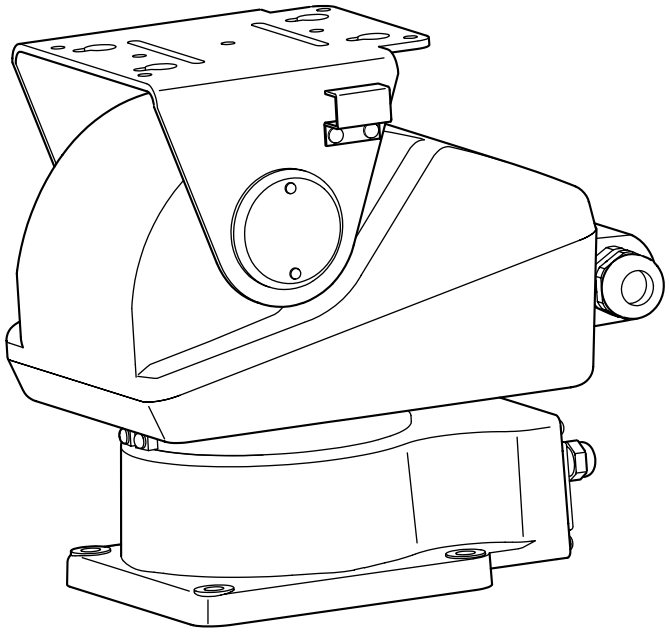
TOA

INSTRUCTION MANUAL

OUTDOOR PAN/TILT HEAD C-PH200



Thank you for purchasing TOA's Outdoor Pan/Tilt Head. Please carefully follow the instructions in this manual in order to ensure long, trouble-free use of your pan/tilt head.

TOA Corporation

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1. SAFETY PRECAUTIONS

- Be sure to read the instructions in this manual section carefully before use.
- Make sure to observe the instructions in this section as the conventions of safety symbols and messages regarded as very important are included.
- Please 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 equipment, read this manual first so you are thoroughly aware of the potential safety hazards as well as understand the safety symbols and messages.

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

When Installing the Pan/Tilt Head

- 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.
- To prevent lightning strikes, install the unit at least 5 meters away from a lightning conductor yet within the protective range (angle of under 45 degrees) of the lightning conductor. Lightning may cause a fire, electric shock or personal injury.
- Leave the installation of the unit to your TOA dealer because the installation requires expert knowledge. If an inexperienced installer installs the unit, the unit may fall, 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 and causing personal injury.
- Avoid installing the unit in vibratory locations. Mounting screws and bolts loosen, which causes the unit to fall off, possibly resulting in personal injury.
- When installing the unit in snowy areas, take appropriate measures to protect the unit against snow. The accumulation of snow causes the unit to fall off, possibly resulting in personal injury.
- Be sure to install the unit with two or more persons. If it is handled by a single person, the unit may fall or topple over, causing personal injury.
- Install the unit only with the specified method. Failure to follow this instruction may cause extreme force to be applied to the unit and the unit to fall, resulting in personal injury.

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

When Installing the Pan/Tilt Head

- 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 personal injury.
- Tighten each nut and bolt securely. Ensure that there are no loose joints after installation to prevent accidents that could result in personal injury.
- Use the specified type of camera housing and wall mounting bracket. If the unit is installed in combination with equipment not specified, the unit may fall, possibly resulting in personal injury.
- Avoid installing the unit in locations exposed to sea breeze or corrosive gas. The unit or its mount may be subject to corrosion, which could cause the unit to fall, possibly resulting in personal injury.
- NEVER operate the Remote Controller while somebody is handling the pan/tilt head. Fingers can be caught in the moving pan/tilt head mechanism, possibly resulting in personal injury.

When Using the Pan/Tile Head

- Should the following irregularities be found during use, immediately switch off the power, disconnect the power supply plug from the AC outlet and contact your nearest TOA dealer. Do not attempt to further operate the unit to avoid fire or electric shock.
  - If you detect smoke or a strange smell coming from the unit.
  - If water or other foreign objects get 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.)[Remove a power supply cord.]

- Do not open the unit's case for modification. Since there are high voltage components inside the unit, opening or modifying the case may result in fire or electric shock. Refer all servicing to your TOA dealer.

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

When Installing the Pan/Tilt Head

- Notes on Housing Cable Connections
  Be sure to observe the following precautions. Failure to do so could cause damage to the cable when the pan/tilt head rotates, possibly causing a fire.
  - Fix the housing cable securely with a cable clamp to prevent its contact with other parts and components.
  - Fix the housing cable so that extreme force is not applied to the cable when the pan/tilt head rotates in the vertical direction.

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

When Installing the Pan/Tilt Head

- Take care so that the housing's front end does not contact a control input cable.The cable may be damaged by the rotation of the pan/tilt head, possibly causing a fire.

When Using the Pan/Tile Head

- Do not place heavy objects on the unit as this may cause the unit to topple over or fall down and personal injury could result.
- Use a dedicated power supply unit. The use of other power supply unit could cause a fire.
- Do not stand or sit on, nor hang down from the unit as this may cause the unit to topple over or fall down, possibly resulting in personal injury.
- Have the unit periodically checked by the dealer from where it was purchased. Should the unit or its mount corrode or structurally deteriorate, the unit could fall down, possibly resulting in personal injury.

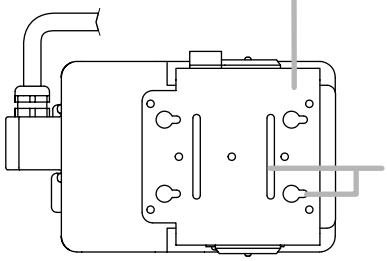
2. GENERAL DESCRIPTION

The TOA C-PH200 is a rainproof and dustproof motorized pan/tilt head designed for both indoor and outdoor applications. Mounted with a camera housing (TOA's C-CH100, C-CH100FH and C-CH200 Series) containing television camera and zoom lens, etc., the C-PH200 pan/tilt head can be rotated vertically and horizontally by remote control, thus greatly extending the camera's range of surveillance capability.
The C-PH200 also features an Auto-Pan function (continuous horizontal rotation with automatic reverse).

