Panasonic

Installation Guide

Included Installation Instructions

Network Camera

Model No. WV-SFV311/WV-SFV310

(This illustration represents WV-SFV311.)

- This manual describes the installation procedures, network camera installation, cable connections, and the angle of view adjustment.
- Before reading this manual, be sure to read the Important Information.
- This manual describes how to install the network camera using the WV-SFV311 model as an example.

For U.S. and Canada:

Panasonic System Communications Company of North America, Unit of Panasonic Corporation of North America
www.panasonic.com/business/
For customer support, call 1.800.528.6747
Two Riverfront Plaza, Newark, NJ 07102-5490

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3 Canada
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www.panasonic.ca

For Europe and other countries:

Panasonic Corporation
http://panasonic.net

Panasonic System Networks Co., Ltd.
Fukuoka, Japan

Authorised Representative in EU:

Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, Germany

PGQX1558XA sL0514-2064 Printed in China

Standard accessories

Important Information	1 pc.	CD-ROM*1	1 pc.
Installation Guide (this document)	1 set	Code label*2	1 pc.
Warranty card	1 set		

*1 The CD-ROM contains the operating instructions and different kinds of tool software programs.
*2 This label may be required for network management. The network administrator shall retain the code label.

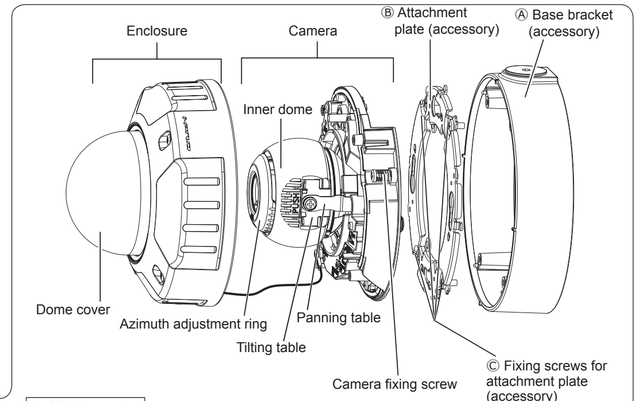
The following parts are used during installation procedures.

Ⓐ Base bracket	1 pc.	Ⓑ Attachment plate	1 pc.
Ⓒ Fixing screws for attachment plate (M4 x 8 mm)	5 pcs. (of them, 1 for spare)	Ⓓ 4P alarm cable	1 pc.
		Ⓔ MONITOR OUT conversion plug	1 pc.
		Ⓕ Template A (for the attachment plate)	1 sheet.
Ⓖ Template B (for the base bracket)	1 sheet.	Ⓗ Bit	1 pc.
Ⓘ 2P power cable	1 pc.	Ⓙ LAN cable cover	1 pc.
Ⓚ Waterproof tape	1 pc.		

Ⓗ

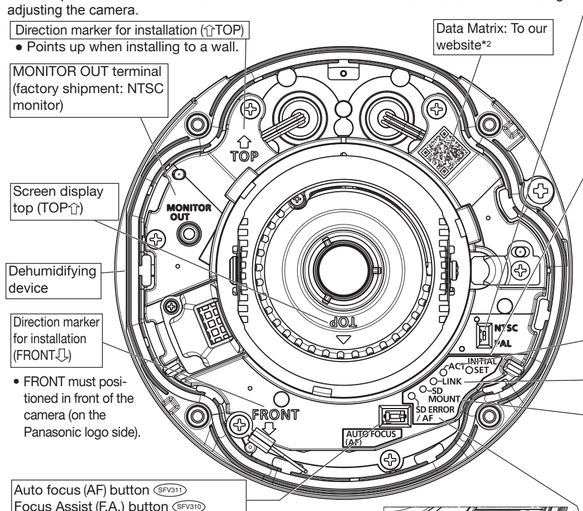
(Screw size 6.35 mm {1/4 inches} torx wrench)

Ⓚ



Major operating controls

The component names of the camera are as follows. Refer to the illustration when installing or adjusting the camera.



*1 SDXC/SDHC/SD memory card is described as SD memory card.
*2 Depending on the scanning application used, the Data Matrix may not be able to be read correctly. In this case, access the site by directly entering the following URL.
http://security.panasonic.com/pss/security/support/qr_sp_select.html

NTSC/PAL switch

- The MONITOR OUT terminal output can be switched for NTSC or PAL monitors.

