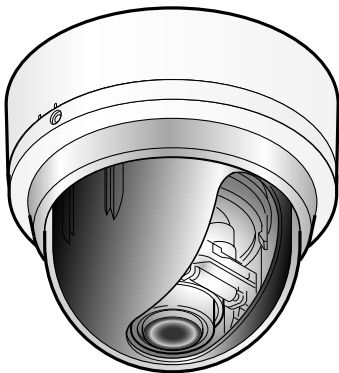




FIXED DOME CAMERA

TK-C2201U
TK-C2201E

INSTRUCTIONS



For Customer Use:

Enter below the Serial No. which is located on the body. Retain this information for future reference.

Model No. TK-C2201U,TK-C2201E

Serial No.

Introduction

Contents

Introduction

Contents	2
Features	3
Operating Precautions	4
Name of Parts	6

Setup

Setting the Switches	9
About Connection Cables	10

Installation

Mounting the Camera	12
---------------------------	----

Adjustment

Adjusting Image	17
Adjusting the Auto White Balance	22
Mounting the Dome Cover	23

Others

Specifications	25
----------------------	----

Thank you for purchasing this product.

Before use, please read this "INSTRUCTIONS" and the information materials included to ensure proper use of this product.

These instructions are for TK-C2201U/TK-C2201E.

Features

- Easy DAY/NIGHT function
- 3D noise reduction (3DNR)
- 4 areas privacy mask
- Built-in display mode (CRT or LCD selectable)

How to read this manual

Conventions and symbols

Note : Indicates operating precautions.

Memo : Indicates reference data regarding limitations on functions, usage and the like.

 : Indicates a reference page or item.

Contents of this manual

- JVC holds the copyright to this manual. Any part or all of this manual may not be reproduced without prior consent from the company.
- Product names of other companies described in this manual are trademarks or registered trademarks of the respective companies. Symbols such as TM, [®], and [©] are omitted in this manual.
- Design, specifications and other contents described in this manual are subject to change for improvements without prior notice.

Operating Precautions

■ Storage and Location of Use

- This camera has been designed for indoor use. It cannot be used outdoors.
- Do not install the camera in the following places.
 - In a place exposed to rain or moisture.
 - In a place with vapor or oil, for example in a kitchen.
 - When the ambient temperature rises above or falls below the acceptable range (from -10 °C to 50 °C)
 - In a place at which corrosive gases are emitted.
 - Near a source of radiation, X-rays, strong radio waves or magnetism.
 - In a place subject to vibration.
 - In a place with excessive dirt.
- Using this unit in the vicinity of the transmitting antenna of a radio or TV, devices that emit strong electromagnetic waves such as a transformer or motor, or wireless devices such as a transistor or mobile phone may give rise to noises in the image and changes in its color.
- Do not install in an environment where there is cold air or near the air outlet of an air conditioner. The dome cover may become foggy as a result of sudden temperature changes.

■ Maintenance

- Clean the dome cover lens using a lens wiper cloth (or a tissue). For tough stains, wipe with a neutral detergent diluted with water, followed by wiping with a dry cloth. Do not use benzene or thinner to wipe the camera. Doing so may melt the surface or cause it to fog.

■ Energy Conservation

- When the camera is not in use for a long time, turn off the power for safety and energy conservation reasons.

■ 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 material.
- 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 material, 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.

■ Disclaimer

- We will not be responsible for any inconveniences or disturbances caused in the event of privacy invasion as a result of camera footages of this product.

