

**A&D**  
A&D Company, Ltd.  
LCB25 Series  
Single Point  
Beam Load Cell



# A and D LCB25 Series Single Point Beam Load Cell Owner's Manual

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## A and D LCB25 Series Single Point Beam Load Cell



## INTRODUCTION

- The LCB25 series single point beam load cells are compact (70 mm length, 22 mm height) , optimum as platforms for from ordinary weighing to platforms for mixing and filling. Design allows for simplified weighing system construction.
- To install the load cell properly, the static conditions, as well as dynamic factors (i.e., shock and vibration) must be considered. To obtain the best performance from the load cell, read this instruction manual before installation.

## SPECIFICATIONS

MODEL LCB 25	G 500	K 001	K 002	K 003
Rated capacity N ( kg)	4. 903 N ( 500 g )	9. 807 N (1 kg)	19 . 61 N (2 kg)	29 . 42 N (3 kg)
Rated output	1 m V/ V ± 10%	2 m V/ V ± 10%		
Safe load l imit	300% of R.C.	150% of R.C.		
Combined error	0. 02 % of R.O.			
Zero balance	± 10% of R.O.			
C om pens at ed t em per at ur e r a nge	– 10 °C 40 °C			
R ec om m ended ex c i t at i on v ol t age	DC 5 V 25 V			
Maximum excitation voltage	DC 25 V			
Maximum platform s ize	200 mm x 200 mm			
Input terminal resistance	1. 17 k Ω± 100 Ω			
Output terminal resistance	1 k Ω± 10 Ω			
Insulation resistance	2000 MΩ or greater ( DC50 V The bridge – body)			
Temperature effect on zero	± 0.023 % of R.O./ 10 °C			
Temperature effect on span	± 0.014 % of Load /10 °C Typ.			
Cable thickness/ length	ϕ 3. 5 , 4 core shielded cable x 0. 4 m A shielded cable is connected to the load cell body			
IP rating	IP 65 * 1			
Mass	40 g			
Deflection	0. 14 mm	0. 28 mm		
Natural frequency	238 Hz		356 Hz	447 Hz
Permissible moment	0. 12 N m	0. 23 N m	0. 46 N m	0. 69 N m

\* 1: High-pressure water jets cannot be used.

## NOTES ON INSTALLATION

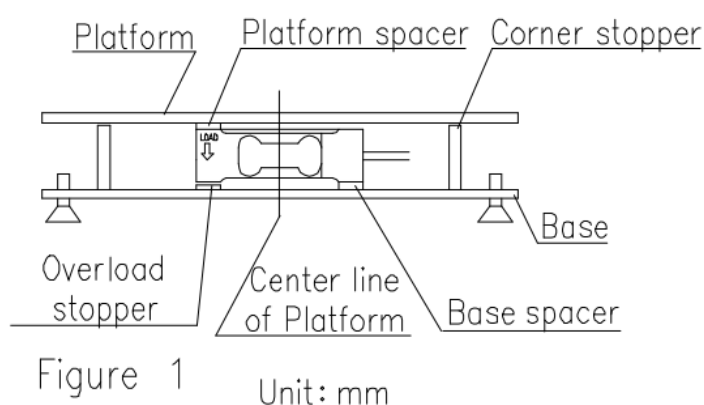
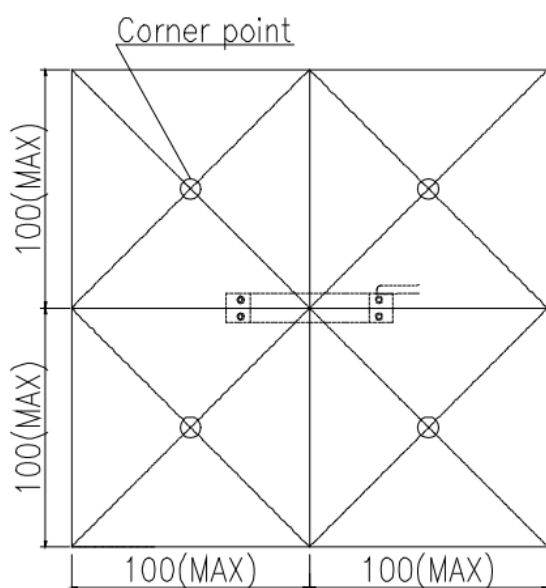
Use care not to damage the resin coating of the load cell. When installing, do not apply excessive load to the load cell.

