



# Panasonic

## Instructions

Extension Unit

Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

Model No. **WJ-HDE510**

### WARNING:

- To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.
- All work related to the installation of this product should be made by qualified service personnel or system installers.
- Never look into the DVD-RAM drive of this product. The laser diode incorporated in the drive emits invisible infrared radiation which is harmful to the eyes.

### CAUTION:

- Read the label on the bottom of the unit for identification of this product, and the power ratings.



SA 1965

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



SA 1966

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.

For U.S.A.

**NOTE:** 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 residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**FCC Caution:** To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

The serial number of this product may be found on the bottom of the unit.

You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

## ■ General

The WJ-HDE510 is a DVD Extension Unit for connection with the WJ-HD500 Digital Disk Recorder for copying or backing up recorded data. The system can be extended by connecting up to 6 extension units in an SCSI chain while the DVD extension unit containing up to two HDDs.

The DVD-RAM stands for digital versatile disk-random access memory. The DVD-RAM can be stored high capacity data for making a backup.

Available DVD-RAM disks:

Cartridge type I for 9.4 GB (DOUBLE SIDED) NON REMOVABLE DISC

Cartridge type I for 2.6 GB (SINGLE SIDED) NON REMOVABLE DISC

Cartridge type II for 4.7 GB (SINGLE SIDED) DISC REMOVABLE

Cartridge type I for 5.2 GB (DOUBLE SIDED) NON REMOVABLE DISC

Cartridge type II for 2.6 GB (SINGLE SIDED) DISC REMOVABLE

\*Cartridge type I: Disc cannot be removed from the cartridge.

\*Cartridge type II: Disc can be removed from the cartridge.

**Note:** The WJ-HDE510 DVD Extension Unit is designed for use with Cartridge type I DVD-RAM disks. Type II DVD-RAM disks can be used only inside the cartridge. Therefore, to use type II DVD-RAM disks, do not remove the disc from the cartridge.

- Matsushita Electric Industrial Co., Ltd. herewith declares that it will not be liable in any way for any loss of data or any other damage, whether direct or indirect, caused by operation or malfunctioning of this product. Backup important data to protect it from possible loss.
- This product is for exclusive use in DVD-RAM drives according to DVD Specifications ver. 2.0 for rewritable disc.

## ■ Precautions

- Do not operate the appliance beyond its specified temperature, humidity or power source ratings. Do not use the appliance in an extreme environment where high temperature or high humidity exists. Use the appliance at temperatures within +5°C to +45°C (41°F to 113°F) and a humidity below 90 %. The input power source for this appliance is 120 V AC 60 Hz.
- Avoid shock and vibration  
Shock or vibration may damage the HDD whether in

operation or not.

Do not move the HDD for 30 seconds right after turning off the power.

- Pay attention to static electricity  
Put your hand on a metallic surface to discharge static electricity before installation.  
Do not touch components on the HDD directly with your hand.  
Always hold the HDD on both sides when installing it.
- Avoid condensation on the surface of the HDD. Wait until the dew evaporates in any of the following cases:  
The appliance is moved to a place where the temperature or humidity differs significantly.  
The appliance is moved out of an air-conditioned room.  
The appliance is placed in an extremely humid place.  
The appliance is placed in a room where the heater has just been turned on.
- Consumable parts  
Contact your dealer for the replacement of consumables when the time comes.  
The built-in hard disk needs replacement after around 30 000 hours of operation.  
The cooling fan also needs replacement after around 30 000 hours of operation.
- Do not block the ventilation opening or slots on the cover.  
To prevent the appliance from overheating, place it at least 5 cm (2 inches) away from the wall.
- Do not put your hands into the disk tray. Your fingers might get caught inside the DVD-RAM drive.
- Avoid condensation on the surface of the HDD and DVD-RAM disk.

Handling DVD-RAM disks

- Avoid exposure to direct sunlight.
- Avoid any contact with water.
- Do not place near heat sources such as radiators, stoves or other units that produce heat.
- Do not touch the DVD-RAM disc recording surface directly with your hand.
- Do not press, bend or place heavy objects against the cartridge case.
- Do not store in very dusty areas.
- Do not attach multiple labels one on top of the other on the DVD-RAM disk, and do not paste over a label that has been torn off.
- Keep the DVD-RAM disk in the case when not using it.
- To protect the DVD-RAM data, set the protection to "Write disable" position.

## ■ Cleaning the DVD Drive

The DVD drive needs to be cleaned after prolonged use.

