FIXED IP DOME CAMERA (VANDAL RESISTANT)
FIXED MEGAPIXEL IP DOME CAMERA (VANDAL RESISTANT)

VN-V225VPU / VN-X235VPU

INSTRUCTIONS (Installation)

This manual is a supplement to [READ ME FIRST].

Please also refer to [READ ME FIRST] (booklet) that is enclosed with this manual.

For image and network settings and so on, please refer to [INSTRUCTIONS (Setting)].

Contents

Futures

- **High anti-dust and Waterproof Performance**

  The anti-dust and waterproof mechanism allows outdoor installation as the camera is not affected by rain. (IP66 specifications)

- **High Picture Quality**

  The camera unit employs a 330,000-pixel CCD (1/4") which enables high quality video surveillance (VN-V225VPU).

  The camera unit employs a 1,250,000-pixel CCD (1/3") which enables high definition, high quality video surveillance (VN-X235VPU).

- **Wide Shooting Range**

  The adjustment range of the shooting direction is wide and the camera can be mounted on a wall with the use of a rotation adjustment mechanism.

- **Unblocked Design**

  The dome-shaped design enables ease of use without being blocked by the camera.

- **High-power Varifocal Lens**

  The built-in varifocal lens (optical zoom 3.6x : VN-V225VPU, 3.0x : VN-X235VPU) makes detailed surveillance possible.

- **Support for PoE (Power over Ethernet)**

  This product supports PoE (IEEE802.3af) and enables power supply from a LAN cable.

- **Night Surveillance**

  This Product is equipped with an infrared ray cutoff filter plug that enables day and night surveillance. Turning off the infrared ray cutoff filter when the light intensity level is low, such as at night, enables you to switch to the high sensitivity mode (B&W mode).

- **Electronic Sense Up**

  You can shoot images during surveillance at a dark place by lengthening the exposure time to enhance the camera's sensitivity level.

- **Realization of High Frame Rate**

  Data transmission is possible in VGA size(640x480) at a rate of 30 fps (VN-V225VPU).

  Data transmission is possible in Quad-VGA size(1280x960) at a rate of 15 fps (VN-X235VPU).

- **Support for Dual Stream**

  Simultaneous distribution of JPEG and MPEG4 images is possible.

- **Support for Multicast**

  This product supports multicast, which enables transmission of image data to multiple computers on the network without lowering the frame rate.

- **Built-in Web Server**

  You can configure the picture quality and communication settings using the Internet Explorer.

- **HTTP-based API**

  This product comes with HTTP-based API. This feature enables you to perform setting and control via the network.

- **Built-in JPEG and MPEG4 Viewer**

  Monitoring of JPEG and MPEG4 images via a computer is possible by downloading the built-in viewer onto the computer.

- **Motion Detection**

  This feature enables output of an alarm upon detection of motion in the video image within preset area.

- **Digital PTZ (VN-X235VPU)**

  This product is equipped with digital PTZ (Pan/Tilt/Zoom) which allows you to clip and enlarge a part of the image that you want to monitor. It enables you to monitor wide area with saving bandwidth.

- **Privacy Mask**

  You can configure the privacy mask setting to hide specific area in the shooting area.

  The shape and location of the mask can be set as required.

- **Two-way Audio Communication**

  Sounds can be transmitted to a computer by connecting an external microphone.

  You can also input audio sound on the computer and output it from the audio in/out terminal of the camera through the network.

- **Analog Monitor Signal Output (For Installation)**

  This product comes with an analog video monitor signal output terminal for adjusting the camera angle during installation.

● **ALARM In/Out**

This product comes with a motion detection feature and dual alarm input.

By motion detection or alarm input, action such as mail delivery, message transmission via TCP/UDP, alarm output can be triggered.

Combination of alarm inputs can be trigger.

Installing an FTP server enables uploading of images before and after the alarm input time (pre-/post-recording) to the server.

● **Fine Focus Adjust Mechanism**

This feature enables you to fine adjust the focus easily, quickly and accurately.

Cautionary Notes

Maintenance and location of use

● Do not place this product in the following environments.

Otherwise, it may malfunction or break down.

- ● Hot or cold locations beyond the surrounding temperature range of -10°C to 50°C (without Heater).
- ● Locations beyond the allowable operating humidity range of 35% RH to 85 % RH (condensation is not allowed).
- ● Near equipment that emits strong magnetic fields, such as transformers or motors.
- ● Near equipment that emits radio waves, such as transceivers and mobile phones.
- ● Locations with excessive dust or sand.
- ● Locations that are subject to vibration.
- ● Locations prone to moisture such as window side.
- ● Locations subject to steam or oil, such as kitchens.
- ● Locations that emit radiation, X-rays or corrosive gases.
- ● Locations where medicine is used such as pools.

● Use of this product or cables connected to this product at locations where strong electric waves and magnetic fields are emitted (e.g., near radio, TV, transformer, monitor, etc.) may cause noise interferences in the images or changes in the color.

● Do not install at locations where cold air is circulated, such as near the air vent of an air conditioner. The drastic change in temperature may fog up the dome cover.

● Do not install at locations that may trap heat. This product also discharges heat from the surface. As such, do not install it at locations that may trap heat, such as wall corners.

● Compliance to IP66 standards does not guarantee that the product is free from water seepage under any environment.

Handling of Equipment

● Do not block vents around the equipment.

Inadequate heat ventilation may result in malfunction of this product. Be sure not to block vents around the product.

Maintenance

● Be sure to turn off the power before performing maintenance.

● Wipe this product using a soft cloth. Wiping with thinner or benzene may melt or tarnish its surface. For dirt that cannot be easily removed, wipe using a neutral detergent diluted with water, followed by wiping with a dry cloth.

Power saving

● When this product is not in use for a long period of time, turn off the power of the system to ensure safety and reduce power consumption.