3. HANDLING PRECAUTIONS

- Be sure to switch off the power before cleaning. To clean, wipe with a dry cloth. When the unit is extremely dirty, use a cloth dampened in a neutral detergent. Never use benzene, thinner and chemically treated towel as the use of such volatiles could damage the unit's finish.
- Avoid leaving the Auto-Pan function enabled for extended periods of time, as the unit's operating life may be diminished due to lubricant loss and resulting gear wear. The unit's estimated life span is approximately 5,000 hours or 200,000 Auto-Pan reverse operations.
- Avoid exposing the moving assembly to strong shocks, as operating parts could be damaged or the unit's life span shortened.
- Adjust the center of gravity of mounted components to within the permissible range of tolerance. If the center of gravity is set outside the tolerance range, the unit may not be able to move on its own, even if the mounted component is within the permissible weight limit. The movement's gears may also become damaged and their life span shortened.
- Unit operation may be impaired due to freezing winter temperatures. Take appropriate anti-freezing measures when operating in such cold conditions.

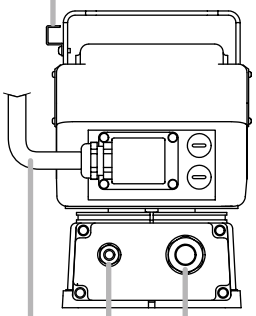
4. NOMENCLATURE AND FUNCTIONS

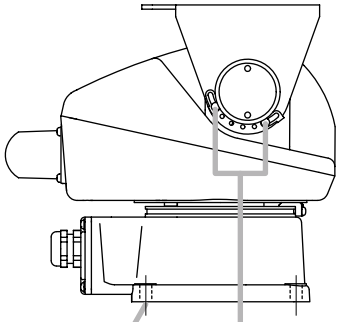


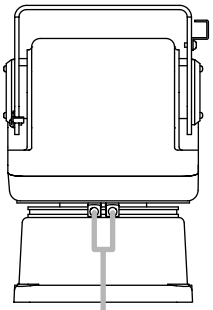
Camera mounting plate
Attach a camera housing (C-CH200 Series, C-CH100 and C-CH100FH) to this plate. Refer to p. 11.

Housing mounting slot
Used to mount a camera housing. Refer to p. 11.

Cable clamp
Fixes housing cables. Refer to p. 11.







Pan/tilt head mounting hole

Cam fixing screw
(for horizontal rotation angle adjustment)
Horizontal rotation angle is adjustable in the range of 175°(left) to 175°(right). Both left and right angles are factory-preset to 175°. Refer to p. 8.

Cam fixing screw
(for vertical rotation angle adjustment)
Vertical rotation angle is adjustable in the range of 20°(upward) and 70°(downward). Upward angle is factory-preset to 20°and downward angle to 70°. Refer to p. 8.

Control input cable bushing
Run the pan/tilt head control cable through this bushing. Refer to p. 9.

Coaxial cable bushing
Run the video signal cable through this bushing. Refer to p. 9.

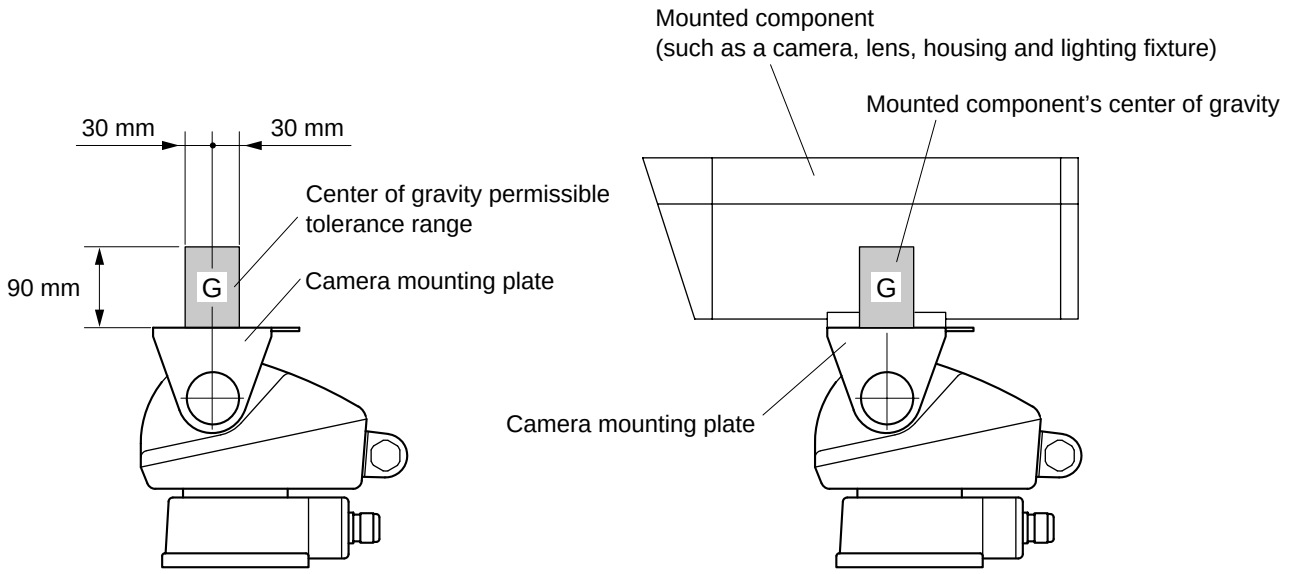
Housing cable
Used for connections to a camera housing.

