Panasonic

Installation Guide
Network Camera (PoE Ready)

Please read this document before using the product, and save this document for future reference. **Panasonic Network Camera Website:**
http://panasonic.net/pcc/ipcam/

Model No. **BB-HCM701** | Indoor Use Only |
BB-HCM705 | Indoor Use Only |

This manual is written for both the BB-HCM701 and the BB-HCM705. Available features and operations vary slightly depending on the model. You can confirm the model no. of your camera by checking the model no. printed on the front of the camera.
Model number suffixes ("A" and "CE") are omitted from the following model numbers shown in this document, unless necessary.
BB-HCM701A, BB-HCM701CE, BB-HCM705A, BB-HCM705CE
Please read the included Important Information before proceeding.
Complete Operating Instructions and all other documentation can be found on the included CD-ROM.
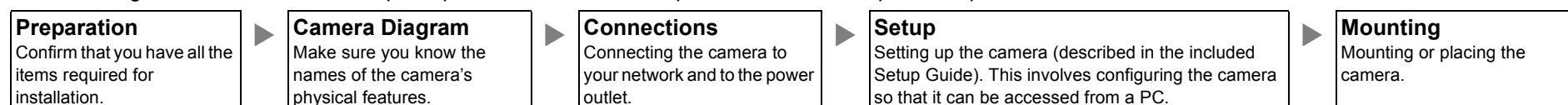
- This document (Installation Guide) explains how to physically connect the camera to the power supply and network, as well how to mount or place the camera for regular use.
- The **Setup Guide** describes how to set up the camera so that it can be accessed using a PC.

- Refer to the **Operating Instructions** on the **CD-ROM** for details regarding the camera's features.
- Refer to the **Troubleshooting Guide** on the **CD-ROM** if you have any problems configuring or using the camera.
- The **Stand-alone SD Memory Card Recording Guide** describes how to record images to an SD memory card without using a PC.

Abbreviations
- UPnP is the abbreviation for "Universal Plug and Play".
- The Network Camera is referred to as "the camera" in this document.
- The Setup CD-ROM is referred to as "the CD-ROM" in this document.

- The term "SD memory card" is used in this document to refer to SD memory cards and SDHC memory cards.
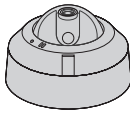
Installation Procedure Overview
The following is an overview of the steps required to install and setup the camera. All steps are explained in this document unless otherwise noted.

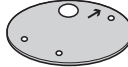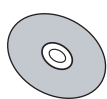| Preparation	Camera Diagram	Connections	Setup	Mounting
Confirm that you have all the items required for installation.	Make sure you know the names of the camera's physical features.	Connecting the camera to your network and to the power outlet.	Setting up the camera (described in the included Setup Guide). This involves configuring the camera so that it can be accessed from a PC.	Mounting or placing the camera.

Preparation
1. Confirm the following items are included in the camera's packaging.

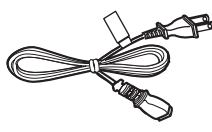| Main Unit (1 pc.)	Bit (1pc.) [BB-HCM701CE/ BB-HCM705CE Only] Order No. PNMH1086Z Used to secure the camera cover.	Screw A (4 pcs.) Order No. XTB4+20AFJ Used to secure the camera (3 pcs.) and the safety wire to the ceiling (1 pc.).	Screw B (1 pc.) Order No. XTB26+10GFJ Used for connecting the safety wire to the camera.
Washer A (1 pc.) Order No. XWG4F16VW Used when securing the safety wire to the ceiling.	Washer B (1 pc.) Order No. XWG26D12VW Used when securing the safety wire to the camera.	Safety Wire (1 pc.) Order No. PQME10080Z Used to secure the camera when mounting it.	Template (1 pc.) Order No. PNPD1302Z Used when marking holes for the cables and screws.
Important Information (1 pc.) Installation Guide (this document) (1 pc.) Setup Guide (1 pc.) Stand-alone SD Memory Card Recording Guide (1 pc.)		Setup CD-ROM (1 pc.) Order No. PNQC1016N Contains the Setup Program needed to configure the camera, as well as the camera's documentation.* *See the included Important Information for a description of each document.	