Others

- This product comes with a built-in AGC circuit. When using this product with AGC set to "Mid", "High" or “Super”, the sensitivity level increases when the image is dark, and the screen may appear grainy as a result. However, this is not a malfunction.
- When using this product with the white balance set to "ATW", the displayed color may differ slightly from the actual color according to the condition of the object due to the principle of the automatic tracking white balance circuit. This is not a malfunction.
- If a high-intensity object (such as a lamp) is shot, vertical lines may appear on the image (smear phenomenon) or blurring may occur around the high-intensity object (blooming phenomenon). This is a CCD characteristic and is not a malfunction.
- To prevent flickering under fluorescent lighting (except inverter illumination) in a location with commercial power frequency of 50 Hz, switch to the flickerless mode.
- When switching between color and black-and-white images in the B&W mode, the brighter area on the screen is emphasized, which may reduce the visibility. However, this is not a malfunction.
- When the electronic sensitivity enhancement feature is enabled, the screen may appear grainy and more white spots may appear as the sensitivity is increased. However, this is not a malfunction.
- The image may be distorted or be mixed with noises when the power voltage is cut off instantaneously or is lowered by a lightning strike or by switching on an air conditioner.
- When this product is moved from a cold place to a warm room, condensation may occur and the product may not operate properly. In this case, leave it for an hour under room temperature before turning on the power.
- The rotation angle of this product is set to wide angle to support wide range equipment. When the lens zoom is wide and the tilt angle is approximately ±70°, the rotation angle may cause part of the product to be reflected in the image.
  In this case, adjust the field angle if required.
- To prevent fogging caused by temperature changes, be sure to put the supplied silica gel at the specified location.
- When multicast is in use, use the IGMPv2- compliant network switch.
- Electricity can be supplied to this product either by using the PoE or connecting to the AC24 V power supply.
  Make sure to select only one mode of electrical supply.
  Connecting the power cable and the LAN cable for the PoE at the same time may result in failure or malfunction of the camera.
- Some hubs/switches of products that are equipped with intelligent features may include a broadcast/multicast suppression function. Viewing of multicast images on this product may fail if this function is enabled.
- It is recommended to use shielded LAN cables, shielded alarm cables and shielded audio cables for connection with this product. The safety and reliability of this product has been checked by using shielded cables.
- When using Built-in Viewer, the video images and audio sound may not be in-sync in some cases. This is not a malfunction.

Copyright Protection

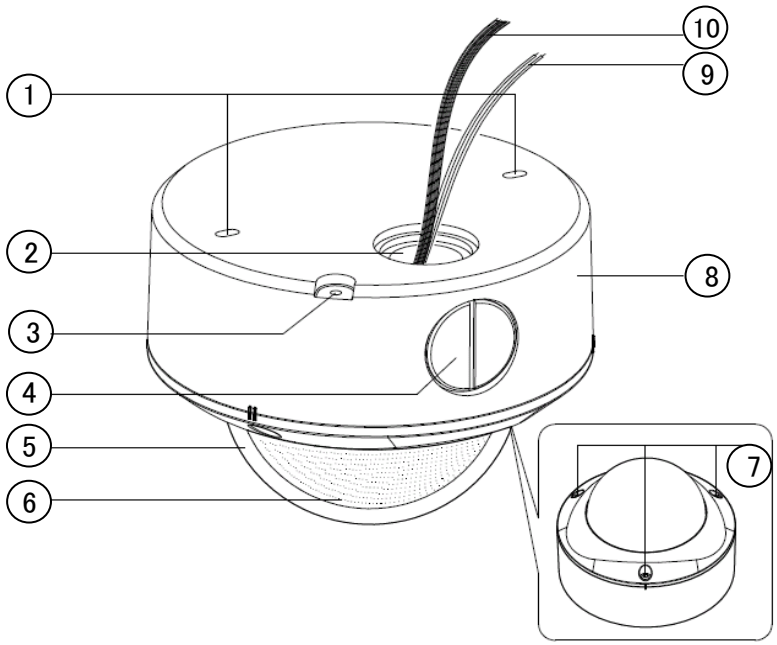
- With the exception of the user being the copyright holder or when permission such as for duplication has been granted by the copyright holder, permission is required in principle for the duplication, modification, or transmission of copyrighted video and audio data.
  Unauthorized duplication, modification, or transmission of copyrighted material may constitute a copyright infringement, and the user may be liable to compensate for any damages.
  When using copyrighted video/audio data, be sure to check the license agreement of the copyrighted material thoroughly.
  When rights or rights holders are involved with regard to the targeted duplicating subject, permission may be required for shooting or using (processing) it.
  Be sure to check the licensing conditions thoroughly.

Exemption of Liability

- The motion detection feature is not a feature to prevent theft or fire. JVC shall not be liable for any damage that occurs.
- JVC shall not be liable for any damage due to the invasion of privacy by images of this camera.

Name and Function of Parts

CAMERA OUTSIDE



① Mounting hole x 2

Use these when mounting the base to the ceiling, wall or electrical box.

Note: ----------

● To mount the camera using an electrical box, please check with your dealer or nearest JVC servicing center.

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② Holes for connection cable and piping (Bottom)

This hole is for pulling out the connection cable.

You can also use this hole to mount the camera directly on the piping. (Piping hole: G3/4- 14UNC)

③ Fall-prevention wire mounting screw

This is used to mount the fall-prevention wire to the camera. (The fall-prevention wire is not supplied.)

Note: ----------

● Connect the fall-prevention wire to prevent the camera from dropping.

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④ Holes for connection cable and piping (side)

This is used to mount the camera directly on the piping from the side. A piping hole plug is attached to this hole by default.

⑤ Dome cover

The dome cover is fragile. Take care when handling.

⑥ Inner dome

Before mounting the camera, remove it and perform image angle setting.

⑦ Dome cover fastening screw

These are fastening screws for the dome cover.

⑧ Base

Mount the base to the ceiling, wall or electrical box before mounting the camera.

