

## Installation Guide

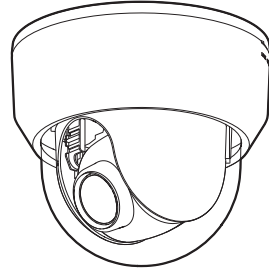
Included Installation Instructions



## Network Camera

For professional use only Outdoor use

Model No. WV-S65501-Z1



### About the user manuals

Product documentation is composed of the following documents.

- **Installation Guide (this document):** Provides information about “Precautions”, “Precautions for installation” and the installation method.
- **Basic Information (Refer to the link on the following product information website):** Provides information about “Precautions for use”, “Parts and functions” and “Detail specifications”.
- **Operating Instructions (Refer to the link on the following product information website):** Explains how to perform the settings and how to operate this camera. <https://i-pro.com/global/en/surveillance/training-support/documentation-database-list>



“<Control No.: C\*\*\*\*>” used in these documents should be used to search for information on our technical information website (<https://i-pro.com/global/en/surveillance/training-support/support/technical-information>) and will guide you to the right information.



- Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.
- microSDXC/ microSDHC/ microSD memory card is described as microSD memory card.
- The external appearance and other parts shown in this manual may differ from the actual product within the scope that will not interfere with normal use due to improvement of the product.

Authorised Representative in EU:  
i-PRO EMEA B.V.  
Laarderhoogtweg 25, 1101 EB  
Amsterdam, Netherlands

i-PRO EMEA B.V. UK Branch  
1010 Cambourne Business Park,  
Cambridgeshire CB23 6DP



N1222-0  
PGQP3665ZA

i-PRO Co., Ltd.

Tokyo, Japan

<https://www.i-pro.com/>

### Disposal of Old Equipment and Batteries Only for European Union and countries with recycling systems



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste. For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.

By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.

For more information about collection and recycling, please contact your local authority. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



#### Note for the battery symbol (bottom symbol)

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

For U.S.A.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Supplier's Declaration of conformity  
Trade name : i-PRO  
Model No. : WV-S65501-Z1  
Responsible Party :  
i-PRO Americas Inc.  
8550 Fallbrook Drive, Suite 200 Houston,  
Texas 77064  
Support Contact : 1-800-513-5417



For U.S.A.

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

Model No. \_\_\_\_\_  
Serial No. \_\_\_\_\_

For U.S.A.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For Canada

CAN ICES-3(A)/NMB-3(A)

Méthode d'installation	Vis de fixation recommandée	La capacité de traction minimale requise
Monter directement la caméra vidéo sur la surface d'installation. Installer la caméra vidéo sur une boîte de groupe/boîte de jonction double.	M4x16 mm {5/8 pouces} x 4 él.*	196 N {44 lbf}
Installer la caméra vidéo à l'aide de la platine de fixation d'installation exclusivement conçue.	Se référer au manuel d'utilisation de chaque platine de fixation.	

\* La longueur de la vis est un exemple lors de l'installation de la caméra au plafond ou sur un mur robuste d'une épaisseur de 20 mm {25/32 pouces} ou plus.

### Contents

Precautions .....	2	Specifications .....	4
Open source software .....	3	Optional accessories .....	4
Copyright .....	3	Standard accessories .....	4
Trademarks and registered trademarks .....	3	Other items that are needed (not included) .....	4
Precautions for installation .....	3	Installation Procedure .....	5
Troubleshooting .....	3		

**WARNING:**

- Operation of this product in a residential environment could cause radio interference.

**Caution:**

- The DC power supply connected to the camera must be in the same building.
- The network camera is only intended for a connection to an ethernet or PoE network without routing to the outside plant.
- This product has no power switch. Be sure to install disconnect devices such as a circuit breaker to shut down the main power of power supplying equipment to this product.
- Only connect 12 V DC Class 2 power supply (UL 1310/CSA 223), limited power source (IEC/EN/UL/CSA 60950-1, IEC/EN/UL/CSA 62368-1 Annex Q) or IEC/EN/UL/CSA 62368-1 PS2.
- Before attempting to connect or operate this product, please read these instructions carefully.

**Notice:**

- This product is not suitable for use in locations where children are likely to be present.
- Do not install this product in locations where ordinary persons can easily reach.
- This product is a professional equipment.
- For information about screws and other parts required for installation, refer to the corresponding section of this document.

■ ■ ■ : Direct current symbol

## Precautions

**■ Do not insert any foreign objects.**

Fire or electrical shock may be caused if water or any foreign objects, such as metal objects, enter inside the unit. Turn the power off immediately and contact qualified service personnel for service.

**■ Do not use this product in an inflammable atmosphere.**

Failure to observe this may cause an explosion resulting in injury.

**■ Avoid installing this product in the locations where salt damage occurs or corrosive gas is produced.**

Otherwise, the mounting portions will deteriorate and injury or accidents due to a fall of the product may occur.

**■ Do not strike or give a strong shock to this product.**

Failure to observe this may cause injury or fire.

**■ Keep microSD memory cards away from infants and children.**

Otherwise, they may swallow the cards by mistake. In this case, consult a doctor immediately.

**■ Do not hang down from this product or use this product as a pedestal.**

Failure to observe this may cause injury or accidents.

**■ Do not damage the power cable.**

**Do not damage, fabricate, twist, stretch, bundle, or forcibly bend the power cable. Do not place heavy objects on it, and keep it away from heat sources.**

Use of a damaged power cable may cause electric shock, short circuit, or fire. Consult the dealer for repair.

**■ Do not install this product on a place that is greatly influenced by wind.**

Installation on a place where the wind speed is 60 m/s (approx. 134 mph) or more may cause a fall of the product resulting in injury or accidents.

**■ Do not sprinkle more water, exceeding the performance limit of waterproof with a high pressure cleaning machine, etc.**

Fire or electrical shock may be caused by immersion.

**■ Do not attempt to disassemble or modify this product.**

Doing so can cause fire, electric shock, etc. Ask your dealer for repair and inspection.

**■ Do not install or clean the camera, or touch this product, the power cable or the connected cables during thunder storms.**

Failure to observe this may cause electric shock.

**■ Refer installation work to the dealer.**

Installation work requires technique and experience. Failure to observe this may cause fire, electric shock, injury, or damage to the product. Be sure to consult the dealer.

**■ Stop the operation immediately when something is wrong with this product.**

When smoke goes up from the product, the smell of smoke comes from the product, or the exterior of the product has deteriorated, continued use will cause a fire or fall of the product resulting in injury, or damage to the property. In this case, turn the power off immediately and contact qualified service personnel for service.

**■ Select an installation area that can support the total weight.**

Selecting an inappropriate installation surface may cause the product to fall down or topple over, resulting in injury or accident.

Installation work shall be started after sufficient reinforcement.

**■ Periodic inspections shall be conducted.**

Rust on the metal parts or screws may cause a fall of the product resulting in injury or accidents. Consult the dealer for the inspections.

**■ The exclusively designed mount bracket shall be used. (except for direct mount of the camera)**

Failure to observe this may cause a drop resulting in injury or accidents. Use the exclusively designed mount bracket for installation.

**■ The screws and bolts must be tightened to the specified torque.**

Failure to observe this may cause a drop resulting in injury or accidents.

**■ Turn the power off when do wiring of this product.**

Failure to observe this may cause electric shock. In addition, short circuit or wrong wiring may cause fire.

**■ Install this product in a location high enough to avoid people and objects from bumping the product.**

Failure to observe this may cause injury.

**■ Do not install this product in locations subject to vibration.**

Loosening of mounting screws or bolts may cause a fall of the product resulting in injury or accidents.

**■ Correctly perform all wiring.**

Short circuits in the wiring or incorrect wiring may cause fire or electrical shock.

**■ Install the product securely on an installation surface in accordance with the installation instructions.**

Failure to observe this may cause injury or accidents.

**■ Do not rub the edges of metal parts with your hand.**

Failure to observe this may cause injury.

**■ Do not touch the metal part of the bottom side of the product.**

The metal part of the bottom side may become hot while the product is in use. Direct skin contact with high temperature parts of the product may cause burns.

**■ Turn the power off when cleaning this product.**

Failure to observe this may cause injury.

## About notations

Some functions are expressed with the following notations in this document.

 Clear dome cover     Smoke dome cover

## Open source software

- This product contains open source software licensed under GPL (GNU General Public License), LGPL (GNU Lesser General Public License), etc.
- Customers can duplicate, distribute and modify the source code of the software under license of GPL and/or LGPL.
- For details concerning licensing and source code of open source software, click “Click here for OSS information” on “Support” page of the setup menu of this product and read the displayed content.
- Please note that we shall not respond to any inquiries regarding the contents of the source code.

## Copyright

Except for open source software licensed under GPL/LGPL and so on, distributing, copying, disassembling, reverse compiling and reverse engineering of the software provided with this product are all expressly prohibited. In addition, exporting any software provided with this product violating export laws is prohibited.

