

# CK-100

## Die Stroke Counter

**NEW**


### Die Supervision without Any Wiring!

**CE Marked**  
Conforming to EMC Directive

#### Convenient for Maintenance Management

The schedule for press die maintenance is generally decided by the number of die strokes (production quantity) and the quality of the processed components.

Till now, the total stroke count was maintained by recording the stroke count each time the die was changed. However, with **CK-100** it is possible to check the total stroke count on the die itself, making the maintenance management very simple. Further, the counter is also very useful for periodic maintenance.

#### 7 Digit 7-Segment Digital Display

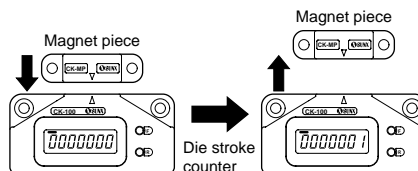
Count from 0 to 9,999,999 is displayable. When the counter is not counting, the display turns off automatically to preserve the battery, and the count is stored in an internal memory.

When it begins to count again, the display turns on.



#### Counting without Contact

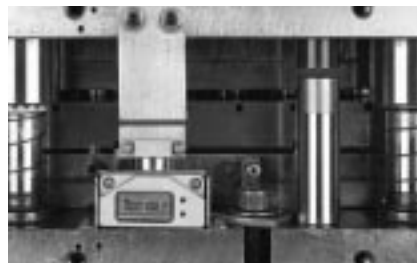
Since the counting is done without any contact by detecting the magnet piece (accessory), this counter has a longer life than the conventional contact type counter.



The count is incremented by one when the magnet piece approaches within 2.5mm and then moves away to a distance of 10.5mm or more.

#### Usable with High-speed Press Machines

It can be safely used with high-speed press machines since it has a response time corresponding to 12,000 strokes/min.



#### Wiring Not Required

Cumbersome wiring is not required since it incorporates a lithium battery. Moreover, the battery life is 2.4 yrs. approx. on continuous operation at 1,500 strokes/min.

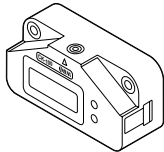
When the battery life is over, the count at that time is stored in an internal memory.

#### Three Independent Count Memories

Since it is equipped with three count memories, it is possible to accumulate, as well as, reset three independent counts (F-1/F-2/F-3). Hence, it allows maintaining of different counts, e.g., for a progressive die, F-1 as total stroke count, F-2 as cumulative count after punching section maintenance, and F-3 as cumulative count after bending section maintenance.

F-1	Total stroke count	5,000,000 times
F-2	Count after punching section maintenance	600,000 times
F-3	Count after bending section maintenance	30,000 times

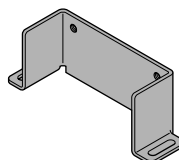
## ORDER GUIDE

Appearance	Model No.	Sensing object	Count operation
	<b>CK-100</b>	Magnet piece <b>(CK-MP)</b>	The count is incremented by one when the sensing object approaches within 2.5mm and then moves away to a distance of 10.5mm or more.

## OPTION

Designation	Model No.	Description
Main body mounting bracket	<b>MS-CK</b>	Mounting bracket for <b>CK-100</b>

