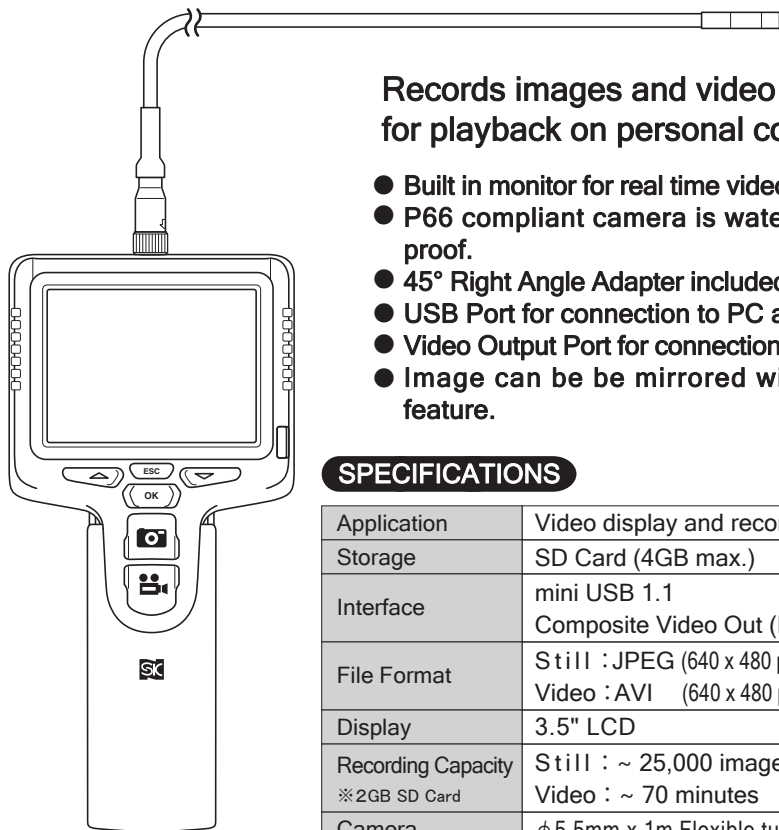


BORESCOPE WITH MONITOR MIS-5510G

Thank you for purchasing the Niigata Seiki Borescope With Monitor.

Please read this instruction manual thoroughly before use to insure proper operation and long service.



Records images and video onto SD card for playback on personal computer.

- Built in monitor for real time video display.
- P66 compliant camera is waterproof and dust proof.
- 45° Right Angle Adapter included for side viewing.
- USB Port for connection to PC and data transfer.
- Video Output Port for connection to video monitor.
- Image can be mirrored with Mirror Mode feature.

SPECIFICATIONS

Application	Video display and recording
Storage	SD Card (4GB max.)
Interface	mini USB 1.1 Composite Video Out (NTSC / PAL)
File Format	Still : JPEG (640 x 480 pixels) Video : AVI (640 x 480 pixels)
Display	3.5" LCD
Recording Capacity ※2GB SD Card	Still : ~ 25,000 images Video : ~ 70 minutes
Camera	φ5.5mm x 1m Flexible tube ※ φ6mm Tip
Camera / Cable	Water / Dust Proof: IP66 Compliant
Angle of View	~ 67°
Depth of Focus	~ 20 to 50mm
Camera Lighting	4x White LED (dimnable)
Power	5V DC
Battery	Lithium-ion ※~3 hr. typical operating time
Opr. Temp. Range	-10 to 60° C
Dim. (Main Unit)	~ 210 x 100 x 45 mm
Mass (Std. config.)	~ 410g (Main Unit + Camera + Battery)

■ PREPARATION

【Before Use】

- This is a precision instrument; handle with care. Do not shock or apply excessive force to the instrument during use or during transport.
- Connect the AC adapter and fully charge before using for the first time. If battery is low the instrument may turn on but will not operate correctly.
- Before use inspect the Camera and Cable for any damage.
- Make sure Camera is properly attached and Fixing Ring is secure before use. Do not operate Camera with Fixing Ring loose.