■ Others

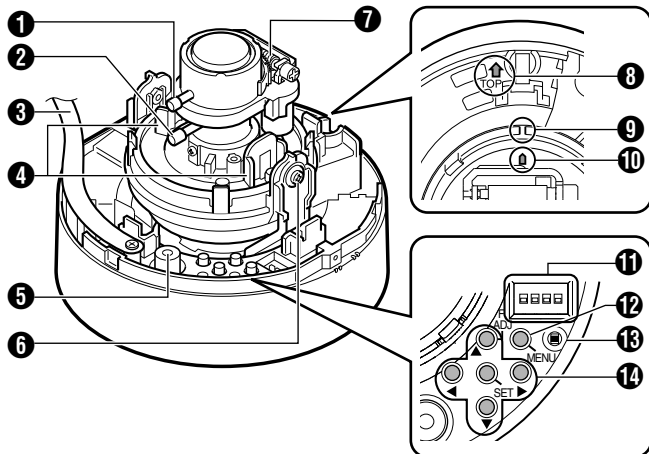
- When using this camera with [AGC] set to "MID" or "HIGH", the sensitivity increases automatically for dark images and the screen may appear grainy, but this is not a malfunction.
- If the Easy DAY/NIGHT switch is turned to "AUTO", the mode changes automatically to black and white in dark places. As the sensitivity level is increased in this case, the screen may appear grainy and more white spots may appear. When switching between modes, the brighter area on the screen is emphasized and visibility may be reduced. However, this is not a malfunction.
- When shooting an extremely bright object (e.g. lamp), the image on the screen may have white vertical tailings (smear) or expansion (blooming) may appear around it. This is a characteristic of the CCD and not a malfunction.
- When the white balance of this camera is set to "ATW-N" or "ATW-W" and depending on the conditions of the object, the color tone may differ slightly from the actual color due to the principle of the automatic tracking white balance circuit. This is not a malfunction.
- When this camera is used under high temperatures, vertical stripes may appear on the screen. This is a characteristic of the CCD and not a malfunction.
- When this camera is moved from a cold to warm place, condensation may occur and the camera may not work. In this case, leave the camera under room temperature for about one hour before turning on the power.
- When the power supply voltage is momentarily disrupted or drops due to lightning, turning on the air-conditioner or the like, image distortion or noise may occur.
- When the power supply voltage of the camera drops, the input protection circuit inside the camera operates, and the camera may be turned off. Make use of a voltage rating within $\pm 10\%$ for the camera's power supply voltage.
- This unit enlarges the rotation angle to support wide range set up. When the zoom of the lens is set to WIDE end and the tilt angle is set around $\pm 80^\circ$, the dome cover can be visible into the image depending on the rotation angle. In this case, adjust the image angle if necessary. (☞ page 18)
- The 3D noise reduction function of this camera may result in afterimage of a moving subject. Afterimage is more likely to occur when using the camera with [DNR LEVEL] set to "HIGH". This is not a malfunction.

Name of Parts

Camera (Interior)

The dome cover and inner dome are removed.

Refer to "Mounting the camera directly to the ceiling or on the wall" (☞ page 13) step 2 to 3 on the removal methods.



① Focus Adjustment Ring

(☞ page 19)

② Zoom Adjustment Ring

(☞ page 19)

③ Fall Prevention Sheet

(☞ page 13)

④ Rotation Knob

(☞ page 18)

⑤ [MONITOR] Terminal (RCA pin)

(☞ page 17)

6 Tilt Fastening Screw

(🔧 page 18)

7 Focus Adjust Gear

(🔧 page 19)

8 Shooting Direction Mark

(🔧 page 15) (🔧 page 18)

9 Pan Center Mark

(🔧 page 18)

10 Rotation Center Mark

(🔧 page 18)

11 Function Selection Switches

(🔧 page 9)

12 [MENU] Button

Display the menu screen.

Refer to the attached manual "MENU SETTING" for more details about setting the menu.

13 Status Indication Lamp

Lights up when the power is turned on.

14 [▲, ▼, ◀, ▶]/[SET] Button

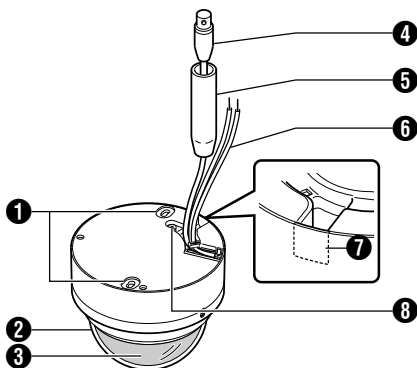
This allows user to select menu screens and change or confirm settings.

Fine Focus Adjustment (🔧 page 20)

Auto White Balance Adjustment (🔧 page 22)

Name of Parts (Continued)

Camera



① Mounting Hole × 2

(☞ page 15)

② Dome Cover

(☞ page 13)

③ Inner Dome

(☞ page 13)

④ Video Signal Output Connector (BNC)

(☞ page 14)

⑤ Protection Cover

(☞ page 14)

⑥ Power Supply Cable

(☞ page 11)

