

ELMO

COLOR CCD TV CAMERA

TND4204VX VANDAL RESISTANT DOME CAMERA INSTRUCTION MANUAL

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

- Do not use any power supply other than specified.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK.

* The CAUTION label is attached on the bottom of camera.

INFORMATION

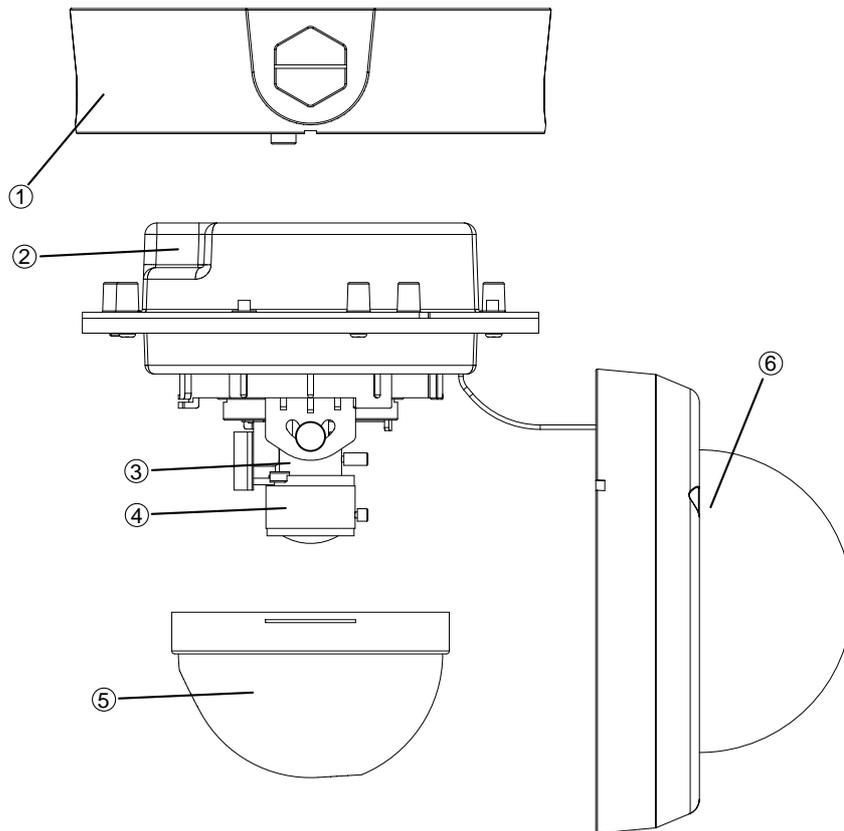
This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, 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.

USER-INSTALLER CAUTION: Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party responsible for compliance to Part of the FCC Rules.

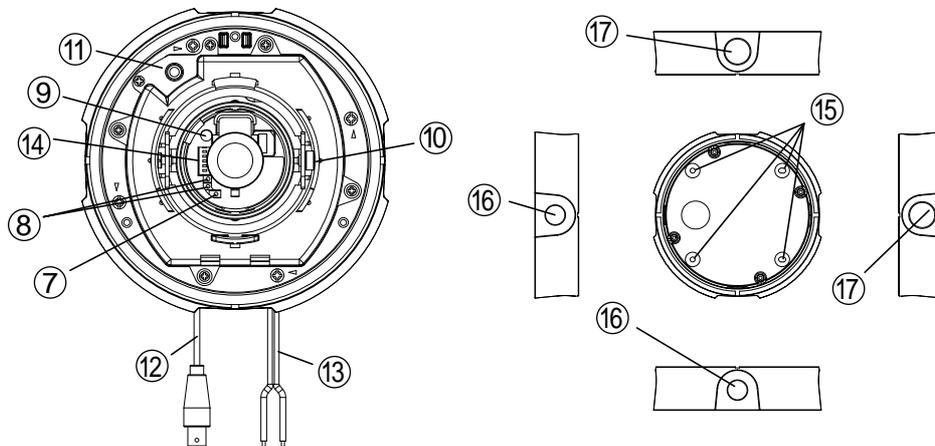
IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with dry cloth.
6. Do not block any ventilation openings, install in accordance with the manufacturer's instructions.
7. Do not install near heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
8. Only use attachment/accessories specified by the manufacturer.
9. Unplug this apparatus during lightning storms or when unused for long periods of time.
10. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, objects have been fallen onto the apparatus, does not operate normally, or has been dropped.

