The DA-38 is designed to allow you to monitor the input with as high a definition as possible, so the dithering process takes place only when the input signal is actually recorded onto tape. The effect of dithering is thus perceptible only on playback.

The dithering function is enabled or disabled in a menu, as follows :

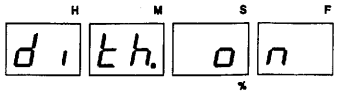


1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Access the dither menu by pressing MENU as many times as necessary, which looks like "d ıt h. oFF".

3 Press either the ▲ or the ▼ key and the "oFF" will change to "on".



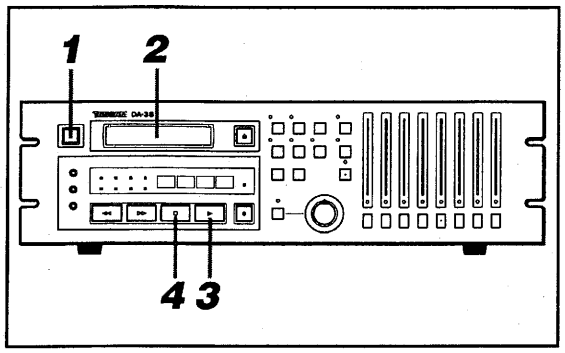
4 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

- To switch off the dither, change the "on" display to "oFF" by means of either ▲ or ▼.

SECTION 5 : PLAYBACK

This section of the manual is divided into six major subheadings : basic playback procedure, shuttling the tape, variable speed playback, setting locating points, repeat playback, and delaying tracks.

5-1. Basic Playback Procedure



- Hook up your system by referring to a hook-up example shown in Section 1 if necessary.

WARNING

Make all connections with power OFF.

1 Switch power ON.

A machine ID number ("id. no. 1" for example) and other indications will show on the display. (The machine ID number is explained in Section 4.)

2 Insert the Hi8 tape into the DA-38.

"- - LOAd - -" shows to indicate the tape is being loaded.

3 To begin playback, press PLAY. The button will light solidly.

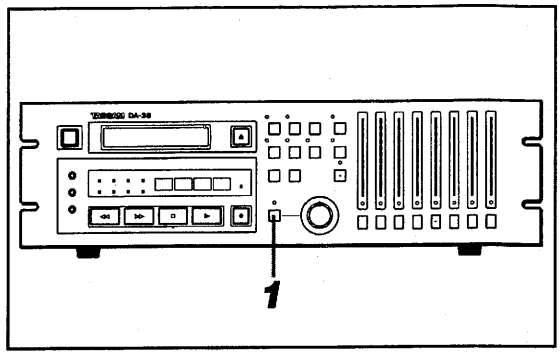
4 To stop playback, press STOP.

IMPORTANT

- *The DA-38 is designed to operate with Hi8 tapes only. Do not use any other tapes.*
- *Do not use tapes once used in other machines than the DA-38 or DA-88, tapes used for video recording for example.*
- *Use 120-minute or shorter tapes. The DA-38 detects the thickness of tapes and automatically ejects tapes thinner than 8.5 μm (tapes used in 150-minute or longer cassettes).*

5-2. Shuttling the Tape

The SHUTTLE function allows you to rock the reels to identify specific points on a tape.



1 Press the SHUTTLE switch and the associated LED will light.

- As you rotate the knob to the right, the tape runs forward, and as you rotate the knob to the left the tape runs in reverse.
- Play speed varies depending on the amount of knob rotation, from 1/4 up to 8 times the normal play speed.
- Bringing the knob back to the center position puts the transport into pause mode and no sound is heard.

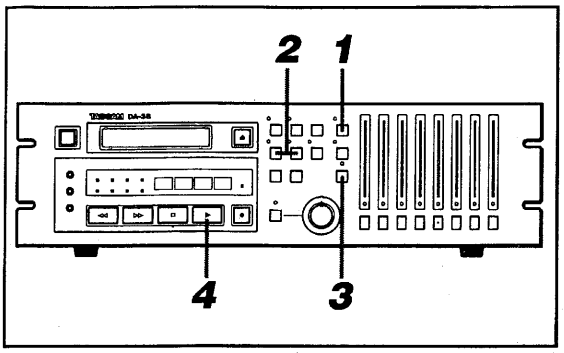
* Press the SHUTTLE switch to disable the function and stop the tape. The associated LED will turn off.

NOTES

- *While shuttling the tape, the monitor output level is automatically attenuated by about 12 dB from the level during normal play.*
- *If you leave the shuttle function in pause mode for about 10 seconds with the knob at the center position, the function is automatically disabled and the associated LED turns off.*

5-3. Variable Speed Play

The DA-38 provides a plus or minus 6.0% variation (in 0.1% steps) to the tape speed both in record and play modes.



1 Press the VARI SPEED key.

Its associated LED will light solidly while at the same time the SHIFT LED will start blinking and the current pitch change will show on the display, like this :

2 Enter the desired pitch change by means of the ▲ and ▼ keys.

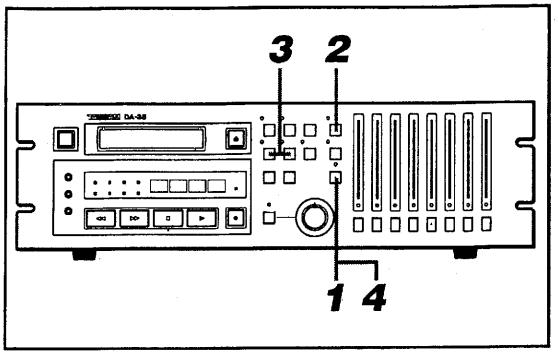
- If you hold either the ▲ or the ▼ key and press the other, the display is cleared to " 0.0 ".

3 After having entered the desired pitch change, press SHIFT and its LED will turn off and the display will be switched back to show the ABS time. But, the VARI SPEED LED remains lit solidly.

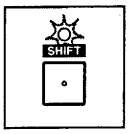
4 Press PLAY to begin playback at the entered pitch.

* To disable the variable speed mode, press the VARI SPEED key if the SHIFT LED is turned off. If the SHIFT LED is lit solidly, press SHIFT then press VARI SPEED.

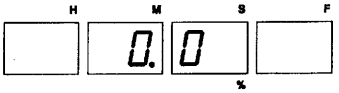
To Change the Current Pitch



1 Press the SHIFT key and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press the PITCH key. The current pitch change will show on the display, like this :



3 Enter the required pitch change by means of the ▲ and ▼ keys.

- The display is cleared to " 0.0 " if you hold either the ▲ or the ▼ key and press the other.

4 Press SHIFT.

The associated LED will turn off and the display will be switched back to show the ABS time.

NOTES

- *Even if you entered a pitch change, the tape plays at normal speed if the VARI SPEED LED is not lit.*
- *Even if the VARI SPEED LED is lit, the tape plays at normal speed if the pitch display was cleared to " 0.0 ".*
- *The DA-38 does not play at variable pitches if it is slaved to another unit or is referenced, although used as the master, to external clock because its WORD IN switch is pressed on.*

5-4. Setting Locations

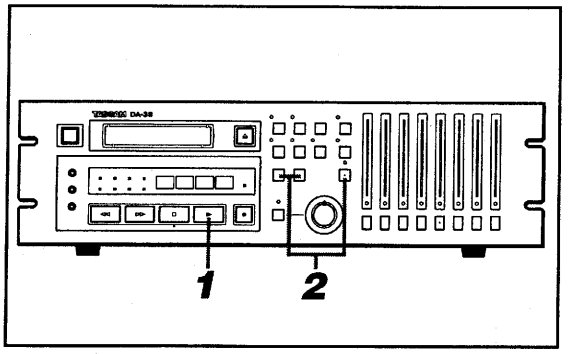
You can specify two points (MEMO 1 and 2) on the tape to which you want the DA-38 to autolocate. You can also have the DA-38 continually play a segment between two MEMO points.

You can specify points on the tape in either of two ways :

- Hold SHIFT and hit MEMO 1/2 on the fly during the recording or playback process, or
- Key in the desired time points.

The first method allows you to specify locations while monitoring the recording or playback process. The second method may be used when the necessary time addresses are known to you in advance or when you want to trim MEMO points captured on the fly.