⑦ Wiring Hole

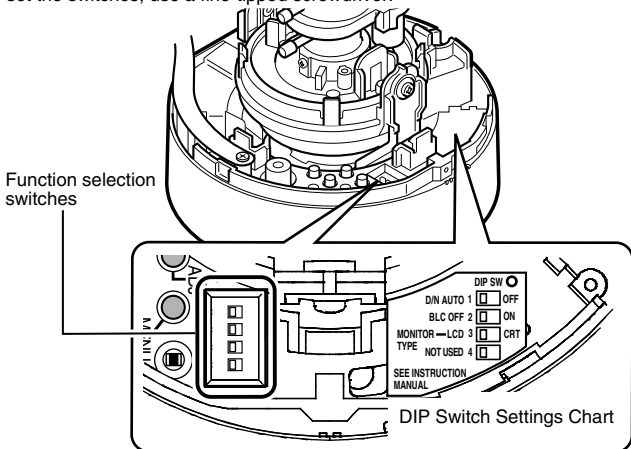
(☞ page 16)

⑧ Fall Prevention Wire Mounting Screw

(☞ page 14)

Setting the Switches

Before mounting the camera, set the function setting switches on the camera. To set the switches, use a fine-tipped screwdriver.



1 [D/N AUTO/OFF] Easy Day & Night Switch

Set this to "AUTO" when shooting a subject with continually changing brightness (day/night). The image switches to color when the subject is bright, and black and white when it is dark. The image is set to color at all times when "OFF" is selected. (Default setting: AUTO)

2 [BLC OFF/ON] Backlight Compensation Selector Switch

Set this to "ON" when shooting in backlight. The subject becomes easier to see as brightness is adjusted according to the photometry area set in [BLC AREA] of the menu. (Default setting: OFF)

Memo Refer to [BLC AREA] in the "MENU SETTING" (separate).

3 [MONITOR TYPE LCD/CRT] Monitor Type Selector Switch

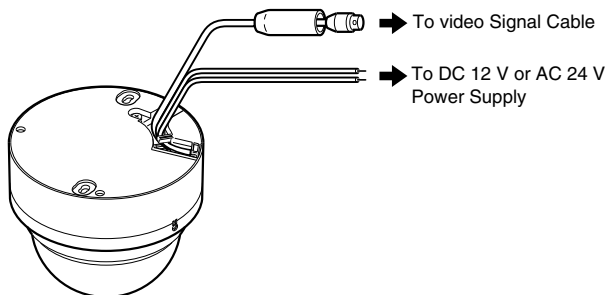
Set this to "LCD" or "CRT" according to the monitor in use. (Default setting: LCD)

Memo Refer to [LCD TYPE] in the "MENU SETTING" (separate).

About Connection Cables

The maximum connection distance varies with the type of cable used.

- Be sure to turn off the power of devices before connecting cables.



Video signal cable (coaxial cable)

Connect a RG-59 75 Ω coaxial cable (BNC) to the video signal output connector (BNC).

DC 12 V or AC 24 V power supply cable

Connect the power cord to the DC 12 V or the AC 24 V power supply.

The following table shows the connection distances when 2-core VVF (vinyl-insulated vinyl sheath cables) are used. (Reference value)

Conductor diameter	Maximum connection distance: DC 12 V	Maximum connection distance: AC 24 V
Φ 1.0 mm (AWG 18)	50 m (160 ft)	130 m (420 ft)
Φ 1.6 mm (AWG 14)	140 m (450 ft)	350 m (1100 ft)
Φ 2.0 mm (AWG 12)	220 m (720 ft)	550 m (1800 ft)

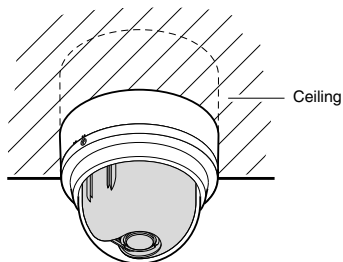
Note

- If thin cables are used, the resistance of the cables will be high and a significant voltage drop will occur when the camera is at its maximum power consumption. Either use a thick cable with low resistance or place the power supply near to the camera and shorten the length of the cable to restrict the voltage drop at the rated current of camera to below 10 %. If voltage drop occurs during operation, the performance will be unstable.
- Do not connect the AC 24 V cable to commercial power supply. If it is connected by mistake, the internal circuit may be damaged. Do not use the camera and make sure to send it to the nearest JVC dealer for inspection.
- Do not connect DC 12 V and AC 24 V cables at the same time.
- When connecting the DC 12 V cables, ensure that the polarities are correct.
Color of the cables red: +12 V, black: GND
- When using a DC 12 V power supply, ensure that the polarities of the cable are correct.
- The AC24 V power supply should conform to the following:
U-type: Class 2 only, E-type: Isolated power supply only

Mounting the Camera

Mounting the camera to the ceiling

- Note**
- When mounting the camera to the ceiling, ensure to wear safety glasses to protect the eye from any falling objects.
 - It maybe mandatory to mount an embedded cover in the ceiling (recessed bracket) in certain areas. If an embedded cover (recessed bracket) is required, ensure it is securely mounted before installing the camera.
 - Please refer to the instruction manual for the embedded cover (recessed bracket) in use for details on its installation.
 - For details on the embedded cover (recessed bracket), please contact your JVC dealer.