Name and Function of Each part



No.	Name	Function
①	Camera mounting bracket	The mounting bracket for ceiling installation.
②	Main body	The main body of the camera section.
③	Zoom ring	For adjusting the image size.
④	Focus ring	For adjusting the focus.
⑤	Cover lens	Protective cover for the lens.
⑥	Dome cover main body	Protective cover for the main body.



No.	Name	Function
⑦	AW PUSH	Used when the white balance is in the PUSH mode.
⑧	DOWN/UP	For setting the vertical sync. phase.
⑨	ALC adjustment volume	For adjusting the brightness of the image.
⑩	Tilt lock screw	For locking the tilt after adjusting the image up/down direction.
⑪	Monitor terminal	Connect this to output images. When adjusting the image shooting direction, field angle or focus (in wiring work, for example), connect a monitor TV, etc.
⑫	BNC cable	Image output terminal to be connected to the image input terminal such as monitor TV.
⑬	AC/DC power cord	Connect this to the AC24V 60Hz or DC12V power supply.
⑭	Selector switch	Refer to P4.[Selector Switch (Details)]
⑮	Screw hole for mounting bracket	For fixing the camera mounting bracket with screws.(Gang box)
⑯	Parallel pipe threads(G1/2)	Used when the wiring duct is connected.
⑰	Parallel pipe threads(G3/4)	Used when the wiring duct is connected.

⑭ Selector switch (Details)

1.SENS UP switch

To set the max. value (upper limit value) of the operating gain in the auto gain control circuit, set this switch to ON position. In case the back lighting is too dark and the camera sensitivity is insufficient, set this switch to ON position.

2. BLC (Back Light Control) switch

In case the back lighting is too bright to view the main object clearly, set this switch to ON position.

3. INT/LL switch(Set at LL position from the factory)

a. INT. (internal) control switch

When the internal synchronization is used, set the switch to the INT side.

b. L.L. (Line-lock) control switch

Matching the vertical synchronization with the power frequency is called the line-lock.

When two or more cameras are connected to a monitor TV through a video switcher, the vertical sync. phase can be locked with the power frequency, and a stable vertical sync. is obtained without being disturbed at the time of switching. Line-Lock is operative only when the AC24V 60Hz power supply is connected.

Use Down/up Buttons to adjust the vertical sync. phase.

4. PUSH/ATW switch

This is the switch to select the white balance PUSH/ATW.

PUSH: When the lighting from the source is constant, it is possible to fix the AW setting.

Place something white (paper, etc.) in front of the lens in a way that the whole screen may be covered, then push the AW PUSH switch. At this moment the setting is saved and retained even after the power is turned OFF.

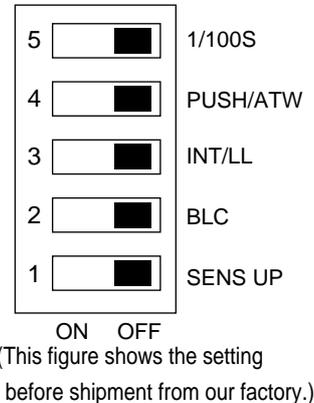
ATW: The camera automatically adjusts the white balance as it continuously measures the color temperature of the lighting source.

5. 1/100s

When this switch is turned ON, the shutter speed is set to 1/100 second. It is effective in reducing the light intensity.

Caution:

When this switch is turned ON, AES does not operate.

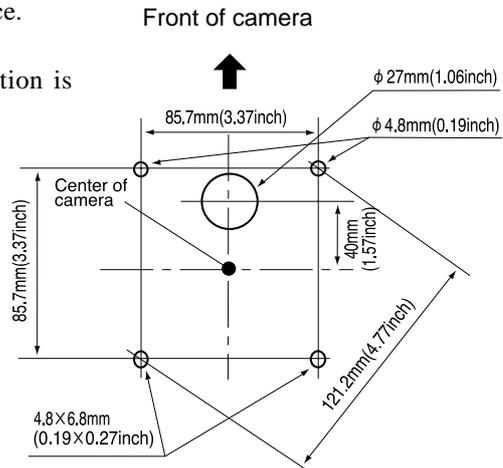


How to Install

1. Make holes in the mounting surface.

(Fig. 1)

※ The paper pattern for installation is included.



