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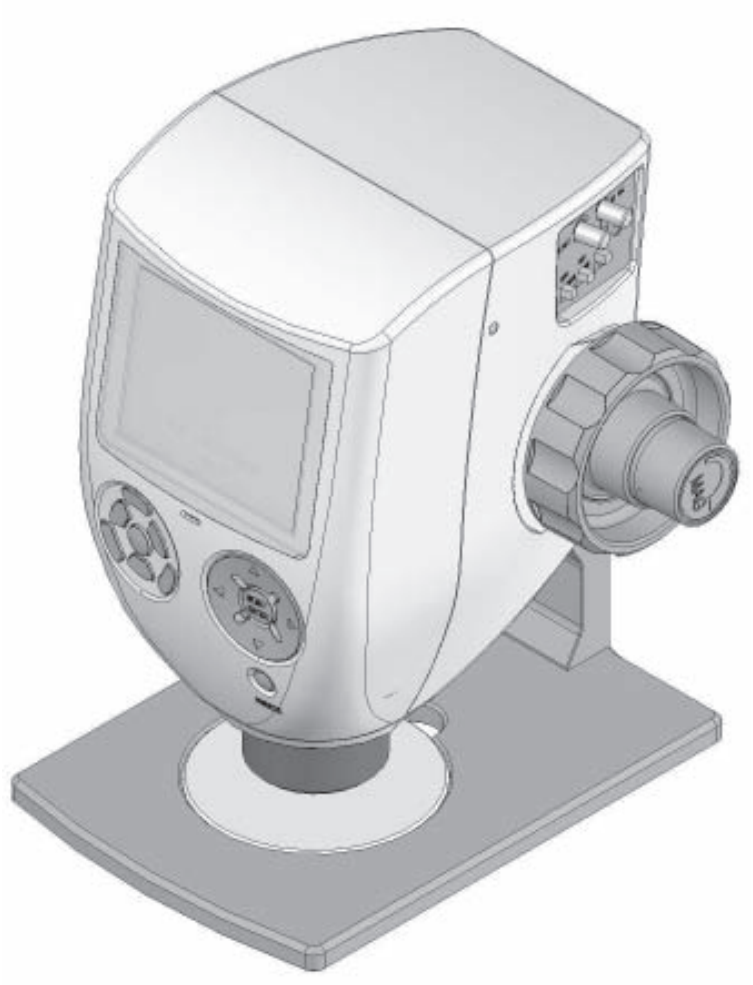
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SCOPEMAN®
MSX-500Di

Instruction Manual



Thank you for your purchasing our MSX-500Di.
To make full use of this MSX-500Di, read this instruction manual carefully before use.
After reading this instruction manual, store it in a safe place for future reference.

MORITEX
SCHOTT

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Before Use Be sure to read the following for safety.

Be sure to observe the following in order to use the MSX-500Di safely and to prevent damage to users, other people or property. Please read and understand the following well before using the MSX-500Di.

⚠**WARNING:**	Indicates a danger that may result in death or serious injury if used improperly.
⚠**CAUTION:**	Indicates a danger that may result in injury or property damage if used improperly.
NOTE:	Indicates that a possibility that may result in reducing the performance of the MSX-500Di, or disabling some functions or MSX-500Di itself.

⚠WARNING

- Should the MSX-500Di have an abnormality such as producing smoke or an unpleased smell, stop operating it. If you continue using it, this may cause a fire or an electric shock. If you find any abnormality, immediately unplug the connector from the MSX-500Di, and contact the store where you purchased this product or our companies (indicated at the end of this document) for repair. NEVER service this product by yourself, as this is extremely dangerous.
- When you will not use the optional batteries, do not remove the cover for them.
- Should any liquid such as water come into the MSX-500Di, immediately unplug the connector from the MSX-500Di, and contact a store where you purchased this product or our companies (indicated at the end of this document) for repair. If you continue using it, this may cause a fire or an electric shock.
- Do not modify or disassemble the MSX-500Di. Otherwise, this may result in a fire or an electric shock.
- Do not use the damaged cable. If the cable is damaged, contact the store where you purchased this product or our companies (indicated at the end of this document). If you continue using it, this may cause a fire or an electric shock.
- Do not damage, break, modify, bend forcibly, pull, twist, or bind the cable. Or do not put a heavy object on the cable or heat it; otherwise, the cable may be damaged, resulting in a fire or an electric shock.
- NEVER use the MSX-500Di when the power is not in the supported range written on the AC adapter. Or NEVER use the MSX-500Di with many loads on one electric outlet. Otherwise, this may result in a fire or an electric shock.
- Do not plug or unplug the cable with wet hands. Otherwise, you may suffer an electric shock.
- When the MSX-500Di is transported from a cold place to a warm place, this may cause condensation to occur. If this happens do not turn the power ON until moisture disappears. Otherwise, this may result in a fire or an electric shock.
- Be sure to use the AC adapter exclusively used for the MSX-500Di. If you use other AC adapter, this may cause a electric shock or a breakdown.
- Please install and use the MSX-500Di unit where its AC adapter can be unplugged easily in case of an emergency.

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⚠CAUTION

- Do not place the MSX-500Di under direct sunlight, near heating or cooling device, or an area where humidity is high. Otherwise, the temperature inside the product may rise, resulting in a fire.
- Do not place the MSX-500Di in an area where humidity is high, where the product may likely be splashed with water, oil or agents, etc., or where there is much dirt or dust. Otherwise, this may result in a fire or an electric shock.
- Do not place the MSX-500Di on an insecure place such as a swaying base or inclined place. Otherwise, this may cause the product to fall down, resulting in injury.
- Do not look the LED light portion directly or look into it. A strong light is emitted from the LED light portion. Otherwise, you may harm your eyes.
- When not in use for a prolonged period of time, be sure to turn the power OFF, unplug each cable from the device, and unplug the power plug from the outlet for safety.

NOTE

- NEVER clean the MSX-500Di with benzine, thinner, or alcohol; otherwise this may cause the discoloration or deformation. If it is heavily smeared, wipe it off with a wrung-out cloth moistened with a diluted neutral detergent, then dry it with a soft cloth. NEVER wash the MSX-500Di with water.
- Do not give a strong impact to the MSX-500Di by dropping or hitting it. Otherwise, this may result in a breakdown.

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Warranty Card ..... **Back Cover**

Features

Supporting versatile purposes

This product is available for inspecting the surface of the solder fitting part after the flow and re-flow flaw, final inspection to detect any flaw, or an observation for the study of plants.

Checking Images on Small Display

You can check an image by the 3.5-inch color display on the front side of the main body, without connecting with your computer or video equipment.

Saving the Captured Images in the SD Card

You can operate the buttons to save images in the SD card. The images, which are captured by the MSX-500Di, can also be loaded in to the computer with SD card-slot and displayed.

Versatile Light Switching

High-brightness LED, which is allocated in a total of seven blocks, enables you to adjust the direction and lighting intensity of the light.

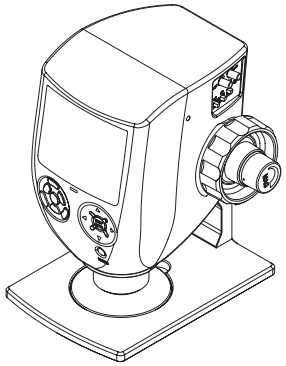
Operating the MSX-500Di from a Computer

You can connect a computer and the MSX-500Di with a USB cable to operate the MSX-500Di from the computer and load the captured image. Refer to the instruction manual for software (separated) for the detail of the operation.

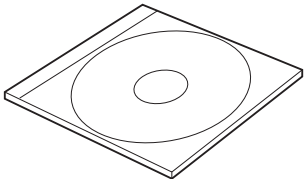
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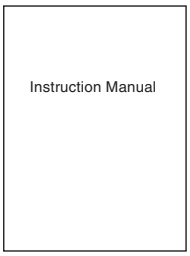
Package Contents

MSX-500Di

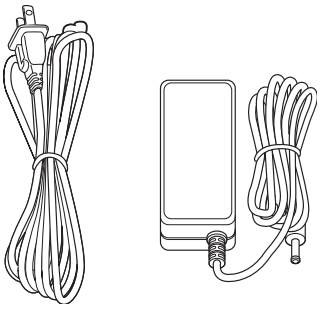


Viewer and Measurement software
(CD and Instruction Manual)

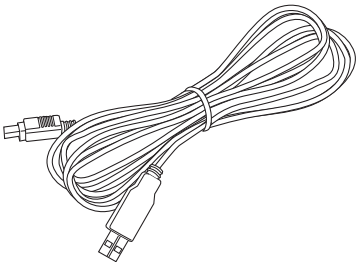




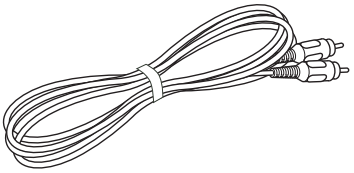
AC adapter



Mini USB cable
(B5 male connector, 5-pin)



