

Clarion®

Installation/Owner's Manual

CC-6500E (WITH SHUTTER) CC-6600E

HEAVY DUTY CMOS CAMERA

- Thank you very much for your purchase of this Clarion product.
- Read this "Installation and Instruction Manual" carefully to ensure correct and safe use.

Clarion Co., Ltd.

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SAFETY PRECAUTIONS

When using this system, follow the precautions listed below.

WARNING

- **Do not use this camera in any way other than vehicle installation.**
This device is a vehicle-mounted rear view camera. Doing so may lead to a malfunction, fire, electric shock or accident.
- **Do not attempt to disassemble or modify the unit.**
Never disassemble, modify or cut the cable covering to draw power from another device. Doing so may lead to a malfunction, fire, electric shock or accident.
- **Do not damage the cable.**
Moisture or water may get inside the camera through the damaged part, resulting in malfunction or fire.
- **Never use the vehicle's safety-related parts* for mounting or grounding the device.**
* Nuts and bolts in the steering system, seat rails, brake system, tanks, etc. Doing so may result in loss of control, fire or accident.
- **Before making connections, disconnect the negative battery terminal.**
Failure to do so may cause a short circuit, resulting in a malfunction, fire, electric shock or accident.
- **Route the cables avoiding high-temperature areas.**
The covering of the cables may melt, causing a short-circuit and resulting in a malfunction, fire or accident. Pay particular attention when routing the cables inside the engine compartment.
- **Installation and removal of the device should be requested to a professional service engineer.**
Doing so may lead to a malfunction, fire or accident. Contact the dealer where the device was purchased.
- **After completing installation and wiring work, check and make sure the vehicle's electrical equipment* is working properly.**
* Brakes, lights, horn, hazard lamps, blinkers, etc. Malfunctioning electrical equipment in the vehicle may lead to fire, electric shock or accident.
- **For vehicles fitted with an auxiliary brake light, move the camera to the left or right and mount it in a location where the auxiliary brake light can be seen fully.**
If not, the auxiliary brake light may be obstructed, resulting in an accident.
- **When mounting the camera outside a vehicle, mount it within the legally-stipulated range.**
A protruding camera may hit a passer-by and cause an accident.
- **If installation of the device requires making a hole in the chassis, check the position of the pipes, tanks, electrical wires, etc. and be sure to avoid interference or contact.**
Damaged pipes or other parts may lead to a malfunction, fire or accident.
- **Route and bundle the cables so that they do not interfere with driving operation.**
If a cable coils round the steering column, gear lever, brake pedals, etc., it may lead to an accident.
- **Never drive looking solely at the monitor.**
There is a limit in the range of the monitor image that can be captured as the camera is an auxiliary device used for checking obstructions, etc. Actual distances and perceptions may differ, so be sure to visually check safety while driving. Failure to do so creates the risk of hitting a person or object in the camera's blind spot, causing a serious accident.
- **Discontinue use in the event of malfunction or abnormality.**
If no image is displayed, smoke is emitted or there is a strange smell, stop using the device immediately and consult the dealer where it was purchased. Continued use may result in a malfunction, fire, electric shock or accident.
- **Do not pour water or place foreign objects inside the device.**
If a foreign object or water gets inside the device, smoke or a strange smell is produced, or any other abnormality occurs, stop using the device immediately and consult the dealer where it was purchased. Continued use may result in a malfunction, fire, electric shock or accident.
- **Reverse your vehicle at a slow speed.**
This camera uses a wide-angle lens. The image captured may differ from the actual distance so reversing the vehicle at a high speed may cause a collision with people or objects, resulting in a serious accident.

CAUTION

- **Follow the instructions in the manual when mounting and connecting the device.**
Incorrect connection may result in a malfunction, fire or accident.
- **After mounting the device, check that the monitor image is a mirror image (same image as the rear mirror).**
Incorrect setup may mean that the monitor image is not horizontally flipped, resulting in accident.
- **Be sure to use the accessories and specified parts.**
Using components other than those specified may lead to damage or detachment of the camera, resulting in them becoming detached and leading to a malfunction, fire or accident.