2. You will need the following additional items to install and configure the camera.

- a PC (see the system requirements in the Important Information document)
- a router

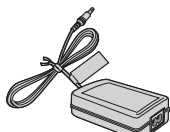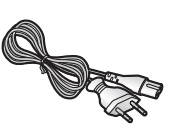- a LAN cable (CAT-5 straight cable)

Option
You can also connect the camera using the optional Panasonic BB-HCA7A, BB-HCA7CE or BB-HCA7E AC adaptor. The optional AC adaptor includes the following items. (For more information, consult your authorized Panasonic dealer.)
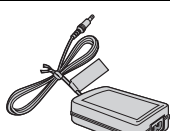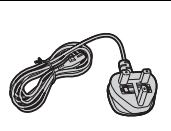
BB-HCA7A

AC Adaptor (1 pc.) Cord Length: About 3 m (9 feet 10 inches)	AC Cord (1 pc.) Cord Length: About 1.8 m (5 feet 11 inches)	Extension Cord (1 pc.) Cord Length: About 7 m (23 feet)

BB-HCA7CE (2 pin AC cord)

AC Adaptor (1 pc.) Cord Length: About 3 m (9 feet 10 inches)	AC Cord (1 pc.) Cord Length: About 1.8 m (5 feet 11 inches)	Extension Cord (1 pc.) Cord Length: About 7 m (23 feet)

BB-HCA7E (3 pin AC cord)

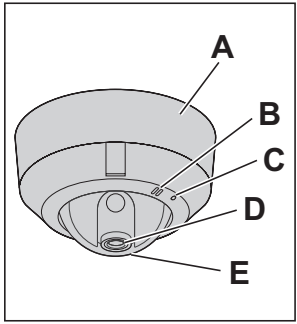| AC Adaptor (1 pc.) Cord Length: About 3 m (9 feet 10 inches)	AC Cord (1 pc.) Cord Length: About 1.8 m (5 feet 11 inches)	Extension Cord (1 pc.) Cord Length: About 7 m (23 feet)

- The AC adaptor, the AC adaptor cord, the AC cord, and the extension cord are not splash resistant, and are intended for indoor use only. The AC adaptor, AC adaptor cord, the AC cord, and the extension cord must be waterproofed for outside use.
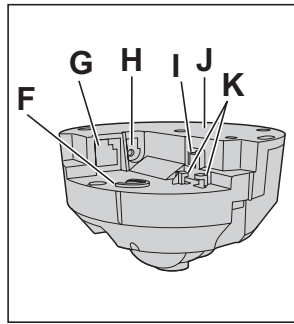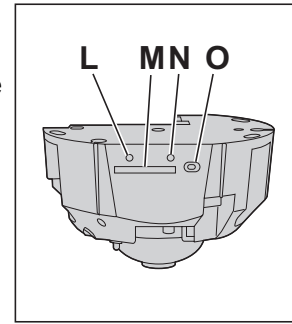
Camera Diagram

Front View

A Camera cover
B Microphone
C Indicator*1
D Lens
E Lens cover

Rear View

F Safety wire hole
G LAN port
H DC IN jack
I External INPUT interface
J Serial number and MAC address label
K Cable hook

Side View

L RESTART button
M SD memory card slot
N FACTORY DEFAULT RESET button
O FUNCTION button/indicator

*1 See 1.1 Understanding the Camera Indicator in the Troubleshooting Guide on the CD-ROM for indicator meaning.
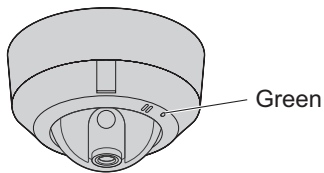

Connections

Before proceeding, confirm that your PC is connected to your router and can access the Internet. Also confirm that your router's UPnP™ feature is enabled. (Most routers have UPnP™ turned off by default.) Refer to the operating instructions included with your router or to the Panasonic Network Camera website (http://panasonic.net/pcc/ipcam/) for more information.

When connecting the camera using PoE (Power over Ethernet)

Connect the camera to your PoE hub using a LAN cable (Cat-5 straight cable) as described below.

① Connect a LAN cable to the camera and to the PoE hub.
   • Your PoE hub must be connected to the router. Refer to the operating instructions included with the PoE hub for connection instructions.

② Connect a LAN cable to a LAN port of the PoE hub and to a LAN port of the router.
   • Confirm that the indicator lights green after about 1 minute. If the indicator does not light green, see 1.2 Camera Indicator Issues in the Troubleshooting Guide on the CD-ROM.

Green

   • Use a 4-pair UTP/STP cable.
   • Do not use a relay connector or a hub between the camera and the PoE hub. These devices may disturb the data or electricity transmission.
   • If the PoE hub has indicators, the indicator lights as shown in the table below.

Indicator	Description
LINK	Turns on when the data is transmitted from the camera.
PoE	Turns on when the electricity is supplied to the camera.

   • If the PoE hub is turned off or power supply is temporarily cut off by the disconnection of the LAN cable, it may take time for the PoE hub's indicators to light.
   • The indicator display differs depending on manufacturers, refer to the manuals of the PoE hub.

