



## **LD 500/500V** **15" TFT Color LCD Monitor**

### **User Manual**



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NESO reserves the right to make changes or improvement to the product described in this manual without notice. Every effort has been made to ensure that the information in this manual is accurate. NESO Technology Inc. is not responsible for printing or clerical errors.

## **Federal Communications Commission (F.C.C.) Statement**

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV devices technician for help.

Use only shielded cables or connect I/O devices to this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

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## Safety Precautions

### Please read following instructions before use:

1. Do not apply pressure to the LCD screen. Excess pressure may cause permanent damage to the display.
2. Do not scratch or press on the panel with any sharp objects, such as a pen or pencil, as this may result in damage to the panel.
3. Store the LCD monitor at a temperature of  $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$  (or  $-4^{\circ} \sim 140^{\circ}\text{F}$ ).
4. Avoid exposing the monitor to direct sunlight and ensure the area around the monitor is free from moisture. Never allow any liquid to get inside the monitor.
5. Do not place any objects on the case.
6. Never place the monitor near a heat source such as a radiator.
7. Do not open the case of the monitor, as doing so may expose you to dangerously high voltage levels. Never attempt to perform repairs on the monitor yourself, but refer all servicing to qualified personnel.
8. Disconnect the monitor from the power outlet when the monitor is not in use for extended periods of time.
9. To increase the life of the LCD Panel, make sure to turn off the power or reduce its brightness when the monitor is not in use.
10. The monitor is equipped with a three-wire grounding-type plug. For safety, this device should only be used with a grounding-type power outlet. If your outlet is not of this type, contact your electrician for replacement. ***Never use a 3-to-2 prong adapter.***

Safety requirements may differ. Please select a suitable power cord depending on the particular area where you are located:

- A. North America: Please select a UL listed and CSA certified power cord.
- B. Germany: Please select VDE certified power cord.
- C. Nordic countries: Please select a power cord certified by SEMKO, NEMKO, DEMKO or FEMKO
- D. Other areas: Please select a power cord suitable to the local power system and power outlet.

Usually when this product is sold, a suitable power cord is provided by the manufacturer. However, this product may sometimes be resold or transported to another area with a different power system and safety requirements. Please pay attention to the selection of a suitable power cord.

The plug on the power cord is intended to serve as the disconnect device, the socket-outlet shall be installed near the equipment and shall be easily accessible.

11. This monitor can only be connected to the following adapter:  
Brand: LINEARITY      Type: LAD6019AB4  
Brand: LIEN CHANG      Type: LCA01F
12. This monitor is designed with a universal power supply that accommodates 100 – 240 VAC and frequency of 50 – 60Hz.

Thank you for your purchase of a NESO LD 500/500V TFT Color LCD monitor. Your NESO LD 500/500V package includes:

- LD 500/500V LCD monitor
- AC adapter
- Power cord
- DVI Video Cable (Optional)
- Signal cable
- Audio cable
- Installation disk
- This user manual

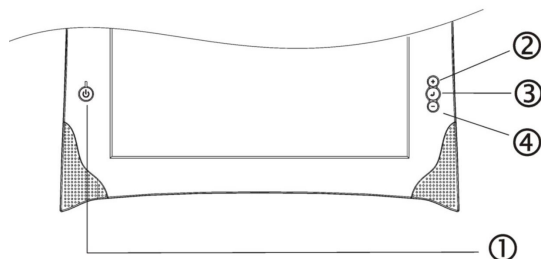
Please contact your local distributor if any of these items is missing.

**Important!**

You may wish to save the original box and packing materials for future use in shipping the monitor.

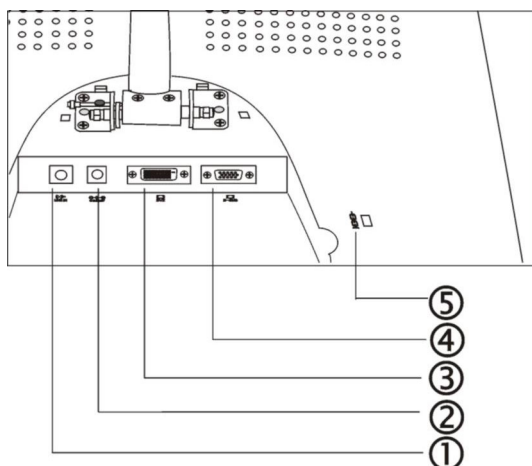
## Control and Connectors






### Front



- ① **Power Switch**
- ② **Auto (+)**
- ③ **Menu (↵)**
- ④ **Mute (-)**

### Rear



- ①  **Line-in**
- ②  **DC-in**
- ③  **DVI Input connector (optional)**
- ④  **D-Sub mini 15 pin Input Connector**
- ⑤  **Security Lock** – allows for the connection to Kensington's MicroSaver security system.