■ Type of cable

Type	Color		Signal Name
⑩ Alarm cable	Black (shielded cable)	Red	Alarm input 1
		Brown	Alarm input 2
		Orange	Alarm output 1
		Yellow	Alarm output 2
		Black	GND
⑨ Audio cable	Brown (shielded cable)	White	Mike in
		Yellow	GND
	Black (shielded cable)	White	Line out
		Yellow	GND
⑩ Power cable	Red (unshielded cable)		AC 24 V power supply
	Black (unshielded cable)		

Note: ----------

● Do not use PoE together with AC24 V power supply. Simultaneous connection will cause failure or malfunction.

Warning

The rated power of this product is AC 24 V, 50 Hz/60 Hz.

Make sure to use it with the correct voltage. Use an AC 24 V supply that is isolated from the primary power supply.

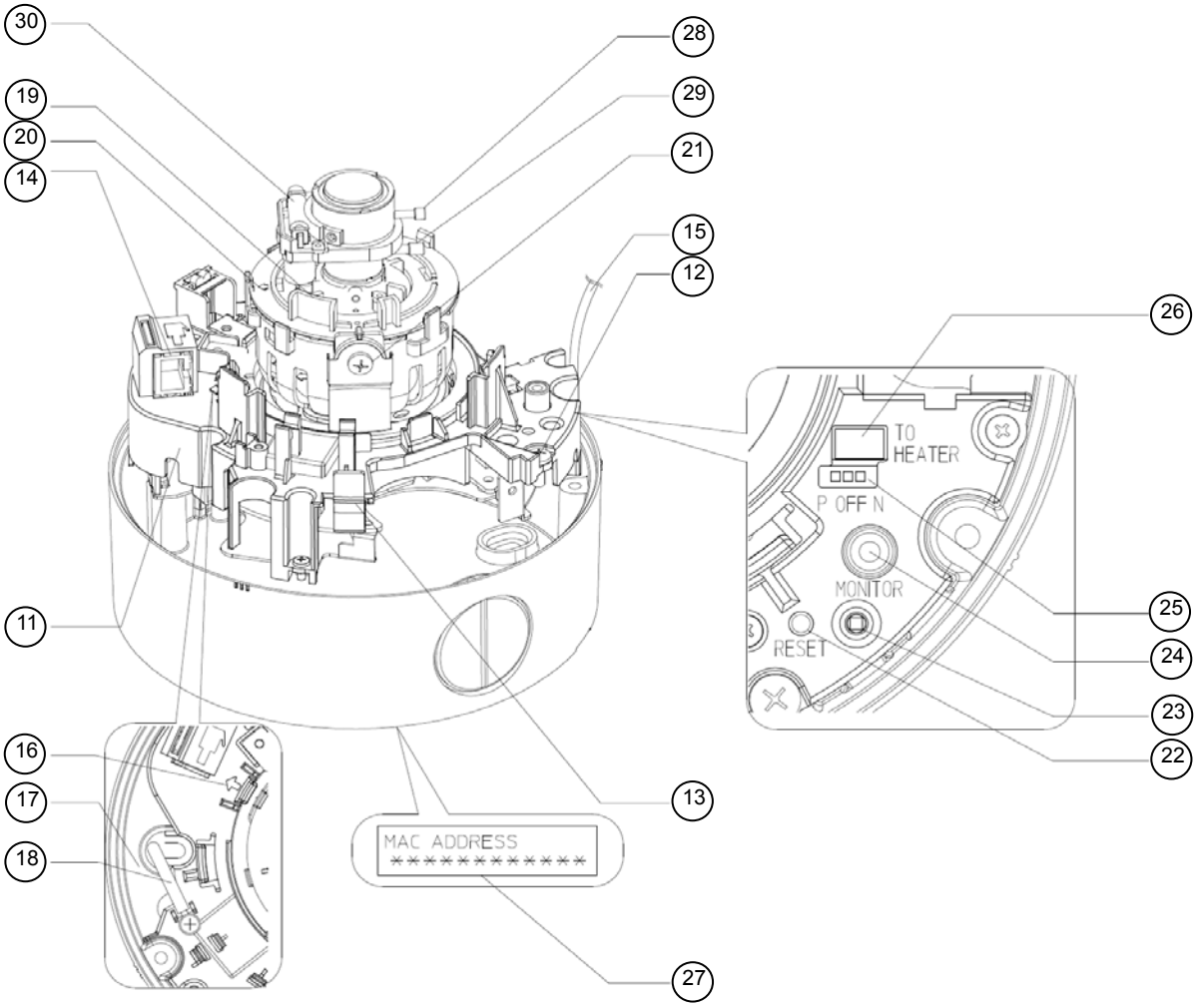
Supplying a power beyond the rated value may result in failures, smoke or fire.

When the camera breaks down, turn off the power and contact our service center immediately.

When a power beyond the rated value is supplied, the internal components may be damaged even if no abnormality is found on the appearance and operation of the camera.

Please contact our service center immediately for servicing (charged separately).

CAMERA INSIDE



⑪ Camera unit

⑫ Camera Fastening Screw x 2

This secures the camera unit ⑪ to the base ⑧

⑬ Camera Fastening Claw x 2

This claw fastens the camera unit to the base. To remove the camera unit, push it towards the direction of the arrow and remove.

⑭ 10BASE-T/100BASE-TX terminal

Use this terminal to connect to the network via a LAN cable.

This product supports PoE(IEEE802.3af) and therefore can be used without a power cable.

⑮ Fall-prevention wire

To connect between the base ⑧ and the dome cover ⑤ to prevent the dome cover from dropping.

⑯ Imaging Direction mark

Install the camera facing the arrow in the shooting direction.

⑰ Silica gel insertion space

This location is where the provided silica gel is to be inserted.

⑱ Lug plate

This plate fastens the silica gel.

⑲ Rotation Knob

This knob rotates the lens section and adjusts the tilting of the image.

⑳ Rotation center mark

㉑ Tilt fastening screw

After adjusting the field angle, tighten the screw so that the camera field angle will not be misaligned.

㉒ [RESET] Reset Button

This button functions in two different ways depending on how it is pressed.

