Safety Precautions

Turn off the power to CW series switches before installation, removal, wiring and maintenance. Failure to turn power off may cause electrical shocks or fire hazard.

When wiring, use wires of a proper size to meet the voltage and current requirements. Tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N·m. Failure to tighten the terminal screws may cause overheating and fire.

Operating Instructions

Notes for Operation

When using the CW series switches in a safety-related circuit of a control system, observe safety rules and regulations of each country concerning particular applications of the actual machines and facilities. Perform risk assessment before operation to ensure safety.

Operating Conditions

In corrosive gas or high-temperature, high-humidity environments, contact failure due to corrosion or color change or breakage of the housing may occur.

Main parts of the CW series switches are made of plastic. Do not scratch the surface with a sharp object or apply excessive electric shock or load, otherwise the switches may be damaged. In particular, keep the button, lens and bezel from such damage, otherwise appearance and function may be impaired.
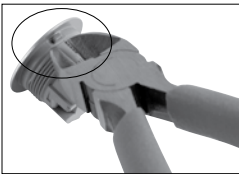
Do not apply detergents, cutting oils, or chemicals which may impair the function and appearance of the CW series switches.

Panel Mounting

First remove the contact block and then the locking ring from the operator. Insert the operator into the panel cut-out from the front, tighten the locking ring from the back, then install the contact block to the operator.
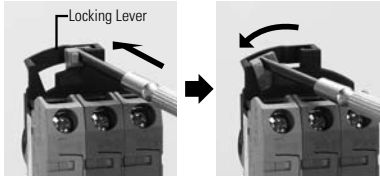
Mounting Hole
1. Mounting hole dimensions are in compliance with IEC60947-5-1.
2. If the anti-rotation projection is removed from the bezel, CW series switches can be mounted in ø22.3mm mounting holes. To remove the anti-rotation projection, remove the gasket and use cutting pliers to break the projection.

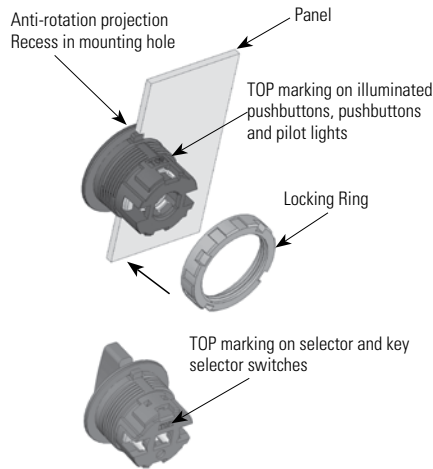### Removing and Installing the Contact Unit
1. To remove the contact block from the operator, push the yellow locking lever and turn it to the left.

Locking Lever

2. To install, align the TOP marking on the operator with the TOP marking on the contact block mounting adaptor, and turn the locking lever to the right.

Installation in Panel Cut-out
Remove the locking ring from the operator. With the anti-rotation projection on the operator aligned with the recess in the mounting hole, insert the operator into the mounting hole. Tighten the locking ring from the rear of the panel.

Anti-rotation projection
Recess in mounting hole

Panel

TOP marking on illuminated pushbuttons, pushbuttons and pilot lights

Locking Ring

TOP marking on selector and key selector switches

Note for Panel Mounting
When installing the operator in a panel cut-out, use the optional locking ring wrench (MW9Z-T1) to tighten the locking ring to a recommended tightening torque of 1.2 N·m. Do not use pliers and do not tighten excessively, otherwise the operator may be damaged.
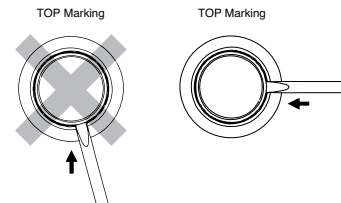
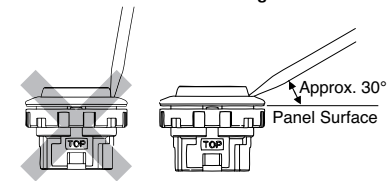### Illuminated Pushbuttons and Pilot Lights

Removing the Lens
To remove the lens from an illuminated pushbutton or pilot light, insert a flat screwdriver under the flange of the lens at 90° from the TOP marking and twist the screwdriver.

