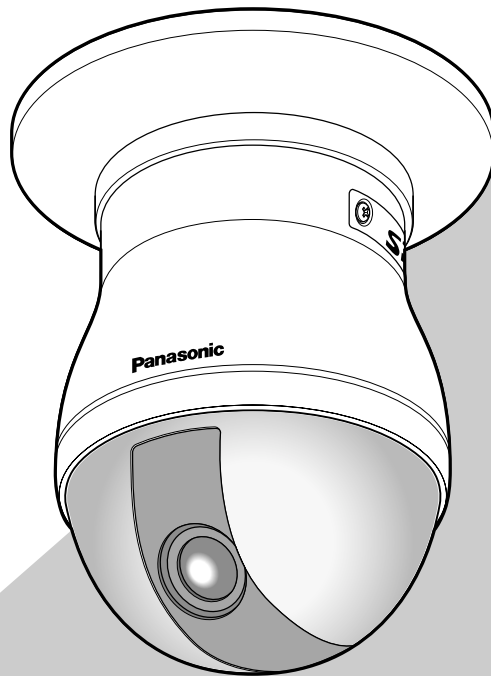


Panasonic®

Network Camera Installation Guide

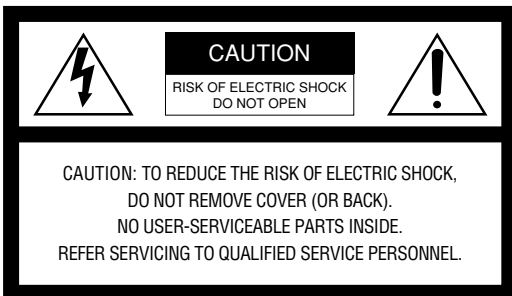
Model No. **WV-NS954**



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

WARNING:

- This apparatus must be earthed.
- To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.
- The apparatus should not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, should be placed on the apparatus.
- All work related to the installation of this product should be made by qualified service personnel or system installers.
- The connections should comply with local electrical code.



SA 1965

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



SA 1966

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For Canada

This Class A digital apparatus complies with Canadian ICES-003.

For U.S.A.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

For U.S.A.

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

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

Model No. _____

Serial No. _____

Important safety instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) 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.



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) 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.

Limitation of liability

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Disclaimer of warranty

IN NO EVENT SHALL Panasonic Corporation BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

- (1) ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- (2) PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
- (3) UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
- (4) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
- (6) ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING A PHOTOGENIC SUBJECT, DUE TO VIOLATION OF PRIVACY WITH THE RESULT OF THAT SURVEILLANCE-CAMERA'S PICTURE, INCLUDING SAVED DATA, FOR SOME REASON, BECOMES PUBLIC OR IS USED FOR THE PURPOSE OTHER THAN SURVEILLANCE;
- (7) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

Preface

The network camera WV-NS954 is designed to operate using a PC on a network (10BASE-T/100BASE-TX). By connecting to a network (LAN) or the Internet, images and audio from the camera can be monitored on a PC via a network.

Note:

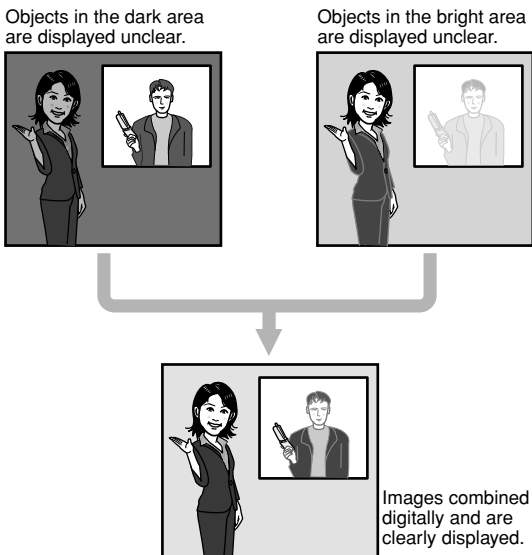
It is necessary to configure the network settings of the PC and its network environment to monitor images and audio from the camera on the PC. It is also necessary that a web browser is installed on the PC.

Features

Super dynamic 3 (SUPER-D3)

When there is wide variation between the illumination of light and dark areas of the location being monitored, the camera adjusts the lens iris in accordance with the brighter areas. This causes loss of detail in darker areas.

Conversely, adjusting the lens brightness for the darker areas causes the brighter areas to become washed out. SUPER-D 3 digitally combines an image that is set up for a clear view of the brighter areas with an image that is set up for a clear view of the darker areas, creating a final image that preserves overall detail.



Motion detection function

When a motion is detected, this product will take the following actions.

- Outputs alarm signals
- Transfers images to the FTP server
- Notifies by mail
- Saves images on the SD memory card

Note:

The motion detector is not a function dedicated to prevent theft or fire, etc. No warranty is provided for any damage and loss resulting in use of this function.

Progressive output (with motion adaptive interlace/progressive conversion)

The motion adaptive interlace/progressive conversion function compensates aliasing of images (that is specific to interlace scan when shooting motion) and converts images into progressive images. By converting into progressive images, clear images of both motion and stationary objects will be created.

JPEG/MPEG-4 dual encode

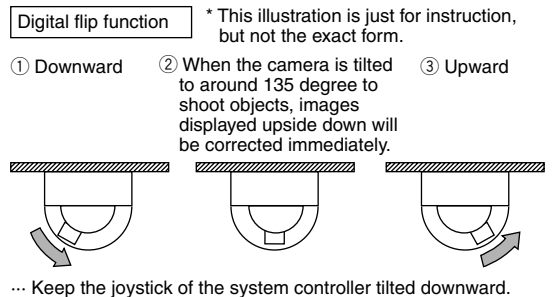
MPEG-4 images can be monitored while monitoring JPEG images.

High power lens and high accuracy preset position function

A single camera provides wide area monitoring.

Flip-a-chip function

Normally, the camera will stop when the tilt angle is at 90° (just below). The flip-a-chip function makes possible to tilt the camera from 0° to 180° without stop the tilting motion. This function makes possible to smoothly track and shoot an object passing just under the camera.



Installation on a ceiling or a wall is available

When using an optional mount bracket, mounting on a ceiling or mounting on a wall is available.

Interactive communication with audio is available

By using the audio output connector and the microphone in connector, receiving audio from the camera on a PC and transmitting audio from the PC to the camera are available.

SD memory card slot

Images can be recorded on an optional SD memory card both automatically (when images fail to transmit using the FTP periodic transmission function) and manually. It is possible to play images saved on the mini SD memory card using a web browser or to download images displayed on a web browser.

Note:

Compatible SD memory card

Performance with this camera has been checked by using Panasonic's SD memory cards (64 MB, 128 MB, 256 MB, 512 MB, 1 GB, and 2 GB).

SD High Capacity (SDHC) card is not compatible with this camera.

About these operating instructions

There are 3 sets of operating instructions for the WV-NS954 as follows.

- Installation guide (book, these operating instructions)
- Network operating instructions (PDF)
- Setup instructions (PDF)

The "Installation Guide" contains descriptions of how to install and connect this camera, and of how to perform the required network settings.

Refer to the "Network operating instructions (PDF)" and the "Setup instructions (PDF)" on the provided CD-ROM for descriptions of how to perform the camera settings and how to operate this camera. Adobe® Reader is required to read the network operating instructions (PDF) and the setup instructions (PDF).

System requirements for a PC

CPU	Pentium® 4 2.4 GHz or faster (A 3.0 GHz CPU or faster CPU is required when using Microsoft® Windows® Vista®.)
Memory	512 MB or more (A minimum of 1 GB memory is required when using Microsoft® Windows® Vista®.)
Network interface	10/100 Mbps Ethernet port x1
Audio interface	Sound card (when using the audio function)
Monitor	Resolution: 1 024 x 768 pixels or more Color: 24-bit True color or better
OS	Microsoft® Windows® XP Home Edition SP2 Microsoft® Windows® XP Professional SP2 Microsoft® Windows® XP Professional x64 Edition is not supported. Microsoft® Windows Vista® 32-bit*
Web browser	Microsoft® Internet Explorer® 6.0 SP2 Microsoft® Internet Explorer® 7.0 * Microsoft® Internet Explorer® 7.0 is required when using Microsoft® Windows Vista® 32-bit.
Other	CD-ROM drive: It is necessary to read the network operating instructions and use the software on the provided CD-ROM. DirectX® 9.0c or later Adobe® Reader: It is necessary to read the operating instructions on the provided CD-ROM.

