

TYPE: SHK-B



SHK-B Bow Type Crosby™ Cabled Load Shackle

Description

The LCM range of SHK-B load shackles are designed for lifting and weighing in rugged or harsh environments, including submersible applications. The shackle pins are forged from high tensile stainless steel to 6.5te and high tensile carbon steel from 9.5te, and are machined to an exacting specification. The basic shackle uses the Crosby G2130 (1 to 25te), G2140 (40 to 120te) and GN Rope H10 (150 to 1000te).

This range of load cells is proof loaded to 150% of the normal rated load, and is available in a range from 1 tonne to 1000 tonne. The integral cable is normally protected by the anti-rotation bracket or by a separate protective plate. The SHK-B is internally gauged and the whole instrumented area is sealed to IP67 to protect it in service.


They are simple to install and are available in standard shackle sizes. As an option, a rotating bobbin can be supplied to centralise the load and to minimise any point-load effects when the shackle is placed under load. We are also always happy to discuss any special requirements that can be accommodated.

The SHK-B series can be supplied on its own or combined with our extensive range of instrumentation to provide a complete load monitoring package. A wireless version is also available (see TELSHACK-B data sheet for details).

Specification

Rated load (tonnes)	1, 2, 3.25, 4.75, 6.5, 9.5, 12, 17, 25, 40, 55, 85, 120, 150, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000
Proof load	150% of rated load
Ultimate breaking load	300% of rated load
Output	Between 1.8mV and 3.6mV
Non-linearity	<±1% of rated load (typically)
Non-repeatability	<±0.1% of rated load
Excitation voltage	10vdc recommended, 15vdc maximum
Bridge resistance	350Ω
Insulation resistance	>500MΩ @ 500vdc
Operating temperature range	-20 to +70°C
Compensated temperature range	-10 to +50°C
Zero temperature coefficient	<±0.01% of rated load/°C
Span temperature coefficient	<±0.01% of rated load/°C
Environmental protection level	IP67
Connection type	10 metre 4 core screened PUR cable (glanded exit)
Wiring connections	+ve supply: Red -ve supply: Blue +ve signal: Green -ve signal: Yellow

Available Options

- Special ranges and capacities up to 2000te
- Special electrical connections
- Integral signal conditioning
- Centralising load bobbin
- Subsea, offshore and ROV friendly versions
- Lloyds, ABS, DNV or other third party witnessing
- TEDS option (when used with TR150 handheld display)
- ATEX version available (see SHK-A datasheet) 
- Wireless version available (see TELSHACK-B datasheet)
- 3.2 Material Certification

Features

- Ranges from 1 tonne to 1000 tonne
- High tensile stainless steel construction (to 6.5te) and high tensile carbon steel construction (9.5te and above)
- Environmentally sealed to IP67
- Simple installation and operation
- Shackle and load pin fully certified
- Optional load centralising bobbin
- Can be supplied with amplified output
- Submersible and many other options available

Typical Applications

- Under-hook hoist/crane weighing
- Cable tension monitoring
- Towing/mooring Tension
- Crane safe load monitoring
- Bollard testing