## Trademarks and registered trademarks

- Microsoft, Windows, Windows Media, Microsoft Edge, and ActiveX are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Intel and Intel Core are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.
- Adobe, Acrobat, and Reader are either registered trademarks or trademarks of Adobe in the United States and/or other countries.
- microSDXC Logo is a trademark of SD-3C, LLC.
- iPad and iPhone are trademarks of Apple Inc., registered in the U.S. and other countries.
- Android and Google Chrome are trademark of Google LLC.
- Firefox is a trademark of the Mozilla Foundation in the US and other countries.
- The word “QR Code” is a registered trademark of DENSO WAVE INCORPORATED in Japan and other countries.
- All other trademarks identified herein are the property of their respective owners.

## Precautions for installation

**i-PRO Co., Ltd. assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.**

■ **In order to prevent injury, the product must be securely mounted to an installation surface according to Installation Guide.**

### ■ Installation area for this product

Select an appropriate place for the installation area (such as a strong installation surface) in your particular environment.

- Make sure that the installation area is strong enough to hold this product, such as a concrete ceiling.
- Install the camera in the foundation area of the architecture or where sufficient strength is assured.
- Do not mount the product on a plaster board or a wooden section because they are too weak. If the product is unavoidably mounted on such a section, the section shall be sufficiently reinforced.

### ■ Mounting method for this product

- This product is designed to be used as a pendant mount camera. If the product is mounted on a desktop or at a slant, it may not work correctly and its lifetime may be shortened.

### ■ Do not place this product in the following places:

- Locations where a chemical agent is used such as a swimming pool
- Locations subject to moisture or oil smoke such as a kitchen
- Locations that have a specific environment that is subject to an inflammable atmosphere or solvents
- Locations where a radiation, an X-ray, a strong radio wave or a strong magnetic field is generated
- Locations near coasts directly subjected to sea breezes, or locations subject to corrosive gases such as from hot springs, volcanic regions, etc.
- Locations where the temperature is not within the specified range
- Locations subject to vibrations, such as on vehicles, marine vessels, or above product lines (This product is not designed for on-vehicle use.)

- Locations subject to condensation as the result of severe changes in temperature such as near the outdoor unit of an air conditioner.
- Locations near rubber products containing sulfur (packing, rubber feet, etc.)

### ■ Screw tightening

Do not use an impact driver. Use of an impact driver may damage the screws or cause tightening excessively.

### ■ Installing in low temperature environments

The camera may not function properly, if it is installed and operated in an environment where the temperature is below  $-20\text{ }^{\circ}\text{C}$   $\{-4\text{ }^{\circ}\text{F}\}$ . In such a case, wait approximately 2 hours or more until the camera is warmed up. Then, turn on the power again. As the camera warms up, snow or frost accumulated on the dome cover will melt. However, it may not be defrosted from the cover depending on the ambient temperature or weather condition.

### ■ About reflection of light from outside

A ghost may appear on the screen depending on the incident angle of external light.

- Refer to our technical information website <Control No.: C0109> for image examples and measures to take.

### ■ Take notice of humidity.

Install this product when the humidity is low. If installation is performed when it is raining or in very humid conditions, the inside may be affected by humidity, causing mist-over inside the dome cover.

### ■ Protection against lightning

When cables are used outdoors, there is a chance that they may be affected by lightning. In such a case, install a lightning arrester close to the camera, and make the length of the network cable between the camera and lightning arrester as short as possible to prevent the camera from being affected by lightning.

### ■ When noise disturbance may happen

Noise may appear in video or audio near a strong electric field from a TV or radio antenna, motors and transformers, or a strong electric field/magnetic field from a power line (lamp line) of AC 100 V or more. Conduct the power distribution work to keep 1 m {3.28 feet} away from them or conduct the electric conduit work using metal pipes. (Be sure to make ground connection of the metal pipes.)

### ■ Make sure to remove this product if it will no longer be used.

### ■ This product has no power switch.

- When turning off the power, disconnect the power supply from the 12 V DC power supply or the PoE+/PoE device.
- When the Ethernet cable or the power cable is connected, the power will be turned on. When the power is turned on, each of pan, tilt, zoom and focus operations will automatically be executed. Before cleaning the product, make sure that the Ethernet cable is disconnected or the power cable is disconnected from the main power supply.

### ■ About the battery

A battery is installed inside the camera. Do not leave the battery exposed in environments of excessive heat as a result of sunlight or fire.

### ■ Equipment classification and power source indication label



Refer to the indication label on the bottom side of this unit for the equipment classification, power source, and other information.

### ■ About static electricity

Before installing or removing this product, be sure to touch metal objects to discharge static electricity from your body.

## Troubleshooting

Before requesting service, refer to “Troubleshooting” of “Basic Information” and “Operating Instructions”. Then, confirm the trouble.

<b>Specifications*</b> *For further information, refer to the “Basic Information”.	
Power source*1, *5:	12 V DC PoE (IEEE802.3af compliant), PoE+ (IEEE802.3at compliant)
Power consumption*1:	<p>■ <b>When using in a state where the tilt speed is 300 °/S</b></p> 12 V DC: 1.3 A/ Approx. 15.4 W PoE 48 V DC: 270 mA/ Approx. 12.95 W (Class 0 device) <p>■ <b>When using in a state where the tilt speed is 500 °/S</b></p> PoE+ 54 V DC: 350 mA/ Approx. 18.9 W (Class 4 device)
Operating environment:	
Ambient operating temperature:	-30 °C to +55 °C {-22 °F to +131 °F} (Power on range -20 °C to +55 °C {-4 °F to +131 °F})
Ambient operating humidity:	10 % to 100 % (no condensation)
Storage environment:	
Storage temperature:	-30 °C to +60 °C {-22 °F to +140 °F}
Storage humidity:	10 % to 95 % (no condensation)
EXT I/O terminals*5:	ALARM IN1 (Alarm input 1/ Black & white input/ Auto time adjustment input) (x1) ALARM IN2 (Alarm input 2/ALARM OUT) (x1) ALARM IN3 (Alarm input 3/ AUX OUT) (x1)
Audio input*5:	ø3.5 mm stereo mini jack
For microphone input:	Recommended applicable microphone: Plug-in power type (Sensitivity of microphone: -51 dB to -38 dB (0 dB=1 V/Pa, 1 kHz)) Input impedance: Approx. 2 kΩ (unbalanced) Supply voltage: 2.5 V ±0.5 V
For line input:	Input level: Approx. -10 dBV
Audio output*2, *5:	ø3.5 mm stereo mini jack (Audio output is monaural.) Output impedance: Approx. 600 Ω (unbalanced) Output level: -20 dBV
Waterproof*3:	IP66 (IEC 60529), Type 4X (UL50E), NEMA 4X compliant
Shock resistance:	IK10 (IEC 62262)
Wind resistance:	Up to 40 m/s {approx. 89 mph}
Dimensions:	Maximum diameter: ø165 mm × 139 mm (H) {ø6-1/2 inches × 5-15/32 inches (H)} Dome radius 63.5 mm {2-1/2 inches}
Mass:	Approx. 1.6 kg {3.53 lbs}
Finish:	<b>Main body:</b> Aluminum die cast, black and PC resin, i-PRO white <b>Outer fixing screws:</b> Stainless steel (Corrosion-resistant treatment) <b>Dome cover:</b> PC resin,  /  (Transmittance: 45 %)
Others:	Tamper-resistant enclosure*4 NEMA TS2 Compliant Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F)

\*1 Refer to our technical information website <Control No.: C0106> for further information about Power source and Power consumption information.

\*2 The audio output can be switched to the monitor output. Refer to the “Operating Instructions” on our product information website for descriptions of how to switch the output.

\*3 Only when installation work is properly performed according to the Installation Guide and appropriate waterproof treatment is performed.

\*4 Component that has a structure on which the screws that are accessible after installation cannot be screwed or unscrewed using an ordinary screwdriver.

\*5 When using a 12 V DC power supply of this product, EXT I/O terminal, audio input, and audio output, I/O cable (option: WV-QCA501A) is required.

## Optional accessories

Base bracket:	WV-QJB501-W	Mount bracket:	WV-QSR501
Base bracket:	WV-QJB504	Dome cover:	WV-QDC502G
Ceiling mount bracket:	WV-QEM503	I/O Cable:	WV-QCA501A

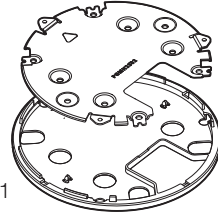
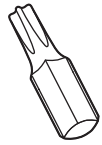
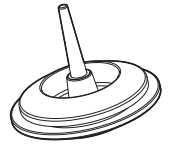
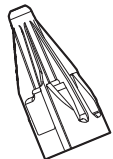
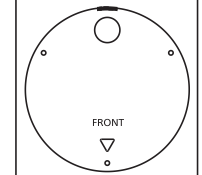
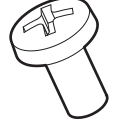
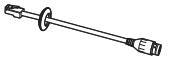
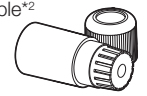


The latest information → Technical information website “Accessory Selector” <Control No.: C0501>

## Standard accessories

Installation Guide (this document) .....	1 pc.	IMPORTANT SAFETY INSTRUCTIONS.....	1 pc.
Installation procedure leaflet.....	1 pc.	Code label*1.....	1 pc.