- Reset function

  Press and release the button for less than two seconds to restart the camera It takes about one minute for the unit to restart, and the [RESET]button is disabled during this interval.

- Focus Assist function

  Press and hold down for at least two seconds but less than five seconds. The ㉓ STATUS indicator starts blinking in green color and orange color repeatedly, and the Focus Assist mode is enabled.

  You can also perform the same operation on the viewer.（→ Refer to INSTRUCTIONS (Setting)）

Note: ----------

- The electronic shutter functions in the Focus Assist mode, which may cause the screen to flicker. However, this is not a malfunction.
- Pressing and holding the button for 5 seconds or longer enables the service confirmation mode.

  The ㉓ STATUS indicator lights up in orange color in this mode. Do not press the button for 5 seconds or longer.

㉓ Status Indicator

This status of this product is indicated in green or orange color.

Starting up	: Lights up in orange
Startup complete	: Lights up in green
Error	: Blinks in orange

Memo: ----------

- The indicator alternates lighting up in green color and orange color repeatedly when in the Focus Assist mode.
- You can set the indicator to turn off or to blink in green after startup is complete using the [LED State] of Built-in Viewer.

See [INSTRUCTIONS (Setting)] to change the setting of LED indicator.

㉔ [MONITOR] Monitor Video Signal Output Terminal (RCA)

This is an output terminal for composite video signals (1 V (p-p), output impedance of 75 Ω).

Use this terminal to connect to devices such as a video monitor. This terminal is used for adjusting the camera angle and focusing during installation.

㉕ Monitor Output Selection Switch

Use this switch to select the availability of output from the ㉔ [MONITOR] terminal as well as the signal system.

N	: Select this when connecting a NTSC compatible monitor.
OFF	: No output. Select this value when distributing images to the network.
P	: Select this when connecting a PAL compatible monitor.

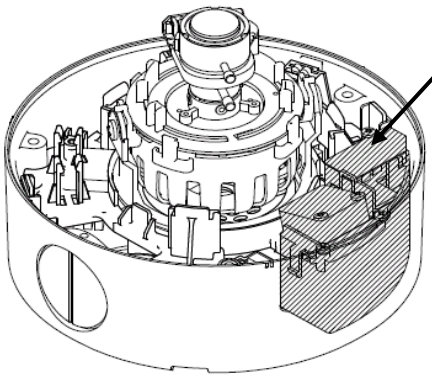
[Default setting : OFF]

Note: ----------

- Images are not distributed to the network when “N” or “P” is selected.
- When the switch is changed, press the ㉒ [RESET] button for less than 2 seconds to restart.

㉖ Heater power connector

This power connector is used when the camera is installed with a heater (sold separately: KA-ZH215U).



※ **Heater space**

Memo :

● When mounting the heater (sold separately :KA-ZH215U), read the instruction manual of the heater carefully before mounting.

Note: ----------

- Please consult your nearest JVC dealer regarding heaters.
- The operating ambient temperature range of the camera is -30℃ to 50℃ when the heater unit is in use. Turn on the camera at an ambient temperature range of -10℃ to 50℃.

㉗ **[MAC address] MAC address indicator**

The MAC address is a unique physical address of the product. This address cannot be altered.

㉘ Focus adjustment ring

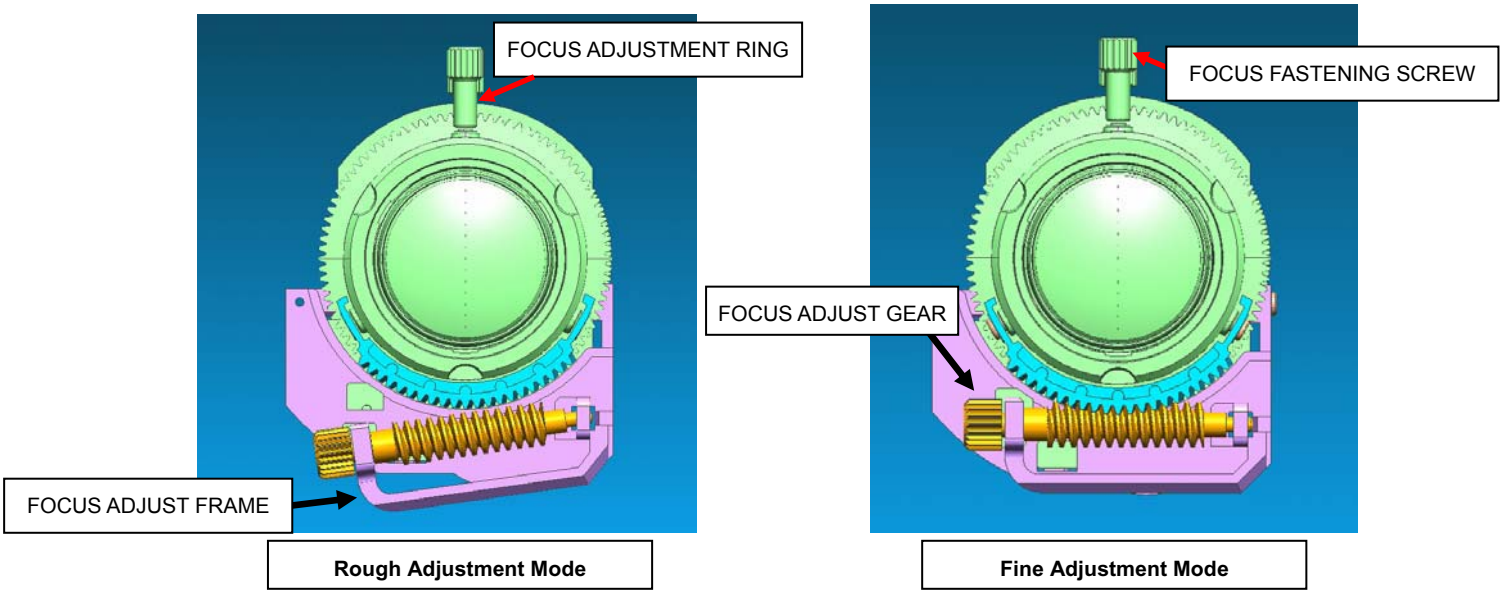
Move the ring to the left and right to adjust the focus.