CAUTION

- **After wiring the various cables, secure them with clamps and/or insulating tape.**
If the cables come into contact with the chassis, they will fray and short-circuit, leading to a malfunction, fire or accident.
- **If a hole is made in the chassis to route the cables, use protective tubing or insulating grommet.**
If the cables come into contact with the openings, they will fray and short-circuit, leading to an accident or fire.
- **If a hole is made in the chassis for mounting or cable routing purposes, seal the gap in the hole and the gap between the hole and the cable with silicon adhesive or similar.**
If exhaust gas or water gets inside the vehicle through the gap, it may result in an accident.
- **Route the cables so that they do not get caught in the chassis, screws, seat rails or other moving parts.**
Damaged or short-circuited cables may result in a malfunction, fire, electric shock or accident.
- **Do not subject the equipment to strong impacts e.g. by dropping or hitting it etc.**
Doing so may lead to a malfunction or fire.
- **If screws are used to mount the device, be sure to tighten them securely.**
Loose screws may result in a malfunction or accident.
- **Do not use the camera underwater.**
If used underwater, water may get inside the camera, resulting in a malfunction, electric shock or accident.
- **After mounting the camera, do not subject it to strong impacts e.g. by hitting it etc.**
The mounting angle may change, resulting in a normal image not being captured. In addition, this device utilises precision electronic parts. Subjecting it to shock may result in malfunction, fire or electric shock.
- **Do not spray high-pressure water onto the camera when washing the vehicle with a high-pressure washing machine.**
Detachment of the camera or loosening of the screws may result in damages or malfunctions. Moreover, if water gets inside the camera, it may result in a malfunction, fire or electric shock.
- **Check the mounting screws occasionally and tighten any that have come loose.**
This camera may get detached and drop off due to loosening of the screws, resulting in contact with pedestrians and accidents.
- **The monitor image of this camera is inverted left to right just like the rear view mirror of your vehicle. In addition, note that the field of vision may also differ depending on the vehicle.**

PRECAUTION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to consult the dealer or an experienced radio/TV technician for help.

INFORMATION FOR USERS:

CHANGES OR MODIFICATIONS TO THIS PRODUCT NOT APPROVED BY THE MANUFACTURER WILL VOID THE WARRANTY AND WILL VIOLATE FCC APPROVAL.

PACKAGE CONTENTS

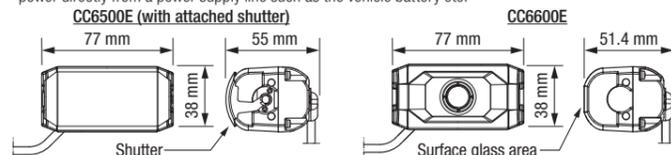
This device consists of the following components. In the event of any defect, contact the retailer where it was purchased.

① Installation/Owner's manual (This Booklet).....	1
② Main camera unit	1
③ Mounting bracket	1
④ Camera cover	1
⑤ Grommet	1
Accessory bag	1
⑥ Hexagon head bolts with built-in washer (M4 mm x 10 mm) (for installing on the main unit)	4
⑦ M4 bush (for installing on the main unit)	4
⑧ Hexagon head bolts with built-in washer (M5 mm x 20 mm) (for installing on the vehicle side)	2
⑨ Flanged nuts (M5 mm) (for installing on the vehicle side)	2

SPECIFICATIONS

	CC6500E (with attached shutter)	CC6600E
Power supply voltage*	Camera power supply	DC 9.0 V
	Shutter drive power supply	DC 12 V
Current consumption	Camera power supply	50 mA or less
	Shutter drive power supply	300 mA or less
Image sensor	1/3.7 inch 0.33 million pixel CMOS	
Angle of view	Horizontal 118° / Vertical 97.8°	
Weight	180 g (including cable)	140 g (including cable)
Main body external dimensions	77 (W) × 38 (H) × 55 (D) mm	77 (W) × 38 (H) × 51.4 (D) mm

* Use only the power supplied by the special camera EUC box or monitor. Never connect to and supply power directly from a power supply line such as the vehicle battery etc.