### INSTALLING ON THE BASE / ATTACHING THE PLATFORM

1. The base should be rigid to prevent it from slanting or curving under normal operating conditions. If the base yields, the platform will bend and adversely affect the load cell.
2. The tare and the platform should be as light as possible to prolong the service life and excellent performance of the load cell.
3. Insert one spacer of 2 mm or greater thickness between the base and the load cell, and also another one between the platform and the load cell.
4. The mounting surfaces for the load cell and the spacer require a surface finish of Ra25 or smaller.
5. Use hexagon socket head bolts (tensile strength Class 10.9-JIS or higher) or high-tension hexagon head bolts (tensile strength Class 10.9-JIS or higher) to attach the load cell on the base. Table 1 shows the applicable clamping torque. Be sure to avoid using ordinary bolts (of a lower tensile strength) available on the market.

Bolt diameter	Clamping torque
M3	1.3 N m

1. Make sure that the attaching surface is clean and free from foreign matter. Tighten the bolts while using much care not to apply unnecessary force (torsion or lateral load) to the load cell.
2. For the allowable dimensions of the platform, see Figure 1. Also, when designing a platform, see the “3-2 OVERLOAD PRECAUTIONS”.



### OVERLOAD PRECAUTIONS

#### 1. Safe load limit

When a load is applied to the center of the load cell, the safe load limit is 150% (G500: 300%) of the rated

capacity. Permanent distortion may be caused if the safe load limit is exceeded. Although there will be no problem as long as a load that is applied to the load cell is lower than the rated capacity, the performance and function of the load cell cannot be maintained if a load that exceeds the rated capacity is constantly applied. It also reduces its service life. When a load may exceed the rated capacity, make sure to attach an overload stopper to protect the load cell as described below.

## 2. Overload stopper

If excessive shock is applied when positioning an object on the platform, the load may exceed the safe load limit. Therefore, be sure to attach an overload stopper just below the load end of the load cell.

### [Recommended installation]

Attach the overload stopper so that the stopper comes into contact with the load cell with as wide an area as possible when 150% of the rated capacity (load plus the platform weight). (See Figure 2.)

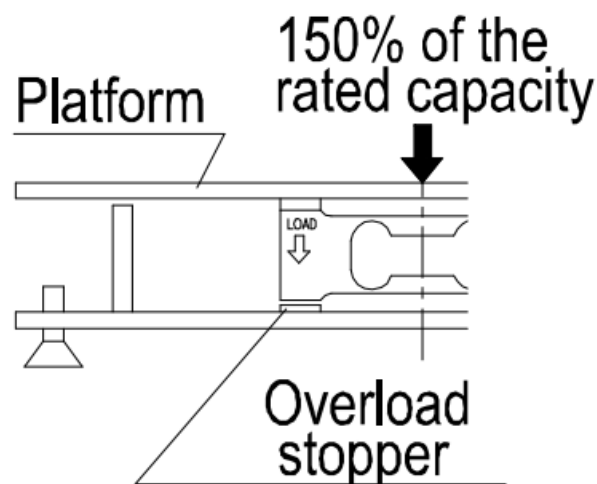


Figure 2

## 3. Corner stopper

Even if the overload stopper is properly adjusted, a load that exceeds safe load limit may be applied to the load cell due to the deflection of the base when a load is applied to the corners of the platform. When a load is likely to be applied to the corners, make sure to attach the corner stoppers.

### [Recommended installation]

Attach the corner stoppers so that the stoppers come into contact with the bottom of the weighing platform with as wide an area as possible when 100% of the rated capacity is applied to each the four corners of the platform. (See Figure 3.)

