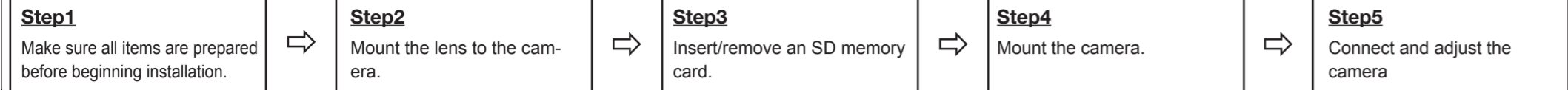


Installation

The installation tasks are explained using 5 steps.



Step1 Preparations

To install the camera to a ceiling or wall, prepare the required mount bracket and the screws that secure the bracket, or the anchor bolt for each installation method before starting the installation. The following are requirement examples for the various installation methods.

Installation method	Recommended screw	Minimum pull-out strength (per 1 pc.)
[1] For mounting on ceiling* (Mount bracket: approx. 260 g {0.57 lbs}, camera: 400 g {0.88 lbs}, lens: 40 g {0.09 lbs})	M6 or M8 screws x 4**	562 N {126 lbf} ²
	M4 x1 (for the safety wire)	24.5 N {5.5 lbf}
[2] For mounting on wall** (Mount bracket: approx. 420 g {0.93 lbs}, camera: 400 g {0.88 lbs}, lens: 40 g {0.09 lbs})	M6 or M8 screws x 4**	724 N {163 lbf} ²
	M4 x1 (for the safety wire)	24.5 N {5.5 lbf}
[3] When using the tripod mount base (A)†	—	—

*1 The number of required screws or anchor bolts varies depending on the specifications of the mount bracket (locally procured). Refer to the operating instructions of the mount bracket (locally procured) for information about how to mount the mount bracket.

**2 Make sure that the screws or anchor bolts separately procured when locally procuring a mount bracket for the ceiling or wall are capable of supporting the total weight (including the moment force when mounting to a wall).

†3 Size of the bracket mounting hole: "1/4-20UNC camera tripod mounting hole (depth 9 mm {11/32 inches})"

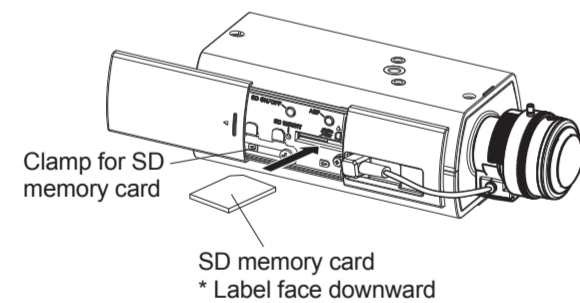
IMPORTANT:

- The installation area shall be strong enough to hold the camera and camera mount bracket.
- The camera mount bracket (locally procured) shall be mounted on the foundation part of the construction or a part with adequate strength.
- Select screws according to the material of the ceiling 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.

Step3 Insert/remove an SD memory card

When using an SD memory card, go through the following procedure before installing the camera. When removing an SD memory card, reverse the procedure. Refer to the Operating Instructions on the provided CD-ROM for further information about the SD memory card settings.

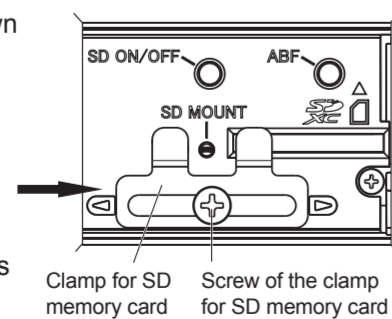
- [1]** Open the slide cover on the side of the camera, insert an SD memory card fully into the SD memory card slot until a click is heard.
- Insert the SD memory card with its label facing down.



- [2]** Loosen the screw (M3) of the clamp for the SD memory card, and slide the clamp to the middle, then tighten the screw.
(Recommended tightening torque: 0.19 N·m {0.14 lbf·ft})

- [3]** Close the slide cover on the side of 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.

