

Compact Tension/Compression Load Cells

Compact

LUX-B-ID

50 N to 20 kN

IP 67

Stainless Steel Made

Easy Installation

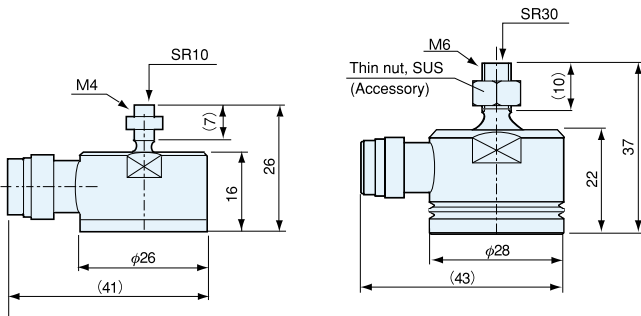
TEDS Installable



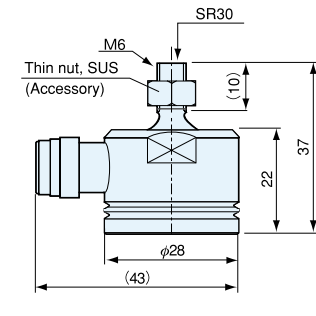
LUX-B-5 to 20KN

LUX-B-500N to 2KN

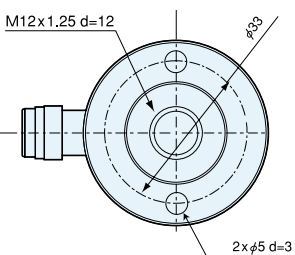
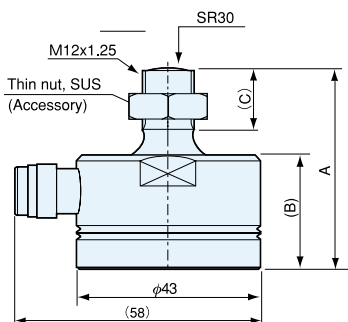
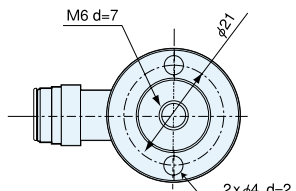
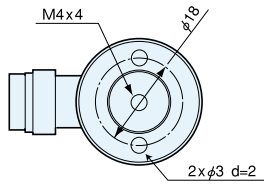
Dimensions



LUX-B-50N to 400N



LUX-B-500N to 2KN



LUX-B-5KN to 20KN

Model	A	B	C
LUX-B-5KN-ID	49	26.5	15
LUX-B-10KN-ID	51	27.5	16
LUX-B-20KN-ID	53	27	16

The LUX-A series is suitable for measuring and controlling loads applied to small-scale presses and press-fitting devices. Compact and lightweight design with screw-shape load receiving portion facilitates installation to equipment. In addition, the connector-equipped design further ensures easy installation without handling the cable together with the load cell, and easy replacement of cable.

Specifications

Performance	
Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.1\%$ RO (2KN: Within $\pm 0.15\%$ RO)
Hysteresis	Within $\pm 0.1\%$ RO (2KN: Within $\pm 0.15\%$ RO)
Repeatability	0.05% RO or less
Rated Output	± 1.3 mV/V or more (500N, 1KN: 0.9 mV/V or more)
Environmental Capability	
Safe Temp. Range	-20 to 80°C
Comp. Temp. Range	-10 to 70°C
Temp. Effect on Zero Bal.	Within $\pm 0.005\%$ RO/ $^\circ\text{C}$
Temp. Effect on Out.	Within $\pm 0.005\%$ / $^\circ\text{C}$
Electrical Characteristics	
Safe Excit. Voltage	15 V AC or DC
Recom. Excit. Voltage	1 to 10 V AC or DC
Input Resistance	$350 \Omega \pm 25\%$
Output Resistance	$350 \Omega \pm 3.5\%$
Cable	4-conductor (0.08 mm ²) chloroprene shielded cable, 4 mm dia. by 4 m long, with connector plug to mainframe and bared to amplifier (Shield wire is not connected to the mainframe.)
Mechanical Properties	
Safe Overload Rating	150%
Natural Frequency	See table below.
Enclosure	SUS (metallic finish)
Weight	Approx. 0.3 kg (5 to 20KN), approx. 0. kg (500N to 2KN)
Protection Rating	IP 67 (Watertight type conforming to JIS C 0920)