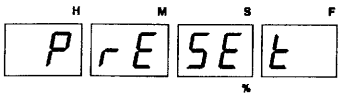
(1) Setting Locations On The Fly



1 Press PLAY to begin playback.

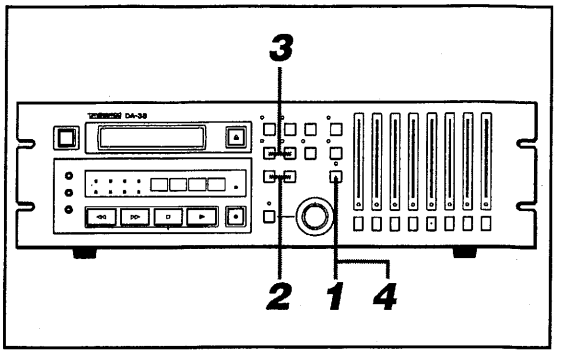
2 Hold SHIFT and, at the desired moment, hit MEMO (1 or 2).

The ABS time reading at that moment is stored into memory, the display momentarily reading like this :

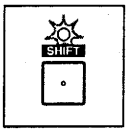


- Whether or not the LOC/MEMO keys are switched to act as the MEMO keys, you can hold SHIFT and hit either MEMO.

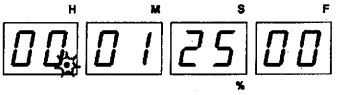
(2) Keying in Locations



1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MEMO 1 or 2, as required, and the display will show the corresponding current memory points, then a period will start blinking in the hours column.



3 Key in the desired time by means of the ▲ and ▼ keys.

- Each time you press MEMO 1 or 2, the blinking period moves to the next column (M, S, then F).
- When no period is blinking in any column, all the hours, minutes, seconds and frame number will change all at once as you press the ▲ or ▼ key.
- If you hold either the ▲ or the ▼ key and press the other, the display will be cleared to "00000000".
- You can enter any time points from zero up to 23 hours, 59 minutes, 59 seconds, 33 frames.

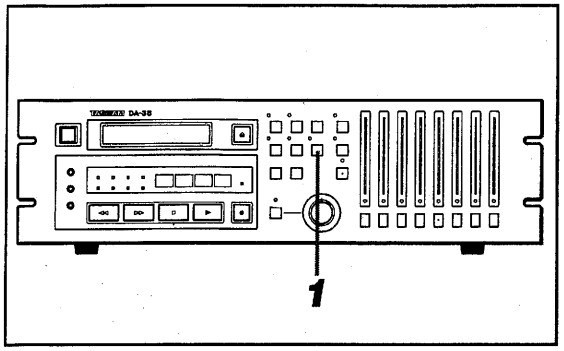
4 Press SHIFT.

The associated LED will turn off and the display will be switched back to show the ABS time.

5-5. Repeat Play

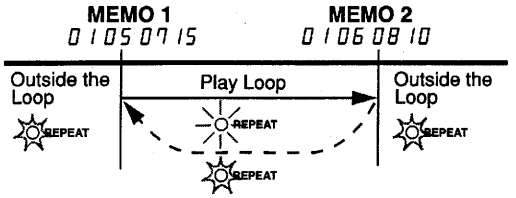
You can have the DA-38 play between two MEMO points over and over again.

If you haven't done yet, create a play loop (as discussed above) before proceeding with the following steps.



1 Press REPEAT. (You don't need to press PLAY.)

- As you press REPEAT, the DA-38 will start playing upon locating the start point of loop. When played up to the end of loop, the tape will automatically rewind and start playing from the start point again.



- Pressing STOP interrupts repeat play. To resume repeat play, press PLAY.

- You can change the current MEMO points during the repeat play process. The repeat play will be disabled if you happen to change the MEMO points to create a loop shorter than 5 seconds.

* To exit the repeat play mode, press REPEAT. The associated LED will then turn off and the transport will go into

Normal play mode — if REPEAT was pressed when the tape was playing,

OR

Stop — if REPEAT was pressed when the tape was being located to the start point of loop.

NOTES

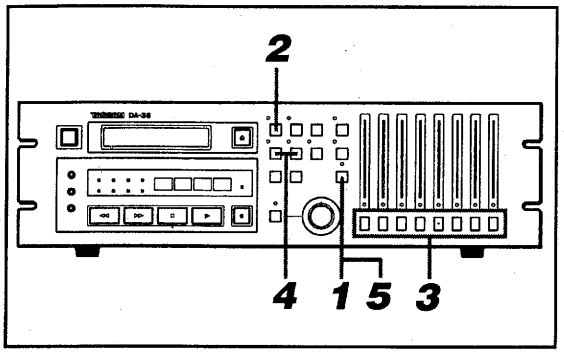
- *There must be at least 5 seconds between two MEMO points.*
- *If only one MEMO point is set, play will repeat between 00 00 00 00 and that MEMO point.*
- *The DA-38 understands the lower MEMO point as the start point of loop, and the higher point as the end.*
- *If you press a transport control key during the repeat play process, the function pressed is activated, but the repeat play mode is not disabled. To resume repeat play :*
  - *Press either LOC key and then, while the tape is being autolocated or after completing autolocation, press PLAY, or*
  - *Press PLAY when you are somewhere in the repeat loop or before the start point of loop.*

5-6. Delaying Tracks

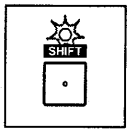
The track delay function corrects the time discrepancies between each track or may be used for other effects.

Adjustable range is from –200 samples (*) to 7200 samples, in 1 sample steps, or from –4 ms to 150 ms, in 1 ms steps, as selected.

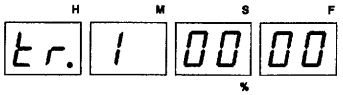
(*) 1 sample corresponds to 22.7 µs at a 44.1 kHz sampling rate or 20.8 µs at a 48 kHz sampling rate.



1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press DELAY and the display will show the track whose timing you have corrected after any other tracks and the delay value you have entered for that track, like this.



3 Select the track you want to delay by pressing its REC FUNCTION switch.

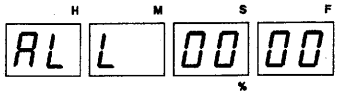
4 Enter the desired delay value by means of the ▲ and ▼ keys.

The display is cleared if you hold either the ▲ or the ▼ key and press the other.

- Each time you press DELAY, the unit changes between "sample" and "ms".

You can enter a 4-digit sample number or a 3-digit ms number.

- If you press and hold DELAY, the display will change to look like this and you can enter one and the same delay time for all the tracks at once.



The DELAY indicator will light solidly on the display to remind you that a track or tracks are already programed to delay.

5 Press SHIFT.

The associated LED will turn off and the display will be switched back to show the ABS time.

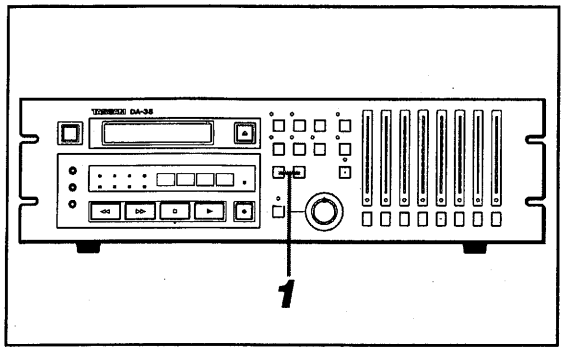
SECTION 6 : AUTOLOCATION

This section of the manual provides information on autolocation procedure, along with autolocation preroll setting and auto play procedures.

6-1. Autolocating to Either of Two Location Points

You can have the DA-38 autolocate to either MEMO 1 or MEMO 2 points.

We suppose you have already set one or two MEMO points. Setting locations is explained in Section 5.



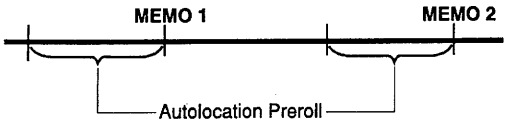
1 Simply press LOC 1 to have the DA-38 autolocate to the location currently stored into the MEMO 1 register, or press LOC 2 to have the unit autolocate to the current MEMO 2 location.

Upon pressing either LOC, the corresponding MEMO point will show on the display before autolocation starts.

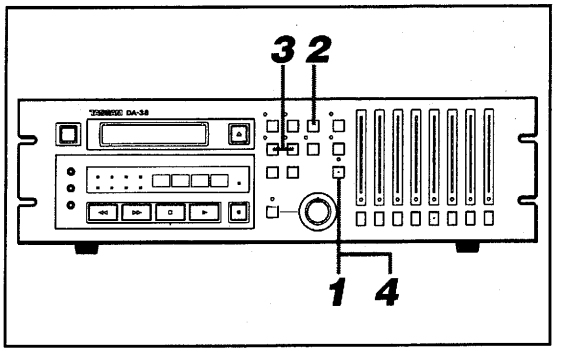
- You can have the DA-38 autolocate to a lower point than predetermined location points, as discussed below.