Video cable



SD card (256MB)



Hexagonal wrench



Instruction Manual (this document) with Warranty Card



Optional Parts

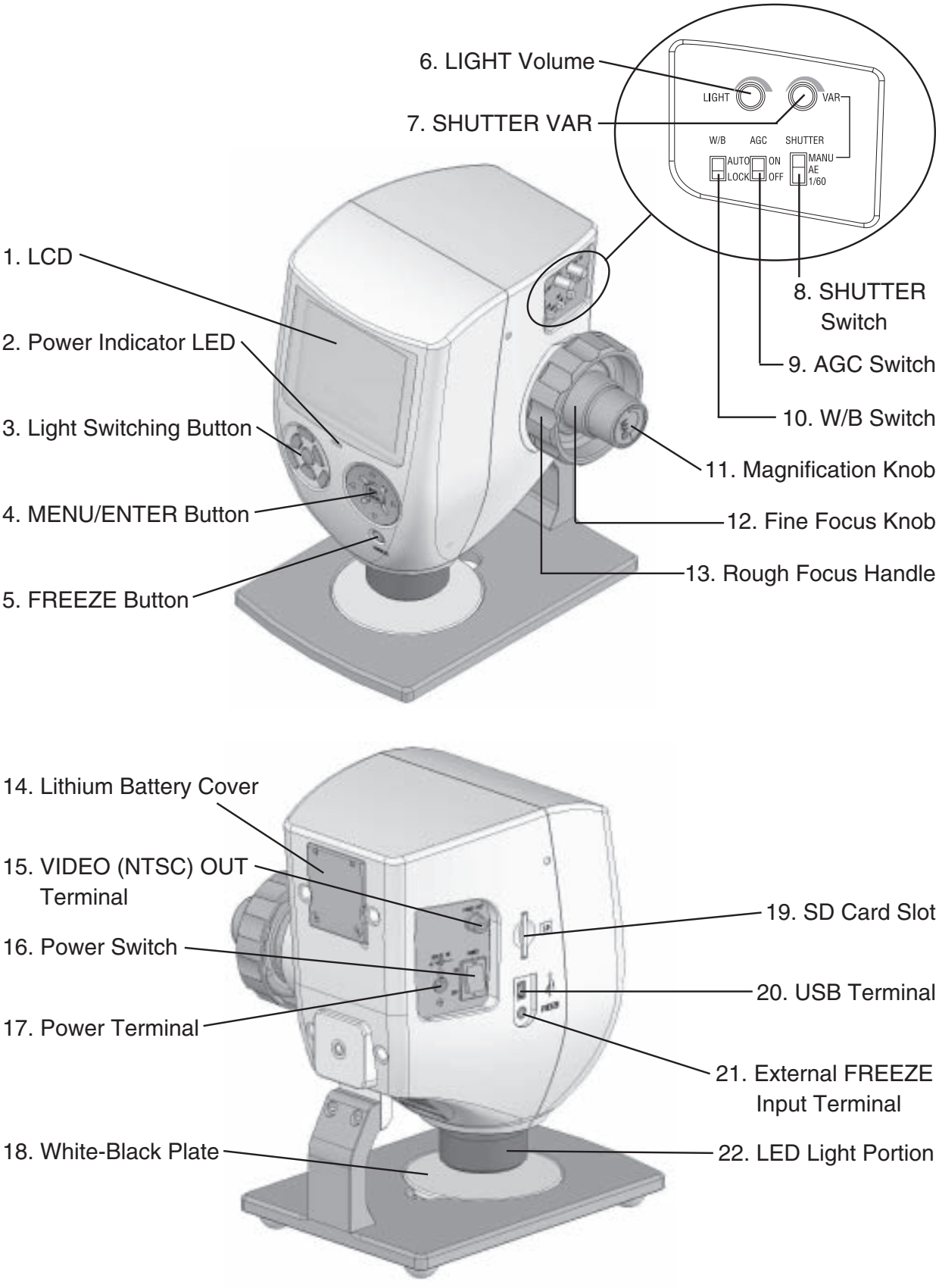
Bottom lighting unit
Remote freeze switch

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Parts Name and Function

■ MSX-500Di

<Camera Controlling Operation Portion>



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1. LCD
Displays an Image

2. Power Indicator LED
Lights when the power is ON.

3. Light Switching Button
Switches the light

4. MENU/ENTER Button
Displays MENU mode, and registers an image.

5. FREEZE Button
Switches LIVE/FREEZE mode

6. LIGHT Volume
Adjusts the brightness of LED light. The light can be turned off when narrowing down the volume.

7. SHUTTER VAR (Adjustable shutter speed)
Allows you to adjust the shutter speed (1/10 - 1/1000 seconds) with rotating SHUTTER VAR when SHETTER switch is set to MANU.

8. SHUTTER Switch (Shutter speed)
MANU: Rotates SHUTTER VAR to adjust the shutter speed.
AE: Adjusts the brightness according to the capturing terms automatically, and sets the appropriate shutter speed.
1/60: Fixes the shutter speed as 1/60 second.

9. AGC Switch (Auto gain control)
ON: Corrects the brightness of the screen when it is darker.
OFF: Displays the screen without any correction for the brightness.

10. W/B Switch (White balance)
AUTO: Adjust the white balance automatically according to the variety of the color temperature.
LOCK: Fixes the white balance to maintain the color temperature

11. Magnification Knob
Adjust the magnification of an object.

12. Fine Focus Knob
Adjust the focus of an object minutely

13. Rough Focus Handle
Adjust the focus of an object widely

14. Lithium Battery Cover
Remove this cover when attaching the optional Lithium-ion battery pack (for sale in Japan only)
* Refer to the instruction manual attached with Lithium-ion battery pack for more detail.

15. VIDEO (NTSC) OUT Terminal
Connects the Video cable.

16. Power Switch
Turns the power ON/OFF.

17. Power Terminal
Connects the AC adapter.

18. White-Black Plate
Set an object on this plate. You can reverse the white/black surface according to the status of an object.

19. SD Card Slot
Inserts the SD Card

20. USB Terminal
Connects the USB cable.

21. External FREEZE Input Terminal
Connects the optional Freezing switch.

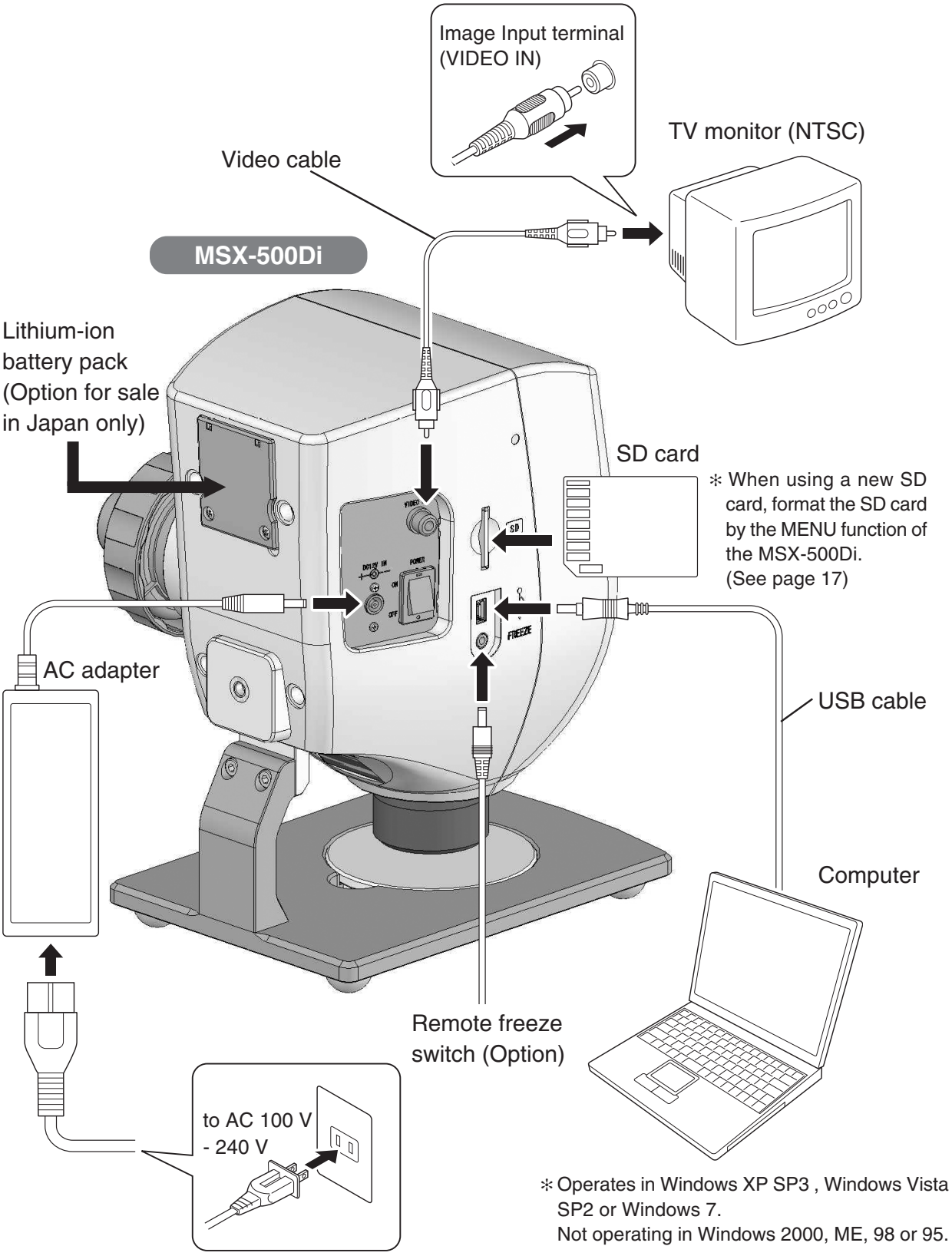
22. LED Light Portion
Contains the lens and light inside the portion.