## Quick Installation Guide

### PC Setting





Before connecting your PC to the LD 500/500V LCD monitor, change the display screen settings (resolution and frequency) to match those below.

fH: 30kHz - 61kHz	fV: 56Hz – 75Hz
<p><b>Important:</b> The maximum resolution of this LCD monitor is 1024 x 768 at a maximum frequency of 75Hz</p>	

### Using the LCD monitor with Windows® 95/98

A monitor information file can be found on the installation disk included in the package. This file includes information to ensure the best performance when the monitor is used with Windows 95/98. Please install the enclosed utility and select “LD 500/500V” from the monitor list in Windows 95/98. Refer to the readme.txt file in the Monitor Installation Disk.

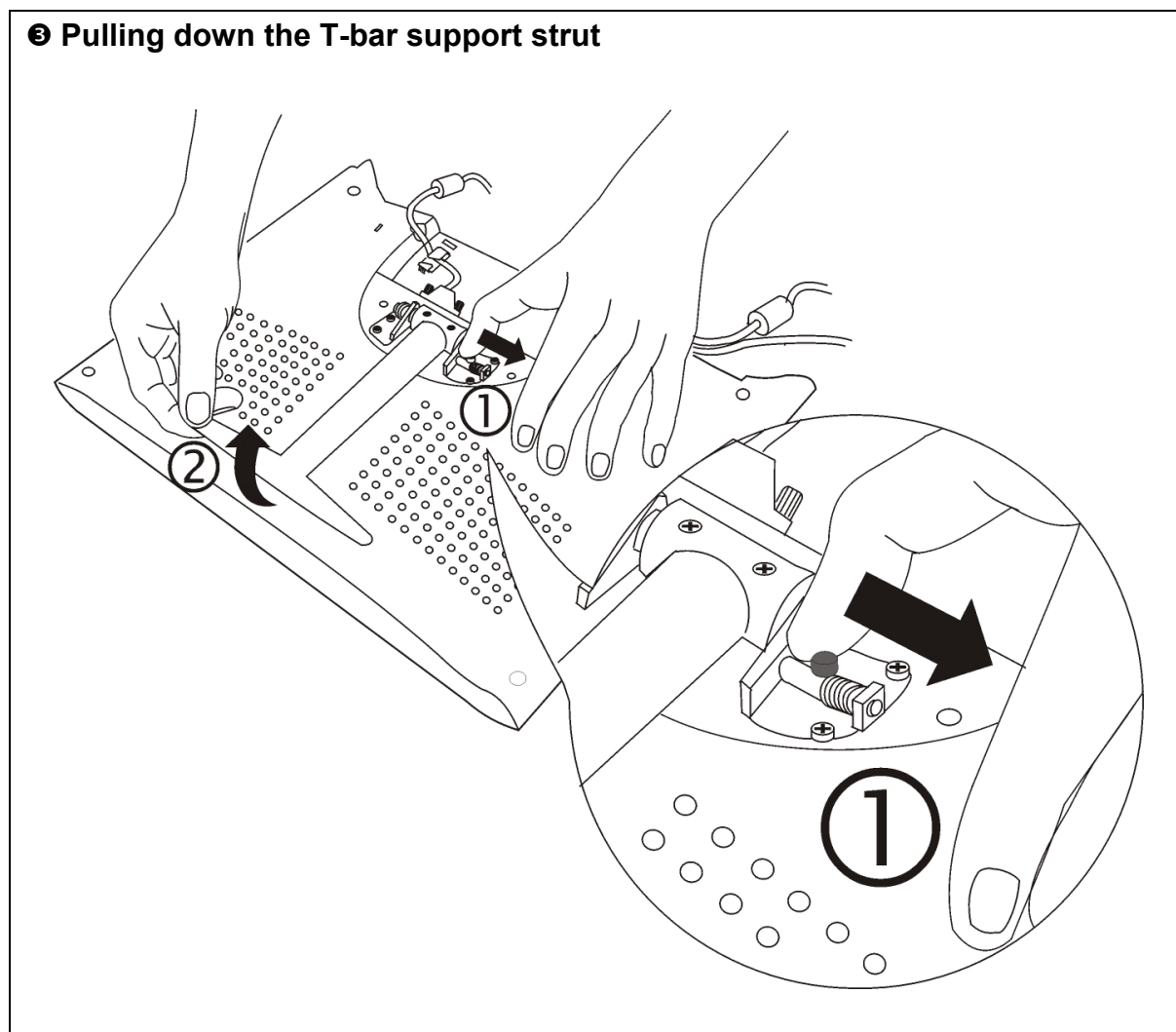
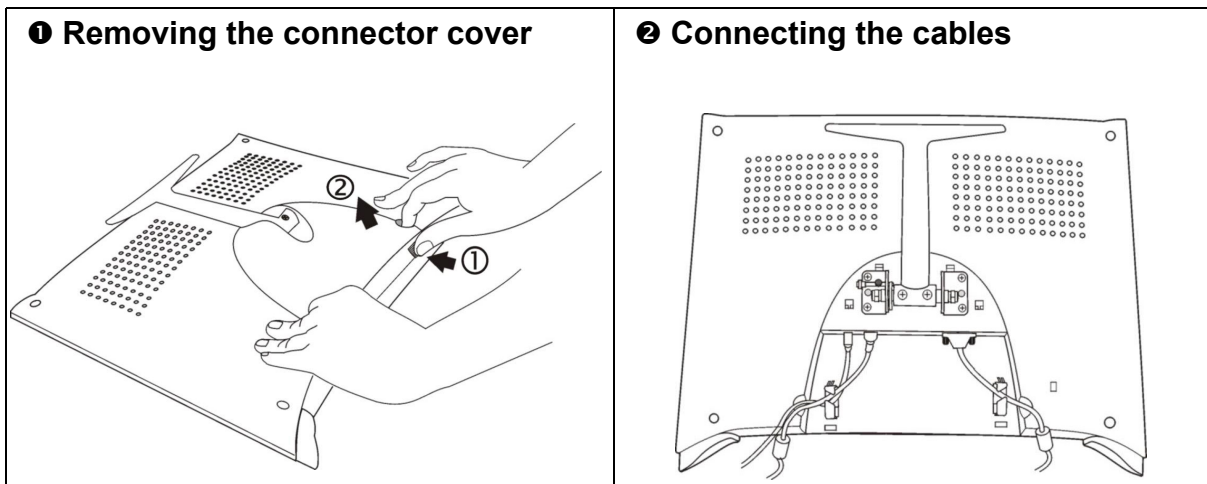
### Connecting the Cables