IMPORTANT:
- This is valid if the [Monitor out] is set to [Switch priority] ([Switch priority] is selected by default). For details, refer to the Operating Instructions (included in the CD-ROM).

INITIAL SET button

- How to initialize the camera

Follow the steps below to initialize the network camera.
① Turn off the power of the camera. When using a PoE hub, disconnect the LAN cable from the camera. When using an external power supply, disconnect the 2P power cable plug from the camera.
② Turn on the power of the camera while holding down the INITIAL SET button, and then keep holding down the button for 5 seconds or more. About 2 minutes later, The camera will start up and the settings including the network settings will be initialized.

IMPORTANT:
- When the camera is initialized, the settings including the network settings will be initialized. Note that the CRT key (SSL encryption key) used for the HTTPS protocol will not be initialized.
- Before initializing the settings, it is recommended to write down the settings in advance.
- Do not turn off the power of the camera during the process of initialization. Otherwise, it may fail to initialize and may cause malfunction.

ACT indicator

• When data is being sent via the network camera	Blinks green (accessing)

LINK indicator

• When the camera is able to communicate with the connected device	Lights orange

SD MOUNT indicator

• When an SD memory card*1 is inserted and could be recognized	Lights off → Blinks green → Lights off
• When data can be saved after the SD memory card is inserted and the SD ON/OFF button is pressed	Lights off → Lights green
• When data can be saved to the SD memory card	Lights green
• When the SD memory card is removed after holding down the SD ON/OFF button for about 2 seconds	Lights green → Blinks green → Lights off
• When data cannot be saved to the SD memory card because an abnormality was detected or the SD memory card is configured not to be used	Lights off

SD ERROR/AF indicator SFV311 F.A. indicator SFV310

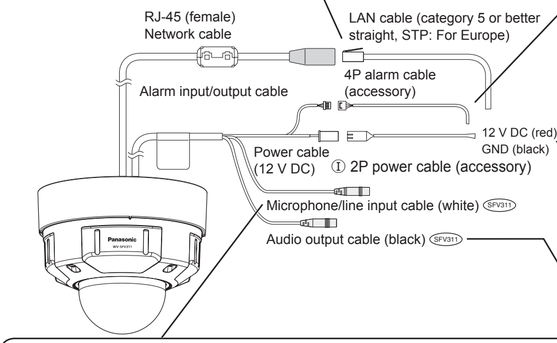
• When AF (Auto Focus) operation is being executed SFV311	Blinks red (Interval of 1 time/ second)
• When the focus assist function is activated SFV310	Blinks red (1 time)
• When the focus ring is positioned near the best focus position SFV310	Lights red
• When the set is being started	Lights red
• When an SD memory card is recognized normally	Lights red → Lights off
• When an abnormality is detected in SD card or the SD slot is not used after the camera has started	Lights red

Making connections

Turn off each system's power supply before making a connection. Before making connections, prepare the required peripheral devices and cables.

Connect a LAN cable (category 5 or better, straight, STP: For Europe)

IMPORTANT:
- Use all 4 pairs (8 pins) of the LAN cable (category 5 or better, straight, STP: For Europe).
- The maximum cable length is 100 m {328 feet}.
- Make sure that the PoE device in use is compliant with IEEE802.3af standard.
- When connecting both the 12 V DC power supply and the PoE device for power supply, 12 V DC will be used for power supply*.
  * If a 12 V DC power supply and a PoE hub or router are used at the same time, network connections may not be possible. In this case, disable the PoE settings. Refer to the operating instructions of the PoE hub or router in use.
  * In the situation where a 12 V DC power supply and a PoE hub or router are used at the same time and the 12 V DC power supply is then disconnected, the power supply may be stopped and the camera may restart depending on the PoE hub or router used.
- When the LAN cable is disconnected once, reconnect the cable after around 2 seconds. When the cable is quickly reconnected, the power may not be supplied from the PoE device.
- When cables are used outdoors, there is a chance that they may be affected by lightning. In this case, install a lightning arrester just before where the cables connect to the camera.



