Panasonic®

Installation Guide

Included Installation Instructions

Network Camera

Model No. **WV-X6531NS**

(Heavy salt damage resistance)

SDXC™

- Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.
- Before reading this manual, be sure to read the Important Information(included in the CD-ROM).
- For information about how to perform the settings and how to operate the camera, refer to the Operating Instructions on the provided CD-ROM.
- The model number is abbreviated in some descriptions in this manual.

Important safety instructions

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
6) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7) Only use attachments/accessories specified by the manufacturer.
8) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

9) Unplug this apparatus during lightning storms or when unused for long periods of time.
10) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Troubleshooting

Before requesting service, refer to the Important Information (included in the CD-ROM) and "Troubleshooting" in the Operating Instructions (included in the CD-ROM) and confirm the trouble.

Open Source Software

- This product contains open source software licensed under GPL (GNU General Public License), LGPL (GNU Lesser General Public License), etc.
- Customers can duplicate, distribute and modify the source code of the software under license of GPL and/or LGPL.
- Refer to the "readme.txt" file on the provided CD-ROM for further information about open source software licenses and the source code.
- Please note that Panasonic shall not respond to any inquiries regarding the contents of the source code.

---: Direct current symbol

∿: Alternating current symbol

About the user manuals

Product documentation is composed of the following documents.

- **Installation Guide (this document):** Explains installation, mounting, cable connections, and network connections.
- **Important Information (included in the CD-ROM):** Provides basic information about the product.
- **Operating Instructions (included in the CD-ROM):** Explains how to perform the settings and how to operate this camera.

Adobe® Reader® is required to read these operating instructions on the provided CD-ROM.
When the Adobe Reader is not installed on the PC, download the latest Adobe Reader from the Adobe web site and install it.
The external appearance and other parts shown in this manual may differ from the actual product within the scope that will not interfere with normal use due to improvement of the product.

Standard accessories

Installation Guide (this document)	1 pc.	CD-ROM*2	1 pc.
IMPORTANT SAFETY INSTRUCTIONS	1 pc.	Code label*3	1 pc.
Warranty card*1	1 pc.		

*1 This product comes with several types of warranties. Each warranty is only applicable to the products purchased in the regions indicated on the relevant warranty.
*2 The CD-ROM contains the operating instructions and different kinds of tool software programs.
*3 This label may be required for network management. Use caution not to lose this label.

The following parts are used during installation procedures.

Cable cover	1 pc.	8P alarm cable	1 pc.
Front/rear sunshields	1 set	24 V AC power supply connector kit	1 set
Front/rear sunshields fixing screw		(Power supply connector housing: 1 pc., Contact: 3 pcs.)	
	2 pcs. (of them, 1 for spare)	Hexagon screw (M5)*4	5 pcs.
Waterproof tape	1 pc.		(of them, 1 for spare)
RJ45 waterproof connector cover	1 pc.	Rain wash coating caution label	1 pc.
RJ45 waterproof connector cap	1 pc.		

*4 The screws are necessary when installing the camera on a separately sold mount bracket.

Waterproof tape

Other items that are needed (not included)

Prepare the required parts for each installation method before starting the installation. The following are the requirements for the various installation methods.
Prepare the foundation of the installation site, installation support, and any other installation setting with heavy salt damage resistance treatment.

| Installation method	Mounting screw	Minimum pull-out strength*1
Ⓐ When hanging the camera from ceiling Use the ceiling mount bracket (WV-Q121BS*2).	M10 screws/4pcs.	1411 N {317 lbf}
Ⓑ When installing the camera on a wall Use the wall mount bracket (WV-Q122AS*2).	M10 screws/4pcs.	823 N {185 lbf}

*1 The minimum pull-out strength is the value per screw.
*2 For details on procedure for attaching mount bracket and camera, read the operating instructions of each mount bracket.
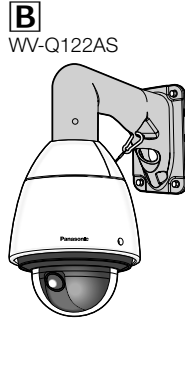
IMPORTANT:
- Prepare four mounting screws (M10) to be mounted on ceiling and wall separately.
- Select screws according to the material of the location that the camera will be mounted to. In this case, wood screws and nails should not be used.
- Please consider using anti-corrosive mounting screws or caulking.
- If the mounting location such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.
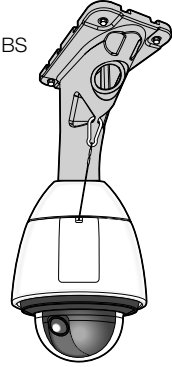
Ⓐ WV-Q121BS   Ⓑ WV-Q122AS

Preparations before installation

[1] Prepare the cables from camera side.