1. Be sure that both the PC and the LCD monitor are turned OFF.
2. Place the LCD monitor as shown below to remove the connector cover. (Please refer to illustration ❶.) When removing the connector cover, push in the buttons gently, and lift the cover up. To protect the LCD panel from scratching, it is recommended that a soft cloth or cushion be placed underneath the LCD panel.
3. Plug the signal cable into the D-Sub  D-SUB or DVI  (optional) socket at the rear of the monitor. When connecting the signal cable, check that the shape of the cable connector matches the shape of socket on the LCD monitor. (Please refer to illustration ❷.)
4. Plug the other end of the signal cable into the video connector at the rear of the PC.
5. Plug the power cord into the power connector  DC12V at the rear of the LCD monitor. (Please refer to illustration ❷.)
6. Plug the other end of the power cord into a power outlet.
7. Plug one end of the audio cable into the line-in port  LINE IN of the LCD monitor and the other end into the speaker-out port on the PC. (Please refer to illustration ❷.)
8. After connecting all cables, fit the cables into the grooves to secure them and ensure that they can be extend out of the sides of the connector cover. (Please refer to illustration ❷.)
9. Using your left hand, press the spring latch to the left, while using your right hand to pull the T-bar support strut into position. Then, release the spring latch. (Please refer to illustration ❸.)
10. Reattach the connector cover (Please refer to illustration ❹.)
11. Adjust the viewing angle (Please refer to illustration ❺.)