Caution
   • The camera is to be connected only to PoE networks without routing to the outside plant.

LAN cable (Cat-5 straight cable)
To the power supply
PoE indicator
PoE hub
LINK indicator
Router
WAN   LAN
Modem
Internet
PC

When connecting the camera using the AC adaptor (Optional)

Connect the camera to your router and the power outlet as described below.

   • If using an AC adaptor, use only the optional Panasonic AC adaptor.

① Connect the LAN cable to the camera and the router.

② Connect the AC adaptor cord to the DC IN jack.

③ Connect the AC cord to the AC adaptor, then plug the AC cord into the power outlet.
   • Confirm that the indicator lights green after about 1 minute. If the indicator does not light green, see 1.2 Camera Indicator Issues in the Troubleshooting Guide on the CD-ROM.
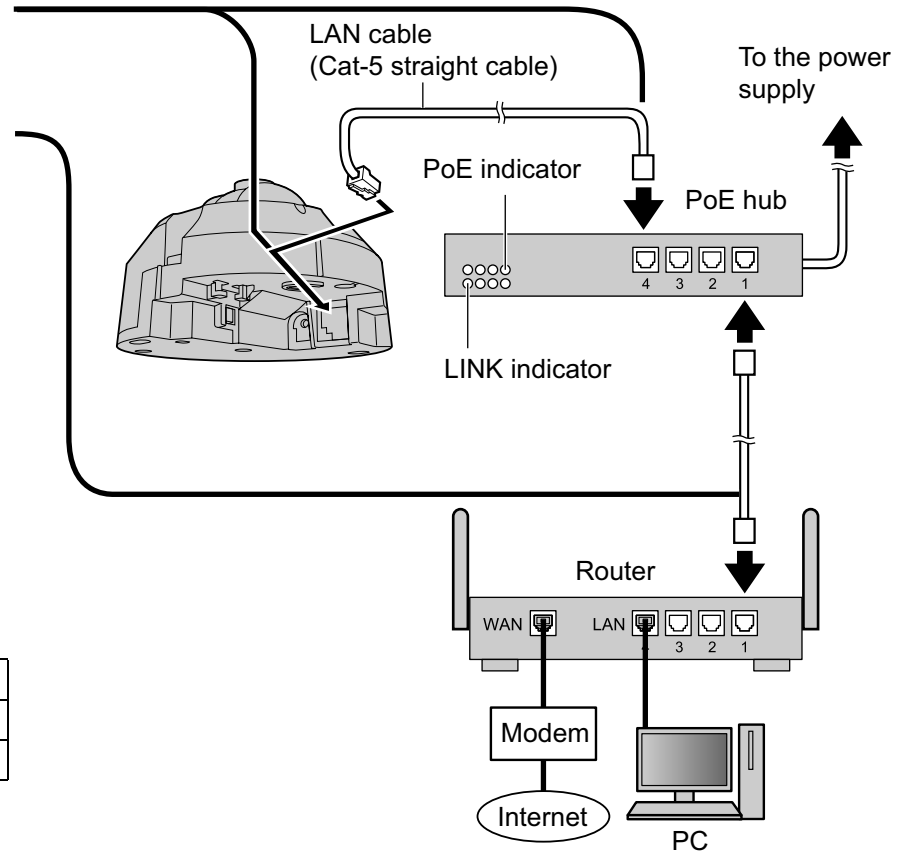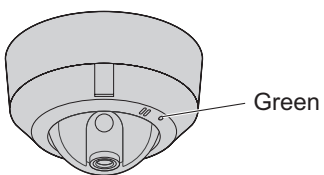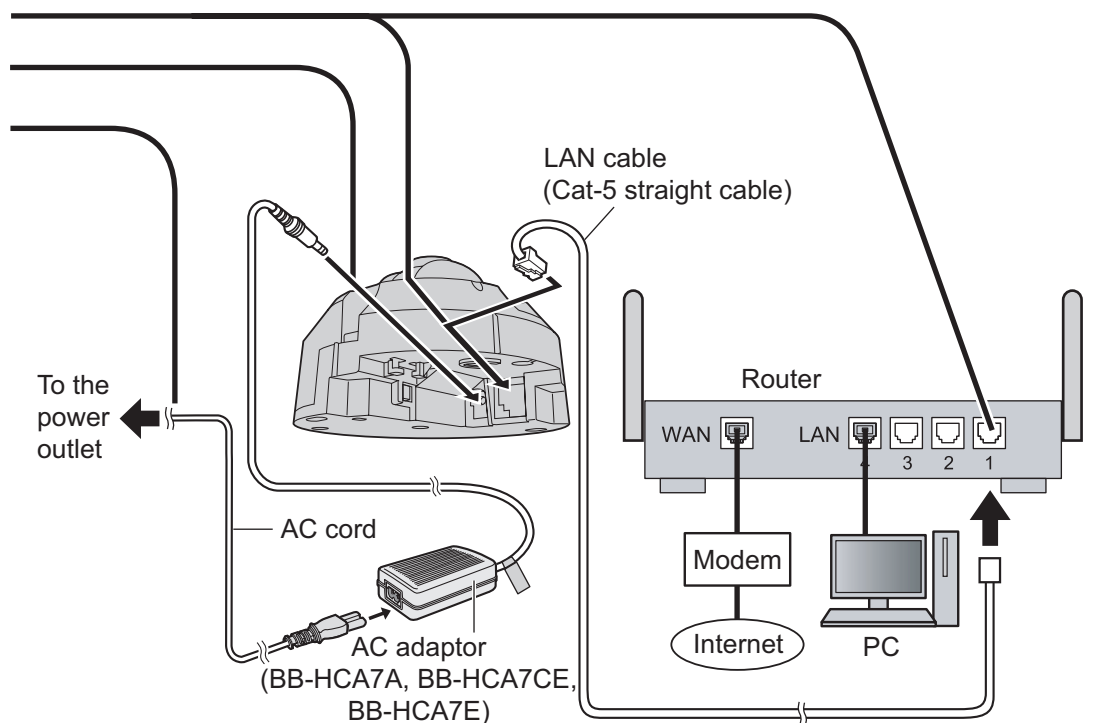

