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# Model No. **DMAT-DL**

## Simultaneous Playback during Record For DoReMi Labs

### USER MANUAL

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## 1. REVISION HISTORY

120103	Rev. 2.2	Company header information revised. Updated Transmit Cue List Function and Receive Cue List Function description. Added DNF Controls Limited Warranty.
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## 2. DESCRIPTION

T-BAR or detented Wheel for Fast and Easy slomo-ing:  
0-200% or -100% to +200% of Play speed.

Quickly and easily store and recall 400 Cue Points, which are retained when power is off.

Small, space saving desktop unit, simple and easy to use.

## FEATURES

- ❑ Power setup menu. Configure the Slow Motion Controller for the way you work.
- ❑ Press 1 key to Mark Cue Point. Press 2 Keys to Recall 400 Cue Points.
- ❑ Fast and Easy to search to a Cue Point, manually entered Timecode number or Record OUT Point.
- ❑ Manually enter/edit Cue Points.
- ❑ Set Preroll duration from one frame to one hour.
- ❑ Freeze on Last Good video (Record OUT Point).

## DEFINITIONS

- ❑ Throughout this document VTR, DDR, VDR & Video Server will be referred to collectively as “Video Server”.
- ❑ The ST300-S/SM as the ST300.
- ❑ Words surrounded by brackets, for example, [ENTER], are keys on the ST300.
- ❑ [XXX] + [XXX] means hold the two keys down simultaneously.

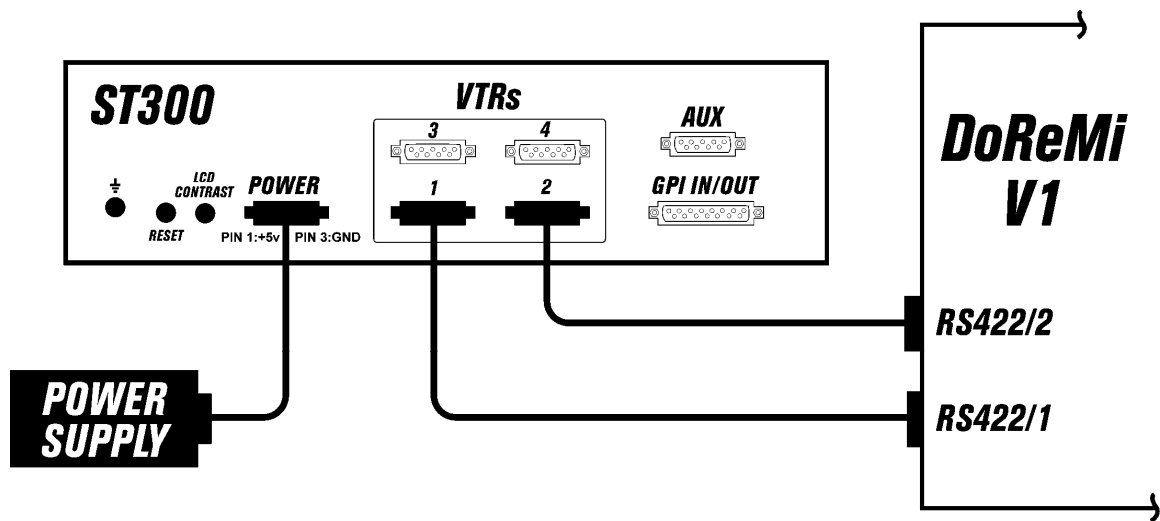
## Getting Started . . .

### 3. INSTALLATION

1. Plug one end of a 9 conductor, RS422 serial cable in to the 9-pin connector on the rear of the ST300. Plug the other end of the cable into the 9-pin remote connector on the Video Server.
2. Plug the POWER SUPPLY into a wall outlet, 90 VAC TO 240 VAC.
3. Select REMOTE mode on the VTR's front panel.
4. Check the **SETUP MENU** prior to using the Slow Motion Controller to confirm proper Record mode, SLO-MO speed range and other User settable modes.

Installation is complete.

### Connection Diagram



### LCD DISPLAY

During normal operation, the top row of the display shows the selected time mode and current time location of the VTR.