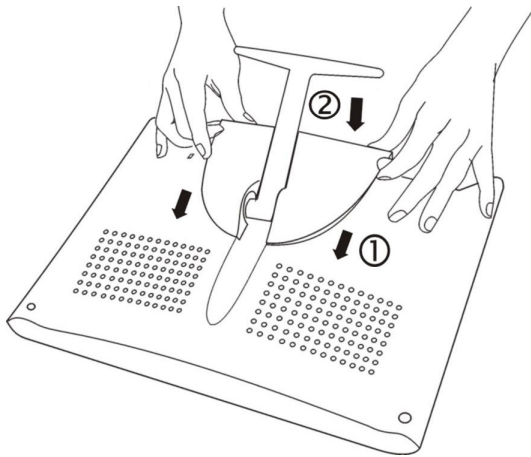
**Important:**

While pulling out the T-bar support strut, be sure to press the spring latch to the left. Otherwise, damage may be caused to the monitor.

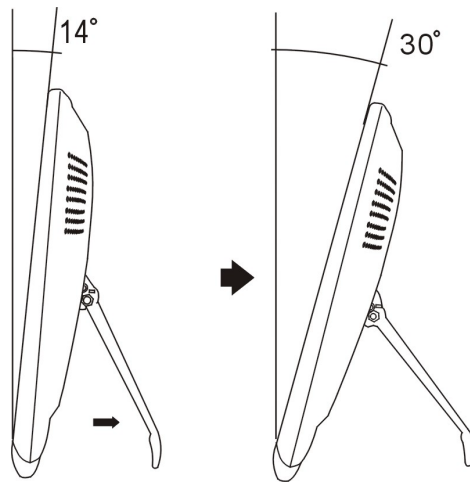
## Illustration



**④ Attaching the connector cover**



**⑤ Adjusting the viewing angle**

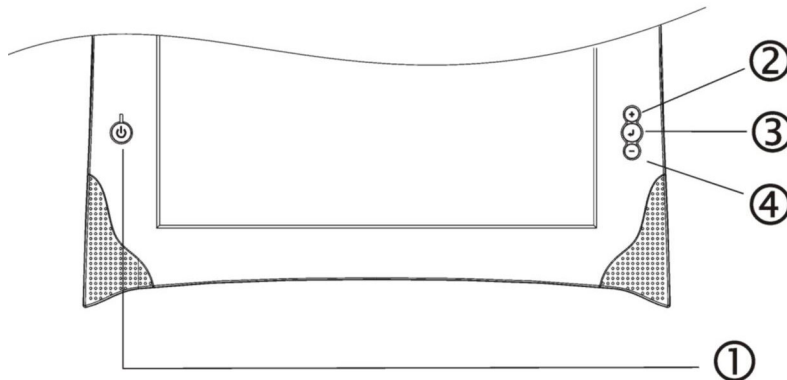




## Operation

This section explains how to fine-tune your monitor's screen image to suit your personal preferences, or to adapt it for different applications or lighting conditions.

### Front Panel Buttons



- ❶ **Power Switch with LED indicator**
- ❷ **Auto (+) button** — Used for automatic adjustment of the display size to full-screen mode or to increase the selected values.
- ❸ **Menu button (↵)** — Brings up the OSD control menu
- ❹ **Mute (-) button** — Mutes the audio or decreases the selected values

In the power-saving mode, the functions accessed by the control buttons described above will be modified as follows:

- ❷ **Auto (+) buttons** — Raises the volume.
- ❸ **Menu button (↵)** — Mute
- ❹ **Mute (-) buttons** — Lowers the volume.

**Important:**

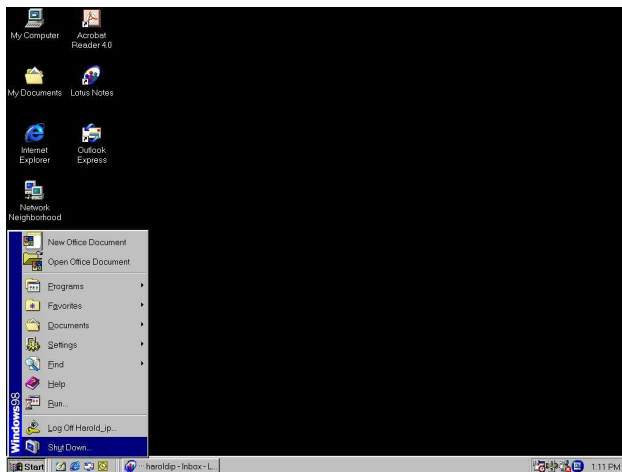
The Auto adjustment function is intended for use on Macintosh computers, or PCs running Windows. It may not function properly if any of the following applies:

1. The PC is running MS-DOS (not Windows).
2. The background color for the "wallpaper" or "desktop" pattern is set to black or dark.
3. A graphics board that is not completely compatible is installed in the PC.