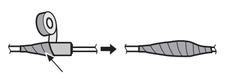
Microphone/line input cable SFV311

Connect a monaural mini plug (ø3.5 mm).
- Input impedance: Approx. 2 kΩ (unbalanced)
- Recommended cable length: Less than 1 m {3.28 feet} (for microphone input)
  Less than 10 m {32.8 feet} (for line input)
- Recommended microphone: Plug-in power type (option)
- Supply voltage: 2.5 V ±0.5 V
- Recommended sensitivity of microphone: –48 dB ±3 dB (0 dB=1 V/Pa,1 kHz)
- Input level for the line input: Approx. –10 dBV

Waterproof treatment for the cable joint sections

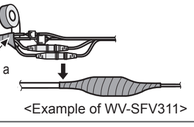
Adequate waterproof treatment is required for the cables when installing the camera with cables exposed or installing it under the eaves. The camera body is waterproof, but the cable ends are not waterproof.
Be sure to use the supplied waterproof tape at the points where the cables are connected to apply waterproof treatment in the following procedure. Failure to observe this or use of a tape other than the provided waterproof tape (such as a vinyl tape) may cause water leakage resulting in malfunction.

<LAN cable>



Wind the tape in a half-overlapping manner.

<Alarm input/output cable, power cable, microphone/line input cable SFV311, audio output cable SFV311>

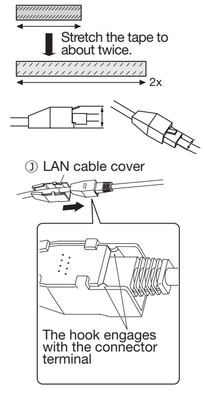


Wind the tape in a half-overlapping manner.

<Example of WV-SFV311>

IMPORTANT:

How to wind the supplied waterproof tape
- Also waterproof the 2P power cable (accessory), 4P alarm cable (accessory), and external connections in the same way.
- Stretch the tape by approx. twice (see the illustration) and wind it around the cable. Insufficient tape stretch causes insufficient waterproofing.
- To prevent the LAN cable hook from coming loose easily, fit the Ⓙ LAN cable cover onto the pigtail cable as illustrated, and then slide it in the direction indicated by the arrow.
  The connector of the LAN cable used with this camera must meet the following restrictions.
  Height when inserted (From bottom to hook.):
  Max. 16 mm {5/8 inches}
  Connector width: Max. 14 mm {9/16 inches}
- To install this product outdoors, be sure to waterproof the cables. Waterproof grade (IEC IP66 or equivalent) is applied to this product only when it is installed correctly as described in these operating instructions and appropriate waterproof treatment is applied. The internal parts of base brackets are not waterproofed.



Connect the alarm input/output cable

Ⓓ 4P alarm cable (accessory)

<Ratings>
- ALARM IN1(DAY/NIGHT IN), ALARM IN2, ALARM IN3
  Input specification: No-voltage make contact input (4 V - 5 V DC, internally pulled up)
  OFF: Open or 4 V - 5 V DC
  ON: Make contact with GND (required drive current: 1 mA or more)
- ALARM OUT, AUX OUT
  Output specification: Open collector output (maximum applied voltage: 20 V DC)
  Open: 4 V - 5 V DC by internal pull-up
  Close: Output voltage 1 V DC or less (maximum drive current: 50 mA)

* The default of EXT I/O terminals is "Off".

IMPORTANT:
- Be sure to use the 4P alarm cable provided with this product.
- Off, input, and output of the external I/O terminal 2 and 3 can be switched by configuring the setting. Refer to the Operating Instructions on the provided CD-ROM for further information about the EXT I/O terminal 2 and 3 (ALARM IN2, 3) settings ("Off", "Alarm input", "Alarm output" or "AUX output").
- When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.
- Install external devices so that they do not exceed the ratings above.

Connect the power cable

Caution:
- A READILY ACCESSIBLE DISCONNECT DEVICE SHALL BE INCORPORATED TO THE EQUIPMENT POWERED BY 12 V DC POWER SUPPLY.
- ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).

Power cable	
	12 V DC
Red	Positive
Black	Negative

Connect the output cable of the AC adaptor to the 2P power cable.

IMPORTANT:
- The 12 V DC power supply shall be insulated from the commercial AC power.
- Be sure to use the 2P power cable provided with this product.
- Be sure to fully insert the 2P power cable into the 12 V DC power supply terminal. 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.