NOTE
- Do not give a strong impact to the MSX-500Di by dropping or hitting it. The Liquid crystal display is very delicate especially, so handle it with extreme care. Rough handling may cause the damage of the liquid crystal display, and malfunction of the main body.

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How to Connect the Cable and Insert the SD Card

Be sure to check the power switch is OFF before connecting AC adapter.



* When using a new SD card, format the SD card by the MENU function of the MSX-500Di. (See page 17)

* Operates in Windows XP SP3 , Windows Vista SP2 or Windows 7.
Not operating in Windows 2000, ME, 98 or 95.

* Refer to the instruction manual for software (separated) for the detail of the connection with USB cable and computer.

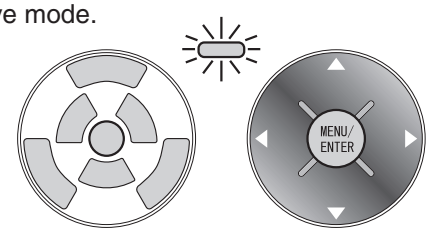
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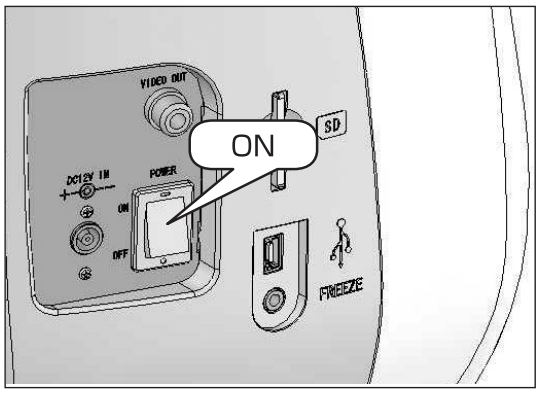
How to Use MSX-500Di

■ Watching an Image

1 Setting an object on the plate, and turn the power switch ON.

● Power indicator LED lights green, and the image can be displayed on the Liquid crystal display as live mode.



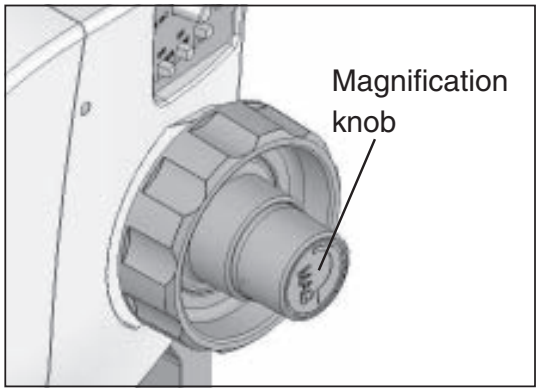


✻ When using Lithium-ion battery pack (DC 7.2 V), the power indicator LED lights blue. The color of the light changes from blue to orange and then from orange to red according to the battery power condition, so making it possible to check whether the battery needs charging or not.

2 Rotating the magnification knob to adjust the magnification

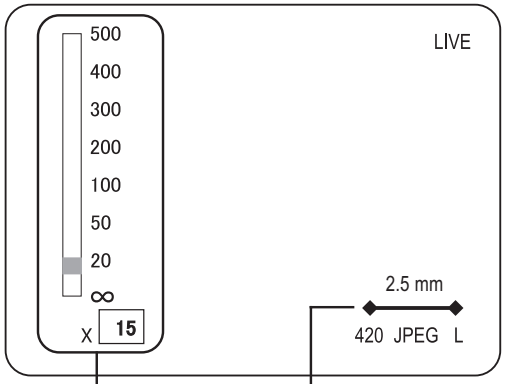
● Magnification and the scale can be displayed on the liquid crystal display.

✻ By changing display magnification, zoom display suitable for the 3.5-inch LCD equipped as standard can be set. (p. 22)



✻ If the magnification is not matched with the capturing distance, the display may be darker.

Contents on the liquid crystal display



Magnification	Display scale (14 inches)
∞*	-
x 20	2.5 millimetre
x 50	1 millimetre
x 100	500 micrometer
x 200	250 micrometer
x 300	167 micrometer
x 400	125 micrometer
x 500	100 micrometer

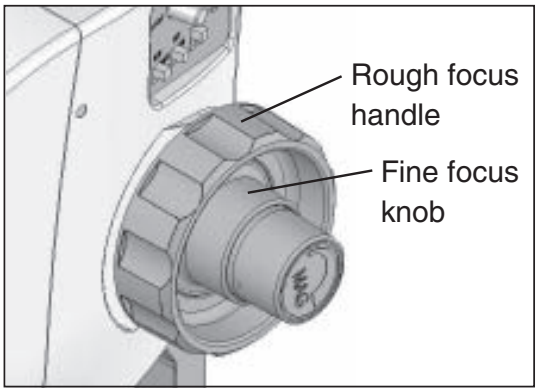
* "∞" stands for the capture distance at infinity.

Magnification or display scale, which is displayed on the liquid crystal display, is a simple scale. Measure an object directly using a precise scale etc. if measuring the size of an object precisely. Shift from lower magnification (∞ side) when adjusting the magnification.

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3 Rotating the rough focus handle and the fine focus knob to adjust the focus

※See p.13 "Adjusting the Light" for more details of how to switch the light and adjust the brightness.

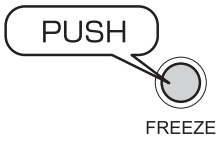


■ Registering an Image

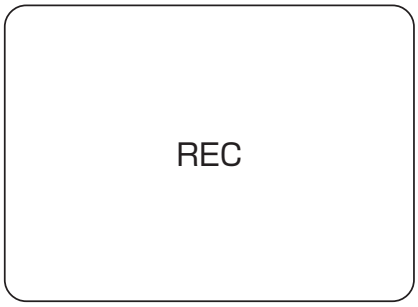
1 Check the SD card has been inserted.

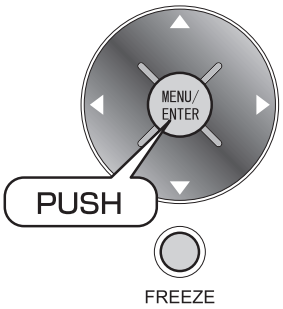
2 Press FREEZE button.

- The image, which is displayed on the liquid crystal display, can be frozen to enter into the freeze mode.
- If the frozen image is different from what you want, press FREEZE button again to return to the live mode.



3 Press MENU/ENTER button to register the image.





- The text "REC" is displayed on the liquid crystal display to save the image in the SD card, and then the freeze mode turn into the live mode again.
- When cancelling the registration, press FREEZE button without pressing MENU/ENTER button.