Notes:

- When using a PC that does not meet the above requirements, displaying of images may become slow or the web browser may become inoperable.
 - Audio may not be heard if a sound card is not installed on a PC. Audio may be interrupted depending on the network environment.
 - Refer to "Notes on Vista®" (PDF) for further information about system requirements for a PC and precautions when using Microsoft® Windows® Vista®.
-

Trademarks and registered trademarks

- Microsoft, Windows, Windows Vista, Internet Explorer, and DirectX are either registered trademarks or trademarks of Microsoft Corporation in the United States and other countries.
- Intel and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- Adobe and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- SD logo is a trademark.
- Other names of companies and products contained in these operating instructions may be trademarks or registered trademarks of their respective owners.

Network security

As you will use this product connected to a network, your attention is called to the following security risks.

1. Leakage or theft of information through this product
2. Use of this product for illegal operations by persons with malicious intent
3. Interference with or stoppage of this product by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this product in a network secured by a firewall, etc.
- If this product is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information, FTP server information and DDNS server information.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

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Precautions

When the camera has an internal thermal problem during operation, the indication "OVER HEAT" will be displayed.

In this case, detach the power plug of the camera from the outlet immediately, and then contact your dealer.

To continue using with stable performance

Parts of this product may deteriorate and it may shorten the lifetime of this product when using in locations subject to high temperatures and high humidity.

(Recommended ambient temperature: 35 °C or below)

Do not expose the product to direct heat such as from a heater.

About the position refresh function

Noise may be produced or the preset positions may become inaccurate after a long operation. Assign the position refresh function to a schedule to correct the camera position periodically, and it is also recommended to clean the slip ring of the camera.

Refer to the setup instructions (PDF) for further information.

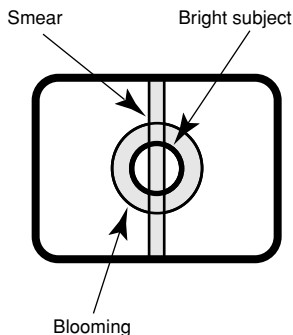
Discoloration on the CCD color filter

When continuously shooting a bright light source such as a spotlight, the color filter of the CCD may have deteriorated and it may cause discoloration.

Even when changing the fixed shooting direction after continuously shooting a spotlight for a certain period, the discoloration may remain.

Do not aim the camera at strong light sources.

A light source such as a spot light causes a blooming (light bleeding) or a smear (vertical lines).



Handle this product with care.

Do not strike or shake, as this may damage the product.

It may cause a malfunction.

About the PC monitor

When displaying the same image on the PC monitor for a long time, the PC monitor may be damaged.

It is recommended to use a screen-saver.

Keep the product away from water.

It may cause a malfunction.

When condensation has been formed inside the dome cover

Detach the dome cover (see page 12) and wipe the condensation off the inside of the dome cover using a dry soft cloth.

Consumables

Parts having contacts such as the lens-drive motors, cooling fan motor and slip-rings inside the camera are subject to wear with time. Please ask the nearest service center about replacement and maintenance of such parts.

Cleaning the camera body

Turn the power off when cleaning the camera.

Otherwise, it may cause injury.

Do not use strong abrasive detergent when cleaning the camera body.

Otherwise, it may cause discoloration.

When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

When the dirt is hard to remove

Use a mild detergent and wipe gently.

Then, wipe the detergent completely off with a dry cloth.

Refresh interval

Image refresh interval may become slow depending on the network environment, PC performance, shooting subject, access number, etc.

About the self-diagnosis function

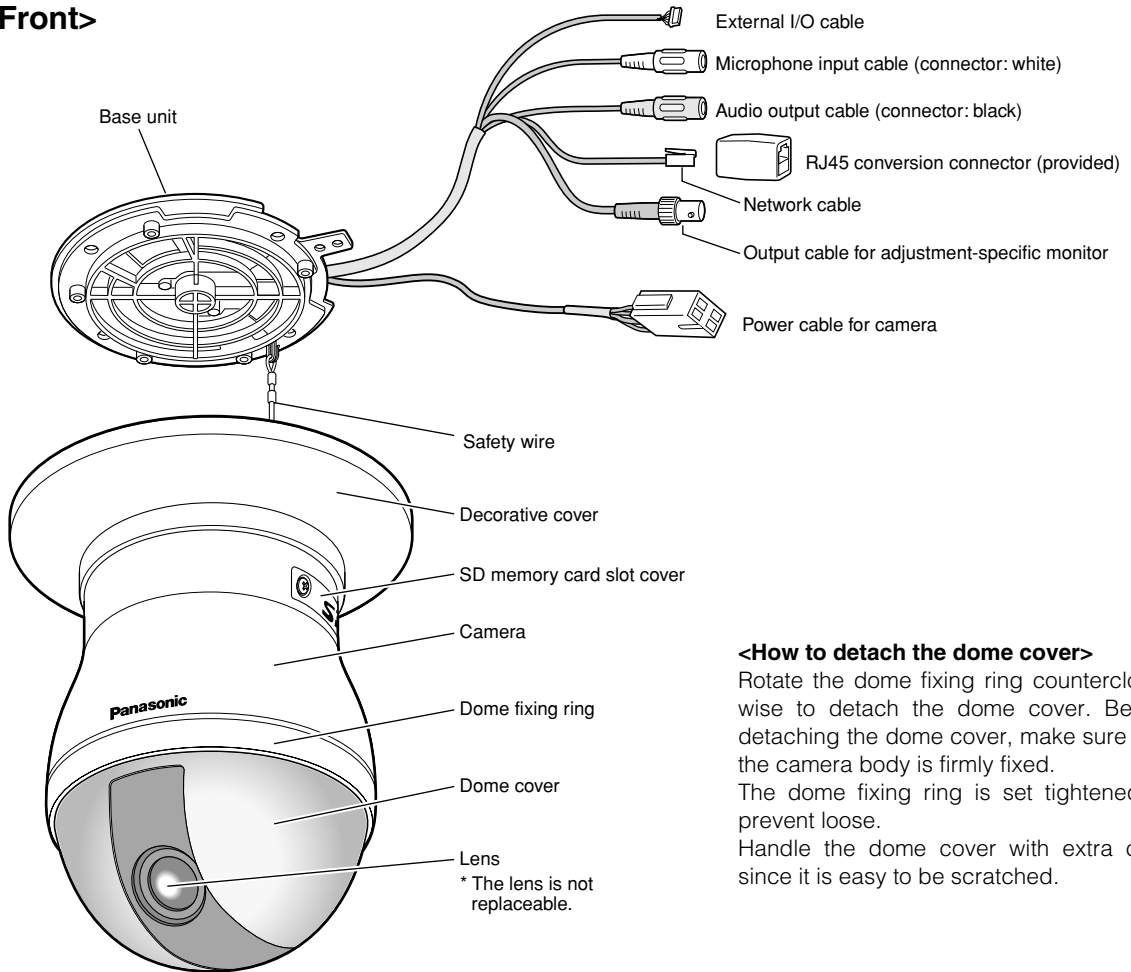
When the camera malfunctions due to exogenous noise, etc. for 30 seconds or more, the camera will automatically reset and will return to normal state. When the camera is reset, initialization will be carried out as when the power of the camera is turned on. When the camera repeatedly resets, exogenous noise level around the camera may be high and that may cause malfunction. Contact your dealer for instructions.