Embedded Cover in Ceiling (recessed bracket)

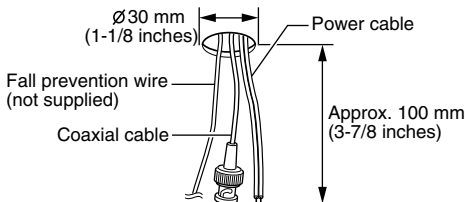
Memo To mount the camera using an electrical box, please contact the nearest JVC dealer.

Mounting the camera directly to the ceiling or on the wall

When mounting to a wall, replace areas indicated as "ceiling" in the procedures by "wall".

■ Setup

- 1 Open a hole in the ceiling (Φ 30 mm, 1-1/8 inches), and draw the fall prevention wire, power supply cable and coaxial cable out from the ceiling (fall prevention wire is not included)

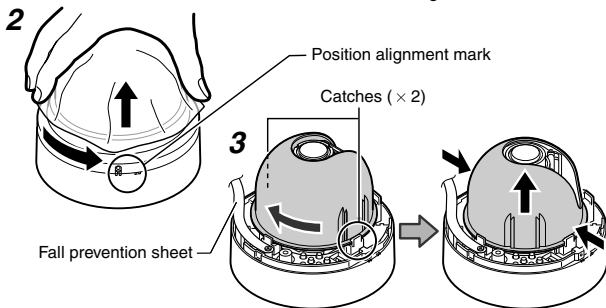


- 2 Remove the dome cover

As illustrated in the diagram, hold the dome cover such that the position alignment mark comes between the thumb and index finger, and turn the cover in the counter clockwise direction to remove the cover. (Refer to page 24 for more details about position alignment mark.)

- 3 Remove the inner dome from the catches (two locations)

The inner dome can be easily removed by turning it about 45 degree and grip from both sides near the catches as illustrated in the diagram.



- 4 Set the switches for video images (see page 9)

Mounting the Camera (Continued)

■ Connection

1 Attach the fall prevention wire from the ceiling to the camera (fall prevention wire is not included)

2 Connect the coaxial cable (see page 10)

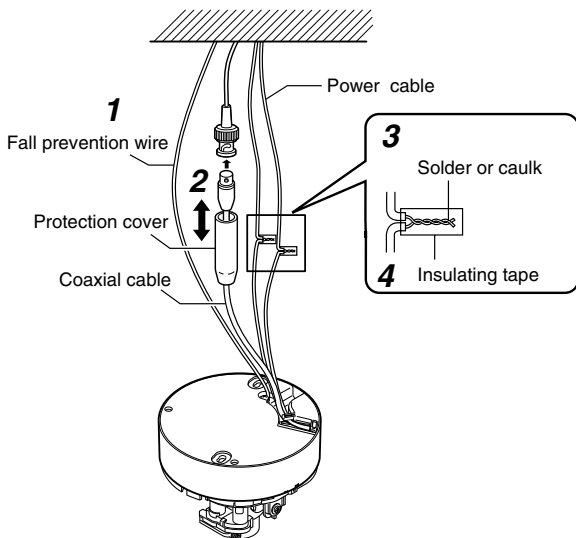
Lower the protection cover and connect the connectors.

Upon connecting, restore the protection cover to cover the connectors. This will isolate and protect the metallic parts of the connectors from the ceiling structures.

3 Connect the power supply cable (see page 11)

4 Wrap insulation tapes around the connecting parts of the power supply cables

Memo Wrapping insulation tapes will improve future work conditions, as well as reduce penetration by noise and other objects.