㉙ Zoom adjustment ring

Move the ring to the left and right to adjust the field angle.

㉚ Focus adjust mechanism

This is used to focus the lens. (Please note that although the illustration is colored, the actual product is uncolored.)

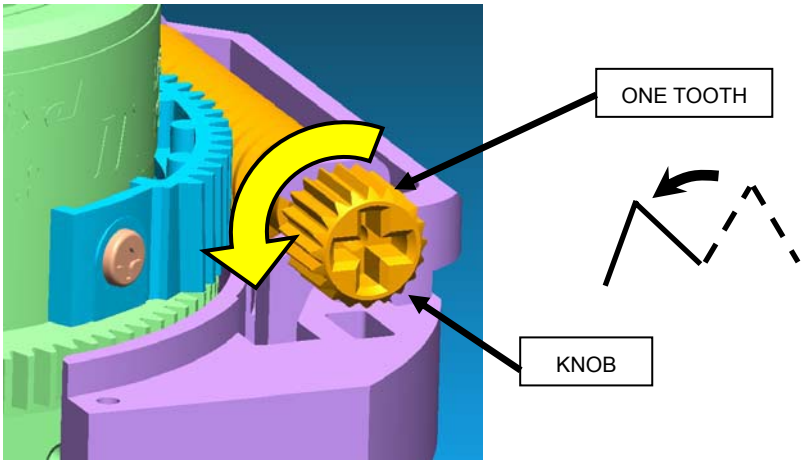


Move the FOCUS ADJUST FRAME as shown in the left diagram (rough adjustment mode).

After focusing with the focus lever, return the FOCUS ADJUST FRAME to the original position (fine adjustment mode), then rotate the FOCUS ADJUST GEAR to fine adjust the focus.

Note: ----------

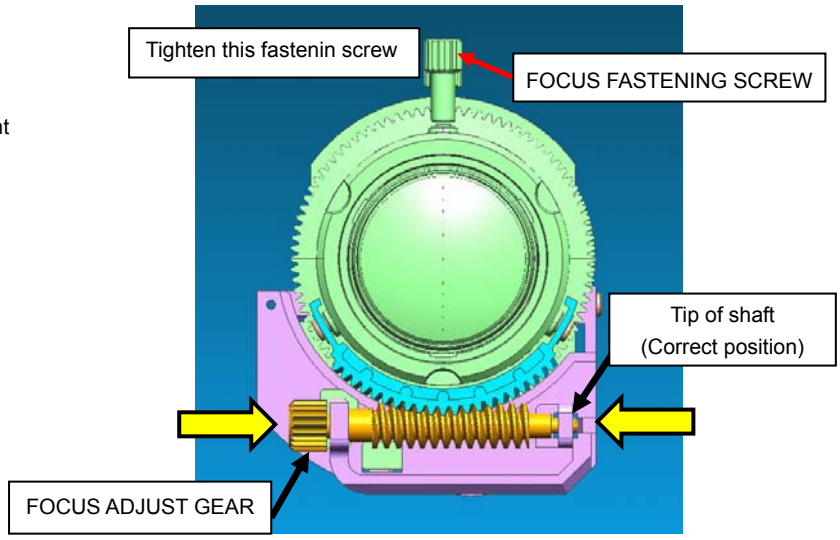
- You cannot adjust with the Focus adjustment ring in the fine adjustment mode.



Rotate the knob about one tooth from the optimum focus position in the direction as indicated in the diagram.

In doing so, you are not required to hold the dome cover while adjusting the focus as in the conventional adjustment method.

After adjustment, hold and press the focus adjust gear between your fingers in the direction of the arrows in the FOCUS fixing method diagram, and tighten the fastening screw of the focus adjustment ring (FOCUS FASTEING SCREW).



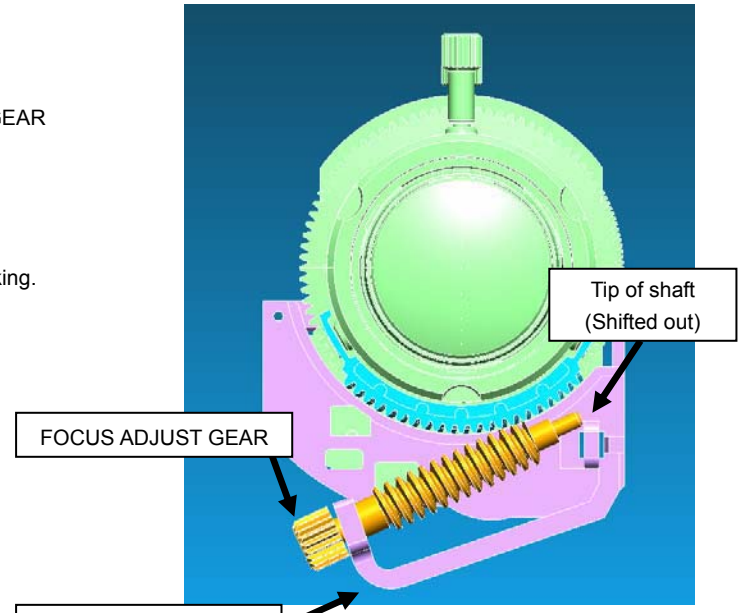
FOCUS fixing method

<<Repairing the Focus Adjust Mechanism>>

When moving the FOCUS ADJUST FRAME for the rough adjustment mode, the tip of the FOCUS ADJUST GEAR shaft may shift out of position as shown in the diagram on the right if the FOCUS ADJUST FRAME is extend outwards more than necessary.

This is not malfunction but to prevent the shaft from breaking.

Return the tip of the shaft to the correct position as shown in the diagram above before use.