MPEG-4 Visual patent portfolio license

This product is licensed under the MPEG-4 Visual patent portfolio license for the personal and non-commercial use of consumer for(i) encoding video in compliance with the MPEG-4 Visual Standard ("MPEG-4 Video") and/or(ii) decoding MPEG-4 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed by MPEG LA to provide MPEG-4 Video. No license is granted or shall be implied for any other use. Additional information including that relating to promotional, internal and commercial uses and licensing may be obtained from MPEG LA, LLC. See <http://www.mpegla.com>.

Major operating controls and their functions

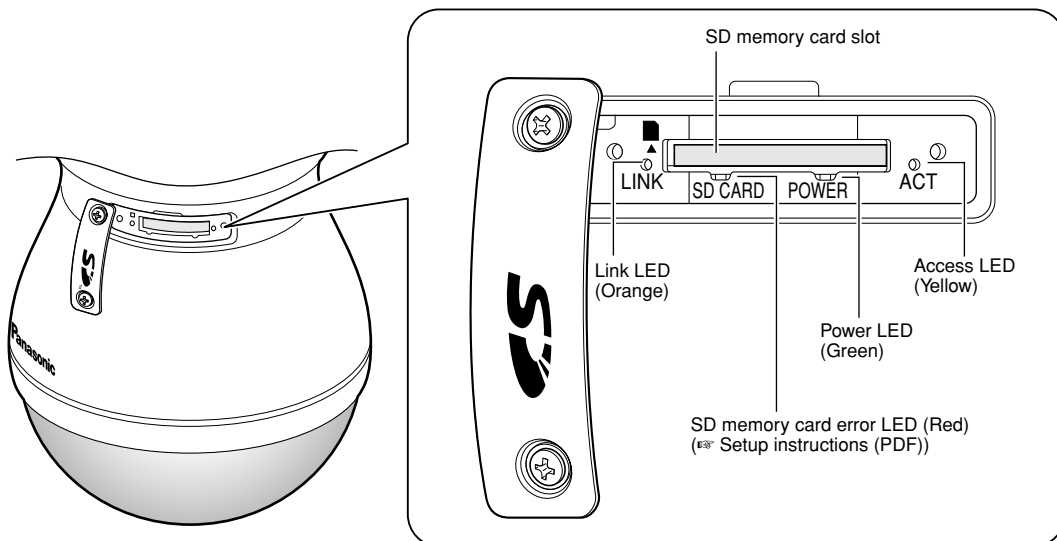
<Front>



<How to detach the dome cover>

Rotate the dome fixing ring counterclockwise to detach the dome cover. Before detaching the dome cover, make sure that the camera body is firmly fixed. The dome fixing ring is set tightened to prevent loose. Handle the dome cover with extra care since it is easy to be scratched.

<Inside the SD memory card slot cover>



Precautions for installation

All work related to the installation of this product should be made by qualified service personnel or system installers.

Use this product for indoor use only.

Do not expose this product to direct sunlight for hours and do not install the product near a heater or an air conditioner. Otherwise, it may cause deterioration, discoloration and malfunction. Keep this product away from water.

This product is designed to be used as a pendant mount camera.

When using after installing it tilted or on desktop, it may not work correctly or its lifetime may be shorten.

Important:

- Prepare 4 fixing screws (M4) to fix the base unit using the base unit according to the material and strength of the area where the camera is to be installed.
Do not use wood screws and nails.
- Required pull-out capacity of a single screw is 196N {20 kgf} or more.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced or the optional ceiling mount bracket WV-Q116 shall be used.
- When pendant-mounting on a ceiling, use the optional ceiling mount bracket WV-Q117.
- When installing on a wall, use the optional wall mount bracket WV-Q118.
- When using an optional mount bracket or inner cover, refer to the operating instructions of the bracket in use.
- Remove the cover film from the transparent part of the dome cover after the installation is complete.

Installing condition						
Camera	Appropriate mount bracket			Part to be mounted on a ceiling/wall		
Weight	Model no.	Weight	Mount type	Recommended screw	Number of screw	Pull-out capacity of a single screw
Approx. 2.2 kg (include the base unit)	(Without mount bracket)	–	on ceiling	M4	4	196 N {20 kgf}
	WV-Q116	Approx. 0.8 kg				* The strength more than 5 times of the total weight including the camera is required for the wall (ceiling) strength.
	WV-Q117	Approx. 0.72 kg				
	WV-Q118	Approx. 0.65 kg	on wall			

Procure fixing screws locally.

Fixing screws to be used to fix this product are not provided.

Prepare them after considering the total weight, the material and strength of the area where the camera is to be installed.

When tightening fixing screws

Firmly tighten screws/bolts that are suited to fix with the material and strength of the area where the camera is to be installed. After tightening screws/bolts, check with eyes if the camera is fixed firmly.

Be sure to remove this product if it is not in use.

Power switch

- This product does not have a power switch. The power will be turned on when the power plug is inserted to an outlet. When cleaning this product, unplug first. When the power is turned on, the camera will automatically pan/tilt/adjust focus as the startup operation.
- A grounding connection must be made before connecting the power plug to the main power supply. When disconnecting the grounding wire, make sure that the power plug of this product is disconnected from the main power supply.

Cautions for installation

- This product is designed to be used as a pendant mount camera. Do not install this product on desk-top. It may cause a malfunction.
- This product should be installed with making the camera level. (The dome part should be downward.)
- Be sure to remove this product if it is not in use.

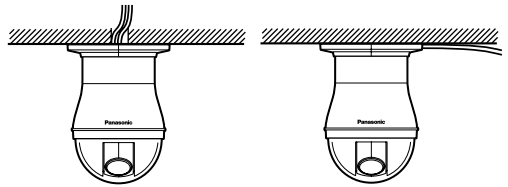
Avoid installing in the following locations.

- Locations where it may get wet from rain or water splash (not only indoor)
- Locations where a chemical agent is used such as a swimming pool
- Locations subject to steam and oil smoke such as a kitchen
- Locations near flammable gas or vapor
- Locations where radiation or x-ray emissions are produced
- Locations where corrosive gas is produced
- Locations where it may be damaged by briny air such as seashores
- Locations where the temperature is not between -10°C - $+50^{\circ}\text{C}$ { 14°F - 122°F }
- Locations subject to vibrations (This product is not designed for on-vehicle use.)
- Locations subject to condensation as the result of severe changes in temperature (The dome cover may be fogged or condensation may be formed.)

Cable connections (power cable, monitor out cable, Ethernet cable, alarm in/out cables, audio in/out cables)

The cables of this product can be wired through a hole that shall be made in a ceiling or through the wiring hole of the decorative cover (The tab of the decorative cover is to be removed.)

- When wiring through a hole in a ceiling, make a hole in the ceiling to pass the cables through. (☞ Step 4 on page 17)
- When wiring through the wiring hole of the decorative cover, fabricate the die-cast case and the decorative cover. (☞ Step 3 on page 16)



When the exogenous noise can affect the product performance

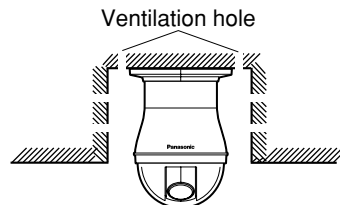
When wiring, make sure that the cables of this product are at least 1 meter away from power cables of 100 V or more such as a cable of electric light, or install cable plumbing system with metal pipes to separate cables to prevent noise affect. (Metal pipes should be grounded.)

Radio disturbance

When the camera is used near a TV/radio antenna, or a strong electric field or magnetic field (such as near a motor, a transformer or a electrical power line), images may be distorted and noise may be produced.

Heat dissipation

Heat is dissipated from the surface of the enclosure of this product. When the installing place is a place where heat stays, such in a location where is surrounded by walls, make ventilation holes for heat dissipation.



Install this product when humidity is low

When installing this product while humidity is high, inside of the dome cover may be fogged. When it happened, detach the dome cover when humidity is low and attach it after drying out inside the dome cover. (☞ page 12)

About SD memory card

- Before inserting a SD memory card into the SD memory card slot, turn the power of this product off. Otherwise, it may cause malfunction or damage data recorded on the SD memory card. Refer to page 6 for descriptions of how to insert/remove a SD memory card.
- When using unformatted SD memory card, format it using this product. Recorded data on the SD memory card will be deleted when formatted. If using an unformatted SD memory card or using a SD memory card formatted with other device, this product may not work properly or performance deterioration may be caused. Refer to the setup instructions (PDF) for how to format a SD memory card.

