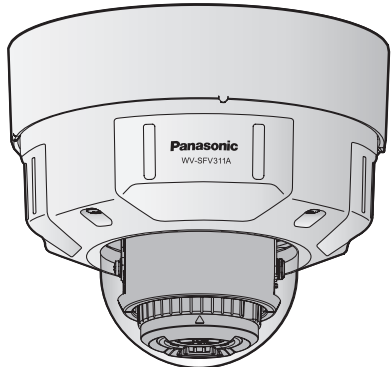


Network Camera

Model No. WV-SFV311A/WV-SFV310A



- 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 model WV-SFV311A 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
(905)624-5010
www.panasonic.ca

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For Europe and other countries:

Panasonic Corporation
http://www.panasonic.com

Panasonic System Networks Co., Ltd.
Fukuoka, Japan

Authorised Representative in EU:

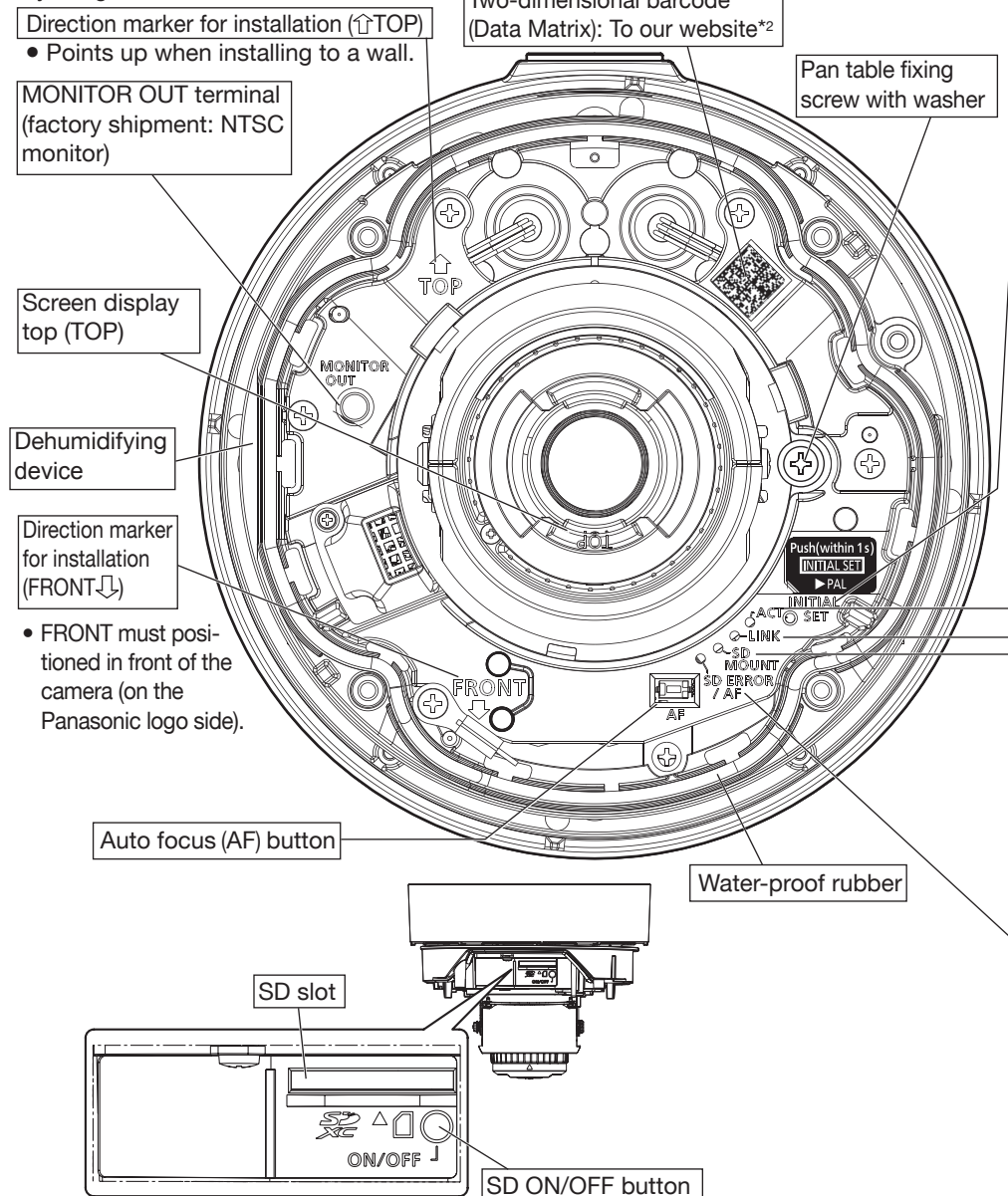
Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsberg 15, 22525 Hamburg, Germany



PGQX1958ZA fes0915-0 Printed in China

Parts and functions

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



Standard accessories

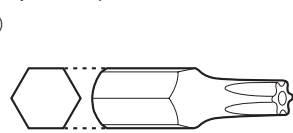
Important Information	1 pc.	CD-ROM*1	1 pc.
Installation Guide (this document)	1 set	Code label*2	1 pc.
Warranty card	1 set		

*1 The CD-ROM contains the operating instructions and different kinds of tool software programs.