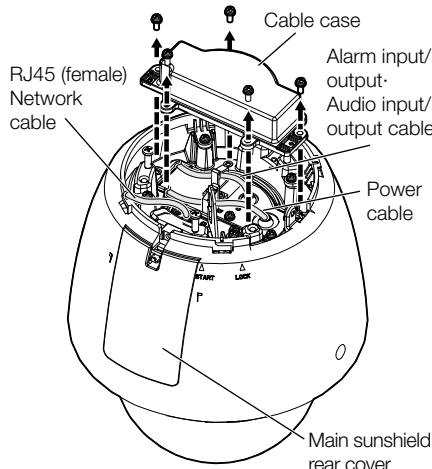◆ **When the only necessary connection to camera is an Ethernet cable**
Use only RJ45 network cable coming from camera. Do not remove the cable case. Use it as it is.

◆ **When using 24 V AC, EXT I/O device, or audio I/O device**
Remove the cable case fixed by five screws on the upper part of camera and pull out power cable, audio I/O cable, and alarm I/O cable stored in it.

Note:
- Do not use the removed cable case and five screws.

Cable case
Alarm input/output·Audio input/output cable
RJ45 (female) Network cable
Power cable
Main sunshield rear cover

[2] Insert an SD memory card (locally procured) as occasion demands.
* SDXC/SDHC/SD memory card is described as SD memory card.
Insert an SD memory card following the procedure shown below. For the detailed procedure, refer to Important Information on the provided CD-ROM.

① Remove the main sunshield rear cover.
② Loosen two locking screws of water-resistant cap and pull the water-resistant cap and toward you.
③ Insert an SD memory card into the SD memory card slot.
④ Attach water-resistant cap and sunshield rear cover to the original position in order.
Recommended tightening torque of the water-resistant cap locking screws:
0.69 N·m {0.51 lbf·ft}

SD memory card (with label side facing down)
SD memory card slot
Water-resistant cap
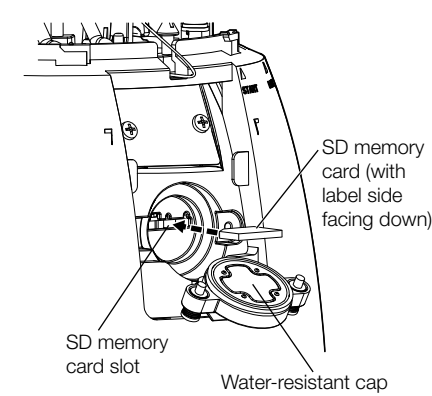
Installation

The installation tasks are explained using 4 steps.

- Remove the camera using the reverse order of the installation procedures.

Step1	Step2	Step3	Step4
Fix the mount bracket and hang the camera	⇨ Making connections	⇨ Fixing the camera	⇨ Configure the network settings

Step1 Fix the mount bracket and hang the camera

◆ **Here explains an example of installation on a wall using wall mount bracket (WV-Q122AS). For detailed installation information and procedure, refer to operating instructions of each mount bracket.**

[1] Process the installation surface
Decide the attachment position and bore holes for screws or anchors on the wall and a hole for wiring as occasion demands.

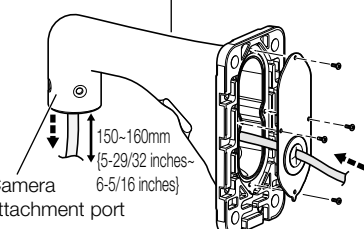**[2] Pass a cable into mount bracket and fix it on the installation surface**
① Insert the cables coming from installation surface from rear surface of mount bracket to internal and pull them out from camera attachment port (cable cover attachment side).
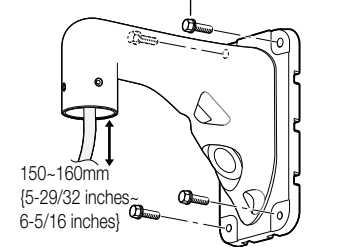 * When passing the cables into mount bracket, take care not to apply unreasonable force to the cables.
② Apply waterproof treatment to the installation surface and the cap of the mount bracket backside.
③ Attach the mount bracket to wall surface using fixing screws (4 pcs.) (M10: locally procured).