⚠CAUTION

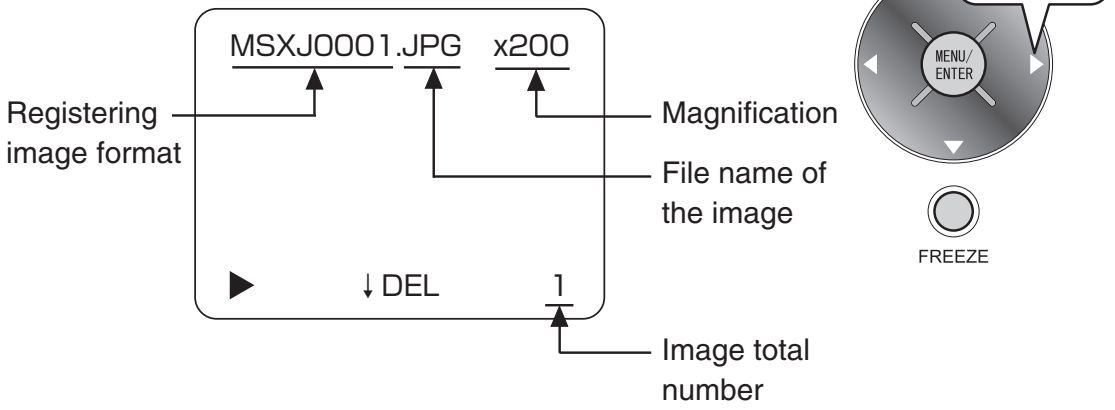
- The time to register ("REC" is displayed) or reproduce may take longer, however do not take the SD card off during the time. This causes the malfunction of the main body or SD card.
- When registering in bitmap format, according to the image size, the time may take for a minute or two at most.
- When the SD card is not inserted, the text " SD card is not inserted" is displayed and an image cannot be registered. Be sure to insert the SD card (See page 8.)
- The file containing magnification information (.mag file), which has the same name as an image file, is created in an SD card. Be sure to transfer or copy the file with the image file when using the attached measurement file.

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■ Reproducing the Registered Image

You can display the registered images on the liquid crystal display. The image is reproduced in the live mode.

1 Press ▷ button in the live mode.

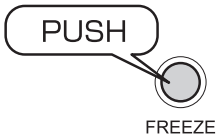


- The registered image is displayed on the liquid crystal display.
- When registering the multiple images, the newest image is displayed at first, and then press ▷ button to display older images. Meanwhile, the newer images can be displayed with pressing ◁ button.

⁎ When reproducing a bitmap image, according to the image size, the time may take for a minute or two at most.

2 Press FREEZE button.

- Returning to the live mode.

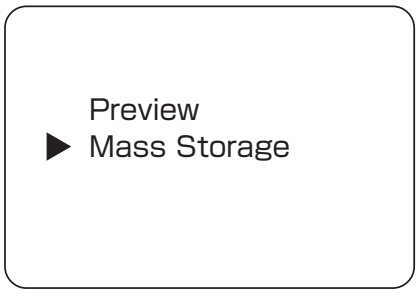


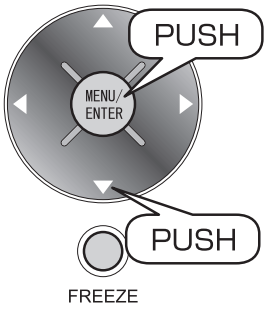
■ Reproducing the Registered Image using a Computer

The registered images can be displayed on a computer display if connecting MSX-500Di to a computer using USB cable.

1 Connect the MSX-500Di to a computer.

2 Press ▽ button to select "Mass Storage", and then MENU/ENTER button.





- The registered image is displayed on the computer display.

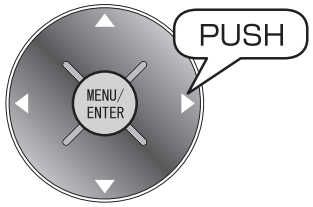
⁎ Refer to the instruction manual for software (separated) for the detail of the connection with the MSX-500Di and computer.

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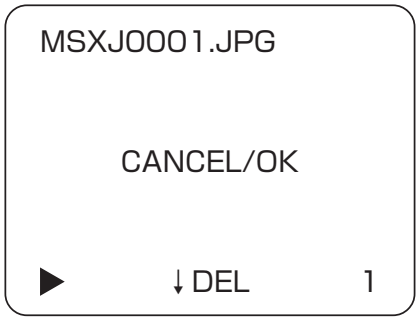
■ Deleting the Registered Image

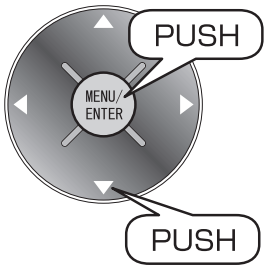
1 **Press ▷ button in the live mode to display an image.**

- The registered image is displayed on the liquid crystal display.
- When registering the multiple images, the newest image is displayed at first, and then press ▷ button to display older images. Meanwhile, the newer images can be displayed with pressing ◁ button.

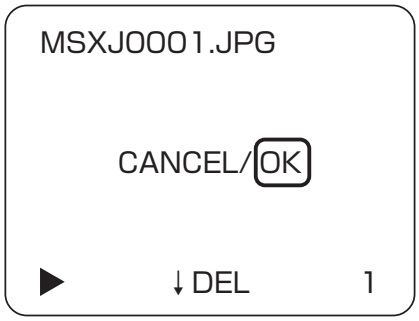


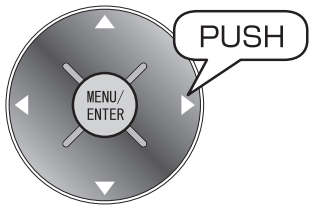
2 **Press ▽ button, and then MENU/ENTER button.**





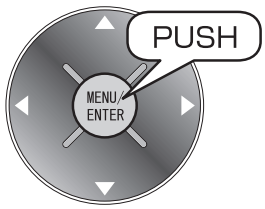
3 **Press ▷ button and select "OK".**





4 **Press MENU/ENTER button.**

- The image is deleted and, returning to the live mode.
- When registering the multiple images, the image, which has been registered before the deleted one, is displayed. FREEZE button enables to return to the live mode.
- After deleting the only image, the message "No file exists" displayed, and then returning to the live mode a few seconds later.

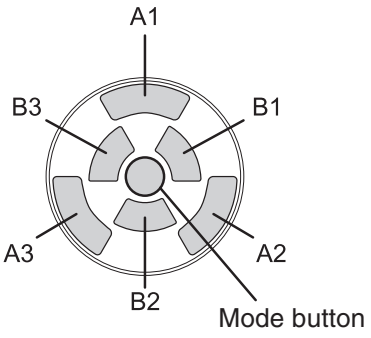


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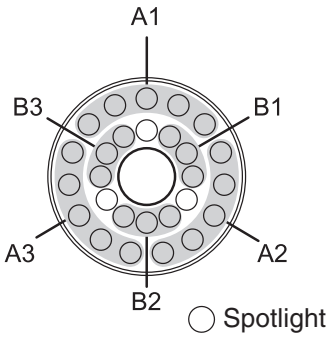
Adjusting the Light

In MSX-500Di, the mode button enables to switch the light according to an object properly. And MSX-500Di achieves much finer light switching by turning off the LED light allocated in each block.

Each button supports LED light as follows.



Light switching button

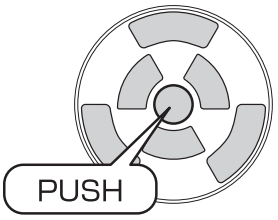


Allocation of the LED light

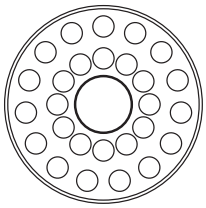
✻ The buttons cannot support the spotlights. Mode button can support the spotlights.

■ Switching the Light with Mode Button

Press the mode button.

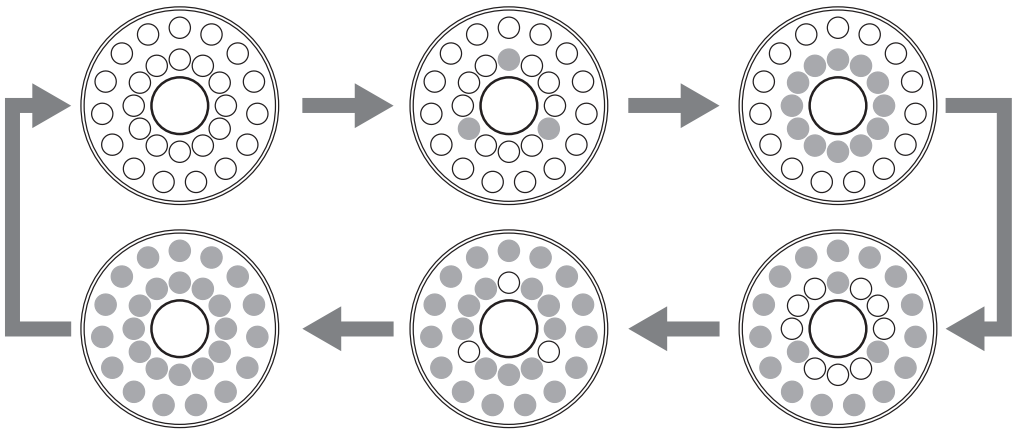


Light switching button



Allocation of the LED light

● Every time pressing the mode button, the LED light lights as follows.



○ Lighting ● Turning off

✻ When turning the power ON, all the LED lights are lighting.

