Small-Sized Compression Load Cells

Nonlinearity 1/2000

LC-V

50 to 200 kN | Compact, Lightweight | Nonlinearity 1/2000 | Hermetically Sealed Structure with Inert Gas Filled in | Fatigue Life ≥1×10⁷ | BISELCOM Gage Used

• TEDS-installed versions can be manufactured. Inquiries are welcome.

• Steady brace CR is available. (See page 27.)

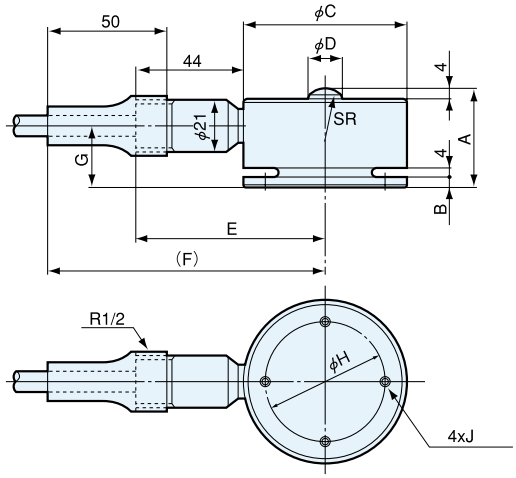
Since load cells in the LC-V series are compact and lightweight, they can be easily installed to existing facilities. Their hermetically-sealed structure filled with inert gas ensures the stable and reliable performance while maintaining accuracy as high as 1/2000.

Specifications

Performance	
Rated Capacity	See table below.
Nonlinearity	Within ±0.05% RO
Hysteresis	Within ±0.05% RO
Repeatability	0.03% RO or less
Rated Output	2.5 mV/V (5000 μm/m) ±0.2%
Environmental Capability	
Safe Temp. Range	–20 to 80°C
Comp. Temp. Range	–10 to 70°C
Temp. Effect on Zero Bal.	Within ±0.003% RO/°C
Temp. Effect on Out.	Within ±0.003%/°C
Electrical Characteristics	
Safe Excit. Voltage	20 V AC or DC
Recom. Excit. Voltage	1 to 10 V AC or DC
Input Resistance	350 Ω ±0.5%
Output Resistance	350 Ω ±0.5%
Cable	4-conductor (0.5 mm²) chloroprene shielded cable, 8.5 mm dia. by 5 m long, with a press-fit terminal for 4 mm (Shield wire is not connected to the mainframe.)
Mechanical Properties	
Safe Overload Rating	150%
Natural Frequency	See table below.
Weight	See table below.
Protection Rating	IP 67 (Watertight type conforming to JIS C 0920)

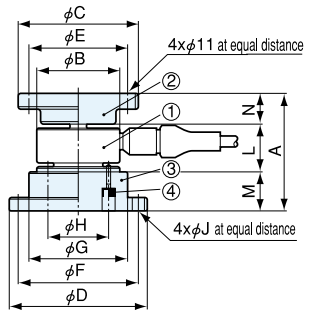
Model	Natural Frequency (Approx.)
LC-5TV	17 kHz
LC-10TV	16 kHz
LC-20TV	15 kHz

Dimensions



Model	Rated Capacity	A	B	ϕC	ϕD	E	F	G	ϕH	J	R	Weight (App.)
LC-5TV	50kN	40	4	68	14	78	114	25	50	M5	40	1.0 kg
LC-10TV	100kN	45	5	78	20	83	119	29	60	M6	70	1.3 kg
LC-20TV	200kN	55	6	98	26	93	129	36	80	M8	120	3.1 kg