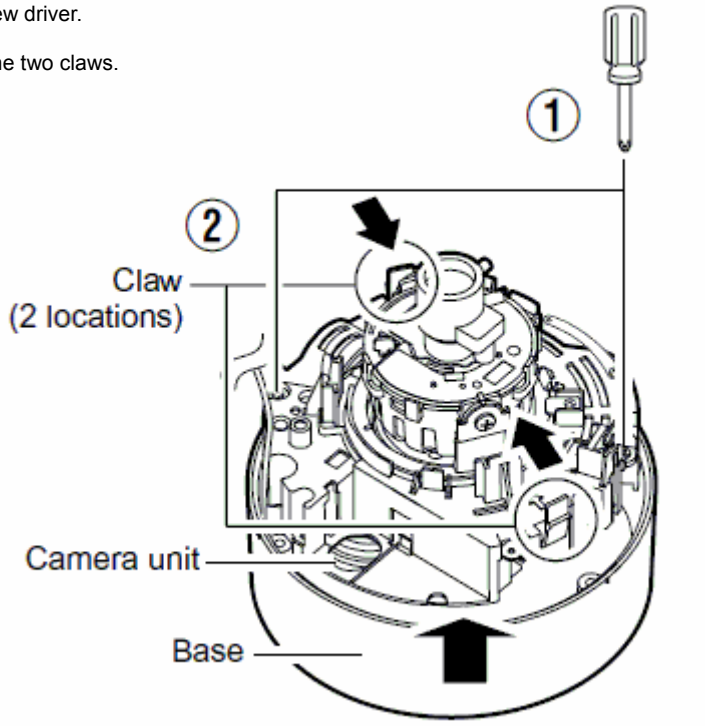


Repair Method

Remove the camera unit from the base

① Loosen the camera fastening screws (x2) with the screw driver.

② Remove the camera from the base while pressing in the two claws.



Mount the camera unit to the base

1. Mount the camera unit to the base

Push in the two claws until you hear a click sound.

Note: ----------

- Mount the camera unit such that the cables and fall-prevention wire of the dome cover are not caught in between.

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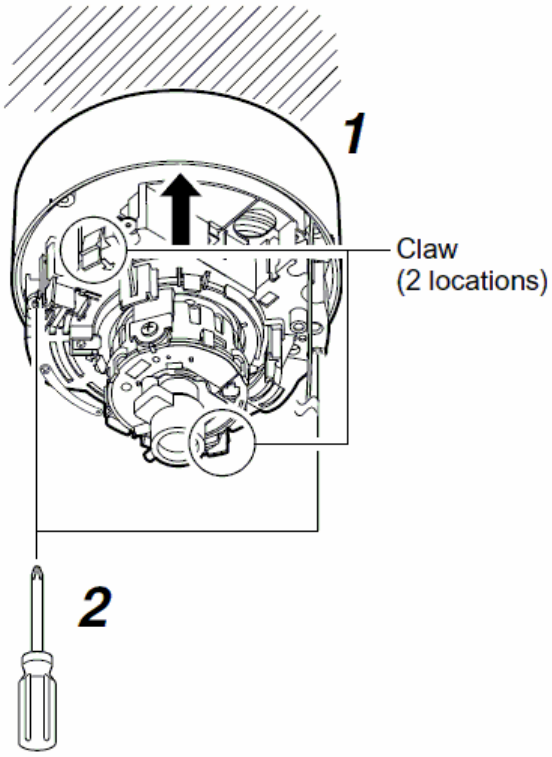
2. Secure the camera unit with the camera fastening screws (x2).

Tighten the camera fastening screws (x2) with the screw driver and secure the camera unit.



Mounting the camera via electrical box

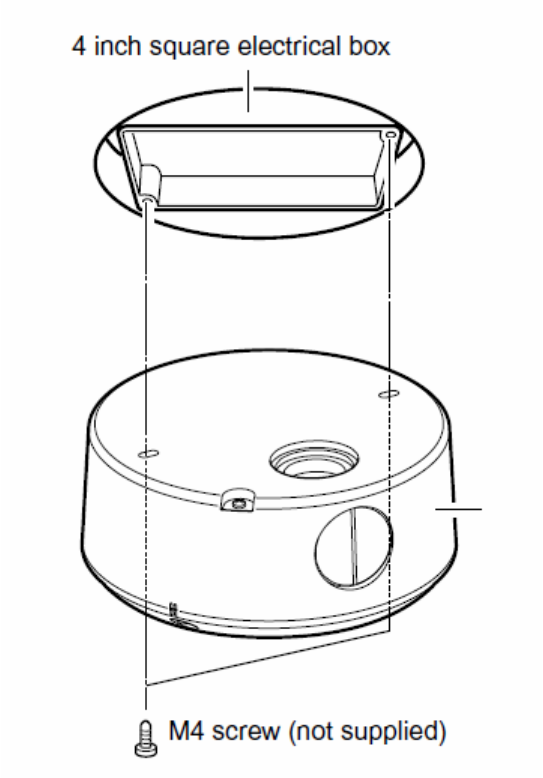
1. Remove the camera unit from the base

2. Mount the base to the electrical box

Use two mounting holes and two M4 screws to mount the base to the electrical box.

Memo: ----------

- M4 screws are not supplied.



3. The following procedures are the same as normal mounting

- Cable connection
- Mounting the camera to the base
- Image adjustment
- Mounting the inner dome
- Mounting the dome cover

Mounting the camera via piping

Use a piping hole to mount the camera. You can use the hole at bottom of the base or at the side of the base.

Using the piping hole at the bottom of the base to mount the camera

1. Remove the camera unit from the base

2. Mount the fall-prevention wire to the base

3. Wind the seal tape

Wind the joint (where the threaded portion of the piping hole and the tapped hole of the piping meets) of the piping with seal tape for more than 2 rounds.

4. Mount the base to the piping

Turn the base in a clockwise direction and screw into the piping. (Piping hole: G3/4-14 UNC)

Note: ----------

- Do not screw in the piping for more than 12 mm deep. Otherwise, it may damage the internal parts of the camera.