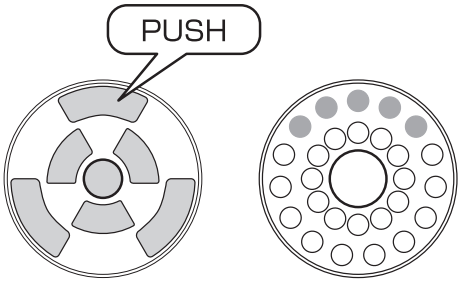
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■ Switching the Light for each Block

The LED lights allocated in each block can be turned off arbitrarily according to an object. Each button lights up the corresponding block of the LED.

Press the button supporting the light to be turned off.

- The LED light supported by the pressed button can be turned off.



Light switching button

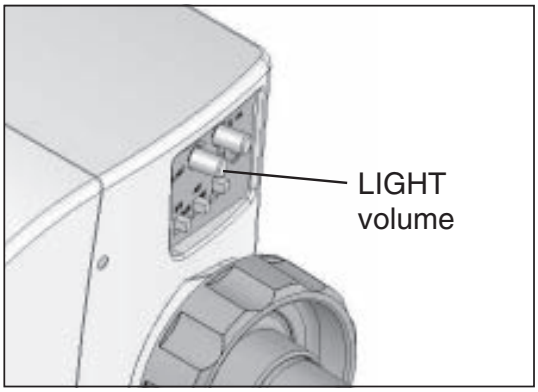
Allocation of the LED light

■ Adjusting the Brightness

Rotate the LIGHT volume

- The brightness of the light can be adjusted.

⁎ The light can be turned off when narrowing down the volume.



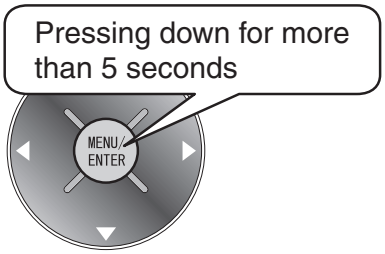
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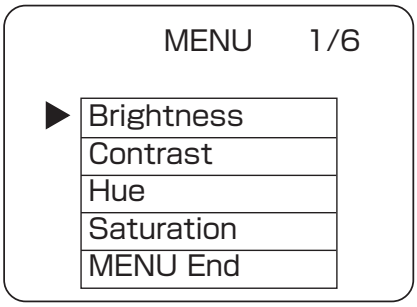
Setting the MENU

In MSX-500Di, various settings can be specified in MENU mode. The following is the procedure to set the degree of sharpness as an example.

1 Press down the MENU/ENTER button for 5 seconds or longer.

● MENU mode (1/6 screen) is displayed.

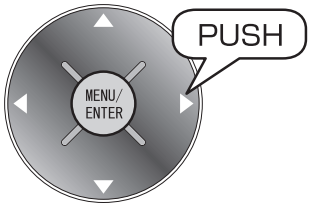


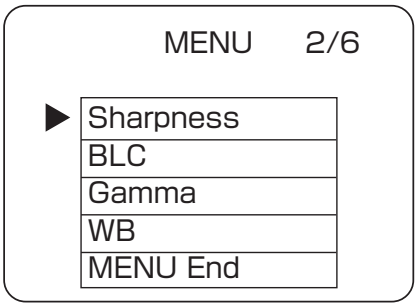


✻ If stopping pressing down the MENU/ENTER button before displaying MENU screen, an image is registered, so press down the MENU/ENTER button until displaying MENU screen.

2 Press ▷ button.

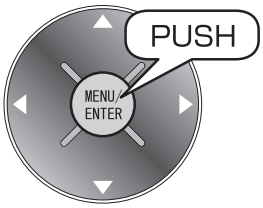
● MENU mode (2/6 screen) is displayed.

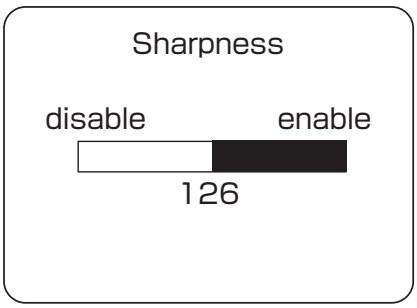




3 Press MENU/ENTER button.

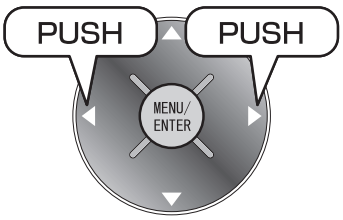
● Sharpness setting screen can be displayed.

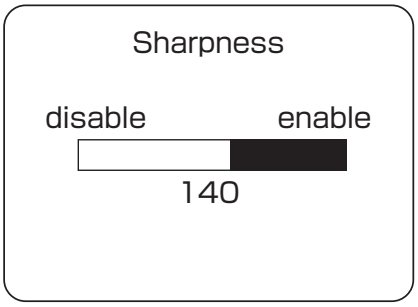




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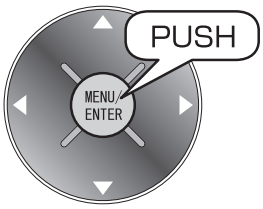
4 Press ◁ or ▷ button to adjust the sharpness.



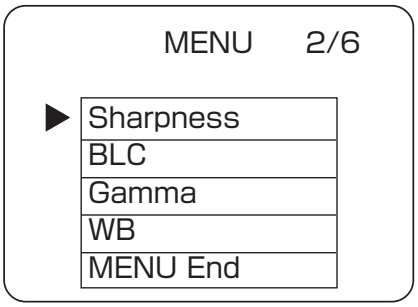


- Outlines become unclear when pressing ◁ button, while outlines can be clear when pressing ▷ button.

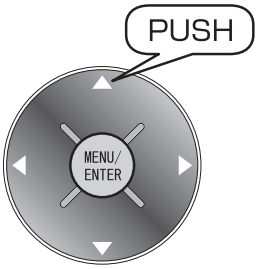
5 Press MENU/ENTER button.



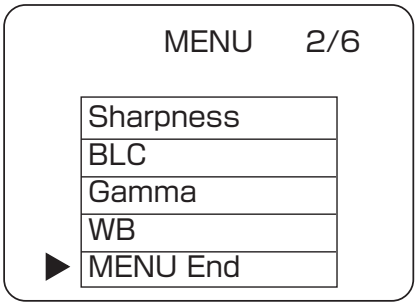
- Sharpness can be specified and the screen returns to the MENU mode (2/6 screen).



6 Press △ button.

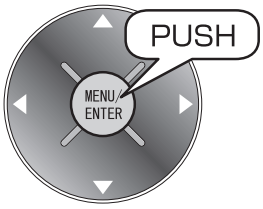


- ▶ moves to "MENU End".



- ▶ can be moved to "MENU End" by pressing ▷ button four times.

7 Press MENU/ENTER button.



- Returning to the live mode.

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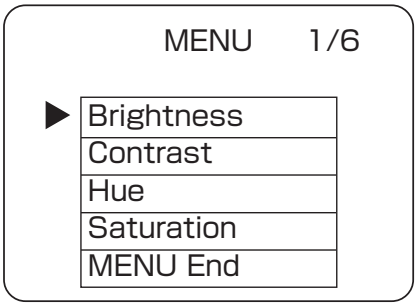
■ Formatting the SD Card

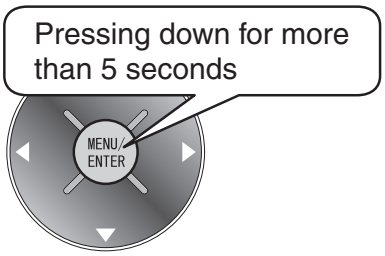
This section describes the procedure to format an SD card with the MENU function of MSX-500Di.

1 Insert an SD card into the SD card slot.

2 Press down the MENU/ENTER button for 5 seconds or longer.

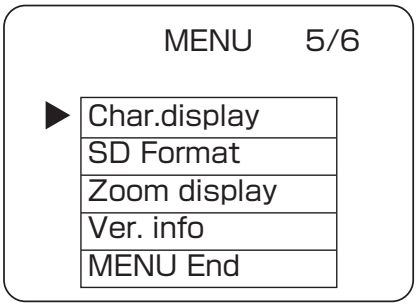
● MENU mode (1/6 screen) is displayed.



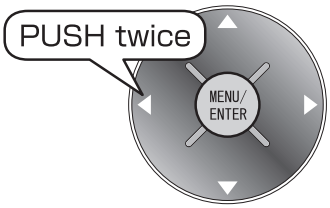


3 Press ◁ button twice.

● MENU mode (5/6 screen) is displayed.

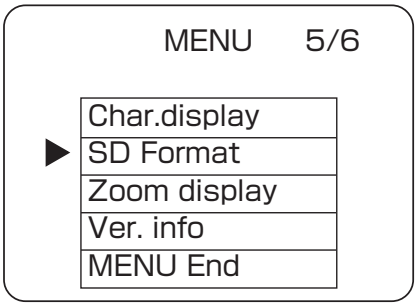


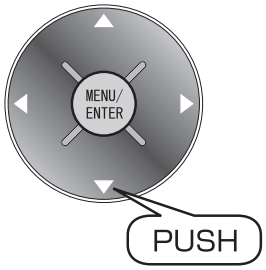
● 5/6 screen can be displayed by pressing ▷ button four times.