- It is recommended to use Panasonic's SD memory cards (64 MB, 128 MB, 256 MB, 512 MB, 1 GB and 2 GB) since they have tested and confirmed full compatibility with this product. If another SD memory card is used, this product may not work properly or performance deterioration may be caused.

Cautions:

- Shrinking the cable-entry seal is a one-time procedure. Do not shrink the cable-entry seal until ascertaining that the unit is functioning.
- CONNECT THIS TO 24 V AC CLASS 2 POWER SUPPLY ONLY.

Router

When connecting this product to the Internet, use a broadband router with the port forwarding function (NAT, IP masquerade).

Refer to the setup instructions (PDF) for how further information about the port forwarding function.

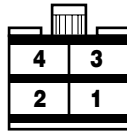
• 24 V AC Power Supply Connection

Recommended wire gauge sizes for 24 V AC line

Copper wire size (AWG)	#24 (0.22mm ²)	#22 (0.33mm ²)	#20 (0.52mm ²)	#18 (0.83mm ²)	
Length of cable (approx.)	(m)	20	30	45	75
	(ft)	65	100	160	260

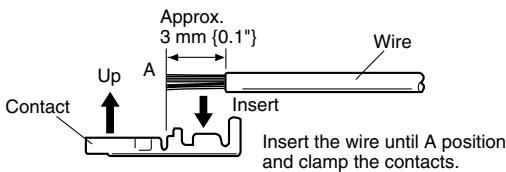
Accessory Connector Information

Pin no.	Power source
1	24 V AC LIVE
2	24 V AC NEUTRAL
3	Ground
4	Not use



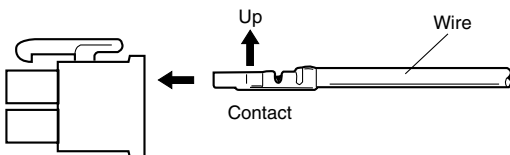
How to Assemble the Cable with the Accessory Connector

Strip back the cable jacket approx. 3 mm {0.1"} and separate the individual conductors.



Prepare the individual conductors for clamping. Use MOLEX band tool part number 57027-5000 (for UL-Style Cable UL1015) or 57026-5000 (for UL-Style UL1007) for clamping the contacts.

After clamping the contacts, push them into the proper holes in the accessory connector of this camera until they snap in place.



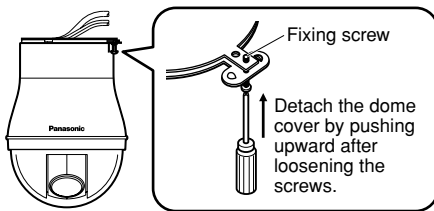
Installation

Before starting installation/connection, make sure that the power plug is not connected to an outlet. Read the "Precautions for installation" section before starting installation/connection. (☞ page 13)

Step 1

Remove the screw (M3 x 6) fixing the camera and the base unit.

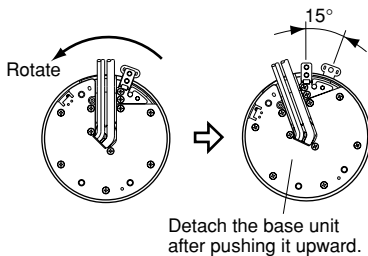
- Do not lose it since it is to be used to fix the camera and the base unit again.



Step 2

Detach the base unit.

- Rotate the base unit to the direction as indicated by the arrow mark as shown in the illustration, and detach it.



Step 3

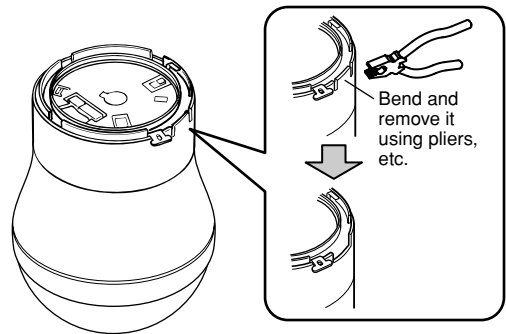
Manufacture the camera and the decorative cover.

- It is necessary to fabricate the camera body and the decorative cover to pull out the cables (power, monitor out, LAN, alarm in/out, audio in/out) from the side of the camera.

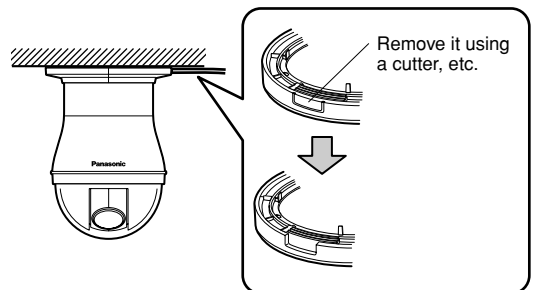
Refer to the following illustrations for how to fabricate the camera body and the decorative cover.

[Fabricate the die-cast case of the camera]

- * Mat a soft cloth when fabricating the die-cast body of the camera body to prevent to scratch the dome cover.



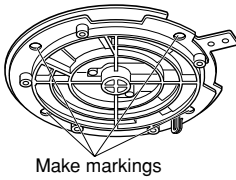
[Fabricate the decorative cover]



Step 4

Make 4 markings for fixing screw holes while holding the base unit.

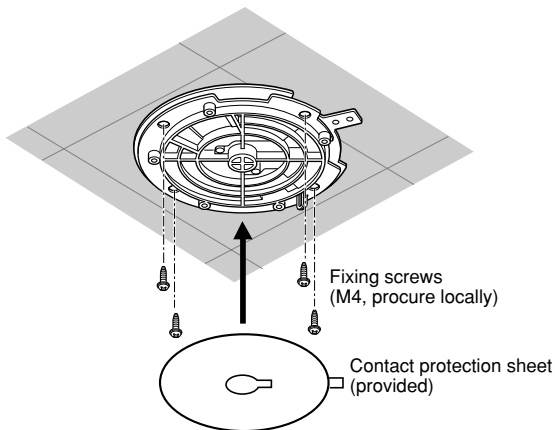
- When wiring through a hole in the ceiling, make a hole after determining the position for a cable hole in the ceiling.



Step 5

Mount the base unit onto a ceiling.

- Prepare fixing screws (M4) according to the material of the place where the camera is to be installed.
- When not installing the camera yet, attach the provided contact protection sheet to prevent dust adhesion.



Step 6

Insert a SD memory card into the SD memory card slot.

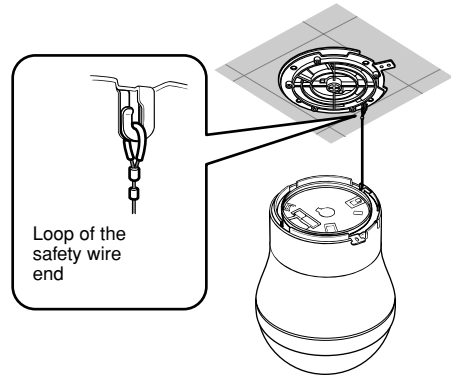
- Refer to page 23 for how to insert a SD memory card.

Step 7

Attach the safety wire fixed with the camera body to the base unit.

- After attaching the safety wire to the camera, pull the safety wire and confirm that the ring at the end of the safety wire is securely hooked on the safety wire holder.

- When the provided contact protection sheet is still on the camera, remove it before attaching the safety wire.



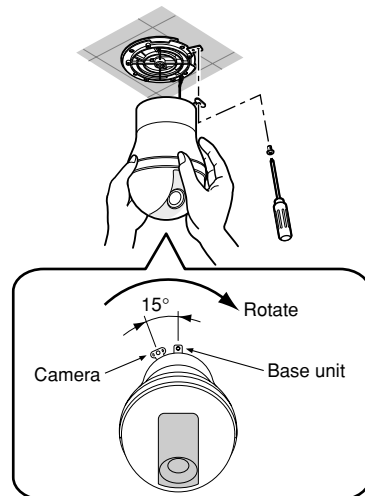
Important:

The safety wire is designed to support weight of the camera. Do not load more than the weight of the camera.

