



## INSTALLATION MANUAL

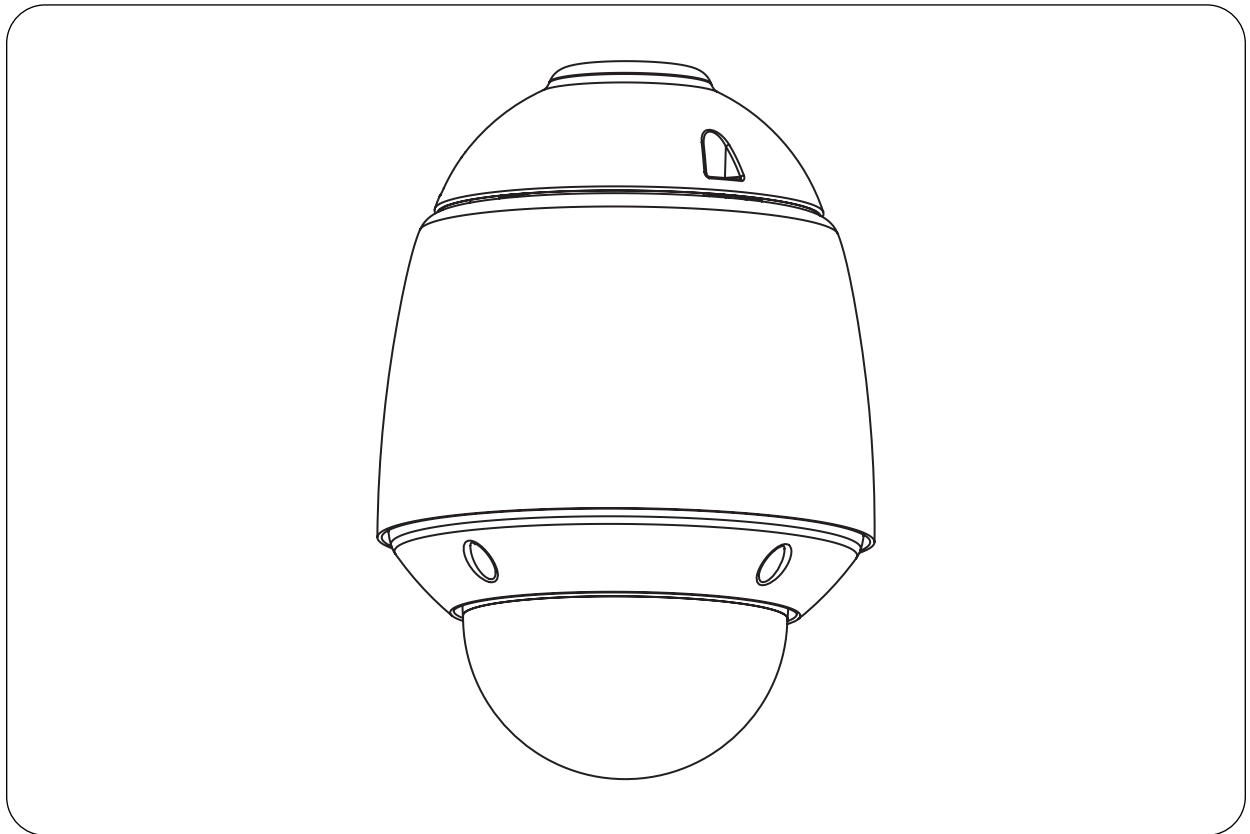
### OUTDOOR COMBINATION CAMERA

**C-CC714 NT**

**C-CC714 PL**

**C-CC764 NT**

**C-CC764 PL**



Thank you for purchasing TOA's Outdoor Combination Camera. Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

TOA Corporation

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# 1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this section carefully before use.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.

## Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.



### WARNING

Do not leave the unit upside-down where it could be exposed to the rain or elements. Water in the unit may cause shorts that could result in fire or electrical shock.



### WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

## When Installing the Unit

- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects (including the unit itself) on the power cord, as doing so may result in fire or electric shock.
- Avoid installing the unit in unstable locations, such as on a rickety or slanted surface. Failure to do so may result in the unit falling and possibly causing personal injury.
- Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
- Only use the unit's dedicated mounting hardware. The use of mounting hardware not designated could result in the unit falling and possibly causing personal injury.
- Do not install the unit in the following locations to avoid a traffic accident or personal injury.
  - Locations which block the driving of the car.
  - Locations where the traffic signal or road sign is hard to be seen.
- To prevent lightning strikes, install the unit at least five meters away from a lightning rod, and yet within the protective range (angle of 45°) of the lightning conductor. Lightning strikes may cause a fire, electric shock or personal injury.
- When installing the unit in the snowy area, take appropriate measures to prevent snow from lying on the unit. If the snow lies on the unit, the unit may fall, causing personal injuries.
- Be sure that at least two persons are available to install the unit. Failure to do so could result in personal injury.
- Do not use any methods other than specified to mount the bracket. Extreme force is applied to the unit and the unit could fall off, possibly resulting in personal injuries.
- Attach the safety wire to the unit. If not attached, the unit could fall off, resulting in personal injury.
- Use nuts and bolts that are appropriate for the ceiling's or wall's structure and composition. Failure to do so may cause the unit to fall, resulting in material damage and possible personal injury.
- Tighten each nut and bolt securely. Ensure that the bracket has no loose joints after installation to prevent accidents that could result in personal injury.

## When Installing the Unit

- Avoid installing the unit in locations exposed to sea breeze or corrosive gas. Mounts may become corroded, eventually causing the unit to fall off, which could result in personal injury.
- Do not mount the unit in locations exposed to constant vibration. The mounting screws and/or bolts may be loosened by excessive vibration, potentially causing the unit to fall, which could result in personal injury.
- Avoid installing the unit at heights exceeding 16 meters above the ground since the unit could be exposed to unexpected strong winds that might cause it to fall or result in other accidents.

## When the Unit is in Use

- If any of the following irregularities occurs, immediately unplug the power plug from the AC outlet and inform the shop from where the unit was purchased. Further using the unit may result in fire or electric shock.
  - If you detect smoke or a strange smell coming from the unit.
  - If water or any metallic object gets into the unit
  - If the unit falls, or the unit case breaks
  - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
  - If no camera images are displayed on the monitor TV when the temperature of the camera unit is 0°C or more.
- To prevent a fire or electric shock, never open nor remove the unit case as there are high voltage components inside the unit. Refer all servicing to your nearest TOA dealer.
- Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.
- Do not touch a power cable during thunder and lightning, as this may result in electric shock.



## CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

## When Installing the Unit

- To avoid electric shocks, be sure to switch off the power before power supply wiring work. Failure to do so may result in electrical shock.
- Leave the installation of the unit to your TOA dealer because the installation requires expert experience and skills. If the unit falls, this could cause personal injuries.

## When the Unit is in Use

- Do not stand or sit on, nor hang down from the unit as this may cause it to fall down or drop, resulting in personal injury and/or property damage.
- Switch off the power, and unplug the power supply plug from the AC outlet for safety purposes when cleaning or leaving the unit unused for 10 days or more.
- Doing otherwise may cause a fire or electric shock.
- Have the unit checked periodically by the shop from where it was purchased. Failure to do so may result in corrosion or damage to the unit or its mounting brackets that could cause the unit to fall, possibly causing personal injury.
- Contact your TOA dealer as to the cleaning. If dust is allowed to accumulate in the unit over a long period of time, a fire or damage to the unit may result.

## **2. GENERAL DESCRIPTION**

TOA's dome-type color cameras combine with a high-speed camera drive that permits one 360-degree horizontal rotation per second and a 22 times (C-CC714) or a 23 times (C-CC764) optical zoom lens. Up to 255 arbitrary positions can be preset and such preset positions can be instantaneously repeated. The systems also feature a 12 times electronic zoom, timer, and tracing, while the C-CC764 offer additional functions that include a motion detector, auto flip, black & white mode, and privacy masking. Because all these cameras are integrated with a weather-resistant outdoor-use housing and a built-in fan heater, they can be freely used outdoors as well.

## **3. FEATURES**

- Digital signal processing realizes high resolution and high picture quality. The unit also features the video memory that increases the electronic sensitivity up to 32 times and enables electronic zooming.
- One coaxial cable used for connection between the Combination Camera and the System Controller permits manual operations of the zoom lens, pan/tilt head, and preset camera positions, and the setting of the camera functions. Also it can correspond to the control using a communications line of RS-485.
- Up to 255 camera positions can be preset.
- Built-in fan heater automatically turns on to keep the camera operable when temperatures decrease.
- Featuring IP66 (IEC60529) compliant dustproof and waterproof.

## 4. HANDLING PRECAUTIONS

- Noise may appear on the monitor or preset camera positions may deviate with prolonged camera use. In such cases, use the camera's refresh function to automatically refresh settings and reestablish the home position once a day or week, thus allowing any position deviation to be corrected. When correcting manually, initialize the camera from the remote controller.
- The AC line is equipped with a surge protector to protect the camera against lightning strikes and other power surges. Therefore, remove the surge grounding terminal's connector when conducting withstand voltage tests, and be sure to replace it after the test is completed.
- It is recommended that the unit be installed in locations where the temperature is under +40°C, as the longevity of the unit may reduce with prolonged unit use under high temperature and high humidity.
- Because the dome camera uses sealed construction, moisture can accumulate inside the camera, possibly causing the inside of the dome to fog. Take care to install the camera when humidity conditions are low.
- Camera images may not immediately be displayed if the power is switched on when the temperature of the camera unit is below 0°C. In such cases, wait for a while with the power switched on. When the temperature inside the enclosure reaches 0°C or higher, normal operation becomes possible after initialization. Note that it could take an hour or two before operation becomes possible when the ambient temperature is -40°C or below.
- Even in locations where the temperature is higher than -40°C, if exposed to strong winds and snow, the snow or ice on the transparent camera dome might not defrost. In such cases, it might be best to leave the power to the camera on at all times.
- Do not direct the camera lens to the sun or strong lighting or light reflection.
- Do not install the unit in locations exposed to constant vibration. The units are not designed for vehicle use. Do not install the unit in a vehicle nor ship.
- Mount the unit to a concrete wall or robustly constructed wall surface that can sufficiently withstand the weight of the units. When mounting the units to a pole, pay special attention to the sway and strength of the pole, and mount it securely at an appropriate height that will not cause the pole to sway and possibly weaken it. Moreover, avoid mounting the units to a pole on which other objects susceptible to wind are also mounted.
- Bolts and nuts used to install the unit to a ceiling, or on a wall or pole are not supplied with the unit. Be sure to prepare bolts and nuts keeping the ceiling's or wall's structure and material, gross weight, etc in mind.
- Do not give vibration or shock to the unit, as doing so may cause unit breakdown, damage or be leakage. Giving vibration or shock may cause damage or leakage to the unit.
- Avoid installing the units on sea or shore, or in locations exposed to corrosive gas, herbicides or other sprayed liquid chemicals, or extraordinary combustible conditions.
- To prevent the unit falls off, be sure to hang the safety wire first when installing the unit.
- The dome camera is designed solely for suspended installations. The camera or dome must be suspended vertically with its dome facing downward. Use special care not to suspend it at a tilted angle.
- The dome camera is not equipped with a power switch. Perform power construction work so that the camera power can be turned on and off remotely.