### Main body mounting bracket



## SPECIFICATIONS

Designation		Die stroke counter																											
Item	Model No.	<b>CK-100</b>																											
Count operation		The count is incremented by one when the sensing object approaches within 2.5mm and then moves away to a distance of 10.5mm or more.																											
Sensing object		Magnet piece <b>(CK-MP)</b>																											
Max. count display		9,999,999																											
Power supply		Exclusive lithium battery 3V <b>(CK-BT)</b> • Battery life (Note)																											
		<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="5">Operation rate (Operation time/24 hrs. × 100)</th> </tr> <tr> <th>0%</th> <th>30%</th> <th>50%</th> <th>80%</th> <th>100%</th> </tr> </thead> <tbody> <tr> <td>500 strokes/min.</td> <td>3.8 yrs. approx.</td> <td>3.6 yrs. approx.</td> <td>3.5 yrs. approx.</td> <td>3.3 yrs. approx.</td> <td>3.2 yrs. approx.</td> </tr> <tr> <td>1,500 strokes/min.</td> <td>3.8 yrs. approx.</td> <td>3.2 yrs. approx.</td> <td>2.9 yrs. approx.</td> <td>2.6 yrs. approx.</td> <td>2.4 yrs. approx.</td> </tr> </tbody> </table>						Operation rate (Operation time/24 hrs. × 100)					0%	30%	50%	80%	100%	500 strokes/min.	3.8 yrs. approx.	3.6 yrs. approx.	3.5 yrs. approx.	3.3 yrs. approx.	3.2 yrs. approx.	1,500 strokes/min.	3.8 yrs. approx.	3.2 yrs. approx.	2.9 yrs. approx.	2.6 yrs. approx.	2.4 yrs. approx.
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Response time		5ms or less (12,000 strokes/min. or less)																											
Display		Count display: 7 digit 7-segment LCD (displayed in the select mode or the count mode, not displayed in the wait mode or the battery replacement mode) Operation display: Bar mark LCD (displayed in the count mode or the wait mode, not displayed in the select mode or the battery replacement mode)																											
Memory		3 memories (EEPROM)																											
Environmental resistance	Pollution degree	3 (Industrial environment)																											
	Protection enclosure	IP67 (IEC), IP67g (JEM)																											
	Ambient temperature	- 10 to + 60°C, Storage: - 10 to + 60°C																											
	Ambient humidity	35 to 85% RH, Storage: 35 to 85% RH																											
	EMC	Emission: EN50081-2, Immunity: EN50082-2																											
	Vibration resistance	10 to 500Hz frequency, 3mm amplitude in X, Y and Z directions for two hours each																											
	Shock resistance	490m/s <sup>2</sup> acceleration (50G approx.) in X, Y and Z directions for three times each																											
Material		Enclosure: PBT, Display cover: Acrylic <b>[CK-MP (Magnet piece) enclosure: Nylon]</b>																											
Weight		<b>CK-100</b> (Main body): 65g approx. (including lithium battery), <b>CK-MP</b> (Magnet piece): 8g approx.																											
Accessories		<b>CK-MP</b> (Magnet piece): 1 No., <b>CK-BT</b> (Exclusive lithium battery): 1 No.																											

Note: This is the typical battery life. The battery life may be shorter depending on the condition of use.

# CK-100

## PRECAUTIONS FOR PROPER USE

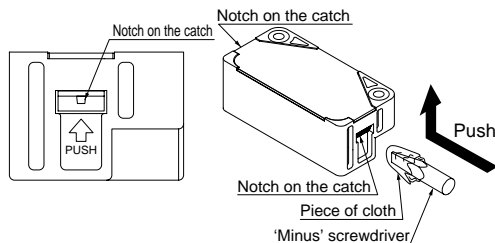


- This product does not possess control functions needed for accident prevention or safety maintenance.
- Make sure to carry out the mounting and the button operations with the power supply of the press machine in off condition. Further, ensure to put up a display informing the 'under operation' condition to other operators.

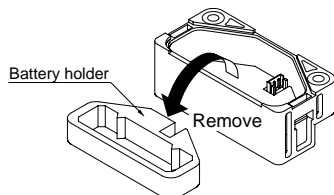
### Battery installation and replacement

- Install the exclusive lithium battery **CK-BT**, supplied as accessory, by the following procedure. At the time of purchase, since the rear cover is not fitted, start from step ②.

- ① At the left and right sides of the counter, there is a mark and a notch on each catch of the rear cover. Put a thin 'minus' screwdriver in the notch on a catch and slide in the direction of the arrow to remove the rear cover. However, cover the tip of the 'minus' screwdriver with a piece of cloth, etc., so that the counter is not damaged.

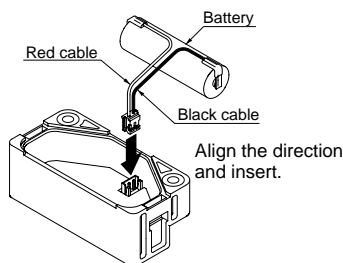


- ② Remove the battery holder from the counter.

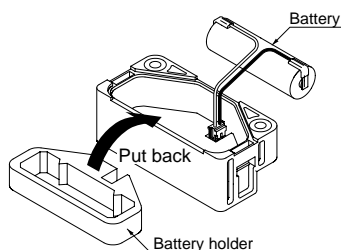


- ※ In case of battery replacement, remove the used battery after removing the battery holder.

- ③ Align the direction and insert the battery side connector into the counter side connector till they lock. The connector has a directionality, so that it cannot be inserted in the wrong direction.