Step 8

Attach the camera body to the base unit.

- Fit the camera body onto the base unit, and rotate the camera clockwise as shown in the illustration.



Step 9

Fix the camera onto the base unit using the removed screw in step 1.

Step 10

Check if the installation has been made successfully.

- Check the following.
 - The camera is firmly installed, not installed tilted.
 - The camera is firmly installed, not installed loose.
 - The fixed part of the camera cannot be rotated even when trying to rotate it.

Step 11

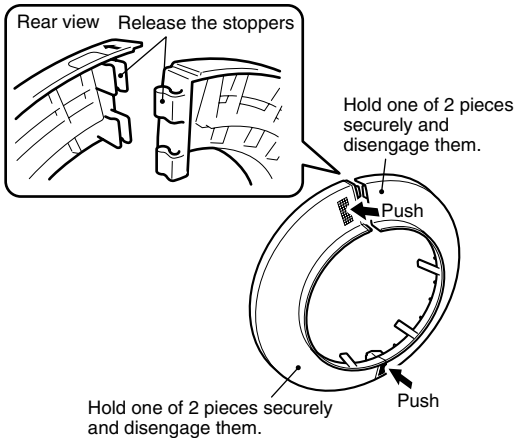
Connect the cables.

- Refer to page 20 for how to connect the cables.

Step 12

Separate the provided decorative cover into 2 pieces.

- Release the stoppers by pressing the [*] parts of the decorative cover as shown in the illustration.
 - * Direction of the pressing force (←) is indicated on the side of the decorative cover.



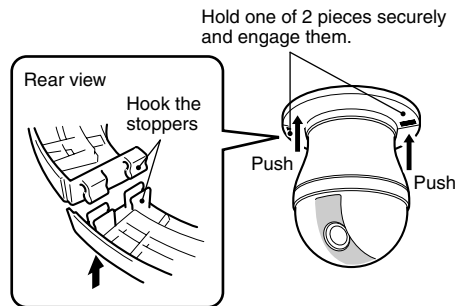
Important:

When pressing to the reverse direction, it may damage the decorative cover.

Step 13

Attach the decorative cover to the camera.

- Position the pieces of the decorative cover that have been split in step 12 to tuck down the camera body, and then attach them together.
 - Fit up the stoppers as shown in the illustration.

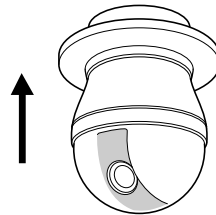


Step 14

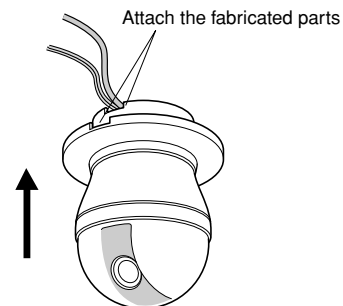
Fix the decorative cover.

- When pulling out the cables from the hole in the ceiling, press the decorative cover to the ceiling with force.
- When pulling out the cables from the side of the decorative cover, press the decorative cover to the ceiling with force while aligning the cables to the fabricated cable hole of the decorative cover.

[When wiring through a hole in a ceiling]



[When wiring through the wiring hole of the decorative cover]



Detach the camera

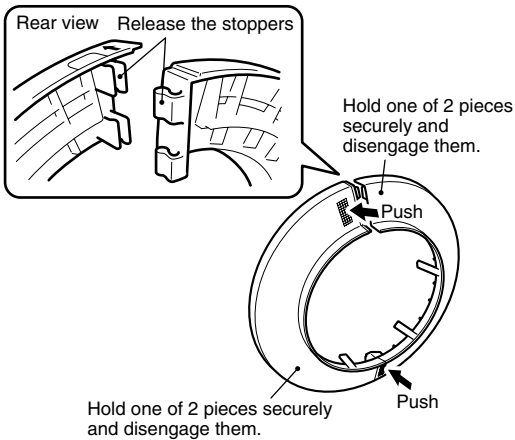
Important:

The camera is fixed on the base unit. Do the following to detach the camera since the camera is fixed with the double fixation structure. Otherwise, it may damage the camera.

Step 1

Separate the provided decorative cover into 2 pieces.

- Release the stoppers by pressing the [*] parts of the decorative cover as shown in the illustration.
- * Direction of the pressing force (↔) is indicated on the side of the decorative cover.



Important:

When pressing to the reverse direction, it may damage the decorative cover.

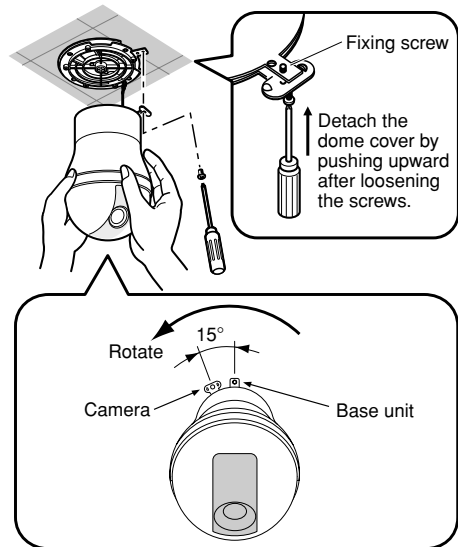
Step 2

Detach the cables.

Step 3

Remove the screw fixing the camera and the base unit.

- Do not lose it since it is to be used to fix the camera and the base unit again.



Step 4

Detach the camera from the base unit.

- Rotate the camera to the direction as indicated by the arrow mark as shown in the illustration, and detach it.

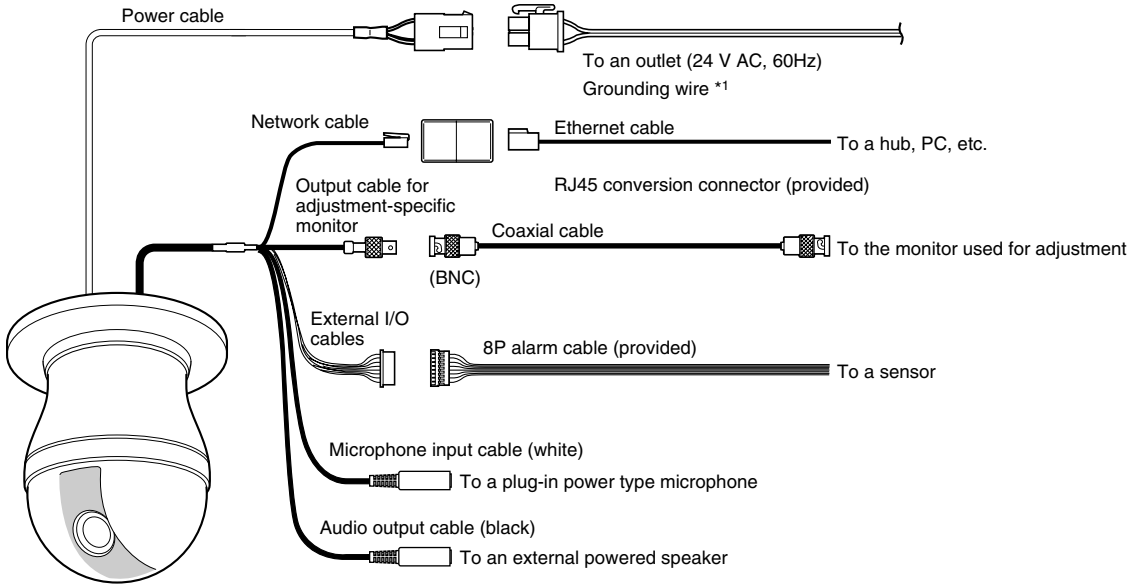
Step 5

Detach the safety wire from the base unit.