- The dome camera features built-in heat generating circuitry. Take care not to touch the internal parts marked “Caution! High Temperature” when working inside the camera during dome cleaning or maintenance .
- Avoid directly touching the dome surface, since camera picture quality could deteriorate if the dome cover becomes smudged and dirty.
- To clean, be sure to first unplug the power plug from the AC outlet, then wipe with a dry cloth. When the unit gets very dirty, use a cloth dampened in a neutral detergent. Never use benzene, thinner or chemically processed towel as the unit's plastic or other parts may be deformed or discolored.
- When cleaning the dome cover, wipe lightly with a soft cloth. In this event, the cover could be scratched and damaged if the dome is covered in dust or sand. When the cover is extremely dirty, it is highly recommended that the cover be removed and that its outside surface be washed lightly with water. Since alcohol-based detergents can turn the dome cover whitish, avoid using them, as camera picture quality could be severely affected.
- When dust has settled on the unit's lens, lightly clean using a commercial camera blower or cleaning paper.

NTSC version complies with Part 15 of the FCC Rules.

**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.

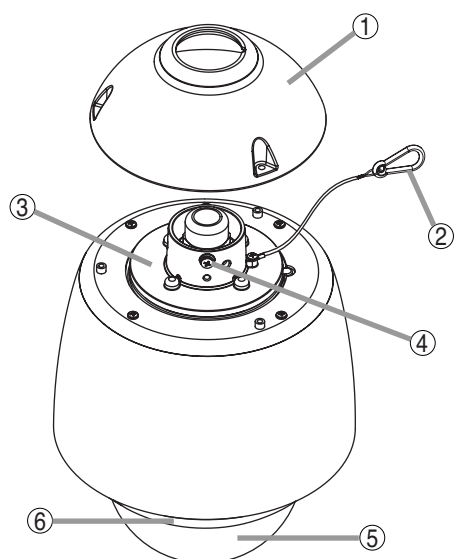
**Modifications**

Any modifications made to this device that are not approved by TOA Corporation may void the authority granted to the user by the FCC to operate this equipment.

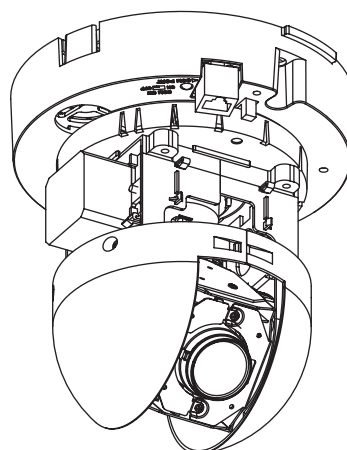
Underwriters Laboratories Inc. (UL) has not tested the performance or reliability of the security aspects of this product. UL has only tested for fire, shock or casualties as outlined in UL's Standard(s) for Safety. UL Certification does not cover the performance or reliability of the security hardware and security operating software. UL MAKES NO REPRESENTATIONS, WARRANTIES OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY RELATED FUNCTIONS OF THIS PRODUCT.

## 5. NOMENCLATURE

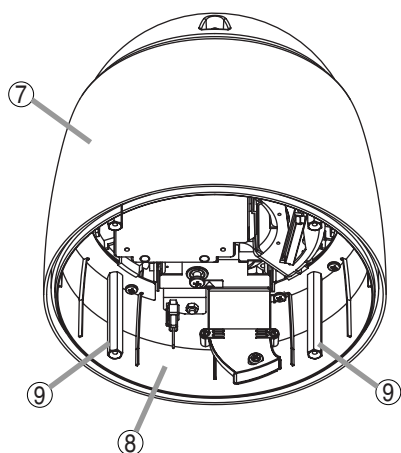
[ Appearance ]



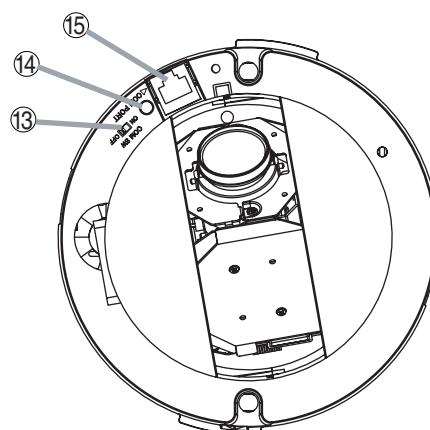
[ Camera Unit Appearance ]



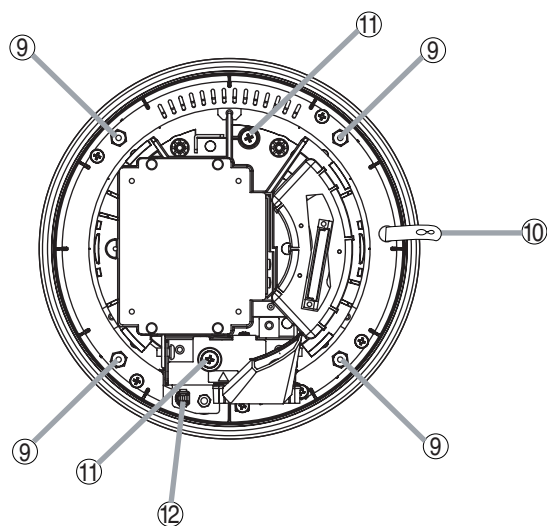
[ Housing Appearance ]



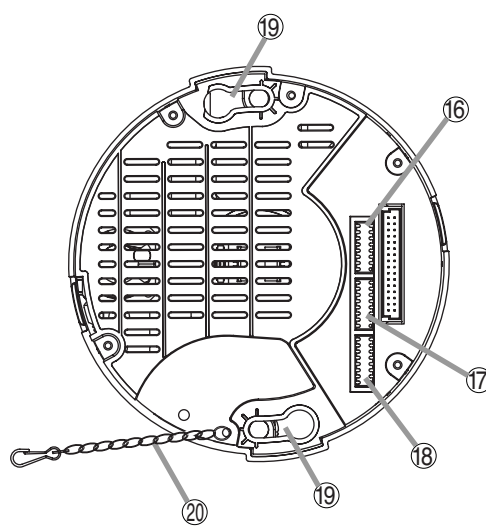
[ Camera Unit Bottom ]



[ Housing Bottom ]

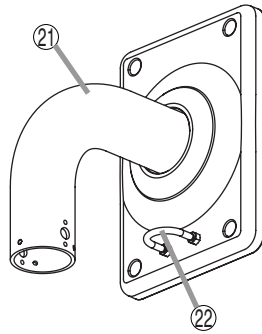


[ Camera Unit Top ]

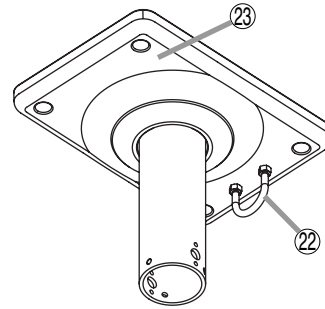




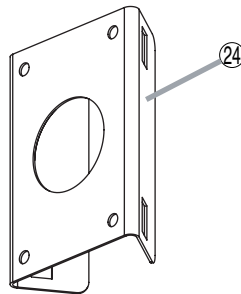
**[ C-BC711W Wall Mounting Bracket (optional) ]**



**[ C-BC711P Suspension Bracket (optional) ]**



**[ C-BC711PM Pole Mounting Bracket (optional) ]**



(1) Top cover

(2) Safety wire for housing

(3) Housing adaptor

(4) Safety screw

(5) Dome cover

(6) Decorative frame

(7) Sunshade (Outside)

(8) Case (Inside)

(9) Hexagon sleeve

(10) Safety wire for dome cover

(11) Camera unit fixing screw

(12) Surge protector GND

(13) COM SW\*

(14) COM LED\*

(15) COM PORT\*

(16) DIP switch (SW1)

(17) DIP switch (SW2)

(18) DIP switch (SW3)

(19) Camera unit mounting hole

(20) Safety wire for camera unit

(21) Wall mounting bracket

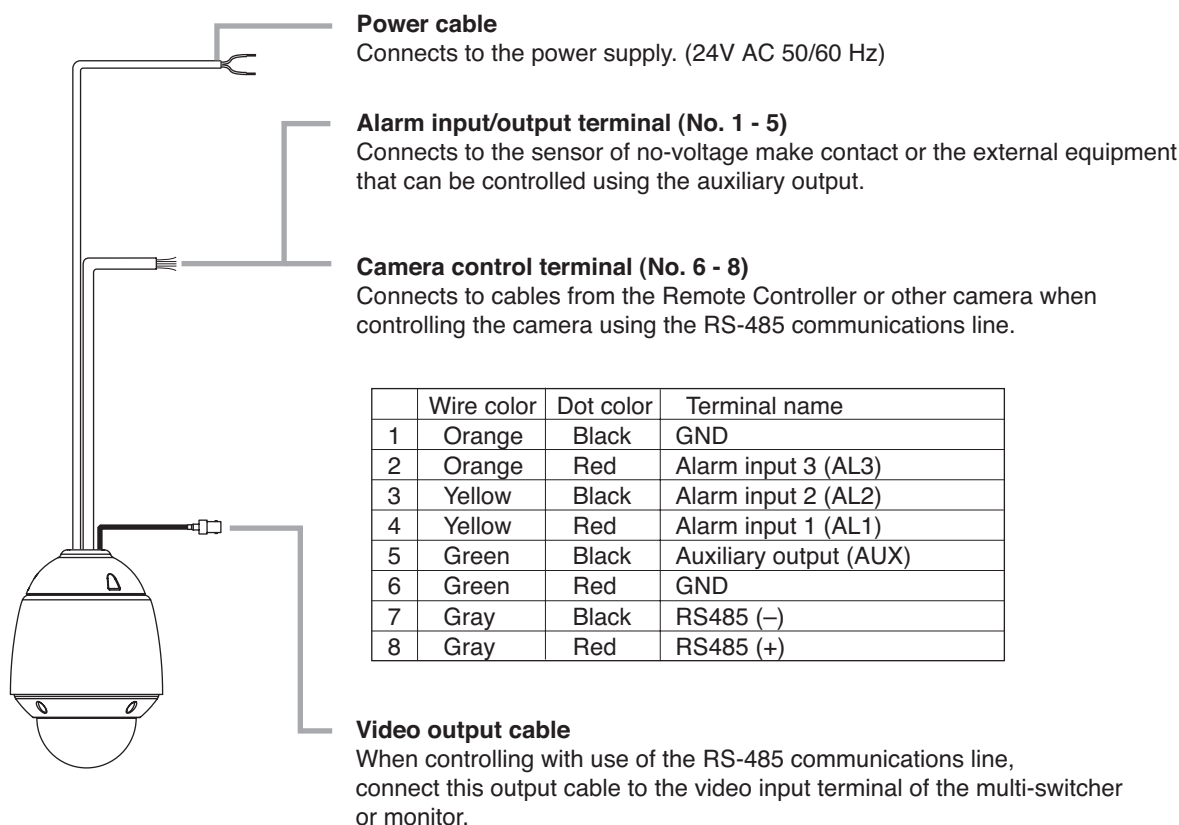
(22) Hook to connect safety wire for housing

(23) Suspension bracket

(24) Pole mounting bracket

\* For handling of (13), (14) and (15), refer to the "Camera Controller Software Operation Manual" of the enclosed CD-R.