Connect an external amplifier-embedded speaker to the audio output cable SFV311

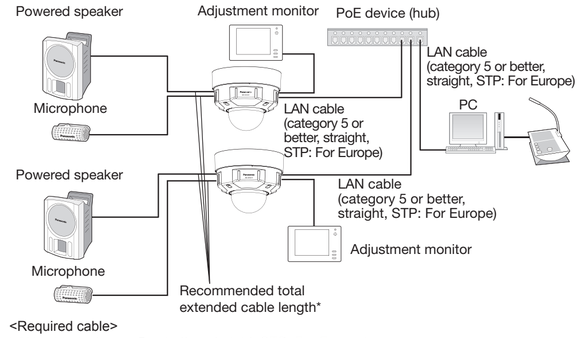
Connect a stereo mini plug (ø3.5 mm) (Audio output is monaural.).*
- Output impedance: Approx. 600 Ω (unbalanced)
- Recommended cable length: Less than 10 m {32.8 feet}
- Output level: –20 dBV

* Use an external powered speaker.

IMPORTANT:
- Connect/disconnect the audio cables and turn on the power of the camera after turning off the power of the audio output devices. Otherwise, loud noise may be heard from the speaker.
- Make sure that the stereo mini plug is connected to this cable. When a monaural mini plug is connected, audio may not be heard.
  When connecting a monaural speaker with amplifier, use a locally procured conversion cable (mono-stereo).

When connecting to a network using a PoE hub

Before starting the installation, check the entire system configuration. The following illustration gives a wiring example of how to connect the camera to the network via a PoE device (hub).



<Required cable>
LAN cable (category 5 or better, straight, STP: For Europe)
Use a LAN cable (category 5 or better, cross) when directly connecting the camera to a PC.
* Recommended cable length from the speaker: less than 10 m {32.8 feet}
Recommended cable length from the microphone: less than 1 m {3.28 feet}

IMPORTANT:
- The adjustment monitor is used for checking the adjustment of the angular field of view 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.
- If a PoE hub is not used, each network camera must be connected to a 12 V DC power supply.
- When using 12 V DC, power supply from a PoE hub or router is not required.

Installation

The installation tasks are explained using 4 steps.

Step1
Make sure all items are prepared before beginning installation.

Step2
Mount the brackets to a ceiling or wall

Step3
Connect cables, and then attach the camera to the mount bracket.

Step4
Adjust the angle of view and focus, and then mount the enclosure.

Step1 Preparations

There are 3 methods to install the camera to a ceiling or wall as described below. Prepare the required parts for each installation method before starting the installation. The following are the requirements for the various installation methods.

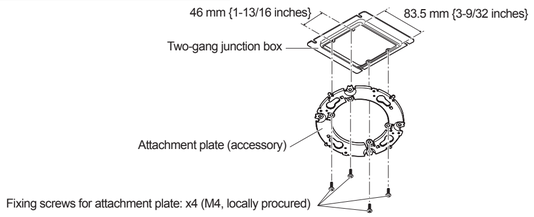
Installation method	Recommended screw	Minimum pull-out strength (per 1 pc.)
[1] Mount the camera on the two-gang junction box using the attachment plate.	M4 screws x 4	196 N {44 lbf}
[2] Directly mount the camera onto the ceiling or wall using the attachment plate (when wiring can be installed in the ceiling or wall).	M4 screws x 4	196 N {44 lbf}
[3] Mount the camera onto the ceiling or wall using the base bracket (when conduits are used for wiring, or when there is no space available for wiring in the ceiling or the wall).*1	M4 screws x 4	196 N {44 lbf}

*1 Use 4 screws (M4 × 8 mm, accessory) to fix the attachment plate to the base bracket.

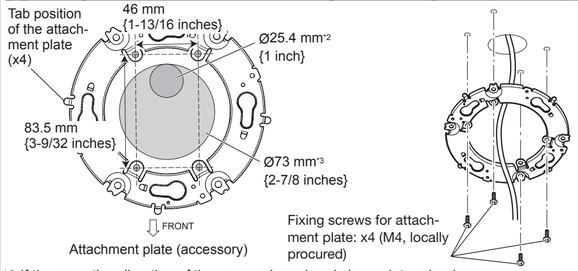
IMPORTANT:
- Procure 4 screws (M4) to secure the attachment plate (accessory) or base bracket (accessory) to a ceiling or a wall.
- The minimum required pull-out capacity of a single screw or anchor bolt is 196 N {44 lbf} or more when mounting with the installation method [1] to [3] above.
- When mounting the camera on a concrete ceiling, use an AY plug bolt (M4) for securing. (Recommended tightening torque: 1.6 N·m {1.18 lbf·ft})
- Select screws according to the material of the ceiling or wall that the camera will be mounted to. In this case, wood screws and nails should not be used.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