Do not insert the screwdriver too far and do not apply excessive force to the lens, otherwise the bezel surface may be damaged.

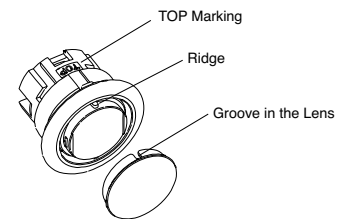#### Screwdriver Insertion Direction
TOP Marking   TOP Marking

Screwdriver Insertion Angle
Approx. 30°
Panel Surface

Installing the Lens
Turn the groove in the lens to the TOP marking on the operator housing. With the groove aligned with the ridge, press the lens in.

TOP Marking
Ridge
Groove in the Lens

Marking
Marking film can be applied for inscriptions or identification. (Marking plates are not available for CW series illuminated pushbuttons and pilot lights.)

Applicable Marking Film Size

Illuminated Pushbutton (Round Flush) Pilot Light (Round Flush, Round Extended)	Illuminated Pushbutton (Round Extended)
13.8 ø15.9	12.6 ø15.9

Thickness: 0.2 mm maximum
Film material: Polyester (recommended)
Note: Film is not supplied and must be provided by the user.

Operating Instructions con't

Pushbuttons

Pushbutton caps cannot be removed. Do not tamper with the cap using a screwdriver or pliers, otherwise it may be damaged.

Selector Switches

Turn the selector operator or key to the detent positions.
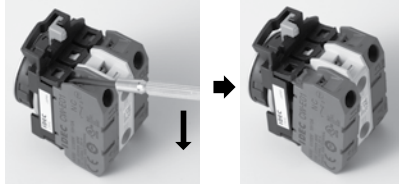
Key Selector Switches

To prevent malfunction and damage, take the following precautions.

- Completely insert the key before turning.
- Do not remove the key while turning.
- Besides the standard key (0H), six other keys are available. Use only a key with a number that matches the number on the switches' key cylinder. (The standard key does not have a key number.)
- Keys are available in two shapes.
  -0H (standard), 1H, 2H: reversible keys
  -3H, 4H, 5H, 6H: non-reversible keys
  Make sure of correct insertion direction.
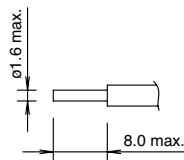
Contact Blocks and LED Modules

To remove the contact block from the operator, insert a flat screwdriver under the latch and push the screwdriver down as shown below. Before removing the LED module, first remove all contact blocks, and then remove the LED module in the same manner.

Wiring

Applicable Wires

Stranded wire: 2.0 mm^2 maximum (14AWG)
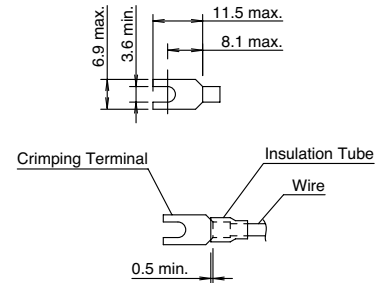Solid wire: ø1.6 mm maximum

One or two wires can be connected to the terminal.
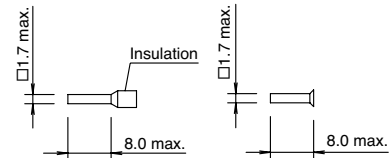
Applicable Crimping Terminals
Spade terminal
When using crimping terminals, be sure to use insulating tubes or insulated crimping terminals.

Ferrule
When connecting two ferrules to one terminal, use ferrules without insulation.

When using spade terminals or ferrules, ensure that they are inserted completely. Ring terminals cannot be used.

Screw Tightening Torque
Tighten the M3.5 terminal screws to a recommended torque of 1.0 to 1.3 N·m.