6-2. Setting Autolocation Preroll Time

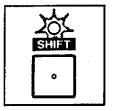
The DA-38 is factory preset to autolocate directly to MEMO points. But you can have the unit offer preroll (up to 59 minutes, 59 seconds) to those points.



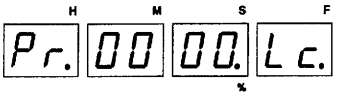
- The autolocation preroll is independent of the punch-in preroll explained in Section 4.



1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press PRE ROLL and the current preroll time shows on the display, like this :



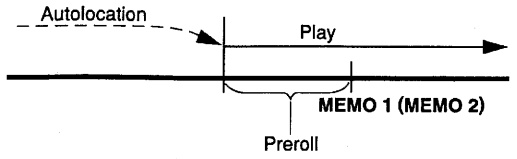
3 Enter the desired preroll time by means of the ▲ and ▼ keys.

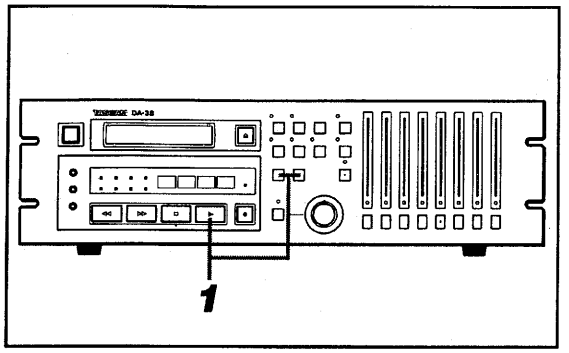
- If you hold either the ▲ or the ▼ key and press the other, the display is cleared to "0000".

4 When the display shows the correct preroll time, press SHIFT, and its associated LED will turn off, the display being switched back to show the ABS time.

6-3. The Auto Play Function

You can have the DA-38 automatically start playing after completing autolocation.





1 Press PLAY after a LOC key and the PLAY button will start blinking, and when the MEMO 1 or 2 point (or user selected starting point of a preroll) is reached, the DA-38 automatically enters play mode.

- If you press PLAY once more while it is blinking, that is, if you press PLAY two times during the autolocation process, the unit starts playing at that moment.

- If you are using the optional RC-848 remote control unit and have the AUTO PLAY LED turn on solidly, the DA-38 automatically enters play mode each time autolocation is complete.

SECTION 7 : SYNCING MULTIPLE DA-38S

You can synchronize, without using any external synchronizer, up to 16 DA-38s for 128 tracks, one DA-38 serving as the master and all the others as slaves.

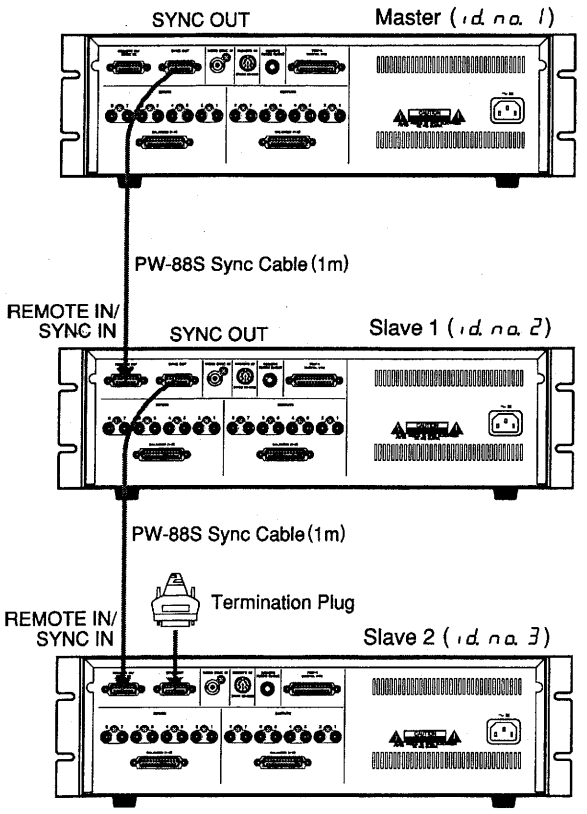
It is also possible to have slaves get synced up to the master with an offset, that is, with a distance maintained between the slaves and the master.

7-1. Hooking Up Multiple DA-38s

- Interlink two or more DA-38s by referring to this illustration, and also to a hookup example shown in Section 1.

WARNING

Make all connections with power OFF.

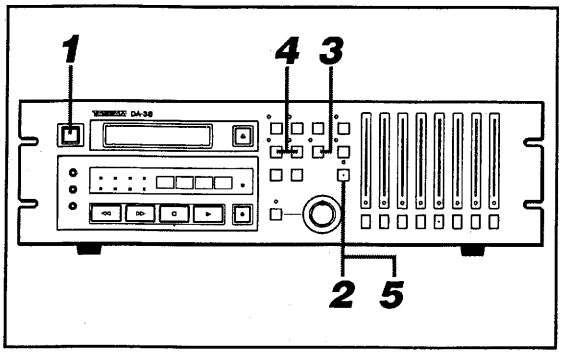


PRECAUTIONS

- *Be sure to use the optional PW-88S sync cables. The use of any other cables could damage the ICs in the DA-38.*
- *Be sure to connect the termination plug that comes with the PW-88S cable to the last slave's SYNC OUT jack or else incorrect functions may occur.*
- *When you use the optional RC-848 remote control unit to control a single DA-38, be sure to insert into its SYNC OUT jack the termination plug which comes with the remote.*
- *After you've connected multiple DA-38s, turn on all the slave units BEFORE the master unit. The master's display will show "id.no. 1".*
- *Turn on all the DA-38s of your system regardless of whether you actually use all of them. A unit or units turned off would make correct operation impossible.*
- *To synchronize multiple DA-38s, use a pre-formatted tape in the master unit, and also in the slave units. The DA-38s achieve synchronization using ABS time, so tapes with no ABS time recorded on make synchronization impossible.*
- *To synchronize multiple DA-38s, use in all the units tapes formatted at one and the same sampling rate or else you cannot synchronize them.*

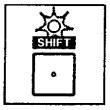
7-2. Selecting a Machine ID Number

After having hooked up multiple DA-38s, assign machine ID numbers to them as follows :

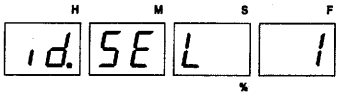


1 Switch on power to all the DA-38s.

2 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



3 By pressing MENU as many times as necessary to access an ID selection menu, which looks like this :



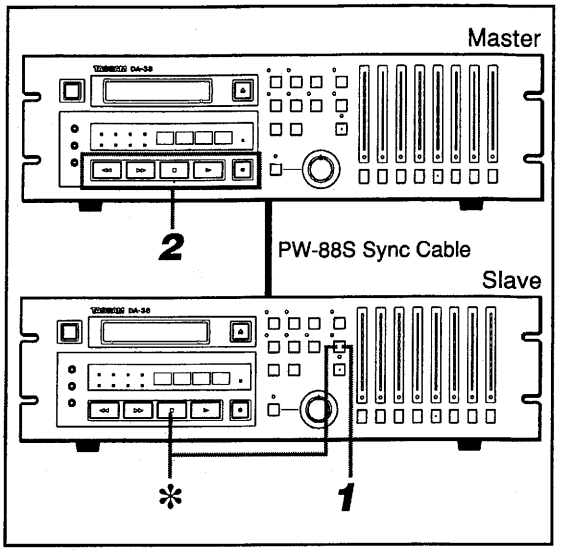
4 Select a machine ID number for each of the DA-38 by means of the ▲ and ▼ keys.

- Select "1" for the master unit.
- Assign other numbers ("2" to "16") to the slaves.

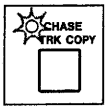
> ***NOTE***
>
> *Each unit must have a different ID number.*

5 Press SHIFT and its LED will turn off, the display being switched back to show the ABS time.

7-3. How to Sync the Slave Units to the Master



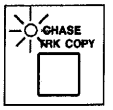
1 Press CHASE on the slave units. The associated LED will start blinking on them.



2 Press the desired transport control button on the master unit and the same function will be triggered on the slave units.

The slave units imitate the master's transport functions and achieve sync as commands and sync signals from the master are fed into their SYNC IN jacks.

The CHASE LED glows solid on the slave units as soon as they get synced up to the master.



* To stop slaves from responding to the master, press CHASE or STOP on them and their CHASE LED will turn off.