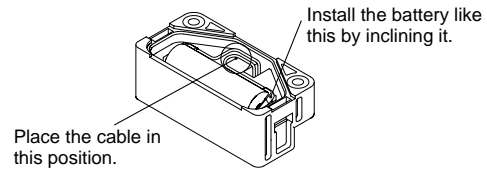


- ④ Put back the battery holder into the counter.

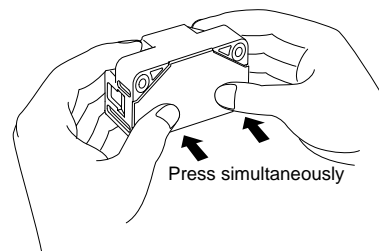


- ⑤ Install the battery as shown below.

If the cable is placed over the battery, the rear cover is difficult to fit. Hence, place the wire as shown in the figure below.



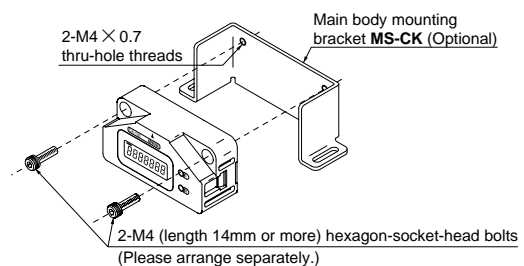
- ⑥ Put back the rear cover without entangling the cable and, by pressing with both hands as shown in the figure below, lock the catches of the rear cover.



- ※ Check that the rear cover is securely mounted. If the counter is used with improper fitting, the environmental protection is lost and the counter can get damaged.

### Mounting

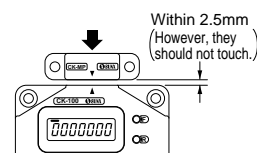
- For mounting the counter on a die, use M4 hexagon-socket-head bolts (length 14mm or more) with a tightening torque of 1.2N·m or less.
- For mounting the magnet piece **CK-MP** by screws, use M4 screws with a tightening torque of 0.5N·m or less.
- For mounting the main body mounting bracket **MS-CK** (optional), use M4 hexagon-socket-head bolts (length 14mm or more) with a tightening of 1.2N·m or less.



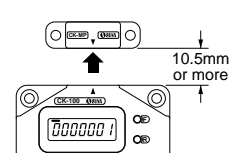
- Follow the procedure given below to mount the counter and the magnet piece.

- ① Find out the range of movement of the die, and decide the position of the counter and the magnet piece such that the distance between them satisfies the counting operation range given in the specifications.

#### When approaching

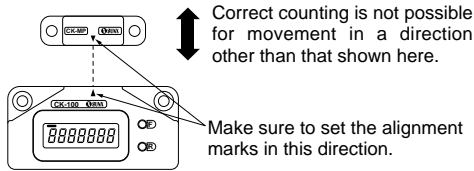


#### When moving away

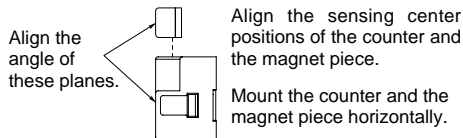


## PRECAUTIONS FOR PROPER USE

- ② Fix the counter and the magnet piece temporarily with bolts and screws after setting their alignment marks (▲) in a straight line, as shown in the figure below.



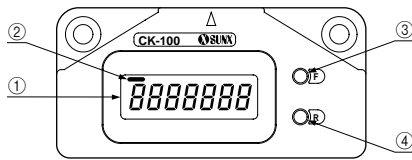
- ③ Fix the counter and the magnet piece, after aligning their sensing center positions, by securely tightening the bolts and screws.



Note: Take care that the sensing range changes if the sensing center position of the counter is not aligned with that of the magnet piece.

- ※ After mounting, make sure to operate the die and confirm that the counting is correct.

### Functional description (CK-100)



Description	Function
① 7 digit 7-segment LCD display	• It displays the count.
② Operation display LCD	• It displays the operation condition (bar mark).
③ Function (memory) select button	<ul style="list-style-type: none"> <li>• Pressing the function (memory) select button in the wait mode or the count mode changes the mode to the select mode.</li> <li>• In the select mode, by pressing the function (memory) select button, it is possible to change the count display as given below.</li> </ul> <div style="text-align: center;"> </div> <p>However, the mode changes back to the count mode after 5 sec.</p>
④ Reset button	<ul style="list-style-type: none"> <li>• In the select mode, pressing the reset button for 1 sec. clears the displayed memory count, and pressing it continuously along with the function (memory) select button for 3 sec., or more, clears all the memory counts.</li> </ul>

### Modes

- **CK-100** has four modes as described below. The LCD display changes according to the mode.