Step2 Fixing the brackets

[1] Using a two-gang junction box



[2] Directly mount the camera to the ceiling or wall using the attachment plate



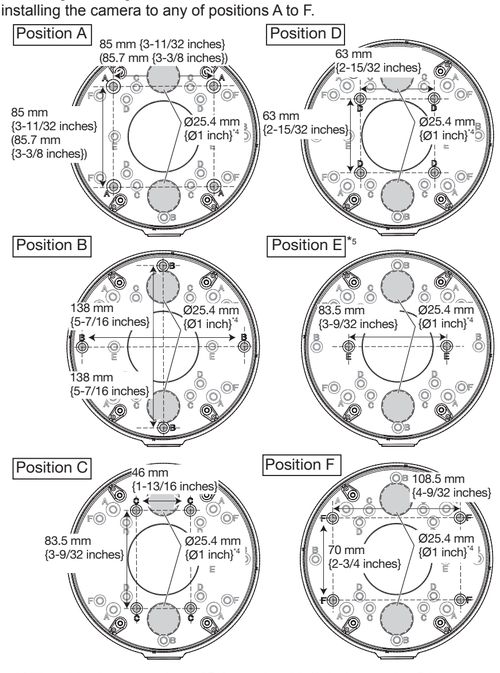
*2 If the mounting direction of the camera has already been determined
Align the FRONT direction (the direction of FRONT⇩ marker on the camera that indicates the installation direction when installing the camera) of Ⓕ template A with the desired direction, and drill through a 25.4 mm {1 inch} diameter hole.

*3 If the mounting direction of the camera is not determined yet or if you want to change the direction of the camera after it has been installed
If you want to be able to change the direction of the camera, drill through a 73 mm {2-7/8 inches} diameter hole in the center. By doing so you can adjust the mounting direction of the camera in 90° increments.

[3] Mount the camera to a ceiling or a wall using base bracket

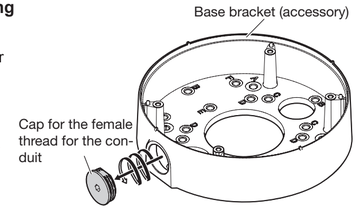
<Mounting the base bracket>

The base bracket can be fixed in any of the following 6 screwing positions according to ceiling and wall conditions. Match the hole used when installing the camera to any of positions A to F.



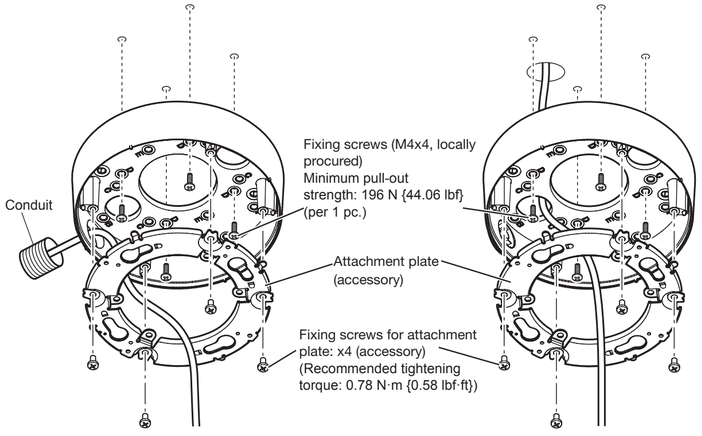
<When using the conduit on the ceiling or wall for wiring>

①Remove the cap for the female thread for the conduit by using a hexagon wrench (ISO 2936, width across flats S=5 mm {3/16 inches}).
- The female thread for conduit is compliant with ANSI NPSM (parallel pipe threads) 3/4 or ISO 228-1 (parallel pipe threads) G3/4.



②Mount the attachment plate and the base bracket.

<When drilling a hole through the ceiling or wall for wiring>



*4 The wiring hole diameter is 25.4 mm {1 inch}. Select any of the 2 base bracket fixture holes of Ⓖ template B when installing the base bracket. After mounting the attachment plate, the mounting direction of the camera can be adjusted in 90° increments.

*5 When attaching the base bracket to a one-gang junction box in Position E, secure the base bracket with 2 screws (M4, locally procured).