5. INSTALLATION

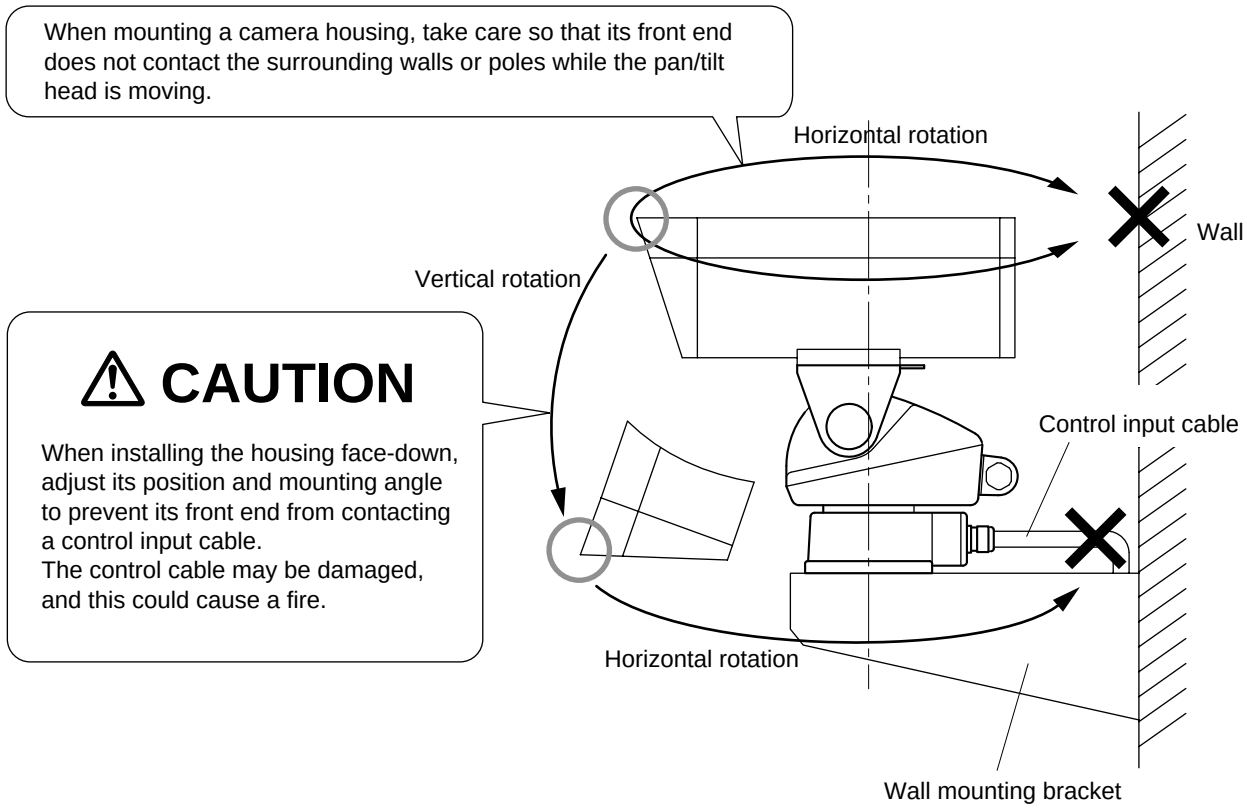
5.1. About the Center of Gravity of Mounted Components

When mounting components, adjust their center of gravity (G) to within the permissible range of tolerance shown below.

Note
If the center of gravity is set outside the tolerance range, the pan/tilt head may not be able to move on its own, even if the mounted component is within the permissible weight limit. The movement's gears may also become damaged and their life span shortened.



5.2. Housing Front End and Its Surrounding Impediments



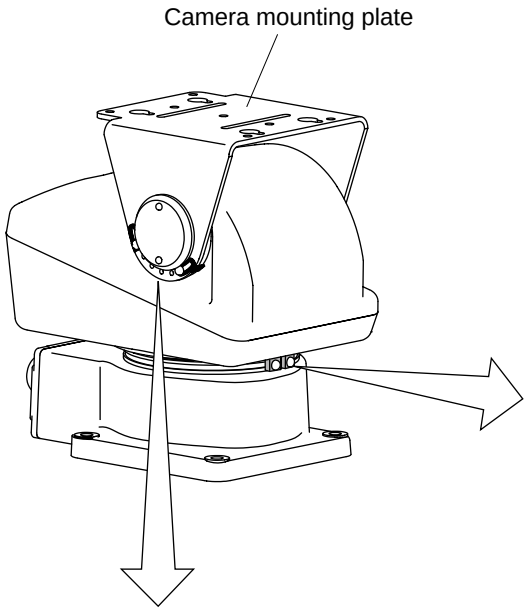
5.3. Rotation Angle Adjustment

- The C-PH200 is shipped preset to the maximum horizontal and vertical rotation angles including 20° upward, 70° downward, and 175° left and right. These rotation angles can be adjusted as shown below to accommodate particular requirements of installation location and/or purpose of use.
- Use a Phillips screwdriver to adjust rotation angles.

Note

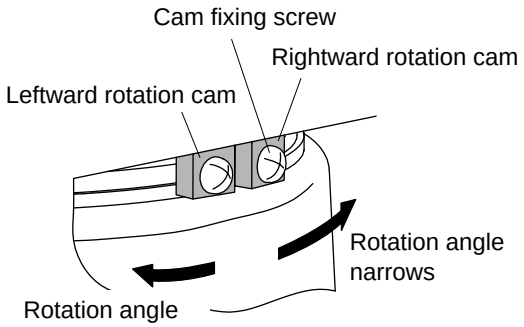
- The C-PH200 does not come with a graduated angle plate for setting rotation angles. Therefore, be sure to check the unit's full rotation angle with an operation test.
- If the C-PH200 is suspended (i.e. is mounted "upside-down"), then throughout this manual the word "left" should be read as "right", and the word "right" should be read as "left". (For example, read "leftward" rotation cam as "rightward" rotation cam.) Similarly, read "upward" as downward" and vice versa.

⚠ WARNING Do not operate the Remote Controller while somebody is handling the pan/tilt head, as fingers may become caught in the pan/tilt head, resulting in personal injury!