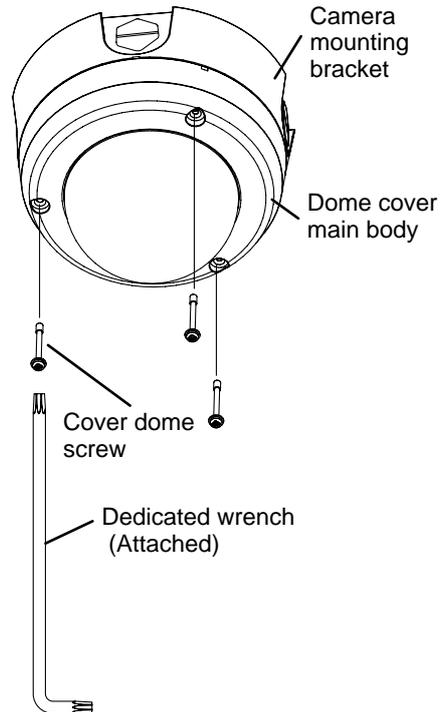
(Fig. 1)

2. Remove the dome cover main body fixing screws from the camera body.

(Fig. 2).

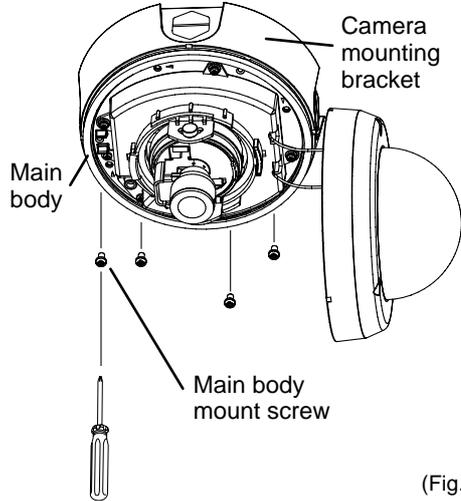
※ Use the dedicated wrench (Attached).

※ Be careful not to drop the cover dome.



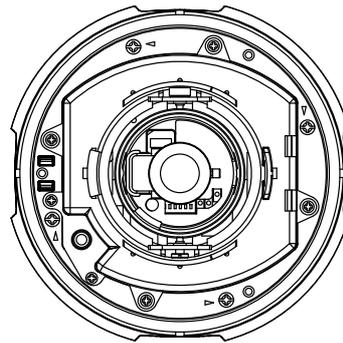
(Fig.2)

3. Remove the main body fixing screws, and remove the main body from the camera mounting bracket. (Fig. 3).



(Fig.3)

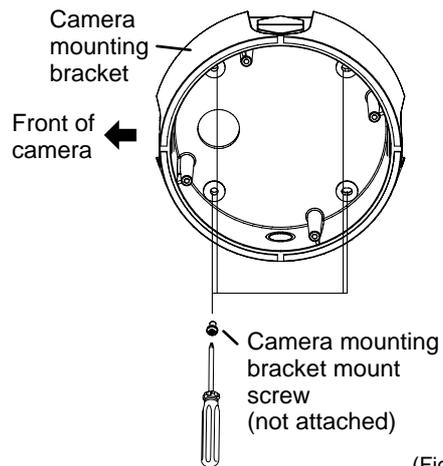
※ Remove the screws identified by the ◁ mark(Figs. 4).



(Fig.4)

4. Fix the camera body to ceiling, wall or box with the camera body fixing screws. (Fig.5)

- ※ Make sure that it is fixed firmly.
- ※ Make sure of the position of the front of the camera.

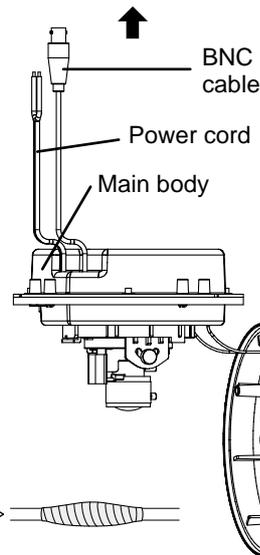
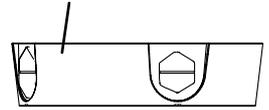


(Fig.5)

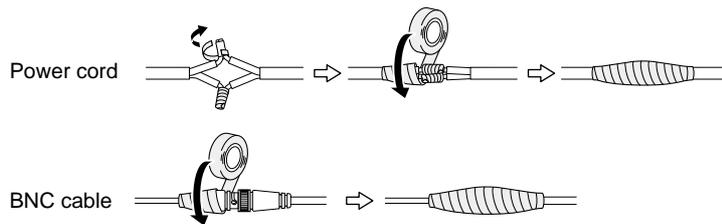
5. Connect the power cord and the BNC cable, and then mount the main body on the camera body. (Fig. 6).