IMPORTANT:
- If open wiring is conducted, be sure to use conduits and run the cables inside the tubes to protect the cables from direct sunlight.
- Installation work shall be such that there is no exposure to water into the architecture through the conduits having been joined.

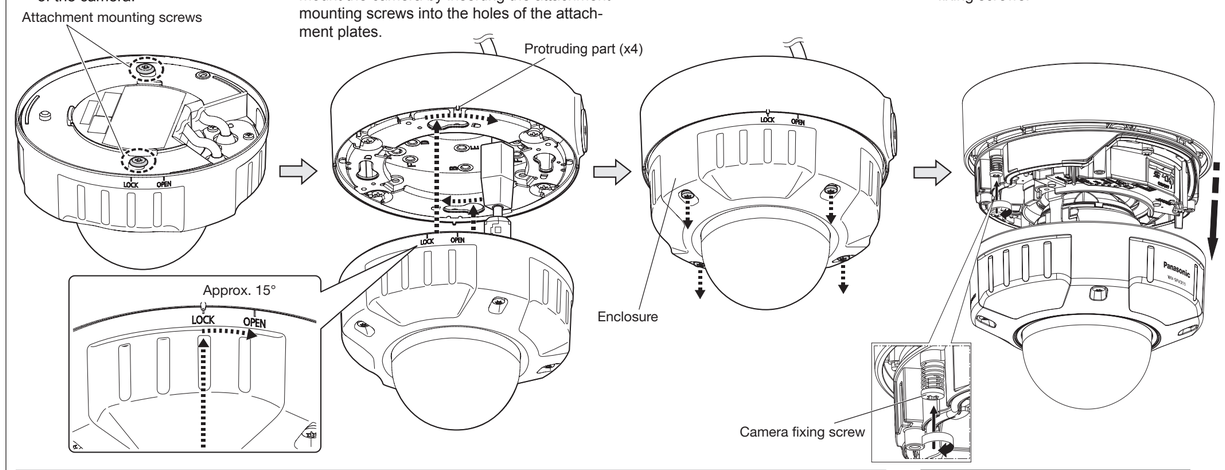
Step3 Mount the camera to the attachment plate

①Check the position of attachment mounting screws on the rear side of the camera.

②Connect cables to the camera according to the instructions in “Making connections”, and mount the camera by inserting the attachment mounting screws into the holes of the attachment plates.

③Loosen the enclosure fixing screws.

④Remove the enclosure from the camera, and secure the camera using camera fixing screws.



Note:
- After cables have been connected to the camera, align the OPEN mark of the enclosure side panel with the protruding part of base bracket, insert 2 attachment mounting screws into the attachment plate, and rotate the camera approximately 15°. The LOCK mark is moved to the protruding part of base bracket and the camera is temporarily secured. (When directly attaching the attachment plate to a ceiling or wall, align the OPEN mark to the tab position of the attachment plate.)
  *The fixing angle of the camera can be rotated in 90° increments.

IMPORTANT:
- Disconnect the 12 V DC power source and PoE power source to prevent power from being supplied during mounting work.
- Enclosure is fixed at the installation auxiliary wire to the camera body, please do not remove the installed auxiliary wire.
- For installations on the wall, to prevent water from accumulating on the surface of the dehumidifying device, install the camera so that the dehumidifying device does not face up. If water accumulates on the surface of the dehumidifying device, it cannot function properly.

Note:
- Loosen 4 enclosure fixing screws using the bit (accessory).

IMPORTANT:
- Be sure to tighten the camera fixing screw. Failure to observe this may cause camera trouble due to camera falling. (Recommended tightening torque: 0.78 N·m {0.58 lbf·ft})

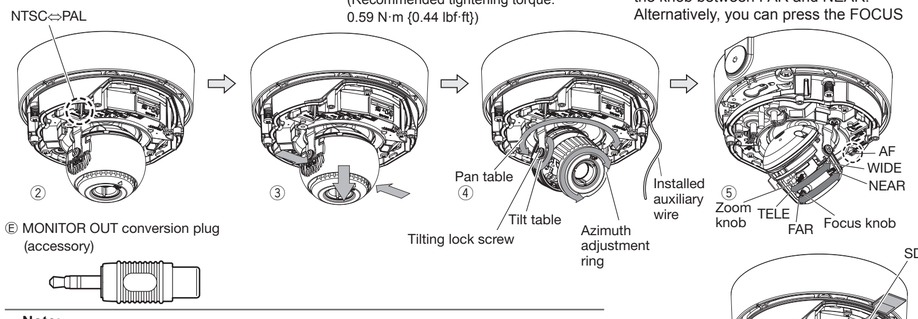
Step4 Adjustment

①Turn on power for the camera by either connecting a LAN cable or a 12 V DC power cable.