\*1 This label may be required for network management. Use caution not to lose this label.

Attachment plate x1 Plate cover x1		Bit x1 (6.35mm hexagonal, T20)		Grommet x2 (of them, 1 for spare)	
RJ45 cap x1		Template x1		Fixing screw x4 (M4 × 8 mm) (of them, 1 for spare)	
				RJ45 Ethernet Cable*2 x1	
				Waterproof RJ45 connector cover/cap x1	

\*2 RJ45 Ethernet Cable is attached to the camera.

## Other items that are needed (not included)

- Mounting screws

Installation method	Recommended screw*1	Minimum pull-out strength*2
Directly mount the camera onto the installation surface	M4 × 16 mm {5/8 inches} × 4 pcs.*3	196 N {44 lbf}
Mount the camera to a two-gangbox/junction box.		
Mount the camera using the exclusively designed mount bracket.	Refer to the operating instructions of each bracket.	

\*1 Select screws according to the material of the location that the camera will be mounted to. In this case, wood screws and nails should not be used.

\*2 This value indicates the minimum pull-out strength required value per screw.  
For information about the minimum pull-out strength, refer to our technical information website <Control No.: C0120>.

\*3 The screw length is an example when installing the camera on a robust ceiling or wall with a thickness of 20 mm {25/32 inches} or more.

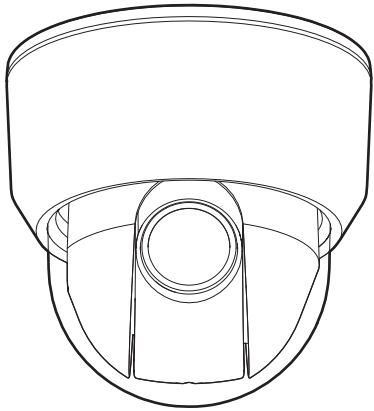
- Ethernet cable with RJ45 plug (category 5e or better, straight, 4 pairs (8 pins))



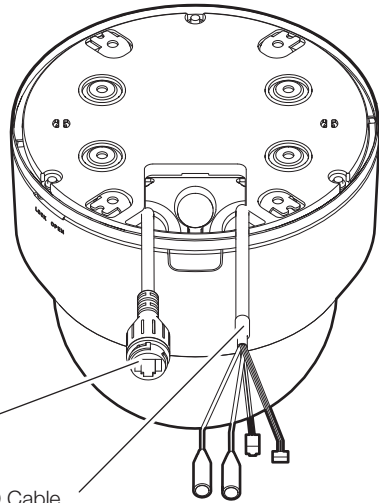
# Installation Procedure

## Parts and functions

Front side

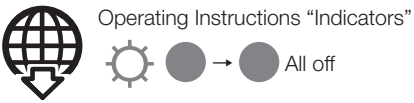
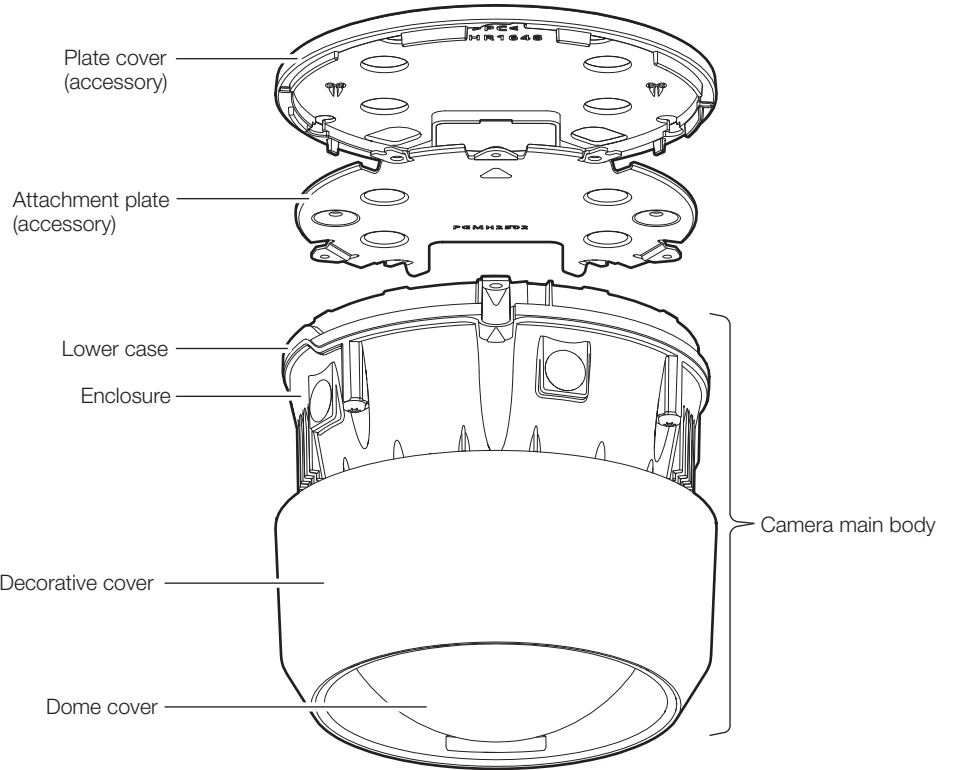


Bottom side



RJ45 Ethernet Cable  
(WV-QCA500A)

I/O Cable  
(WV-QCA501A: option)

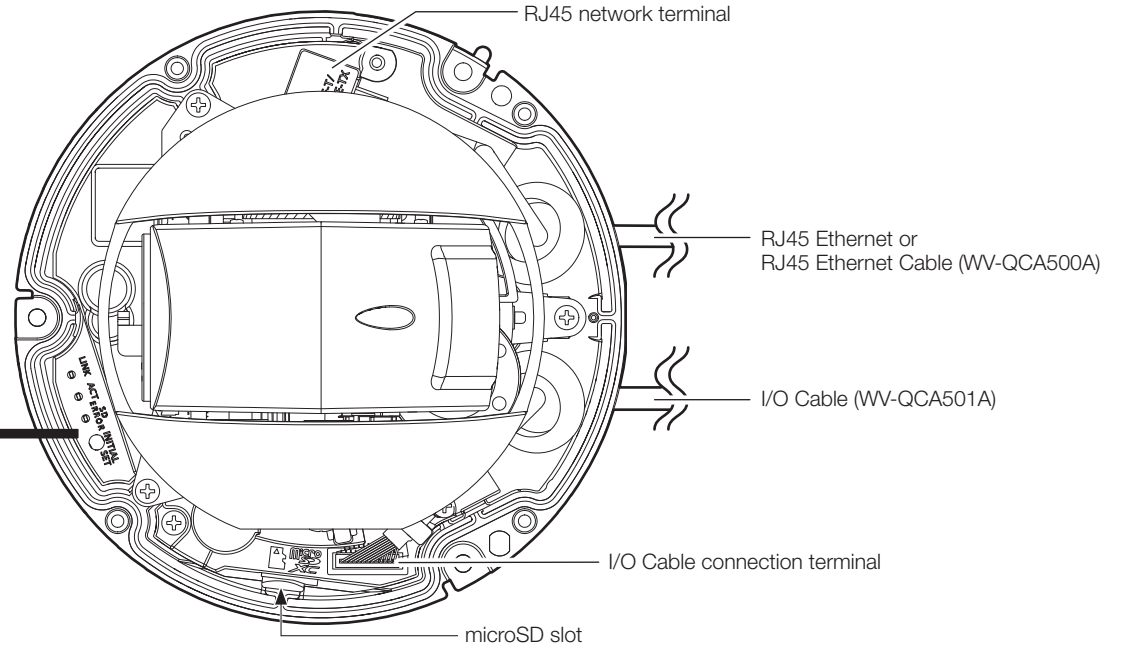
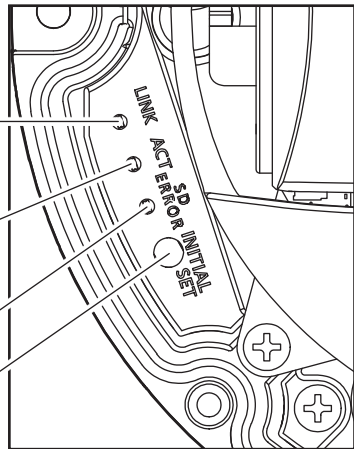


LINK indicator  
(orange)

ACT indicator  
(green)