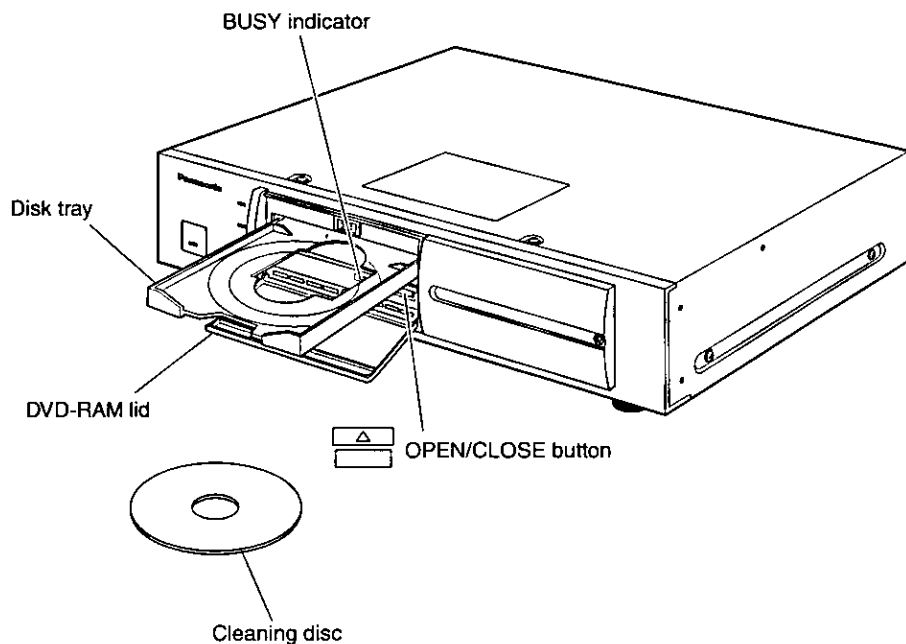
Use the optional cleaning disc as shown below for cleaning the DVD drive.

Panasonic PD Lens Cleaner (Wet-type) LF-K123LCA

Follow the procedure described below to clean the DVD drive of the DVD Extension Unit.

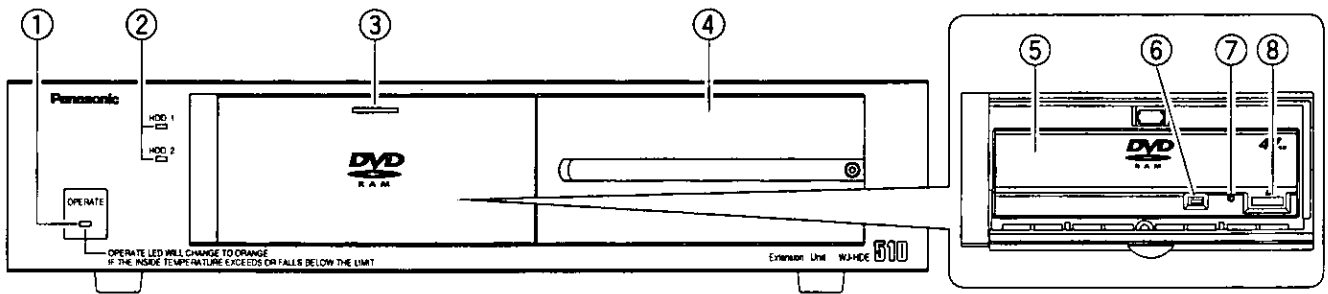
1. Turn on the power switch located on the rear of the DVD Extension Unit.
2. Press the DVD-RAM lid to open the lid located on the front of the DVD Extension Unit.
3. Press the **OPEN/CLOSE** button inside the DVD-RAM drive to slide out the disk tray.
4. Insert the cleaning disc into the tray.  
(Refer to the operating instructions of the cleaning disc for details.)
5. Press the **OPEN/CLOSE** button on the DVD-RAM drive to slide in the tray. Cleaning will start automatically.
6. Press the **OPEN/CLOSE** button to slide out the tray, then remove the cleaning disc.
7. Press the **OPEN/CLOSE** button again to slide in the tray.
8. Close the DVD-RAM lid.

**Note:** The optimum cleaning frequency differs depending on the usage environment and conditions. It is recommended though to clean the drive once every one to four months.

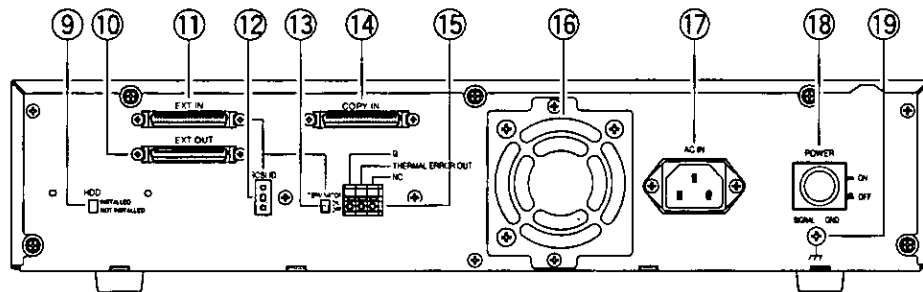


# ■ Appearance

## ● Front View



## ● Rear View



### ① Operate indicator (OPERATE)

Lights in green while power is supplied to the unit.  
Lights in orange when a thermal error is detected inside the unit.

### ② HDD indicator (HDD 1) (HDD 2)

Lights in green while the HDD is accessed. Do not turn off the POWER switch while any of the access indicators is lit.

### ③ DVD-RAM lid

Protects the DVD-RAM drive from dust. Press this lid to install the DVD-RAM disk. The DVD-RAM lid normally should be kept closed to prevent dust from entering the drive.

### ④ HDD lid

Two HDD openings are provided inside the DVD Extension Unit. Remove this lid to install the HDD. Replace the lid after installing the HDD.