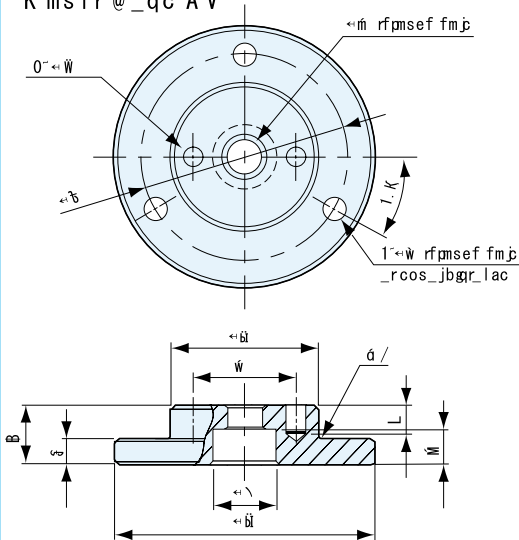
Model	Rated Capacity	Natural Frequency (App.)	Recommended Tightening Torque*
LUX-B-50N-ID	± 50 N	8 kHz	3
LUX-B-100N-ID	± 100 N	11 kHz	
LUX-B-400N-ID	± 200 N	14 kHz	
LUX-B-500N-ID	± 500 N	16 kHz	10
LUX-B-1KN-ID	± 1 kN	21 kHz	
LUX-B-2KN-ID	± 2 kN	27 kHz	
LUX-B-5KN-ID	± 5 kN	18 kHz	80
LUX-B-10KN-ID	± 10 kN	21 kHz	
LUX-B-20KN-ID	± 20 kN	25 kHz	

* Tighten the oil-free part with torque wrench.

To Ensure Safe Usage

If impacts are expected in receiving tension loads, select a load cell with the rated capacity higher by one rank than the operating load.

K m s l r @ _ q c A V



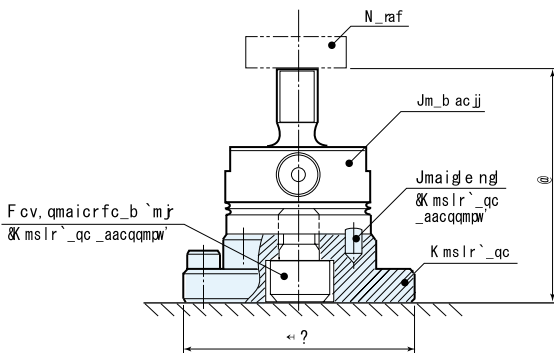
Load Cell	Mount Base	A	B	C	D	E	F	G	H	J	L	M	N	Weight (App.)
LUX-B-50N-ID	CX-2	21	04	7	13	5	0,3	2,3	2,3	3	/6±. / 1}	0,4	2,3	2. e
LUX-B-100N-ID														
LUX-B-200N-ID														
LUX-B-500N-ID	CX-4	26	07	/1	17	/0	3	5	5	3	0/±. / 2}	0	4	/.. e
LUX-B-1KN-ID														
LUX-B-2KN-ID														
LUX-B-5KN-ID	CX-6	46	22	0.	35	0.	/.	/1	/1	5	11±. / 3}	0	4	13. e
LUX-B-10KN-ID														
LUX-B-20KN-ID														

Hexagon socket head bolt for connection between load cell and mount base and locking pins are attached to the mount base.

B g k c l q n l q g l A m k ` g l _ r g n l u g r f Q n c a g j ? a a c q m p g q

ç In Combination with Mount Base CX

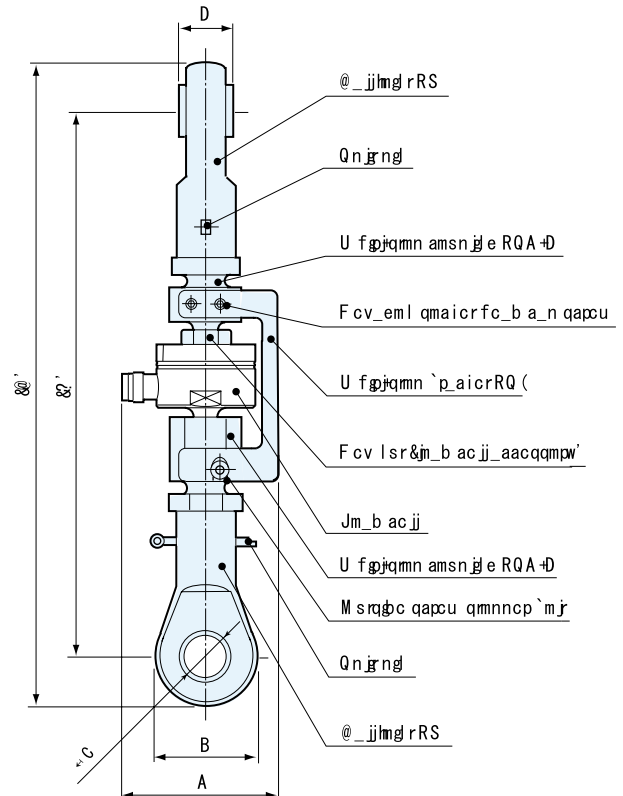
Patch should be prepared by user or CA-2 or the equivalent should be used. This combination does not apply to tension load measurement.