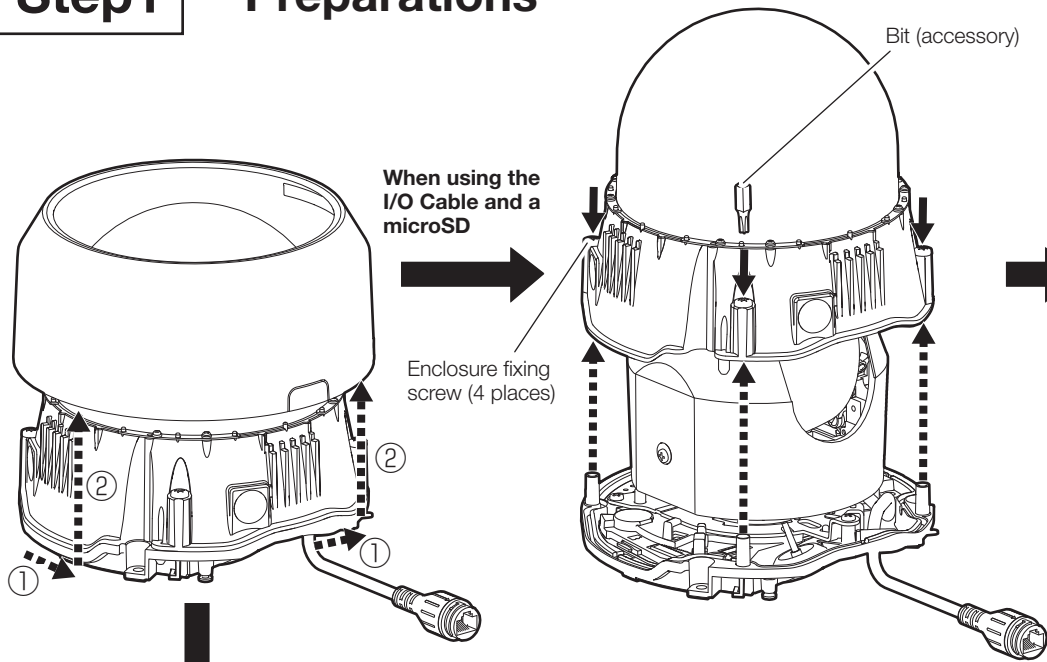
SD ERROR indicator  
(red)

INITIAL SET  
button

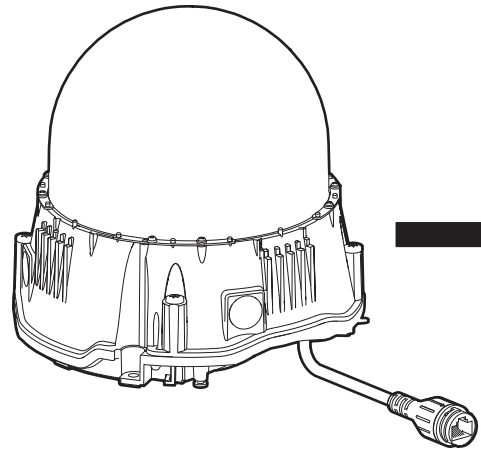


# Step1

## Preparations



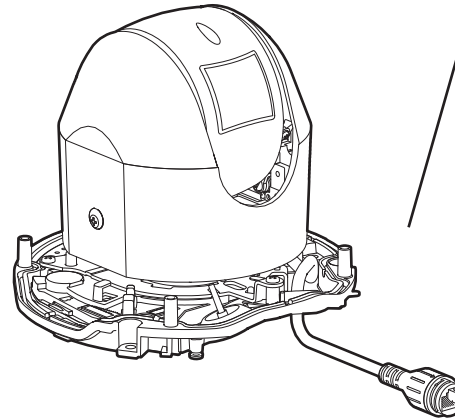
When using neither the I/O Cable nor microSD



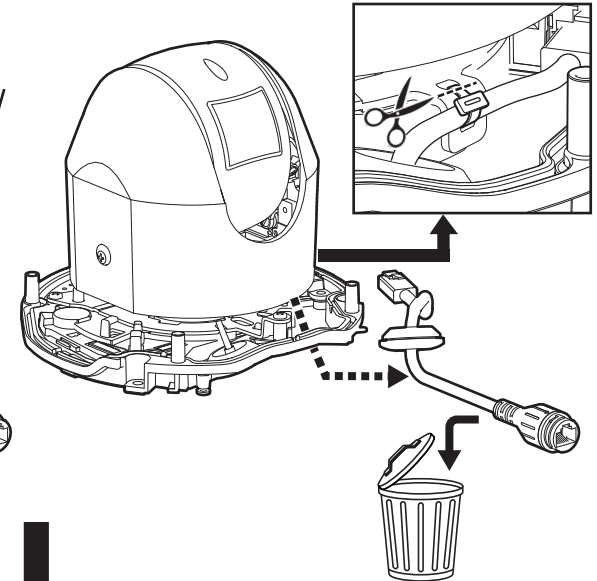
⇒ Go to following steps for the subsequent procedure

- Step 1
  - For side cable access
  - When wiring with the base bracket (WV-QJB504) using a conduit
- Step 2
- Step 4-2
- Step 5
- Step 7
- Step 8

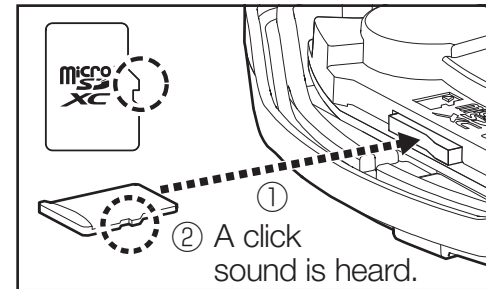
■ When using the waterproof RJ45 connector



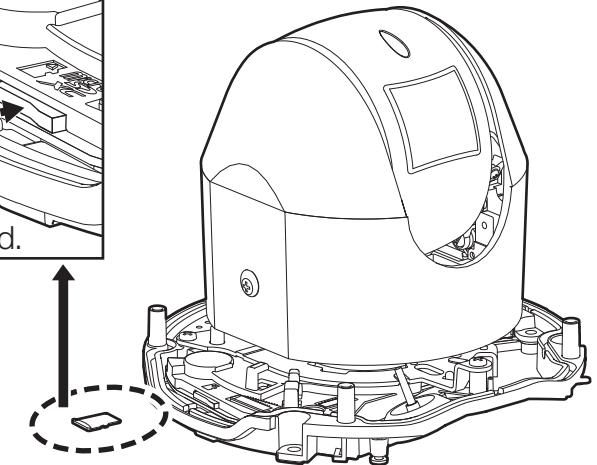
■ When directly connecting the Ethernet cable



■ When using a microSD



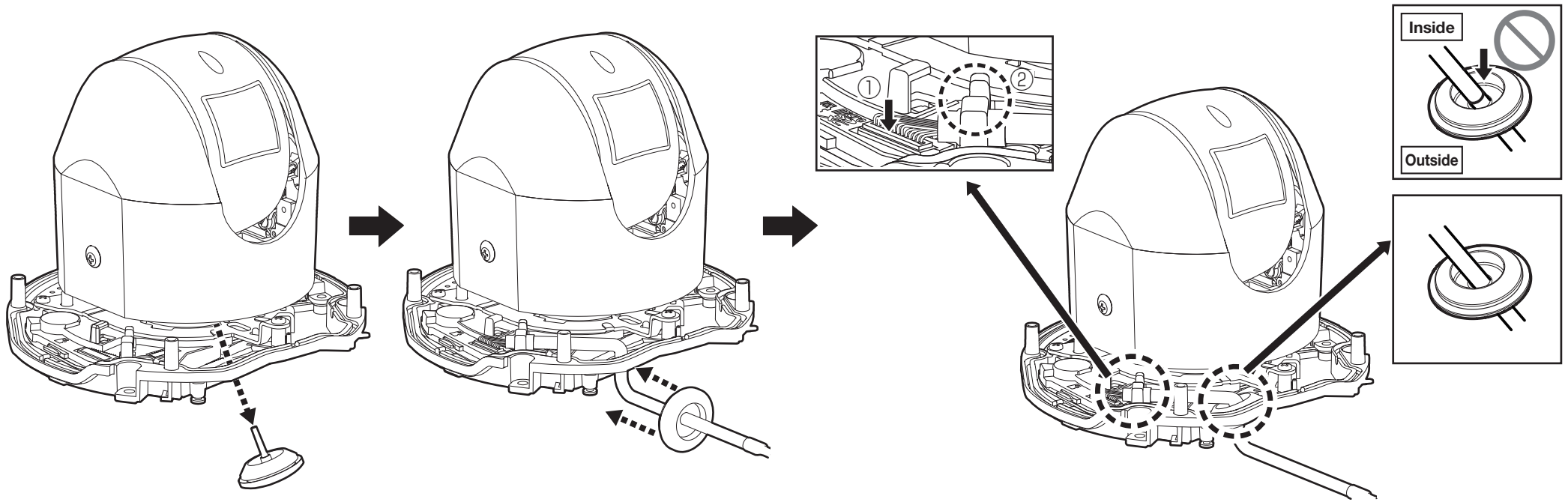
Operating Instructions  
 "SD memory card format"  
 It is recommended to use a microSD memory card for i-PRO devices.