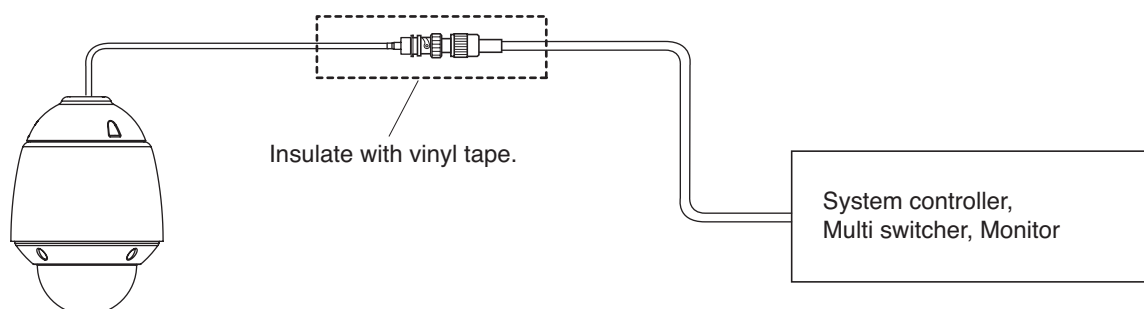
## 6. CONNECTIONS



**Note:** The length of power cable, video output cable and multi wick cable is about 1.8 m.

### 6.1. Precautions When Installing the Camera

- Insulate the joint of the camera video output cable and the coaxial cable from other equipment by wrapping the (vinyl) insulating tape around it. Also, install such cables taking care that they do not contact metal stuff close to them.



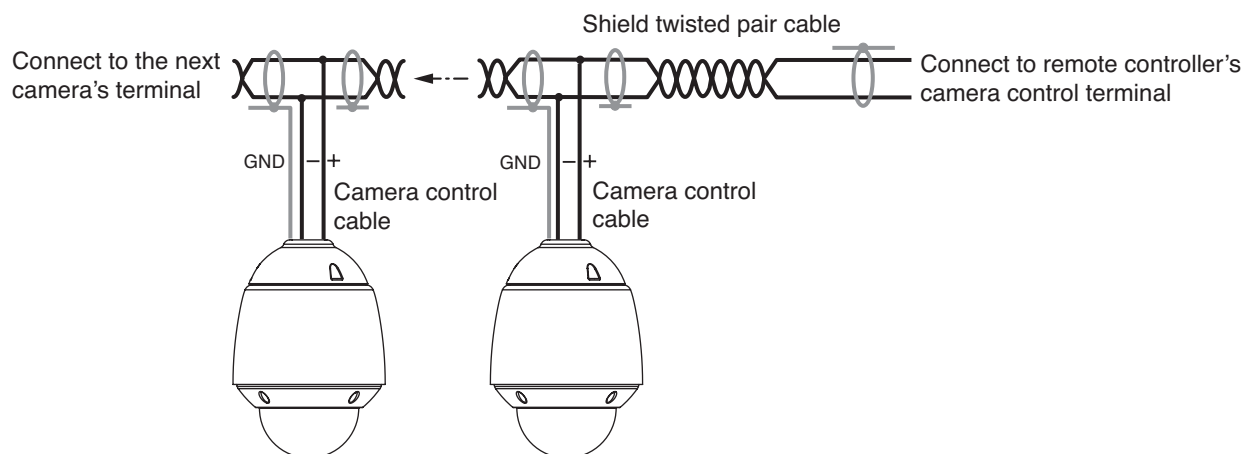
- Avoid install the camera cable in close proximity to other cables of electric products, such as fluorescent lamps. Failure to do this could downgrade the picture quality.
- Installing the camera near the strong electric or magnetic field produced by television transmitting antennas, motors or transformers could distort or shake the monitor screen. In such cases, install the cables in the sheet steel cable piping.
- Before applying the power to the camera, be sure to complete all connections between the camera and related equipment.

## 6.2. Camera Control Connector Connection (RS-485)

- Connect terminals (+) and (–) of the C-RM500 Remote Controller or the C-IF500 Interface Unit to the camera's terminals (+) (terminal No. 8) and (–) (terminal No. 7), respectively.
- Connect the camera's terminals (+) and (–) to the next camera's terminals (+) and (–) in order.

### Notes

- The maximum number of units connectable to a pair of RS-485 lines (from termination to termination) is 32 units including the Remote Controller. The maximum cable length connecting each terminal is 1.2 km in total.
- The camera may not operate correctly if 32 or more units are connected or the total cable distance exceeds 1.2 km. In such cases, split or extend wiring using the C-IF500 Interface Unit.
- Indoor-use and outdoor-use combination cameras can be wired in free combinations.



## 7. CAMERA SETTINGS

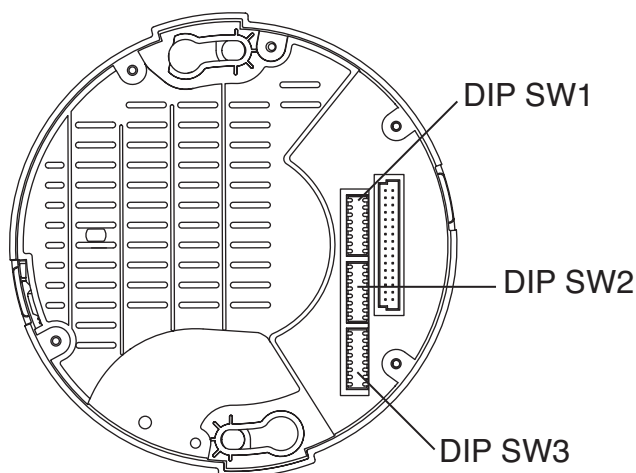
### 7.1. About AUX Output

Open collector output,  
Rated: withstand voltage: 30 V DC,  
Permissible current: under 100 mA

### 7.2. About Alarm Input

No-voltage make contact input,  
Rated: open voltage: 18 V DC,  
Short-circuit current: under 2 mA

## 7.3. Dip Switch Settings



	DIP SW1	DIP SW2	DIP SW3
No.1	Camera address setting switch 1	Communication speed setting switch 1	Firmware update switch 1
No.2	Camera address setting switch 2	Communication speed setting switch 2	Firmware update switch 2
No.3	Camera address setting switch 3	OSD switch	Firmware update switch 3
No.4	Camera address setting switch 4	Unused	Unused
No.5	Camera address setting switch 5	Unused	Unused
No.6	Camera address setting switch 6	Communication method selector switch	Unused
No.7	Camera address setting switch 7	Unused	Memory clear switch
No.8	Camera address setting switch 8	Termination switch	Unused

### Note

Set the unused DIP switches to the "OFF" position.

If the DIP switches are not set correctly, the camera does not operate correctly.

### 7.3.1. Camera Address Setting Switch (DIP Switch 1: No. 1 – 8)

Used to set camera address when using the camera in connection with the C-RM500 Remote Controller. Set the DIP switch so that the address is equal to the connected switcher's channel number. The relationship between switch settings and camera addresses are shown on page 14. (Factory setting: Only No.1 is "ON".)

### Note

If the address switch number does not match with the connected switcher's channel number or if set to the same number as that of other camera connected to the same system, the system does not operate correctly.

### 7.3.2. Communication Speed Setting Switch (DIP switch 2: No. 1 – 2)

Check to be sure that the communication speed set here is the same as that of the Remote Controller. When changing the speed, change settings of all cameras and Remote Controller within the system. (Factory setting: 38,400 bps.)

No.1	No.2	bps
OFF	OFF	38400
O N	OFF	19200
OFF	O N	9600
O N	O N	4800

### 7.3.3. OSD Switch (DIP switch 2: No. 3)

When this switch is set to the OFF position, the initial screen does not disappear until communications with other equipment are established following initial operation after the power has been switched ON. (Factory setting: OFF)

### 7.3.4. Communication Method Selector Switch (DIP switch 2: No. 6)

Chooses the RS-485 communication method from Type A (used with the C-RM500 Remote Controller) and Type B. Set the switch to the OFF position to choose Type A, and to the ON position to choose Type B. (Factory setting: OFF)

### 7.3.5. Termination Switch (DIP switch 2: No. 8)

Set the switch of the camera last connected to the RS-485 communications line to ON. (Factory setting: OFF)

### 7.3.6. Firmware Update Switch (DIP switch 2: No. 1 – 3)

No.1: Used to update Master CPU firmware.

No.2: used to update Slave CPU firmware.

No.3: Temporarily pauses the initial operation.

More particularly, refer to the “Camera Controller Software Operation Manual” of the enclosed CD-R.

### 7.3.7. Memory Clear Switch (DIP switch 3: No. 7)

Switching on the power with this switch set to the ON position returns all camera settings to the initial setting. The indication “Memory Clear” is displayed on the screen while clearing memory. After the indication has disappeared, turn off the power and set the switch to the OFF position.

**Note:** Clock information and backup data are not erased.

[ Camera address setting switch: 1 - 64 ]

No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1
1		17		33		49	
2		18		34		50	
3		19		35		51	
4		20		36		52	
5		21		37		53	
6		22		38		54	
7		23		39		55	
8		24		40		56	
9		25		41		57	
10		26		42		58	
11		27		43		59	
12		28		44		60	
13		29		45		61	
14		30		46		62	
15		31		47		63	
16		32		48		64	

[ Camera address setting switch: 65 - 128 ]

No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1
65		81		97		113	
66		82		98		114	
67		83		99		115	
68		84		100		116	
69		85		101		117	
70		86		102		118	
71		87		103		119	
72		88		104		120	
73		89		105		121	
74		90		106		122	
75		91		107		123	
76		92		108		124	
77		93		109		125	
78		94		110		126	
79		95		111		127	
80		96		112		128	

[ Camera address setting switch: 129 - 192 ]

No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1
129		145		161		177	
130		146		162		178	
131		147		163		179	
132		148		164		180	
133		149		165		181	
134		150		166		182	
135		151		167		183	
136		152		168		184	
137		153		169		185	
138		154		170		186	
139		155		171		187	
140		156		172		188	
141		157		173		189	
142		158		174		190	
143		159		175		191	
144		160		176		192	



[ Camera address setting switch: 193 - 255 ]

No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1	No.	DIP switch 1
193		209		225		241	
194		210		226		242	
195		211		227		243	
196		212		228		244	
197		213		229		245	
198		214		230		246	
199		215		231		247	
200		216		232		248	
201		217		233		249	
202		218		234		250	
203		219		235		251	
204		220		236		252	
205		221		237		253	
206		222		238		254	
207		223		239		255	
208		224		240			

## 8. INSTALLATION



### WARNING

The Combination Camera weight 4.4 kg. Select the heavy-duty mounting surface that can structurally support the weight of the camera. Doing otherwise may result in the unit falling and possibly causing personal injury.