Mount bracket (example: WV-Q122AS)
150~160mm [5-29/32 inches~6-5/16 inches]
Camera attachment port
Fixing screws (4 pcs.) (M10: locally procured)
150~160mm [5-29/32 inches~6-5/16 inches]

IMPORTANT:
- After waterproofing the hole for fixing mount bracket, the port for pulling out the cable on installation surface, and the cap part on rear surface of mount bracket, fix the mount bracket on the installation surface.
- Fixing screw: Minimum pull-out strength (per 1 pc.)
  WV-Q121BS   1411 N {317 lbf}
  WV-Q122AS   823 N {185 lbf}
- Adjust the length of cable from camera attachment port of mount bracket to cable end to 150~160mm {5-29/32 inches~6-5/16 inches}. (If the cable that is pulled out is too long, storage after wiring becomes difficult. On the contrary, if it is too short, the cable cannot reach to the camera when installing the camera. Adjust the cable length carefully.)

[3] Process the Ethernet cable (locally procured) and attach the waterproof connector cover and cap (accessory)
First pass the Ethernet cable through the RJ45 waterproof connector cap (accessory) and then through the RJ45 waterproof connector cover (accessory). Next, use a specialized tool (locally procured) to crimp the RJ45 plug (locally procured) to the end of the Ethernet cable.

RJ45 plug (locally pocured)
RJ45 waterproof connector cover (accessory)
RJ45 waterproof connector cap (accessory)
Ethernet cable (locally procured)
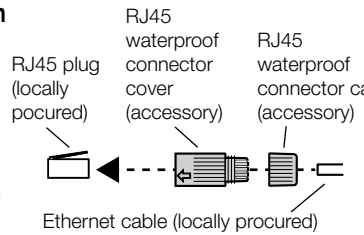
IMPORTANT:
- Take care not to remove the rubber parts from inside the RJ45 waterproof connector cover (accessory).
- The maximum length of the Ethernet cable (locally procured) is 100 m, and the external dimensions of it are from ø5 mm {ø3/16 inches} to ø6.5 mm {ø1/4 inches}.
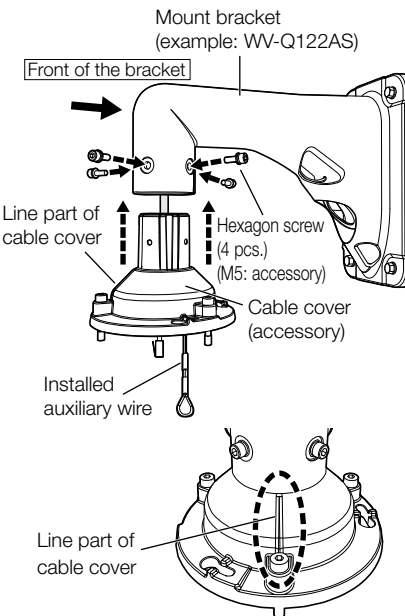
[4] Attach the cable cover (accessory)
① Fix the cable cover to mount bracket using hexagon screws (4 pcs.) (M5: accessory). Adjust the orientation of cable cover so that the line part of cable cover faces front of the bracket.

Mount bracket (example: WV-Q122AS)
Front of the bracket

IMPORTANT:
- "Camera mounting screw (hexagon screw (M6))" included with mount bracket cannot be used. Use the "hexagon screw (M5)" included with the camera.
- Recommended tightening torque: 2.45 N·m {1.81 lbf·ft}

② Remove the tape as the installed auxiliary wire is temporarily fixed to the inside of the cable cover with tape.

Line part of cable cover
Hexagon screw (4 pcs.) (M5: accessory)
Cable cover (accessory)
Installed auxiliary wire
Line part of cable cover

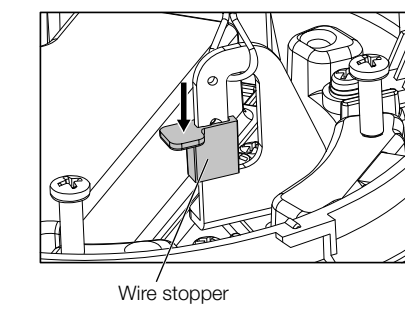**[5] Hang the camera at the installed auxiliary wire of the cable cover and fix the safety wire**
① Move the camera to the installation location and hitch the installed auxiliary wire of the cable cover to the wire hook on the upper part of camera. Next, lower the wire stopper to prevent the installed auxiliary wire from coming off.
② Attach the safety wire of the camera to the wire hook section of mount bracket.
  * For the safety wire attachment position, refer to operating instructions of each mount bracket.