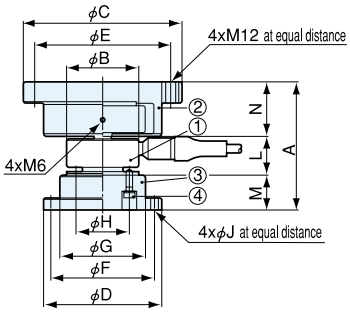
Dimensions with Accessories Mounted



In Combination with Saddle CA and Mount Base CF

Load Cell Proper ①	Saddle ②	Mount Base ③	Hexagon Socket Head Cap Screw ④	A	B	ϕC	ϕD	ϕE	ϕF	ϕG	ϕH	ϕJ	L	M	N
LC-5TV	CA-10B	CF-50	4-M5 L=20	94	68	98	112	80	96	80	50	9	40	30	24
LC-10TV	CA-10B	CF-60	4-M6 L=20	99	78	98	122	80	106	90	60	9	45	30	24
LC-20TV	CA-50B	CF-80	4-M8 L=25	123	98	118	148	100	124	100	80	13	55	40	28

Hexagon socket head cap screw is attached to the mount base for its connection to the load cell.



In Combination with Movable Saddle ER and Mount Base CF

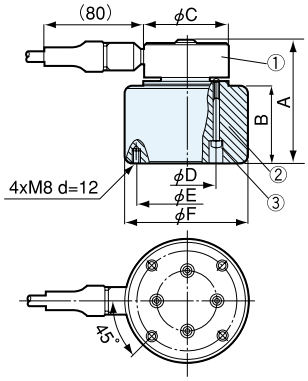
Load Cell Proper ①	Movable Saddle ②	Mount Base ③	Hexagon Socket Head Cap Screw ④	A	B	ϕC	ϕD	ϕE	ϕF	ϕG	ϕH	ϕJ	L	M	N
LC-5TV	ER-5B	CF-50	4-M5 L=20	119	68	148	112	128	96	80	50	9	40	30	49
LC-10TV	ER-10B	CF-60	4-M6 L=20	134	78	178	122	158	106	90	60	9	45	30	59
LC-20TV	ER-20B	CF-80	4-M8 L=25	173	98	198	148	178	124	100	80	13	55	40	78

Hexagon socket head cap screw is attached to the mount base for its connection to the load cell.

Dimensions in Combination with Mount Bases for Model Change

• These mount bases are used to replace LC-E, LCF-A (LC-F) or LC-G with LC-V.

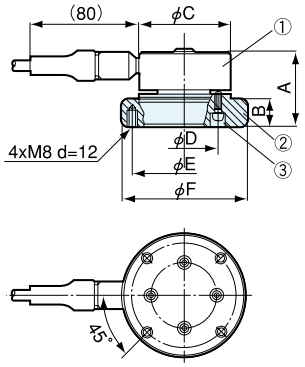
Mount Base CFS-E to Replace LC-E with LC-V



Load Cell Proper ①	Mount Base ②	Hexagon Socket Head Cap Screw ③	A	B	ϕC	ϕD	ϕE	ϕF
LC-5TV	CFS-5E	4-M5 L=50	103	63	68	50	80	100
LC-10TV	CFS-10E	4-M6 L=50	103	58	78	60	80	100
LC-20TV	CFS-20E	4-M8 L=50	110	55	98	80	90	120

Hexagon socket head cap screw is attached to the mount base for its connection to the load cell.

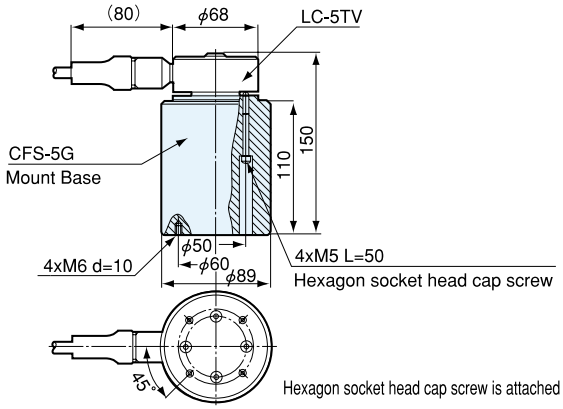
Mount Base CFS-F to Replace LCF-A with LC-V



Load Cell Proper ①	Mount Base ②	Hexagon Socket Head Cap Screw ③	A	B	ϕC	ϕD	ϕE	ϕF
LC-5TV	CFS-5F	4-M5 L=16	60	20	68	50	80	96
LC-10TV	CFS-10F	4-M6 L=25	75	30	78	60	100	116
LC-20TV	CFS-20F	4-M8 L=35	95	40	98	80	130	156

Hexagon socket head cap screw is attached to the mount base for its connection to the load cell.

