

# LCC11 シリーズ

圧縮型ロードセル

## LCC11 Series

Compression Load Cells

# 取扱説明書

## Instruction Manual

**AND**

# English

## 1. Precautions



This is a caution mark.

**Note** Important information that helps users to operate the product.

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Product specifications are subject to change without any obligation on the part of the manufacturer.

## 2. LCC11 Series Compression Load Cells

### The Type with Pre-Installed Accessories

Accessories are a bearing plate with upper socket and a mounting plate with lower socket.

LCC11T010-K (Rated capacity 100 kN )

LCC11T020-K (Rated capacity 200 kN )

LCC11T030-K (Rated capacity 300 kN )

### The Type without Accessories

LCC11T010N-K (Rated capacity 100 kN )

LCC11T020N-K (Rated capacity 200 kN )

LCC11T030N-K (Rated capacity 300 kN )

## 3. Introduction

- The LCC11 series are high-performance, double convex compression load cells and have flexibility of use for truck scale weighing systems and hopper scales. The rated capacity range is from 100 kN to 300 kN. The LCC11 series can be used in severe environments equivalent to IP68. The load cell, considering installation and maintenance, is designed to be compact and lightweight, and is constructed using a hermetic stainless steel case.
- Consider the system design and installation carefully because for precision weighing, the load cell is more sensitive. Read this instruction manual carefully, for correct installation and precision weighing.

## 4. Specifications

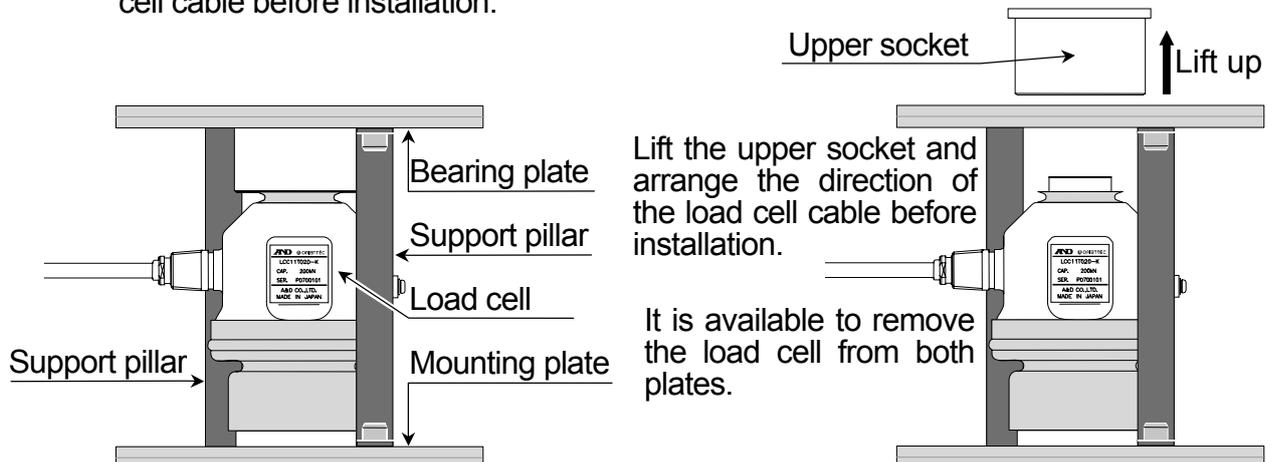
Rated capacities .....	100 kN, 200 kN, 300 kN
Rated output .....	2mV/V±0.1%
Maximum safe overload .....	200%R.C.
Combined error .....	±0.016%R.O.
Zero balance .....	±1%R.O.
Compensated temperature range.....	-20°C ~ 60°C
Minimum excitation voltage .....	5VDC
Recommended excitation voltage .....	5 ~ 12VDC
Maximum excitation voltage .....	15VDC
Input terminal resistance .....	800Ω±80 Ω
Output terminal resistance.....	2200 Ω±10 Ω
Insulation resistance.....	Greater than 5000M Ω at DC50V
Temperature effect - Zero.....	0.019%R.O./10°C Typ.
Temperature effect - Span.....	0.010%R.O./10°C Typ.
Cable diameter/ length .....	φ8/ 12m
Dustproof/Waterproof .....	IP68 (100h at 1.5m immersion)
Cable connection color	
Red .....	Excitation + (Input)
White .....	Excitation - (Input)
Green .....	Signal + (Output)
Blue .....	Signal - (Output)
Yellow.....	Shield