Note:
- The camera is not fixed. Take care not to hit the camera against periphery (especially the dome cover).
- Retain a work space of 500 mm {1ft 7-11/16 inches} or more from the cable cover when you hang the camera from it.
- The installed auxiliary wire and the safety wire are designed assuming the only camera body is suspended. Do not apply other loads.

* Image seen from front surface of bracket

Mount bracket (example: WV-Q122AS)
Wire hook section
Cable cover
Camera
②Safety wire
①Installed auxiliary wire
Wire hook on the upper part of camera
Wire stopper

Step2 Making connections

[2] Power cable
- Brown → To the power supply (24 V AC 50 Hz/60 Hz)
- Blue
- Black → GND

[1] RJ45 (female) Network cable
Ethernet cable (category 5e or better, straight)
→ To a PoE+ hub
RJ45 waterproof connector (accessory)

[3] Alarm input/output cable
[3] 8P alarm cable (accessory) → To a sensor

[4] Audio input cable (white)
→ To a plug-in power type microphone

[5] Audio output cable (black)
→ To an external powered speaker

[1] Connect an Ethernet cable (category 5e or better, straight) to RJ45 (female) network cable.

① Insert the RJ45 plug (locally procured) into the RJ45 waterproof jack connected to the camera.

② Connect the RJ45 waterproof connector cover (accessory) to the RJ45 waterproof jack and then rotate the RJ45 waterproof connector cover until the "⇨" marks align.

③ Connect the RJ45 waterproof connector cap (accessory) to the RJ45 waterproof connector cover and rotate the RJ45 waterproof connector cap until there is no gap between it and the RJ45 waterproof connector cover.

RJ45 waterproof jack — RJ45 plug (locally pocured) — RJ45 waterproof connector cover (accessory) — RJ45 waterproof connector cap (accessory)
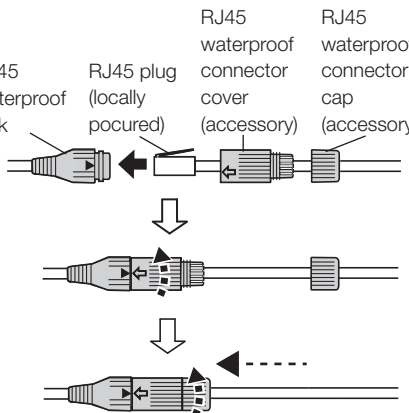
IMPORTANT:
- If the procedure for the RJ45 waterproof connector (accessory) part is not correctly followed, the waterproofing may be compromised. Do not install the camera where the RJ45 waterproof connector is exposed to constant rain or moisture.
- When you remove the RJ45 waterproof connector, be sure to follow the reverse order of the connecting procedures. (The RJ45 waterproof jack may be damaged when you try to remove the RJ45 waterproof connector cover with its "⇨" mark matching "▶" mark of the RJ45 waterproof jack.)

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[2] Assemble 24 V AC connector kit (accessory) and connect it to the power cable of camera body as occasion demands.

① Recommended wire rod and array of pins of connector housing (accessory)

AWG size (stranded wire)	#24 (0.22 mm²)	#22 (0.33 mm²)	#20 (0.52 mm²)	#18 (0.83 mm²)
Wire length	20 m	30 m	45 m	75 m

Power supply connector housing

Pin No.	Signal
1	24 V AC LIVE (Brown)
2	24 V AC NEUTRAL (Blue)
3	Ground (Black)
4	Not use
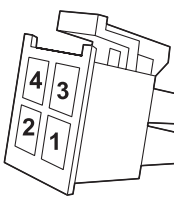
② How to assemble the 24 V AC power supply connector kit
- Remove approx. 3 mm {1/8 inches} of the outer jacket of the cable and twist the cable core to prevent the short circuit first.
- Insert the tip of the cable into the point A of the contact (accessory), and hold the cable using the cable clamp.
- Procure either of the following tools for clamping.
  Molex manual clamp tool:
  57027-5000 (For UL1015),
  57026-5000 (For UL1007)
- After clamping the contact and the cable, insert the contact properly into the power supply connector housing.