Mount Base CFS-G to Replace LC-G with LC-V



Hexagon socket head cap screw is attached to the mount base for its connection to the load cell.

Steady Braces
CR Series

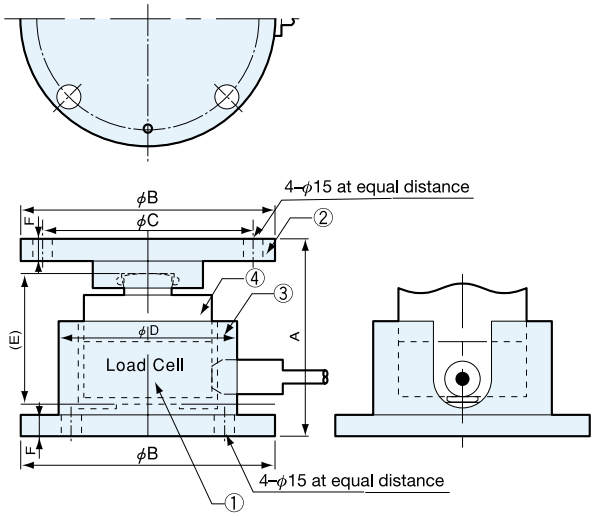
The steady brace is used in place of a saddle and mount base when installing a load cell to a hopper scale. It eliminates the need to prepare a rolling prevention mechanism such as check rod.

Features

- Reductions in construction time and investment are ensured since designing and construction for rolling prevention are not required.
- Enables installation of a load cell in small space.
- Easy installation to equipment

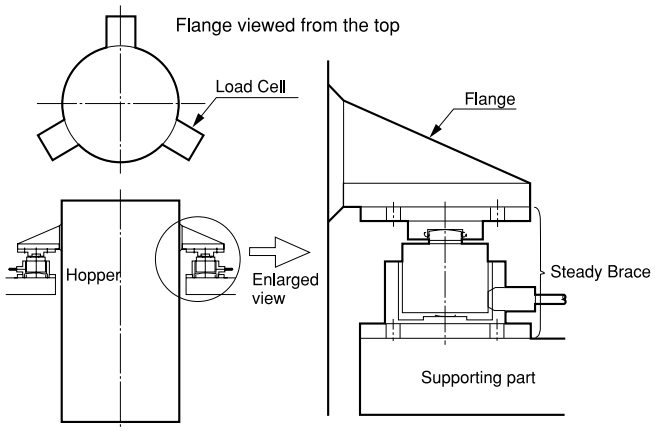
Dimensions in Combination with Load Cell

● Steady Brace CR in Combination with LC-V



Load Cell Proper ①	Steady Brace ②, ③, ④	A	ϕB	ϕC	ϕD	E	F	Weight (App.)
LC-5TV	CR-5	120	148	126	96	80	13	7 kg
LC-10TV	CR-10	120	158	136	110	80	13	8.5 kg
LC-20TV	CR-20	145	187	164	136	95	15	15.6 kg

Installation Sample



Behavior of Steady Brace against Lateral Load

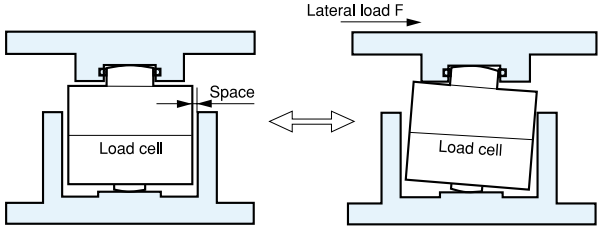


Fig. 1 Normal Status

Fig. 2 With lateral load applied

When a laterial load is applied in the status shown in Fig. 1, the load cell inside the assembly is inclined and the upper part of steady brace moves to the right (see Fig. 2).
When the laterial load is removed, the status shown in Fig. 1 returns.

For safe operation
To prevent the hopper from falling down, the hopper's center of gravity should be low enough from the installation position of load cell.