CE

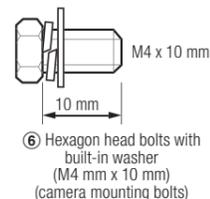
Declaration of conformity
We Clarion declares that the product CC6500,CC6600 is following the provision of Directive 2004/108/EC and Directive 2011/65/EU.

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HOW TO INSTALL

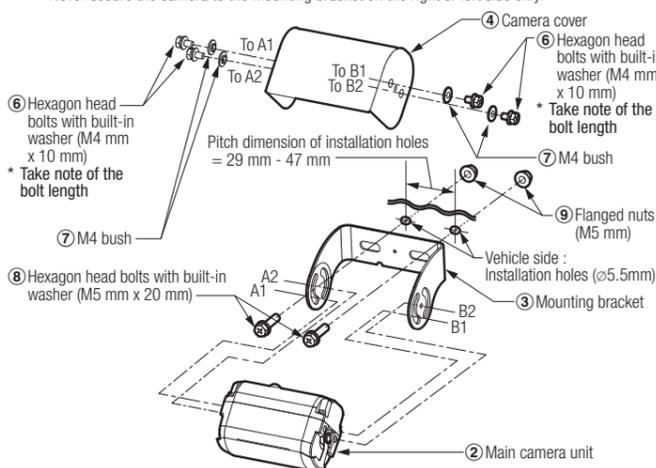
Installation Precautions

- Be sure to use the supplied bolts to mount the bolts to the camera. If any bolts are lost when mounting the camera, be sure to use M4 mm x 10 mm hexagon head bolts with built-in washer. Do not under any circumstances use bolts longer than this. To ensure watertightness, the bolt stoppers in the camera case have a bag structure. Use of long bolts may damage the screw thread and camera main body, compromising watertightness.
- Never swing the camera by the cable or pull the cable. Doing so may impair the camera's watertightness or break the cable, resulting in malfunction.
- Avoid mounting the camera where the surface glass area is easily stained by mud splashes, exhaust fumes, etc.



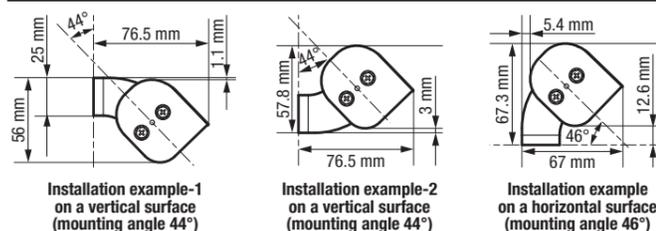
- 1 Drill camera mounting holes (Ø 5.5 mm) at 2 locations, and cable routing holes (Ø 14 mm if the enclosed grommet is used) on the chassis end.**
To prevent camera shake, make a hole in a strong part and mount the camera. If the part is not strong enough, carry out appropriate reinforcement.
- 2 Fix the mounting bracket securely to the chassis using the enclosed bolts and flange nuts. (2 locations)**
- 3 Secure the camera main body temporarily to the mounting bracket using the enclosed bolts and bushes. (2 locations on the left and right)**

Never secure the camera to the mounting bracket on the right or left side only.