4 Press ▽ button.

● ▶ moves to "SD Format".

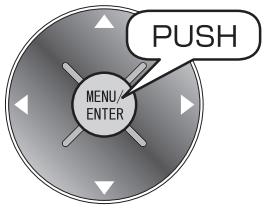


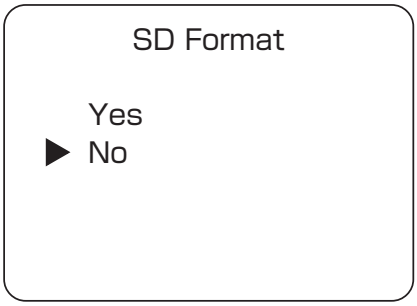


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5 Press MENU/ENTER button.

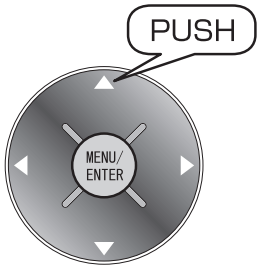
● SD Format setting screen will be displayed.

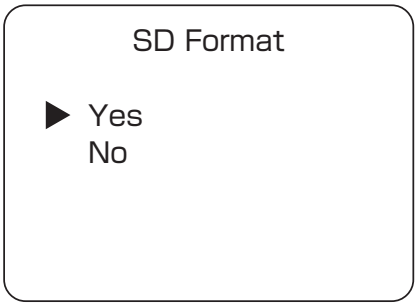




6 Press △ button.

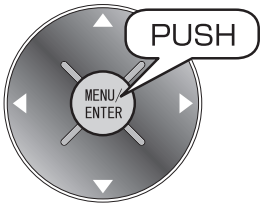
● ▶ moves to "Yes".

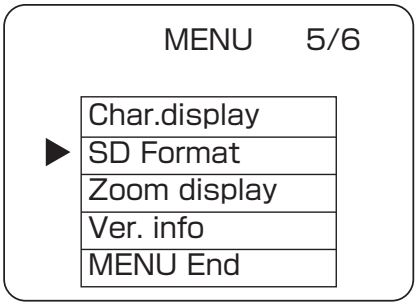




7 Press MENU/ENTER button.

● The SD card has been formatted and the screen returns to the MENU mode (as shown in step 4 of page 17).





8 Select "MENU End" with △ / ▽ button to end the MENU mode.

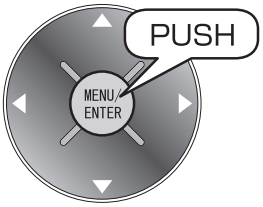
⚠CAUTION

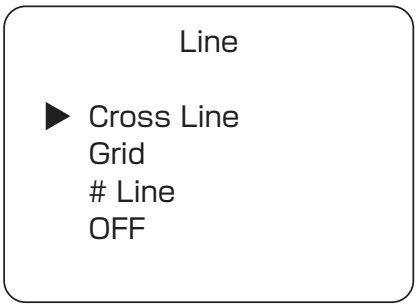
● Available format type of the SD card is FAT16. If formatting an SD card using MENU mode, the format type is FAT16. Check the format type of the SD card formatted by a computer. Wrong format type is not acceptable.

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■ Using the line generation function

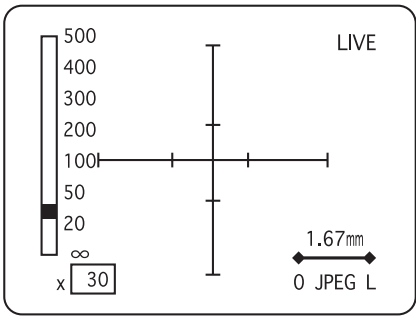
1 Select the line to use.





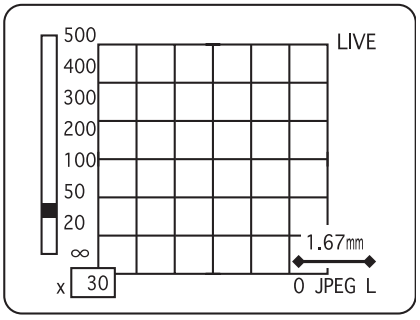
2 Description of available lines

2-1 Cross Line



- Displays a cross line starting from the center of the screen.
- This scale uses the same scale unit as the display scale shown at the lower right when magnification is displayed.

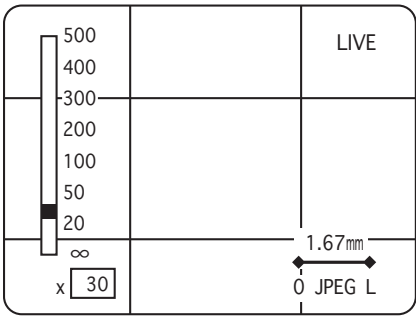
2-2 Grid



- Displays grids on the screen.
- These grids use the 1/2 scale unit compared to the display scale shown at the lower right when magnification is displayed.

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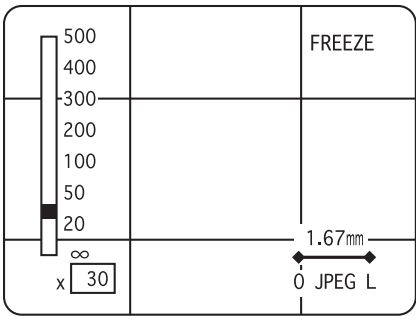
2-3 # Line

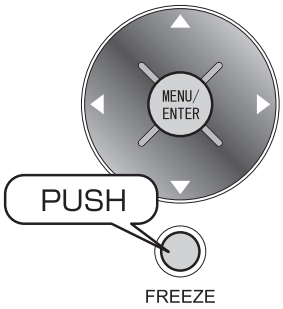


- Displays # Line on the screen.
- Each of the 4 lines which consist of # Line can be moved in parallel.

2-4 How to move # Line

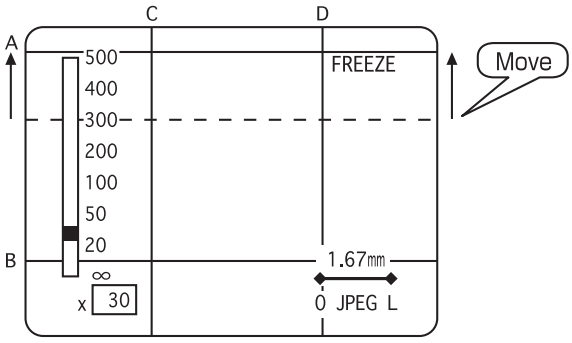
① Press FREEZE button.

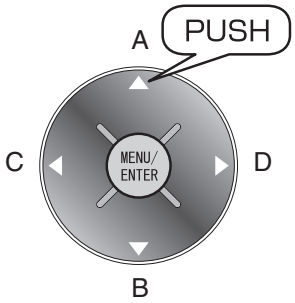




- Lines can be moved by making the screen motionless.

② Line A, B, C and D can be moved by pressing an arrow assigned to each on the cross key button.



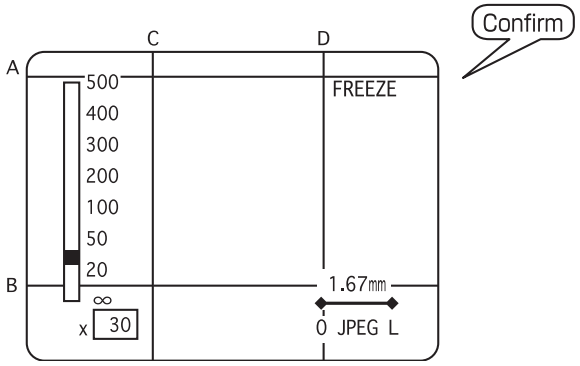


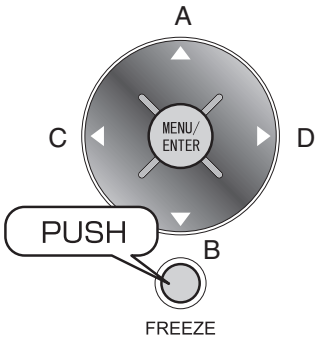
∗ Image when Line A is moved.

- After pressing FREEZE button, lines can be moved by pressing up, down, left or right arrows on the cross key button.

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③ After deciding positions of lines, press FREEZE button again to register, and the screen returns to the live mode.





- Lines registered by using the steps from ① - ③ will be displayed at the same positions even after turning the power off.
- If the power is turned off in the middle of registration, lines which were previously registered will be displayed.