### ⑤ DVD-RAM drive (tray)

### ⑥ Busy indicator

Lights in green when a DVD-RAM is installed in the DVD Extension Unit.  
It changes to orange while the DVD-RAM Drive is running.

### ⑦ Eject hole

### ⑧ Open/Close button

Is used for insertion or removal of the DVD-RAM disk while the DVD-RAM lid is opened.

### ⑨ Hard Disk Detection switch (HDD INSTALLED/ NOT INSTALLED)

Selects it to the required position as following.  
**INSTALLED:** Set to this position when the optional HDDs are installed in the unit.  
**NOT INSTALLED:** Set to this position when the DVD-RAM drive is only used.

### ⑩ SCSI Output connector (EXT OUT)

Connect another Extension Unit with an SCSI cable.

### ⑪ SCSI Input connector (EXT IN)

Connect the WJ-HD500 or another Extension Unit with an SCSI cable.

### ⑫ SCSI ID switch (SCSI ID -/+)

Press the - or + selector with a small headed screwdriver to select the desired SCSI ID in the chain.

### ⑬ Termination switch (TERMINATOR ON/OFF)

Set this switch to ON when the Extension Unit is located at the end of SCSI chain. Set this to OFF unless the Extension Unit is located at the chain end.

### ⑭ Copy port (COPY IN)

For connecting the WJ-HD500 Digital Disk Recorder.

⑮ **Terminal Board (THERMAL ERROR OUT/G/NC)**

A thermal error signal is supplied and OPERATE LED lights in orange when the inside temperature exceeds or fails below the limit. Connect these terminals with the WJ-HD500.

**NC:** No connection

⑯ **Cooling Fan**

Prevents the temperature of the DVD Extension Unit from rising. Do not block the ventilation opening on the cover.

⑰ **AC inlet (AC IN)**

Plug the power cord (supplied as a standard accessory) into this socket and connect it to an AC outlet.

⑱ **Power switch (POWER)**

Turn on this switch (peripherals) first, then the power of the WJ-HD500.

Confirm that all HDD indicators go out before turning off this switch. Switch off the power of the WJ-HD500 first, then turn off this switch (peripherals).

⑲ **Signal GND terminal (SIGNAL GND)**

Connect this terminal with the other equipment's SIGNAL GND to avoid possible grounding loop and noise if required.

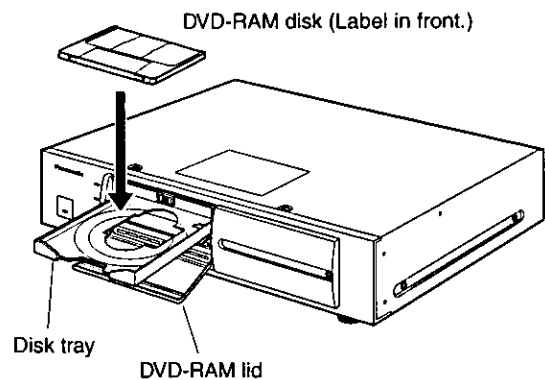
## INSTALLATION

The installations described below should be made by qualified service personnel or system installers.

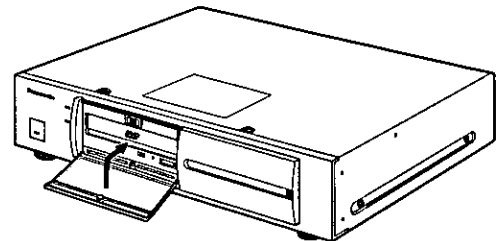
### ■ Inserting the DVD-RAM disk into the DVD Extension Unit

A new DVD-RAM disk needs to be formatted on a DVD recorder. For formatting information refer to the operating instruction of the WJ-HD500 Digital Disk Recorder.

1. Turn on the power switch located on the rear panel of the DVD Extension Unit and press the DVD-RAM lid to open the front of the DVD Extension Unit.
2. Press the OPEN/CLOSE button on the DVD-RAM drive to slide out the disk tray.
3. Confirm that the DVD-RAM disk is set to "Write enable" position, and insert the disk into the tray with the label in front.



4. Press the OPEN/CLOSE button on the DVD-RAM drive to slide the DVD-RAM disk and tray into the drive, then close the DVD-RAM lid softly.



## ■ Removal of the DVD-RAM disk from the DVD Extension Unit

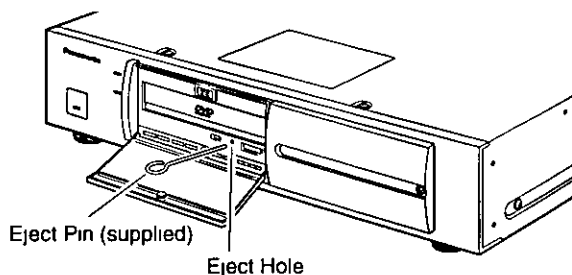
Before removing the DVD-RAM disk from the DVD Extension Unit, carry out the following two steps with the WJ-HD500 Digital Disk Recorder

- Confirm that none of the menus and lists is displayed on the monitor
- Press the COPY button for 2 seconds or more and confirm that "DVD UNLOCKED" is displayed in the center of the monitor screen

- 1 Press the DVD-RAM lid to open on the front of the DVD Extension Unit
- 2 Press the OPEN/CLOSE button on the drive  
The disk tray slides out. Remove the disk.