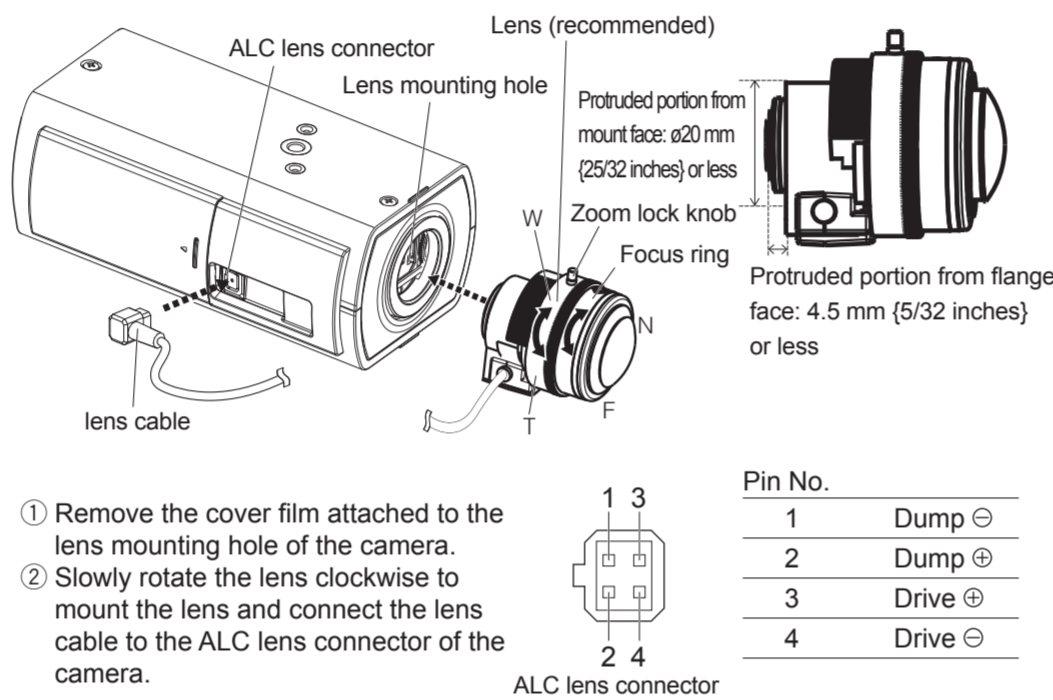


Step2 Mount the lens to the camera

The lens section is not included with the camera. It is possible to mount a 1/3 type video camera lens to the camera. It is recommended to use a recommended high-resolution lens especially when the illuminance level of the photographic subject is low and the camera is used with the lens iris open. If a lens other than the recommended lens below is mounted and the camera is used at a resolution of 1280 x 720 or higher, the camera cannot achieve full performance of high resolution.

Refer to our website (<http://security.panasonic.com/pss/security/support/info.html>) for further information about the recommended lens.

* When using a lens made by other companies, use a lens that has a protruded portion from the mount face of $\phi 20$ mm {25/32 inches} or less and a protruded portion from the flange face of 4.5 mm {5/32 inches} or less. Lenses without a focus adjustment mechanism and zoom lenses cannot be used.



- Remove the cover film attached to the lens mounting hole of the camera.
- Slowly rotate the lens clockwise to mount the lens and connect the lens cable to the ALC lens connector of the camera.

Step4 Mount the camera (Continued)

For mounting on ceiling

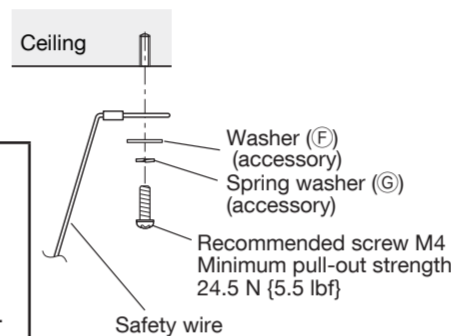
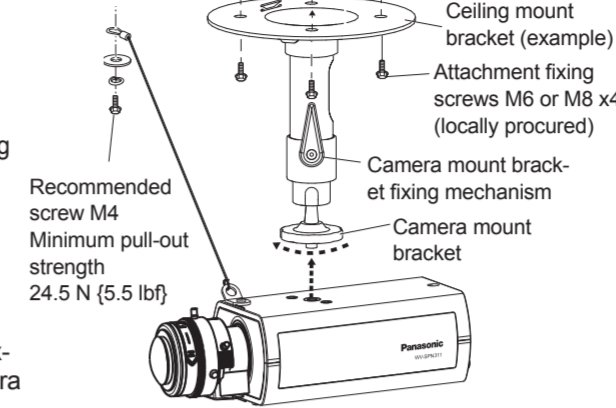
- [1]** Mark the position of holes to be made for the ceiling mount bracket (locally procured) on the attachment position of the ceiling, and make those holes for attachment. Determine the hole diameter and hole depth according to the specifications of the screws or anchor bolts to be used.

- [2]** Secure the ceiling mount bracket (locally procured) using separately procured attachment fixing screws or anchors.

- [3]** Loosen the camera mount bracket fixing mechanism to freely move the camera mount bracket. Align the screw thread with the fixing screw hole of the camera, and rotate the camera mount bracket to secure the camera.

- Tighten the camera mount bracket fixing mechanism and secure the camera mount bracket.
* The tripod mount base (accessory) is not used.