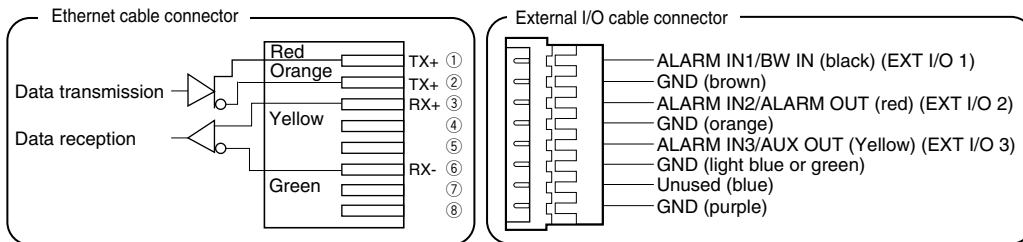
Connection

Caution:

Before starting connection, make sure that the circuit breaker is switched off. Failure to do so could result in fire, injury, electric shock or property destruction.



*1: The grounding wire should be connected to ground.



• Network cable

Connect with an Ethernet cable (category 5 or better).

Important:

Maximum length of an Ethernet cable that can be connected is 100 m.

• Output cable for adjustment-specific monitor

Connect with a coaxial cable (BNC) (only when checking video signal output).

The monitor out connector is provided only for checking the adjustment of the angular field of view on the video monitor when installing the camera or when servicing.

• External I/O cables

Important:

- Input and output of EXT I/O terminal 2 and 3 can be switched by configuring the setting. The default of EXT I/O terminal 2 is "ALARM IN 2" and of EXT I/O terminal 3 is "ALARM IN 3". It is possible to determine whether or not to receive input from EXT I/O terminal 2 and 3 (ALARM IN2, 3) by selecting "OFF", "Alarm input", "Alarm output" or "AUX output" for "Terminal alarm 2" or "Terminal alarm 3" on the [Alarm] tab on the "Alarm setup" page. Refer to the setup instructions (PDF) for further information.
 - When selecting "Alarm output" for EXT I/O terminals, avoid signal collision with external signals.
-

<Ratings>

- ALARM IN1/BW IN, ALARM IN2, ALARM IN3
Input specification: Non-voltage make contact (DC 4 - 5 V internal pull-up)
OFF: Open or DC 4 - 5 V
ON: Make contact with GND (drive current: 1 mA or more)
- ALARM OUT, AUX OUT
Output specification: Open collector output (Maximum applied voltage: DC 20 V)
OPEN: DC 4 - 5 V by internal pull-up
CLOSE: Output voltage: DC 1 V or less (maximum drive current: 50 mA)

• Microphone in connector

Connect the mini plug (ø3.5 mm) of a plug-in power type microphone (sold separately).

Supply voltage: 2.5 V ±0.5 V

Input impedance: 3 kΩ ±10 %

Recommended sensitivity of microphone:

-48 dB ±3 dB (0 dB=1 V/Pa, 1 kHz)

Recommended cable length: Less than 1 m

Important:

Connect/disconnect the audio/video cables after turning off the power of the camera and the amplifier. Otherwise, loud noise may be heard from the speaker.

• Audio output connector

Connect a monaural mini plug (ø3.5 mm). Use a powered external speaker.

Recommended cable length: Less than 10 m

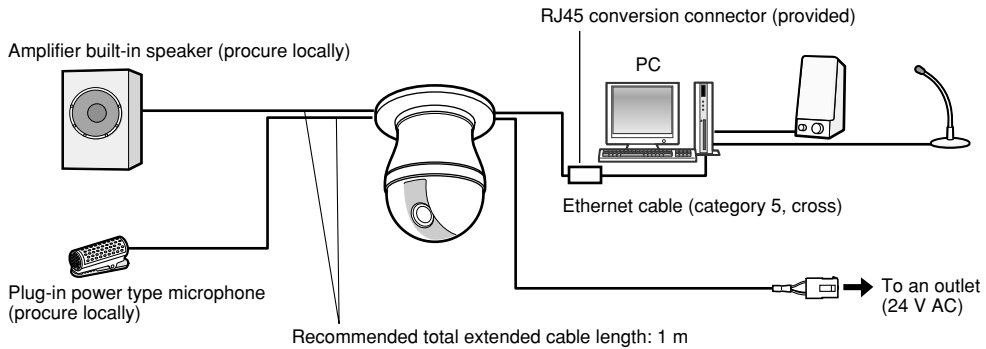
Note:

Make sure that the stereo mini plug is connected to this connector. When a monaural mini plug is connected, audio may not be heard.

When connecting a monaural powered speaker, use an optional conversion cable (mono-stereo).

Connection example

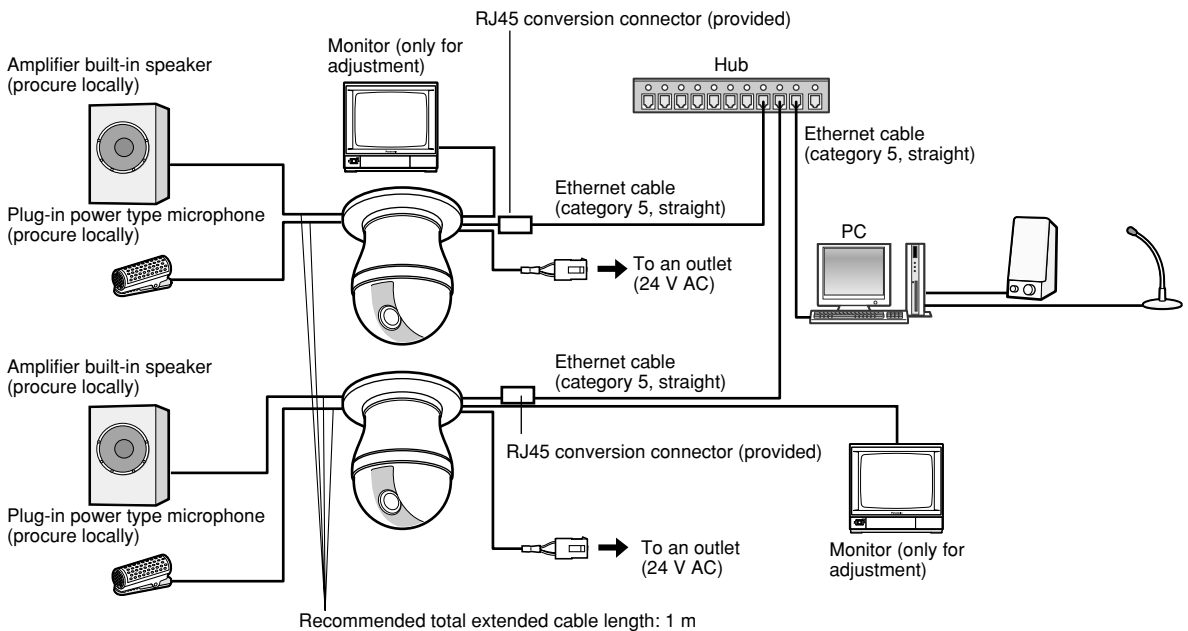
When connecting with a PC directly



<Required cables>

Ethernet cable (category 5, cross)

When connecting to a network (hub)



<Required cables>

Ethernet cable (category 5, straight)

Important:

- The monitor out connector is provided only for checking the adjustment of the angular field of view on the video monitor when installing the camera or when servicing. It is not provided for recording/ monitoring use.
- Depending on the monitor, some characters (camera title, preset ID, etc.) may not be displayed on the screen.
- Use a switching hub or a router which is compliant with 10BASE-T/100BASE-TX.
- Power supply is required for each network camera.

Insert/remove a SD memory card

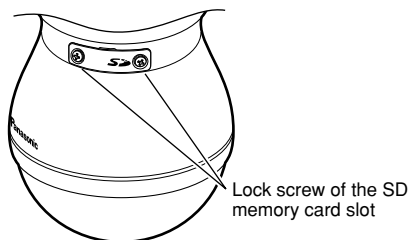
Important:

Before inserting the SD memory card, turn off the power of the camera first.