 **Warning** Weight of the camera mounting bracket and mounting metal piece is 1600g(3.52 lbs). Make sure that the ceiling or wall is strong enough to support the weight of the camera mounting bracket and mounting metal piece altogether. If not strong enough, the device may drop and injure the personnel around.

Camera mounting bracket



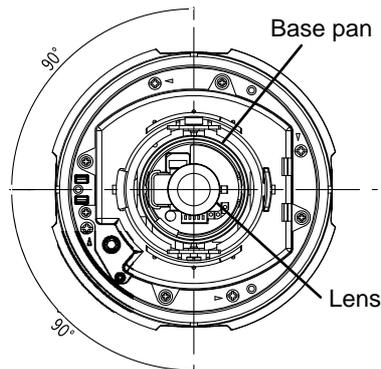
- When you connect the Power cord and the BNC cable, roll the waterproof tape to prevent water damage as the figures below indicate.



(Fig.6)

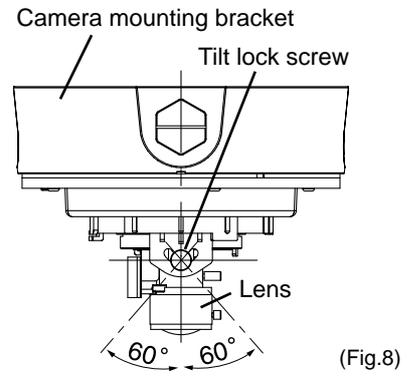
 **Caution** Please do not hold a part of the lens, when adjusting the image direction. It may cause a breakdown of the lens.

6. While watching the monitor, adjust the image direction.
 - Right/left direction (Fig.7) Rotate the base pan to right or left, and adjust the right/left direction.
 - Up/down direction (Fig.8) Loosen the tilt lock screw, and adjust up/down direction. After setting the up/down direction, fasten the tilt lock screw.

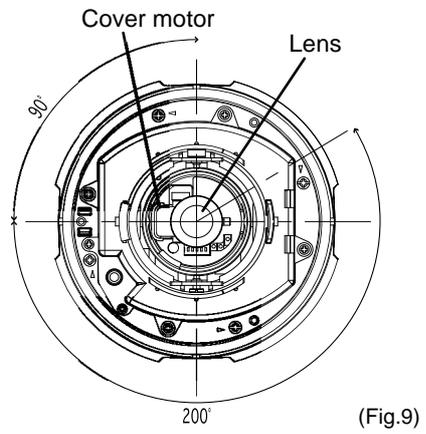


(Fig.7)

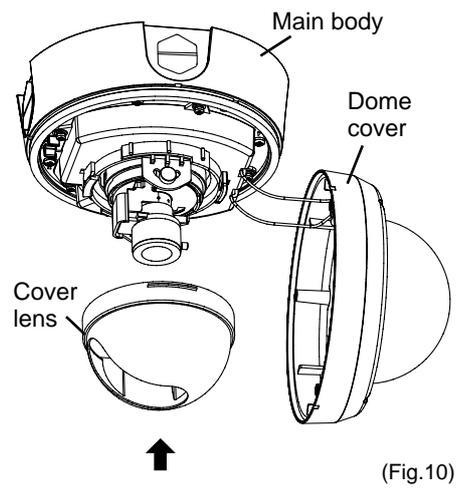
- ※ Be careful not to drop the tilt lock screw.
- ※ Manually fasten the tilt lock screw.
If fastened with pliers or the like, the tilt lock screw may be broken.