Load Cell	Mount Base	(A)	(B)
LUX-B-50N-ID	CX-2	21	11
LUX-B-100N-ID			
LUX-B-200N-ID			
LUX-B-500N-ID	CX-4	26	27
LUX-B-1KN-ID			
LUX-B-2KN-ID			
LUX-B-5KN-ID	CX-6	46	47
LUX-B-10KN-ID			5/
LUX-B-20KN-ID			51

ç In Combination with Ball Joint TU, Whirl-stop Coupling TSC and Whirl-stop Bracket TS

This combination does not apply to compression load measurement.



(U f g j q m n ` p_a i c r g l m r n g t b c b u g r l w d j e n p a c l r n l d s l a r n l, R m_t m b a a p o l r_j f_x_p b g q r_j j_a_d r w b c t g c q s a f _ q _ g l i u f g f q s n m p r q f c j n_b g l n j a c m d r f c j n_b a c j j g l r f c j n_b a c j j g l p n i c l,

Load Cell	Whirl-stop Coupling	Whirl-stop Bracket	Ball Joint	Y	A	B	C	D	ϕE	F
LUX-B-50N-ID	TSC-2M	TS-2	TU-6B	/.	/0.	22,5	/6	4	/0	7
LUX-B-100N-ID	TSC-2F									
LUX-B-200N-ID										
LUX-B-500N-ID	TSC-4MB	TS-4B	TU-12B	/43	/73	3..3	1.	/0	/4	
LUX-B-1KN-ID	TSC-4FB									
LUX-B-2KN-ID										
LUX-B-5KN-ID	TSC-6MB	TS-6B	TU-18B	015	057	45	20	/6	01	
LUX-B-10KN-ID				017	06/					
LUX-B-20KN-ID				02/	061					

To Ensure Safe Usage

Check the strength of the material to which the load cell is tightened. If a load cell with the rated capacity of 2 kN or more is selected, the material to which the load cell is tightened should have a tensile strength σ_b of 800 N/mm² or higher.

Typical recommended materials:

- SUS 630 (H900) HRC 40 to 47
- SCM 434 HRC 30 to 38

For tension load measurement, take care never to exceed the safe overload rating.

c LUX-B-ID Safe Bending Moment (N-mm)

Figures below show the safe bending moment against lateral load with a load applied in sensitivity direction (vertical direction)