### Note Emergency eject

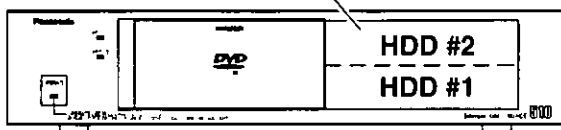
If you are unable for some reason to open the drive with the OPEN/CLOSE button, first make sure that the power of the DVD Extension Unit is turned off, and then open the drive by inserting the supplied eject pin into the eject hole on the front of the drive.



## ■ Installing the Optional Hard Disk

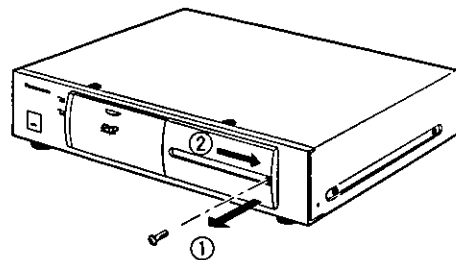
A maximum of two HDD units (procured locally) can be installed in the DVD Extension Unit. The following describes how to install HDD #1 (MASTER). To install #2 HDD, repeat the steps described for #1 HDD. Install the HDD units in the bays in the following order. Never skip or reverse the order of the HDD units.

HDD Positions Inside the Lid



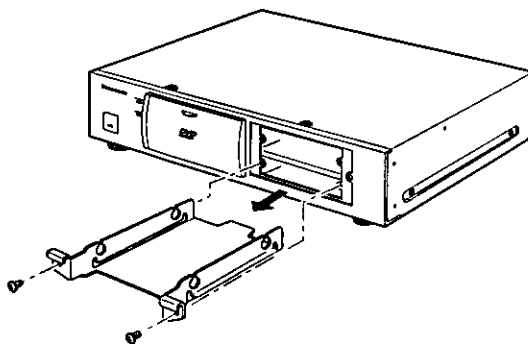
- 1 Turn off the power switch located on the rear panel of the DVD Extension Unit and disconnect the power cord from an AC outlet.

- 2 Remove the HDD lid
  - 2-1 Loosen the HDD lid fixing screw
  - 2-2 Slide the HDD lid to the right and remove it

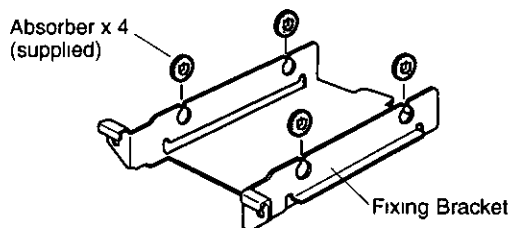


- 3 Remove the HDD brackets #1 and #2
  - 3-1 Loosen two screws
  - 3-2 Pull bracket #1 out of the bay

**Note** Keep the four removed fixing screws for use in step 8



- 4 Insert the four HDD absorbers (supplied) so that the grooves are caught in the fixing bracket.



- 5 Prepare an HDD unit

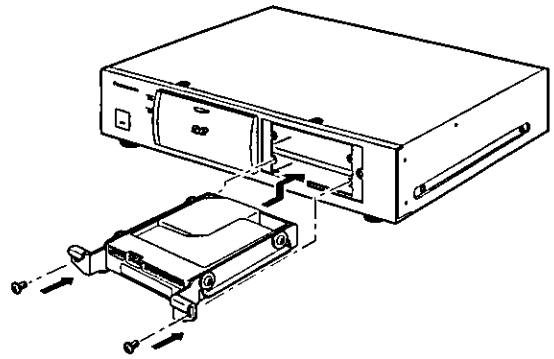
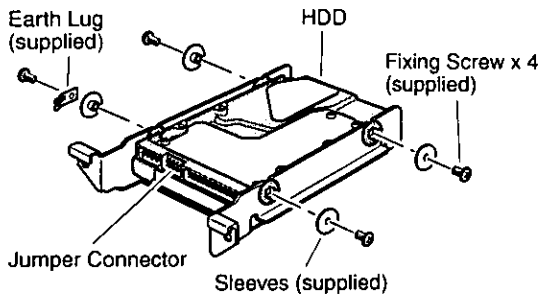
### Notes

- Put your hand on a metallic surface to discharge static electricity before taking out the HDD from the case
- Place the case with the HDD on a soft surface such as a cushion mat with the circuit board side up to discharge static electricity

- 6 Hold the HDD on both sides and place it on the fixing bracket. Then fasten it with the four screws, sleeves and earth lugs.

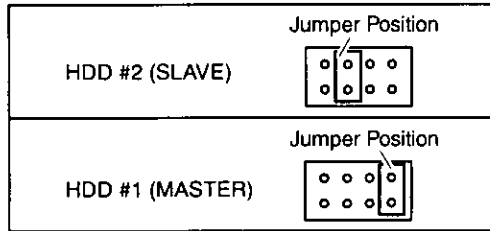
**Note** Never use an electric screwdriver to prevent shock.