Green

   • When you operate the camera, the power outlet should be near the camera and easily accessible.
   • Use only specified Panasonic AC adaptor (Model No. BB-HCA7A, BB-HCA7CE, BB-HCA7E).

LAN cable (Cat-5 straight cable)
To the power outlet
AC cord
AC adaptor (BB-HCA7A, BB-HCA7CE, BB-HCA7E)
Router
WAN   LAN
Modem
Internet
PC

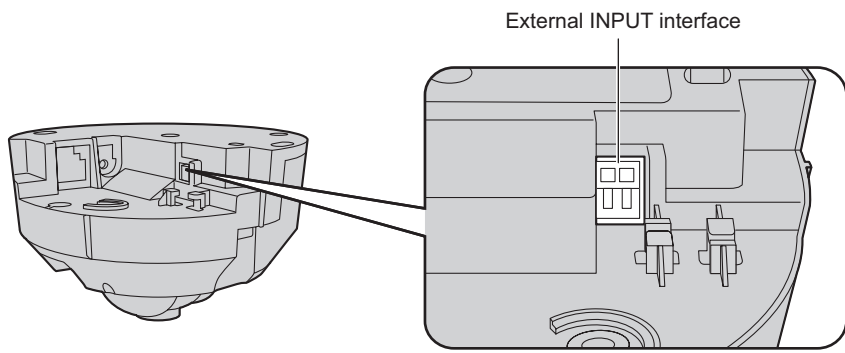**After the camera's indicator turns green, you may set up the camera. Continue by following the procedure described in the included Setup Guide.**
   • If the indicator does not turn green, see 1.2 Camera Indicator Issues in the Troubleshooting Guide on the included CD-ROM.

Read the following information after setting up the camera according to the procedure described in the Setup Guide.

Connecting External Sensors

The camera's external INPUT interface allows you to connect a device (such as sensors, motion detectors, etc.) that can be used to trigger the camera's image buffering and transferring features (see Section 2 Using Triggers to Buffer and Transfer Images in the Operating Instructions on the CD-ROM). The external INPUT interface has 2 terminals.
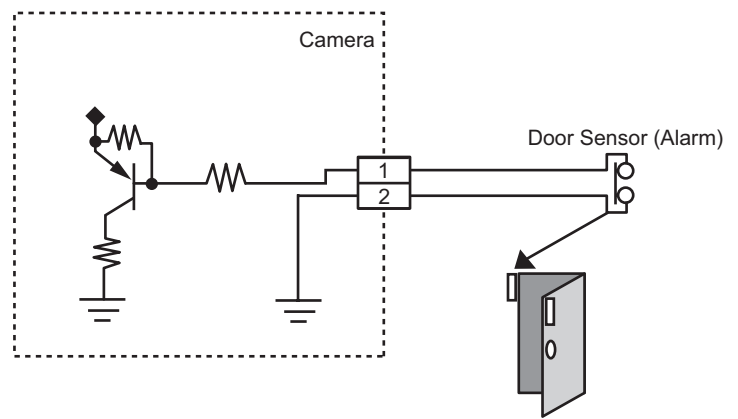
External INPUT interface

Circuit Diagram Example

Camera

Door Sensor (Alarm)

Terminal	Description
1	External sensor input. The camera can be triggered by either an open circuit or a GND short-circuit.
2	GND terminal.