### 8.1. About Installation

- Mount the camera to a heavy-duty wall surface using the optional C-BC711W Wall Mounting Bracket.
- When installing the camera on a pole, use the optional C-BC711W Wall Mounting Bracket, C-BC711PM Pole Mounting Bracket and 2 YS-60B Mounting Bands in combination.
- Mount the camera to a heavy-duty ceiling surface using the optional C-BC711P Suspension Bracket.

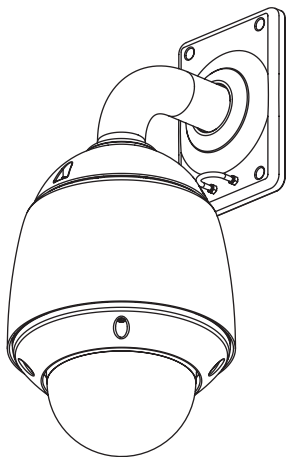
#### Note

Perform presetting beforehand when controlling the camera using the RS-485.  
(refer to p.11 “Camera Settings”.)

### 8.2. Installation Method

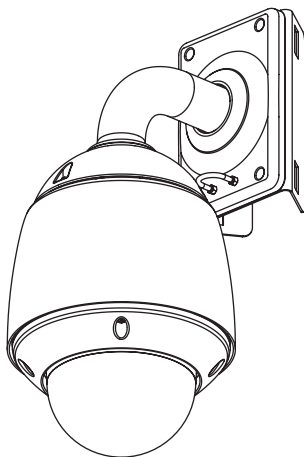
The camera can be mounted on a wall, a pole or be suspended from a ceiling.  
More particularly, refer to each related pages.

[ Wall mounting view ]



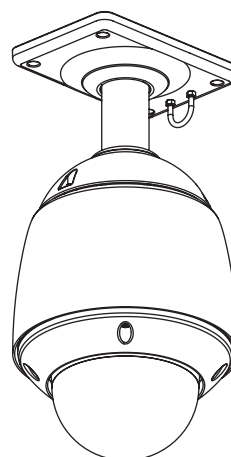
Refer to p.19

[ Pole mounting view ]



Refer to p.27

[ Suspension view ]



Refer to p.28

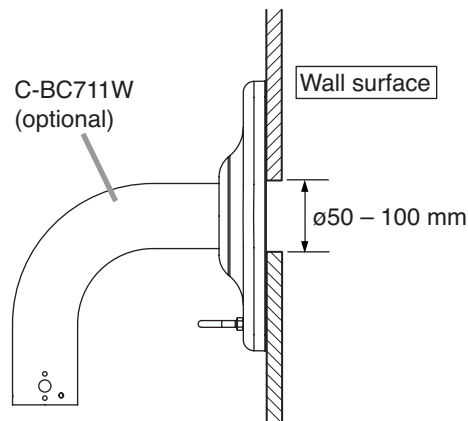
### 8.3. Wall Mounting Bracket Installation

Use the optional C-BC711W Wall Mounting Bracket.

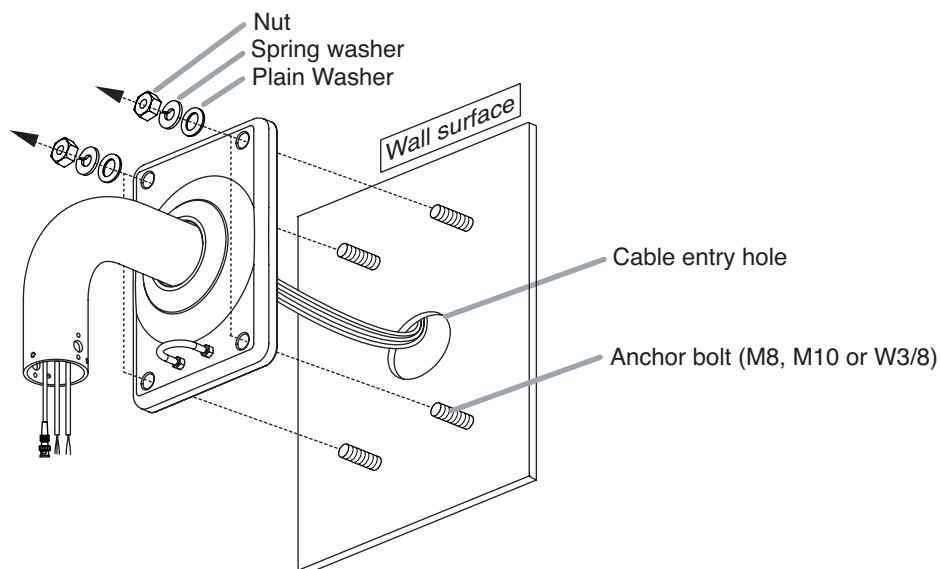
#### Notes

- Check to be sure that wall surface can structurally support the weight of the camera and mounting bracket
- Bolts, nuts and washers are not supplied with the bracket. Use bolts, nuts and washers that are appropriate for the wall's structure and composition.
- Be sure to hang the safety wire first when installing the unit.

1. Make a cable entry hole of  $\varnothing 50 - 100$  mm on a wall.

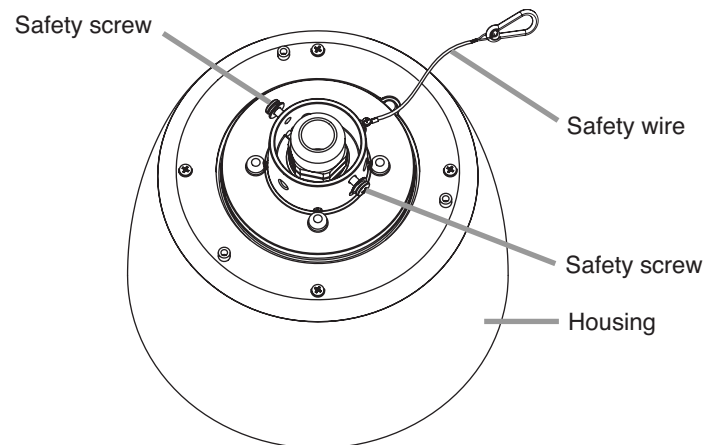


2. Run the cables to be connected to the camera through the wall mounting bracket, then fix the bracket on a wall.

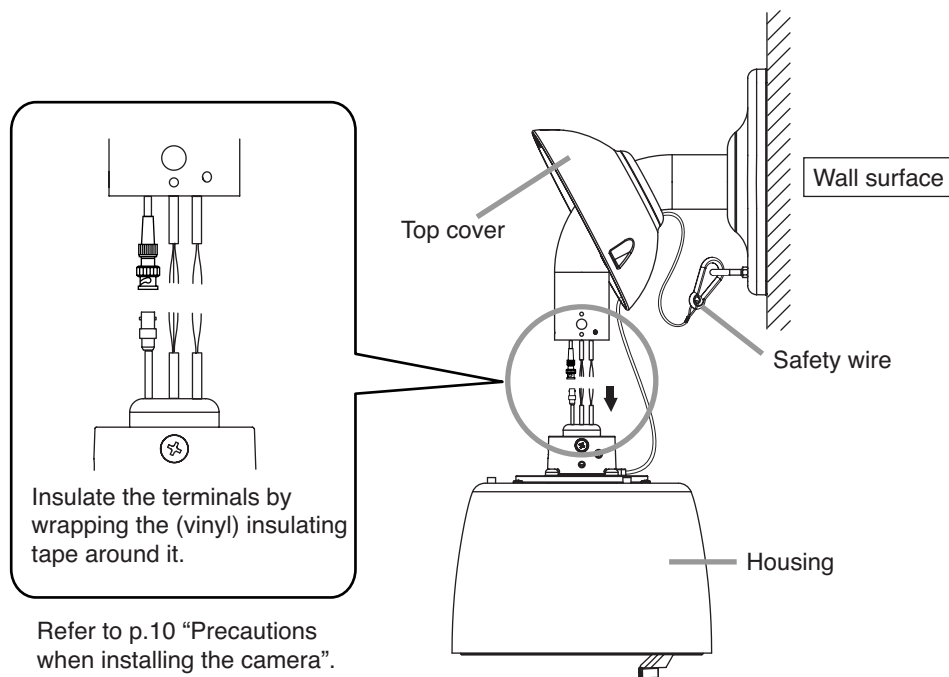


## 8.4. Attaching Housing and Camera Unit to Wall Mounting Bracket

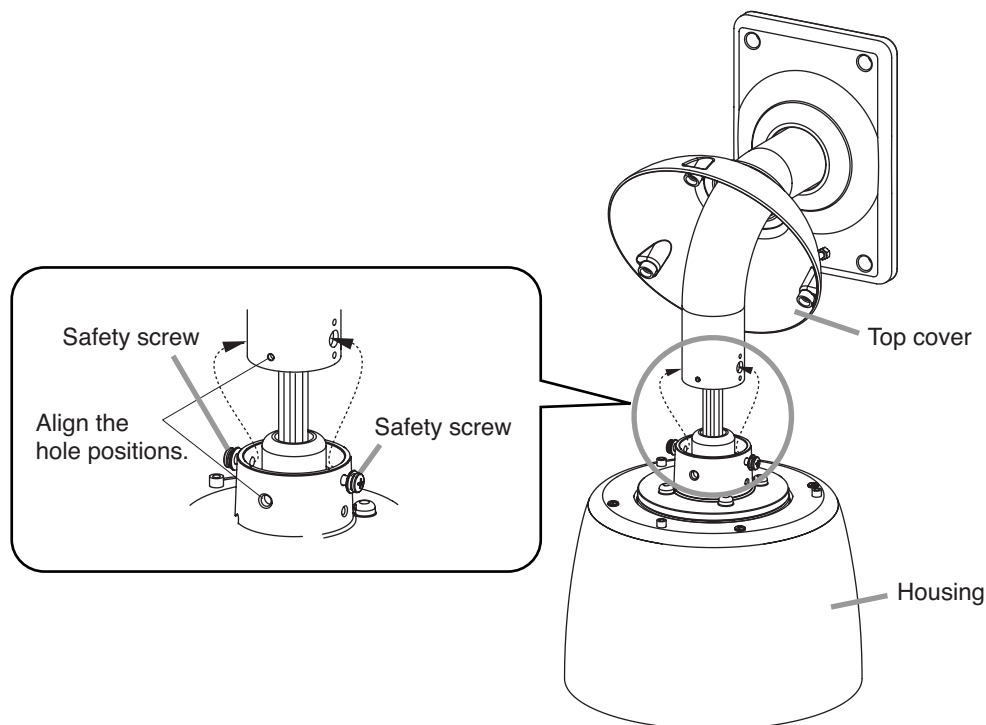
1. Loosen 2 safety screws.