Approx. 3 mm {1/8 inches}
Upper — A — Insert — Contact (accessory) — Cable
Upper — Contact (accessory) — Cable
Power supply connector housing (accessory)
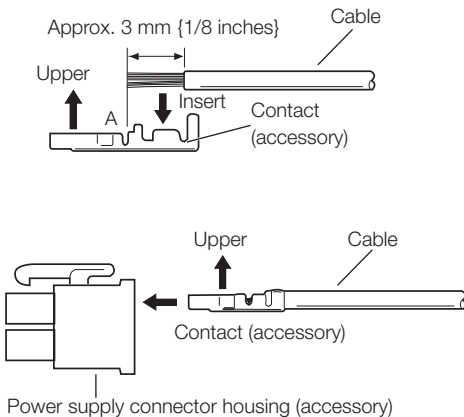
Caution:
- A READILY ACCESSIBLE DISCONNECT DEVICE SHALL BE INCORPORATED TO THE EQUIPMENT POWERED BY 24 V AC POWER SUPPLY.
- ONLY CONNECT 24 V AC CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).
- ONLY CONNECT POWER OVER ETHERNET 54 V DC / PoE+ 54 V DC LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).

IMPORTANT:
- The 24 V AC power supply shall be insulated from the commercial AC power.
- Be sure to use the 24 V AC power supply connector kit (accessory) provided with this product.
- After processing 24 V AC connector, actually connect it to the camera and ensure it operates normally before using it.
- Be sure to fully insert the 24 V AC power supply connector into the power cable. Otherwise, it may damage the camera or cause malfunction.
- When installing the camera, make sure that excessive force is not applied to the power cable.

Step3 Fixing the camera (continued)

③ Joint both sides of front/rear sunshields (accessory). First, hook the wire side, and then hook the other side.

IMPORTANT:
- Joint both sides of the front/rear sunshields (accessory) before fitting in the main sunshield.
- Do not trap the safety wire inside.

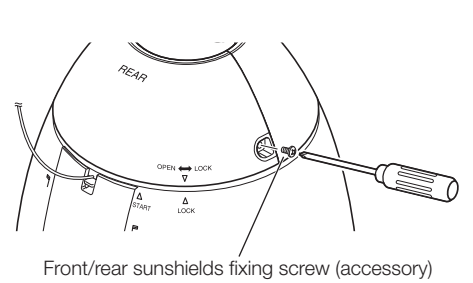Front/rear sunshields (accessory)
Main sunshield
Safety wire
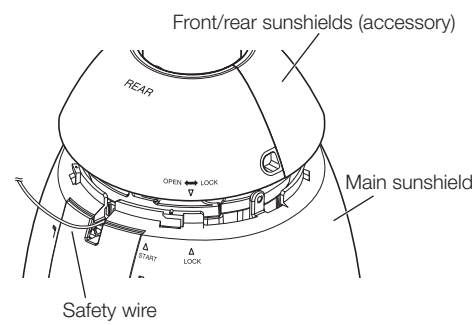
④ Fix the front/rear sunshields on the camera temporarily.
- Align the arrow (▽) with the arrow (△) of "START" on the main sunshield to embed it, and then rotate it toward arrow (△) of "LOCK" until it "clicks".

Front/rear sunshields (accessory)
Main sunshield
Align "▽" to this "△"
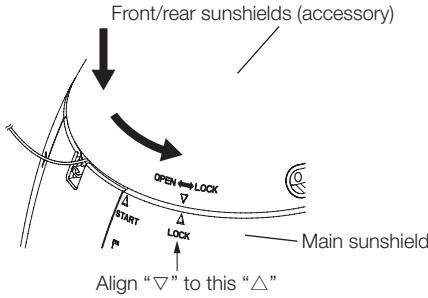
⑤ Fix the front/rear sunshields on the camera using the front/rear sunshields fixing screw (accessory). Recommended tightening torque:
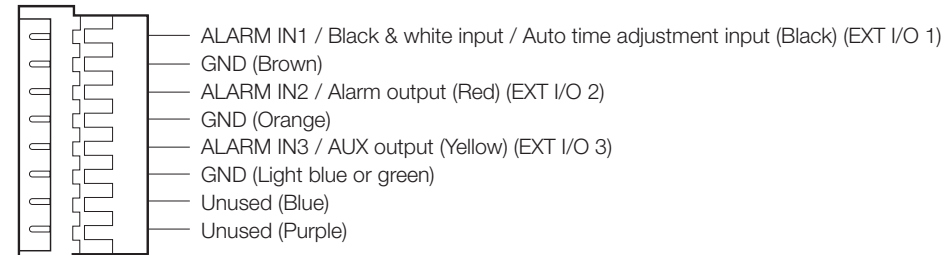 0.72 N·m {0.53 lbf·ft}

Note:
- When removing the front/rear sunshields (accessory), perform steps ①~⑤ in the reverse order.