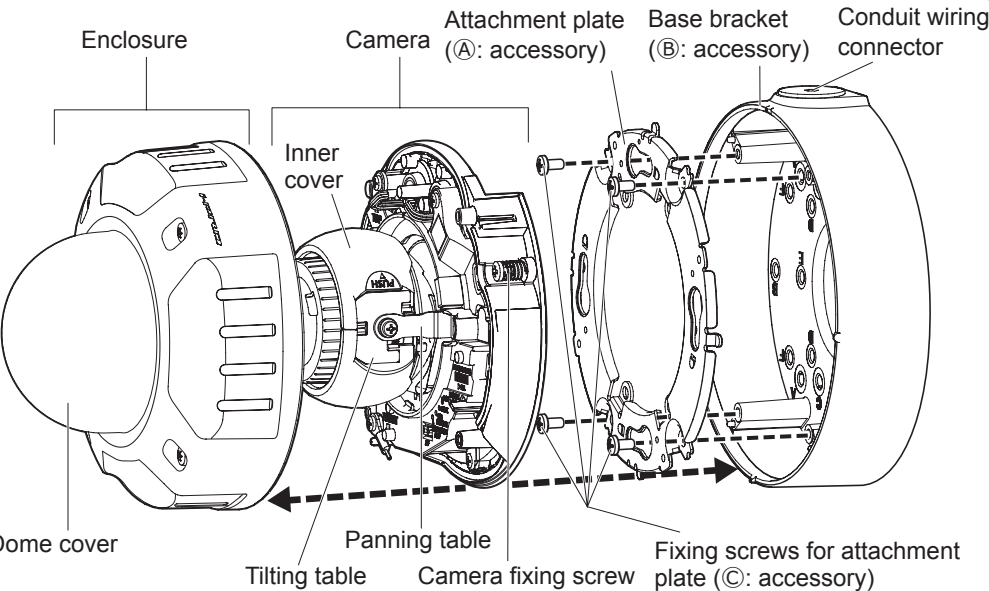
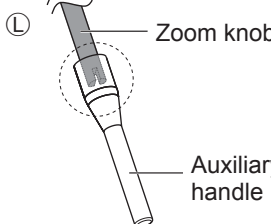
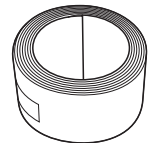
*2 This label may be required for network management. The network administrator shall retain the code label.

The following parts are used during installation procedures.

Ⓐ Attachment plate	1 pc.	Ⓔ Template B (for the base bracket) ...	1 sheet
Ⓑ Base bracket	1 pc.	Ⓕ Bit (Hex wrench, screw size 6.35 mm {1/4 inches} T20)	1 pc.
Ⓒ Fixing screws for attachment plate (M4 × 8 mm {5/16 inches})	5 pcs. (of them, 1 for spare)	Ⓖ 2P power cable	1 pc.
Ⓓ 4P alarm cable	1 pc.	Ⓗ LAN connector cover	1 pc.
Ⓔ MONITOR OUT conversion plug	1 pc.	Ⓖ Waterproof tape	1 pc.
Ⓕ Template A (for the attachment plate). 1 sheet		Ⓖ Auxiliary handle	1 pc.



(Hex wrench, screw size 6.35 mm {1/4 inches} T20)



INITIAL SET button (Initializing / NTSC⇔PAL switch 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 keep the INITIAL SET button held down till the SD MOUNT indicator is lit in green (more than 10 seconds). In about 2 minutes after releasing the INITIAL SET button, 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.

- When the INITIAL SET button (i.e. the initializing button) is pressed (less than 1 second) to switch the output signal of the MONITOR OUT terminal (NTSC⇔PAL output), the MONITOR OUT terminal can be switched for the NTSC monitor/PAL monitor.

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
- When data can be saved after the SD memory card is inserted and the SD ON/OFF button is pressed (less than 1 second)
- When data can be saved to the SD memory card
- When the SD memory card is removed after holding down the SD ON/OFF button (about 2 seconds)

Lights off → Blinks green → Lights off
Lights off → Lights green

Lights green
Lights green → Blinks green → Lights off (recording)
Lights green → Lights off (waiting for recording)
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

SD ERROR/AF indicator

- When AF (Auto Focus) operation is being executed
- When the set is being started
- When an SD memory card is recognized normally
- When an abnormality is detected in SD card or the SD slot is not used after the camera has started

Blinks red (Interval of 1 time/ second)
Lights red
Lights red → Lights off
Lights red → Stays red

Note:

- Lighting/blinking LED can be turned off with the software settings at any time. (The initial state is lighting or blinking.) Set the LED to be solid off if necessary, depending on the installation conditions. (*2) Operating instructions included in the CD-ROM)