7. Correct the image tilt. (Fig.9)
- ※ Be sure to hold the cover motor.



8. Mount the cover lens, and mount the dome cover with the dome cover fixing screws. (Fig.10)

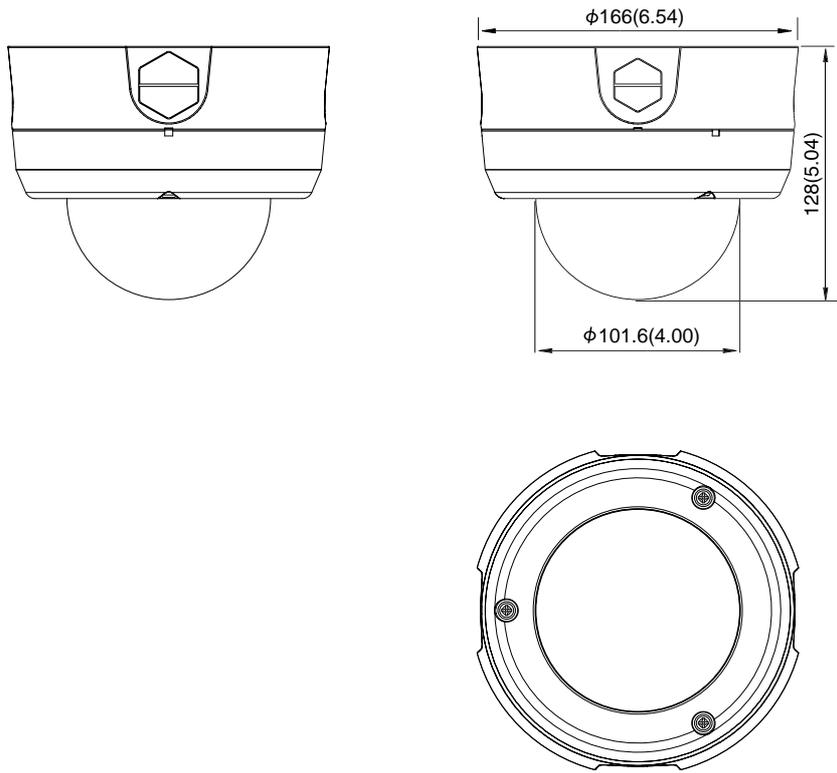


When any failure is suspected

Symptoms	Check here.
Image is not displayed.	<input type="radio"/> Are cables connected correctly? <input type="radio"/> Are the power plugs of peripheral units inserted correctly into the receptacles?
Color is not correct.	<input type="radio"/> Is the video monitor adjusted correctly?
Image is disarrayed.	<input type="radio"/> Is any connector of this machine or video monitor loose or contacted poorly?

Appearance

All dimensions in mm(inch)



Specifications

Model	TND4204VX
Power source	AC24V(AC15V-27V) 60Hz ± 0.5Hz or DC12V(DC11V-35V)
Power consumption	AC : Approx.2.5W or DC : Approx.2.8W
Image pick-up device	1/3" color interline-transfer CCD
Effective picture element	768(H) × 494(V)
Scanning area	4.88mm(H) × 3.66mm(V)
Scanning system	2:1interlaced
Scanning frequency	LL : 15.75kHz (H), 60Hz (V) INT : 15.734kHz (H), 59.94Hz (V)
Sync.system	AC : Line-lock/Internal (switchable) DC : Internal
Resolution	480TV lines(H) 350TV lines(V)
S/N ratio	50dB
Standard illumination	60lx (F1.2 under incandescent lamp)
Lowest illumination	0.35lx (F1.2 under incandescent lamp)
White balance	ATW/PUSH (switchable)
AGC	Built-in (SENS UP switchable)
Backlight control (BLC)	Provided (switchable)
Electronic shutter	1/60sec. / 1/100sec. (switchable)
Power	Power cable (Non-plug)
VIDEO OUT terminal	BNC cable output VBS 1.0V(p-p) 75 Ω
Lens	Varifocal lens F1.2 f=3~9mm
Angle of view	Horizontal 31.8° (TELE)~90.0° (WIDE) Vertical 23.9° (TELE)~68.2° (WIDE)
Movable angle	Pan 180° (± 90°) / Tilt 120° (± 60°) / Camera 290°
Waterproof rating	IP66
Dimensions	Diameter : 166mm(6.54") Height : 128mm(5.04")
Weight	Approx. 1600g(3.52lbs)
Ambient temperature	-10 °C ~50 °C (14 °F ~122 °F)
Ambient humidity	30%~90%
Accessory	Instruction manual, Registration certification card Dedicated wrench, Paper pattern(for installation)

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