For example: TM 01:12:09:23

Time Modes - TM= Tape Timer TC= LTC VT= VITC

The currently selected SLO-MO speed is displayed on the far right side of the top row.

The bottom row of the display shows the current Cue Point number and its contents.

## 4. SETUP MENU

Press [**MENU**]. The MENU key indicator will turn on.

Turn the Wheel to select item to change.

Press [**MENU**] **OR** use the Softkeys to change the desired mode for that option.

Turn the Wheel at any time to select another item.

Press [**ESC**] at any time to exit **SETUP MENU**. The MENU key indicator will turn off.

**MODES:** (Turning Wheel clockwise)

**RECORD** Press [**MENU**] to select the desired record mode:  
Lockout, Assemble, Crash (Full) or Insert.

Only in INSERT mode: Press the associated Softkey, located below the display, to toggle Video(V), Audio1(A1), Audio2(A2), Audio3(A3), Audio4(A4) on/off.

**MARK-Q** Press Softkey to:  
Enable ADVANCE to next Cue Point, when [**MARK**] is pressed.

**OR**

Maintain CURRENT Cue Point when [**MARK**] is pressed.

**WIND  
MODE** Press Softkey to select:  
HOLD

(Fast wind is maintained only while key is pressed.)

**OR**

LATCH

(Fast wind is initiated and maintained with momentary key press.)

Select fast wind speed (3.9 to 23.7) by pressing Softkey below SPD.

**SLOMO** ST300 display shows:

SLOMO with:	WHEEL
TBAR	Speed Prset

Press Softkey [**TBAR**] (or [**WHEEL**]) to toggle between them.

The T-BAR has two speed ranges:

0 → +200 with a detent at +100% play speed

**OR**

0 → +100 with a detent at +100

**For Wheel only:**

Press Softkey [**SPEED**] to select SLOMO speed ranges:

Press Softkey to select: 0 → +200 **OR** -100 → +200.

Press Softkey [**BACK**] to return to SLOMO MENU.

Press the [**ESC**] key to exit SETUP MENU.

**OR** turn the wheel to select another item.

**For Wheel only:**

Press Softkey [**PRSET**] to select the SLOMO Preset Speed Mode.

Press Softkey [**UPDATE**].

When exiting SLOMO mode, the last used speed is saved in the Preset Speed register.

Press Softkey [**STATIC**].

The Preset Speed register is NOT updated when exiting SLOMO mode. It is only changed by [**SHIFT**] + [**SLOMO**] (PRESET SLOMO).

**GANG  
MODE**

Press Softkey to select PERMANENT GANG (described in the FUNCTION Table) or TEMPORARY GANG. In TEMPORARY mode, press and hold the VTR key that you want to read status from, then press the VTR#'s of those VTRs that you want to include in the gang. Release the keys. The LED on the monitored VTR blinks, all other VTRs in the gang stay on constantly. To break the temporary gang, press any VTR# key.

**SEARCH  
SPEED**

Press Softkey to select ST300 or VTR to control the search speed of the VTR.

Either the ST300 or VTR mode will be faster.

HINT: Select VTR mode if you will be controlling multiple VTRs.

Select ST300 if you will be controlling older VTRs

**ST300  
SETUP**

ST300 SETUP
-------------

Clear Cues
------------

SetDefault
------------

Press Softkey beneath ClearCues to clear all Cue Points to 00:00:00:00.

Press Softkey [**YES**] when asked “Are You Sure?”

Press Softkey beneath SetDefault to set ST300 to default settings.

Press Softkey [**YES**] when asked “Are You Sure?”

**DISPLAY  
SOFTWARE  
VERSION**

The version number for the currently installed software is displayed.

**DROP  
FRAME**

Press Softkey to select DROP FRAME ON or OFF.

Used in conjunction with Timecode Generator preset.

**RECORD**

Press Softkey to select single button or 2-button record.

RECORD = [**REC**] Only.

**OR**

RECORD = [**REC**] + [**PLAY**].

**FREEZE**

Press Softkey to enable or disable FREEZE at Record Outpoint. Changing mode automatically clears FREEZE point.