> ***NOTE 1***
>
> *You cannot change the machine ID number while the CHASE key is pressed on and its LED is blinking or lights solidly.*

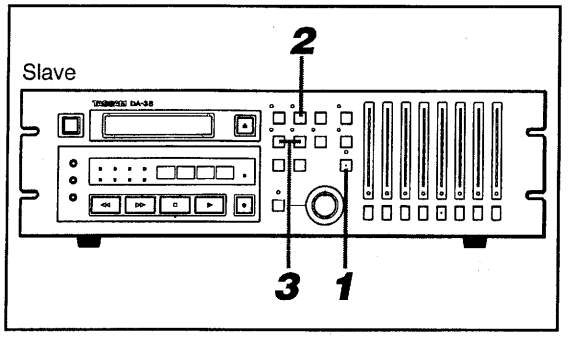
NOTE 2

An error message "E. CLOC" will show on the display to indicate :

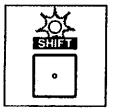
* *A different sampling rate from the one used by the master is selected on the slave unit,*
* *The sync cable (PW-88S) is not connected to the master or to a slave unit or units, or*
* *The master unit is not turned on.*

7-4. Offsetting Slave Units

You can enter an offset so that a slave or slaves lead or lag the master. (The offset of which we speak here is what is called machine offset ; it is not timecode referenced.)



1 Press SHIFT on the slave unit for which you want to enter an offset. The associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



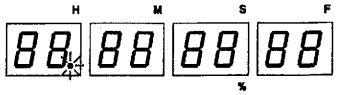
2 Press OFFSET and the current offset time will show on the display, waiting for you to enter a new offset time.

NOTE

No offset can be entered on the master unit. If you press the master's OFFSET, the display will read "-- -- -- --".

3 A period should now be blinking in the hours column, so enter the desired hours by means of the ▲ and ▼ keys.

- Each time you press the OFFSET key, the blinking period will move to the next column (M, S, then F).
- When the period in all the columns is turned off, the hours, minutes, seconds and frame number will change all at once as you press the ▲ or the ▼ key.
- If you hold either the ▲ or the ▼ key and press the other, the display will be cleared to "00000000".
- You can enter an offset from "-2000000" up to "02000000".

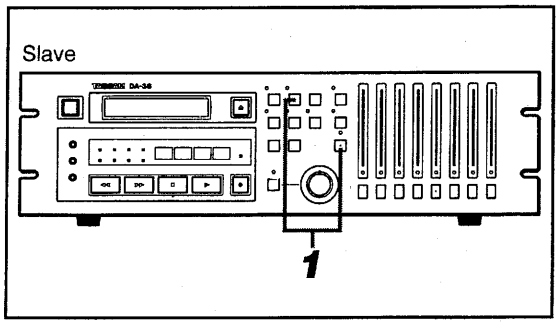


* To disable the offset sync, hold either the ▲ or the ▼ key and press the other in step 3 above to clear the current offset time to "00 00 00 00".

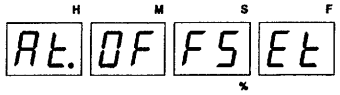
- The OFFSET indicator lights on the display when an offset is entered.

Entering an Offset On The Fly

The current distance between the master and slave units can be entered as an offset, as follows :



1 On the slave for which you want to enter an offset, hold SHIFT (whether it was pressed on or off) and, at the desired moment, press OFFSET.



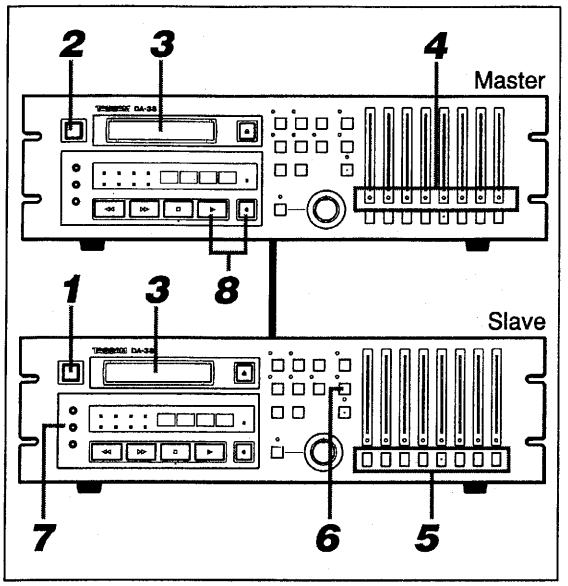
The distance between the master and the slave at that moment is saved to the slave as an offset, as confirmed by a momentary appearance of "AL.OFFSEL" ("AL." stands for automatic) on the slave's display.

NOTE

The auto offset function is not available on the units which are in CHASE mode (whether the associated LED is lit solidly or is blinking).

7-5. Digital Dubbing Between DA-38s

With digital recording, how many times dubbing is repeated, no hiss or distortion is added ; you can copy important multitrack tapes as many times as you need to create work tapes or copies for distribution without having to worry about any deterioration.



- Hook up the DA-38s by referring to the illustration below, and also to hookup examples shown in Sections 1 and 7.

- Be aware of the precautions discussed earlier in this section, under the heading, Hooking Up Multiple DA-38s. Do not proceed with the following steps without reading them.

WARNING

Make all connections with power OFF.

1 Switch on power to the slave unit.

A machine ID number and others will show on the display.

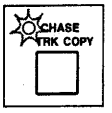
2 Switch on power to the master unit.

3 Insert the source tape into the master unit, and a pre-formatted target tape into the slave unit.

4 Check to see that all the REC FUNCTION LEDs are turned off on the master unit

5 Press all the eight REC FUNCTION switches on the slave and the associated LEDs will start blinking.

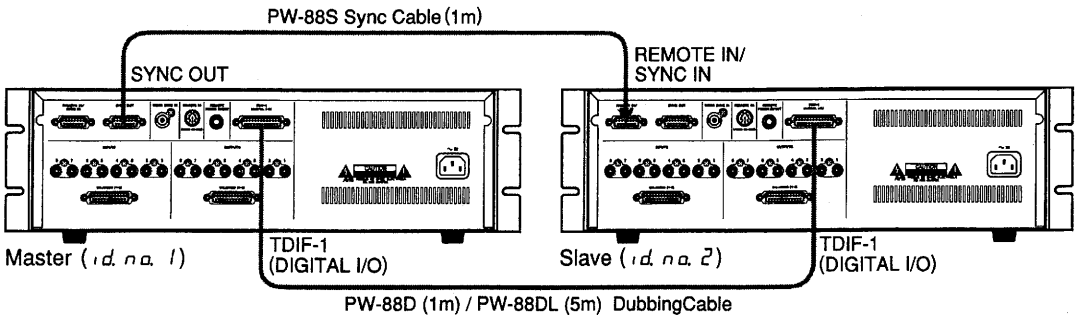
6 Press the CHASE key on the slave unit and the associated LED will start blinking.



7 Press the DIGITAL IN switch on the slave and the DIGITAL IN indicator will light solidly on the display.

8 To begin dubbing, hold RECORD and press PLAY on the master unit. Playback will be triggered on the master unit, and recording on the slave.

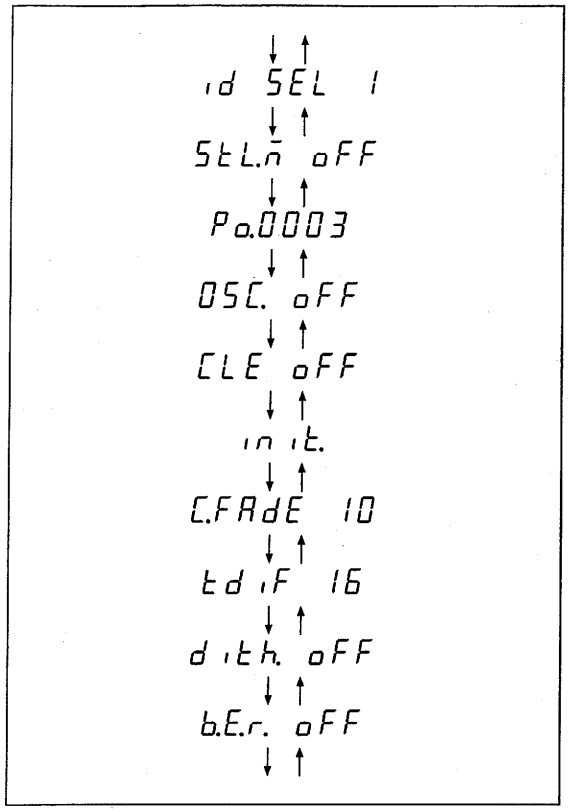
- The digital output is separate from the analog output in the DA-38 and there is no special pre-dubbing procedures such as timing the digital output.