②Connect the MONITOR OUT conversion plug (accessory) to the MONITOR OUT terminal of the camera, and then connect the monitor for adjustment with a RCA pin cable (locally procured).
- The camera is set to be connected to the NTSC monitor for adjustment at factory shipment.

③Press the PUSH position on both sides of the inner dome and remove the inner dome.

④Adjust the angle of the camera with the tilt table, pan table, and azimuth adjustment ring.
Horizontal position (Panning): ±180°
Vertical position (Tilting): 0° to ±85°
Image tilt adjustment:
-225°(Left) to +120°(Right)
- Tighten the cross slot tilting lock screw. (Recommended tightening torque: 0.59 N·m {0.44 lbf·ft})



Ⓔ MONITOR OUT conversion plug (accessory)

Note:
- Depending on the adjustable range or the optical zoom, it must be noted that the shadow of the enclosure may be projected.
- When mounting the camera on a ceiling, adjust the tilt angle so that the TOP mark above the lens always comes to the top side.
- When the camera is installed to a wall, rotate the azimuth adjustment ring till the TOP mark above the lens always comes to the top side.
- When adjusting the viewing angle for cameras mounted to ceilings, the enclosure and installation auxiliary wire may be displayed on the screen depending on the direction the camera is facing. Move the enclosure and installation auxiliary wire so that they are not displayed on the screen.
- Remove the camera using the reverse order of the installation procedures.

IMPORTANT:
- Securely tighten all the fixing screws (x4) of enclosure. Otherwise, camera dropping may result in injury. (Recommended tightening torque: 0.78 N·m {0.58 lbf·ft})
- Defocus may be caused by the reinstalled enclosure. In this case, perform the auto focus function from the setup menu. (SFV311)
- Remove the cover film from the dome cover.

After installing the camera, refer to “Configure the settings of the camera (leaflet)” and perform the camera settings.

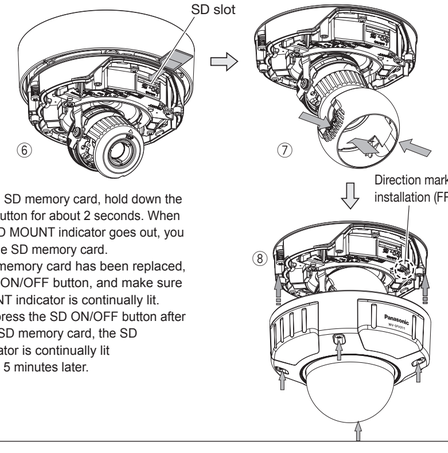
⑤Adjust the zoom and focus while performing Step ④.
- Loosen the zoom knob and move the knob between TELE and WIDE to obtain the appropriate angle of view. Then, tighten the zoom knob.
- Move the focus knob between FAR and NEAR to obtain the appropriate focal length. Press the AF button to activate the auto focus function. (SFV311)

Loosen the focus knob and move the knob between FAR and NEAR. Alternatively, you can press the FOCUS ASSIST button to open the FOCUS ASSIST adjustment screen and obtain the optimum focal length. Then, tighten the focus knob. (SFV310)

⑥Insert an SD memory card into the slot, if necessary.
- Insert the SD memory card with its label facing down.
- For information about performing the SD memory card setting, refer to the Operating Instructions (included in the CD-ROM).

⑦Press the PUSH position on both sides of the inner dome and install the inner dome to the place where it was removed.

⑧Disconnect the monitor for adjustment. Attach the enclosure.
Align the ▽ mark on the camera body with the LOCK line on the enclosure and then mount the enclosure to the camera body at a straight angle.
(For details, refer to the Cautions for mounting the enclosure with the camera.)



- To remove the SD memory card, hold down the SD ON/OFF button for about 2 seconds. When the flashing SD MOUNT indicator goes out, you can remove the SD memory card.
- After the SD memory card has been replaced, press the SD ON/OFF button, and make sure the SD MOUNT indicator is continually lit.
- If you do not press the SD ON/OFF button after replacing the SD memory card, the SD MOUNT indicator is continually lit approximately 5 minutes later.