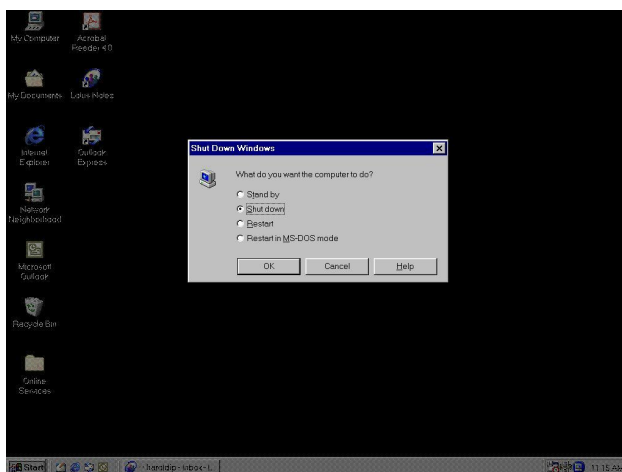
## About Auto Adjustment

The Auto Adjustment is best performed at Windows “Shut Down” mode. Follow the steps as below:

- 1) From the “Start” menu, select “Shut Down”



The following dialogue will appear.



- 2) Press **Auto (+)** on the front bezel, the following message will appear.

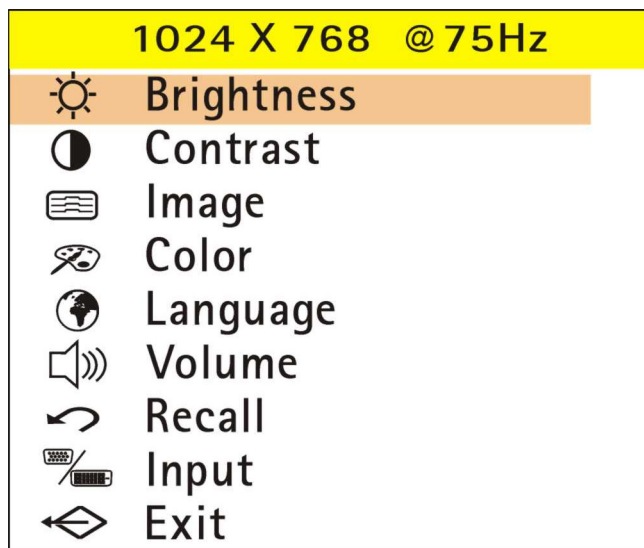
**Auto adjusting ...**

- 3) Wait until it finish all the adjustment and then select “Cancel” to return to Windows.

## On-Screen Display (OSD) Main Menu

Your LD 500/500V TFT Color LCD monitor provides nine main control parameters that you can adjust according to preference. To access the main menu of the OSD controls, follow the steps as follows:

1. Press the Menu (⏏) key. On the screen of the monitor, the menu shown below will appear.












2. Press “+” or “-“ key to scroll the highlight bar up or down the Main Menu.
3. Press the Menu key to enter into the sub-menu.

**Note:**

1. The upper line of the OSD shows the current resolution of the monitor and vertical sync status.
2. OSD menu will disappear after 30 seconds of user-defined inactivity.
3. Allow the LCD monitor to warm up for at least 20 minutes before making adjustments.

## Description of OSD Functions

The following is a description of the different choices shown in the main OSD control menu.