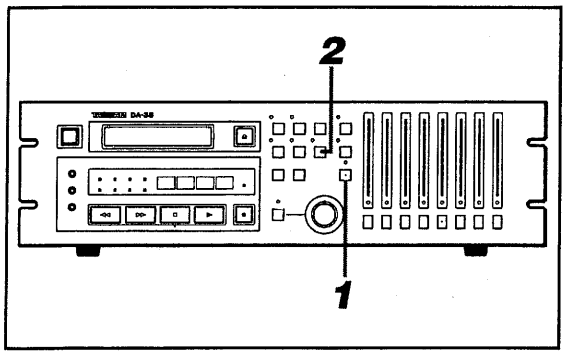
SECTION 8 : CONTROLLING THE DA-38 FROM MENUS

8-1. General

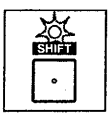
The DA-38 allows you to control various functions from menus. The following 10 menus are provided :



How to Access Menus



1 Press SHIFT and the associated LED will start blinking to show that all the double functions keys are switched to offer their lower blue-labelled functions.



2 Press MENU as many times as necessary to access the desired menu.

- Each time you press MENU, you go down through the menus in the order shown in the left column of this page.
- To go up through the menus, hold MENU and press the ▼ key.
- After having exited a menu setting mode, when you press MENU once, the menu you were last at shows on the display. But, when switching on power to the unit and pressing MENU once, the display shows the ID selection menu ("id SEL").

Menus Explained

① "id SEL 1"
For selecting a machine ID number. Select "1" on the master unit, and assign other numbers ("2" to "16") to slaves. Factory preset is "1".

② "StL.n oFF"
At this menu you can switch on or off the shuttle monitor. Factory preset is "oFF". Shuttling the tape is explained in Section 9.

③ "Po.0003"
This is a postroll time menu for setting the length of postroll after punching out of record. Adjustable range is from 3 up to 59 minutes, 59 seconds, in 1 second steps. Factory preset is "0003". See also Section 4.

④ "OSC. oFF"
At this menu you can switch the built-in oscillator on or off. Factory preset is "oFF". For the details, see below.

⑤ "CLE oFF"
This is a head cleaning menu. The cleaning function is factory preset to "oFF". Cleaning the heads is explained in Section 10.

⑥ "in it"
The menu is used to initialize the backup memory, as discussed later in this section of the manual.

⑦ "C.FAdE 10"
This is a crossfade time menu, allowing you to enter from 10 ms up to 90 ms, in 10 ms steps. Factory preset is "10". Entering a crossfade time is explained in Section 4.

⑧ "tdiF 16"
At this menu you can select a TDIF input bit length among three options : 16, 20, and 24, as discussed later in this section of the manual. Factory preset is "16".

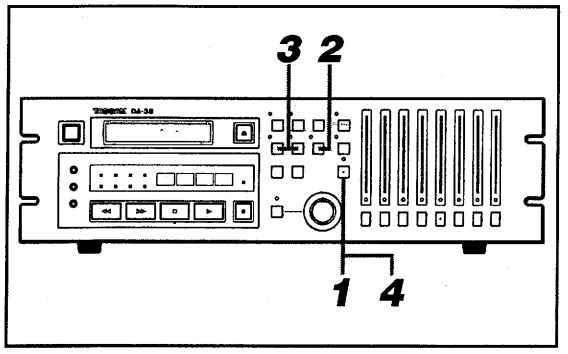
⑨ "dith. oFF"
This is for switching the dithering function on or off, as discussed in Section 4. Factory preset is "oFF".

⑩ "b.Er. oFF"
At this menu you can see the rate at which an error occurs in the digital data. The function is factory preset to "oFF". See Section 10 for an explanation.

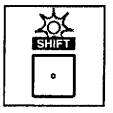
8-2. Using the Built-in Oscillator

The DA-38 has a digital tone oscillator that produces a 440 Hz, sine wave tone.

(1) Accessing the Oscillator Menu

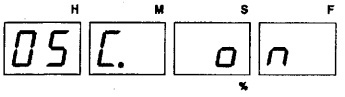


1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU as many times as necessary to access the oscillator menu which looks like "OSC. oFF".

3 Press either the ▲ or the ▼ key to change the "oFF" to "on".



4 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

- Obviously, to switch the oscillator off, change the "on" display back to "oFF" in step 3 above by pressing either the ▲ or the ▼ key.

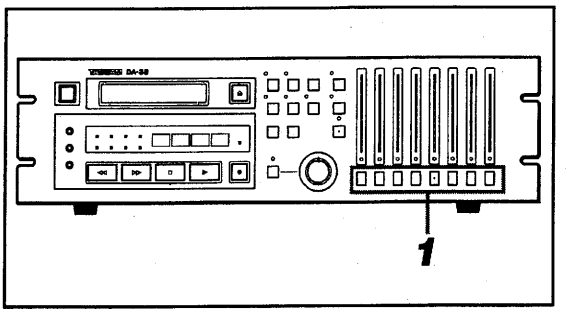
NOTES

- *The built-in oscillator cannot be switched on if the track copy function is turned on at the "trcP." menu.*
- *When the built-in oscillator is switched on, the DA-38 overrides whatever signal is plugged into the input.*

(2) To Monitor the Sine Wave Tone

CAUTION

Reduce the monitor level to prevent damaging your ears.

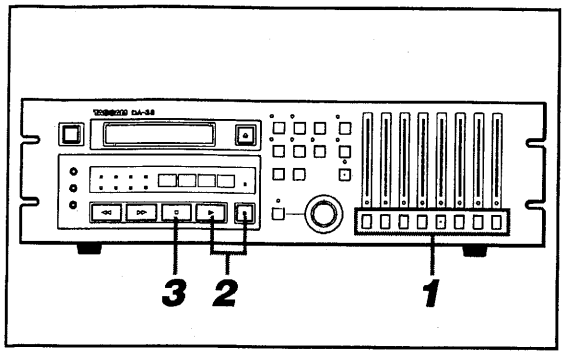


- The built-in oscillator must be switched on at the "OSC" menu.

1 Press the REC FUNCTION switches that correspond to the channels you want to monitor. The associated LED will start blinking and the sine wave tone from the oscillator is sent out of the outputs.

- When the ALL INPUT key is pressed on, the sine wave tone from the oscillator is sent out of all the eight outputs.
- To switch the oscillator off, press either the ▲ or the ▼ key to change the "on" display to "oFF" when you are at the "OSC" menu.

(3) How to Record the Sine Wave Tone on Tape



- The built-in oscillator must be switched on at the "OSC" menu.

1 Press the REC FUNCTION switch of the track you want to record on. The associated LED will start blinking.

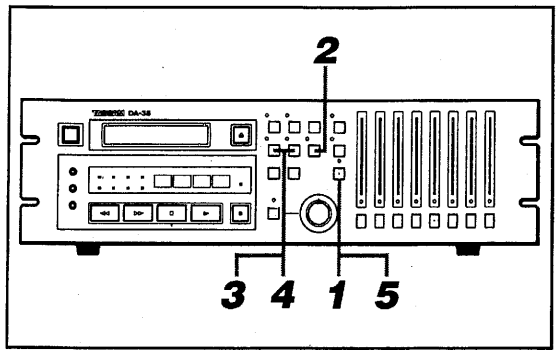
2 To begin recording the sine wave tone from the oscillator, hold RECORD and press PLAY. The RECORD button will light solidly, and also the REC FUNCTION LED that was blinking.

3 To stop recording, press STOP.

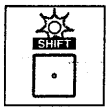
- To switch the built-in oscillator off, press either the ▲ or the ▼ key to change the "on" display to "oFF" at the "OSC" menu.

8-3. Initializing the Backup Memory

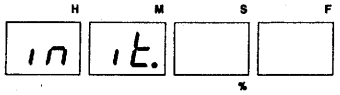
Follow these steps to initialize or reset the backup memory.