## DOREMI MENU

1. Press [**MENU**].
2. Press Softkeys ← or → until the first line of the display shows “DOREMI MENU”.
3. Press Softkey [**YES**].
4. Turn the wheel to move between menu options.
5. Press Softkey [**CHG**] to change specific menu option.

Available menu options:

- 00 Control – remote/local
- 01 Time mode- A Time (absolute time)
  - A Time as LTC
  - VITC Time
  - Time Code
- 02 Sync from- Internal
  - Auto
  - Sync In
  - Input
- 03 Chase- on/off
- 04 Mount
- 05 Input from – Composite/S-VHS
- 06 Compress
- 07 Initialize
- 08 Format
- 09 Drop Frame –Drop/No Drop
- 10 Time Left

If you press [**CHG**] in option 04,07,08, the second line of the display shows “Are you sure?” Press Softkey [**YES**] or [**NO**].

6. Press [**ESC**] to exit the Menu Mode.

## DOREMI OPTION MENU

1. Press [**MENU**].
2. Press Softkeys ← or → until the first line of the display shows “DOREMI OPTION MENU”.
3. Press Softkey [**YES**].
4. Turn the wheel to move between menu options.
5. Press ++ or -- Softkeys to change specific menu option or [**MENU**] to enter the submenu if it exists for the specific menu option.

Available menu options:

- 00 Auto Play
- 01 Disk Copy
  - Press [**MENU**] to toggle between options:
  - Source is:
  - Full Disk
  - Segment #:
  - Target #1:
  - # Targets:
- 02 Edit Preset
  - Press [**MENU**] to toggle between options:

A1: (press ++/-- to toggle On/Off)  
Insert: (press ++/-- to toggle On/Off)  
Assemble: (press ++/-- to toggle On/Off)  
Video: (press ++/-- to toggle On/Off)  
TC: (press ++/-- to toggle On/Off)  
A2: (press ++/-- to toggle On/Off)

### 03 Set Video

Press [MENU] to toggle between options:

Delay: (press ++/-- to set 00-310 sec)  
ChromHue: (press ++/-- to set -128+127)  
ChromSat: (press ++/-- to set -128+127)  
LumaCont: (press ++/-- to set -128+127)  
LumaBrit: (press ++/-- to set -128+127)  
PAL switch 0  
Black (press ++/-- to toggle between 0.0/7.5 IRE)  
HTRIG (press ++/-- to select desired value)  
HTRIG (press ++/-- to toggle On/Off)  
CH PH (press ++/-- to select desired value)  
Pattern (press ++/-- to toggle On/Off)

### 04 Save

Press Softkey [CHG] to save. The display will prompt  
“Are you sure?” Press Softkey [YES] to save, [NO] – not to save

### 05 Disc Access

Press ++/-- to toggle between Play & Record/Play Only

### 06 Frame Mode

Press ++/-- to toggle between On/Off/Play Only

### 07 Step Rec

Press ++/-- to toggle between Disabled/Enabled

### 08 Clip menu

Press ++/-- to scroll the list of available clips

### 09 TC burn-in

Press [MENU] to toggle between

Color (press ++/-- to select Off

White/Black

White/Bkgd

Black/White

Black/Bkgd

Position (press ++/-- to select Bottom\_Right

Bottom\_Center

Bottom\_left

Top\_Left

Top\_Center

Top\_Right

### 10 Audio In

Press ++/-- to toggle between Analog/Digital

### 11 SCSI Speed

Press [MENU] to toggle between

Clock (press ++/-- to select 10/20 MHz)

Width (press ++/-- to select 8/16 bit)

### 12 V1 Type

Press ++/-- to toggle between Player Only / Rec/Player



- 13 Video Type  
Press ++/-- to toggle between NTSC/PAL
  - 14 Nb pixels  
Press ++/-- to toggle between Full/Limited
  - 15 Decimation  
Press ++/-- to toggle between On/Off
  - 16 Nb Fields  
Press ++/-- to toggle between One/Two
  - 17 SCSI ID  
Press ++/-- to select 00-07
  