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5. Secure the base to the ceiling

Use Φ4 mm screws (x2) to secure the base tightly to the ceiling.

- Check that there is no gap between the ceiling and the base.

Note: ----------

- Φ4 mm screws are not supplied. Use the appropriate type according to the material of the location for mounting.

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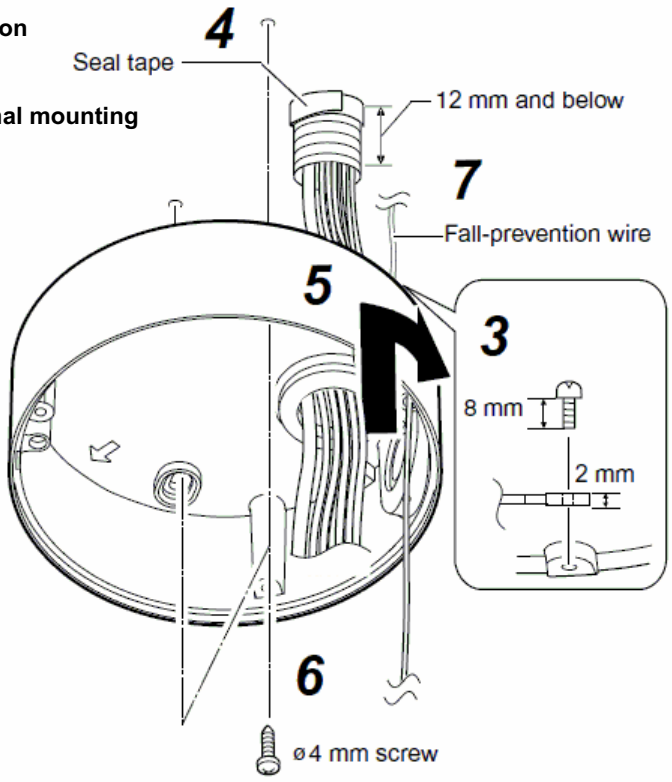
6. Mount the fall-prevention wire to a strong location

7. The following procedures are the same as normal mounting

- Cable connection
- Mounting the camera to the base
- Image adjustment
- Mounting the inner dome
- Mounting the dome cover



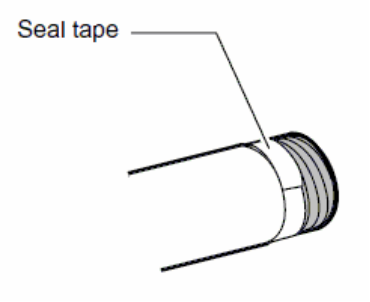
Using the piping hole at the side of the base to mount the camera

If the piping cannot be mounted through the bottom of the base, you can mount the piping to the camera through the piping hole at the side of the base.

1. Remove the camera unit from the base and mount the fall-prevention wire

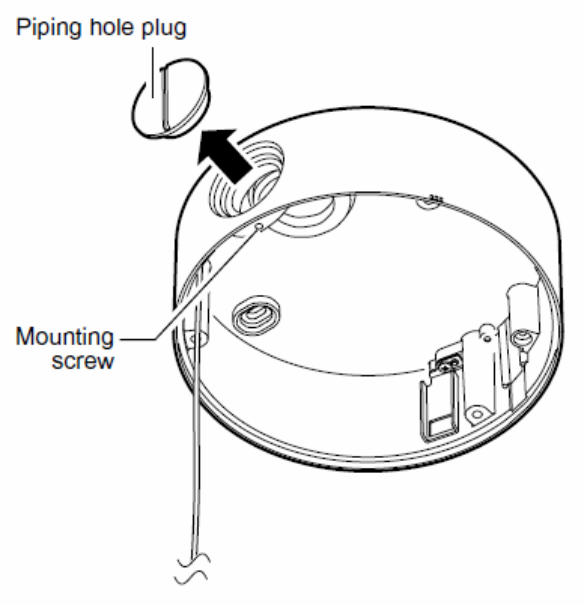
2. Wind the seal tape

Wind the joint (where the threaded portion of the piping hole and the tapped hole of the piping meets) of the piping with seal tape for more than 2 rounds.



3. Remove the piping hole plug of the base

Loosen the mounting screw (M3 x 6 mm) with a screw driver such as a straight slot screw driver and pull out the plug from the side of the base.



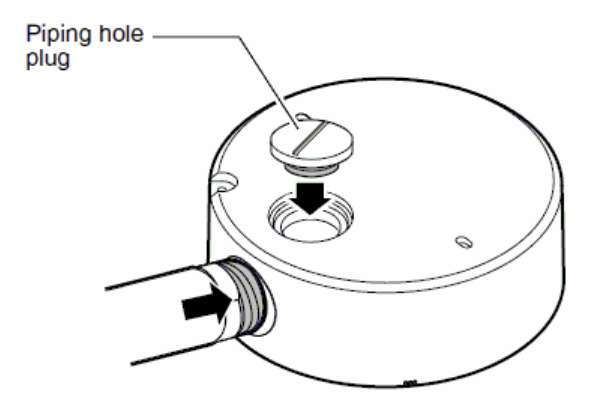
4. Mount the piping hole plug to the piping hole at the bottom of the base

5. Mount the base to the piping

Screw the piping into the piping hole at the side of the base. (Piping hole: G3/4-14 UNC)

Note: ----------

- Do not screw in the piping for more than 12 mm deep. Otherwise, it may damage the internal parts of the camera.