**Torque:** 0.49 N•m (5 kgf•cm)



7. Set the unit address with the jumper connector on the HDD.

**Note:** For further information, refer to the instructions supplied with the HDD unit.

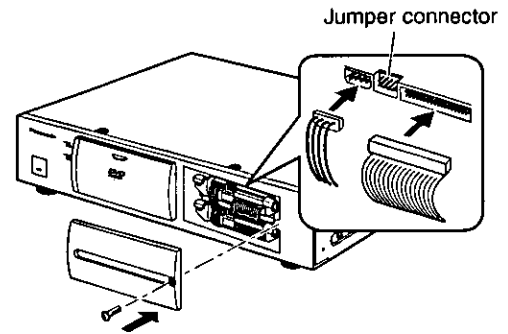


8. Hold the HDD with the bracket on both sides and place it into the specified bay. Then fix it with two of the fixing screws in step 3.

**Torque:** 0.49 N•m (5 kgf•cm)

**Note:** To install one HDD, place it into bay #1.

9. Plug the two harness connectors into the installed HDD.



10. Repeat the above steps for HDD #2.

11. Replace the HDD lid.

12. Set the Hard Disk Detection switch to INSTALLED.

## ■ Connection and Switch Setting

The figures show examples of SCSI connections. The WJ-HD500 Digital Disk Recorder controls the DVD Extension Unit through the SCSI chain.

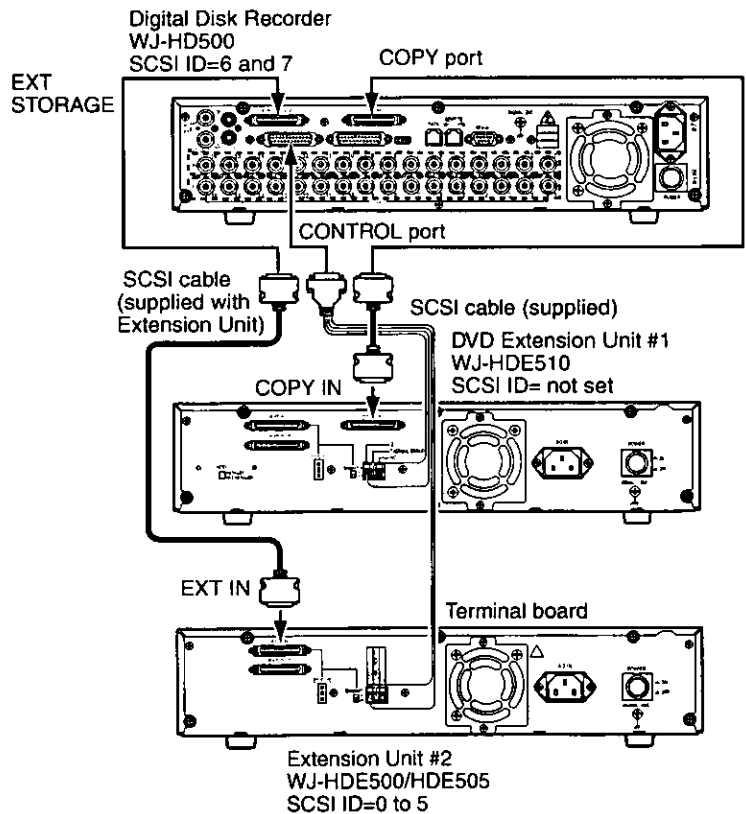
### <Connection between the WJ-HD500 and a WJ-HDE510 without HDD>

The figure shows a WJ-HDE510 without an HDD. The DVD-RAM is used for backup of the data recorded on the WJ-HD500 Digital Disk Recorder.

1. Connect between the COPY port on the WJ-HD500 and the COPY IN port on the 1st DVD Extension Unit with the supplied (WJ-HDE510) SCSI cable.