  - 18 Clks/frame
  - 19 Emulate  
Press ++/-- to toggle between V1/BVW-75
  - 20 # Audio Ch  
Press ++/-- to toggle between 0/2
  - 21 Jog On
  - 22 Loop mode  
Press ++/-- to toggle between On/Off
  - 23 Edit Time  
Press [MENU] to select  
Edit IN (press ++/-- to select 04-10)  
Edit OUT (press ++/-- to select 04-10)
  - 24 Stripe TC  
Press Softkey [CHG] to save. The display will prompt “Are you sure?” Press Softkey [YES] to stripe [NO]– not to stripe
  - 25 Odd Fields  
Press ++/-- to select Under 00%- under 100%
  
  - 26 Stop Chase  
Press ++/-- to select Nb frames 00-10
  - 27 Fast mode  
Press ++/-- to toggle between Normal/Enhanced
  - 28 Jog speed  
Press ++/-- to toggle between No Limit/Limit to 100%
  - 29 Stop Mode  
Press ++/-- to toggle between Still Mode/ EE Mode
  - 30 Version Number  
Press [MENU] to see information about version number, serial number, RAM size etc.
6. Press [ESC] to exit the Menu Mode.

## 5. OPERATION

Select the desired transport function by pressing the appropriate switch on the SLOW MOTION CONTROLLER.

The Real-Time Status Indicators will light to indicate the VTR's current tape transport mode.

For example: Pressing [**PLAY**] will put the VTR into the PLAY mode.  
The PLAY Status Indicator will turn on when the VTR is in PLAY mode.  
Press [**RECORD**] OR [**RECORD**] + [**PLAY**] to put the VTR into Record mode. (See SETUP MENU)

**NOTE:** The VTR will not go into Record mode if "Record Inhibit" is enabled on the VTR or tape cassette.  
Check SETUP MENU prior to using the SLOW MOTION CONTROLLER to confirm proper Record mode and other User settable modes.

### A. DMAT OPERATION

#### **SIMULTANEOUS RECORD/PLAYBACK SETUP.**

1. Connect RS422-1 connector of the V1 unit to the VTR1 connector on the back of the ST300. VTR1 is a recorder.
2. Connect RS422-2 connector of the V1 unit to the VTR2 connector on the back of the ST300. VTR2 is a player.
3. On the back of the V1 unit:  
The Incoming video comes through VIDEO IN/1 connector.  
Connect the VIDEO OUT/1 connector to VIDEO IN/2 connector.  
The incoming Time Code comes through Time Code IN/1 connector.  
Connect the Time Code OUT/1 connector to Time Code IN/2 connector.
4. On the ST300:  
Press VTR [1].  
Press [MENU].  
Press <, > until DOREMI MENU is displayed.  
Press Softkey [YES] to enter DOREMI MENU.  
Turn the Wheel until the display shows "Time Mode"  
Press Softkey [CHG] to select Time Code.  
Press [ESC] to exit the menu mode.
5. On the ST300:  
Press VTR [2].  
Press [MENU].  
Press <, > until DOREMI MENU is displayed.  
Press Softkey [YES] to enter DOREMI MENU.  
Turn the Wheel until the display shows "Time Mode".  
Press Softkey [CHG] to select Time Code.

Press **[ESC]** to exit the menu mode.

6. On the ST300:

Press **[MENU]**.

Press Softkey **[YES]** to enter ST300 SETUP MENU.

The display shows RECORD MODE. Press **[MENU]** to select Crash, Assemble or Insert record.

Press **[ESC]** to exit the menu mode.

Setup is complete.

## **RECORDING.**

Press **VTR[1]**.

Press **[RECORD]** key. Record is started.

Press **[STOP]** to stop recording at any time.

## **SIMULTANEOUS PLAYBACK DURING RECORD:**

Put VTR1 into RECORD mode.

Press **VTR[2]**.

Press **[EE]**. The light above EE key turns ON.

The ST300 is in PB/EE mode.

In this mode, the unit switches to incoming video any time it's in STOP mode.

In this mode, the display shows running timecode of the recorder.

Press **[MARK]** to mark recorder time into Cue Points.

Press **[GOTO]** to search to marked Cue Points.