Insert a SD memory card

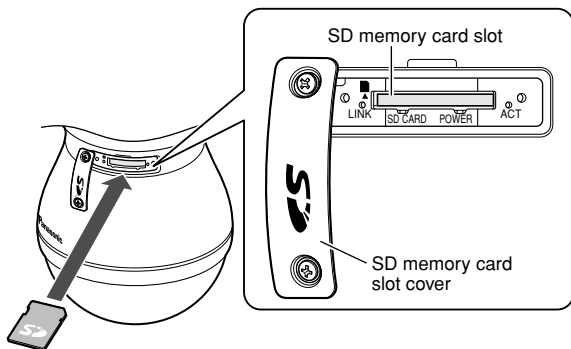
Step 1

Loosen the lock screw of the SD memory card slot cover.



Step 2

Remove the SD memory card slot cover, and then insert a SD memory card into the slot.



Remove the SD memory card

Important:

Before removing the SD memory card, select "Not use" for "SD memory card" on the [SD memory card] tab of "Basic Setup" on the setup menu first. After configuring the setting above, turn off the power of the camera and then remove the mini SD memory card. (Setup instructions (PDF))

Step 1

Loosen the lock screw of the SD memory card slot by following step 1 of "Insert a SD memory card" section.

Step 2

Detach the SD memory card slot.

Important:

- Do not pull the SD memory card slot strongly. Otherwise, it may damage the camera.
- Do not insert a SD memory card with wrong insertion direction. If it is inserted with wrong insertion direction with force, it may cause malfunction.

Step 3

Put the SD memory card slot cover back into place as it was, and then tighten the lock screw of the SD memory card slot cover.

[Recommended tightening torque: 2.5 kgf·cm]

Step 4

Select "Use" for "SD memory card" on the [SD memory card] tab of "Basic Setup" on the setup menu. (Setup instructions (PDF))

Step 5

Select "Format" for "SD memory card" on the [SD memory card] tab of "Basic Setup" on the setup menu. (Setup instructions (PDF))

Step 3

Release the locked SD memory card by pushing the card and then pull the SD memory card from the slot.

Step 4

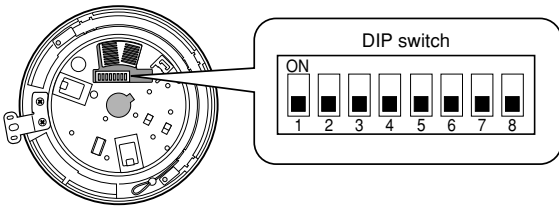
Follow step 3 of the "Insert a SD memory card" section to put the SD memory card slot cover back into place as it was, and then tighten the lock screw of the SD memory card slot cover.

Initialize the camera

Use the DIP switch to initialize the camera. The DIP switch can be found when the base unit is detached. (☞ page 19)

Important:

The settings including the network settings will be initialized. Note that the preset position settings will not be initialized.

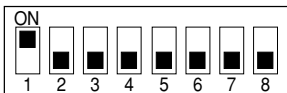


Step 1

Detach the camera from the base unit. (☞ page 19)

Step 2

Set "1" of DIP switch to "ON".



- The default positions of each DIP switch are OFF.
- Put the protection sheet back into place as it was after setting to "ON".

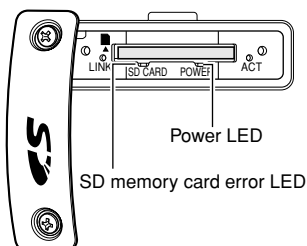
Step 3

Attach the camera to the base unit. (☞ page 17)

Step 4

Turn on the power of the camera. (☞ page 14)

- When the power LED (green) and the SD memory card error LED (red) located next to the SD memory card slot are blinking, the initialization is completed.

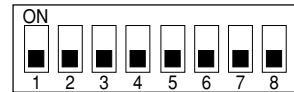


Step 5

Turn off the power of the camera, and then detach the camera from the base unit. (☞ page 19)

Step 6

Set "1" of DIP switch to "OFF".



Important:

When "1" of DIP switch is in the "ON" position, the camera will not be operated in normal state. Make sure that "1" of DIP switch is in the "OFF" position.

Step 7

Attach the camera to the base unit. (☞ page 17)

Step 8

Turn on the power of the camera. (☞ page 14)

- When the power of the camera is turned on, the camera will be operated in normal state.

Configure the network settings

Install the software

Before installing the software, read the readme file on the provided CD-ROM first.

Software included on the provided CD-ROM

- Panasonic IP Setup Software
Configure the network settings of the camera. Refer to the following for further information.
- Viewer Software "Network Camera View3"
It is necessary to install the viewer software "Network Camera Viewer3" to display images on a PC. Install the viewer software by following the displayed instructions after double-clicking the "nwc3setup.exe" icon on the provided CD-ROM or install from the camera directly (☞ Setup instructions (PDF)).

Configure the network settings of the camera using the Panasonic IP setting software

It is possible to perform the network settings of the camera using the IP setup software on the provided CD-ROM. When using multiple cameras, it is necessary to configure the network settings of each camera independently. If the Panasonic IP setting software does not work, perform the network settings of the camera and the PC individually on the "Network setup" page of the setup menu. Refer to the setup instructions (PDF) for further information.

Important:

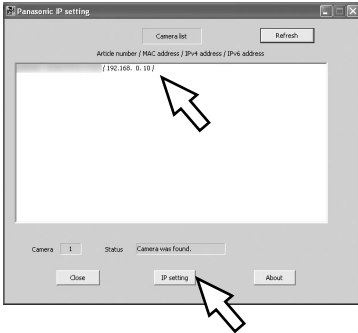
- The "Windows Security Alert" window may be displayed when starting the IP setup software. In this case, click the "Unblock" button on the displayed "Windows Security Alert" window.
 - For the security enhancement, the MAC address/IP address of the camera to be configured will not be displayed when around 20 minutes have passed after turning on the power of the camera. However, the MAC address/IP address of the camera will be displayed even after around 20 minutes have passed when the values of all the following setup items are still the default values; "IP address", "Default gateway", "Net mask", "HTTP port", "DHCP", "User name", "Password".
 - The Panasonic IP setting software is inoperable in other subnets via the same router.
-

Step 1

Start the Panasonic IP setting software.

Step 2

Click the [IP setting] button after selecting the MAC address/IP address of the camera to be configured.

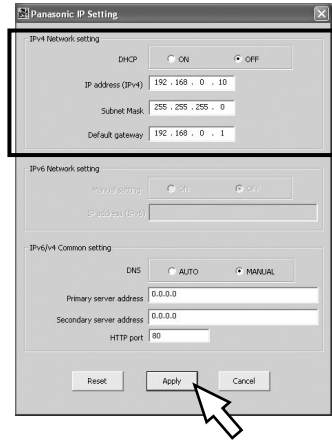


Note:

When using a DHCP server, the IP address assigned to the camera can be displayed by clicking the [Refresh] button of the IP setting software.

Step 3

Complete each network setup item and click the [Apply] button.



Note:

When using a DHCP server, it is possible to set "DNS" to "AUTO".

Important:

- It may take around 30 seconds to completely upload the settings of the camera after clicking the [Apply] button. The settings may be invalidated when the power supply is cut or when the LAN cable is disconnected before completing the upload. In this case, perform the settings again.
- When using a firewall (including software), allow access to all UDP ports.

Troubleshooting

Before asking for repairs, check the symptoms on the following table.

Contact your dealer if a problem cannot be solved even after checking and trying the solution or if the problem is not described below.