2. Run the safety wire through the top cover, then hang the hook to the mounting bracket.
3. Run the top cover through the pipe, then connect cables.

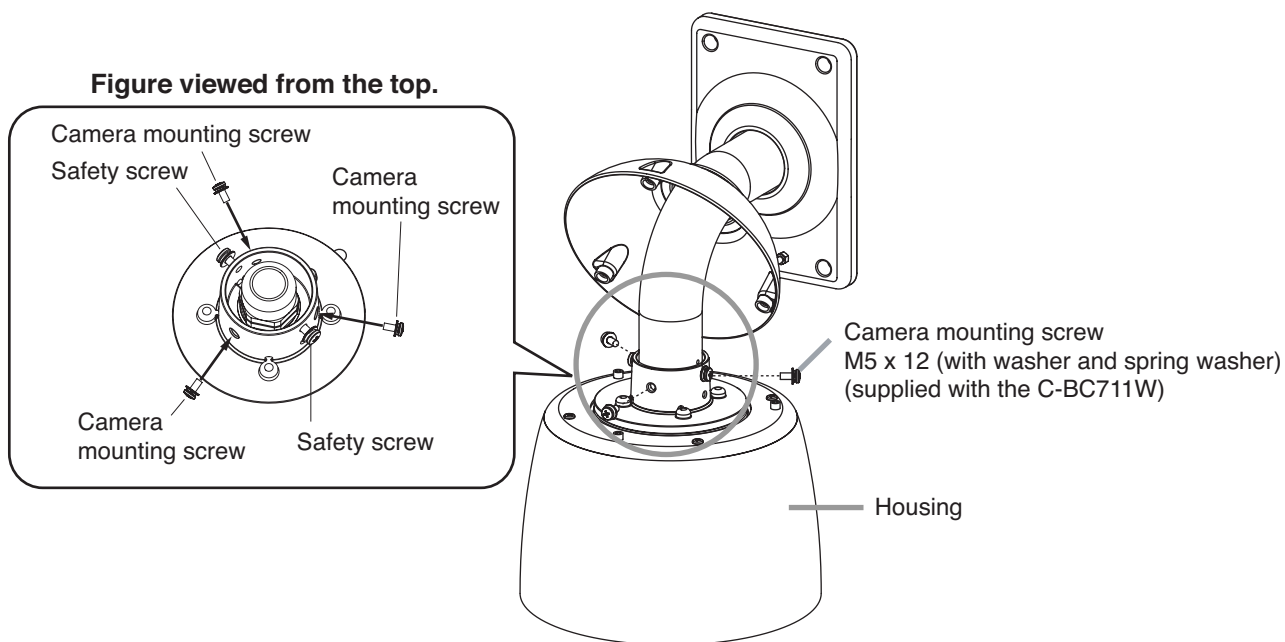


4. After confirming the housing direction, push the housing up, then tighten 2 safety screws.

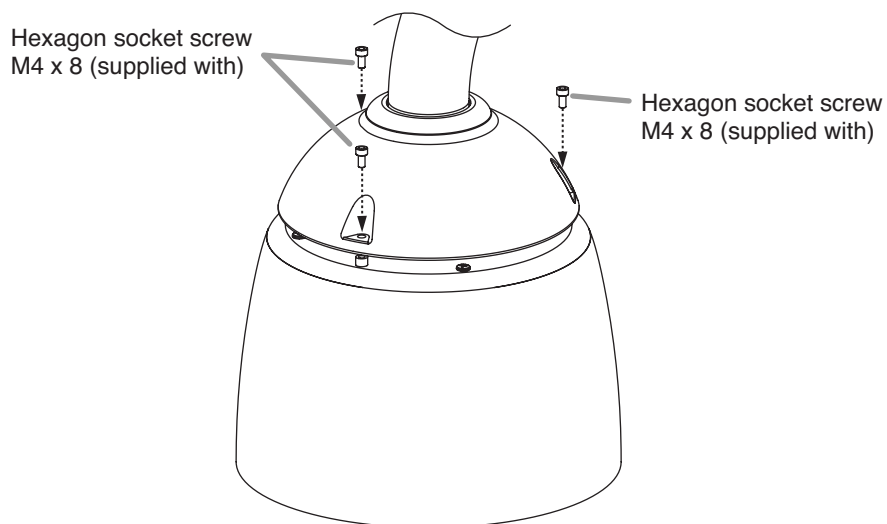


5. Using the 3 supplied camera mounting screws M5 x 12, attach the housing unit to pipe. Tighten 3 screws equally and ensure that no parts rattle.

**Note:** In this event, tighten screws while pressing the housing against the pipe.

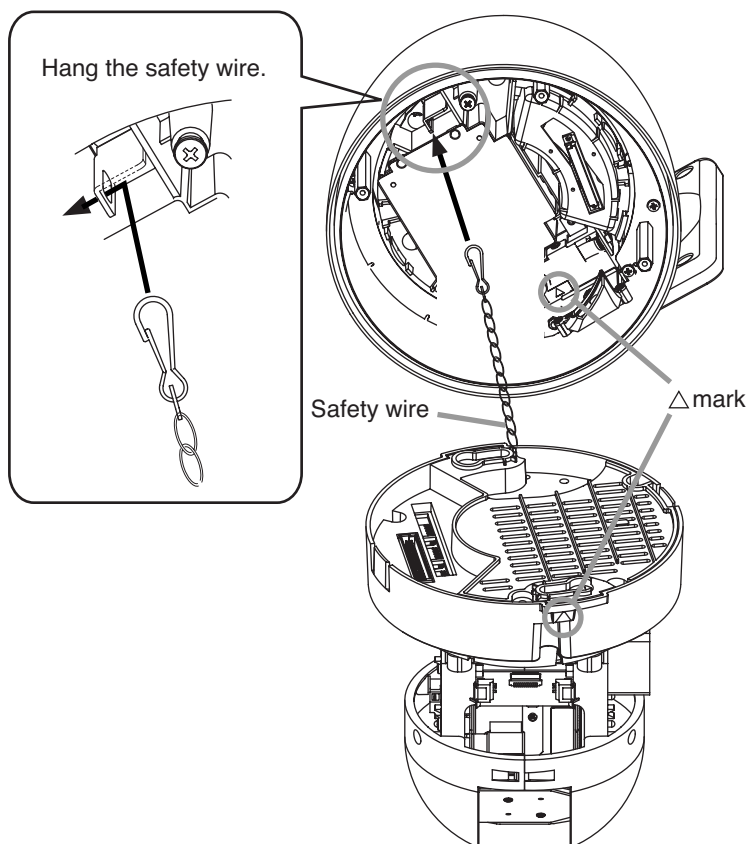


6. Using the supplied 3 hexagon socket screws, attach the top cover 1 to the housing.

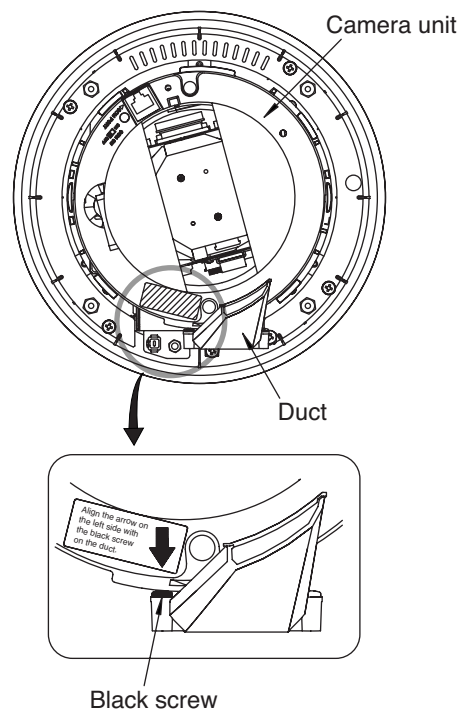


7. Connect the safety wire to the housing projection, then attach the camera unit.

**Note:** Align  $\triangle$  mark of the camera unit with that of the housing when attaching the camera unit to the housing.



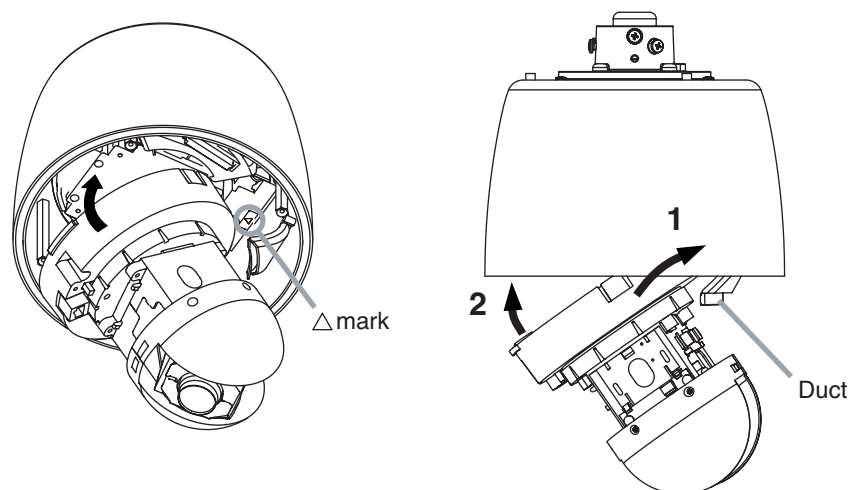
**Aligning the positioning marks  
at the time of camera unit fixation**