**Note:**

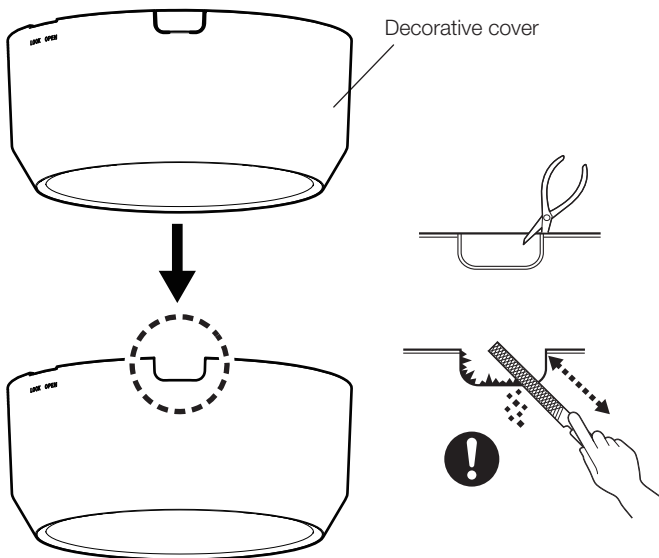
- When using neither the multi-cable nor microSD, it is unnecessary to remove the enclosure. In the illustration for the installation, the illustration when installing without the enclosure is shared.

■ When using a 12 V DC power supply, external I/O or audio I/O (WV-QCA501A)



■ For side cable access

■ When wiring with the base bracket (WV-QJB504) using a conduit

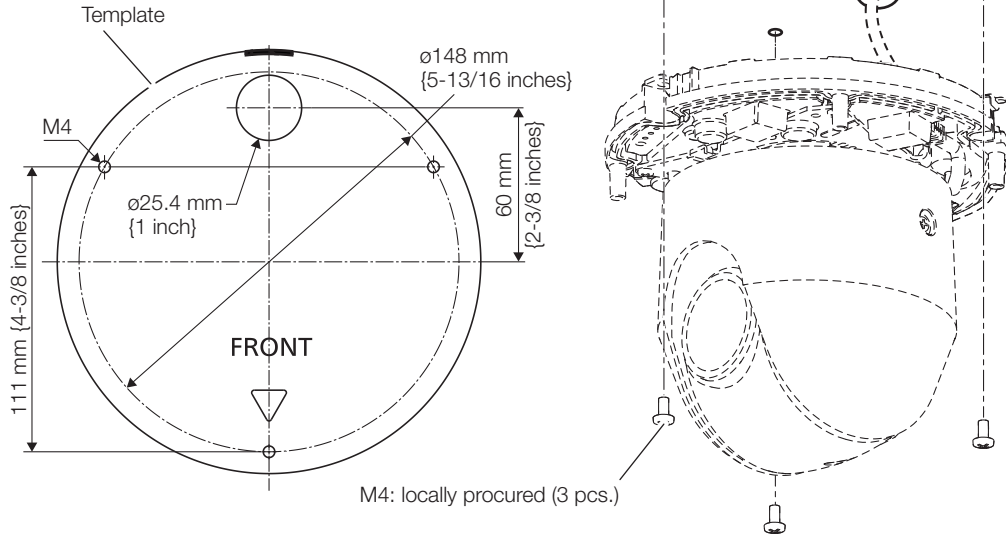


! Do not use the base bracket (WV-QJB501-W, WV-QJB504) when using the heavy salt damage resistant model.

# Step 2

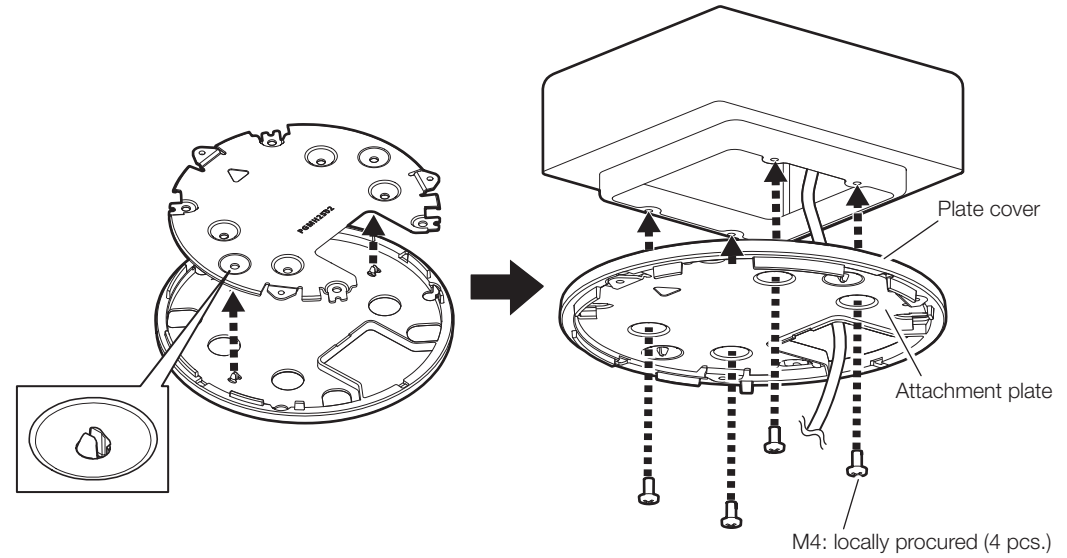
**!** Minimum pull-out strength of fixing screw (M4: locally procured): 196 N {44 lbf} / per 1 pc.

## ■ When directly fixing on the installation surface



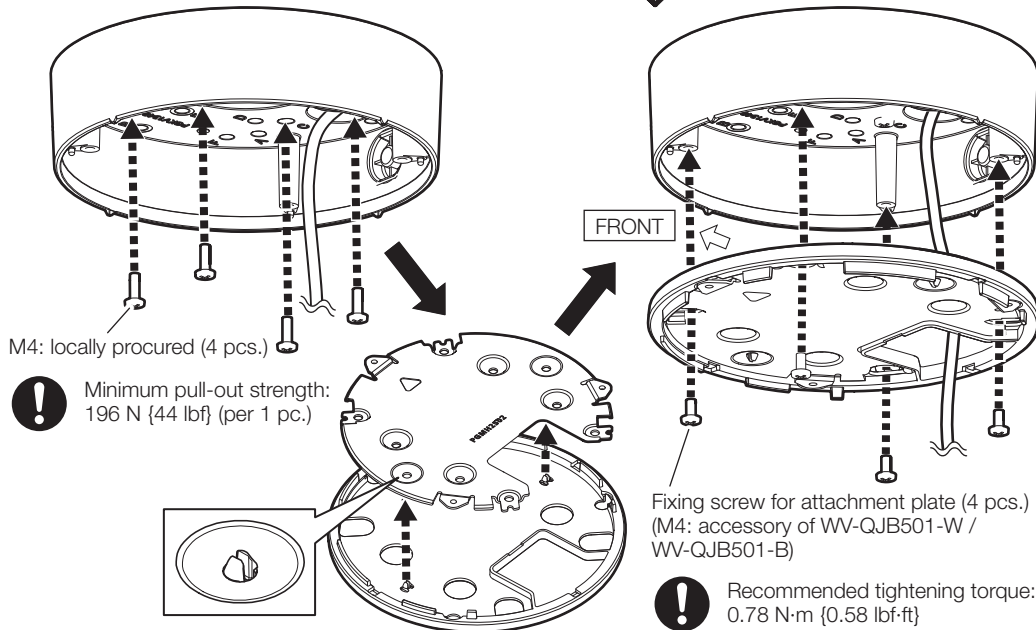
## ■ When fixing on the gangbox/ junction box