*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

Making connections

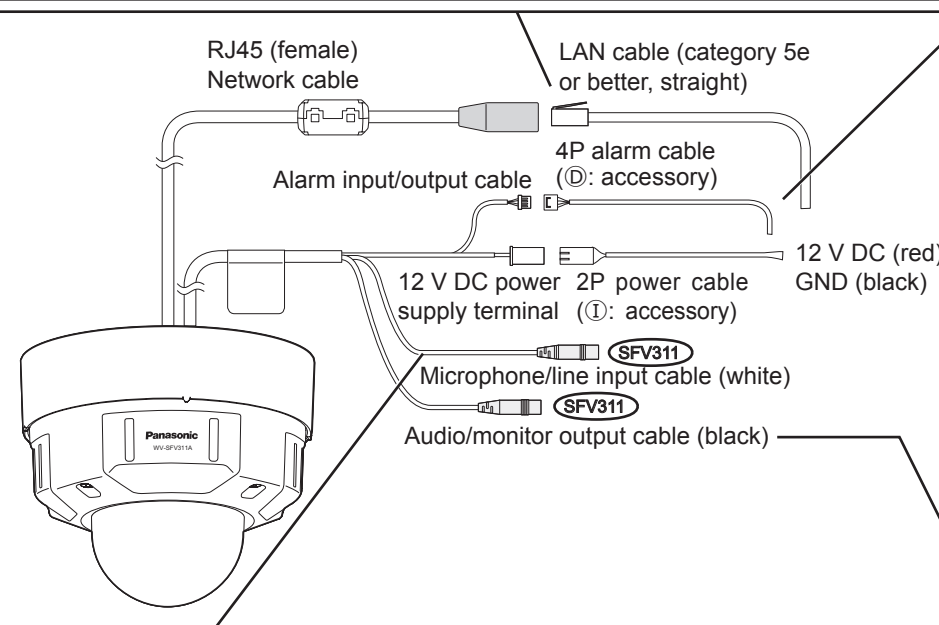
Turn off each system's power supply before making a connection. Before making connections, prepare the required peripheral devices and cables.

Connect a LAN cable to the RJ45 (female) network cable

* Use a LAN cable (category 5e or better, 8 pins, straight).

IMPORTANT:

- Use all 4 pairs (8 pins) of the LAN cable (category 5e or better, straight).
- 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 stereo mini plug (ø3.5 mm).

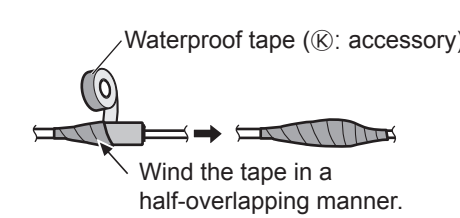
- Input impedance: Approx. 2 kΩ (unbalanced)
- Recommended cable length: Less than 1 m {328 feet} (for microphone input)
Less than 10 m {32.8 feet} (for line input)
- Recommended microphone: Plug-in power type (option)
 - Supply voltage: 2.5 V ±0.5 V
 - Recommended sensitivity of microphone: -48 dB ±3 dB (0 dB=1 V/Pa, 1 kHz)
- Input level for the line input: Approx. -10 dBV

Waterproof treatment for the cable joint sections

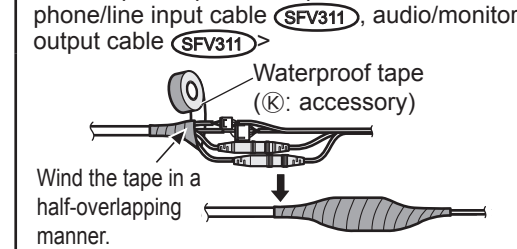
Adequate waterproof treatment is required for the cables when installing the camera with cables exposed or installing it under the eaves. The camera body is waterproof, but the cable ends are not waterproof.

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 waterproof tape (K: accessory) (such as a vinyl tape) may cause water leakage resulting in malfunction.

<LAN cable>

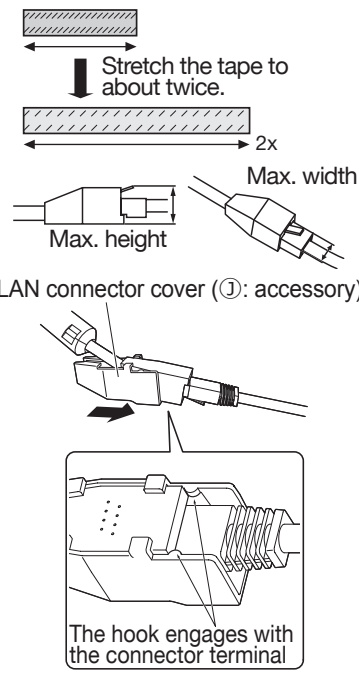


<Alarm input/output cable, power cable, microphone/line input cable (SFV311), audio/monitor output cable (SFV311)>



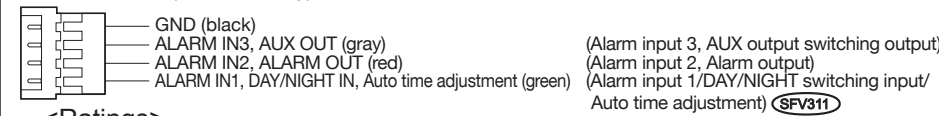
IMPORTANT:

- Also waterproof the 2P power cable (I: accessory), 4P alarm cable (D: 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 connector cover (I: accessory) 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 (B: accessory) are not waterproofed.