- [4]** Attach the safety wire to the foundation area of the architecture or where sufficient strength is assured. Prepare the fixing screws according to the material of the area where the safety wire is to be installed.



IMPORTANT:

- Be sure to rotate and secure the camera mount bracket. Rotating the camera places a large burden on the camera mount bracket, and may cause damage.
- The safety wire shall be adjusted to remove slack.
- The distance from the camera to the ceiling changes depending on the tilt angle of the camera. Attach the safety wire in a position according to the tilt angle of the camera.

For mounting on wall

- [1]** Mark the position of holes to be made for the wall mount bracket (locally procured) on the attachment position of the wall, and make those holes for attachment. Determine the hole diameter and hole depth according to the specifications of the screws or anchor bolts to be used.

IMPORTANT:

- Mount the bracket in a position higher than 2.7 m {8.86 feet} from the floor.

Step5 Connect and adjust the camera (Continued)

If the camera angle is changed when the camera mount bracket fixing mechanism is tightened, excessive force is applied to the camera mount bracket and camera, which may damage them.

After adjusting the camera angle, make sure to tighten the camera mount bracket fixing mechanism securely again.

- [3]** Adjusting the focus (SPN311)

- First, reset the back focus position by holding down the auto back focus button for 5 seconds or more when the power is on. (This operation can also be performed on the setup menu. Refer to the Operating Instructions (included in the CD-ROM).) (SPN311)
- Manually adjust the angle of view and focus coarsely by adjusting the zoom and focus of the lens, and then press the auto back focus button on the side of the camera (page 1) or perform the auto back focus function from the setup menu. (SPN311) Refer to the Operating Instructions (included in the CD-ROM) for how to perform the auto back focus function from the setup menu.
* How to take a wide depth of field: When focus is desired on entire near or distant subjects, select indoor scene mode, or adjust the focus to the midrange position using manual focus adjustment.

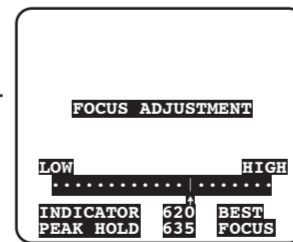
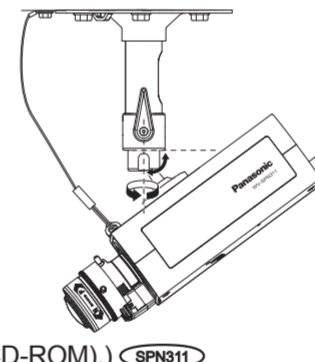
Adjusting the focus (SPN310)

The focus is adjusted using the focus assist function. The angle of view and focus can be adjusted in accordance with the distance between the camera lens and a photographic subject. These adjustments shall be performed together with the camera angle adjustment.

- Loosen the zoom lock knob, and adjust the angle of view (angular field of view) in accordance with the photographic subject by moving the zoom lock knob and focus ring.

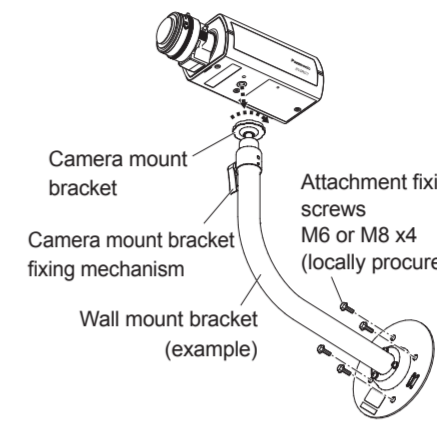
Note

- The focus may not be adjusted appropriately when the zoom lock knob is positioned at the "W" (or "T") end. In this case, adjust the focus again by slightly moving the zoom lock knob to the direction of "T" (or "W").
- Fasten the zoom lock knob.
 - Press the focus assist button.
→ "FOCUS ADJUSTMENT" menu will be displayed. The focus assist function will be activated to perform the optimum adjustment.
 - When the focus ring is positioned near the best focus position, the position will automatically be memorized as the "PEAK HOLD" position.
 - Loosen the focus lock knob and move the focus ring, the current focus position will be indicated on "INDICATOR". Adjust the focus position so that the indicator value goes close to the "PEAK HOLD" position.
 - When the indicator value goes to the best focus position, "BEST FOCUS" will be displayed at the lower right corner of the screen, then fasten the focus lock knob.
 - Press the focus assist button again to close the "FOCUS ADJUSTMENT" menu. (No operation for 3 seconds also closes the menu.)