**!** Minimum pull-out strength: 196 N {44 lbf} (per 1 pc.)



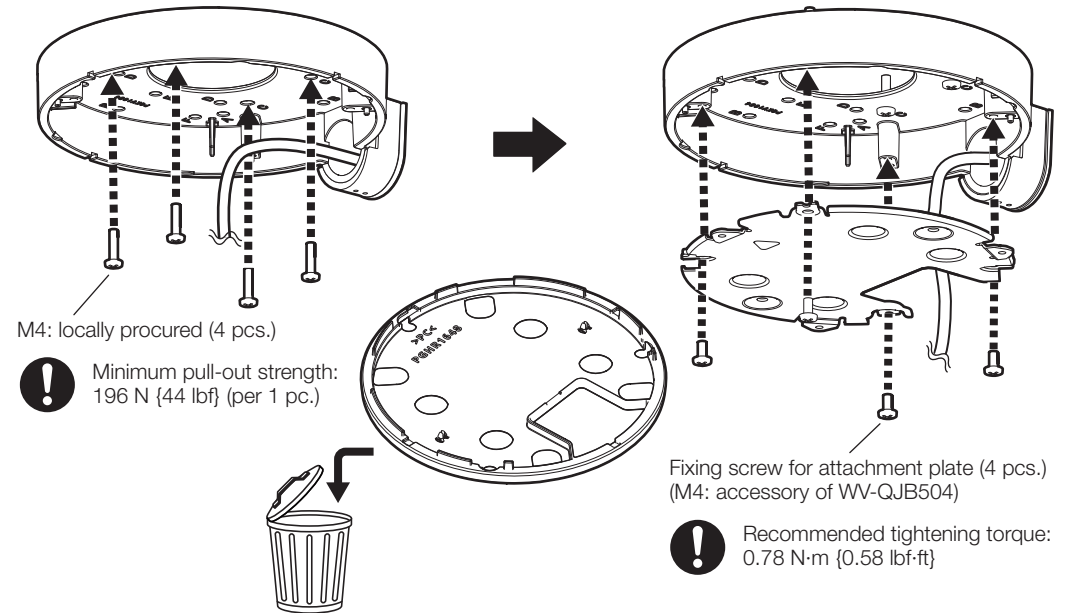
## ■ When fixing with the base bracket (WV-QJB501-W / WV-QJB501-B)

Operating Instructions "WV-QJB501-W / WV-QJB501-B"



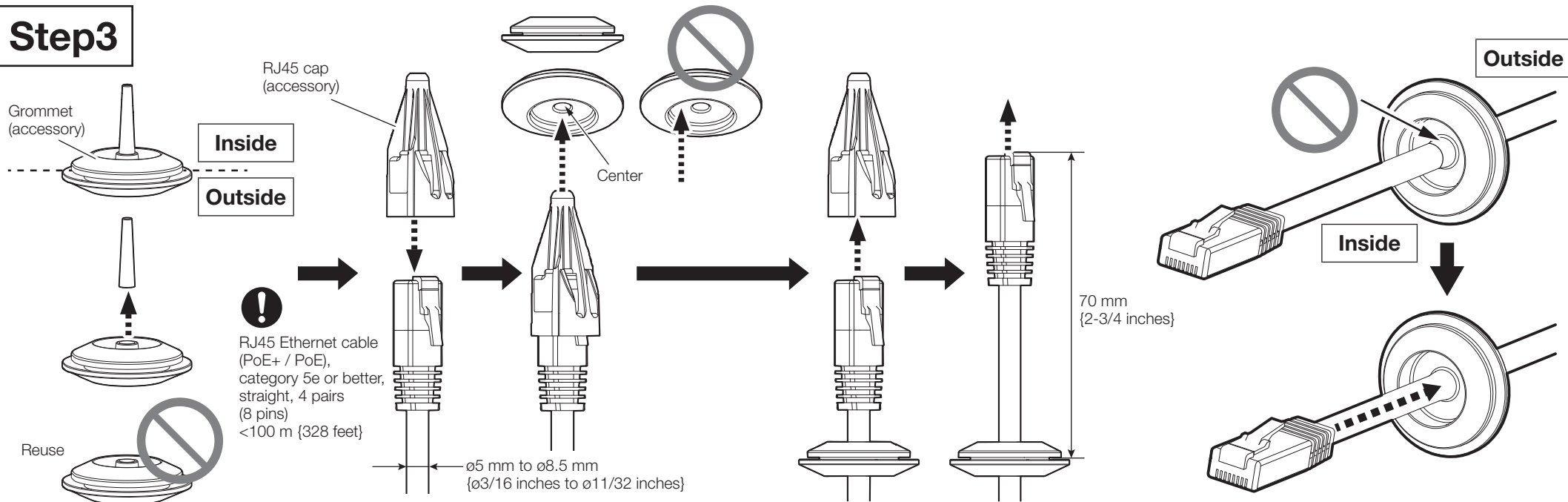
## ■ When fixing with the base bracket (WV-QJB504)

Operating Instructions "WV-QJB504"

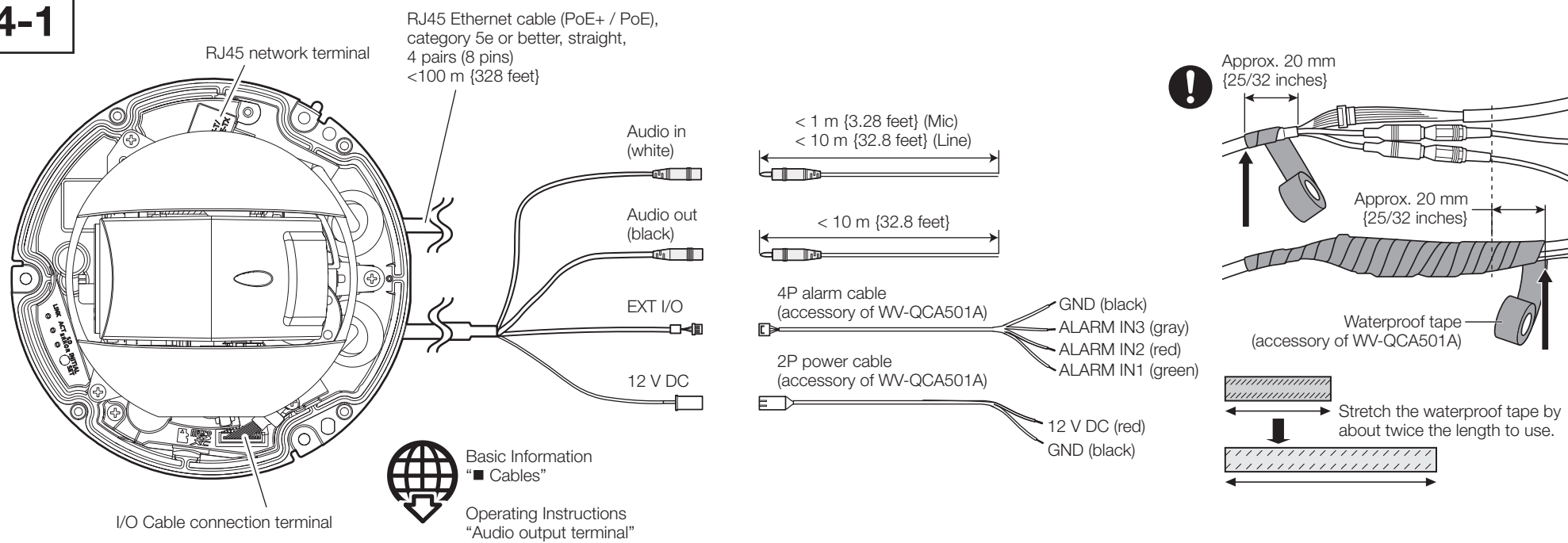




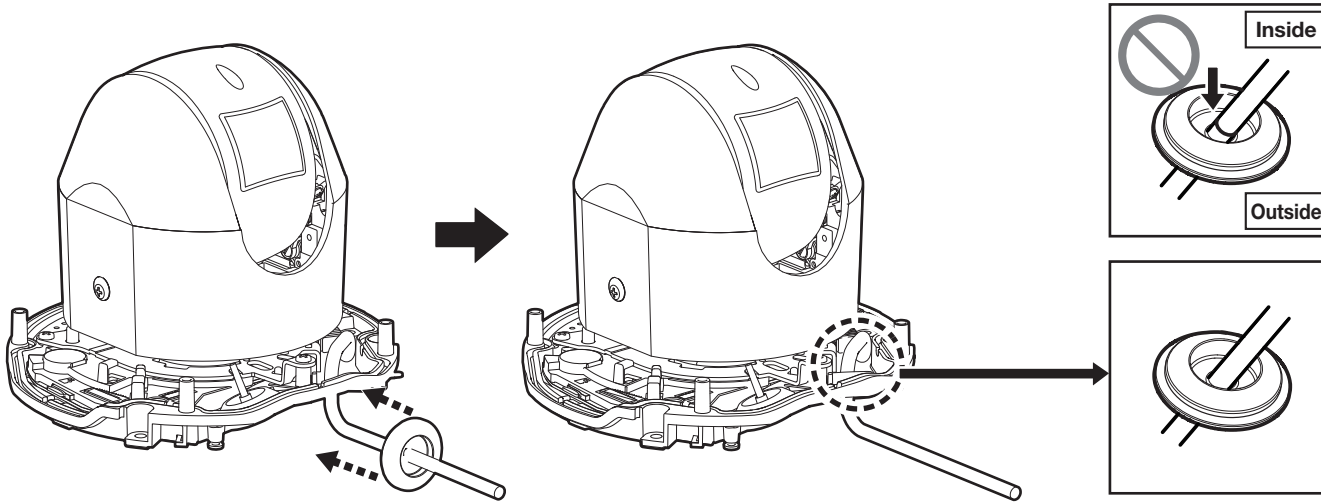
# Step3



# Step4-1

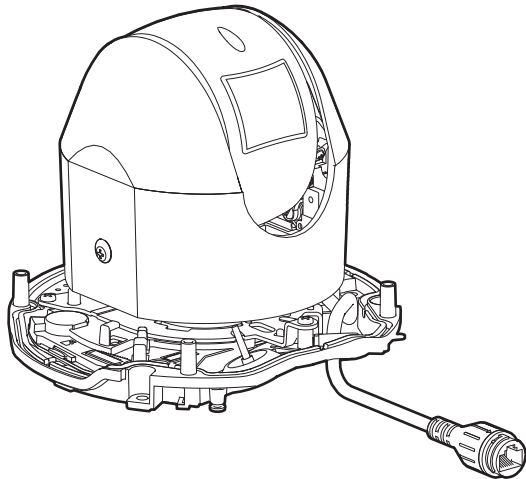


■ When connecting the RJ45 Ethernet cable (locally procured) directly to the camera.