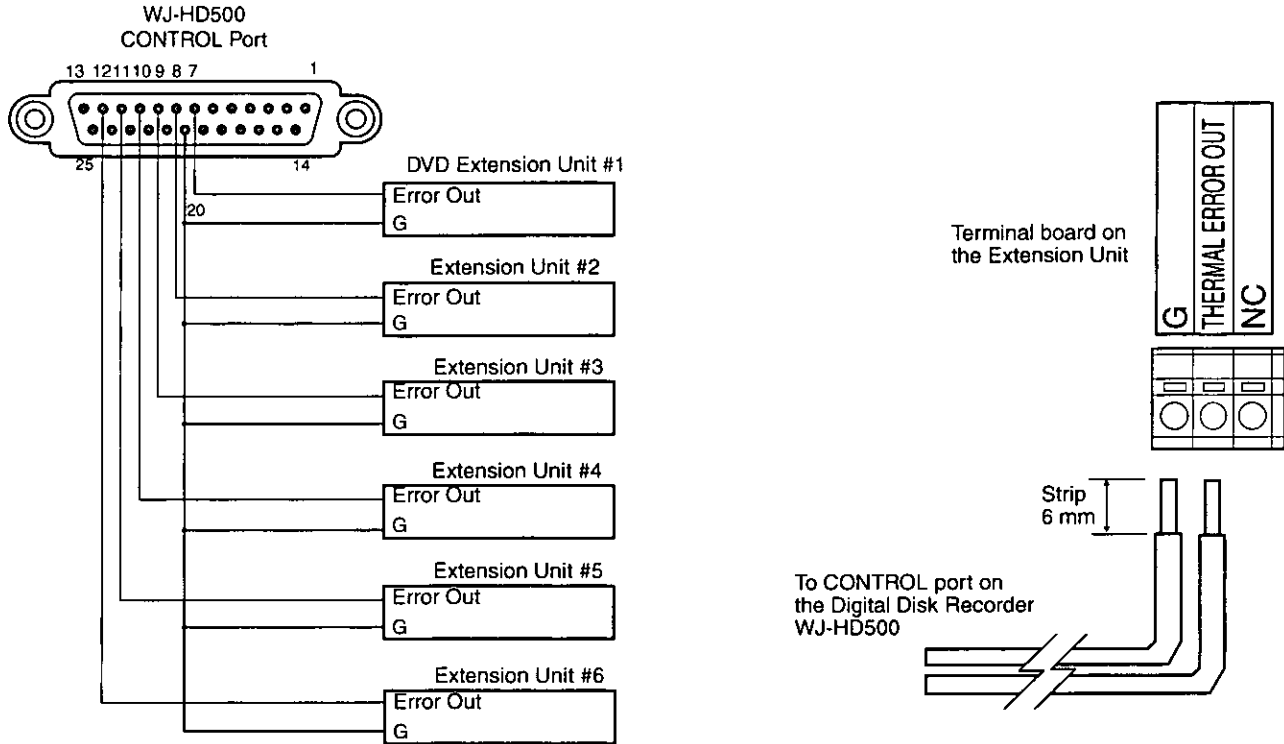
2. Connect between the EXT STORAGE port on the WJ-HD500 and the EXT IN port on the 2nd Extension Unit with the supplied (WJ-HDE500) SCSI cable.

The system can be expanded by up to 6 Extension Units. To connect the other Extension Units, refer to the operating instructions of each unit for further information.



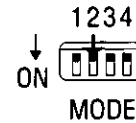
## Error Connection

Connect each of the error outputs to the CONTROL port on the rear panel of the WJ-HD500 as shown below. The WJ-HD500 will display a thermal error on the monitor screen.



## Switch Settings

1. Set MODE switch #2 on the rear of the WJ-HD500 to OFF when connecting a DVD Extension Unit without an optional HDD.  
Set the MODE switch to ON if the other Extension Units are installed in the system.
2. Set the SCSI ID and TERMINATION of the Extension Units as required.