6. The following procedures are the same as normal mounting

- Cable connection
- Mounting the camera to the base
- Image adjustment
- Mounting the inner dome
- Mounting the dome cover

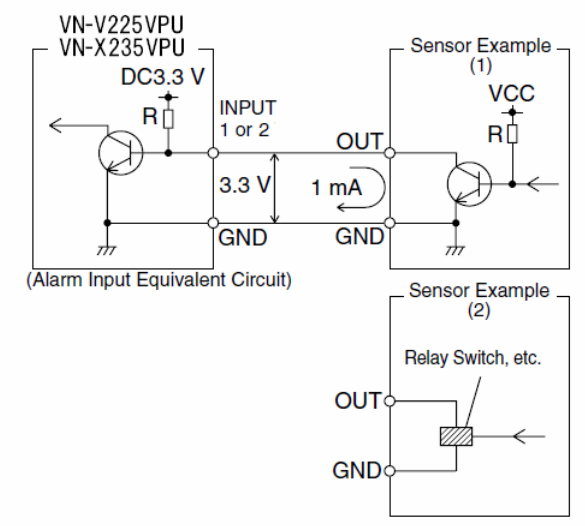
Alarm In/Out

Alarm Input

Connect this terminal to sensor devices, such as an infrared sensor, door sensor, metal sensor, manual switch, etc.

■ Input requirements

- No-voltage relay NPN open collector input
- Polarity of input detection can be selected using a software
- Make/Break (500 ms and above)
- Circuit current at low level : 1 mA
- Applied voltage at high level : 3.3 V



Alarm Output Terminal

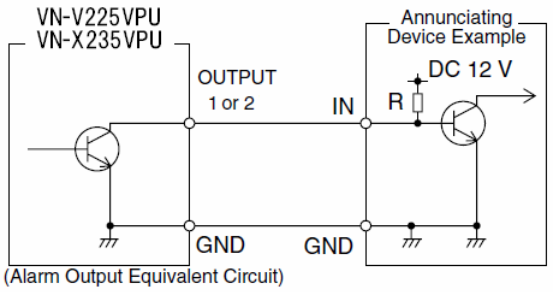
Connect this terminal to annunciating devices, such as annunciators, indicators, lights, or buzzers.

■ Output requirements

- Equivalent to NPN open collector output

  (Set the output logic using the Internet Explorer)
- Allowable applied voltage : DC12 V and below
- Allowable inflow current : 50 mA
- Momentary (100 ms to 5000 ms) output

  (Set time using the Internet Explorer)



Note: ----------

- Connect the GND wire of this camera to the GND terminal of the annunciating device or alarm input sensor.

Troubleshooting

Symptom	Causes and Countermeasures
No MONITOR image output	● Set the Monitor Output Selection Switch to “N” or “P”, and press the Reset button. ● When using the [MONITOR] output, set the privacy mask to “Off“.
Zonal noise occurs at the bottom of the MONITOR image	When using the [MONITOR] output, set the privacy mask to “Off”.
Images from the network are distorted	Set the Monitor Output Selection Switch to "OFF", and press the Reset button for less than 2 seconds.
No sound is heard from the external microphone	Check the connection between the external microphone and the camera.

Specifications

Camera Unit

Pick-up element : 1/4-inch progressive scan CCD (VN-V225VPU)

1/3-inch progressive scan CCD (VN-X235VPU)

Effective pixels : Approx. 330,000 pixels 659 (H) x 494 (V) (VN-V225VPU)

Approx. 1,250,000 pixels 1296(H) x 966 (V) (VN-X235VPU)

Monitor Output

Composite video x 1 (75 Ω, 1 Vp-p)

Minimum object illumination (VN-V225VPU)

Color : 0.4 lx (typ.. 50 %, F1.2, AGC Super, 1/30s)

Black & White : 0.03 lx (typ.. 50 %, F1.2, AGC Super, 1/30s)

Minimum object illumination (VN-X235VPU)

Color : 0.8 lx (typ.. 50 %, F1.2, AGC Super, 1/30s)

Black & White : 0.08 lx (typ.. 50 %, F1.2, AGC Super, 1/30s)

Audio Input

Plug-in power type microphone can be connected

Supply voltage : DC 2.7 V (typ.) Input impedance : 2.2 kΩ (typ.)

Audio Output

Line out x 1, (200Ω Maximum 2 Vp-p)

Network Output

Image compression format : JPEG, MPEG4

Frame size : 1280 x 960(VN-X235VPU only)

640 x 480

320 x 240

Network interface : RJ-45 100BASE-TX/10BASE-T/FULL/HALF/

Auto negotiation supported

LAN Specifications

Compliant with IEEE802.3, IEEE802.3u and IEEE802.3af

Communication protocol : TCP/IP, UDP, HTTP, FTP, ICMP, ARP, RTP, DHCP, SNTP, SMTP, IGMP

Lens

VN-V225VPU

Focal length	f = 2.8 mm to 10.5 mm
Maximum aperture ratio	F1.2 (f = 2.8 mm) to F2.7 (f = 10.5 mm)
Aperture range	F1.2 to F360
Field angle adjustment	3.75-times
Switchable IR filter	

VN-X235VPU

Focal length	f = 3 mm to 9 mm
Maximum aperture ratio	F1.2 (f = 3 mm) to F2.1 (f = 9 mm)
Aperture range	F1.2 to F360
Field angle adjustment	3-times
Switchable IR filter	

General

Alarm input x 2 : No-voltage a contact input, NPN open collector input, low level, latch/momentary (500 ms and above)

(Circuit current during low level : 1 mA; Applied voltage during high level : DC 3.3 V)

Alarm output x 2 : NPN open collector output (Allowable applied voltage : DC 12 V; Allowable inflow current : 50 mA)

Internal memory : 8 MB

Supply voltage : AC 24 V 50 Hz/60 Hz or PoE (DC -48 V)

Current consumption/Power consumption : AC 24 V 0.35 A PoE 7W (class 0)

Ambient temperature : -10 ℃ to 50 ℃ (operation) 0 ℃ to 40 ℃ (Recommended)

Ambient humidity : 35% RH to 85 % RH (without condensation)

Anti-dust/Waterproof performance : IP66

Mass : approx. 1.3kg

Attachments/Accessories

Read me first 1

Safety precaution..... 1

CD-ROM..... 1

Warranty Card 1

Service Information Card..... 1

Wrench 1

Silica gel 1

Template..... 1