Connect the alarm input/output cable

4P alarm cable (D: accessory)



<Ratings>

- ALARM IN1(DAY/NIGHT IN, Auto time adjustment) (SFV311), ALARM IN1(Auto time adjustment) (SFV310), 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 (D: accessory) provided with this product.
- 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.

Note:

- 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").

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 (I: accessory).

IMPORTANT:

- The 12 V DC power supply shall be insulated from the commercial AC power.
- Be sure to use the 2P power cable (I: accessory) provided with this product.
- Be sure to fully insert the 2P power cable (I: accessory) 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.
- Be sure to use an AC adaptor compliant with the Specifications (written in the indication label on the bottom side of this unit) regarding power source and power consumption.

Connect the audio/monitor output cable to an external speaker with an amplifier (SFV311)

Connect a stereo mini plug (ø3.5 mm).

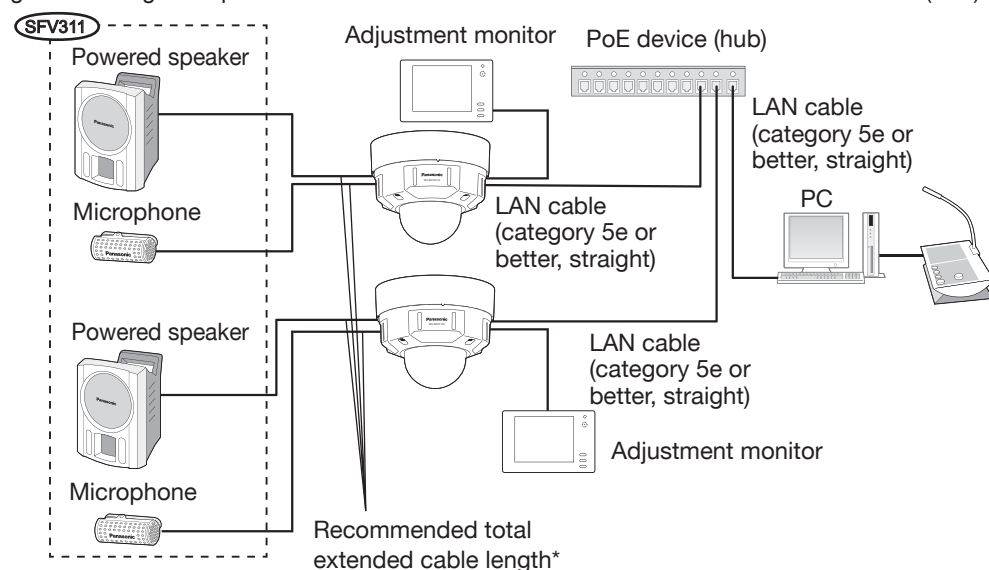
- Output impedance: Approx. 600 Ω (unbalanced)
- Recommended cable length: Less than 10 m {32.8 feet}
- Output level: -20 dBV (Can switch to monitor output)

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 5e or better, straight)
Use a LAN cable (category 5e 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.



Step 1 Preparations

There are 4 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 (Ⓐ: accessory).	M4 screws × 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 × 4	196 N {44 lbf}
[3] Mount the camera onto the ceiling or wall using the base bracket (Ⓑ: accessory) (when conduits are used for wiring, or when there is no space available for wiring in the ceiling or the wall). ^{*1}	M4 screws × 4	196 N {44 lbf}
[4] Mount the camera on the ceiling using the WV-Q105A ceiling mount brackets (when mounting in areas where the screws are too weak to support the total weight, such as the plaster board of double-ceilings).	anchor bolts × 2	^{*2}

^{*1} Use 4 fixing screws for attachment plate (M4 × 8 mm {5/16 inches}, accessory) to fix the attachment plate to the base bracket.

^{*2} Make sure that the installed ceiling can support more than 5 times of the weight of the camera, the attachment plate and the anchor bolt. When using [4] the WV-Q105A ceiling mount brackets, use them indoors.