Front/rear sunshields fixing screw (accessory)

⑥ When the camera has been installed, remove the protection sheet from the dome cover. After removal, be sure not to touch the clear part of the dome cover.

⑦ Turn on the power supply of camera and check the screens of camera following Step 4 "Configure the network settings" and adjust the angular field of view. For details on adjustment of angular field of view of camera, refer to Operating Instructions on the provided CD-ROM.

Precautions
- Attach the "Rain wash coating caution label" carried by the camera to the surface of the camera (Refer to the illustration below).

请贴在本产品的侧面。
Please put on the side of the product.
製品外観などに貼付けてください。
COATING

Live indicator

INITIAL SET switch (OFF⇔ON)
Power indicator
Live indicator
SD memory card slot

The live indicator will light or blink as follows depending on the camera status.

Camera operation status		Live indicator status
When the power is turned on	Before the network connection is established	Lights orange → Lights off → Blinks orange → Lights orange
	When the network connection is established	Lights orange → Lights off → Blinks orange → Blinks green → Lights green
During the standby or connection (Cable is not connected.)		Lights orange
During the standby or connection (Cable is connected.)		Lights green
During the upgrade process		Blinks orange
Initialization (When the network connection is established)		Lights orange → Lights off → Blinks orange → Lights orange → Blinks orange → Blinks green → Lights green
Port forwarding error caused by the UPnP function		Blinks orange (in 2 seconds intervals (on for 1 second / off for 1 second))
Trouble happening on the camera		Blinks red
Failure in writing data on the SD memory card		Lights red

Step2 Making connections (continued)

[3] Connect 8P alarm cable (accessory) as occasion demands.

- ALARM IN1 / Black & white input / Auto time adjustment input (Black) (EXT I/O 1)
- GND (Brown)
- ALARM IN2 / Alarm output (Red) (EXT I/O 2)
- GND (Orange)
- ALARM IN3 / AUX output (Yellow) (EXT I/O 3)
- GND (Light blue or green)
- Unused (Blue)
- Unused (Purple)

Note:
- The default of EXT I/O terminals is "Off". Refer to the Operating Instructions on the provided CD-ROM for further information about the EXT I/O terminal settings.

[4] Connect a microphone or external audio line to the audio input cable as occasion demands.

[5] Connect a powered speaker to the audio output cable as occasion demands.

Note:
- The audio output can be switched to monitor output. The default is "Audio". Refer to the Operating Instructions on the provided CD-ROM for descriptions of how to switch the output.
- If the audio output is used for the monitor output, connect a ø3.5 mm stereo mini plug (locally procured) to the wire as shown in the right figure and use it.

N.C.
Video output GND
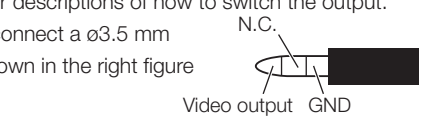
[6] If you use a cable other than Ethernet cable, waterproof it.
The camera body is waterproof, but the cable ends and the inside of the mount bracket are not waterproof. Waterproof the connection part of each cable.
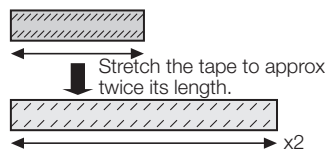
<Waterproof treatment>
Waterproof by using the waterproof tape (accessory) as shown in the right-hand figure.