Mode	LCD display	Description
Wait		• The counter automatically enters the wait mode if die stroke counting, selection of count memory or clearing of count is not done for 30 sec. or more.
Count		• This mode is for counting the number of die strokes.
Select		• This mode is for selecting the count memory and for clearing the counts.
Battery replacement		• The sensor enters this mode when the battery life is over. Since the display turns off and operation stops, change the battery. However, the count is stored in an internal memory.

### Count storage timing

- The counts are stored in the memory (EEPROM) when the following occur:

- ① When a change is made from the select mode to the count mode
- ② When a change is made from the count mode to the wait mode
- ③ When a count is cleared
- ④ When the counter enters the battery replacement mode

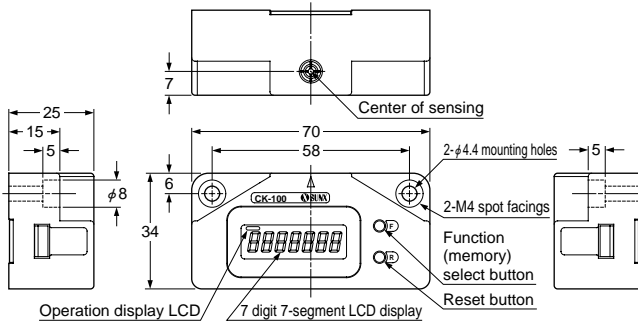
### Others

- Make sure to use the specified magnet piece and battery.  
Magnet piece: **CK-MP** (accessory)  
Exclusive lithium battery: **CK-BT** (accessory)
- Take care that the counter will count even if a magnet other than the magnet piece **CK-MP** (accessory) is brought near the sensing face of the counter and then moved away.
- Do not charge, short-circuit, disassemble, heat or put the battery into fire. There is a danger of battery leakage or explosion.
- The battery should be removed from the main body when the counter is not used for a long time. Fluid leakage from the battery may soil the main body or an explosion may cause fire or burns.  
Even if the battery is removed, the memorized counts are not erased.
- Dispose off the used battery as normal industrial waste.
- When sensing is done in the select mode, although the count display may be delayed, the counting is done correctly.
- SUNX Ltd. will bear no responsibility, whatsoever, for any loss or damage due to the counter not operating because of battery life, battery trouble, etc. Please change the battery, well in time, when it nears its expected life even if the counter is operating properly. The lithium battery (**CK-BT**) is separately available.
- Do not operate the buttons with pointed or sharp objects.
- Take care that if the buttons are pressed too hard, since they are made of rubber, they might deform, enter the case, and not return to their original position.

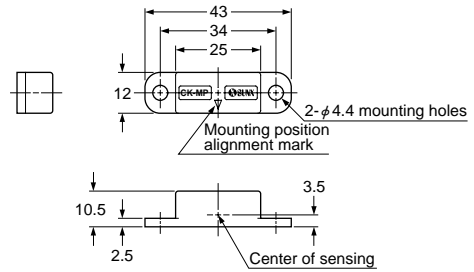
# CK-100

## DIMENSIONS (Unit: mm)

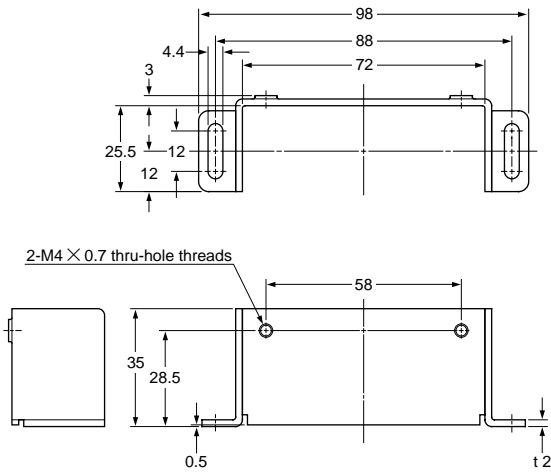
**CK-100** Main body



**CK-MP** Magnet piece (Accessory)



**MS-CK** Main body mounting bracket (Optional)



Material: Cold rolled carbon steel (SPCC)

### Assembly dimensions