Icon	Function	Function Description
	<b>Brightness</b>	Increases or decreases the brightness of the screen image
	<b>Contrast</b>	Increases or decreases the difference between dark and light color
	<b>Image</b>	<p>When “Image” is selected, a sub-menu with the following items will appear:</p> <p><b>H-pos</b> Adjusts the position of the screen image left or right.</p> <p><b>V-pos</b> Adjusts the position of the screen image up or down.</p> <p><b>Clock</b> Has a frequency tracking feature that offers the user better screen image stability and clarity. The clock value can be increased by up to +50. Decreases in the clock value (minus) depends on the input timing.</p> <p><b>Phase</b> A total of 32 scales (0 to 31) are available for adjusting the focus and clarity of the display image.</p> <p><b>Sharp</b> Specially designed for viewing pictures. A total of 10 scales are available for adjusting.</p> <p><b>Text/Gfx</b> This function is to choose a display that allows maximum text/graphics quality. The resolution can either be 720 x 400 or 640 x 400</p> <p><b>Exit</b> Exits the OSD controls.</p>
	<b>Color</b>	<p>Provides three color adjustment options:</p> <p><b>9300K</b> Sets the CIE coordinate color temperature to 9300K</p> <p><b>6500K</b> Sets the CIE coordinate color temperature to 6500K</p> <p><b>User</b> Adjusts the color temperature freely.</p> <p><b>Auto Gain*</b> The auto gain is used to fine-tune the whites and light grays to an even balance.</p>
	<b>Language</b>	Allows users to choose from among six languages for displaying text in the OSD controls—English, French, Italian, German, Japanese and Simplified Chinese.
	<b>Volume</b>	Raises or lowers the volume of the built-in speaker.
	<b>Recall</b>	Returns all adjusted parameters to factory preset values.
	<b>Input</b>	Switch between D-Sub and DVI input (Optional)
	<b>Exit</b>	Exits the OSD controls.

\*Because of the differences in video signal output levels of graphics boards, disparities can be seen in the color temperature and brightness of the images shown on the monitor, even when the settings are the same. “Auto Gain” corrects irregular video signal output levels to eliminate disparities in color temperature and brightness. This adjustment should be done when a graphics board and monitor are connected. Please refer to the readme.txt file in the Monitor Installation Disk.

## Specifications (LD 500)

Display Type	38.1-cm (15-inch) TFT color LCD panel
Pixel Pitch	0.297 mm x 0.297 mm
Display Colors	16.7 million colors
Viewing Angle	Horizontal: 160°, Vertical: 160°
Scanning Frequency	Horizontal: 30 – 61 KHz Vertical: 56 – 75 Hz
Brightness	250 cd/m <sup>2</sup> (typical)
Contrast Ratio	500:1 (typical)
Input Signal	RGB Analog
Input Connectors	D-Sub mini 15-pin, DVI (optional)
Active Display Size	304 mm x 228 mm
Viewable Image Size	381 mm (diagonal)
Recommended Resolution	1024 x 768
Plug & Play Support	VESA DDC 1/2B
Front-Panel User Controls	Power, Menu, + (Auto), - (Mute)
Operating Conditions	Temperature: 5°C – 35°C (41°F – 95°F) Humidity: 20% - 85% (non-condensing)
Storage Conditions	Temperature: -20°C – 60°C (-4°F – 140°F) Humidity: 5% - 85%
Power Management (When audio is mute)	International Energy Star, NUTEK, and VESA DPMS Operation: < 40 watts (max.) LED Indicator: Green Suspend: < 6 watts (max.) LED Indicator: Amber Active Off: < 4 watts (max.) LED Indicator: Amber
Speaker Out	1 watt + 1 watt
Audio Input	Stereo mini-jack
Compatibility	PC99, Windows 95/98/me/2000/XP, Macintosh
Dimensions	414mm(W) x 330mm(H) x 74mm(D)
Weight	Net: 3.4 KGs Gross: 4.0 KGs

### Energy Declaration

This monitor is equipped with power-saving features that support the VESA Display Power Management Signaling (DPMS) standard. The monitor must be connected to a computer that also supports the VESA DPMS standard in order to fulfill the requirements of the NUTEK specification 803299/94/96. The time settings for switching to a power saving mode can be adjusted from the system unit by software.