Press **[PLAY]** to play video on VTR2.

Press **[STOP]** twice to return to EE mode and monitor current record time and video.

## **B. CUE POINTS**

### **SELECT A CUE POINT**

1. Press **[NEXT CUE]** or **[LAST CUE]** to step through the Cue Points.

**OR**

Manually enter the desired Cue Point number using the numeric keypad.

2. The current Cue Point number and its contents will be shown on the second line of the display.

### **MARK/ENTER/EDIT A CUE POINT**

1. Press **[MARK]** to mark the VTR's time into the Cue Point.

**OR**

2. Press **[ENTER TIME]** to manually enter a time using the numeric keypad. The ENTER TIME key indicator will turn on.

3. Manually enter a time on the numeric keypad. Press **[ENTER]** to save the entered time.

**OR**

4. Press **[ESC]** to exit without saving. The ENTER TIME key indicator will turn off.

## **GOTO/PREROLL TO A CUE POINT**

1. Select the desired Cue Point.  
The Cue number and its contents are shown on the bottom line of the display.
2. Press [**GOTO**] to search to the Cue Point. The GOTO key indicator will turn on.  
When the VTR reaches the Cue Point time, the GOTO key indicator will turn off.
3. Press [**PREROLL**] to preroll to the Cue Point.  
The PREROLL key indicator will turn on.

When the VTR reaches the Cue Point time, the PREROLL key indicator will turn off.

## **C. GOTO/PREROLL TO A MANUALLY ENTERED TIME**

1. Press [**ENTER TIME**] to manually enter a time using the numeric keypad. The ENTER TIME key indicator will turn on.
2. Manually enter a time on the numeric keypad.
3. Press [**GOTO**] OR [**PREROLL**] to search to the entered time  
**OR**
4. Press [**ESC**] to exit without searching.  
The ENTER TIME key indicator will turn off.

## **D. RECORD MODE SELECTION**

1. Press [**MENU**]. The MENU key indicator will turn on.
2. Turn the wheel until “REC:” is viewed on the top line of the display.  
The current Record mode is shown.
3. Press the [**MENU**] key to select:  
**Record Lockout, Assemble, Crash or Insert** Record mode.
4. INSERT ONLY - Press the desired Softkey to toggle  
Video, Audio1, Audio2, Audio3 or Audio4 record on/off.  
  
The **Softkeys** are located just below the display.  
Follow the line graphic from the bottom of the display to the Softkey.
5. Press [**ESC**] to exit the MENU. The MENU key indicator will turn off  
**OR**  
Turn the Wheel to for other setup options.

## *Advanced Features . . .*

### **6. TRANSFERRING CUELIST**

The TRANSMIT CUELIST function allows you to transmit your list of Cue Points to a PC, using the provided utility software on the PC, or to another ST300. Transfer to a PC requires OpSuite 3.0 software, which runs on a Windows-based computer. Contact DNF Controls for more information.

#### **To Transmit Cue Points to the ST300:**

1. Connect the VTR 4 connector on the rear of the ST300 to the VTR4 connector of the receiving ST300 using an RS422 9-pin cable with TX and RX lines crossed. (A “turnaround” cable)
2. Press [**MENU**].
3. Scroll the wheel until “Transmit CUE List? YES=Enter, Exit=ESC” is displayed.
4. Press [**ENTER**] to start transmitting.  
The Display shows “Waiting to transmit” on the first line.
5. When the Receiver is ready, transfer starts automatically.  
The Display now shows ”Transmitting cuelist”.
6. After the transfer is over, the display shows “Transfer is over” for one second and then shows “Waiting to transmit” again.
7. Connect another ST300 to transmit the list again  
**OR**
8. Press [**ESC**] twice to exit the MENU mode.

#### **To Transmit Cue Points to the PC:**

1. Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using a RS422 to RS232 adapter.
2. Repeat steps 2-8 of the TRANSMIT CUE POINTS to the ST300 section.

## **RECEIVE CUELIST FUNCTION.**

The RECEIVE CUELIST function allows you to receive your list of Cue Points from a PC or from another ST300. Transfer to a PC requires OpSuite 3.0 software, which runs on a Windows-based computer. Contact DNF Controls for more information.