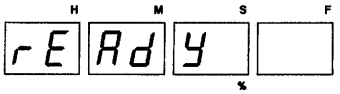
1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



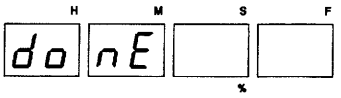
2 Press MENU as many times as necessary to change the display to look like this :



3 Press either the ▲ or the ▼ key and the display will change to look like this:



4 Press either the ▲ or the ▼ key once more. The initialization process will start, and when it is complete, the display will change to look like this:



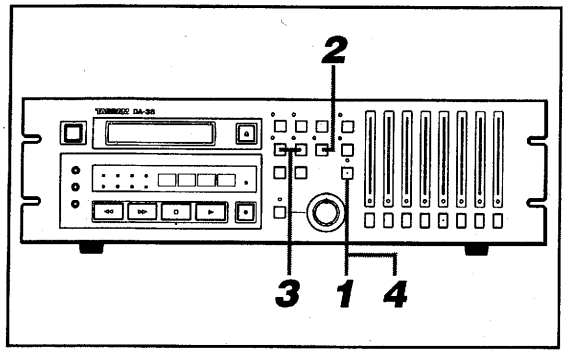
5 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

8-4. Selecting a TDIF Input Bit Length

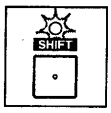
To send and receive digital data through the TDIF-1 I/O port on the rear panel of the unit, you have to select a bit length in accordance to the one of an incoming digital data.

The DA-38 offers three options : 16, 20, and 24. Factory preset is 16.

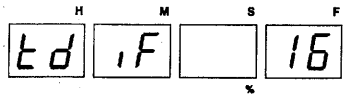
Follow these steps to select a bit length.



1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU as many times as necessary to access a TDIF menu, which looks like this :



3 By using the ▲ and ▼ keys, have the display show the necessary bit length.

- Select "24" when the unit is connected to another DA- 38, or
- Select "16" when connected to the DA-88.

4 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

SECTION 9 : MONITOR AND OTHER CAPABILITIES

This section explains the DA-38's capabilities that assist in streamlining the recording, playback, and synchronization operations.

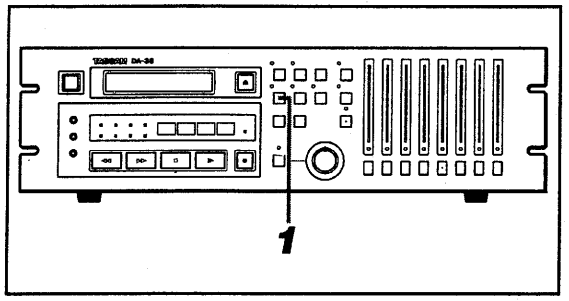
9-1. Monitor Functions

This paragraph explains the following monitor functions :

- All Input
- Insert
- Auto Input
- Shuttle

Relationship between those functions and the transport modes is shown in table below.

(1) All Input Monitor

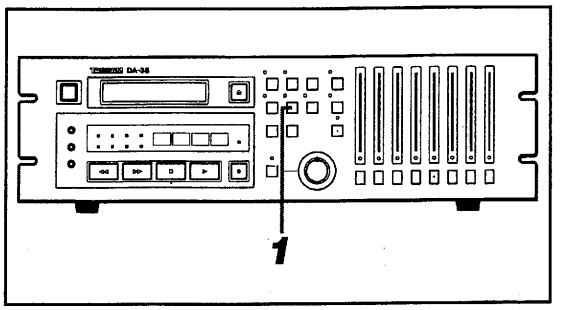


ALL INPUT is used to switch the eight outputs to be fed directly by the corresponding inputs.

To switch on the function :

1 Press ALL INPUT and the associated LED will light solidly to show the unit is in Auto Input mode.

(2) Insert Monitor



This function causes the outputs to be switched between tape and input depending on transport modes, as shown in the table below.

To switch the function on :

1 Press INSERT and the associated LED will light solidly to indicate that the unit is in Insert monitor mode.

NOTES

If the DA-38 is not remote controlled, the INSERT key switches on or off not only the insert monitor function but also the next auto input monitor function.

- *When the INSERT LED is lit :*

  Both the insert and the auto input monitor modes are activated.

- *When the INSERT LED is turned off :*

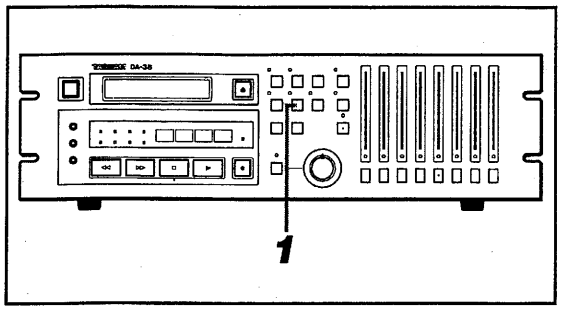
  Both the insert and the auto input monitor functions are disabled.

If you are using the optional RC-848 remote control unit, you can switch the insert and the auto input monitor functions on/off separately.

MONITOR SWITCHING

			REC FUNCTION	PLAY	RECORD	STOP F FWD, REW	SHUTTLE	
ALL INPUT ON			ON	INPUT	INPUT	INPUT	INPUT	
			OFF	INPUT	INPUT	INPUT	INPUT	
ALL INPUT OFF	INSERT OFF		ON	INPUT	INPUT	INPUT	INPUT	
			OFF	TAPE	TAPE	MUTE	TAPE	
	INSERT ON	AUTO INPUT OFF	ON	TAPE	INPUT	MUTE	TAPE	
			OFF	TAPE	TAPE	MUTE	TAPE	
		AUTO INPUT ON	ON	TAPE	INPUT	INPUT	SHTL. M OFF	TAPE
							SHTL. M ON	INPUT
			OFF	TAPE	TAPE	MUTE	SHTL. M OFF	TAPE
							SHTL. M ON	MUTE

(3) Auto Input monitor



This causes the inputs whose corresponding tracks are record enabled to be sent directly to the same numbered outputs whenever the transport goes into any other modes than play.

To activate this function :

1 Press INSERT and the associated LED will light solidly to show that the auto input mode is entered.

NOTES

As discussed above, if the DA-38 is not remote controlled, the INSERT key switches on or off not only the auto input monitor function but also the insert monitor function.

- *When the INSERT LED is lit :*

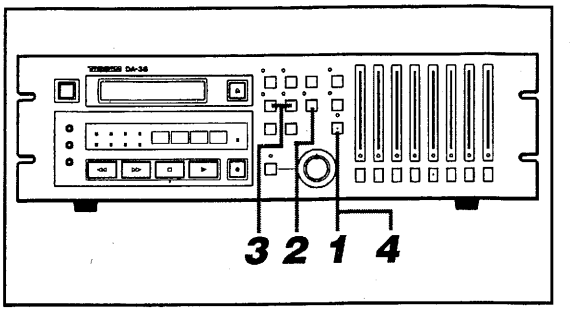
  Both the insert and the auto input monitor modes are activated.

- *When the INSERT LED is turned off :*

  Both the insert and the auto input monitor functions are disabled.

If you are using the optional RC-848 remote control unit, you can switch the insert and the auto input monitor functions on/off separately.

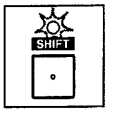
(4) Shuttle Monitor



When you rotate the SHUTTLE knob for reel rocking to locate specific points on the tape, what you hear depends on whether the shuttle monitor mode is activated or not, as shown in the table below.

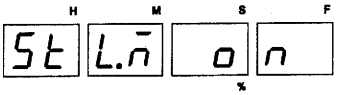
To activate or disable the shuttle monitor function :

1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU as many times as necessary to access a shuttle monitor menu which looks like "StL.n oFF".

3 Press either the ▲ or the ▼ key to change the "oFF" to "on".



Shuttle Monitor Mode	REC FUNCTION Off	REC FUNCTION On
StL.n oFF (factory preset)	Tape	Tape
StL.n on	Mute	Source (Input)

NOTE

The shuttle monitor is not available unless both the insert and the auto input monitor modes are activated.

4 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

- To disable the shuttle monitor mode, press either the ▲ or the ▼ key at the shuttle monitor menu to change the "on" display to "oFF".

9-2. Capabilities to Assist In Saving Your Time

When entering the following numbers by using the ▲ and the ▼ keys, you can promptly clear the currently displayed number or speed up the scrolling of numbers.

- Punch in and out points (p.4 • 6)
- Punch in preroll time (p.4 • 8)
- Pitch change (p.5 • 2)
- Locating points (p.5 • 3)
- Track delay time (p.5 • 5)
- Autolocation preroll time (p.6 • 1)
- Offset (p.7 • 3)

(1) To Clear the Currently Displayed Number

Hold either the ▲ or the ▼ key and press the other. The numeric display will be cleared to zero or to a factory preset.

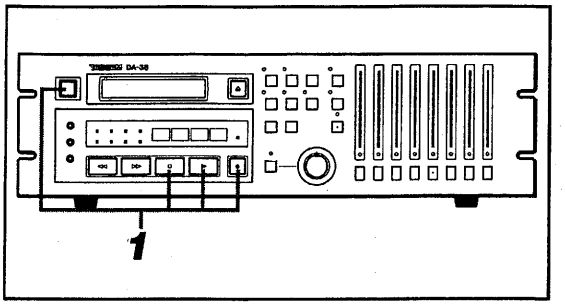
(2) To Speed Up the Keying In of Numbers

Hold either the ▲ or the ▼ key and press SHIFT. The numbers will scroll faster. Releasing the SHIFT key slows the scrolling down to normal speed.