Caution
• The external INPUT interface is not capable of connecting directly to devices that require large amounts of current. In some cases, a custom interface circuit (customer-provided) may have to be used. Serious damage to the camera may result if a device that exceeds its electrical capability is connected to the external INPUT interface.
• Low voltage/current circuits and high voltage/current circuits are used in the camera circuit. All wiring should be performed by a qualified electrician. Incorrect wiring could damage the camera and cause a fatal electric shock.

Note
• Do not push strongly on the external INPUT interface with the pointed object. The external INPUT interface may get stuck into the unit, and you may not be able to use it.

Mounting the Camera

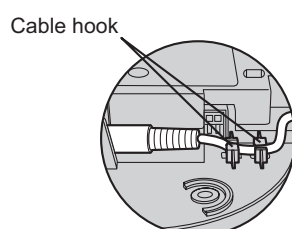## Important Information Regarding Camera Mounting
Please read the following information before mounting the camera. Consult an authorized dealer for mounting.

Caution
• Make sure you attach the safety wire when mounting the camera on a ceiling to prevent the camera from falling.

Note
• The camera is intended for indoor use only and should not be mounted outdoors.
• The included screws are for use with wooden ceilings only.
• Use screws that are appropriate for the material of ceiling.
• If the ceiling or wall material is mortar or concrete, see page 4 "When mounting the camera on a concrete or mortar ceiling".
• Do not drive the screws into a soft material. Drive the screws into a secure, 25 mm (1 inch) thick area of the ceiling or wall, such as a crossbeam, otherwise the camera may fall. If there is no crossbeam, place a board on the other side of the ceiling or wall to make sure the camera is securely mounted.
• The pull-out strength of the installation area must be at least 294 N (30 kgf) per screw.
• Mount the camera to a flat horizontal ceiling surface or vertical wall. (The camera cannot be used on surfaces that have more than a 15° slant.)
• The camera cover must be removed in order to insert or remove the SD memory card.
• The camera's MAC address and serial number are printed on the bottom of the camera and are needed in order for camera configuration and maintenance. Make a note of both of them before mounting the camera.
• Mounting and cabling instructions described in this document follow generally accepted guidelines suitable for residential installations. In some areas, commercial and industrial installations are regulated by local or state ordinances. For such installations, contact your local building department or building inspector for more details.
• Camera images can be viewed in relatively dark areas, however, image quality decreases when viewing dark images. We recommend using supplemental lighting for best results.
• Prolonged exposure to direct sunlight or halogen light may damage the camera's image sensor. Mount the camera appropriately.
• Do not directly touch the lens cover. Clean the lens cover with a dry and soft cloth if necessary.
• When mounting the camera, make sure to wrap the AC adaptor cord (if used) around the hooks as shown to ensure secure connections.
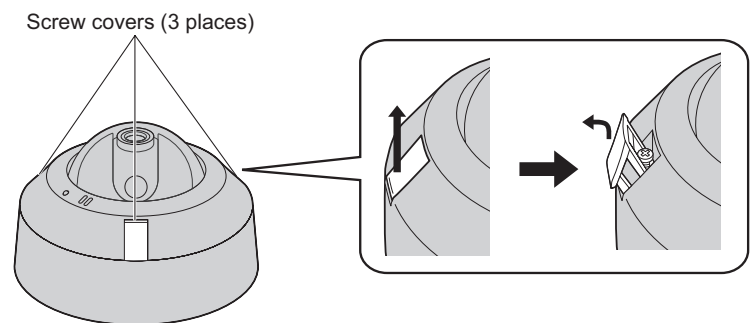
Cable hook