## Step4-2

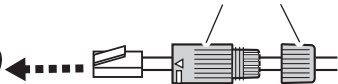
■ When using the RJ45 Ethernet cable (connected to the camera)



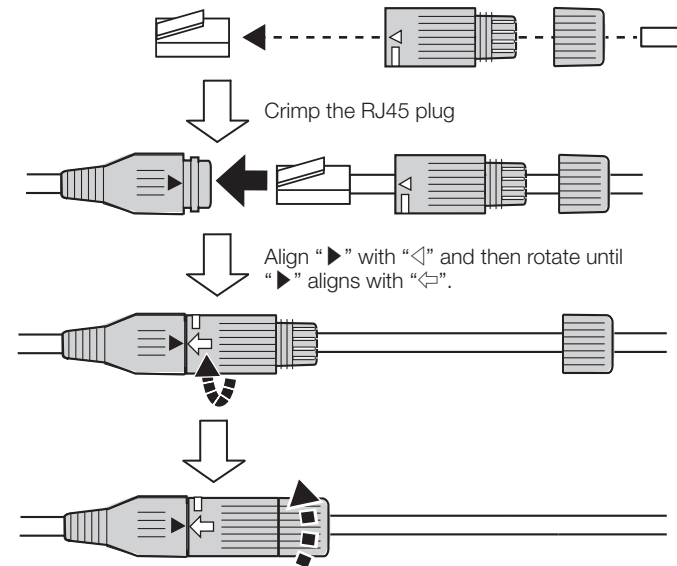
**Note:**

- When the waterproof RJ45 connector used for the existing camera is deteriorated, replace it with the connector included in this product.

Waterproof RJ45 connector used for the existing camera

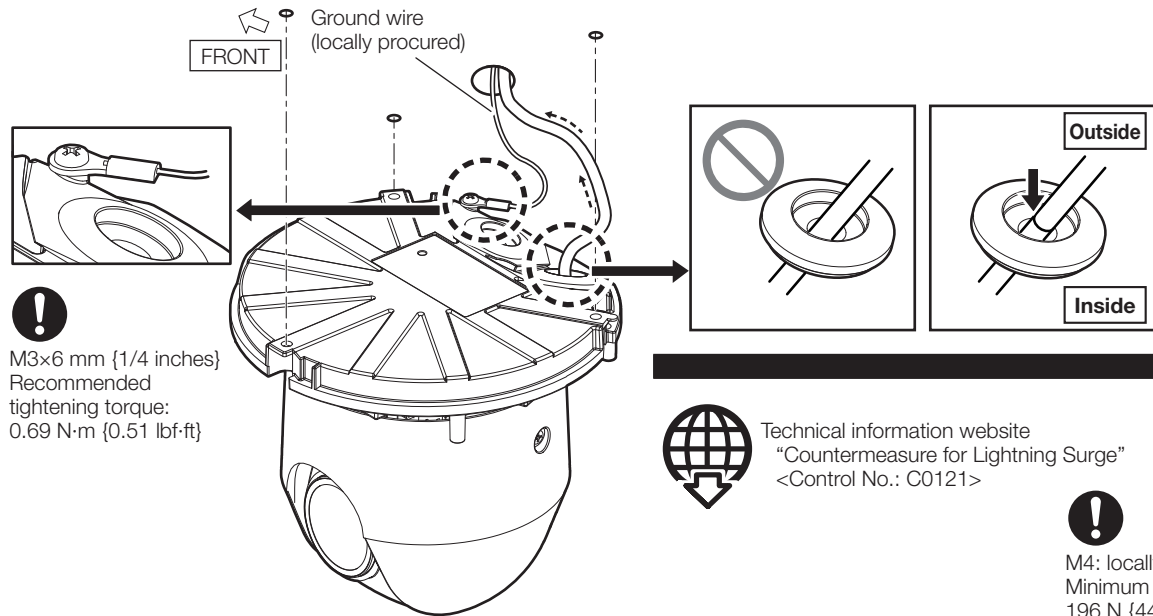


How to assemble the waterproof RJ45 connector (accessory)

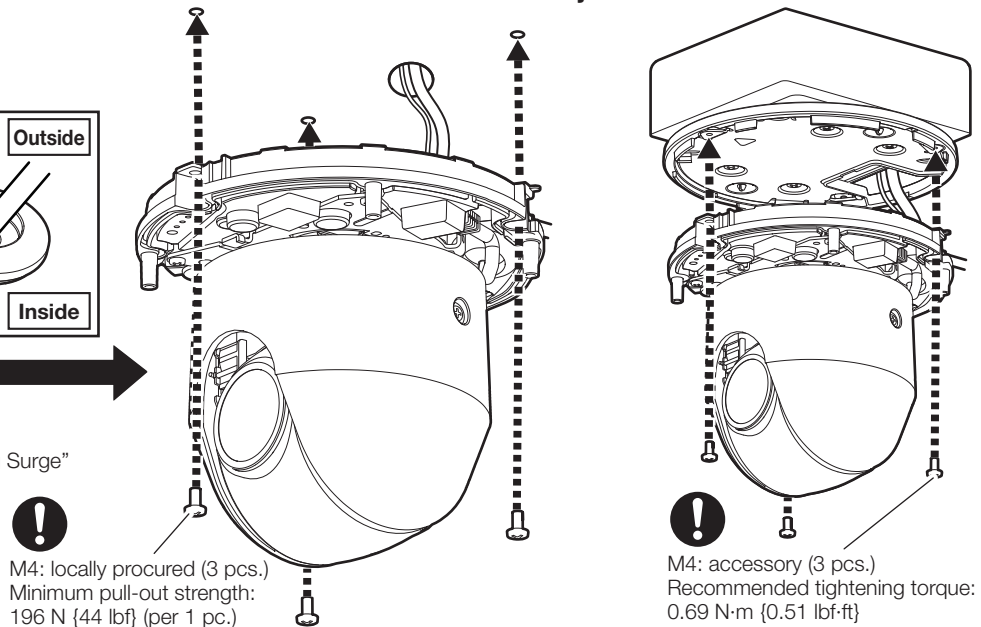


# Step5

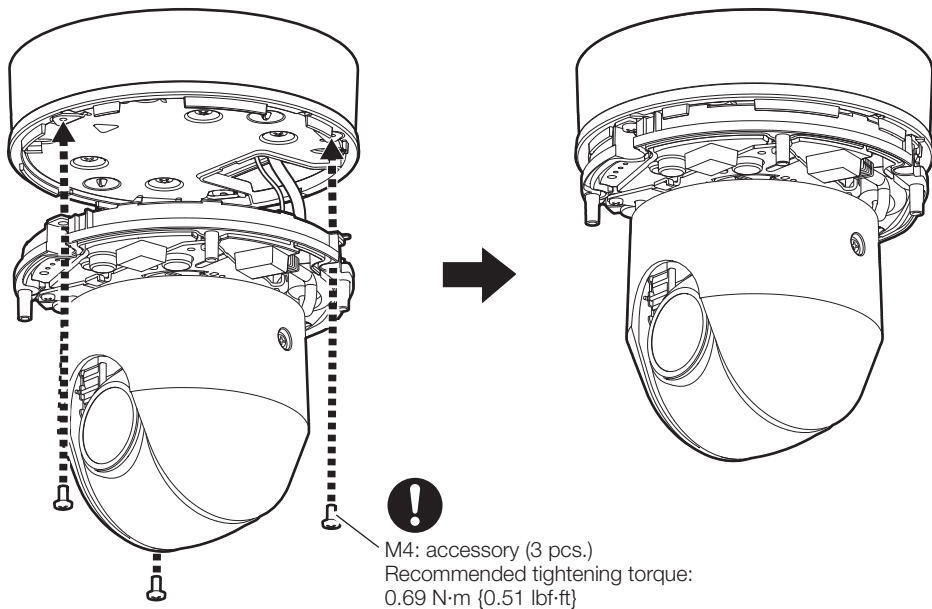
## ■ When directly fixing on the installation surface