### **To Receive Cue Points from the ST300:**

1. Connect the VTR4 connector on the back of the ST300 from the VTR4 connector of the transmitting ST300 using RS422 9-pin cable with TX and RX lines crossed. (A “Turnaround” Cable)
2. Press [**MENU**].
3. Scroll the wheel until “Receive CUE List? YES=Enter, Exit=ESC” is displayed.
4. Press [**ENTER**] from start receiving.  
The Display shows “Waiting to receive” on the first line.
5. When the Transmitter is ready, transfer starts automatically.  
The Display now shows “Receiving cuelist”.
6. After the transfer is over the display shows “Done-Success! Press any key...”
7. Press any key. The display shows “Receive cuelist?” message.
8. Press [**ESC**] to exit the MENU mode.

### **To Receive Cue Points from the PC:**

1. Connect the VTR4 connector on the back of the ST300 to one of the COM ports on the PC using RS422 to RS232 adapter
2. Repeat steps 2-8 of the RECEIVE CUE POINTS from the ST300 section.

## Reference . . .

### 7. FUNCTION TABLE

Function	Key Press	Description
EE On/Off	[ <b>EE</b> ]	Toggle PB/EE mode on/off. Status indicator is on when PB/EE mode is on. NOTE: in PB/EE mode, the unit goes into EE mode any time it is in STOP mode.
ENTER TIME	[ <b>ENTER TIME</b> ]	To manually entered timecode numbers into the currently displayed Cue Point. Enter the desired timecode number using the numeric keypad. Press [ <b>ENTER</b> ] to save your entry <b>OR</b> [ <b>ESC</b> ] to exit without saving.  To enter a GOTO location without altering the contents of the Cue Point, enter the desired timecode number using the numeric keypad. Press [ <b>GOTO</b> ] to search to the entered time. Press [ <b>ESC</b> ] to exit without searching.
FREEZE ENABLE	[ <b>FREEZE</b> ]	Toggles the Freeze on/off. When the light is ON, the Freeze is enabled. When the light is OFF, the freeze is disabled. NOTE: this is <u>NOT</u> a REC OUT freeze, it <u>IS</u> a user defined Freeze.
FREEZE	[ <b>SHIFT</b> ] + [ <b>FREEZE</b> ] (Active in SLO-MO only).	To enter or mark the Freeze time press [ <b>SHIFT</b> ] + [ <b>FREEZE</b> ]. The display shows the current freeze time. You can enter the Freeze time using the numeric keypad or MARK the current time into the Freeze time by pressing [ <b>MARK</b> ]
FREEZE ON LAST GOOD VIDEO	Active in SLO-MO only.	In SLO-MO mode, STILL frame the VTR when the current timecode is within 6 frames of the last Record Out point (memorized automatically upon exiting Record mode). Enable, disable or clear FREEZE point from SETUP MENU (see MENU).
GOTO CUE or ENTERED TIME	[ <b>GOTO</b> ]	Search the VTR to the contents of the currently displayed Cue Point. If ENTER TIME is active (LED is on), search the VTR to the entered time.  To enter a GOTO location without altering the contents of the Cue Point - Press [ <b>ENTER TIME</b> ]. Enter the desired timecode number using the numeric keypad. Press [ <b>GOTO</b> ] to search to the entered time. Press [ <b>ESC</b> ] to exit without searching.