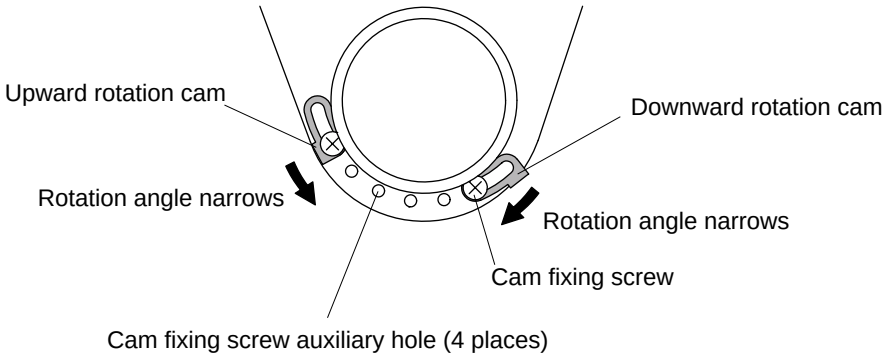
Adjusting the horizontal rotation angle

Loosen the cam fixing screw to allow the cam to move in the direction indicated by the arrow, and tighten while set in the desired position.



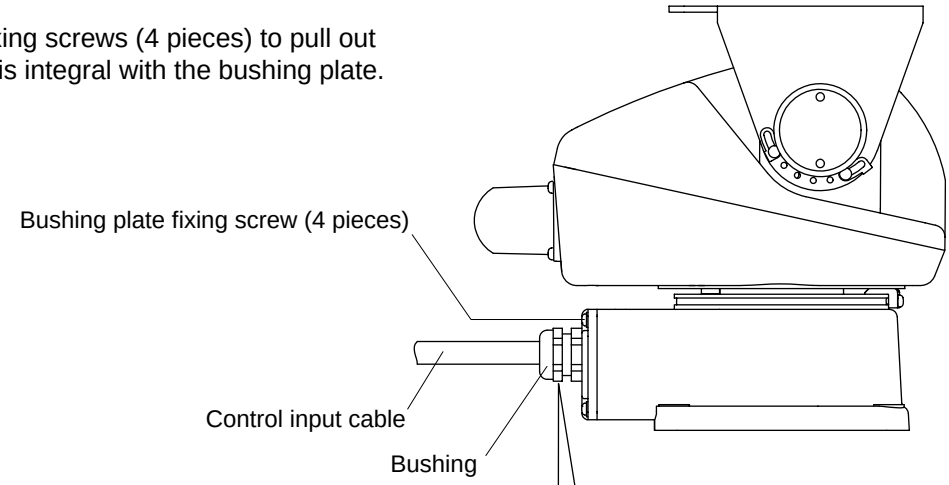
Adjusting the Vertical Rotation Angle

Loosen the cam fixing screw to allow the cam to move in the direction indicated by the arrow, and tighten while set in the desired position. If the cam movement distance is insufficient, install the cam fixing screw in the adjacent auxiliary hole.

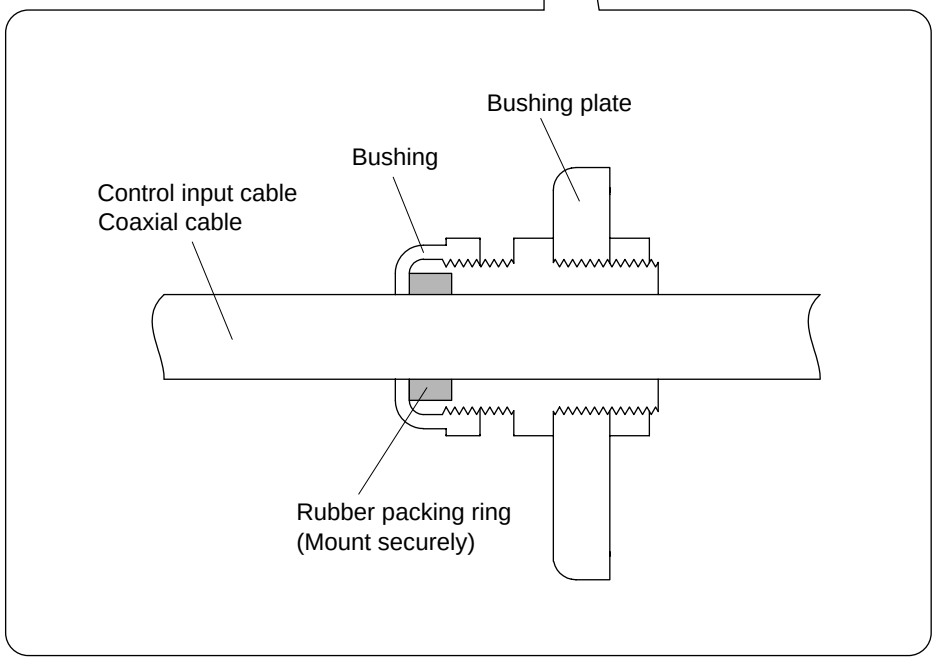


5.4. Control Input Cable and Coaxial Cable Connections

1. Remove bushing plate fixing screws (4 pieces) to pull out the terminal chassis that is integral with the bushing plate.