## 5. Installation

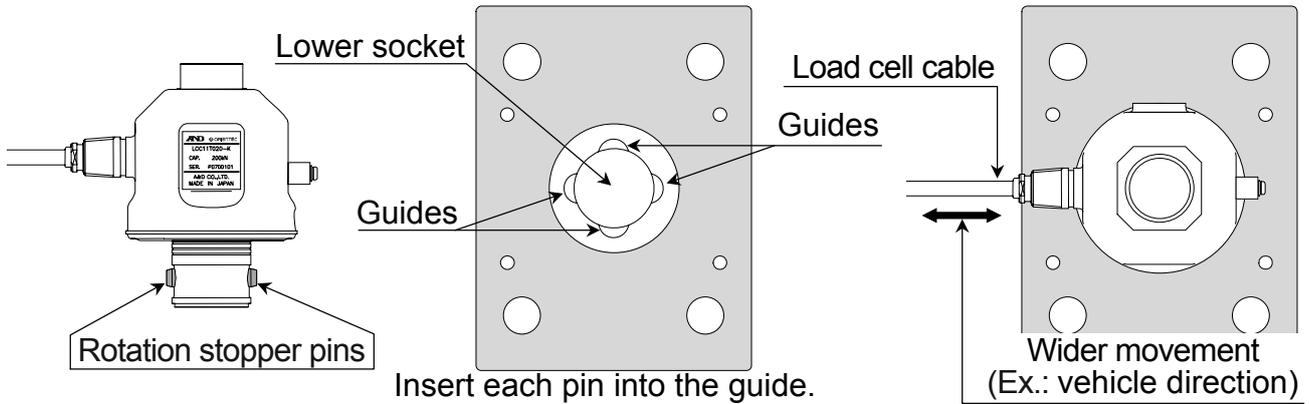
This section describes the installation of "the type with pre-installed accessories" as standard type. Refer the following procedure to install "the type without accessories".

**Caution** Consider the installation and weighing system design to use the LCC11 series, because it is very sensitive and high response.  
Concerning "the type with pre-installed accessories", remove the support pillar before loading anything on it.

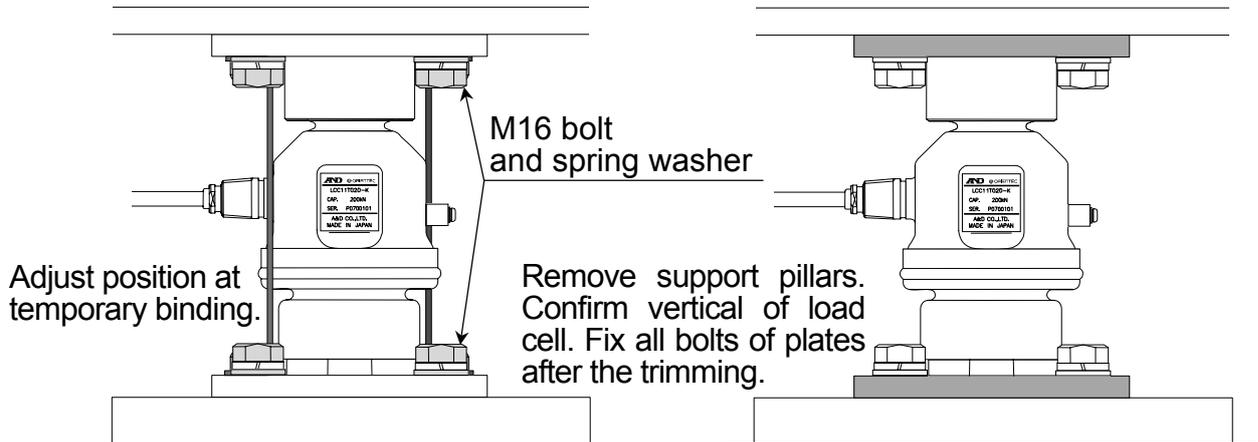
Step 1 Design the layout of the load cell cable.  
Remove the upper socket and rotate the load cell to arrange the direction of the load cell cable before installation.