Function	Key Press	Description
GANG	[SHIFT] + [VTR#1] OR [SHIFT] + [VTR#2] OR [SHIFT] + [VTR#3] OR [SHIFT] + [VTR#4]	Press and hold the [SHIFT] key and press the key of the VTR whose status you want to monitor. The led above the VTR# key starts blinking. Release the [SHIFT] key and the VTR key. The light continues blinking. Press the VTR#'s for the other VTRs to include in the Gang. Their lights come on and stay on constantly. Press [SHIFT] to exit.
GOTO FREEZE POINT	[SHIFT] + [GOTO]	Search VTR to FREEZE point (last Record Out point).
FFWD	[FFWD]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
JOG	[JOG]	Select JOG mode and enable the Wheel.
LAST CUE	[LAST CUE]	Step to the previous Cue Point Location.
MARK CUE POINT	[MARK]	Save the current time in the currently displayed Cue Point. Per SETUP MENU, (see MENU Function), the Cue Point Location will advance to the next Cue Point location or remain the same.
NEXT CUE	[NEXT CUE]	Step to the next Cue Point Location.
PREROLL	[PREROLL]	Preroll the VTR to the contents of the currently displayed Cue Point.
PREROLL VALUE	[SHIFT] + [PREROLL]	Enter desired Preroll Value. Press [ENTER] to save entry <b>OR</b> press [ESC] to exit without saving entry.
RECORD	[REC]	Places VTR in the Record mode selected by RECORD MODE in the SETUP MENU (see MENU). One button record.
REWIND	[RWD]	Press and HOLD to shuttle. Release key to stop. Set WIND Speed in MENU.
SHUTTLE	[SHUTTLE]	Select SHUTTLE mode and enable the Wheel.
SLOMO	[SLOMO]	Press SLOMO to slo-mo the VTR. Turn the wheel or move the T-Bar to change the play speed. Press SLOMO to STILL frame <b>OR</b> press any transport key to exit.
SLO-MO SPEED PRESET	[SHIFT] + [SLOMO]	For WHEEL ONLY - Press [SHIFT] + [SLOMO] to preset the slo-mo speed. Turn wheel to select desired speed. Press [ESC] or any transport key to exit.
STOP	[STOP]	Press once to STILL frame VTR. Press again to put VTR into STOP mode.



Function	Key Press	Description
TIME MODE SELECT	[ <b>TIME MODE</b> ]	Press to toggle between Timecode (TC), VITC (VT), or Tape Timer (TM) display modes.
TIME PRESET (Generator Preset)	[ <b>SHIFT</b> ] + [ <b>TIME MODE</b> ]	Press to enter Time Preset. Press [ <b>ENTER</b> ] to load Time Generator <b>OR</b> press [ <b>ESC</b> ] to exit without saving.

## 8. SPECIFICATIONS

Power	90 VAC to 265 VAC adapter supplied with IEC connector
Size	[L" x W" x H"] 12" x 6" x 1.5" (front) 3.0" (rear) [T-Bar unit is 12.6" wide]
Weight	4 lbs.
Real Panel Connectors	VTR1, VTR2, VTR3, VTR4 (All DB9F) GPI (DB15F) Power (DB9M) Aux (DB9F)
Display:	Easy to read 2-line, back-lit LCD display. (User adjustable contrast)
Jog/Shuttle Wheel	With mechanical detents.
Optional "T"-bar	Slo-mo 0-200% of Play Speed.

### RS422 SERIAL CONNECTOR 9 Pin D type, female (DB9F)

Pin #	1	Frame Ground	6	Receive Common
	2	Receive A ←	7	Receive B ←
	3	Transmit B →	8	Transmit A →
	4	Transmit Common	9	Frame Ground
	5	Spare		

### POWER CONNECTOR 9 Pin D type, male (DB9M)

Pin #	1	+5v DC	6	+5 VDC
	2	+5v DC	7	Ground
	3	Ground	8	Ground
	4	+12 VDC	9	Ground
	5	-12 VDC		

### GPI IN/OUT CONNECTOR 15 Pin D type, female (DB15F)

Pin #	1	GPI 1 Out	Pin#	9	GPI 1 In
	2	GPI 2 Out		10	GPI 2 In
	3	GPI 3 Out		11	GPI 3 In
	4	GPI 4 Out		12	GPI 4 In
	5	GPI 5 Out		13	GPI 5 In
	6	GPI 6 Out		14	GPI 6 In
	7	GPI 7 Out		15	GPI 7 In
	8	Ground			

NOTE: Consult your dealer or DNF for custom options available for GPI I/O.

## **9. DNF CONTROLS LIMITED WARRANTY**

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls  
12843 Foothill Blvd., Suite C  
Sylmar, CA 91342  
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services at prices listed in the DNF Controls Price List. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

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