## Specifications (LD 500V)

Display Type	38.1-cm (15-inch) TFT color LCD panel
Pixel Pitch	0.297 mm x 0.297 mm
Display Colors	16.7 million colors
Viewing Angle	Horizontal: 120°, Vertical: 120°
Scanning Frequency	Horizontal: 30 – 61 KHz Vertical: 56 – 75 Hz
Brightness	250 cd/m <sup>2</sup> (typical)
Contrast Ratio	350:1 (typical)
Input Signal	RGB Analog
Input Connectors	D-Sub mini 15-pin, DVI (optional)
Active Display Size	304 mm x 228 mm
Viewable Image Size	381 mm (diagonal)
Recommended Resolution	1024 x 768
Plug & Play Support	VESA DDC 1/2B
Front-Panel User Controls	Power, Menu, + (Auto), - (Mute)
Operating Conditions	Temperature: 5°C – 35°C (41°F – 95°F) Humidity: 20% - 85% (non-condensing)
Storage Conditions	Temperature: -20°C – 60°C (-4°F – 140°F) Humidity: 5% - 85%
Power Management (When audio is mute)	International Energy Star, NUTEK, and VESA DPMS Operation: < 40 watts (max.) LED Indicator: Green Suspend: < 6 watts (max.) LED Indicator: Amber Active Off: < 4 watts (max.) LED Indicator: Amber
Speaker Out	1 watt + 1 watt
Audio Input	Stereo mini-jack
Compatibility	PC99, Windows 95/98/ME/2000/XP, Macintosh
Dimensions	414mm(W) x 330mm(H) x 74mm(D)
Weight	Net: 3.4 KGs Gross: 4.0 KGs

### Energy Declaration

This monitor is equipped with power-saving features that support the VESA Display Power Management Signaling (DPMS) standard. The monitor must be connected to a computer that also supports the VESA DPMS standard in order to fulfill the requirements of the NUTEK specification 803299/94/96. The time settings for switching to a power saving mode can be adjusted from the system unit by software.

## Standard Timing Table

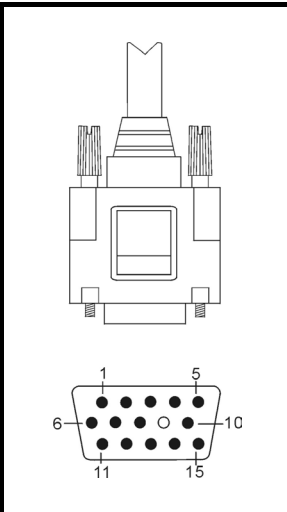
If the selected timing is NOT included in the table below, this LCD monitor will use the most suitable available timing.

Resolution	H. Freq. (KHz)	V. Freq. (Hz)	Pixel Freq. (MHz)	H/V Sync. Polarity	Mode
640 x 350	31.469	70.087	25.175	+/-	VGA-350
640 x 400	31.469	70.087	25.175	-/+, -/-	VGA-400-GRAPH, NEC PC9821
640 x 480	31.469	59.940	25.175	-/-	VGA-480
640 x 480	37.861	72.809	31.500	-/-	VESA-480-72Hz
640 x 480	37.500	75.000	31.500	-/-	VESA-480-75Hz
720 x 400	31.469	70.087	28.322	-/+	VESA-400-TEXT
800 x 600	35.156	56.250	36.000	+/+	SVGA
800 x 600	37.879	60.317	40.000	+/+	VESA-600-60Hz
800 x 600	48.077	72.188	50.000	+/+	VESA-600-72Hz
800 x 600	46.875	75.000	49.500	+/+	VESA-600-75Hz
1024 x 768	48.363	60.004	65.000	-/-	XGA
1024 x 768	56.476	70.069	75.000	-/-	VESA-768-70Hz
1024 x 768	60.023	75.029	78.750	+/+	VESA-768-75Hz

## Pin Assignment

The pin assignments of the connectors are listed below for the reference of technical personnel only. Please do not attempt to alter the connections yourself as doing so may seriously damage your monitor.

Pin No.	Assignment	Pin No.	Assignment
1	Red	9	DDC +5V
2	Green	10	Ground
3	Blue	11	ID (Ground)
4	ID (Ground)	12	Bi-Directional Data SDA
5	DDC Ground	13	H. Sync
6	Red Ground	14	V. Sync
7	Green Ground	15	Data Clock (SCL)
8	Blue Ground		



## Troubleshooting

This LCD monitor has been pre-configured using factory standard VGA timings. Due to the output timing differences among various VGA cards in the market, users may initially experience an unstable or unclear display whenever a new display mode or new VGA card is selected.

**Important:**

This LCD monitor supports multiple VGA modes.

Refer to the standard Timing Table for a listing of modes supported by this LCD monitor.