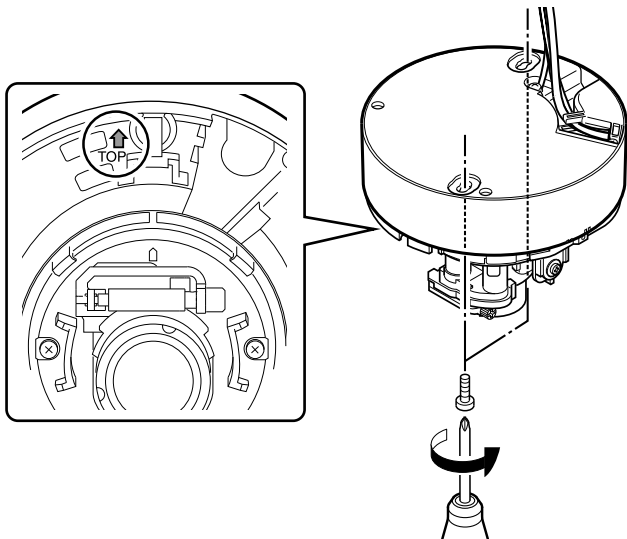


■ Mounting

1 Align (↑) with the shooting direction, and mount the camera onto the ceiling

Note Mounting screw (not included)

- The diameter of the attachment hole is Φ 4.5 mm (3/16 inch).
- Do not use flathead screws.
- When using an impact screwdriver, do not tighten the screws fully. Tighten using your hand instead. Failure to do so may damage the outer case.



■ Adjusting images

After mounting is completed, adjust the images while checking the actual image.
"Adjusting Image" (☞ page 17)

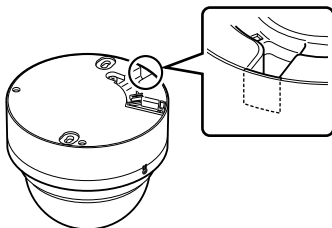
Mounting the Camera (Continued)

Mount by allowing the cable to exit from the side

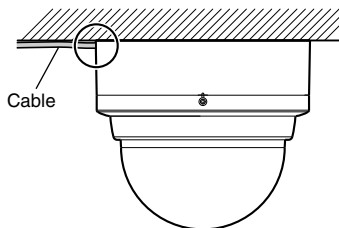
When mounting the camera to the ceiling or a wall, it is possible to guide the cable from the side without opening any holes.

The basic mounting method is identical to steps in "Mounting the camera directly to the ceiling or on the wall" (see page 13) .

- 1 Cut both ends of the extraction hole for the cable with a nipper and break off the excess material using tools such as long-nose pliers**



- 2 Pull out the cable from the extraction hole and mount it to the ceiling or wall**



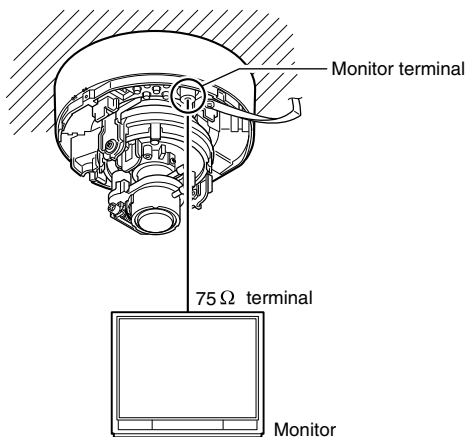
Adjusting Image

After mounting the camera, adjust the images while looking at the actual image. Discharge the static electricity from your body by touching the metallic part of the monitor terminal before handling the camera as static electricity may cause the camera to malfunction.

1 Mount the monitor

Connect the monitor terminal of this camera to a test monitor to adjust the camera's shooting direction, image and focus.

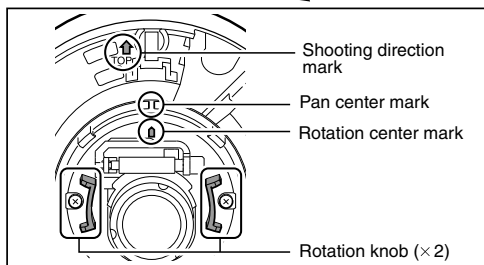
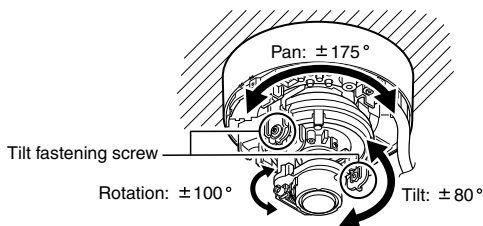
2 Turn on the camera



Adjusting Image (Continued)

3 Adjust the shooting direction of the camera

Adjust the camera for pan, tilt and rotation, and face the camera towards the subject.



- Memo**
- Rotate both pan $\pm 175^\circ$ and rotation $\pm 100^\circ$ from the positions aligned with the camera's shooting direction mark, pan center mark and rotation center mark. Be sure to hold the rotation knob and adjust the rotation without holding the lens unit.

- Loosen the tilt fastening screw before performing tilt adjustment.
- After adjusting the field angle, tighten and secure the tilt fastening screw so that the field angle will not be misaligned.