- 4 See "WIRING AND CONNECTIONS" for the wiring instructions.**
- 5 After connecting the cables, mount the camera and adjust the angle so that the rear bumper or back end of the vehicle appears in the monitor. (See diagram on the right)**
- 6 After adjusting the mounting angle of the camera, fully tighten the bolts to secure the camera main body properly.**
- 7 Be sure to use a sealing material (e.g. a sealant etc.) on the mounting holes, screws and cable routing holes on the chassis for water-proofing and rust-proofing.**

Mounting example



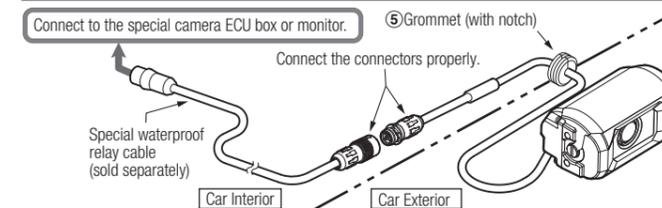
WIRING AND CONNECTIONS

Wiring Precautions

- Disconnect the negative terminal of the battery before connecting the cables. Failure to do so may cause a short circuit, resulting in a malfunction, fire, electric shock or accident.
- Lay the relay cable inside the vehicle so as to prevent it from getting damaged. If you have to lay the cable outside the vehicle, make sure it is securely fastened to the chassis in order to prevent it from flapping and getting caught by tree branches etc. In addition, besides ensuring that the connectors are connected properly, install the camera in a location where water will not splash onto it.
- When wiring the cables, as far as possible keep them away from hot areas such as the engine, exhaust pipe, transmission, etc., rotating parts such as the cooling fan, alternator, etc., and noise generating sources, and cover them with a corrugated tube before securing with clamps etc.
- Never cut the cables as they are special cables with built-in coaxial lines.
- When bake painting the vehicle, be sure to wire the cables only after the painting.
- Use a protective tube or the enclosed grommet etc. to protect the metallic parts of the routing holes, cross-sections of the metal plate and parts of the cables that are easily cut. In addition, lay the cables without damaging them such as by twisting or bending them strongly as this will result in internal short-circuiting. Be careful not to scratch the outer skin as this will damage the waterproof property.
- For the power supply (camera power / shutter drive power), use only the power supplied by the special EUC box or monitor. Never supply power directly by connecting to a power supply line such as the vehicle battery as this will result in a malfunction, fire, electric shock or accident due to an over-voltage or over-current.

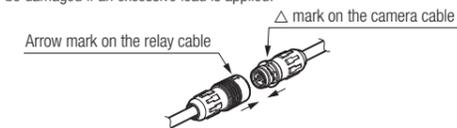


Wiring example



Connection procedure for special waterproof relay cable (sold separately)

- 1 Align the arrow mark on the relay cable to the Δ mark on the camera cable to insert the connector.**
- 2 Pull the cable lightly to make sure that the connector is locked properly.**
Do not pull or bend the connected part with a force of 30 N or higher. The connector may be damaged if an excessive load is applied.



CLEANING THE CAMERA

- Do not use benzine, thinner, or alcohols.
- Do not wipe the camera with a cleaner that contains polishing powder etc. This may result in scratches on the camera.
- If the surface glass area is stained, wipe lightly with a soft and wet cloth etc. Scratches may occur if you rub the camera strongly with a dry cloth.
- If the surface glass area is stained, you can clean it by opening and closing the shutter with your hands. When you open and close the shutter by hand, the shutter may not close completely sometimes. In this case, operate the shutter to return it to the original position.

TROUBLESHOOTING

The following situations may not be malfunctions. Check the following one more time before sending the camera for repair. Contact the dealer where the product was purchased if you have any questions or if you still cannot resolve the problem.

Symptom	Possible reasons	Remedy
There is no image	Incomplete wiring	Check the connections and connect the camera correctly.
Image quality is bad	Surface glass area is stained	Wipe lightly with a soft and wet cloth etc. Note that scratches may occur if you rub the camera strongly with a dry cloth.
	The lens is exposed to sunlight or the headlight from another vehicle	The camera will return to normal if the light shining on the lens disappears.
	Surrounding is too dark	Image quality deteriorates at night or in dark places. The image returns to normal when it brightens up.
Shutter does not open	The area is constricted by obstructions such as rubbish etc.	Remove the obstructions. Note that the shutter may be damaged if the obstruction is removed unreasonably then.
	Snow, ice, etc. is stuck to the camera	Melt the snow, ice, etc., first before use.