【During Use】

- Do not use in direct sunlight.
- Do not bend Camera Cable at tight angles.
- Please note, the Camera tip gets hot during use.
- Always turn power OFF before removing the SD card. Removing card when data is being stored may corrupt the data on the card.
- Do not use in hazardous environments, such as in oil or gas tank.
- Do not use where high electrical noise is present, it may distort the image or damage the recorded data.
- Use product only for intended purpose.
- Not for use in aircraft or medical applications.

【After Use】

- Do not disassemble or modify, it may cause damage or malfunction.
- Do not use solvents or harsh detergents to clean exterior of instrument.
- Use care not to get dirt or fingerprints on Camera Lens surface.
The Camera Lens can be cleaned by gently wiping with a cotton swab moistened with alcohol.
- Monitor can be cleaned by gently wiping with damp cloth.
- Use care not to press on Monitor face, it may cause distorted image or malfunction.
- Although Monitor is of high quality, there may be some pixels which are black or which stay lit. This is not camera malfunction and those pixels will be recorded properly in the images.
- Use only with genuine maintenance or accessory parts. Use of third party parts may cause malfunction.
- When not in use, store in provided case in low humidity environment in order to prevent mold growth.
When winding the Camera Cable for storage, do not bend in loop of less than 15cm in order to prevent damage. Likewise, do not bend optional 2m camera to less than 16cm, or optional 3m camera to less than 17cm loops.

■ TROUBLESHOOTING

Q. There is no image on Display with power switched ON.

A. The Battery may be low. Please connect the AC Adapter or charge the Battery before continuing to use.

Q. After turning on power, nothing is displayed after the opening screen.

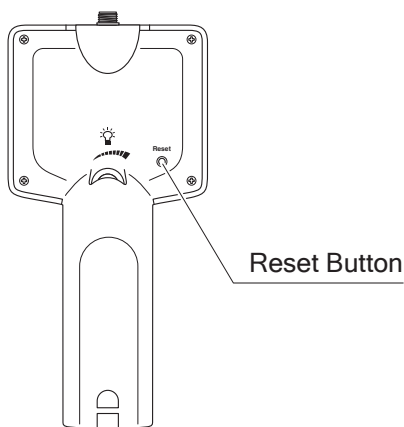
A. Please check connection to the Camera and other cables.

Q. Unable to record still images or video

A. SD card must be inserted in order to capture still images and video. Also, system can not record if improper SD Card is used.