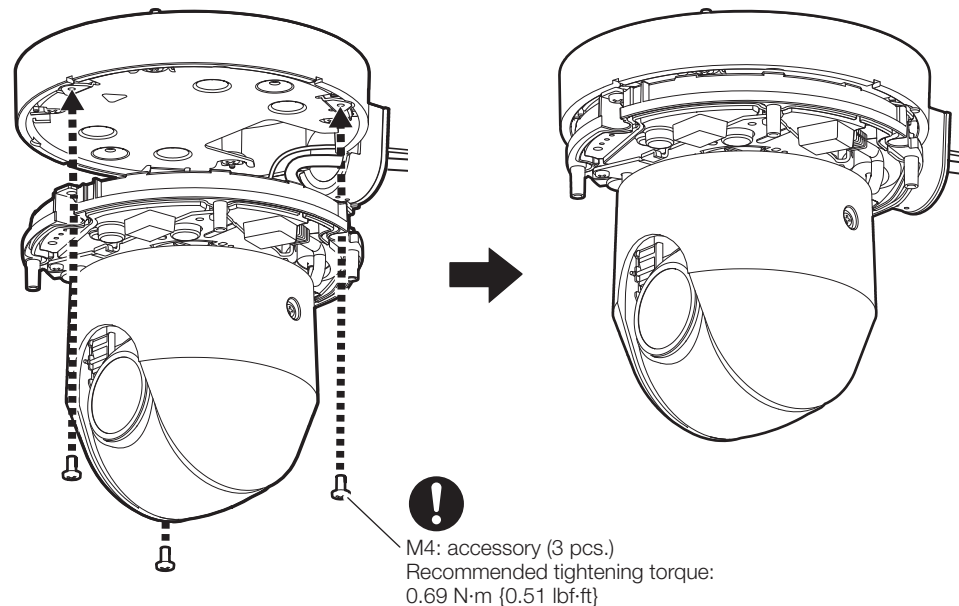
## ■ When fixing on the gangbox/ junction box



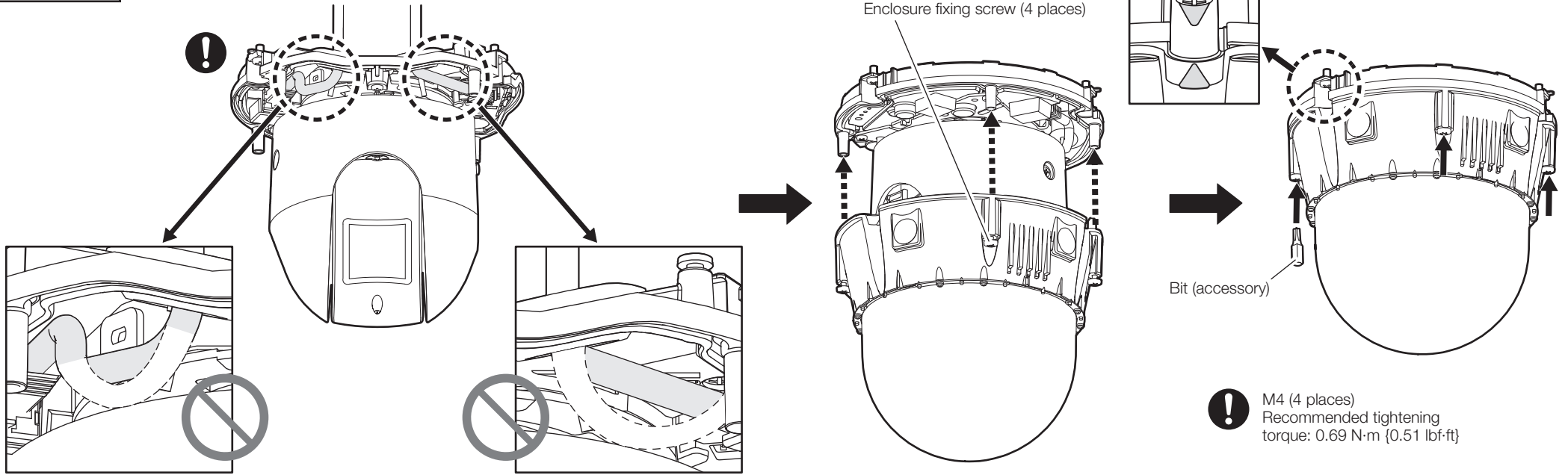
## ■ When fixing with the base bracket (WV-QJB501-W / WV-QJB501-B)



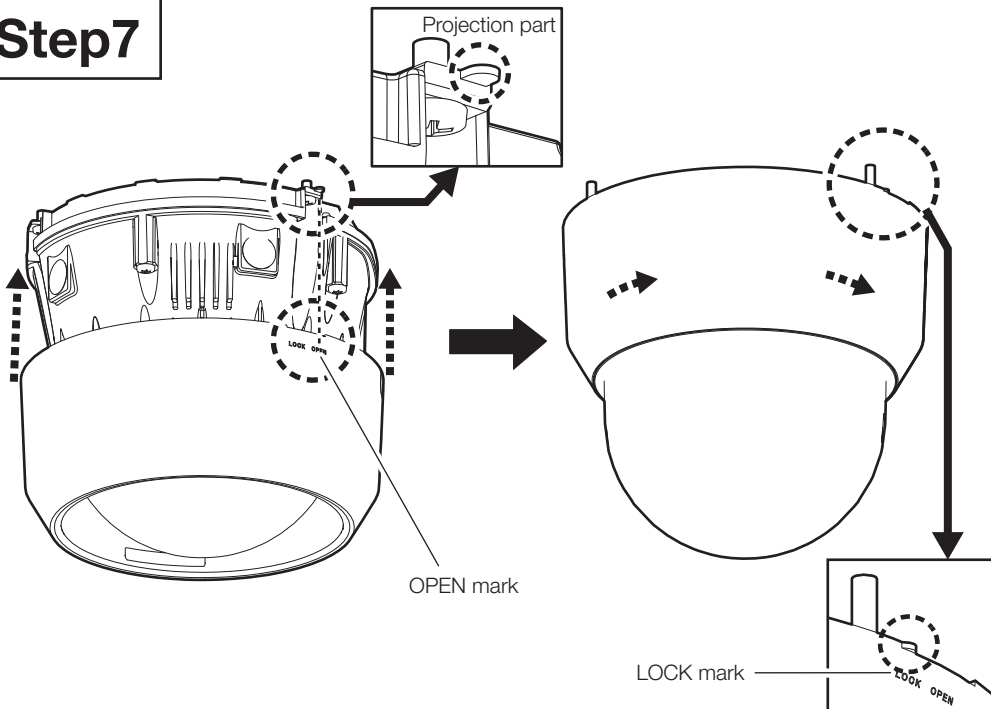
## ■ When fixing with the base bracket (WV-QJB504)



## Step6

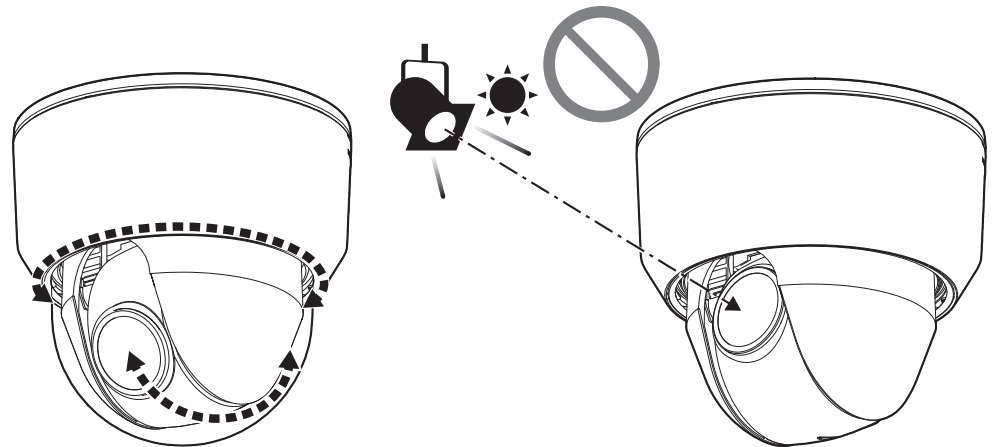


## Step7



## Step8

→ Power On (12 V DC/ PoE+/ PoE)  
If there is a protection film on the dome cover, remove it.



Technical information website  
"IP Setting Software"  
<Control No.: C0123>  
or  
"i-PRO Configuration Tool (iCT)"  
<Control No.: C0133>

"Extra optical zoom"  
<Control No.: C0124>

"Camera images that appear to overlap"  
<Control No.: C0128>