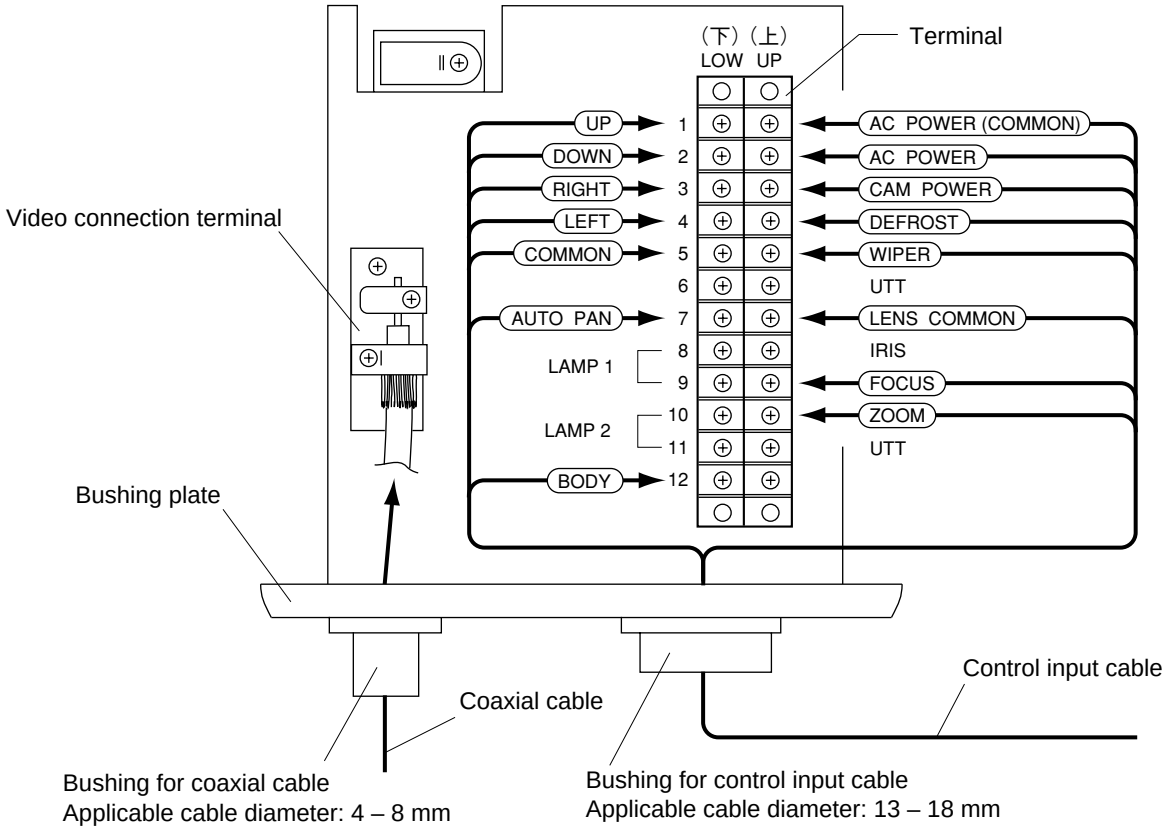
2. Install the control input and coaxial cables by routing both cables through the bushing.



Note

- Be sure to mount a rubber packing ring when routing the control input and coaxial cables through the bushing.
- If a gap is created between cable and bushing, wrap the self-adhesive butyl rubber tape around the cable to prevent the entry of rainwater.
- Ensure the routed cable is correctly fixed by lightly pulling it.

3. Connect lead wires to the terminal.

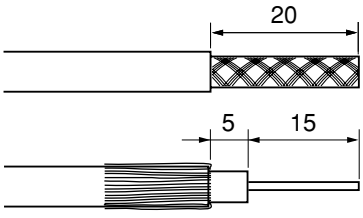


Note
Take care not to confuse the upper terminal with the lower terminal when making terminal connections.

5.5. Coaxial Cable End Processing

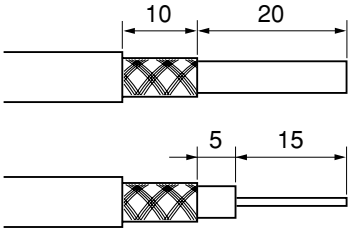
Process the coaxial cable end as follows:

5.5.1. 3C-2V Cable



1. Strip the cable sheath 20 mm from the cable end.
2. Bend back braided copper shields over the cable sheath, then remove the insulating material 15 mm from the cable end.

5.5.2. 5C-2V Cable



1. Strip the cable sheath 30 mm from the cable end, and braided copper shields 20 mm.
2. Remove the insulating material 15 mm from the cable end.

5.6. Camera Housing Mounting (Upright Installation)

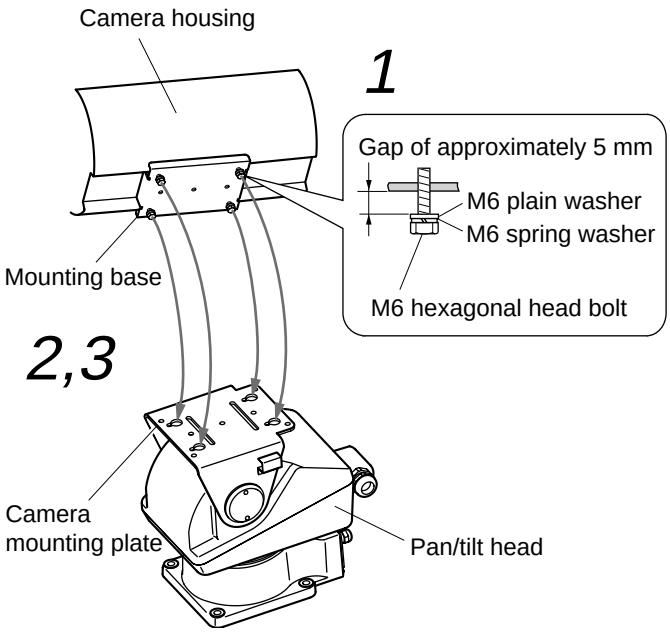
TOA's C-CH200 Series, C-CH100 and C-CH100FH Outdoor Camera Housings can be used for the C-PH200 Pan/Tilt Head.

Mount the camera housing on the C-PH200 first.

1. Install M6 hexagonal head bolts on the camera housing.
   Provide a space of approximately 5 mm between the housing's mounting base and plain washer.
   Note
   Hexagonal head bolts are preinstalled in some camera housings. In such cases, loosen the bolts and create an approximately 5 mm gap between the two.

2. Insert the hexagonal head bolt head/spring washer/plain washer assembly into the housing mounting hole, then pull the camera housing forward to fit it to the camera mounting plate.

3. Retighten the hexagonal head bolts to fix the camera housing to the camera mounting plate.
   Note
   Check to ensure that each bolt is securely tightened.