Q. System freezes during operation.

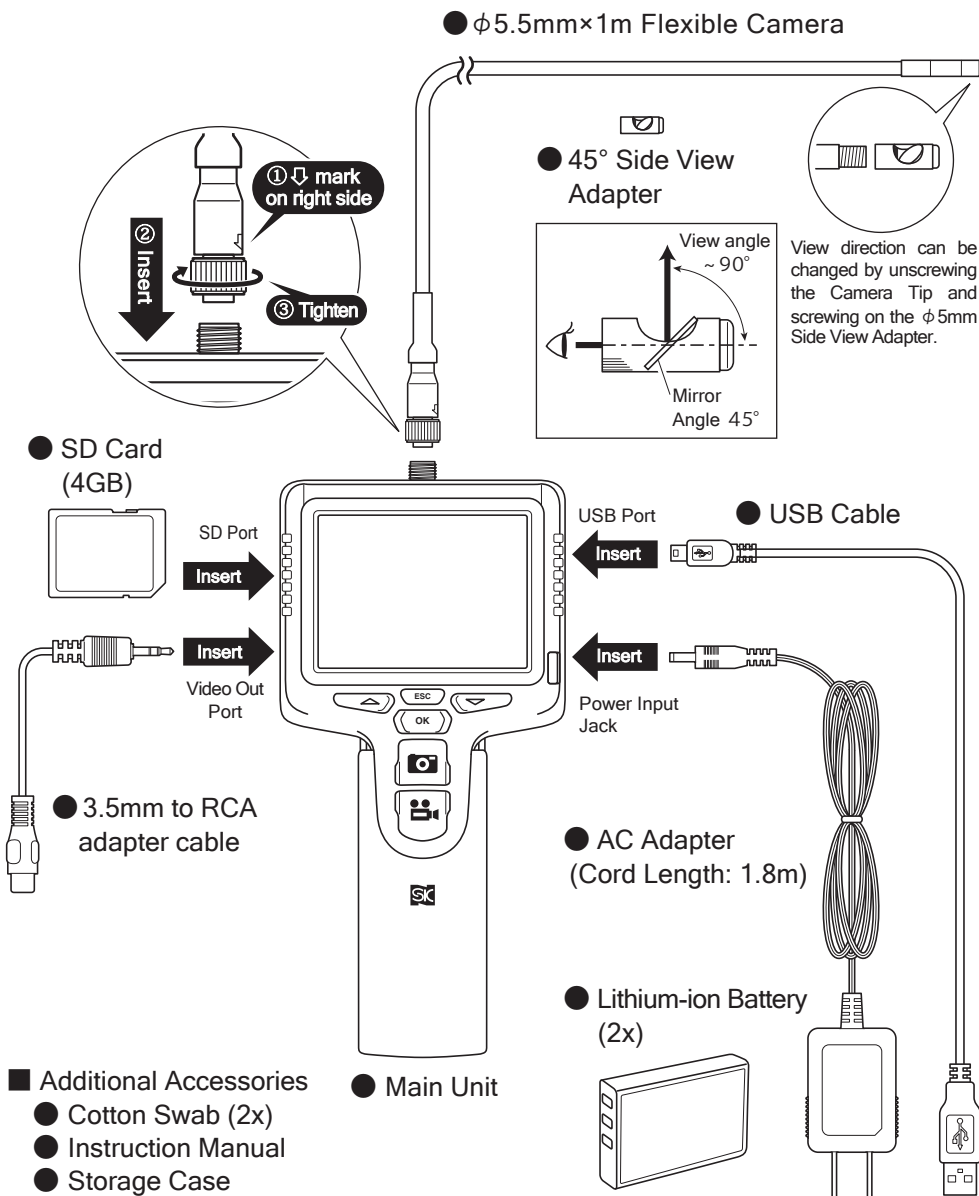
A. Press the Reset Button at the rear of the instrument using a thin tool. Upon reset, the system will automatically restart.



(Rear)