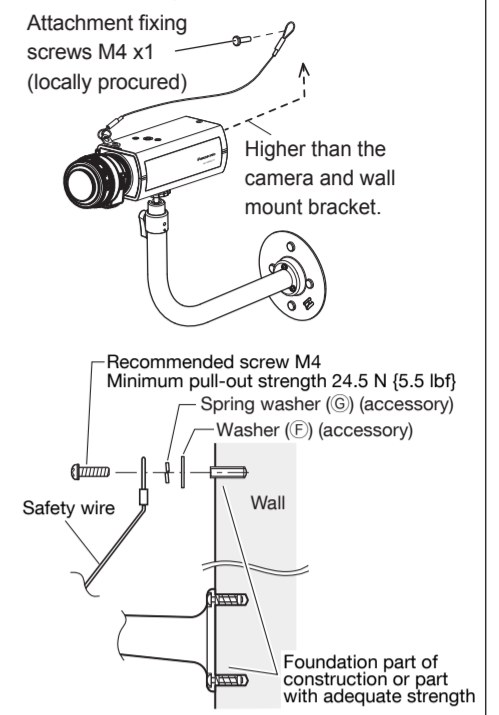


- [2]** Secure the wall mount bracket (locally procured) using separately procured screws or anchors.

- [3]** Loosen the camera mount bracket fixing mechanism to freely move the camera mount bracket. Align the screw thread with the fixing screw hole of the camera, and rotate the camera mount bracket to secure the camera. Tighten the camera mount bracket fixing mechanism and secure the camera mount bracket.
* The tripod mount base (accessory) is not used.



- [4]** Attach the safety wire to the foundation area of the architecture or where sufficient strength is assured. Prepare the fixing screws according to the material of the area where the safety wire is to be installed.



IMPORTANT:

- Be sure to rotate and secure the camera mount bracket. Rotating the camera places a large burden on the camera mount bracket, and may cause damage.
- Attach the safety wire in a position higher than the camera and the mount bracket.
- Attach the safety wire so that if the camera were to become detached, it would not fall on nearby people.

Step5 Connect and adjust the camera

- [1]** Connecting wires

Connect the necessary cables/lead wires according to the procedure of "Making connections". (When power is supplied by PoE, the camera is turned on when a LAN cable is connected. Make sure to connect the LAN cable after turning off the power of hub and router.)

- [2]** Adjusting the camera angle

Connect the adjustment monitor to the MONITOR OUT terminal of the camera with the RCA pin cable (locally procured). Loosen the camera mount bracket fixing mechanism on the camera mount bracket, and then check the adjustment monitor to adjust the camera angle. When adjusting the camera angle, make sure to loosen the camera mount bracket fixing mechanism on the camera mount bracket before making adjustments.

Note:

- The most common use of a varifocal lens and a zoom lens. Note that the adjustment method is different depending on the type. For further information, refer to the operating instructions for the lens to be used. When using 8x or 10x lens, adjust the back focus after positioning the zoom ring at the "W" end and positioning the focus ring at a step short of the "F" end. (SPN311) When using 2x or 3x lens, adjust the back focus after positioning the zoom ring at the "T" end and positioning the focus ring at a step short of the "F" end. (SPN311)
- Depending on the lens to be used, if the zoom ring is fully rotated in the "W" direction, the periphery may become dark. In such a case, rotate the zoom ring in the "T" direction for readjustment.
- When images in the near-infrared light area change from the color mode to the black & white mode, out-of-focus may be occurred according to the nature of optical property. In this case, the focus can be corrected by selecting "Auto" or "Preset" for "Adjusting method" on the setup menu (The focus will not automatically be adjusted according to the illumination level change once the focus is corrected.) Refer to the Operating Instructions (included in the CD-ROM) for how to configure the "Adjusting method" setting on the setup menu. (SPN311)
- When shooting the following subjects, it may have difficulty adjusting the back focus position automatically. In this case, adjust the back focus position manually from the setup menu. Refer to the Operating Instructions (included in the CD-ROM) for how to perform the auto back focus function from the setup menu. (SPN311)
- When shooting the following subjects or in the following places, close the "FOCUS ADJUSTMENT" menu by pressing the focus assist (F.A.) button, and adjust the focus to obtain the best focus position while monitoring images from the camera. (SPN310)
 - Subj. moves frequently
 - Subj. with large illuminance change
 - Subj. with low illuminance
 - Subj. through a window
 - Subj. with less contrast such as white wall
 - Subj. with heavy flicker
- In case the angular field of view has changed during adjustment, close the "FOCUS ADJUSTMENT" menu by pressing the focus assist (F.A.) button. (When the angular field of view changes, the indicator values of "PEAK HOLD" and "INDICATOR" also change.) After fixing the angular field of view, open the "FOCUS ADJUSTMENT" menu by pressing the focus assist (F.A.) button, then adjust the focus again. (SPN310)

IMPORTANT:

- After performing basic adjustments, make sure to press the auto back focus button once to perform detailed adjustments. (SPN311)
- After connecting the camera, refer to "Configure the settings of the camera" (leaflet) and perform the camera settings.