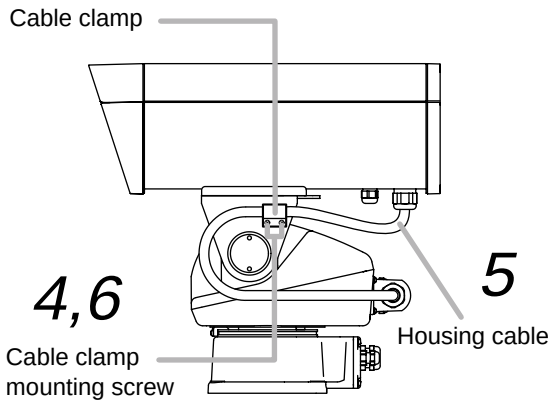


Run a housing cable through a cable clamp next.

4. Loosen 2 cable clamp mounting screws.
   Loosen to allow the housing cable to be routed through the clamp.

5. Route the housing cable through the cable clamp.

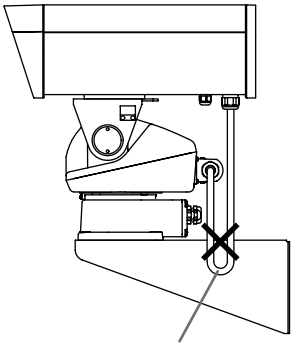
6. Retighten the two cable clamp screws loosened in Step 4.



⚠ CAUTION

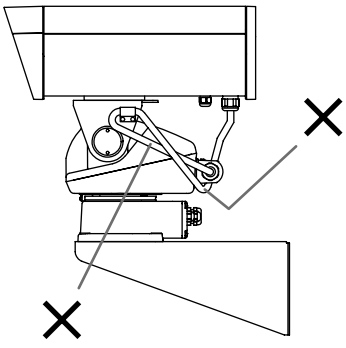
Fix the housing cable in the position that does not allow extreme force to be applied to the cable when the pan/tilt head moves vertically. Selection of the incorrect position could cause damage to the cable, possibly resulting in fire.

Wrong cable routing example 1



Since the cable is not routed through a cable clamp, the cable is damaged when the pan/tilt head rotates horizontally.

Wrong cable routing example 2



If a cable slack is too ample, it contacts the pan/tilt head's rear and extreme force could be applied to the cable while the unit is rotating vertically.

Because no appropriate slack is provided in the cable, extreme force is applied to the cable while the pan/tilt head is rotating vertically.

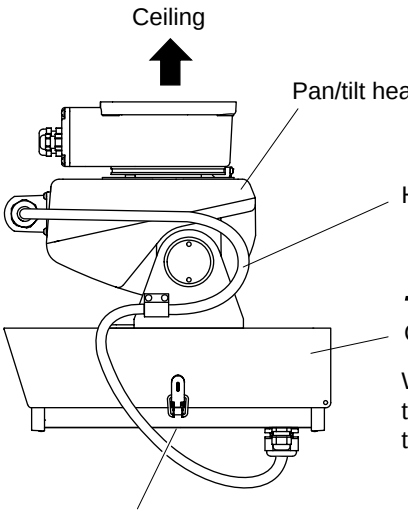
5.7. Camera Housing Mounting (Suspended Installation)

TOA's C-CH Series Camera Housings can be installed in a suspended position.

Note: Since a waterproof function is disabled, avoid suspending such housings outdoors.

1. Using the housing suspension slots, attach the camera housing to the C-PH200 Pan/Tilt Head.
   Note: Housings do not come with their mounting bolts. Prepare the following nuts and bolts:
   • M6x12 hexagonal head bolt with washer : 2 pieces

2. Route the housing cable.



When suspending the housing, reverse the housing mounting directions referred to in the instructions for upright mounting.

Note

Do not use the bolts attached to the camera housing when suspending. Removing the bolts allows dust to enter, causing equipment failures.

5.8. Housing Cable Specifications

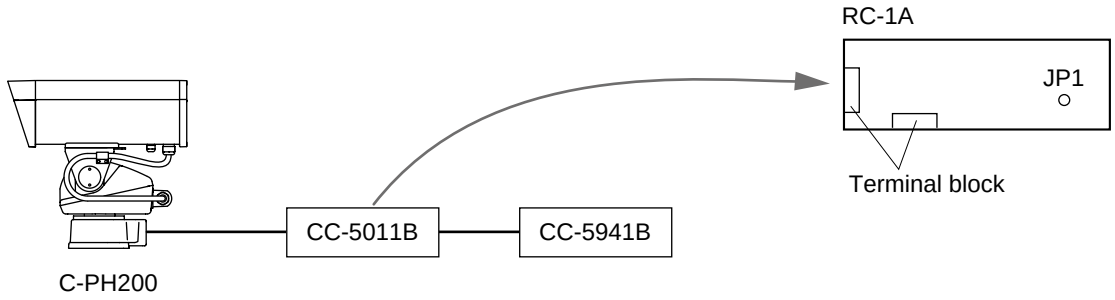
Lead No.	Color	Application
1	Green	24 VAC (Common)
2	Yellow	24 VAC
3	Blue	Camera power supply
4	Gray	Defroster
5	Red	Wiper
6	Black	Unused
7	Purple	Lens (Common)
8	Orange	Iris
9	White	Focus
10	Peach	Zoom
11	Brown	Unused
12	Coaxial cable shields	Video (coaxial cable shields)
13	Coaxial cable core	Video (coaxial cable core)

5.9. Notes on Operations by Auto-Pan Control

When using an auto-pan function to operate the C-PH200 Pan/Tilt Head, be sure to make the following changes to best meet particular requirements of connected control equipment. Failure to do so could cause the pan/tilt head's malfunctions.