Waterproof tape (accessory)
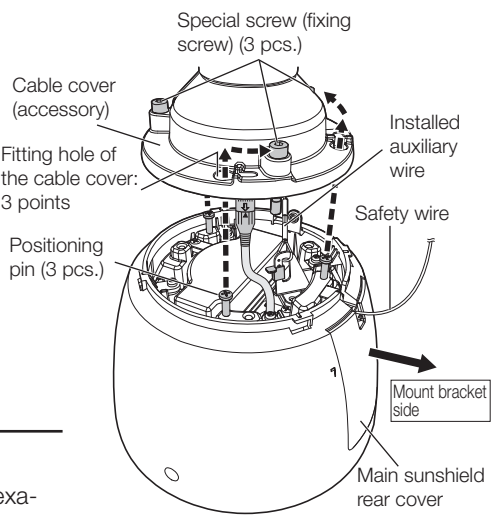Wind the tape in a half-overlapping manner
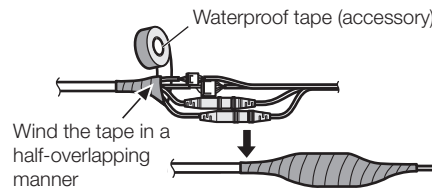
IMPORTANT:
- Stretch the tape by approx. twice (see the illustration) and wind it around the cable. Insufficient tape stretch causes insufficient waterproofing.

Stretch the tape to approx. twice its length.
×2

Step3 Fixing the camera

[1] Attach the camera to the cable cover (accessory).

① Make the Panasonic logo mark on the camera body face the front side and the main sunshield rear cover (where SD memory card is inserted) face the mount bracket side.

② Insert the positioning pins on the upper part of camera into cable cover attachment hole.

③ Rotate the camera part in a clockwise direction when looking from the bottom and confirm it is temporarily fixed.

④ Tighten it securely with 3 special screws (fixing screws) of the cable cover. Recommended tightening torque:
 2.45 N·m {1.81 lbf·ft}

Special screw (fixing screw) (3 pcs.)
Cable cover (accessory)
Installed auxiliary wire
Fitting hole of the cable cover: 3 points
Positioning pin (3 pcs.)
Safety wire
Mount bracket side
Main sunshield rear cover

Note:
- Special screw (fixing screw): As these are hexagon screws, use a hexagon wrench (locally procured) "for M6".
- Bend it to the inside of the cable cover to prevent the installed auxiliary wire and the wiring section from being caught in the periphery of the cable cover.

[2] Attach the front/rear sunshields (accessory) to the camera.

① Put a finger on the dent of front/rear sunshields and unhook both sides to split it. One side is fixed like wire to prevent loss.

Dents
Wire
Unhook
Cable cover
Front/rear sunshields (accessory)
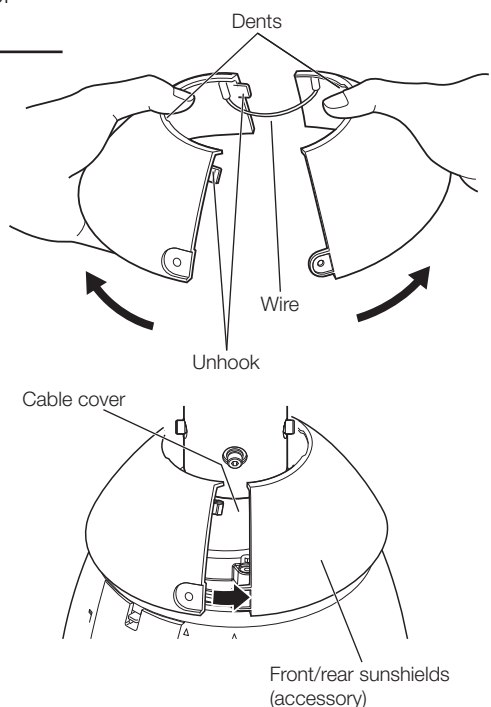
② Locate the front/rear sunshields to the position that covers the cable cover.
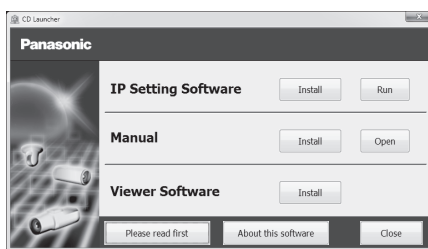

Step4 Configure the network settings

Configure the setting of the camera after temporarily invalidating the firewall software. Once the camera configuration is completed, return to the original state.
Contact the network administrator or your Internet service provider for information about configuring the settings of the network.

[1] Insert the provided CD-ROM into the CD-ROM drive of your PC.
- The License Agreement will be displayed. Read the Agreement and choose "I accept the term in the license agreement", and click [OK].
⇒ The launcher window will be displayed.