- Note**
- Moving the camera beyond its adjustable range may deteriorate the performance of this camera.
 - As this camera has a wide tilt/rotation range, a part of this camera may appear on the screen depending on the field angle and direction.
 - Do not hold the lens unit when adjusting the camera direction. Applying force on the lens unit may damage it.

4 Adjust the image size

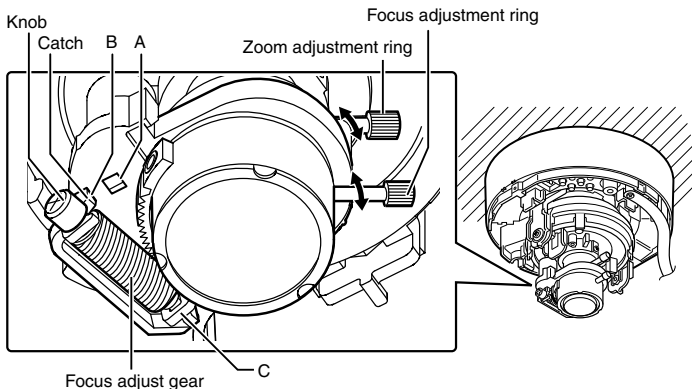
Loosen the fastening screw for the zoom adjustment ring and move the ring to the left/right to adjust the image size. After adjustment is complete, fasten the screw with pressing it slightly toward the lens direction (toward the shooting direction).

5 Adjust the focus

- ① Hold the focus adjust gear knob, shift the catch from point A to point B as illustrated in the diagram to disengage the gear.

Note To prevent the gear shaft from breaking when the gear is opened too far out from B, remove the gear shaft from the bearing (C in diagram). In this case, re-insert the shaft back into the bearing C and return it to the original position before using.

- ② Loosen the fastening screw for the focus adjustment ring and move the ring to the left/right to adjust the focus.



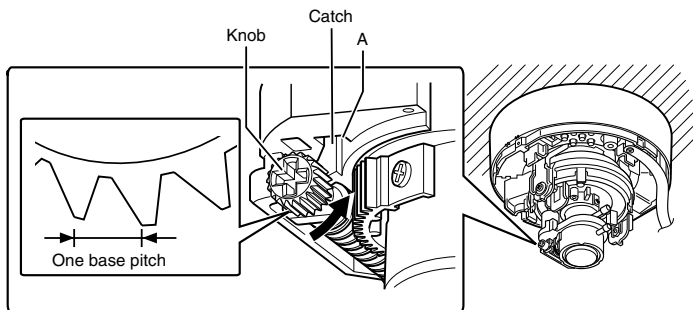
Adjusting Image (Continued)

6 Fine adjust the focus

- ① Press and hold the [▲] button.
 - Focus adjust mode will be activated and "FOCUS ADJUST MODE" is displayed on the monitor screen.
 - The contours are emphasized as the iris opens and the depth of field becomes shallow.
 - After adjustment, press [▼, ◀, ▶], [SET] or [MENU] to exit focus adjust mode. The mode is also automatically deactivated after about 30 seconds.

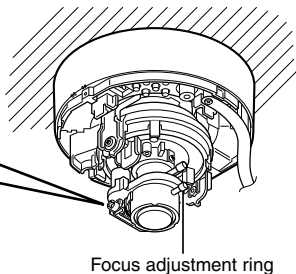
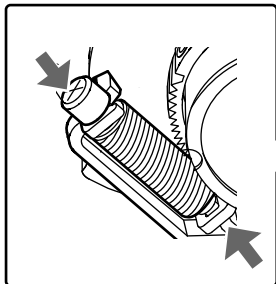
Memo During the focus adjust mode, the electronic shutter will function automatically. As a result the screen will appear grainy. This is not a malfunction.

- ② Shoot the subject.
- ③ Return the catch to A in the diagram, and then rotate the knob to adjust the focus to the optimum position.
- ④ Rotate the focus adjust gear knob one base pitch in the direction of the arrow in the diagram to correct the focus shift when mounting the dome cover.
- ⑤ Peel off the protection sheet temporarily and cover the dome cover to check the focus. After checking, paste the protection sheet back on the dome cover.



7 Tighten the fastening screw of the focus adjustment ring

Hold and press the focus adjust gear between your fingers in the direction of the arrows in the diagram, and tighten the fastening screw of the focus adjustment ring.



Adjusting the Auto White Balance

Each light source has its own color temperature. Therefore, when the main light source lighting the subject is changed, adjust the white balance again.