- Step 2 There are rotation stopper pins on the load cell. Insert each pin into the guide of the lower socket. Arrange the direction of the load cell cable along a wider movement of the bearing plate to prevent interference between these pins and the lower socket. Example: For a truck scale, arrange the cable direction along to a vehicle direction.



- Step 3 For the unit that the load cell, mounting plate and bearing plate are assembled, confirm that the load cell is vertical during temporary binding. Fix the unit with M16 bolts and spring washers and remove these support pillars.

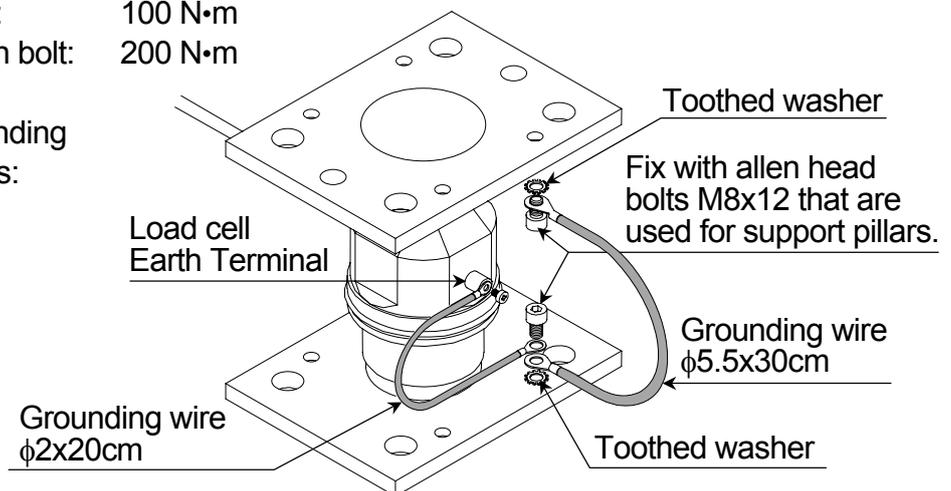


- Step 4 Adjust the vertical of the load cell using the mounting and bearing plates. Measure the vertical at least two points 90 degrees apart. Tolerance of incline is 0.5 degrees.

- Step 5 Install bolts on the mounting and bearing plates, when the load cell is vertical. Recommended torque is as follows:

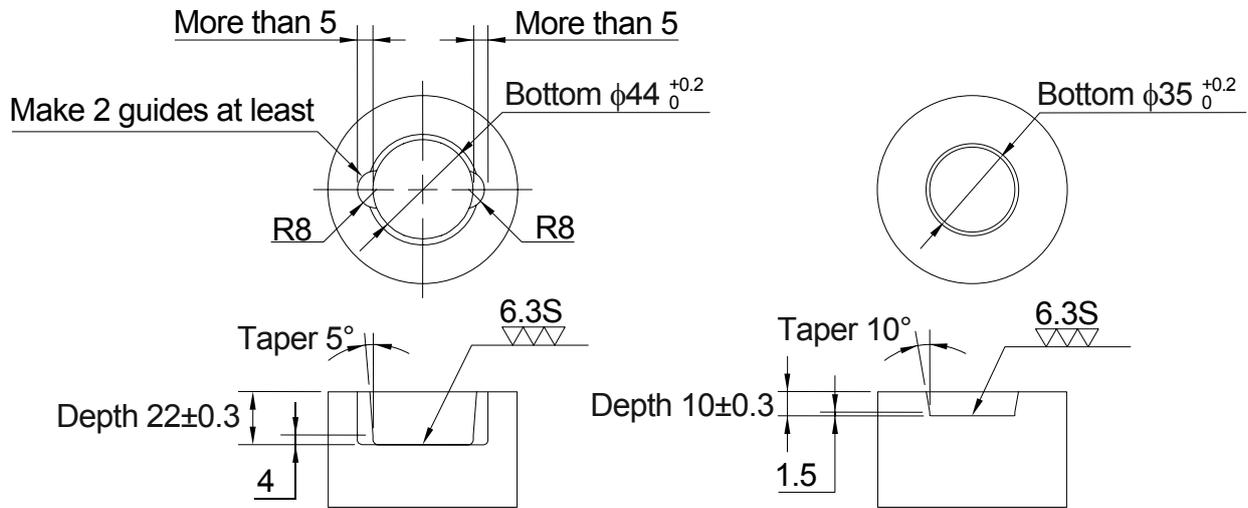
Normal bolt: 100 N·m  
 High-tension bolt: 200 N·m

- Step 6 Connect grounding wires as follows:



## 6. Socket Shapes

When you make sockets, use the following drawing.  
The hardness of the socket is HRC32 to 38.