• Adjust the installation location and the direction the camera is facing while watching the actual camera image being displayed on a computer screen.
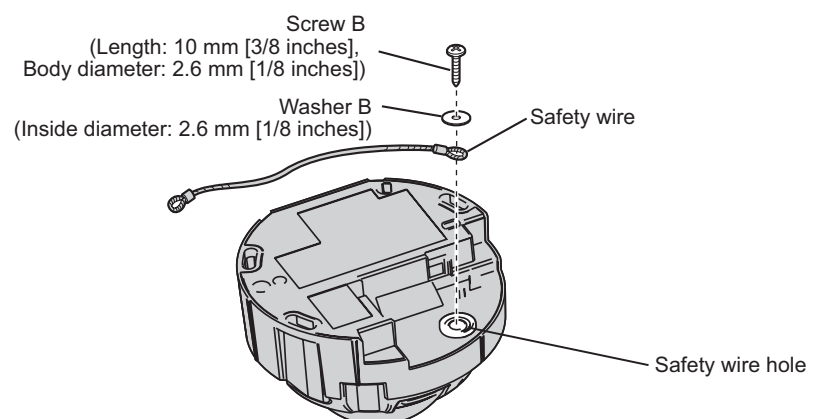
Mounting the Camera

Wiring without making a hole for cables in the ceiling or wall

1. Open the screw covers, loosen the screws, and remove the camera cover. (**For BB-HCM701CE/BB-HCM705CE:** When loosening the screws, use the included bit.)
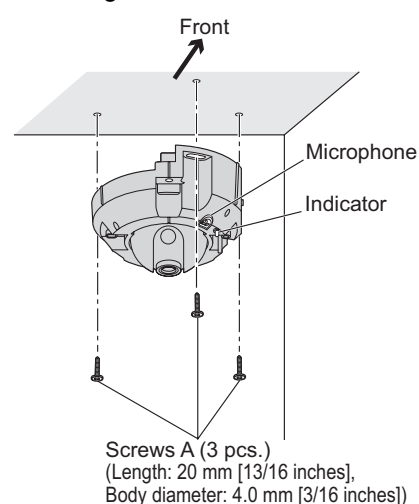
Screw covers (3 places)

2. Secure the safety wire to the camera using screw B (included) and washer B (included).
    • Make sure you attach the safety wire when mounting the camera on a ceiling to prevent the camera from falling. (Recommended torque 0.6 N·m {6.1 kgf·cm})
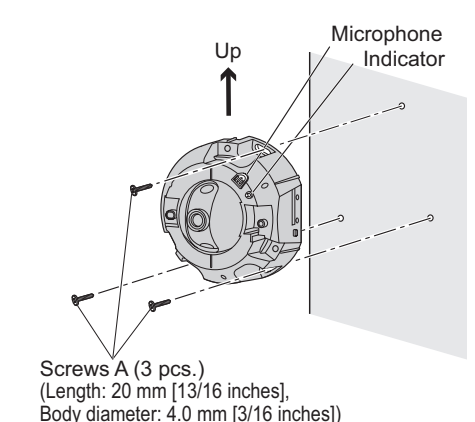
Screw B
(Length: 10 mm [3/8 inches],
Body diameter: 2.6 mm [1/8 inches])

Washer B
(Inside diameter: 2.6 mm [1/8 inches])

Safety wire

Safety wire hole

3. Connect all necessary cables (AC adaptor, LAN, etc.).
4. Secure the camera to the ceiling or wall using screws A (included).
    • Do not drive the screws into a soft material. Drive the screws into a secure, 25 mm (1 inch) thick area of the ceiling or wall, such as a crossbeam, otherwise the camera may fall. If there is no crossbeam, place a board on the other side of the ceiling or wall to make sure the camera is securely mounted.
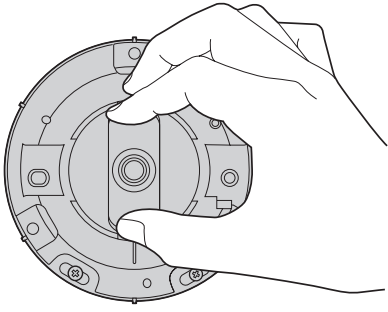
■ Ceiling

Front

Microphone

Indicator

Screws A (3 pcs.)
(Length: 20 mm [13/16 inches],
Body diameter: 4.0 mm [3/16 inches])

■ Wall

Up

Microphone
Indicator

Screws A (3 pcs.)
(Length: 20 mm [13/16 inches],
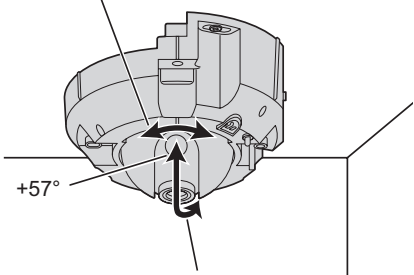Body diameter: 4.0 mm [3/16 inches])

3

5. With the indentations above and below the lens, use your fingers to adjust the angle of the lens. (While watching the computer screen, set where the lens is facing.)
- Do not touch the lens when mounting.
- Depending on the angle of the pan/tilt, the edges of the camera may be visible.