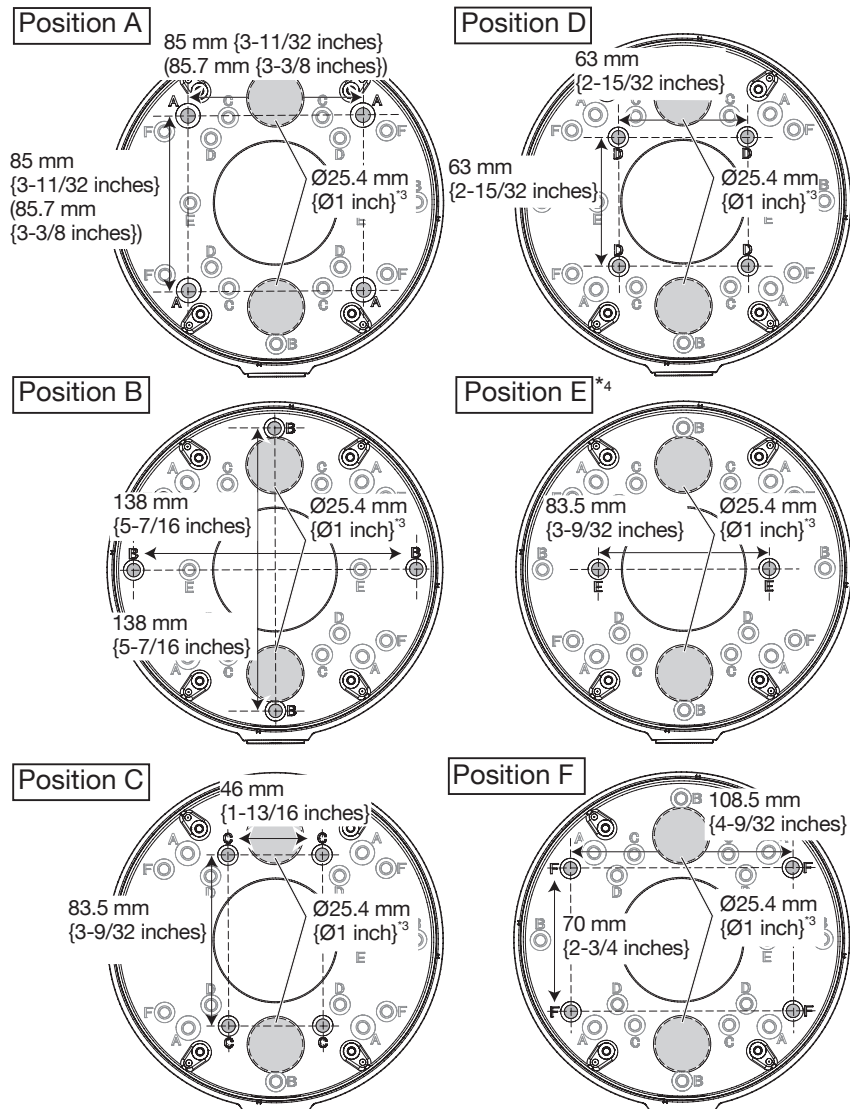
IMPORTANT:

- 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.

[3] Mount the camera to a ceiling or a wall using base bracket (Ⓑ: accessory)

<Mounting the base bracket>

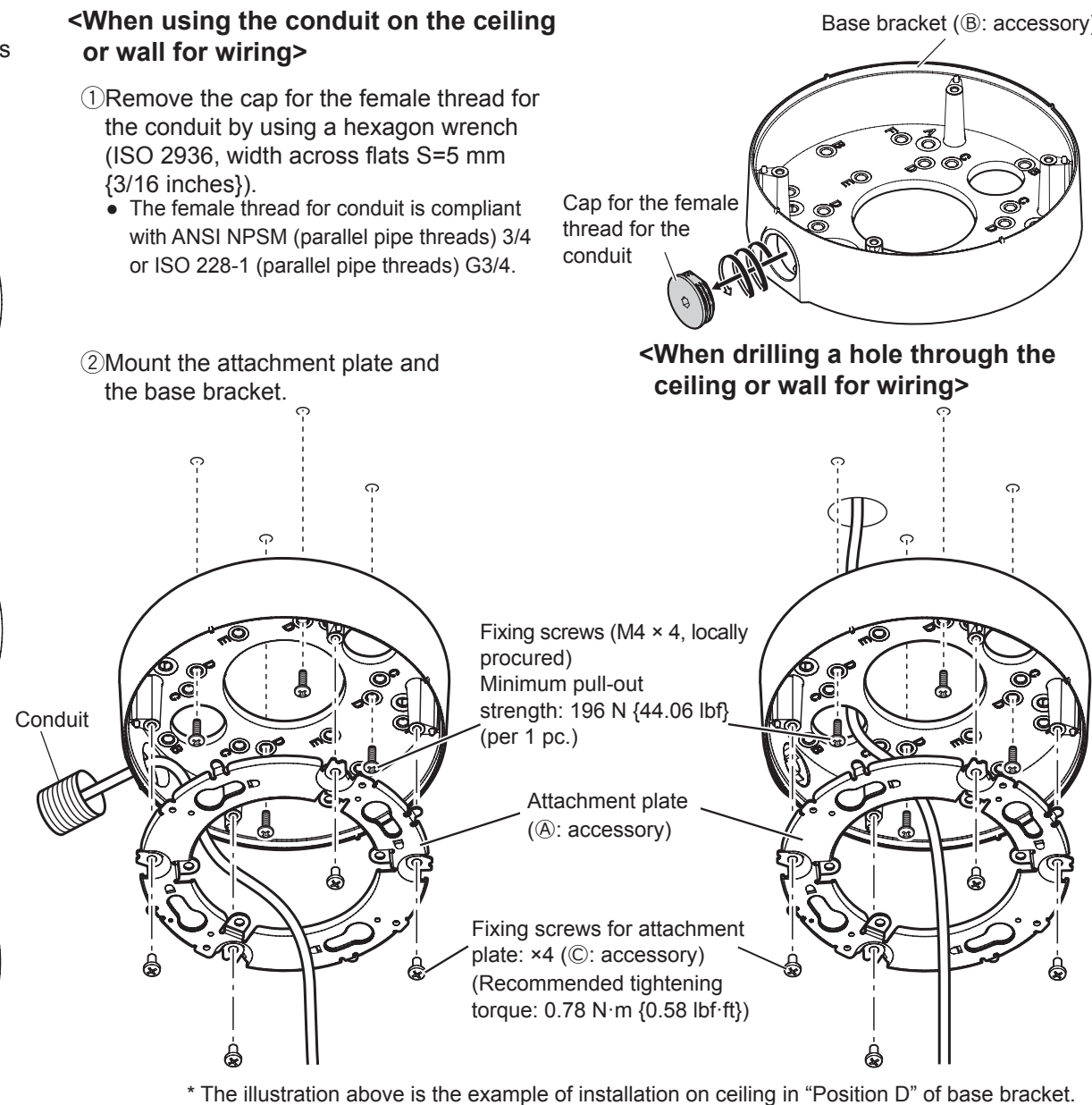
The base bracket can be fixed in any of the following 6 screwing positions according to ceiling and wall conditions. Match the hole used when installing the camera to any of positions A to F.