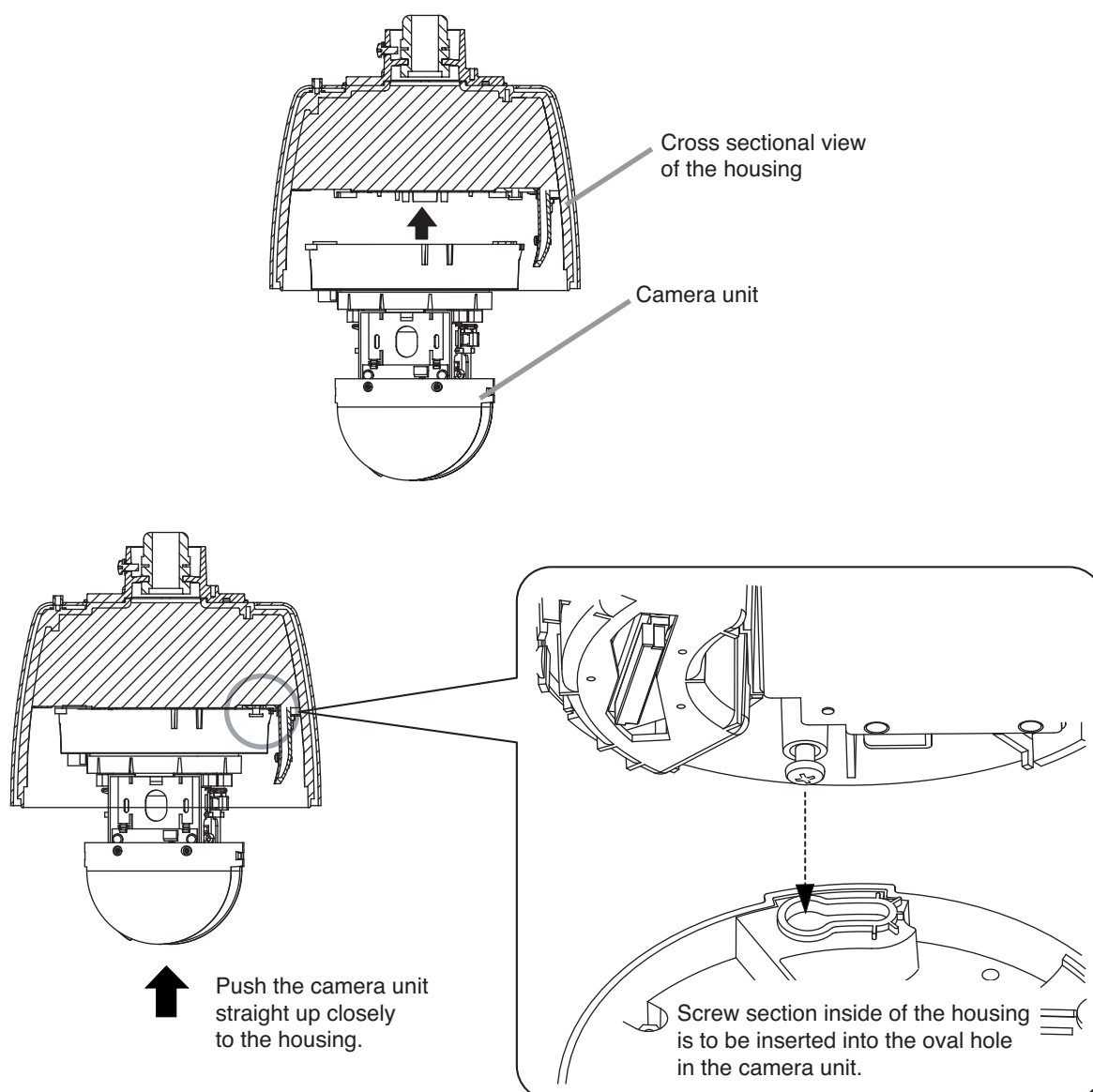
When attaching the camera unit, align the arrow on the label with the black screw on the duct.

**Note**

Insert the camera unit in an oblique direction in the order of 1 to 2 keeping away from the duct of the housing.

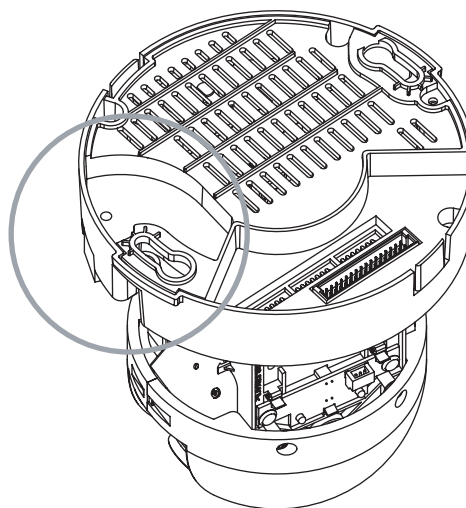
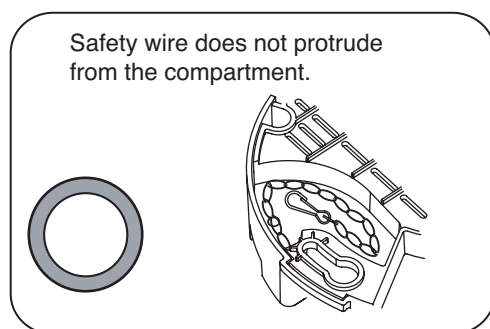
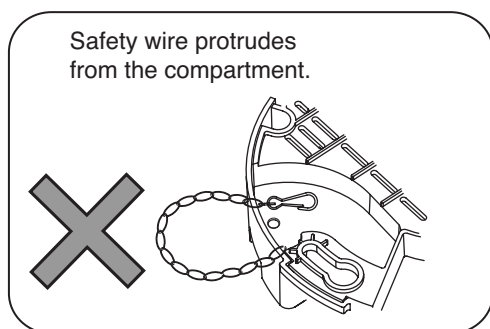


8. Make the camera unit in horizontal position and push it straight up closely to the housing.

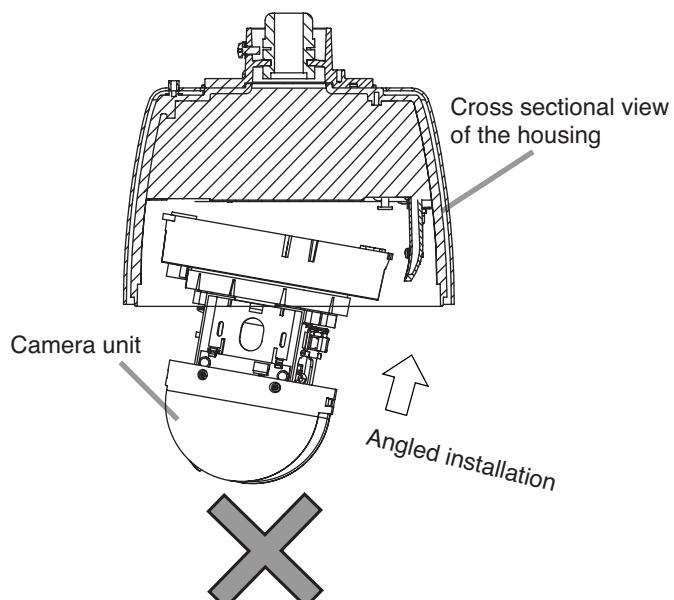
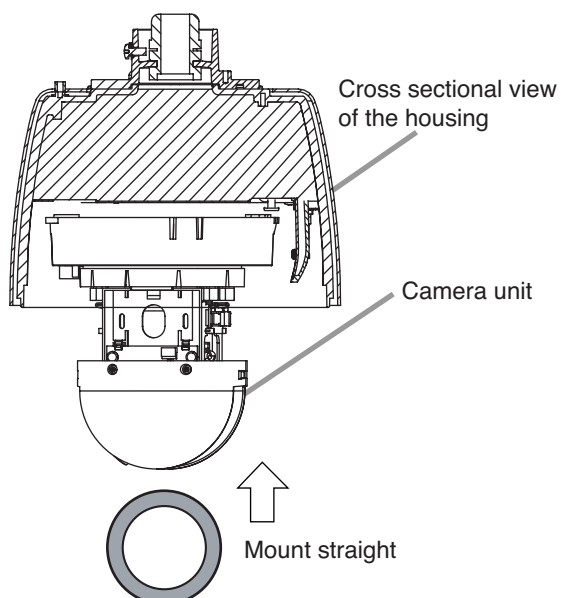


**Note**

Do not allow the safety wire to protrude from the compartment of the camera unit. Damage may be caused to the wire if it protrudes.

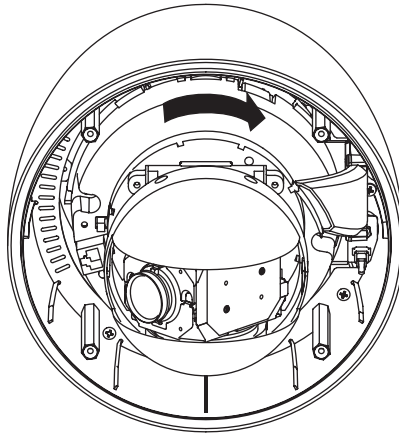
**Note**

When mounting the camera unit to the housing, mount it straight till it is attached to the housing correctly. Mounting it at an angle may cause damage to the camera unit.