■ Ceiling   ■ Wall

Pan angle: -10° to +10°

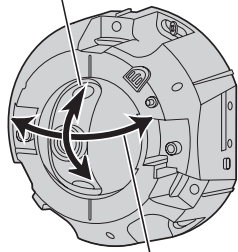

+57°

Tilt angle: -57° to +57°
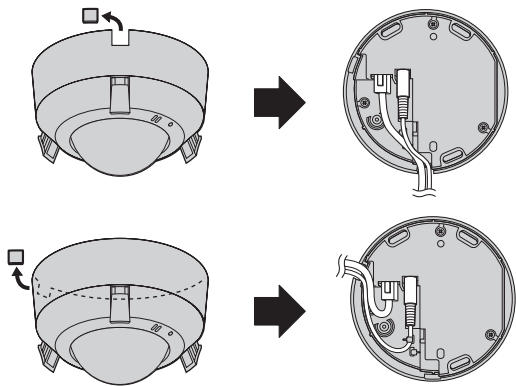If the lens is tilted to between 0° to -57°, the camera image will be upside down.

Tilt angle: -57° to +57°

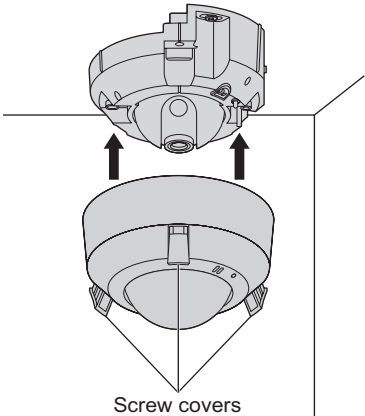Pan angle: -52° to +52°

6. If you did not make a hole in the ceiling for the cables, remove one of the tabs on the camera cover and pass the cables through the opening as shown. There are 2 tabs; use a tool to cut and remove a tab as needed, depending on the direction you want to pass the cables through.
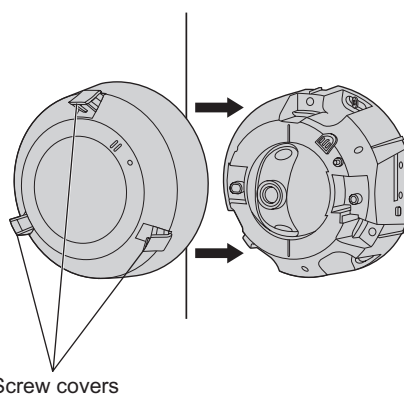

7. Attach the camera cover, tighten the screws, and close the screw covers. (Recommended torque 0.6 N·m {6.1 kgf·cm}) (**For BB-HCM701CE/BB-HCM705CE:** When tightening the screws, use the included bit.)

■ Ceiling   ■ Wall
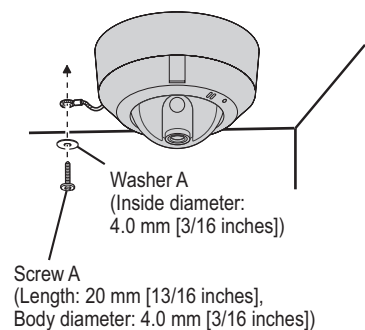

Screw covers   Screw covers

- Be careful not to nip the cable etc.

8. Secure the safety wire to the ceiling or wall using screw A (included) and washer A (included).
- The included screws are for use with wooden ceilings only.
- Use screws that are appropriate for the material of ceiling.
- Attach the safety wire in a position so that if the camera were to become detached, it would not fall on nearby people.
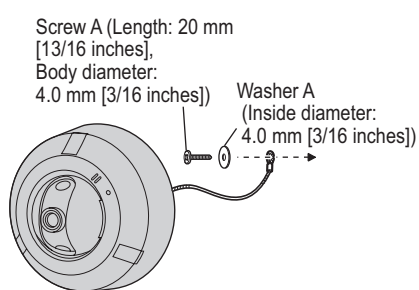
■ Ceiling   ■ Wall

Washer A
(Inside diameter: 4.0 mm [3/16 inches])

Screw A
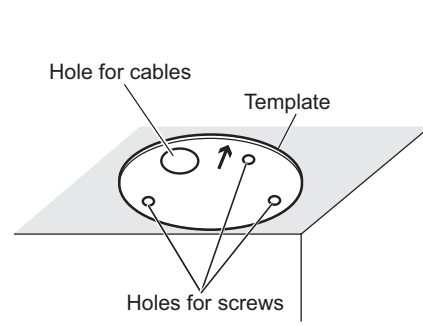(Length: 20 mm [13/16 inches], Body diameter: 4.0 mm [3/16 inches])