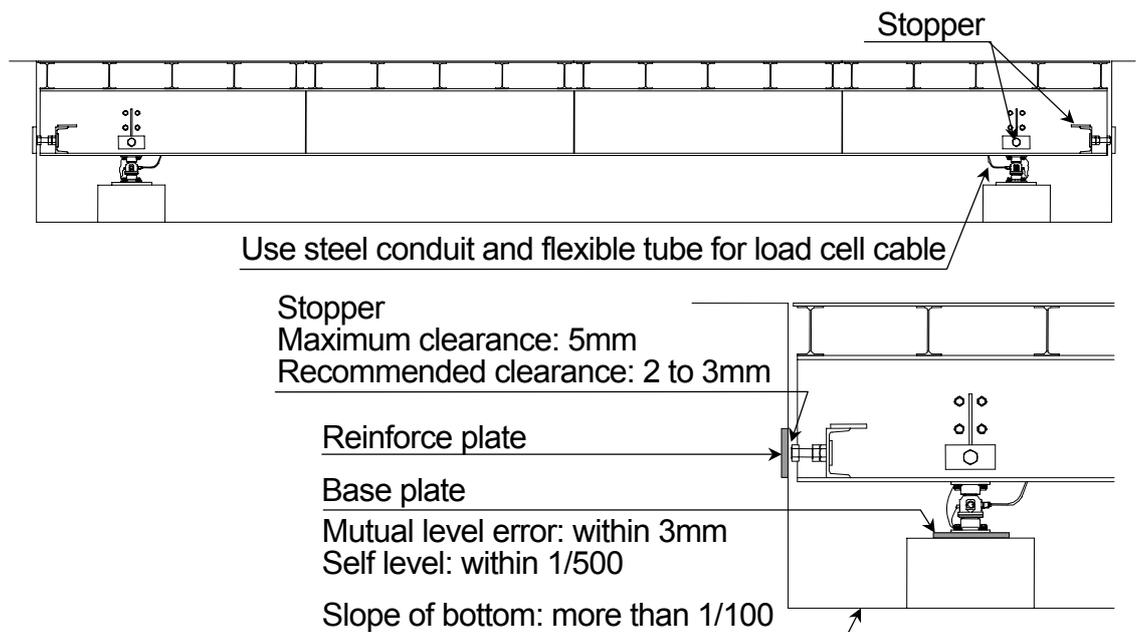


## 7. Caution

- ❑ Design the structure to install the load cell strong enough to withstand the load.
- ❑ Make the foundation structure at the load cells, strong enough to support them.
- ❑ Confirm the following about the base plate of the structure that load cells are installed on.
  - Level between each base plate: Within 3mm
  - Self-level of each base plate: Within 1/500
- ❑ When a weighing system of pit type is constructed, provide a drain system for water that gets into the pit. Submerging the load cell will cause it to malfunction.
  - Provide the pit bottom with a slope of at least 1/100.
  - Provide a drain pipe, reservoir, or pump.
- ❑ Protect the load cell from direct sunlight, rain and splash, when the system is installed in the open air.
- ❑ Attach stoppers to prevent excessive motion. Allow a maximum clearance of 5 mm. The recommended clearance is 2 to 3 mm.
- ❑ Leave some slack in the load cell cable so that it will not be pulled.
  - Install the load cell cable using conduit or flexible tubing.
  - Separate the load cell cable from any power line.
- ❑ Do not remove any extra load cell cable to maintain temperature compensation.
- ❑ Connect the wiring correctly.
 

Red .....	Excitation+ (Input)	Green .....	Signal+ (Output)
White.....	Excitation- (Input)	Blue .....	Signal- (Output)
Yellow .....	Shield		
- ❑ Turn off the indicator and other instruments before attaching the load cell.
  - Check the excitation voltage before operating the load cell.

- ❑ Do not input any excessive excitation voltage above the tolerance, it will cause damage to the load cell.
- ❑ Avoid shock and overload to the load cell.
- ❑ Use lubricant between the load cell and sockets.
- ❑ When the welding is executed, ground the earth line and disconnect the load cell cable from the indicator to protect the load cell and indicator from the welding current.
- ❑ Example of truck scale  
Make the foundations carefully. Build the scale pit structure exactly.