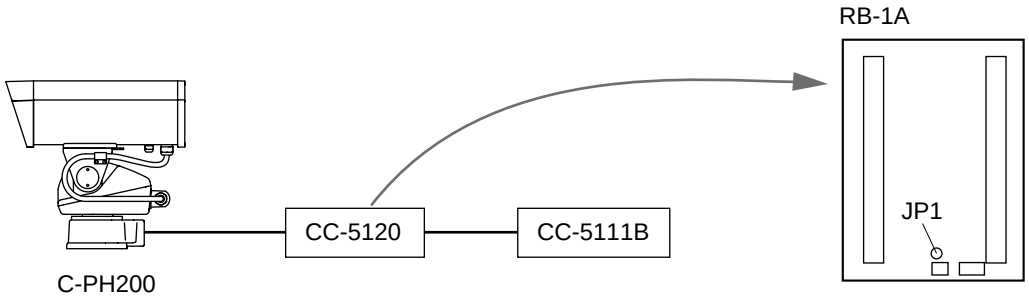
5.9.1. If using the CC-5011B Direct Control System Remote Control unit…

Open the CC-5011B's case and cut JP1 on the RC-1A circuit board with nippers. For details, please read the section "Connections" of the instruction manual for the CC-5011B.



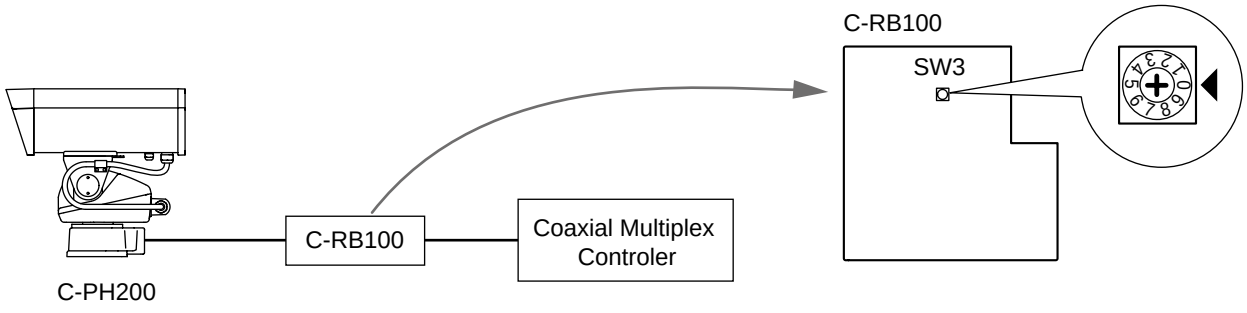
5.9.2. If using the CC-5120 Relay Box…

Open the CC-5120's case and cut JP1 on the RB-1A circuit board with nippers.