9-3. To See the System Version

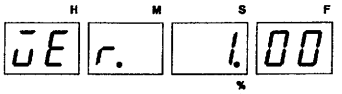
You can have the display show the system version number of your DA-38.

(1) To Display the SYSCON ROM Version

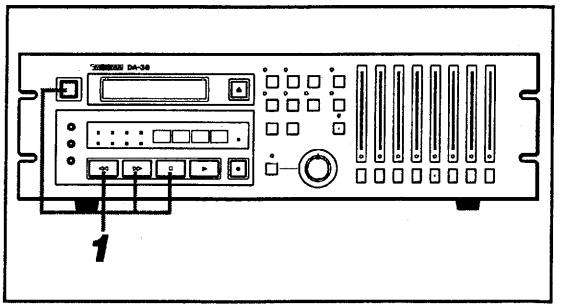


1 Hold STOP, PLAY, and RECORD and press POWER on.

The SYSCON ROM version will show on the display.

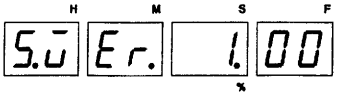


(2) To Display the SERVO Microcomputer



1 Hold REW, F FWD, and STOP and press POWER on.

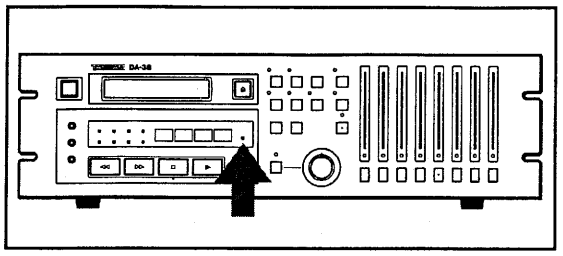
The SERVO microcomputer version will show on the display.



SECTION 10 : MAINTENANCE

This section of the manual provides information on displays assisting in correcting problems in time, and head cleaning procedure.

10-1. Error Rate Display



(1) PB CONDITION Indicator

The PB CONDITION indicator lights solidly to show a bad playback condition and a persistent error occurrence in the digital data at an increased rate. The possible causes include :

- The tape is bad.
- The tape is fatigued.
- The heads are dirty.

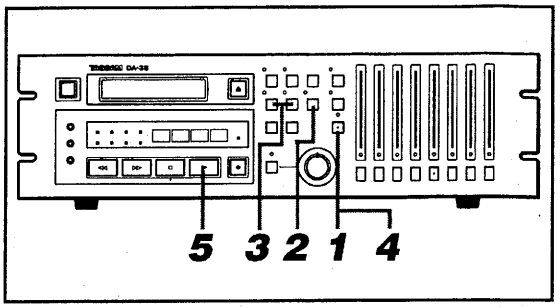
If the PB CONDITION indicator frequently lights or remains lit, proceed as follows :

1. Replace the tape.
   ↓
   If the indicator still lights,
   ↓
2. Clean the heads, as explained later in this section.
   ↓
   If the indicator still lights,
   ↓
3. Contact TASCAM.

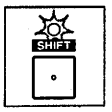
(2) Block Error Rate Display

The DA-38 is capable of displaying an error condition per frame (1 rotation of the head drum = 30 ms) on the level meters.

The block error rate display function is switched on or off at a menu as follows :

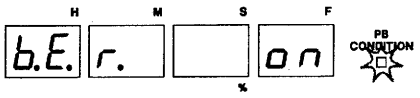


1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU as many times as necessary to access a block error rate menu which looks like "b.E.r. oFF".

3 Press either the ▲ or the ▼ key to change the "oFF" display to "on". The PB CONDITION indicator will start blinking on the display to show that the block error rate display mode is activated.



4 Press SHIFT and the associated LED will turn off, the display being switched back to show the ABS time.

5 Press PLAY to begin playback.

• Level Meter Indications Explained

Error Occurrence Location

Meter	Error Location
1	Tape edge (Head A)
2	Tape edge (Head B)
3	(Not Used)
4	(Not Used)
5	Center of the tape (Head A)
6	Center of the tape (Head B)
7	(Not Used)
8	(Not Used)

Error Quantity (Number of Error Occurred Blocks among the total of 128 Data Blocks)

Number of Lit Segments	Number of Error Blocks
0	0-7
1	8-15
2	16-23
3	24-31
4	32-39
5	40-47
6	48-55
7	56-63
8	64-71
9	72-79
10	80-87
11	88-95
12	96-128

• To disable the error rate display, change the "on" to "oFF" by pressing either the ▲ or the ▼ key in step 3 above.

10-2. Cleaning the Heads

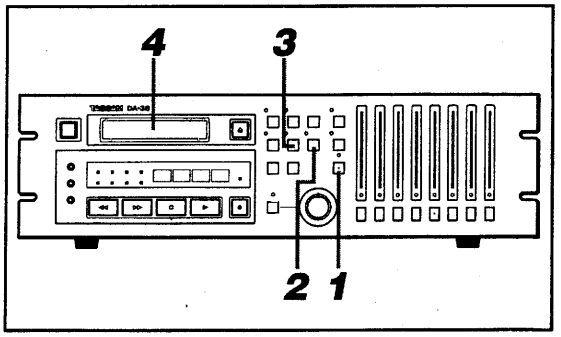
Dust or debris inevitably accumulate on the heads with time. When the heads get dirty, the PB CONDITION indicator lights or noise or dropouts in the tape signal result. Should this occur, clean the heads as instructed below.

We also recommend that you clean the heads about every 50 hours of operation.

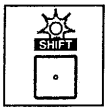
NOTE

To clean the DA-38's heads, be sure to use the TEAC HC-8 cleaning tape or a dry cleaning tape exclusively designed for Hi8 8-mm video tape recorders. The use of wet cleaning tapes may result in winding problems.

Follow these steps to clean the heads.

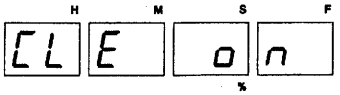


1 Press SHIFT and the associated LED will start blinking to show that all the double function keys are switched to offer their lower blue-labelled functions.



2 Press MENU as many times ass necessary to access the cleaning menu which looks like "CLE oFF".

3 Press the ▲ key to change the "oFF" to "on".



If a tape was loaded, it is automatically ejected.

4 Insert a cleaning tape and cleaning will automatically start. About 5 seconds later, cleaning is complete and the tape is automatically ejected, the display being switched back to show the ABS time.

If you press the ▼ key at the cleaning menu, the display will show how many times the heads have been cleaned so far. Pressing the ▼ key during the cleaning process has no effect.

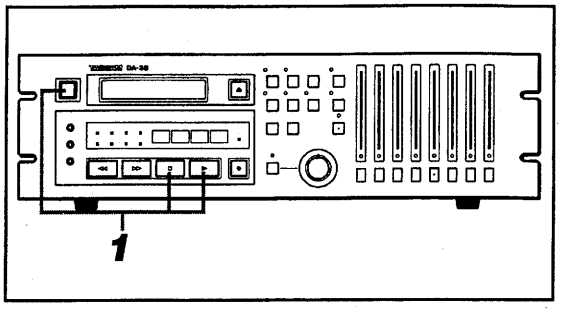
NOTES

- *The TEAC HC-8 cleaning tape is designed to be used in one stroke only. You cannot rewind or fast forward it. When you use it for the next time, simply insert it into the DA-38.*
- *Do NOT rewind the cleaning tape in other equipment (such as video tape recorder) to use it in the DA-38 again, which could lead to accumulate dust on the heads.*
- *Excessive cleaning will cause premature wear of the heads. Do NOT clean the heads more than 5 times running.*
- *A routine maintenance check-up is recommended about every 500 hours of operation by an authorized TASCAM service station.*

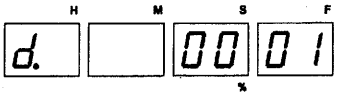
10-3. Head Drum Utilized Time Display

You can have the DA-38 indicate how many hours the head drum has been used so far.