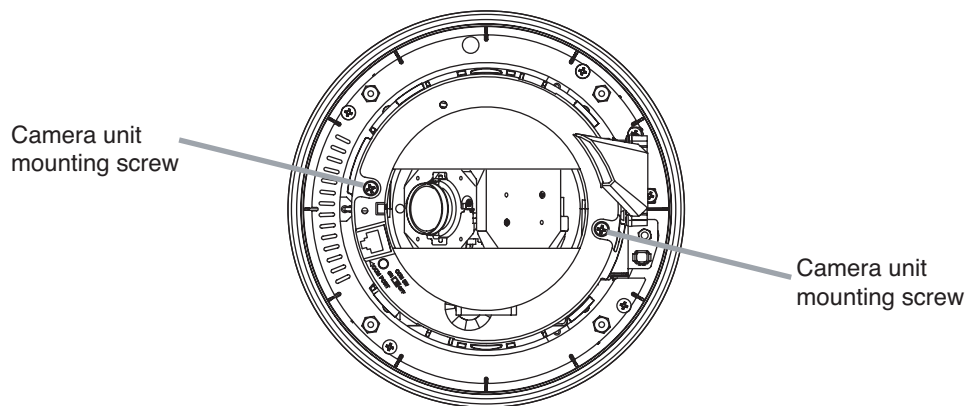




9. Rotate the camera unit until it locks into place.

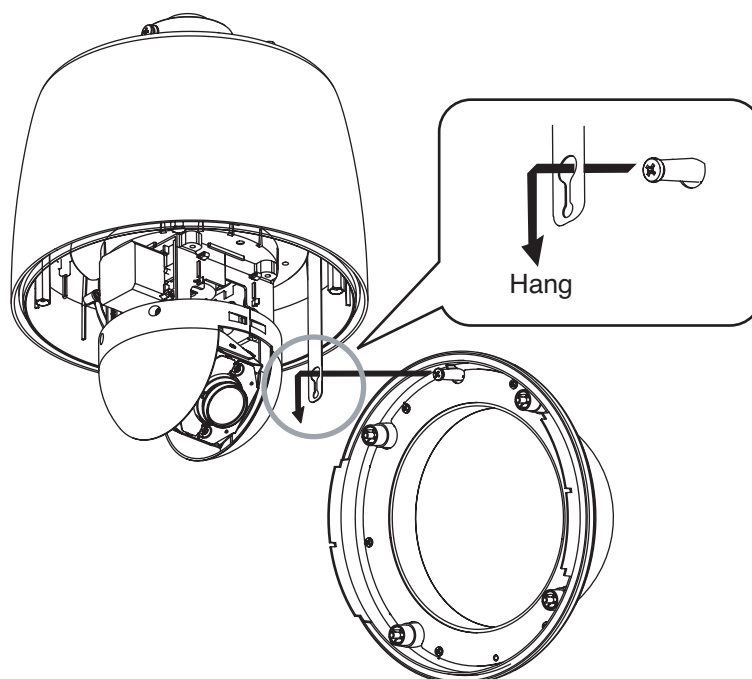


10. Tighten 2 camera unit mounting screws to attach the camera unit to the base unit.



11. Attach the dome cover.

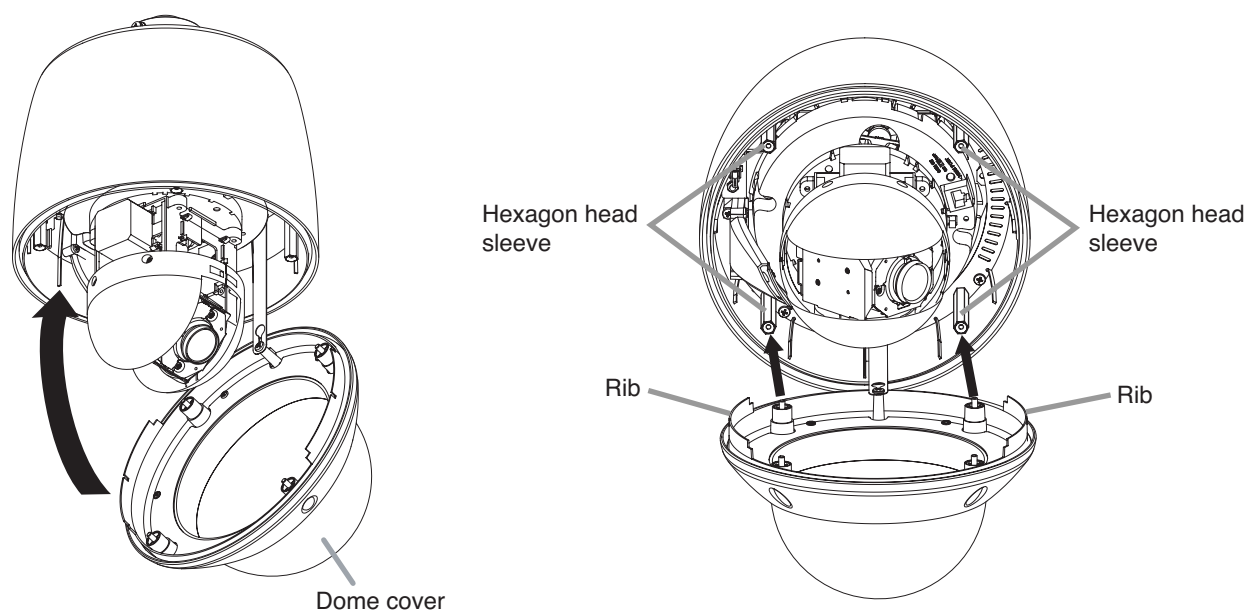
Slide down the dome cover's screw head through the housing suspension fitting's slot.



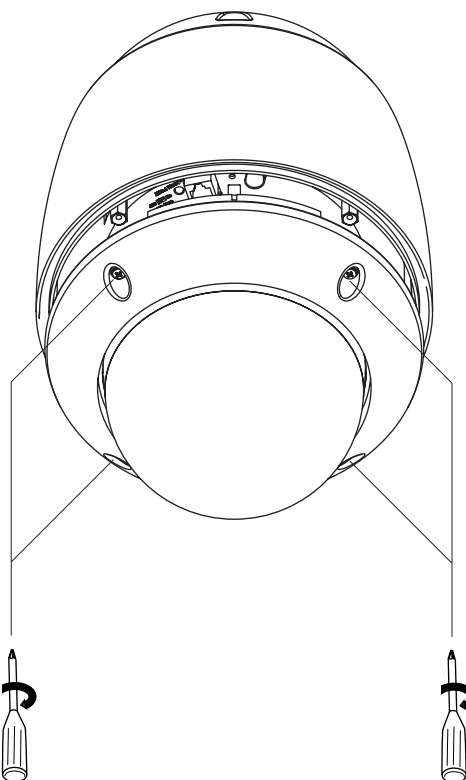
12. Align the dome cover's 4 screws with the hexagon head sleeves inside the housing.

**Note**

Be sure to attach the dome cover after sliding down its screw head through the housing suspension fitting's slot so that the dome cover can be attached securely to the housing.



13. Tighten 4 screws equally to attach the dome cover to the housing and ensure that the dome cover does not rattle.



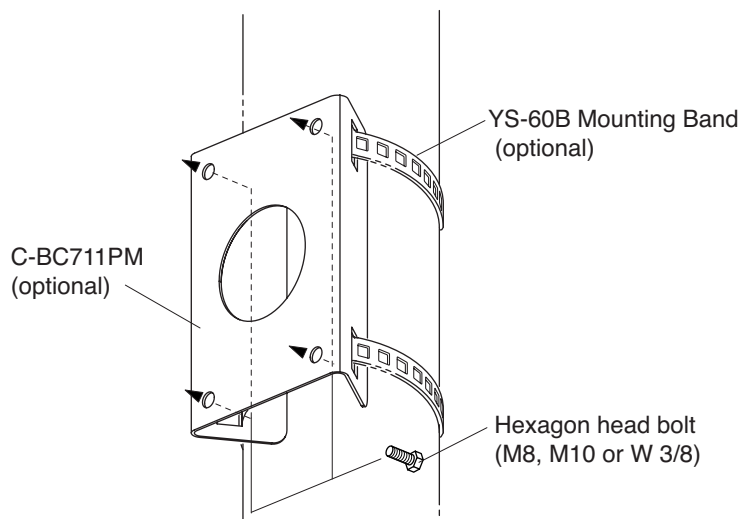
## 8.5. Pole Mounting Bracket Installation

The optional C-BC711PM Pole Mounting Bracket, C-BC711W Wall Mounting Bracket and YS-60B Mounting Band are required to mount the camera on a pole.

### Note

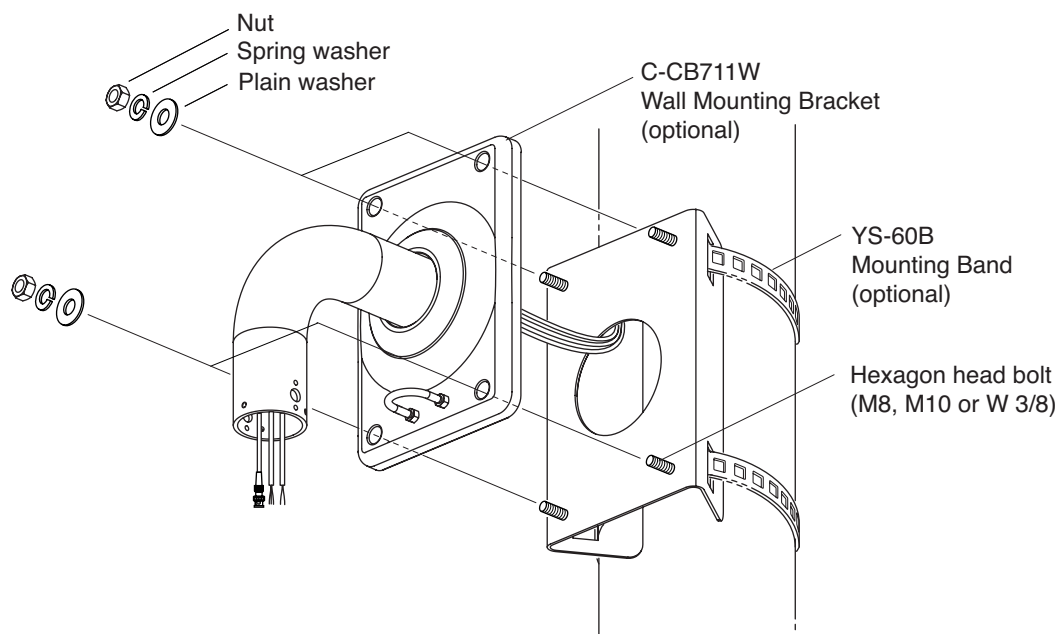
Those mounting brackets and band can be installed on a pole having a mounting pipe diameter of 90 - 340 mm. Be sure to use 2 mounting bands. If mounting band is too long, cut it.

1. Insert the optional mounting bands into the pole mounting bracket's slots, then attach the band to a pole.



2. Attach the wall mounting bracket to the pole mounting bracket.

**Note:** Bolts, nuts and washers for fixing are not supplied with the bracket.



3. For installation procedures of the housing, camera unit and the dome cover, refer to p.20 as the procedures are the same as that of wall mounting.

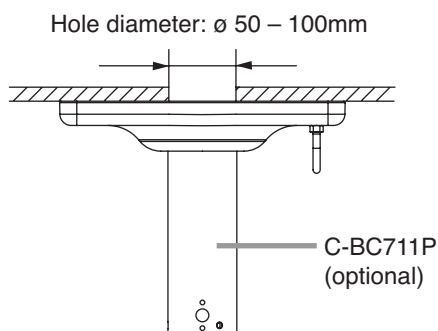
## 8.6. Suspension Bracket Installation

The C-BC711P Suspension Bracket is required to suspend the camera from a ceiling.

### Note

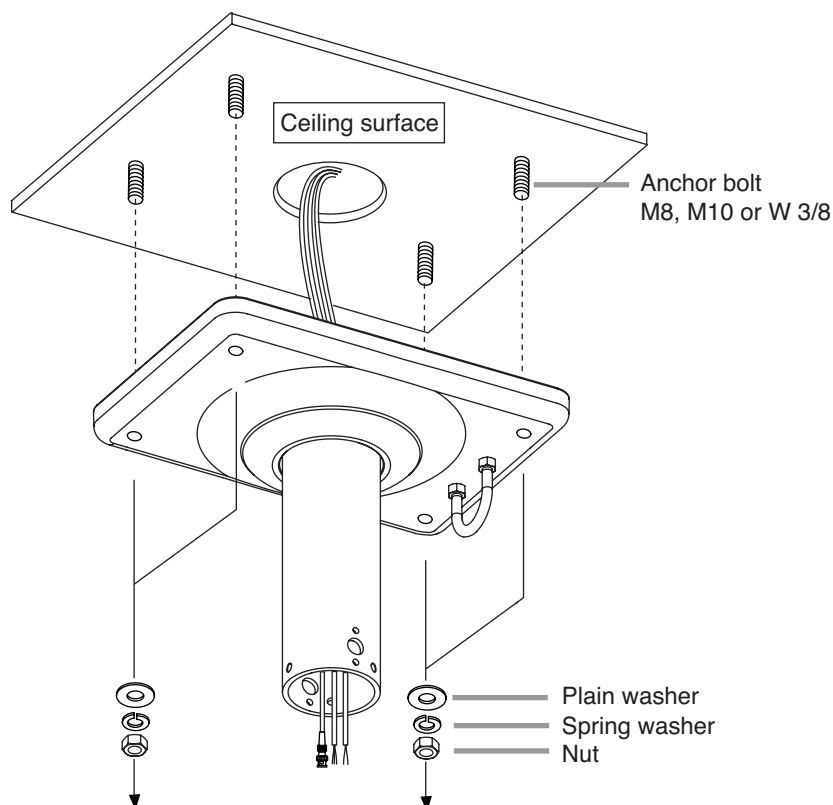
Mount the bracket to a concrete wall or robustly constructed wall surface that can sufficiently withstand the weight of the units.