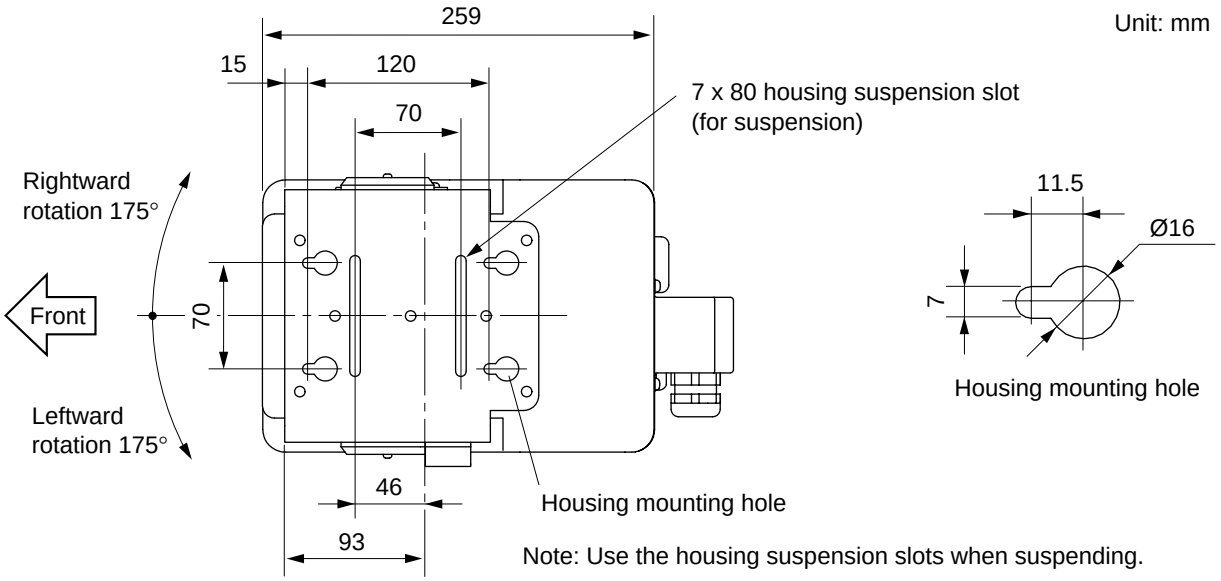


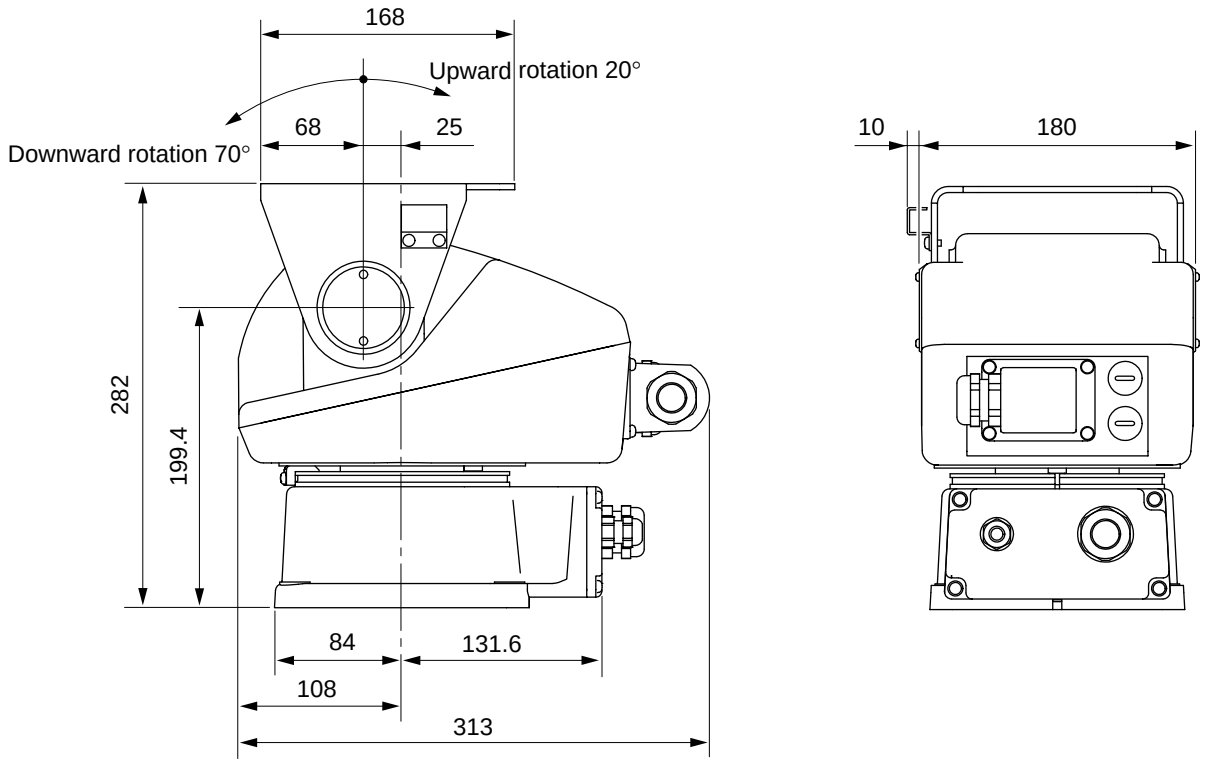
5.9.3. If using the C-RB100 Coaxial Multiplex Control Relay Box…

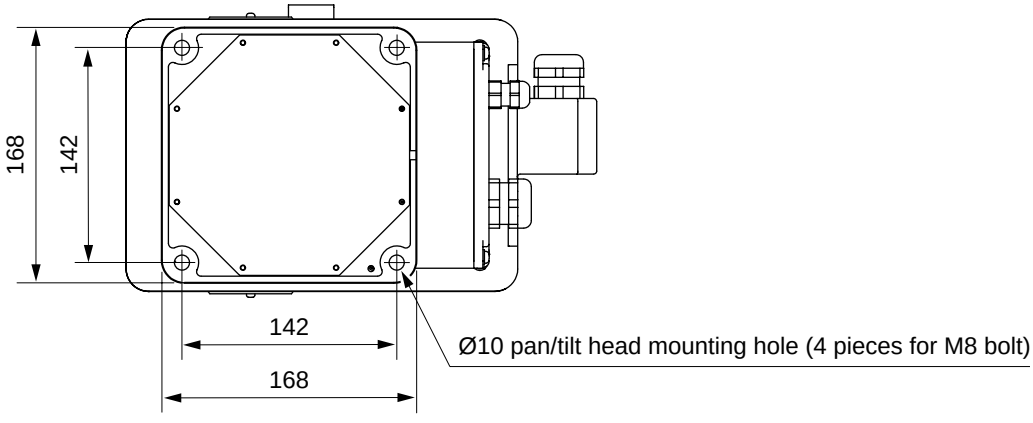
Open the C-RB100's case and perform settings for the SW3 Pan/Tilt Head Installation Setting switch. Set the switch to "0," "7," "8," or "9" when installing the C-PH200 unit upright, and to "1" when installing it in a suspended (upside-down) position. (Factory-preset to "0.")
For more information about this, refer to the section "Settings" of the instruction manual for the C-RB100.



6. DIMENSIONAL DIAGRAM







7. SPECIFICATIONS

Power Source	24 VAC, 50/60 Hz
Power Consumption	46 VA
Input/Output Lines	Video signal : Applicable diameter : ø4 – ø8 mm Screw terminal for 3C-2V or 5C-2V Powercontrol: Applicable diameter : ø13 – ø18 mm M3 screw terminal (12 P) with free terminal screw x 2 Output line : Connected to the housing using dedicated cable
Rotation Angle	Tilt : –70 to +20°±5° Pan : Over 340°(automatic reverse), 350°±5°(manual operation)
Operation Speed (No load)	Tilt : 3°±0.5°/sec (50 Hz), 3.6°±0.6°/sec (60 Hz) Pan : 6°±0.5°/sec (50 Hz), 7.2°±0.6°/sec (60 Hz)
Rated Time	Vertical : 15 minutes Horizontal : Continuous
Auto-Pan Life	5,000 hours or 200,000 reverse operations
Load Rating	11 kg (upright installation) 10 kg (indoor suspension)
Waterproof / Dustproof Capability	IP-54 (Waterproof capability only applies to upright installation.)
Wind Pressure	Operable at average wind velocity of 40 m/s or less. Not destructed at maximum wind velocity of 60 m/s (provided the unit is installed at a height of 15 m above the ground and C-CH200 Series camera housings are mounted)
Applications	Indoors and outdoors (except seaside and industrial districts where the unit is subject to corrosion, and heights that expose the unit to strong wind pressure) Because a waterproof function is disabled, unit cannot be installed in a suspended position outdoors.
Operating Temperature	–10° to +50° (standard specifications and not frozen)
Operating Humidity	30 to 90% RH (relative humidity)
Finish	Die-cast aluminum and anti-corrosion aluminum plate, off white, powder coating
Dimensions	190 (W) x 282 (H) x 313 (D) mm
Weight	10.2 kg
Applicable Model	Camera housing : C-CH200 series, C-CH100 series
Option	Wall mounting bracket : C-BC200K

Note: Specifications and external view of the C-PH200 Pan/Tilt Head are subject to change without notice.

TOA Corporation