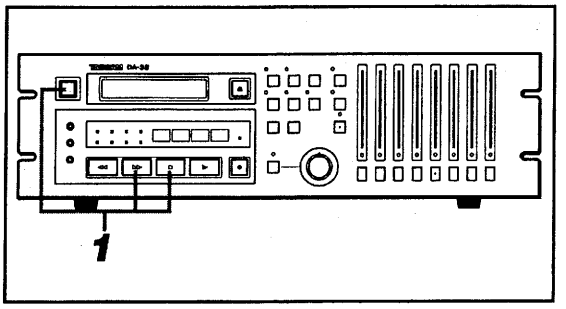
(1) Total Utilized Time



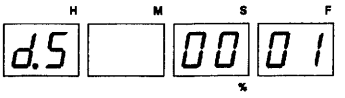
1 Hold STOP together with PLAY and press POWER on. The display will show how many hours the head drum has been used so far.



(2) Fast-winded Time



1 Hold F FWD together with STOP and press POWER on. The display will show how many hours the head drum has been used so far not for recording or playback but for fast-winding tapes.



SECTION 11 : APPENDICES

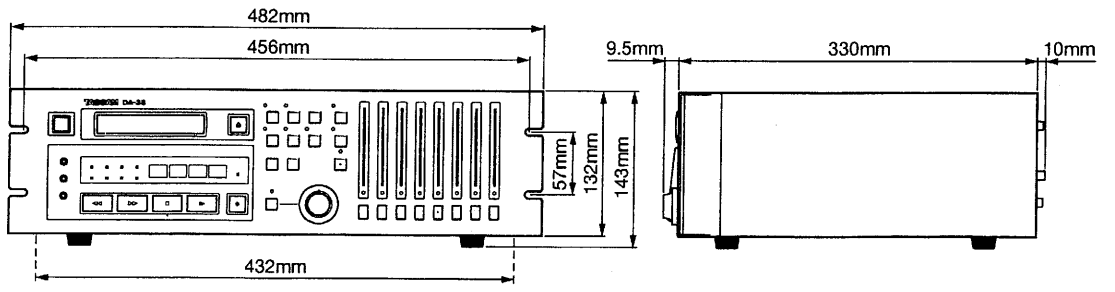
11-1. Specifications

Recording Format : DTRS format 4-rotary head digital recorder
Tape : Hi8 ME or MP
Tracking System : ATF
Erasure System : Overwrite
Number of Channels : Eight plus sub-code area
Recording Time : 108 minutes with NTSC standard "120" tape
113 minutes with PAL/SECAM standard "90" tape
Fast Winding : 80 sec. (100 times play speed)
Shuttle Speed : 1/4 to 8 times play speed
Digital I/O : TDIF-1 (TEAC Digital Audio Interface Format) D- sub 25 pin
Analog Input : D-sub 25 pin, +4 dBm (1.2V), 10 kohms (balanced)
RCA, -10 dBV (0.3V), 10 kohms (unbalanced)
Analog Output : D-sub 25 pin, +4 dBm (1.2V), 75 ohms (balanced)
RCA, -10 dBV (0.3V), 250 ohms (unbalanced)
Sync (Remote) Input : D-sub 15 pin
Sync Output : D-sub 15 pin
Word Sync Input : BNC
Remote Input : DIN 8 pin
Remote Punch I/O : 1/4" phone jack
Sampling Rate : 44.1/48 kHz
Quantization : 16 bit linear
Pitch Control : +/-6 % (in 0.1% steps)
Frequency Response : 20 Hz to 20 kHz +/-0.5 dB (load impedance 10 kohms)
Dynamic Range : Better than 92 dB
Signal-to-Noise Ratio : Better than 92 dB

THD : Less than 0.008 %
Crosstalk : Better than 90 dB (at 1 kHz)
Crossfade Time : 10 to 90 ms (in 10 ms steps)
Track Delay : -200 to 7200 samples
Offset : +/-2 hours
Power requirements :
USA/CANADA : 120 V AC, 60 Hz
U.K./EUROPE : 230 V AC, 50 Hz
AUSTRALIA : 240 V AC, 50 Hz
Power consumption : 37 Watts
Dimensions (W x H x D) :
482 x 143 (132 without feet) x 350 mm, 19" x 5-3/8" (5-3/16" without feet) x 13-3/4"
Weight : 7.5 kg (16.53 lbs)

- *In these specifications, 0 dBV is referenced to 1 Volt, and 0 dBm is referenced to 0.775 Vrms. Actual voltage levels are also given in parentheses (0.316 V for –10 dBV is rounded down to 0.3 V).*

- *Changes in specifications and features may be made without notice or obligation.*



11-2. Optional Accessories

- **RC-848 Full-function Remote Control Unit**
  - 99-point autolocator functions
  - ACCESSORY 1 and 2 connectors for controlling TASCAM (or other) analog audio machines
  - RS-422 connector for controlling VT machines
  - Jog/shuttle wheel for locating a specific point at variable speeds
  - Keypad-entered time locations
  - Switching on/off the DA-38's AUTO INPUT, separately from the INSERT function

- **RC-808 Basic Transport Remote Control Unit**
  Has duplicates of REC FUNCTION, ALL INPUT, RHSL, AUTO IN/OUT, CLEAR, REPEAT, MEMO and LOC in addition to the transport controls.

- **MMC-38 MIDI Machine Control Interface**
  Provides a convenient means of controlling one or more DA-38s from a remote controller such as a MIDI sequencer using MIDI Machine Control commands. Also enables the synchronization of tape deck and sequencer via either MIDI Time Code (MTC) or SMPTE Time Code without sacrificing an audio track for timecode.

- **IF-88AE Interface Unit**
  For data communication between the DA-38 and other digital machines with AES/EBU digital I/O or SPDIF.

- **IF-88SD Interface Unit**
  For data communication between the DA-38 and other digital machines with SDIF-2.

- **PW-88S Sync Cable (1 m)**
  For connecting multiple DA-38s in series, serving one as the master and others as slaves. One cable establishes connection between two DA-38s.

- **PW-88D (1 m) / PW-88DL (5 m) Dubbing Cable**
  For connecting two DA-38s through their digital I/O ports, serving one as the source machine and the other as the target.

- **PW-848L (10 m) Remote Cable**
  For connecting the optional RC-848 remote to the DA-38.

- **RC-30P Punch-in Footswitch**

11-3. Error Messages Explained

Display	Problem		Remedy
E. CLOC	When referenced to external word clock	No clock is coming into the WORD IN, or the incoming clock's frequency is incorrect.	Plug in the correct clock.
	When slaved to an another DA-38	The unit is not connected to the master with the PW-88S sync cable.	Connect the units by using the PW-88S cable.
		The master unit is turned off.	Turn on the master unit.
		A different sampling rate from the one used on the master unit is selected on the slave.	Use tapes formatted at the same sampling rate.
E t. cut.	The tape is broken.		Replace the tape.
E. dio	You attempted to record from the digital input to which the PW-88D (dubbing) cable from the source unit is not connected.		Connect the PW-88D cable to the digital I/O port.
E. dEu	Condensation occurred on the head drum.		Wait for 1 or 2 hours with the unit powered on before attempting to use the unit again.
E. Hi-8t.	You inserted a different tape from the Hi8 tape.		Use only Hi8 tapes in this unit.
E. thint.	You inserted a thinner tape than 8.5 µm.		Use 120-minute or shorter tapes in this unit.
S. Err. 11	The transition from one transport mode to another didn't take place in time.		Turn off the unit, then turn on it again.
S. Err. 31	Because of excessive irregular stress, the tape slackened beyond the limit and winding problems occurred.		The tape is fatigued by excessive use. Turn off the unit, and turn on it again, then replace the tape.
S. Err. 21 S. Err. 41	The reel tables could not work correctly, causing winding problems.		Turn off the unit, and turn on it again before continuing to use the unit. Or replace the tape after turning on the unit again.
S. Err. 02	The drum motor could not work correctly in time.		Turn off the unit, and turn on it again before continuing to use the unit. Or replace the tape after turning on the unit again.
S. Err. 04	The capstan motor could not work correctly in time.		Turn off the unit, and turn on it again.
S. Err. 08 S. Err. 59 S. Err. 68	The reel motor could not work correctly in time.		Turn off the unit, and turn on it again before continuing to use the unit. Or replace the tape after turning on the unit again.

If a "S. Err." message persists, contact your authorized TASCAM representatives.

Other Messages

Display	Meaning
--LOAd--.	The unit is loading the tape.
-UnLOAd-	The unit is ejecting the tape.
b o t	The tape is at the beginning.
E o t	The tape is at the end.
no tAPE	No tape is inserted into the unit.
no Ab5-t	The tape is not formatted.
rEc inh	The tape is write-protected.

TASCAM
TEAC Professional Division

DA-38

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PRINTED IN JAPAN 0696U2 M-1220B