1. Make a cable entry hole of  $\varnothing 50 - 100\text{mm}$  on a ceiling.



2. Attach the suspension bracket to a ceiling.

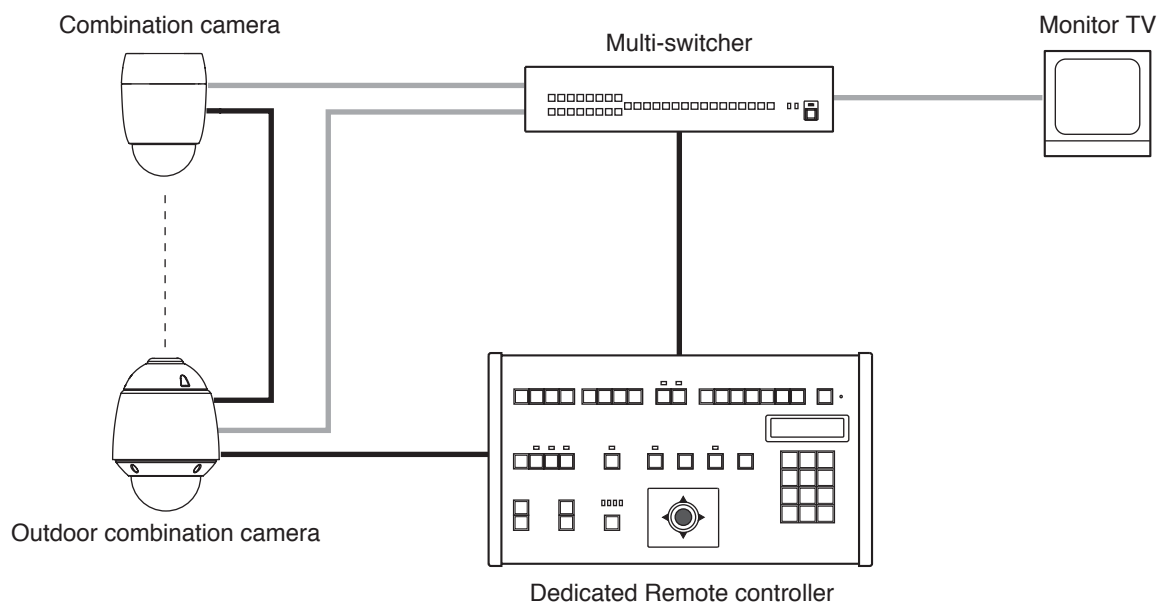
**Note:** Bolts, etc. are not supplied with the bracket.



3. For installation procedures of the housing, camera unit and the dome cover, refer to p.20 as the procedures are the same as that of wall mounting.

## 9. SYSTEM EXAMPLES

### [ RS-485 Communications line control ]



#### Note

Combination cameras and outdoor combination cameras can be used in free combinations. When a camera (fixed installation\*1 ) is used in combinations, the corresponding camera screens can be controlled by the switcher only.

## 10. SPECIFICATIONS

Model	C-CC764 NT	C-CC764 PL
Power Source	24 V AC, 50/ 60 Hz (2P loose end)	
Power Consumption	10 W (normal operation), 80 W max.	
Control system	RS-485 communications system (new protocol compatible)	
Video Output	VBS 1.0 V(p-p), 75 Ω, BNC-R jack	
Camera Control Terminal	RS-485 camera control connector, multi-pair cable 8P loose end (3P out of 8P)	
Alarm Input	3-channels, no-voltage make contact input, open voltage: 18 V DC, short-circuit current: under 2 mA(settable alarm action), multi-pair cable 8P loose end (3P out of 8P)* <sup>1</sup>	
Auxiliary Contact Output	1 channel, open collector output, withstand voltage: 30 V DC, permissible current: under 100 mA, multi-cable 8P loose end (3P out of 8P)* <sup>1</sup>	
Synchronization	Internal synchronization/ power synchronization (phase adjustable when in power synchronization mode)* <sup>2</sup>	
ID	each 8 alphanumeric character, camera/ position/ trace/ auto-panning/ tour/ home/ sector/ AUX	
No. of Preset Positions	255 positions * <sup>1</sup>	
Automatic operation	Auto-panning, Preset Sequence, Trace (2 patterns (60 sec.) possible to memorize), Tour (possible to memorize 16 patterns)	
Timer	Refresh: Start at the preset time every day or every week by timer settings Program: Settable 16 actions	
Camera		
Image Device	1/4 type CCD	
Resolution Horizontal	Horizontal: 480 lines (at center)	
S/N Ratio	50 dB	
Minimum Illumination	High-sensitivity function OFF: 3 lx (50IRE), 1 lx (20IRE) High-sensitivity function ON: 0.03 lx (50IRE), 0.01 lx (20IRE)	
Backlight Compensation	wide dynamic/ pattern 1/ pattern 2/ pattern 3/ OFF	
Dynamic range	46 dB (Backlight compensation: when wide dynamic ON)	
High-Sensitivity Function	B/W mode, Slow shutter mode (32 times max.)	
White Balance	ATW/ AWB	
Flicker Reduction	Automatic correction	
Electronic Zooming	12 x zooming	
Auto-Focus	One push/ stop AF/ continuous	
Lens		
Zooming	23 x	
Effective Focal Length	f = 3.6 – 82.8 mm (23 times)	
Effective Horizontal View Angle	Horizontal: 54° (W) – 2.5° (T), Vertical: 41.6° (W) – 1.9° (T)	
Maximum Aperture	F 1.6 (W) – 3.7 (T)	
Zooming Speed	WIDE end to TELE end Approx. 1.5 s (preset operation), Approx. 2.9 s (manual operation)	
Pan/Tilt Head		
Rotating Range	Panning: endless 360° rotation, Tilting: +5° to –185°	
Rotating Speed	Panning/ Tilting: 360°/s max. (preset operation), 360°/s max. (manual operation)	
Other Functions	Auto-flip, Freeze preset, Manual limit, Privacy masking (up to 8), Motion detect (each 8 presets at each 4 positions)	
Operating Temperature	–40 to 50°C	
Operating Humidity	Under 90% (no due condensation produced)	
Applicable Place	Indoors/ outdoors (avoid installing the unit on shore, in industrial area or in locations exposed to corrosive gas, fine particles or unexpected strong wind.)	
Dustproof/Waterproof Capability	IP66	
Finish	Case/ Top cover/ Decorative frame: PC resin, light gray Sunshade: Aluminum, light gray, paint Dome cover: PC resin (transparent)	
Dimensions	Camera section external diameter: ø230 x 330.5 (H) mm Dome external diameter: ø150 mm	
Weight	4.4 kg	

Model	C-CC714 NT	C-CC714 PL
Power Source	24 V AC, 50/ 60 Hz (2P loose end)	
Power Consumption	10 W (normal operation), 80 W max.	
Control system	RS-485 communications system (new protocol compatible)	
Video Output	VBS 1.0 V(p-p), 75 Ω, BNC-R jack	
Camera Control Terminal	RS-485 camera control connector, multi-pair cable 8P loose end (3P out of 8P)	
Alarm Input	3-channels, no-voltage make contact input, open voltage: 18 V DC, short-circuit current: under 2 mA(settable alarm action), multi-pair cable 8P loose end (3P out of 8P)* <sup>1</sup>	
Auxiliary Contact Output	1 channel, open collector output, withstand voltage: 30 V DC, permissible current: under 100 mA, multi-cable 8P loose end (3P out of 8P)	
Synchronization	Internal synchronization/ power synchronization (phase adjustable when in power synchronization mode)* <sup>2</sup>	
ID	each 8 alphanumeric character, camera/ position/ trace/ auto-panning/ tour/ home/ sector/ AUX	
No. of Preset Positions	255 positions	
Automatic operation	Auto-panning, Preset Sequence, Trace (2 patterns (60 sec.) possible to memorize), Tour (possible to memorize 16 patterns)	
Timer	Refresh: Start at the preset time every day or every week by timer settings Program: Settable 16 actions	
Camera		
Image Device	1/4 type CCD	
Resolution Horizontal	Horizontal: 480 lines (at center)	
S/N Ratio	50 dB	
Minimum Illumination	High-sensitivity function OFF: 1 lx (50IRE), 0.3 lx (20IRE) High-sensitivity function ON: 0.03 lx (50IRE), 0.01 lx (20IRE)	
Backlight Compensation	pattern 1/ pattern 2/ pattern 3/ OFF	
High-Sensitivity Function	Slow shutter mode (32 times max.)	
White Balance	ATW/ AWB	
Flicker Reduction	Automatic correction	
Electronic Zooming	12 x zooming	
Auto-Focus	One push/stop AF/continuous	
Lens		
Zooming	22 x	
Effective Focal Length	f = 4.0 – 88 mm (22 times)	
Effective Horizontal View Angle	Horizontal: 47.3° (W) – 2.2° (T), Vertical: 36.5° (W) – 1.7° (T)	
Maximum Aperture	F 1.6 (W) – 3.8 (T)	
Zooming Speed	WIDE end to TELE end Approx. 1.3 s (preset operation), Approx. 2.4 s (manual operation)	
Pan/Tilt Head		
Rotating Range	Panning: endless 360° rotation, Tilting: +5° to –90°	
Rotating Speed	Panning/ Tilting: 360°/s max. (preset operation), 360°/s max. (manual operation)	
Other Functions	Manual limit	
Operating Temperature	–40 to 50°C	
Operating Humidity	Under 90% (no due condensation produced)	
Applicable Place	Indoors/ outdoors (avoid installing the unit on shore, in industrial area or in locations exposed to corrosive gas, fine particles or unexpected strong wind.)	
Dustproof/Waterproof Capability	IP66	
Finish	Case/ Top cover/ Decorative frame: PC resin, light gray Sunshade: Aluminum, light gray, paint Dome cover: PC resin (transparent)	
Dimensions	Camera section external diameter: ø230 x 330.5 (H) mm Dome external diameter: ø150 mm	
Weight	4.4 kg	

\*<sup>1</sup> Either internal synchronization or power synchronization is selected when operated by the RS-485 communications control.

**Note:** The design and specifications are subject to change without notice for improvement.

• **Accessories**

CD-R (CAMARA CONTROLLER Software, installation manual) .....	1
Hexagon socket screw M4 x 8 .....	3

• **Optional Products**

Wall Mounting Bracket:	C-BC711W
Suspension Bracket:	C-BC711P
Pole Mounting Bracket:	C-BC711PM
Mounting Band:	YS-60B
Smoked dome cover:	C-A711DM