④ Assignment of buttons to each line and basic information

- Assignment of buttons

Line	Buttons	Operation
A	Up	Moves the line upward in parallel on the screen by pressing this button.
B	Down	Moves the line downward in parallel on the screen by pressing this button.
C	Left	Moves the line leftward in parallel on the screen by pressing this button.
D	Right	Moves the line rightward in parallel on the screen by pressing this button.

✻ Lines can only be moved in one specified direction; if they are moved out of the screen, they will be scrolled from the opposite direction.

- Basic information

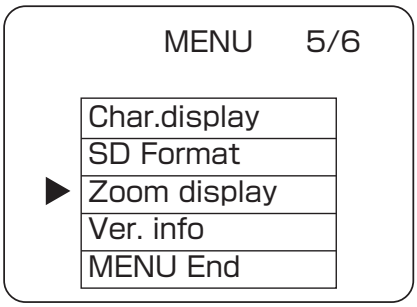
  Line width (fixed): 1 dot on the 3.5-inch LCD (2 dots on 14-inch monitor)
  Line color: White
  Others: When lines and other character information (such as zoom display bar) are overlapped, display of character information is prioritized.

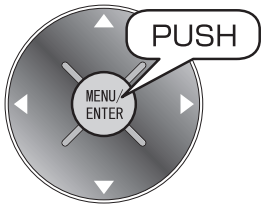
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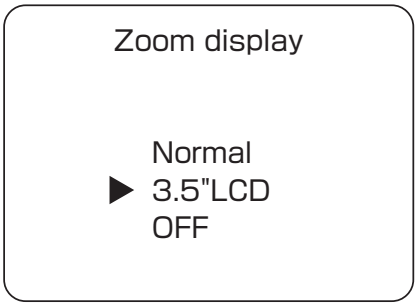
■ Changing display magnification

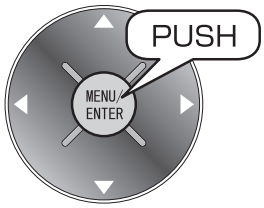
By changing the following setting, zoom display of the main body can be changed.

How to change setting



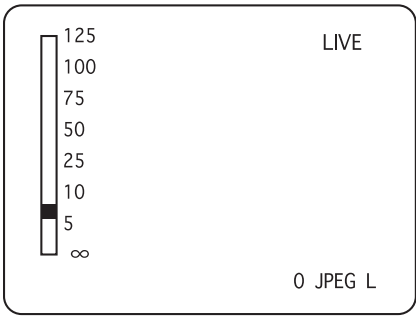






- Normal ..... Display with magnification equivalent for 14-inch monitors
- 3.5"LCD ... Display suitable for the 3.5-inch monitor equipped on the main body as standard

Image of display on the 3.5-inch LCD



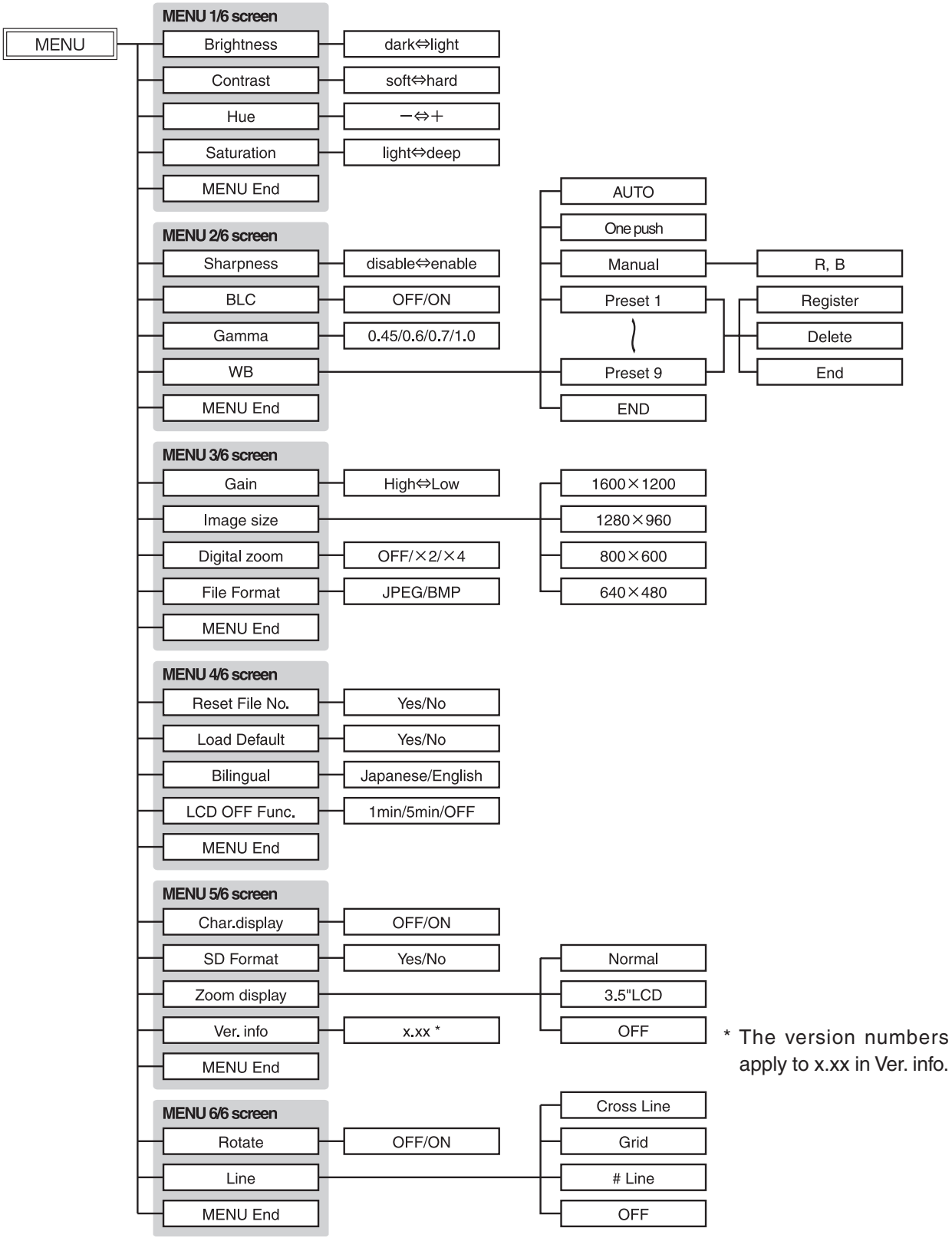
Restrictions on display on the 3.5-inch LCD

- Display magnification bar is displayed only on the monitor.
- Magnification cannot be displayed in numeral values and scale cannot be displayed.
- Images cannot be attached when the magnification bar is saved.
- Output to USB is not supported.

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■ List of MENU Screen

Press △ / ▽, ◁ / ▷, or MENU/ENTER button to select the menu as the above description.
Refer to the following list as for the available contents in the MENU mode.



* The version numbers apply to x.xx in Ver. info.

⁎ Refer to the instruction manual for software (separated) for the detail of how to control the MSX-500Di from a computer.

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■ Description of each MENU

MENU 1/6 screen

Brightness Adjusts the brightness of an image.

Contrast Adjusts the gap between white and black, and the exposure.

Hue Adjusts the density of red and blue totally.

Saturation Adjusts the color level to be clear.

MENU 2/6 screen

Sharpness Adjusts the relative strength of outline.

BLC Backlight Correction. Adjusts the exposure properly and automatically when loading the image with backlight.

Gamma Adjusts the brightness and saturation to reproduce the image faithfully.

WB White Balance. Adjusts the density of white to reproduce the natural hue.

⁎ This can be adjusted only when W/B switch in the Camera Controlling operation portion (See page 6) is LOCK.

MENU 3/6 screen

Gain Amplifies the video signal electrically. Sets the images bright, however amplifies the noise.

⁎ This can be adjusted only when AGC switch in the Camera Controlling operation portion (See page 6) is OFF.

Image size Selects the image size. (1600 x 1200, 1280 x 960, 800 x 600, 640 x 480)

Digital zoom Enlarges the loaded image by the digital processing.

⁎ The image quality may be decreased as the image is enlarged. Magnification is not displayed in the operation mode.

File Format Selects the file format for saving image in JPEG/BMP.

MENU 4/6 screen

Reset File No. Resets the file number of the images to be loaded in an SD card.

⁎ Note that the number is overwritten.

Load Default Specifies the settings by default.

Bilingual Selects the language for displaying MENU in Japanese/English.

LCD OFF Func. Turns off the backlight of the liquid crystal display if any button operation is not performed for a period of time (1 min/5 min).

MENU 5/6 screen

Char. display ON/OFF Selects ON/OFF for the character displaying on the LIVE image.

SD Format Formats an SD card by default.