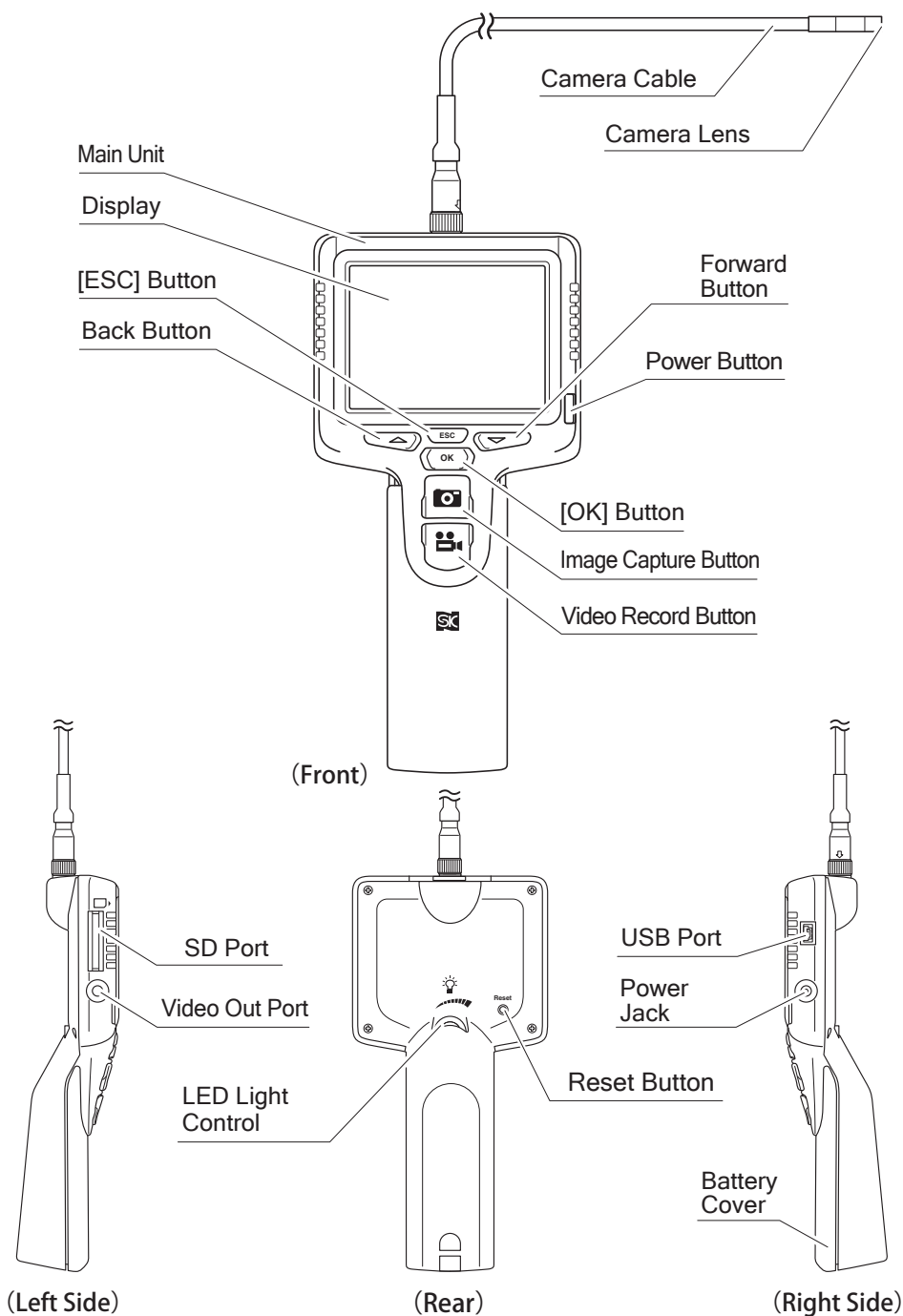
■ PACKAGE CONTENTS·ASSEMBLY

Upon receipt, check to make sure the package contains the following items and assemble as required for use.



※ Do not use if any accessories are missing; contact distributor or place of purchase.
Make sure all parts are present before assembling or connecting any cables.

■ PARTS IDENTIFICATION



Using the AC Adapter

- ① Connect the AC adapter Plug to the Power Jack on the right side of the Main Unit. (Do not force. Plug will not go all the way into the Jack.)
- ② Plug in the Adapter, the Power Button light will be RED with BLUE blinking.

Using Lithium-ion Battery

【Inserting the Lithium-ion Battery】

- ① Press on the Battery Cover Button and open the Cover as shown.
- ② Align the battery terminals and insert the Battery with the label side facing out.
- ③ Close the Battery Cover.

【Charging the Lithium-ion Battery】

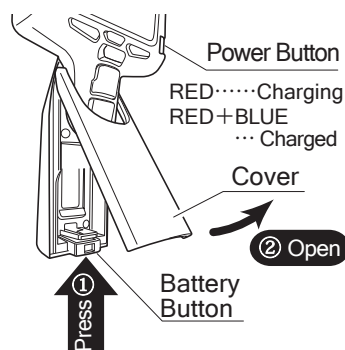
※ If AC Adapter is connected with Battery inserted, the Power Button will light up RED and the Battery will begin charging. When fully charged the RED + BLUE lights will go on.

※ Charging will take longer if charged with power ON. (→P7)

CAUTION Use only the included Lithium-ion battery.