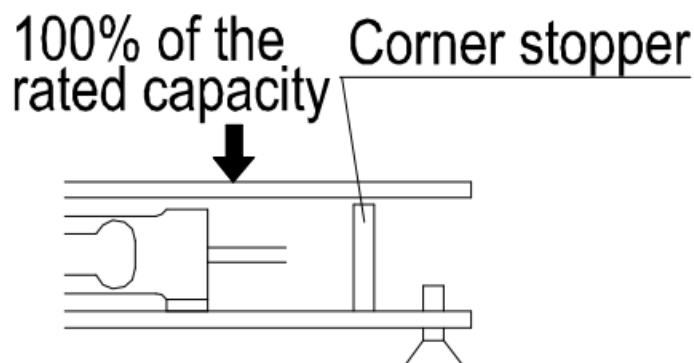


Figure 3

## 4. Other safeguards

If an overload or excessive shock force is likely to occur, overlay the platform with a shock-absorbing pad.

## 5. Maximum permissible moment

If a moment greater than the specified maximum value is applied to the center of the load cell, the load cell may not function properly. Especially when the load is over one-third of the rated capacity, it may cause the moment to exceed the specified maximum value, even when within the maximum loading area. Under such a condition, place the object to be weighed on the platform directly above the center of the loading area so that the maximum moment will not be exceeded. The moment applied to the load cell can be obtained as follows:

Moment [N · m] = Distance from the center of gravity of the object to the load cell center [m] x mass of the object [kg] x 9.8

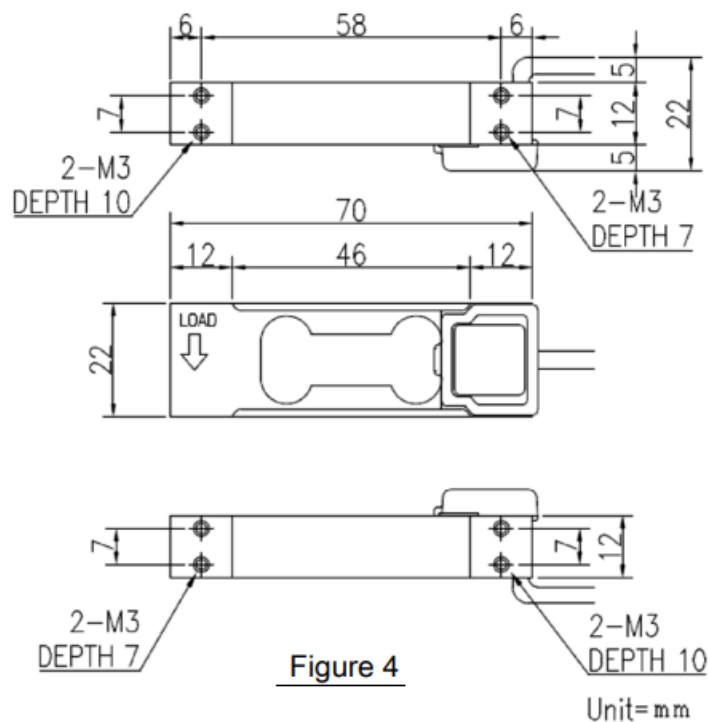
## CABLM eas Cs oOf LthOe Rob jCecOt [DkgE] /x T9.R8 EMINAL TYPE

RED..... EXC + WHITE ..... EXC –  
 GREEN..... SIG + BLUE ..... SIG –  
 YELLOW ..... SHIELD (connected to the load cell body)

## MAINTENANCE

1. Remove all dirt and dust from the load cell, and always use it in a clean environment.
2. Use a blower to clean the load cell. Do not wash using water.
3. Periodically inspect the overload stopper and corner stoppers.

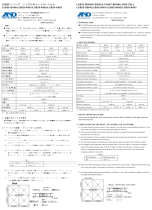
## DIMENSION



3-23-14 Higashi-Ikebukuro, Toshima-ku, Tokyo 170-0013 JAPAN  
 Tel: [81](3)5391-6132 Fax: [81](3)5391-1566

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LCB25 Series Single Point Beam Load Cell, LCB25 Series, Single Point Beam Load Cell, Point Beam Load Cell, Load Cell, Cell

References

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