1 Press the [MENU] button.

2 Select [WHITE BALANCE] with the [▲/▼] button and "AWC" with the [◀/▶] button, then press the [SET] button.

3 Zoom in to fill the screen with white.

Place a white object at the center of the screen, under the same lighting condition as the subject to be shot and zoom in to fill the screen with white.

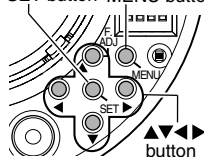
4 Press the [SET] button.

Auto white balance adjustment begins. During operation, "AWC OPERATION" is displayed on the screen.

5 Adjustment is complete.

When the appropriate white balance is acquired, "AWC OK" is displayed.

SET button MENU button



WHITE BALANCE CONTROL	
▷ AWC SET	
R GAIN	160
B GAIN	160
AWC OPERATION	

AWC OPERATION
(during operation)

WHITE BALANCE CONTROL	
▷ AWC SET	
R GAIN	160
B GAIN	160
AWC OK	

AWC OK
(adjustment completed)

■ Error display

If auto white balance adjustment is not successful, the following messages will appear on the monitor.

- AWC ERROR : NG (Subject error)

Displayed when there is not enough white color on the subject or the color temperature is not suitable.

Fill the screen with a white object thoroughly and adjust the white balance again.

- AWC ERROR : LOW LIGHT (Insufficient Illumination)

Displayed when the light is low. Increase the illumination, then readjust the white balance.

- AWC ERROR : HIGH LIGHT (Excessive Illumination)

Displayed when the light is too bright. Decrease the illumination, then readjust the white balance.

- AWC ERROR : TIME OVER (Subject movement)

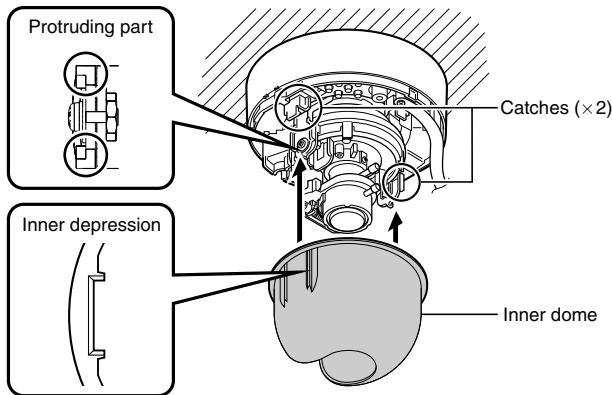
Displayed when the subject moves. Keep the subject still, then readjust the white balance.

Mounting the Dome Cover

Attach the dome cover back when all settings are finished.

1 Mount the inner dome

Mount the inner dome in a way that supports the tilt direction of the lens. Insert the inner depression of the inner dome into the protruding parts beside the fastening screw. Push it in until it is locked by the catches (2 locations).



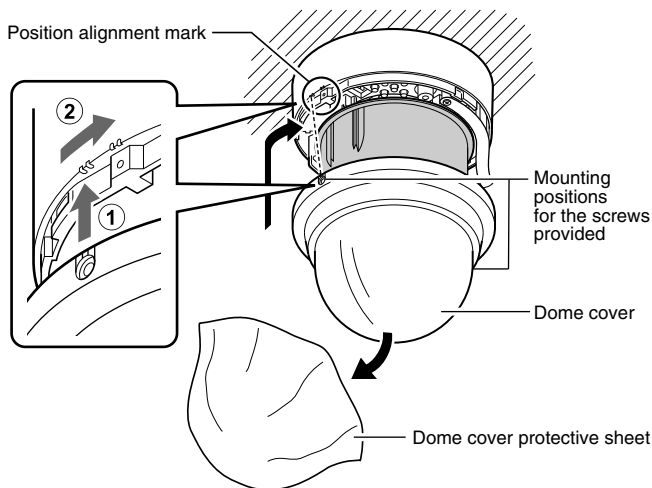
Mounting the Dome Cover (Continued)

2 Mount the dome cover, and peel off the dome cover protection sheet

- ① Align the position marks of the same shape on the camera unit and dome cover. (Camera unit: double track, dome cover: double track)
- ② Turn and secure the dome cover in the clockwise direction.

Memo Secure the dome cover with the two screws provided if necessary.

- Note**
- When the cover is removed again after mounting the dome cover, the field angle may changed. If the field angle is changed, re-adjust the focus and the field angle.
 - Check that the dome cover has been mounted firmly. Incomplete mounting will cause the cover to drop down.