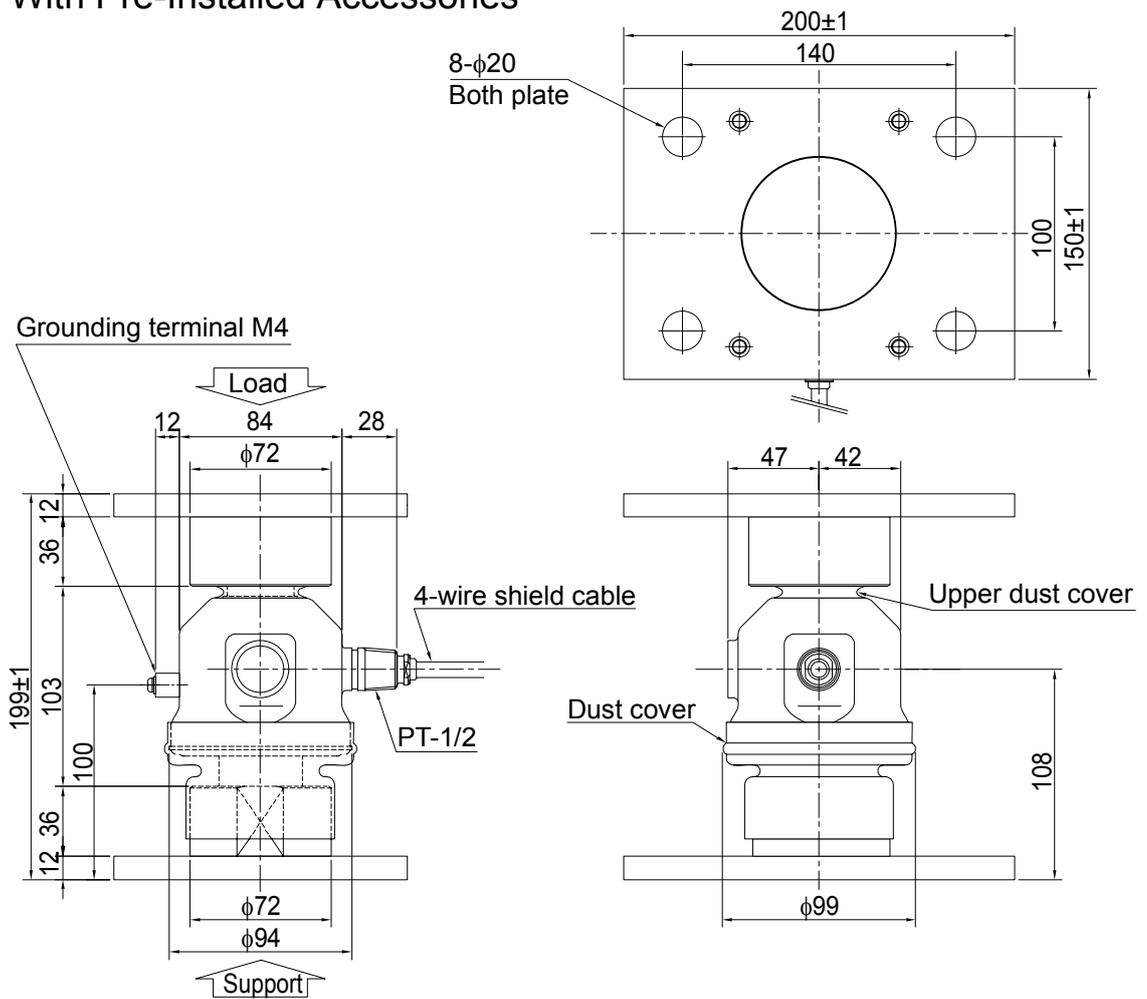
## 8. Maintenance

Check the following items for the load cells maintenance.

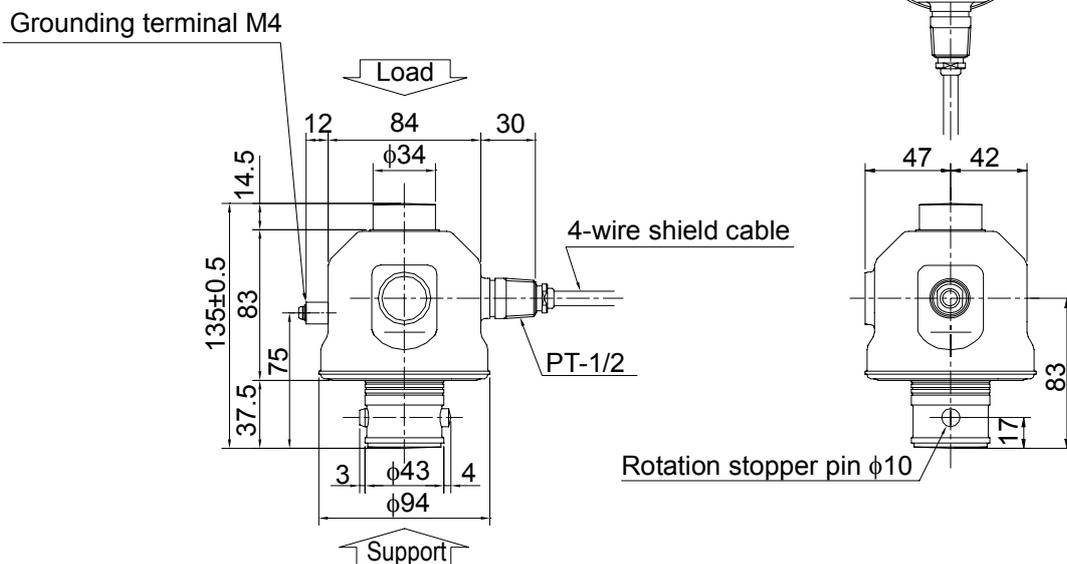
- ❑ Is there the appropriate clearance?  
Is there a foreign substance such as mud at the clearance?
- ❑ Is there water or other puddle liquid in the pit?
- ❑ Is there foreign substance on the load cell, mounting plate and bearing plate?
- ❑ Are there loosened bolts?
- ❑ Is there a slack in the load cell cable?
- ❑ Is there a connection problem?
- ❑ Is there any current leakage?

# 9. Dimensions

## The Type With Pre-Installed Accessories



## The Type Without Accessories





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