<b>Problem</b>	<b>Points to check with possible solutions</b>
No power	<ul style="list-style-type: none"> <li>■ Make sure the power button is ON</li> <li>■ Make sure the power cord is firmly connected to the back of the monitor and to a power outlet.</li> </ul>
Power on but no screen image	<ul style="list-style-type: none"> <li>■ Make sure the signal cable supplied with the monitor is fully inserted into the video output port on the back of the computer. If the other end of the signal cable is not attached permanently to the monitor, tightly secure it to the monitor.</li> <li>■ Adjust brightness and contrast.</li> </ul>
No signal Input	<ul style="list-style-type: none"> <li>■ Check that the PC is turned ON</li> <li>■ Check that the signal cable is properly connected to the graphics board or PC.</li> <li>■ Check that the graphics board is correctly inserted in the PC.</li> </ul>
Out of range error message appears	<ul style="list-style-type: none"> <li>■ Use the graphics board's utility software to change the frequency setting. (Refer to the manual for the graphics board.)</li> <li>■ For Windows 95 users (OSR 2.0 or newer) or Windows 98, restart the PC in a safe mode and change the frequency in the "Display" setting for the PC.</li> </ul>
Vertical bars of distortion appear	<ul style="list-style-type: none"> <li>■ Make adjustments to the "Image", "Clock" setting in the OSD menu.</li> </ul>
Horizontal bars of distortion appear.	<ul style="list-style-type: none"> <li>■ Make adjustments to the "Image", "Phase" setting in the OSD menu.</li> </ul>
The screen has defective pixels (e.g. slightly light or dark)	<ul style="list-style-type: none"> <li>■ This is due to the characteristics of the panel itself, not the LCD monitor.</li> </ul>
Incorrect display of colors	<ul style="list-style-type: none"> <li>■ If any colors (red, green, or blue) are missing, check that the signal cable is firmly connected. Damaged pins in the cable connector may also result in a faulty connection.</li> </ul>



<b>Problem</b>	<b>Points to check with possible solutions</b>
Display position is incorrect	<ul style="list-style-type: none"><li>■ Adjust the vertical position or horizontal position from the OSD menu. (“Image”, “H-pos” or “V-pos”)</li><li>■ If the problem persists, use the graphics board’s utility software to change the display position if available.</li></ul>
The screen is too bright or too dark	<ul style="list-style-type: none"><li>■ Adjust the contrast and brightness from the OSD menu. (The backlight of the LCD monitor has a fixed life span. When the screen becomes dark or begins to flicker, please contact your dealer)</li></ul>
The Auto adjustment button does not work properly	<ul style="list-style-type: none"><li>■ The Auto adjustment function is intended for use on Macintosh and IBM compatibles PCs running Windows. It may not work properly if either of the following applies.<ul style="list-style-type: none"><li>- You are running MS-DOS on an AT-compatible PC.</li><li>- The background color for the “wallpaper” or “desktop” pattern is set to black.</li></ul></li></ul>

## DDC Plug & Play

This monitor provides Plug & Play capability (VESA DDC 1/2B). To utilize this capability, your graphic card and hosting system must also be Plug & Play compatible. When properly set up, the graphic card and hosting system will automatically identify and configure the monitor, and most importantly, optimize its performance.

## Cleaning the LCD Monitor

### Caution

- To ensure safety, always unplug the monitor before clearing it. Cleaning the monitor while it is plugged into a power outlet may result in electric shock.
- Periodically clean the area around the plug. A Buildup of dust, water, or oil on the plug may result in fire.
- Dust accumulation within the monitor may result in fire or equipment failure. Please keep the monitor in a dust-free environment.
- Never use paint thinner, benzene, alcohol, abrasive cleaners, or other strong solvents, as these may cause damage to the cabinet or LCD.

Periodic cleaning is recommended to keep the monitor looking new and to prolong its operational lifetime. Clean the cabinet and LCD panel as described below.

### To clean the LCD Panel:

1. The LCD surface can be cleaned with a soft cloth, such as cotton or lens paper.
2. If necessary, stubborn stains can be removed by moistening part of a cloth with water before wiping.

### To clean the Cabinet:

1. Use a soft, lightly moistened cloth and a mild detergent.
2. Do not spray wax or cleaner directly onto the cabinet.

**DISCLAIMER:**

NESO strongly discourages the use of any paint thinner, benzene, alcohol, abrasive cleaners, or other strong solvents on the LCD Panel or cabinet, as they may damage the monitor. NESO shall not be liable for any damage to the monitor resulting from use of any above mentioned substances.

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