Panasonic
IP Setting Software — Install / Run
Manual — Install / Open
Viewer Software — Install
Please read first — About this software — Close

Note:
- If the launcher window is not displayed, double click the "CDLauncher.exe" file on the CD-ROM.
- Refer to "Using the CD-ROM" in the Operating Instructions on the provided CD-ROM for further information about CDLauncher.
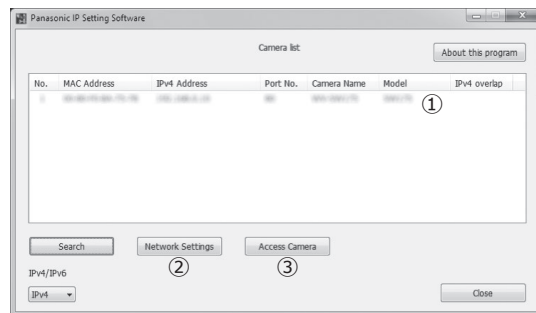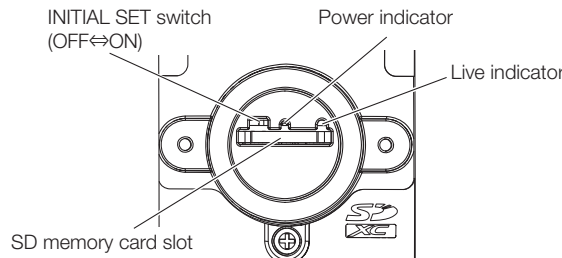
[2] Click the [Run] button next to [IP Setting Software].
⇒ [Panasonic IP Setting Software] screen will be displayed. The MAC Address / IP address of the detected camera will be displayed.

[3] Select the camera you want to configure (①), and click [Network Settings] (②) to change the network settings. Then, click [Access Camera] (③).

Note:
- Select the camera with same MAC address as the MAC address printed on the camera that you want to configure.

Panasonic IP Setting Software
Camera list
About the program
No. | MAC Address | IPv4 Address | Port No. | Camera Name | Model | IPv4 overlap
①
Search — Network Settings — Access Camera
② ③
Close

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[4] When the administrator registration window is displayed, enter "User name", "Password" and "Retype password" by following the instructions displayed on the screen, and then click the [Set] button.
Please keep your user name and password in a safe place free from public view to ensure security.
After completing the registration, the camera will automatically be re-connected and the authentication window will be displayed. Enter the registered user name and password.
The default setting of user authentication is "On". For further information, refer to the "Preface" section in the Operating Instructions.

Administrator registration
User name (1 to 32 characters)
Password (1 to 32 characters)
Retype password
Set
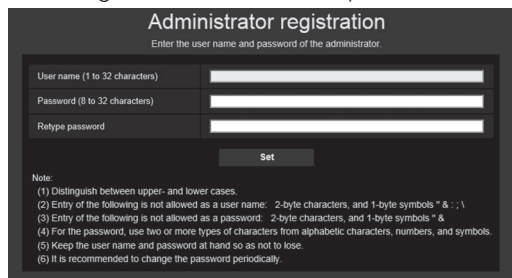
IMPORTANT:
- When the camera is used over the Internet, setting user authentication to "Off" may lead to unintended access by a third party. Please leave user authentication set to "On".

[5] When live images from the camera are displayed, the network connection is complete.

Note:
For more information on the following content, refer to the Operating Instructions.
- Please set [Time & date] on the [Basic] screen of "Setup" before using the camera.
- It is impossible to display H.265 (or H.264) or MJPEG images, receive/transmit audio, display logs, and use full-screen display when the viewer software "Network Camera View 4S" is not installed on the PC. Push the [Viewer Software] button on the live screen to install the software as necessary.
- Depending on the environment of your PC, it may take time for images to be displayed.
- At the time of purchase, [Audio transmission mode] is set to "Off". If needed, change the setting on the [Audio] tab on the "Image/Audio" page in "Setup".
- Due to security enhancements in "IP Setting Software", "Network settings" cannot be changed when around 20 minutes passed after turning on the power of the camera to be configured. (When the effective period is set to "20 min" in the "Easy IP Setup accommodate period".) However, settings can be changed after 20 minutes for cameras in the initial set mode.
If images are not displayed, set the Web browser to compatibility view. For details on how to configure, refer to our website (https://security.panasonic.com/support/info/)