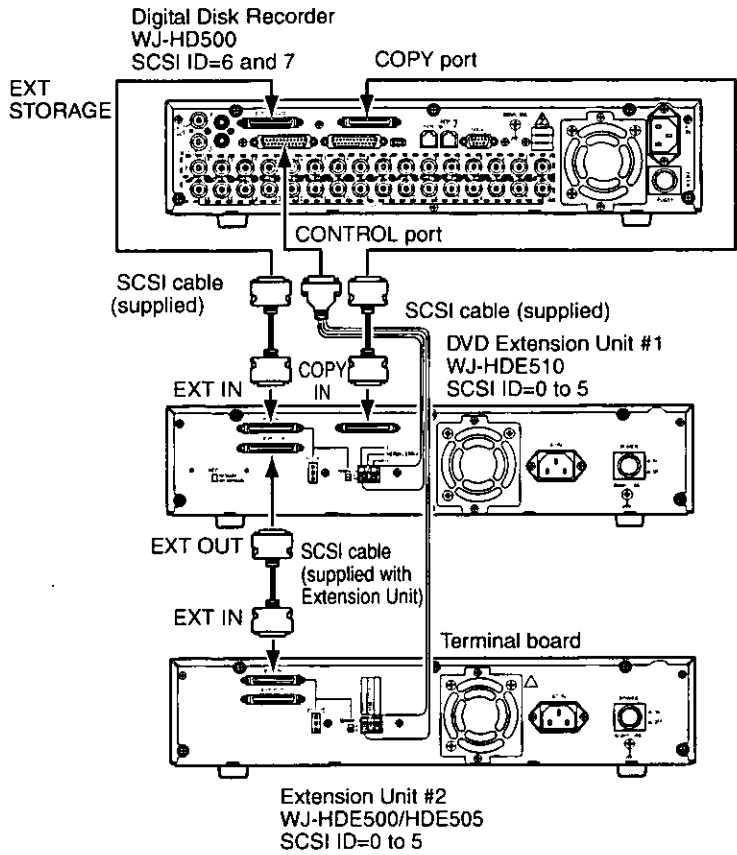




**<Connection between the WJ-HD500 and a WJ-HDE510 with HDD>**

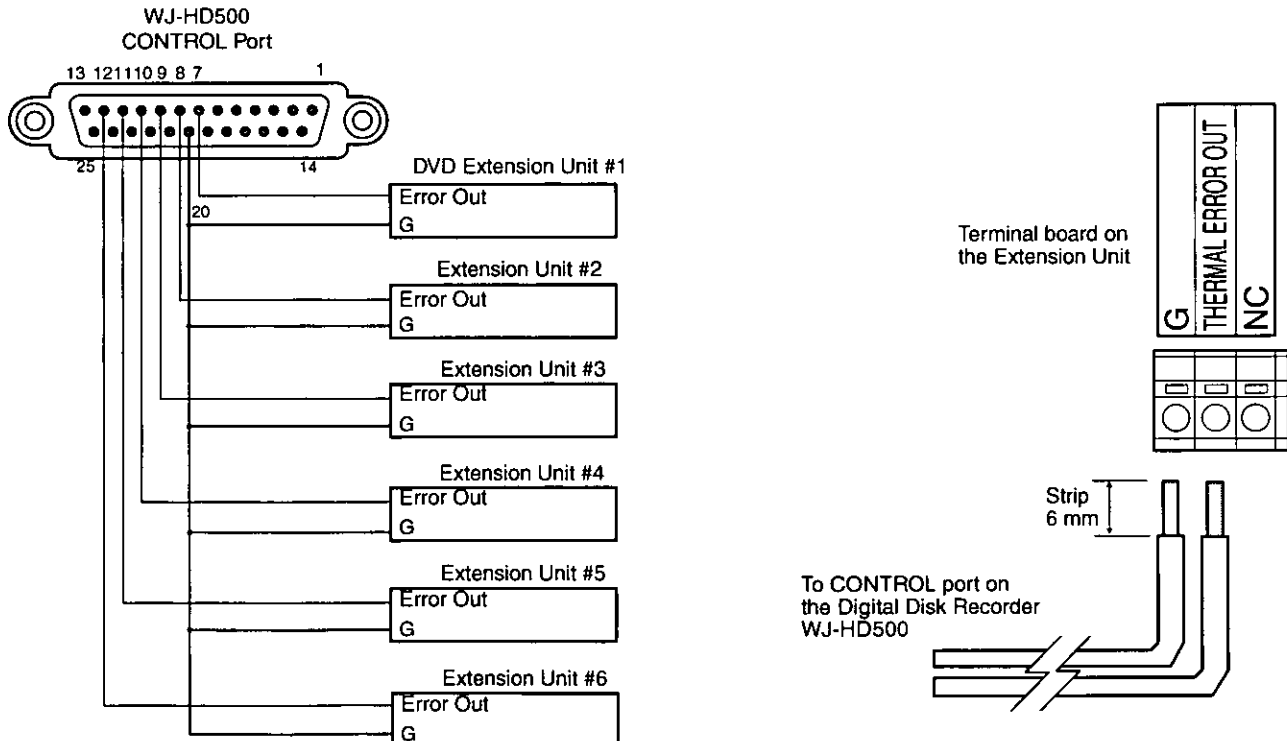
The figure shows the WJ-HDE510 with an HDD. The DVD-RAM is used for backup the data recorded on the WJ-HD500 Digital Disk Recorder as well as for storing the data of the extension hard disk drive units in the system.

1. Connect between the COPY port on the WJ-HD500 and the COPY IN port on the 1st DVD Extension Unit with the supplied (WJ-HDE510) SCSI cable.
  2. Connect between the EXT STORAGE port on the WJ-HD500 and the EXT IN port on the 2nd Extension Unit with the supplied (WJ-HDE500) SCSI cable.
- Repeat the connection steps for any subsequent extension units.
- The system can be expanded by up to 6 Extension Units. To connect the other Extension Units, refer to the operating instructions of each unit for further information.



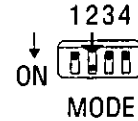
**Error Output Connection**

Connect each of the error outputs to the CONTROL port on the rear panel of the WJ-HD500 as shown below. The WJ-HD500 will display a thermal error warning on the monitor screen.

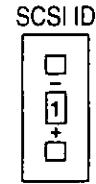


## Switch Settings

1. Set MODE switch #2 on the rear of the WJ-HD500 to ON when connecting a DVD Extension Unit with an optional HDD.



2. Set the SCSI ID for the DVD Extension Unit and each subsequent Extension Unit with the - or + selector on the rear of each Unit.



**0 to 5:** IDs for Extension Units.

**Note:** SCSI ID 6 and 7 are reserved for WJ-HD500 Digital Disk Recorder.

3. Set the termination switch to ON for the Extension Unit located at the end of the SCSI chain.

TERMINATION

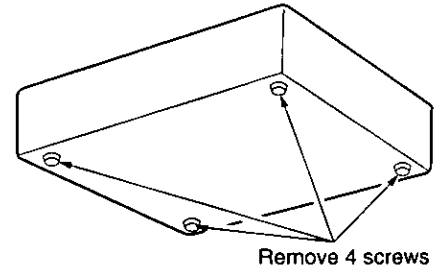


## ■ Mounting into a Rack

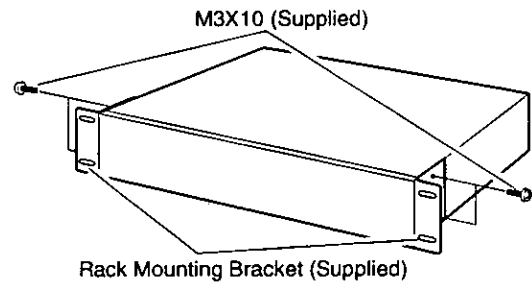
The installation described below should be made by qualified service personnel or system installers.