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

- Remove 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.

- Mount the attachment plate and the base bracket.



^{*} The illustration above is the example of installation on ceiling in "Position D" of base bracket.

IMPORTANT:

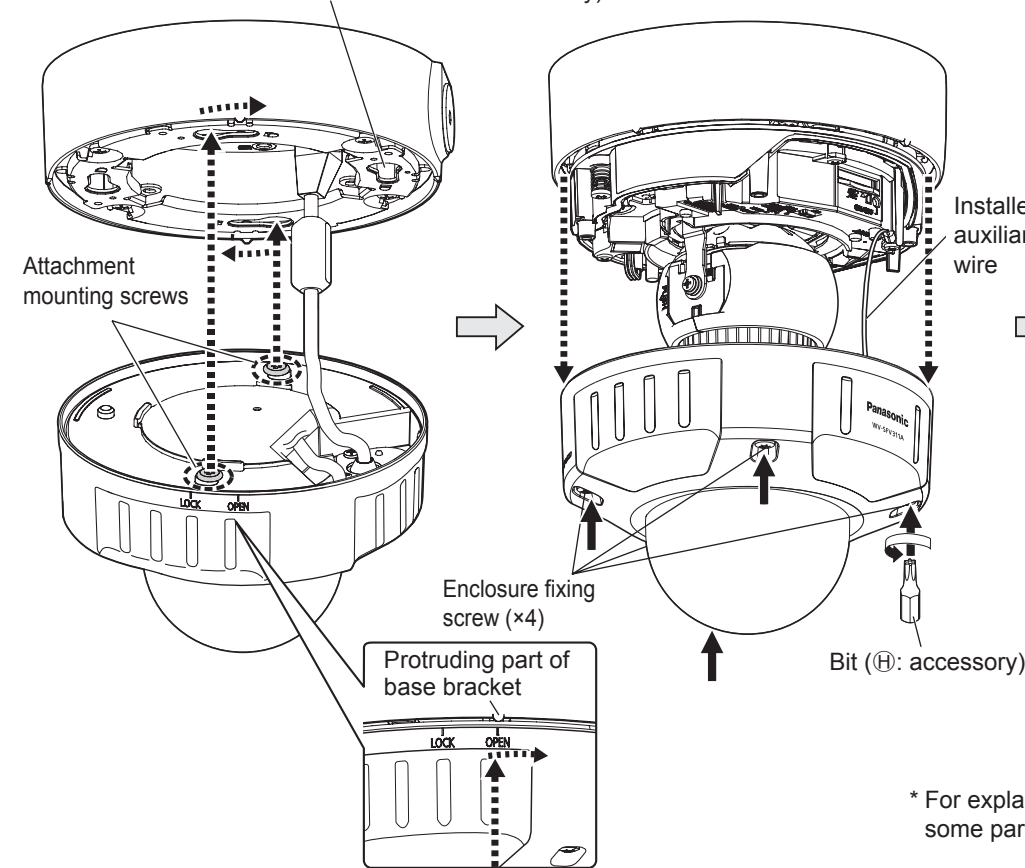
- If open wiring is conducted, be sure to use conduits and run the cables inside the tubes to protect the cables from direct sunlight.
- Installation work shall be such that there is no exposure to water into the architecture through the conduits having been joined.

Step 3 Mount the camera to the attachment plate

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

Holes of the attachment plate (×4)

- Connect 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 plate (Ⓐ: accessory).

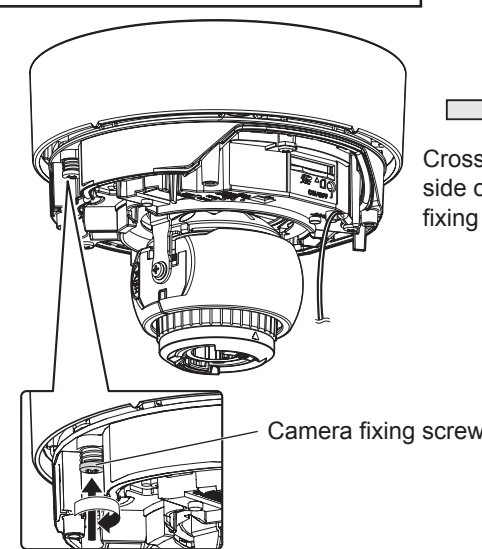


- Loosen 4 enclosure fixing screws using the bit (Ⓕ: accessory), and remove the enclosure from the camera.