Symptom	Cause/solution	Reference pages
The power cannot be turned on.	<ul style="list-style-type: none"> Is the power cable connected firmly to power that meets the required specifications? Check if it is connected correctly and firmly. 	20
	<ul style="list-style-type: none"> Is the base unit attached to the camera firmly? Check if it is attached correctly and firmly. 	17
The camera does not move to the preset positions accurately.	<ul style="list-style-type: none"> Execute the refresh position function to correct the camera position when the camera does not move to the set position precisely. It is also possible to correct the camera position periodically by assigning the position refresh function to a schedule. In some situations, reconfigure the preset positions. 	Setup instructions (PDF)
When the camera is panning/tilting, the camera stops panning/tilting and mechanical noise comes from the camera.	<ul style="list-style-type: none"> When the camera position is moved after turning on the power of the camera, the camera may stop in the process of panning/tilting and mechanical noise will come out from the camera. Execute the refresh position function from the [Initialization] tab of the "Maintenance" page. 	Setup instructions (PDF)
The camera starts panning unpredictably.	<ul style="list-style-type: none"> This may be caused by noise. Check the exogenous noise level around the camera. 	14
Audio input contains noise.	<ul style="list-style-type: none"> Check the following. <ul style="list-style-type: none"> Grounding of the camera, a switching hub or a peripheral device is not done. The camera is used near an electrical power line. The camera is used near a device which produces strong magnetic field or radio waves (such as near a TV/radio antenna, a motor of an air conditioning system, a transformer, etc.) <p>When audio input still contains noise even after checking the above possibilities, use a powered microphone or connect Audio output with low output impedance.</p>	14

Inspect the power cable, power plug and connectors periodically.

Symptom	Cause/solution
The power cable insulation is damaged.	<ul style="list-style-type: none">• The power cable, plug and connectors are worn out. This may result in electric shock or a fire. Unplug the power plug from the AC outlet immediately, and refer to qualified service personnel.
The power cable, plug and connectors get hot during use.	
The power cable gets hot when bent or stretched.	

Specifications

General

Power source	24 V AC, 60 Hz
Power consumption	15 W
Ambient temperature	-10 °C - +50 °C { 14 °F - 122 °F} (Recommended temperature: 35 °C {95 °F} or below)
Ambient humidity	90 % or less
Monitor output (for adjustment)	VBS: 1.0 V [P-P]/75 Ω (NTSC), composite (BNC)
External I/O terminals	ALARM IN 1/BW IN, ALARM IN 2/ALARM OUT, ALARM IN 3/AUX OUT (x1 each)
Microphone input	ø3.5 mm mini jack (Applicable microphone: Plug-in power type) Supply voltage: 2.5 V ±0.5 V, Input impedance: 3 kΩ ±10 %
Audio output	ø3.5 mm stereo mini jack (Monaural output, Line level)
Dimensions	ø154.5 mm x 233 mm (H), diameter of the dome: 145 mm
Weight	Camera (include the base unit): Approx. 2.2 kg Accessories (decorative cover): Approx. 50 g

Camera

Image sensor	1/4 inch interline transfer CCD
Effective pixels	768 (H) x 494 (V)
Scanning area	3.59 mm (H) x 2.70 mm (V)
Scanning system	2:1 interlace scan (with motion adaptive interlace/progressive conversion function for network output)
Minimum illumination	Color: 0.5 lx {0.05 footcandle}, black and white: 0.04 lx {0.004 footcandle} (Sensitivity up: OFF, AGC: HIGH, F1.4 WIDE) Color: 1.1 lx {0.11 footcandle}, black and white: 0.09 lx {0.009 footcandle} (When using an optional smoke type dome cover)
Dynamic range	52 dB typ. (Super dynamic 3: ON, Shutter speed: OFF)
Gain	ON (LOW)/ON (MID)/ON (HIGH)/OFF
Shutter speed	OFF (1/60), AUTO, 1/100
Sensitivity up	Up to 32x
Black & white mode	ON/OFF/AUTO (HIGH)/AUTO (LOW)
White balance	ATW1/ATW2/AWC
Digital noise reduction (DNR)	LOW/HIGH
Electronic zoom	Up to 10x
Camera title	Up to 16 characters (alphanumeric characters, marks) ON/OFF
VMD alarm	ON/OFF, 4 areas available per preset position
Image hold	ON/OFF
Image stabilization	ON/OFF
Privacy zone	ON/OFF (up to 8 zones available)

Lens

Zoom ratio	30x
Focal length	3.8 mm - 114 mm
Maximum aperture ratio	1 : 1.4 (WIDE) - 3.7 (TELE)
Macro	1.5 m
Aperture range	F1.4 - 22, Close
Angle of view	Horizontal: 1.9 ° (TELE) - 52 ° (WIDE)
Vertical:	1.4 ° (TELE) - 40 ° (WIDE)

Panning/tilting platform

Panning range	360° Endless panning
Panning speed	Manual: Approx. 0.065 °/s - 120 °/s, preset: up to approx. 400 °/s
Tilting range	-5 ° - 185 ° (horizontal - vertical - horizontal) (Depends on the TILT ANGLE setting) Selectable tilting angle: 0 °/-1 °/-2 °/-3 °/-4 °/-5 °
Tilting speed	Manual: Approx. 0.065 °/s - 120 °/s, preset: up to approx. 400 °/s
Number of the preset positions	256
Auto mode	OFF/preset sequence/auto pan/auto track/patrol
Self return	10 s/20 s/30 s/1 m/2 m/3 m/5 m/10 m/20 m/30 m/60 m
Map shot	360 ° map shot/preset map shot

Network

Network	10BASE-T/100BASE-TX, RJ45 connector
Resolution	VGA (640 x 480)/QVGA (320 x 240)
Image compression method	
MPEG-4	Image mode: Motion priority/Standard/Quality priority Transmission type: UNICAST/MULTICAST bitrate: (constant bit rate) 64 kbps/128 kbps/256 kbps/512 kbps/1 024 kbps/ 2 048 kbps/4 096 kbps (frame rate priority) 4 096 kbps/Unlimited
JPEG	Image quality: 0 SUPER FINE/1 FINE/2/3/4/5 NORMAL/6/7/8/9 LOW (10 steps: 0-9) Transmission type: PULL/PUSH
Refresh interval	0.1 fps - 30 fps (Frame rate of JPEG display will be limited when displaying JPEG and MPEG-4 simultaneously.)
Audio compression method	G.726 (ADPCM) 32 kbps/16 kbps
Bandwidth Control	Unlimited/64 kbps/128 kbps/256 kbps/512 kbps/1 024 kbps/2 048 kbps/ 4 096 kbps
Protocol	TCP/IP, UDP/IP, HTTP, RTSP, RTP, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP
OS	Microsoft® Windows® XP Home Edition SP2, Microsoft® Windows® XP Professional SP2, Microsoft® Windows® Vista®*1 32-bit*2
Web browser	Microsoft® Internet Explorer® 6.0 SP2, Microsoft® Internet Explorer® 7.0 *2 Microsoft® Internet Explorer® 7.0 is required when using Microsoft® Windows Vista® 32-bit.
Maximum concurrent access number	8 (Depends on network conditions)
FTP client	Alarm image transmission, FTP periodic transmission
Multi-screen	Images from 16 cameras (4 cameras x 4 groups) can be displayed simultaneously.
SD memory card (option)	Manufactured by Panasonic (Performance with this camera has been checked.) Capacity: 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB * SD High Capacity (SDHC) card is not compatible with this camera.

*1 Refer to "Notes on Vista®" (PDF) for further information about system requirements for a PC and precautions when using Microsoft® Windows® Vista®.

Options

Wall Mount Bracket	WV-Q118	(weight: Approx. 0.65 kg)
Ceiling Mount Bracket	WV-Q116	(weight: Approx. 0.8 kg)
Ceiling pendant type mount bracket	WV-Q117	(weight: Approx. 0.72 kg)
Smoke type dome cover	WV-CS3S	(weight: Approx. 90 g)

Standard accessories

Installation guide (this book)	1 pc
Warranty	1 pc
CD-ROM*	1 pc.
Code label	1 pc.
RJ45 conversion connector	1 pc.

* The CD-ROM contains the operating instructions (PDFs) and the software.

The following are for installation.

Decorative cover	1 pc.
Contact protection sheet	1 pc.
Connector for 24 V AC	1 pc.
8P alarm cable	1 pc.
(The provided 4P alarm cable is not to be used with this product.)	

**Panasonic System Networks Company of America,
Unit of Panasonic Corporation of North America**

www.panasonic.com/business/

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