Screw A (Length: 20 mm [13/16 inches], Body diameter: 4.0 mm [3/16 inches])

Washer A
(Inside diameter: 4.0 mm [3/16 inches])

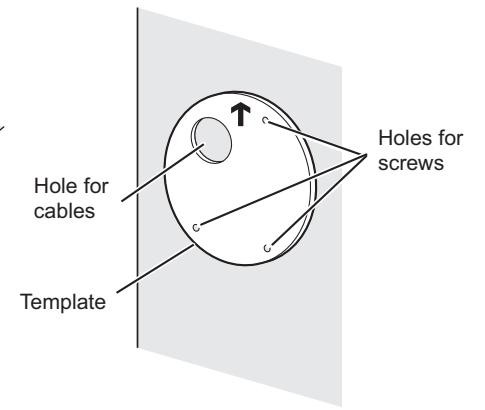**Wiring through a hole made in the ceiling or wall**

1. Place the template against the ceiling or wall and align the arrow to the direction you want to install the camera.
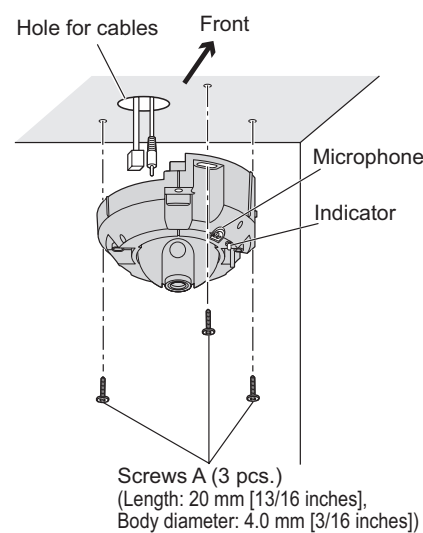
■ Ceiling   ■ Wall

Hole for cables
Template
Holes for screws
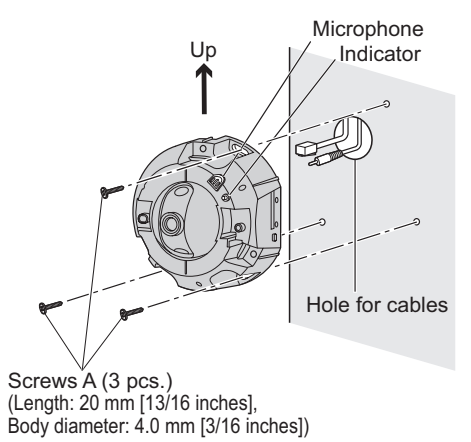
Hole for cables
Template
Holes for screws

2. Mark the points where you are going to make holes for the cables and screws.

3. Make a hole for cables in the ceiling or wall. Pass and connect all necessary cables (AC adaptor, LAN, etc.). Then follow steps 4, 5, 7 and 8 in "Wiring without making a hole for cables in the ceiling or wall".
- Do not drive the screw into a soft material. Drive the screw into a secure, 25 mm (1 inch) thick area of the ceiling or wall, such as a crossbeam, otherwise the camera may fall. If there is no crossbeam, place a board on the other side of the ceiling or wall to make sure the camera is securely mounted.

■ Ceiling   ■ Wall

Hole for cables   Front
Microphone
Indicator

Screws A (3 pcs.)
(Length: 20 mm [13/16 inches], Body diameter: 4.0 mm [3/16 inches])
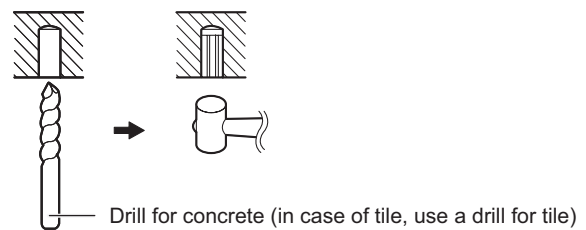
Up   Microphone Indicator

Hole for cables

Screws A (3 pcs.)
(Length: 20 mm [13/16 inches], Body diameter: 4.0 mm [3/16 inches])

When mounting the camera on a concrete or mortar ceiling

1. Place the template against the ceiling and mark the points where you are going to make holes (3 places).

2. Make holes with an electric drill. Insert anchors (customer-provided) into the holes and push them inside the holes with a hammer.
- Mortar ceilings break easily when drilling. Be careful of pieces of mortar which may become loose and fall.

Drill for concrete (in case of tile, use a drill for tile)

3. Mount the camera by following the instructions on this page.

4. Mark the point where you are going to make a hole for the safety wire, follow step 2 and secure the safety wire.