- Secure the camera by tightening the camera fixing screws.

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}



^{*} For explanation purpose, the enclosure, installed auxiliary wire, and some parts of the camera will be hidden in the following illustrations.

Note:

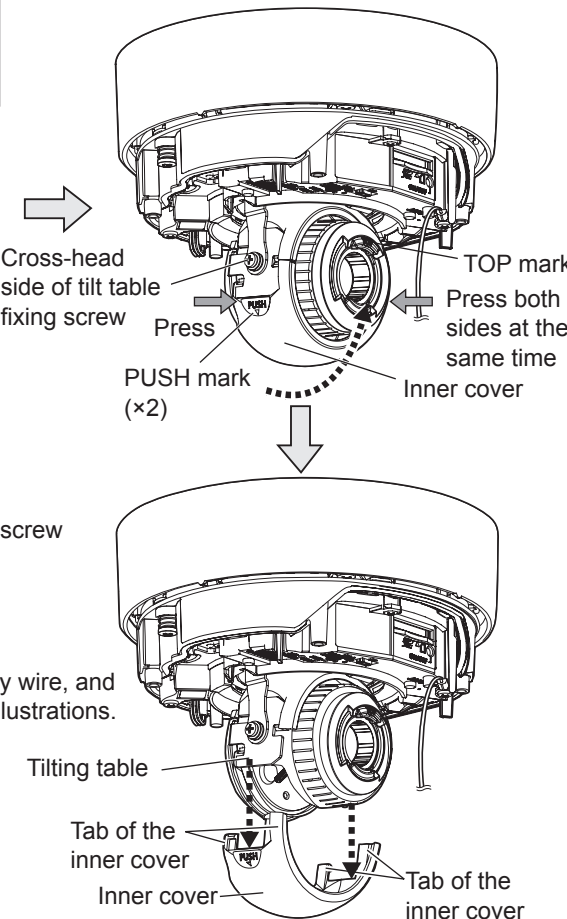
- After cables have been connected to the camera, align the OPEN mark of the enclosure side panel with the protruding part of base bracket, insert 2 attachment mounting screws into the attachment plate, and rotate the camera approximately 15°. The LOCK mark is moved to the protruding part of base bracket 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.)

IMPORTANT:

- Disconnect the 12 V DC power source and PoE power source to prevent power from being supplied during mounting work.
- Enclosure is fixed to the camera body by the installed auxiliary wire, so please do not remove it.
- 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.

- Loosen the cross-head side of tilt table fixing screw (on one side), and incline the tilt table while keeping the TOP mark on the camera lens head facing the front (i.e. the direction of FRONT↓ mark on the camera).

- Press the PUSH mark on both sides of the inner cover at the same time, and remove the inner cover as shown in the following illustration.

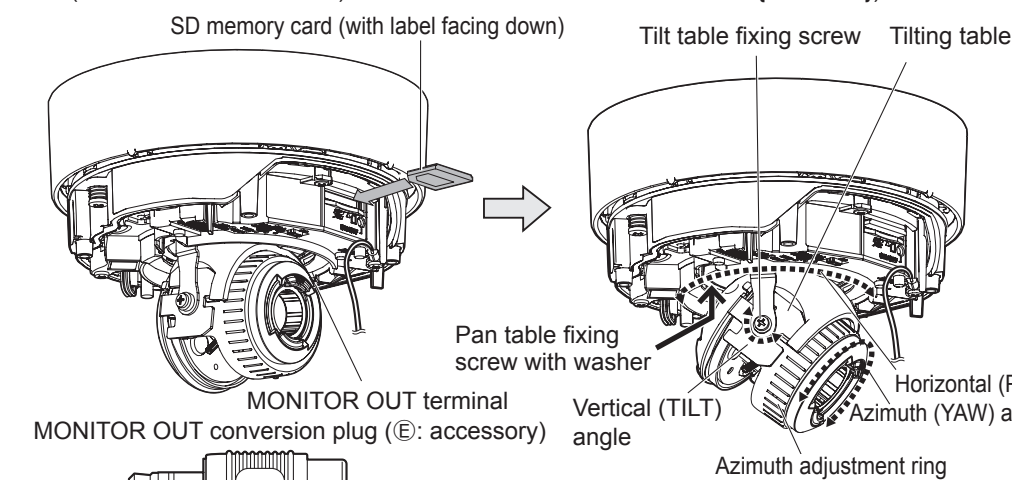


Note:

- Press the PUSH mark, release the four tabs of the inner cover from the tilting table, and remove the inner cover.

Step 4 Adjustment

- Turn on power for the camera by either connecting a LAN cable or a 12 V DC power cable, and then remove the protection film from the camera lens.
- Connect 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).
- Insert 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).