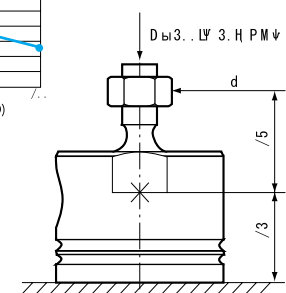
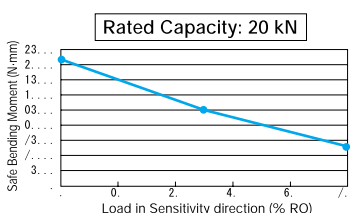
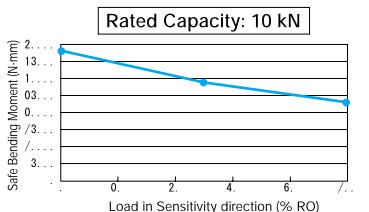
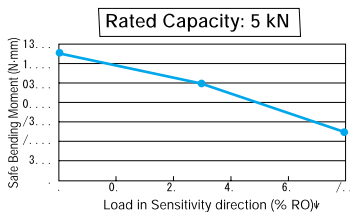
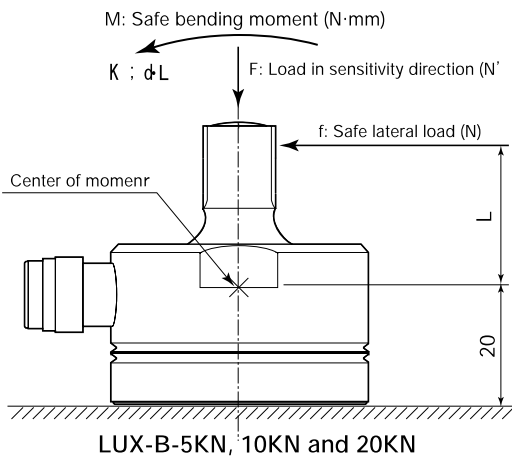
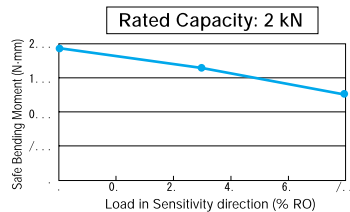
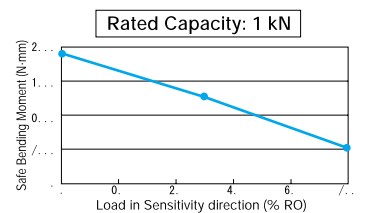
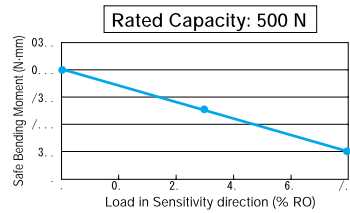
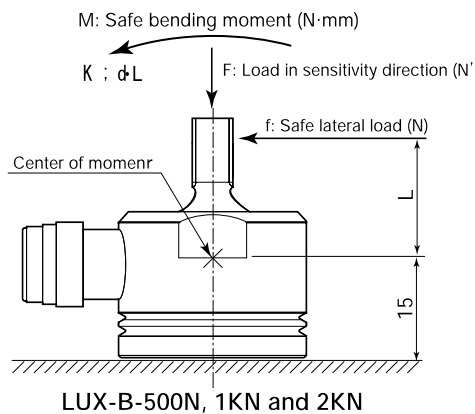
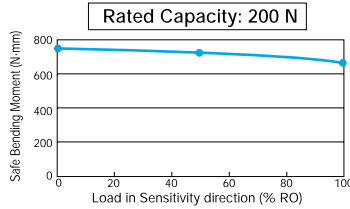
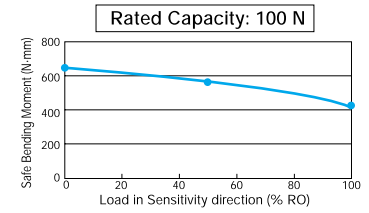
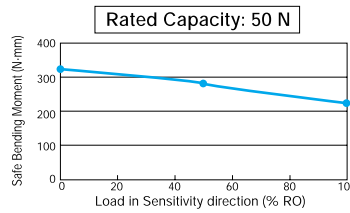
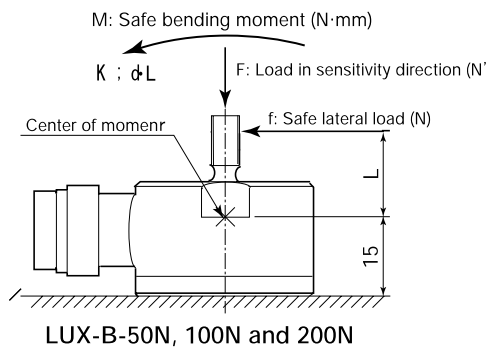


Fig. 1

How to Obtain Safe Lateral Load

Shown here is an example of calculating the safe lateral load when the LUX-A-1kN receives a load in sensitivity direction (vertical direction). (See Fig. 1.)

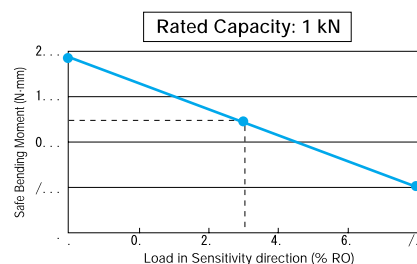
The safe lateral load f (N) which can be applied to the screw at the distance of 17 mm from the center of moment when a load of 500 N (50% the rated capacity) is applied in sensitivity direction is obtained as follows:

According to Graph-1, safe bending moment, M , is approximately 2500 N-m when a load of 50% the rated capacity is applied in sensitivity direction. Since the relation between safe lateral load f , and safe bending moment M is $M = f \cdot L$,

$$f = \frac{M}{L} = \frac{2500}{17} = 147.1 \text{ N}$$

Therefore, the safe lateral load f is 147.1 N.

Note: Safe lateral load is an allowable load to the mechanical strength of the load cell but it does not guarantee the accuracy.



Graph-1