The DVD Extension Unit can be mounted into the rack as described below.

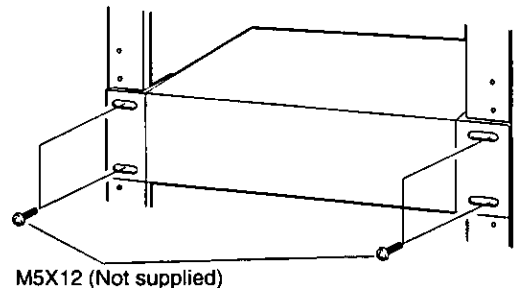
1. Remove the four rubber feet by removing the four screws from the bottom of the DVD Extension Unit.



2. Place the rack mounting brackets on both sides of the DVD Extension Unit and tighten with the four supplied screws (M4x10).



3. Install the DVD Extension Unit with the rack mounting brackets in the rack, securing it with four screws (not included).



### Cautions:

- When mounting a DVD Extension Unit together with other appliances in a rack, it may be influenced by the power transformer, etc. of some units such as amplifiers. In this case, install the Extension Unit below such units and leave one or two spaces open inbetween.
- Do not block the ventilation opening or slots in the cover to prevent the appliance from overheating. Always keep the temperature in the rack below 45°C (113°F).
- The cooling fan inside the DVD Extension Unit is subject to wear and needs to be replaced periodically.
- If the rack is subject to vibration, secure the rear of the appliance to the rack by using additional mounting brackets (procured locally).

## ■ Troubleshooting

Phenomenon	Cause	What to do	Page
No power is supplied.	Power cord is not firmly connected.	Securely plug the cord into AC outlet and AC inlet.	-
Thermal error. OPERATE indicator lights in orange.	Ambient temperature is too high or low.	Use the unit within +5°C to +45°C.	-
	Ventilation openings or fan is blocked.	Remove obstacles.	2
	Cooling fan failed.	Consult your dealer for replacement.	5
DVD-RAM drive is not recognized.	SCSI cable	Use the supplied cable and connect it securely.	7, 9
DVD-RAM disk cannot be formatted.	DVD-RAM disk type	Confirm the type of DVD-RAM disk.	2
	Dirt or dust of the optical lens or DVD-RAM disc	Use the optional cleaning disc.	3
Cannot copy to DVD-RAM disk.	Write disabled.	Set it to "Write enable".	2
	Dirt or dust on the optical lens or DVD-RAM disc	Use the optional cleaning disc.	3
	Operate indicator is blinking in green.	See page 12.	12
Cannot remove the DVD-RAM disk.	Recorded data is being copied or played back.	Remove disk after copying or playback is completed.	-
HDD indicator blinks.	SCSI cable	Use the supplied cable and connect it securely.	7, 9
Extension HDDs are not recognized.	Hard Disk Detection switch	Set to INSTALLED position.	6, 7
	SCSI ID setting	Set ID number properly	
	SCSI cable	Use the supplied cable and connect it securely.	
	SCSI connection	Install extension units in the specified order.	
	Power switch	Turn on the power switch (peripherals) first, then the power of the WJ-HD500.	

When the DVD-RAM drive detects error, Busy indicator blinks in green.

Phenomenon	Cause	What to do
<p>Blinking 3 times</p>	<p>Dirt or dust DVD-RAM disc [Recording reserve area (shifting area) is used 90 % or more.] In case of this, it changes into write disable mode automatically.</p>	<p>Use DVD-RAM disk only for reading. Use the optional cleaning disc. In case of being formatted DVD-RAM disk, it may use. We recommend backing up the recorded data.</p>
<p>Blinking 2 times</p>	<p>Dirt or dust of the optical lens or DVD-RAM disc In case of this, it changes into write disable mode automatically.</p>	<p>Use the optional cleaning disc.</p>
<p>Blinking 1 time</p>	<p>The internal temperature of the WJ-HDE510 is too high.</p>	<p>After removing the obstacle blocking ventilation openings or fan, turn the power of the WJ-HDE510 off.</p>

## ■ Specifications

Required Power:	AC 120 V, 60 Hz
Power Consumption:	Max. 55 W (with 2 HDD units installed)
Interface:	SCSI-2 (FAST SCSI), Half-pitch 50-pin D-sub
Operating Temperature:	+5°C to +45°C (41°F to 113°C)
Dimensions:	420 mm (W) x 88 mm (H) x 350 mm (D), (exclusive of rubber feet) 16-9/16" x 3-7/16" x 13-13/16"
Weight	Approx. 7.7 kg (17 lbs)

Weight and dimensions indicated are approximate.  
Specifications are subject to change without notice.

## ■ Accessories

Power Cord.....	1 pc.	HDD Fixing Screws.....	8 pcs.
SCSI Cables Half-pitch 50-pin D-sub).....	2 pcs.	Absorbers.....	8 pcs.
Rack Mounting Brackets.....	2 pcs.	Sleeves.....	8 pcs.
Bracket Fixing Screws.....	4 pcs.	Earth Lugs.....	2 pcs.
		Eject Pin.....	1 pc.

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