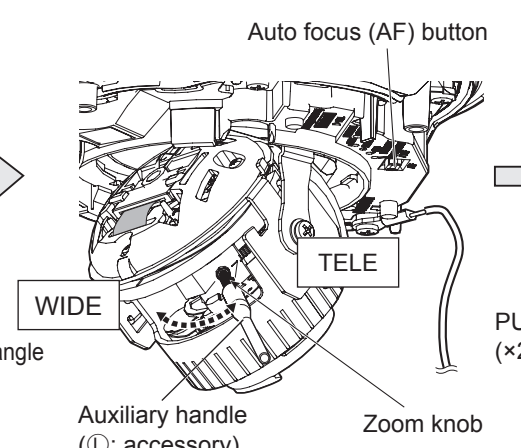
- To remove the SD memory card, hold down the SD ON/OFF button (about 2 seconds). When the flashing SD MOUNT indicator goes out, you can remove the SD memory card.
- After the SD memory card has been replaced, press the SD ON/OFF button (less than 1 second), and make sure the SD MOUNT indicator is continually lit.
- If you do not press the SD ON/OFF button after replacing the SD memory card, the SD MOUNT indicator is automatically lit approximately 5 minutes later.

Note:

- Depending on the lens range or the optical zoom, it must be noted that the shadow of the enclosure may be projected.
- When the vertical (TILT) angle of the camera is more than 75°, part of image may appear to be overlapped. To prevent from overlapping, reduce the vertical (TILT) angle or adjust the optical zoom.
- When mounting the camera on a wall, rotate the pan table by 180° to the left and rotate the tilt table till the TOP mark above the lens always comes to the top side.
- When adjusting the mounting to the ceilings, the enclosure and installed 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.

- Adjust the zoom and focus.

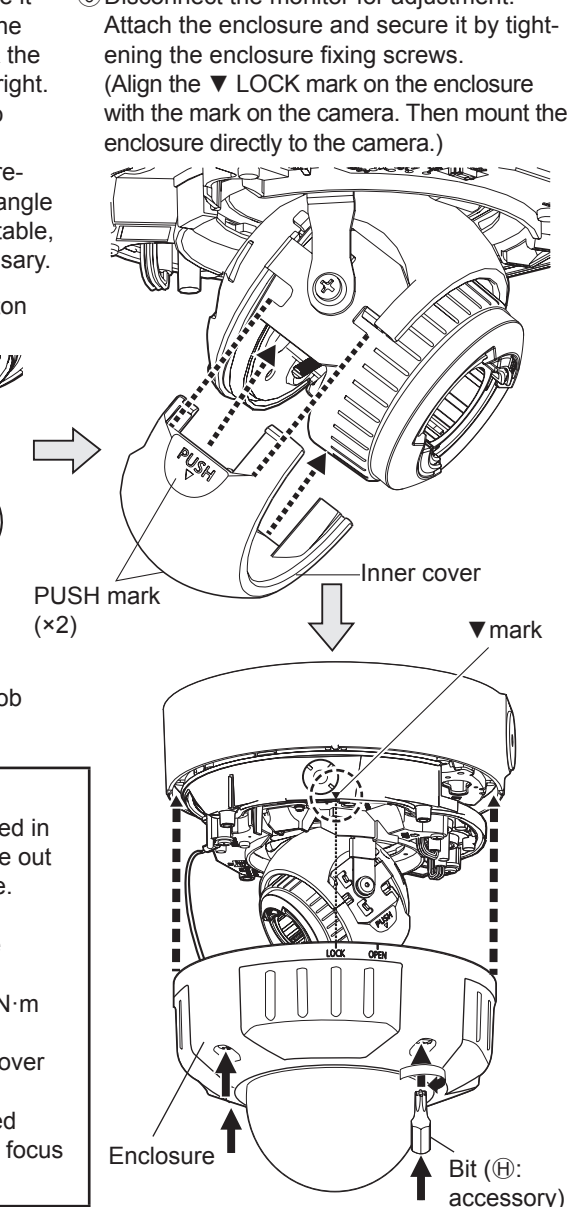
- Loosen the zoom knob equipped with auxiliary handle (Ⓖ: accessory) by rotating the knob to the left, and move it between TELE and WIDE to obtain the appropriate angle of view. Then, lock the zoom knob by rotating it back to the right.
- Adjust the focus by pressing the auto focus (AF) button.
- Adjust the screen size and focus by repeating steps 1 and 2. Readjust the angle of the camera with the tilt table, pan table, and azimuth adjustment ring if necessary.



IMPORTANT:

- Check that the water-proof rubber installed in the slot around the camera does not slide out of the slot, and then mount the enclosure.
- Securely tighten all the enclosure fixing screws (×4) of enclosure. Otherwise, the enclosure dropping may result in injury. (Recommended tightening torque: 0.78 N·m {0.58 lbf·ft})
- After complete installation, remove the cover film from the dome cover.
- Defocus may be caused by the reinstalled enclosure. In this case, perform the auto focus function from the setup menu.

- Press the PUSH mark on both sides of the inner cover, and install the inner cover to the place where it was removed.
- Disconnect the monitor for adjustment. Attach the enclosure and secure it by tightening the enclosure fixing screws. (Align the ▼ LOCK mark on the enclosure with the mark on the camera. Then mount the enclosure directly to the camera.)



- Remove the camera using the reverse order of the installation procedures.
- After installing the camera, refer to "Configure the settings of the camera (leaflet)" and perform the camera settings.