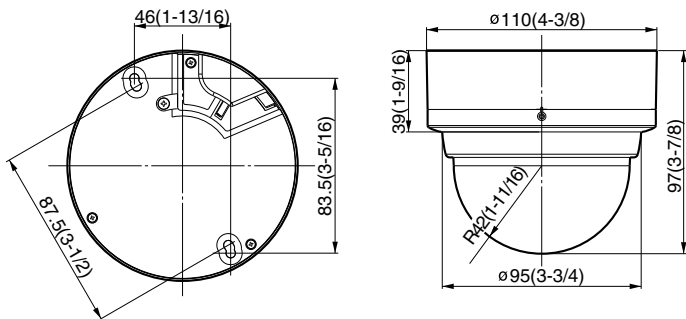


Specifications

Horizontal resolution	: 550TV lines (typical)
Video S/N	: 52 dB (typical, AGC OFF)
Minimum illumination	: Color mode: 0.05 lx (typical, 50 %, F1.2, AGC HIGH) Black and white mode: 0.03 lx (typical, 50 %, F1.2, AGC HIGH)
Zoom ratio	: 3.75
Focal length	: 2.8 mm to 10.5 mm
Maximum aperture ratio	: F 1.2 (f = 2.8 mm) F 3.6 (f = 10.5 mm)
Minimum aperture	: Equivalent to F 360
Angle of view	: f = 2.8 mm 99.5 ° (H) × 73.2 ° (V) f = 10.5 mm 24.4 ° (H) × 20.6 ° (V)
Angle adjustment range	: Pan: ± 175 ° Tilt: ± 80 ° Rotation: ± 100 °
Power supply	: AC 24 V 60 Hz, DC 12 V (TK-C2201U) AC 24 V 50 Hz/60 Hz, DC 12 V (TK-C2201E)
Power/current consumption	: 2.3 W (TK-C2201U) 190 mA (TK-C2201E)
Mass	: 330 g
Ambient temperature	: -10 °C to 50 °C (14 °F to 122 °F) (Operation) 0 °C to 40 °C (32 °F to 104 °F) (Recommended)
Accessories	: (TK-C2201U) WARRANTY CARD × 1 INSTRUCTIONS × 3 SCREW × 2 (TK-C2201E) INSTRUCTIONS × 5 SCREW × 2

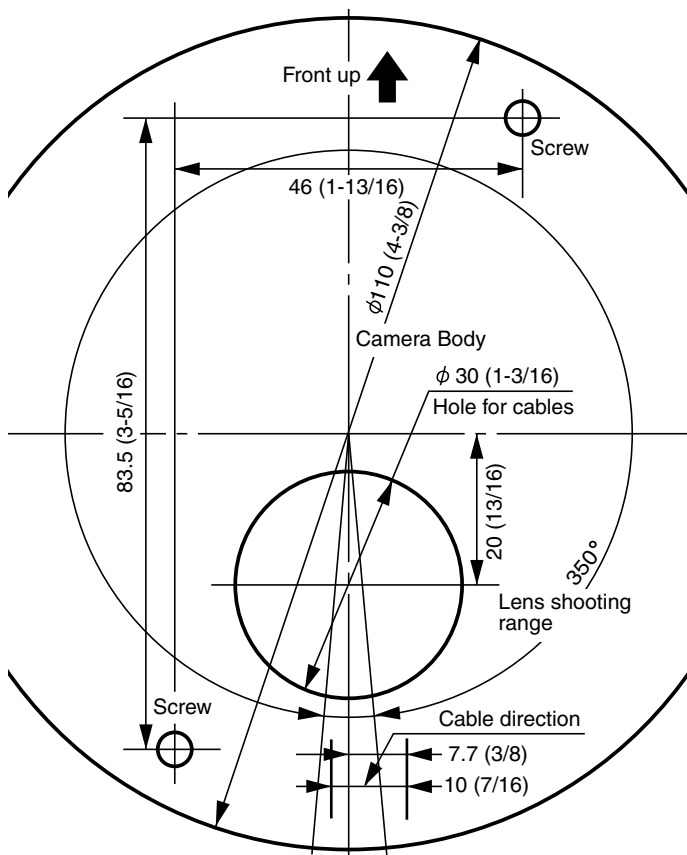
Specifications (Continued)

■ External Dimensions [Unit: mm (inch)]



* Specifications and appearance of this unit are subject to change for further improvements without prior notice.

■ Ceiling Mounting Hole [Unit: mm (inch)]



TK-C2201U/TK-C2201E
FIXED DOME CAMERA

JVC