Charging with the USB cable,

Operation 【Connect to PC】 P9



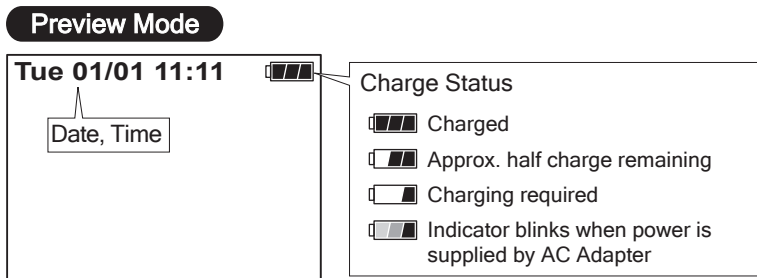
BUTTON FUNCTION for each mode ※ See page 5 for Parts Identification

Button function depends upon which of the three modes the instrument is in.

Button	Preview Mode	Playback Mode	Menu Mode
	Record image or video of current live display	Play back images / video saved to memory card	Settings
Back / Forward Buttons 	Display recorded image or video	Select saved data	Select Menu Item
[OK] Button 	Display menu screen	Delete saved data	Confirm selected Menu Item
[ESC] Button 	Playback mode display ※ If SD Card inserted	Switch between Prev. and Playback Modes	Return to Preview Mode
Img. Capture Button 	Record a still image	Switch between Prev. and Playback Modes	Display software version
Vid. Record Button 	Start / Stop video recording	Play / Pause when recording video	Return to Preview Mode

■ Power ON

- ① Please refer to ■ Assembly section (page 4) and attach the flexible Camera and other necessary cables to the Main Unit.
 - ② Please refer to the ■ Power section (page 6) and connect power to the system.
 - ③ Press and hold the Power button to turn ON.
If connected to AC Adapter, the RED + BLUE lights will go on. If powered by the Lithium-ion Battery, the YELLOW light will go on.
Upon initial startup, **SEIKO** and opening Logo is displayed and the system will go to Preview Mode (The live view camera image will appear on the display.)
 - ④ Remove the Cap from the Camera Lens, and put the Camera in the desired location.
- ※ The image brightness can be controlled using the Light Control to adjust the LED brightness.



■ Power OFF

When power is ON, pressing the **Power Button** will turn the system OFF.

BEFORE USE

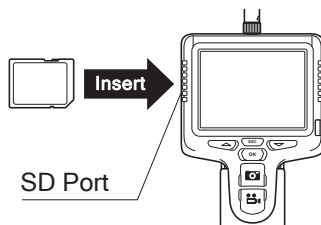
● Setting the Menu display language

Default setting is "English", Please set the desired display language for use.

- ① Turn power ON.
- ② Press the **[OK] Button**.
- ③ "MENU" will appear on the Display.
Use the **Back** and **Forward Buttons** to select "Language", and press **[OK]** to confirm.
- ④ Select the desired language and confirm using the **[OK] Button**.
The display language is now changed.

■ Using the SD Card

An SD Card is required to record still images or video. Insert the provided SD card, or a commercially available SD card, into the Port on the left side of the Main Unit until you hear a click.



※ Pushing it in a second time until it clicks will eject the SD card for removal.

※ Saved images will have a sequential numbered file name.

Still Image File Name → 「IMG□□□□.JPG」

Video File Name → 「MOV□□□□.AVI」

※ SD Card file structure:




■ Still Image Recording

In Preview Mode, press the **Image Capture Button**  to capture an image and save to the SD card.

※ If Display is in Menu Mode, press **[ESC] Button** to switch to Preview Mode.

■ Video Recording

① In Preview Mode, press the **Video Record Button**  to begin recording.



② Press the **Video Record Button**  a second time to end and save file to the SD card.

※ If Display is in Menu Mode, press **[ESC] Button** to switch to Preview Mode.

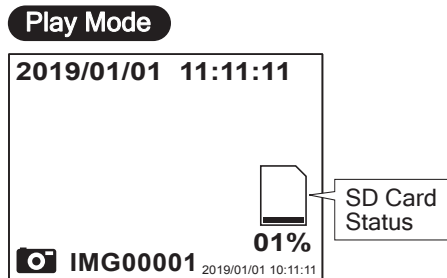
■ Playback of Captured Still Images

① In Preview Mode, press the **[ESC] Button** to switch to Playback Mode.