Zoom display In the display of the operation mode, zoom display (Normal, 3.5"LCD, OFF) can be selected. (Zoom display is not displayed when performing the digital zoom)

Ver. info Displays the version of the MSX-500Di.

MENU 6/6 screen

Rotate Rotates the image 180-degree. (OFF: 0-degree, ON: 180-degree)

Line Displays the lines specified for the image display. (Cross Line, Grid, # Line, OFF)

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Maintenance

NOTE

- NEVER clean the MSX-500Di with benzine, thinner, or alcohol; otherwise this may cause the discoloration or deformation. If it is heavily smeared, wipe it off with a wrung-out cloth moistened with a diluted neutral detergent, then dry it with a soft cloth. NEVER wash the MSX-500Di with water.
- Stained lens may cause unclear image. In this case, wipe it off with the cotton bud moistened with an alcohol or lens cleaner.

Troubleshooting

Double-check the following items before asking for repair. In many cases, the product may go back to normal by making unexpected remedies.

Symptom	Cause and Remedy
Nothing appears on the liquid crystal display even with the power ON.	● Is the AC adapter plugged firmly? ➔ Plug the AC adapter firmly. ● Is the AC adapter connected to the main body firmly? ➔ Connect the AC adapter to the main body firmly. (See page 8.)
The light cannot be on even with the power ON.	● Are all the lights turned off with the mode button? ➔ Press the mode button. (See page 13.) ● Is the LIGHT volume narrowed down at full. ➔ The lights are turned off when narrowing down the LIGHT volume at full. Adjust the LIGHT volume for proper brightness. (See page 14.) ● Is the LED burnt out? ➔ If the LED is burnt out, it needs to be replaced. Contact the dealer where purchased or our companied for replacement.
Images cannot be registered.	● Is the SD card inserted? ➔ Insert the SD card. (See page 8.) ● Is the SD card formatted? ➔ Format the SD card. (See page 17.)
The images on the liquid crystal display do not move.	● Has the image been into the freeze mode? ➔ Press the FREEZE button.
Out of focus	● Is the focus being adjusted with the rough focus handle? ➔ Use the fine focus knob to adjust the focus.

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Specifications

※ For improving the product, the specification and external view are subject to change without notice.

■ MSX-500Di

Product name: SCOPEMAN MSX-500Di
Model: MSX-500Di
Camera: 1/1.8 inch, interline CCD image sensor, Total 2110 thousand pixels
Effective pixels: 2010 thousand pixels
Scanning system: Interlace
Magnification: x 10 to x 500 (Standard)
※ Magnification equivalent for 14 inch monitor (The capture distance at infinity is available if removing the base)
Working distance:
54 mm (Magnification: x 10) to 9.7 mm (Magnification: x 500)
Light source: High-brightness white LED: 27 sets Featuring light switching/light control function
Liquid crystal monitor:
3.5 inch, TFT color liquid crystal display
Interface: USB Ver. 1.1, Mass storage/USB Video Class compliance
Computer operation environment:
OS: Windows XP SP3, Windows Vista SP2 or Windows 7,
CPU: Pentium 4.1 GB and above (recommended), Memory: 512 MB and above (recommended)
Recording media: SD Card
Record format: BMP/JPEG (still image)
Software: All the following items are measured manually, distance between 2 points, angle, and area.
Operating temperature:
5 °C to 35 °C, 30% to 80% RH (Not occurring condensation)
Power source: AC 100 to 240 V ±10% (AC adapter), DC 12 V, 3 A
Power consumption:
12 VDC, 0.7 A, 8.4 VA
Weight: 2.0 kg
Location: Indoor only (Do not expose this product to direct sunlight.)
At a height of 1000 m or less, and the environment removing corrosive gas, flammable gas, oil mist, or dust
Pollution degree2
Over voltage category: II

■ File Size for One Image

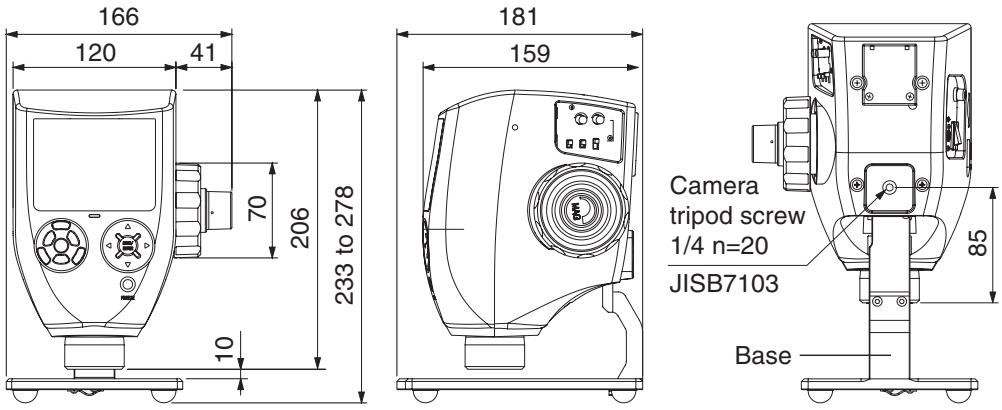
Symbol	Pixels	Registering image format	
		JPEG	BMP
S	640 x 480 (VGA)	Approx. 130 KB	Approx. 900 KB
M1	800 x 600	Approx. 190 KB	Approx. 1400 KB
M2	1280 x 960 (one million pixels)	Approx. 440 KB	Approx. 3600 KB
L	1600 x 1200 (two million pixels)	Approx. 730 KB	Approx. 5600 KB

※ Image size may vary depending on a recording object.

■ External View

MSX-500Di

[Unit: mm]



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Warranty and Servicing

1. **A warranty is included with this product.**
   Be sure to check the “Dealer stamp, purchase date, and warranty period” at the dealer time of purchase and store in a safe place.

2. **The warranty period of this product is 1 year from the purchase date.**
   If any malfunction should occur during proper and normal use during the warranty period, then we will according to the terms of the warranty carry out servicing free of charge at the dealer where purchased or at our company.

3. **Servicing after the warranty period has expired will incur charges.**
   When functions of this equipment are judged to be restorable through repairs, servicing can be done at a cost if desired.

4. **Please contact us if anything is unclear.**
   Please contact the dealer where purchased or our company if there are any unclear points about details on repair items or servicing.

- **When requesting servicing, please report the following:**
  - Model name **MSX-500Di**
  - Production number (described in the seal on the back of the main body), Purchase date
  - Malfunction description (as detailed as possible)
  - Name (company or individual) Address, Phone number

Moritex Corporation

MVS & Indutrial Sales Division
Sunny Building Ikebukuro
4-39-11 Higashi Ikebukuro, Toshima-ku, Tokyo, 170-0013 Japan
Phone +81-3-6367-3631 Fax +81-3-3590-6627
Email image@moritex.co.jp www.moritex.co.jp

Moritex U.S.A., Inc.
6862 Santa Teresa Blvd., San Jose, CA 95119, U.S.A
Phone +1-408-363-2100 Fax +1-408-363-9980
Email sales@moritexusa.com www.moritexusa.com

Moritex Singapore Pte Ltd.
18 Boon Lay Way, #09-166, TradeHub 21, Singapore 609966
Phone +65-6515-9368 Fax +65-6515-9360
Email sales@moritex.com.sg www.moritex.com.sg

Moritex Asia CO.,Ltd.
Units 1201A and 1211 - 1212 of Tower 1 of Ever Gain Plaza,
88 Container Port Road
Kwai Chung, New Territories, Hong Kong
Phone +852-2439-0968 Fax +852-2439-0377
Email sales@moritex.asia www.moritex.asia

MORITEX SCHOTT (A Division of SCHOTT UK Ltd.)
Unit 7, Stow Court, Stow Road
Stow-cum-Quy, Cambridge, CB25 9AS, UK
Phone +44 (0)1223 813322 Fax +44 (0)1223 813352
Email info.uk@schott.com www.moritex.com

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Warranty of MSX-500Di

Model		
Ser. No		
Customer	TEL Address Name	
Symptom(s)		
Dealer's name		
Term of Warranty	Date of purchase From Date Month Year	Till the end of the 1st year after purchase

This paper warrants that we will provide you with our after-sale service or a replacement of the broken equipment within the range of the conditions mentioned above. When the equipment at your hand proves to be defective or damaged prior to the expiration date of this paper, present this paper with the equipment to the dealer from whom you purchased it. Any omission of the contents from the paper makes the warranty invalid. Please keep this warranty because it will not be reissued if lost.

Moritex Corporation
MVS & Industrial Sales Division
Sunny Building Ikebukuro 4-39-11 Higashi Ikebukuro,
Toshima-ku, Tokyo, 170-0013, Japan
Phone: +81-3-6367-3637 Fax: +81-3-3590-6630
Web site: http://www.moritex.co.jp/
E-mail: image@moritex.co.jp

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