The previously recorded still image or video thumbnail will be displayed.





② Use the **Back Button**  and **Forward Button**  to scroll through the images on the SD card.

③ Press **[ESC] Button** to return to Preview Mode.



※ SD Card fill status will display for a few seconds when first switched to Playback Mode.

■ Playback of Recorded Video

- ① In Preview Mode, press the **[ESC] Button** to switch to Playback Mode. The previously recorded still image or video thumbnail will be displayed.
- ② Use the **Back Button**  and **Forward Button**  to scroll through the thumbnails of the video files saved on the SD card. Press the **Video Record Button**  to play the selected video.
- ③ Press the Video Record Button  or Image Capture Button  to pause.
- ④ Press **[ESC] Button** to return to Preview Mode.

■ Output Display to External Monitor (TV)

The system can be switched to use an external monitor for display.

【Connection】



- ① Make sure the TV or monitor has a video input terminal.
- ② Connect the 3.5mm jack to RCA adapter to the video output port of the unit.
(→P4 diagram)
- ③ Use a standard commercially available video cable to connect the unit to the TV or external monitor.

【Switching output to Display on the external monitor.】

- ① Press the **[OK] Button** to display the Menu Mode list on the Display.
 - ② Select “Video Output” and press the **[OK] Button** to confirm. The video will switch from the Main Unit Display to the external monitor (TV monitor.)
- ※ Each time the steps ① - ② are repeated, the output destination will switch between the Main Unit Display and the external output.

To set the video output: **■ Menu Mode 【Video Format】 P10**

■ Delete Saved Data

- ① Using the procedures on Page 8, 9 “Playback of captured still images”, “Playback of recorded video”, select the files you want to delete.
- ② Press the **[OK] Button** and the “Delete” option appears on the screen.
- ③ Use the **Back Button** , or the **Forward Button**  to select “yes” and then press the **[OK] Button** to delete the selected file.

To delete all the saved data: **■ Menu Mode 【Delete All】 P11**

■ Connect to PC

The Following features are available when connected to a PC (Windows XP, Vista, 7) using the included USB Cable. (→P4 diagram)

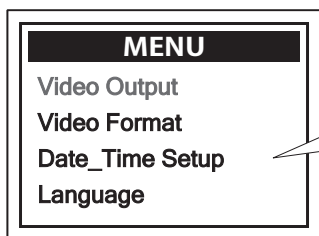
- Charging by USB Cable.
- Remote access of files on the SD Card. The data can be read directly by the PC as a removable disk.

■ MENU MODE (Menu Items) ①

※ See page 5 for Parts Identification

In Preview Mode, press the **[OK] Button** to switch to Menu Mode.

Menu Mode


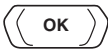





Menu Screen

The following selections are available:

- Video Output
- Video Format
- Date_Time Setup
- Language
- Delete All
- Auto Power Off
- Mirror Mode

【Menu Mode – Button Basic Functions】

Back / Forward Buttons 	[OK] Button 	[ESC] Button 	Image Capture Button 	Video Record Button 
Select Menu Item	Confirm selected menu item	Return to Preview Mode	Display Software Version	Return to Preview Mode



■ Video Output

■ How To Use 【 Output Display to External Monitor (TV) 】 P9





■ Video Format <Video Output Settings>

- ① In Preview Mode, press the **[OK] Button** to switch to Menu Mode.
- ② Select “Video Format” and confirm by pressing the **[OK] Button**.
- ③ Select the desired output format (In Japan and N. America, select NTSC) and confirm by pressing the **[OK] Button**.
- ④ The “FACTORY SETUP” screen appears, and you can set the folloing display parameters. If you do not need to change the values, confirm with the **[OK] button**.

BRIGHTNESS	SATURATION
CONTRAST	DEFAULT (Reset to factory settings)
HUE	

- ⑤ To change the settings, select the item you want to change and confirm by pressing the **[OK] Button**.
- ⑥ A numerical value change screen is displayed. Use the **Back Button**  and the **Forward Button**  to change the value, and confirm with the **OK Button**.

Date Time Setup <Setting the date and time>

- ① In Preview Mode, press the **[OK] Button** to switch to Menu Mode.
- ② Select “Date Time Setup” and confirm by pressing the **[OK] Button**.
- ③ The “Time Adjustment” screen will be displayed. Press the **Back**  and **Forward**  Buttons to move the cursor, and the **Image Capture**  and **Video Record**  Buttons to change the setting.
- ④ Press the **[OK] Button** to confirm the selection.

Language <Set the display language used for Menu Mode>

- ① In Preview Mode, press the **[OK] Button** to switch to Menu Mode.
- ② Select the “Language” setting, and press the **[OK] Button** to confirm.
- ③ Select the desired language and confirm by pressing the **[OK] Button**.

Delete All <Delete all the data on the SD card>


- ① In Preview Mode, press the **[OK] Button** to switch to Menu Mode.
- ② Select “Delete All” and press the **[OK] Button** to confirm.
- ③ The Delete All screen will be displayed.
Select “Yes” and press the **[OK] Button** to confirm.
All the data on the SD card will be deleted.

Auto Power Off <Set the time for automatic power off feature>

- ① In Preview Mode, press the **[OK] Button** to switch to Menu Mode.
- ② Select the “Auto Power Off” setting, and press the **[OK] Button** to confirm.
- ③ The Auto Off screen will be displayed.
Select Cancel, or the desired time (5・10・15・30min.) and confirm by pressing the **[OK] Button**.

Mirror Mode

<Mirror the image along horizontal axis. This feature is convenient when using the side view adapter.>

- ① In Preview Mode, press the **[OK] Button** to switch to Menu Mode.
- ② Select the “Mirror Mode” setting, and press the **[OK] Button** to confirm.
- ③ The display image will be mirrored along horizontal axis.
- ※ The charge status indicator  is normally displayed in the upper right corner of the image; When mirrored, the indicator will be in the upper left corner.
- ④ To cancel mirroring, Select the “Mirror Mode” setting again, and press the **[OK] Button** to confirm.

OPTIONAL ACCESSORIES

Contact your distributor or place of purchase to purchase accessory items.

Optional Cameras for MIS

Optional cameras compatible with this product. (IP66 compliant)

■ Material: ϕ 3.9 Model : Plastic Cable

ϕ 5.5 Model : Stainless Steel Cable

■ Features: ϕ 3.9 Model : Small diameter, flexible camera - Ideal for inspecting narrow spaces.

ϕ 5.5 Model : Stainless steel cable with high rigidity - Suitable for harsh environments.

Model	Specifications	Cable Type	No. of Pixels	Image size (pixel)	Depth of Focus (mm)
C-MIS-3910G	ϕ 3.9mm×1m	Flexible Tube	300 K	640×480	~ 20 to 50
C-MIS-3920G	ϕ 3.9mm×2m				
C-MIS-3930G	ϕ 3.9mm×3m				
C-MIS-5510G	ϕ 5.5mm×1m	Semi-Hard Tube			
C-MIS-5520G	ϕ 5.5mm×2m				
C-MIS-5530G	ϕ 5.5mm×3m				

Side View Adapters for MIS

Side View Adapters for this product.

■ Material: Plated Copper (Other than Mirror)

■ Features: Attaches to tip of ϕ 5.5 camera for changing the direction of view.

Model	Mirror Angle	View Direction	Mass
S V-MIS-35G	~ 35°	~ 70°	~ 2 g
S V-MIS-60G	~ 60°	~ 120°	

Lithium-ion Battery for MIS

Replacement lithium-ion battery for this product.

Model	Rated Voltage	Capacity	Mass
B-MIS-37G	DC 3.7V	1,880 mAh	~ 42 g

REPAIRS AND SERVICE

- If product does not operate properly, or if you have any questions, please contact distributor or place of purchase.
- Please note, manufacturer is unable to respond to inquiries or provide service directly. Please contact distributor or place of purchase.

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