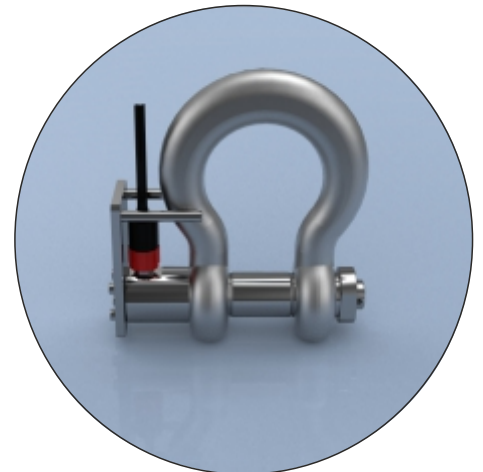
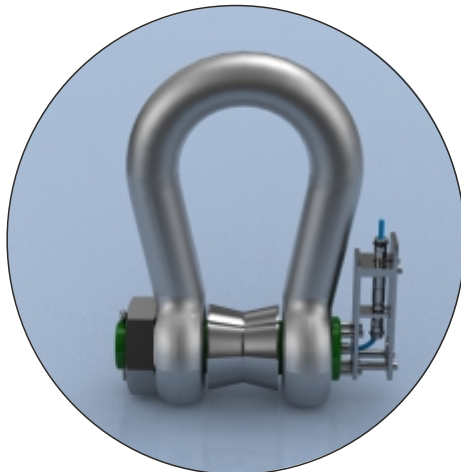
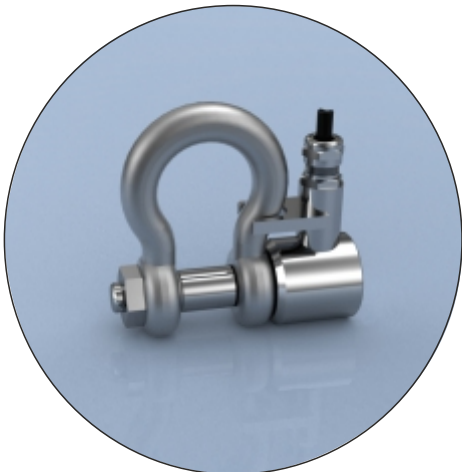
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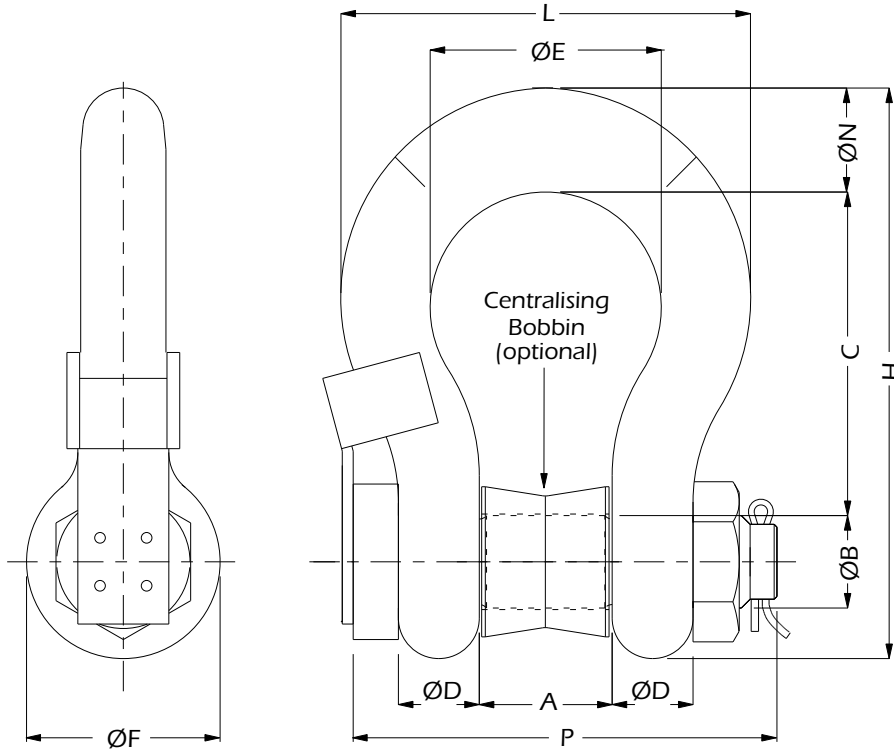
Special Options

Special ranges	The SHK-B can be supplied in any range, between 1te and 1000te and calibrated as required. Usually we will choose the nearest standard shackle size. We can also offer special design shackles up to 2000te. Please contact our design team for more details
Special electrical	The standard SHK-B cable exits the shackle pin via a gland and is restrained using the anti-rotation bracket. We can offer variations to the electrical connection method. For example, integral connectors, special cable length etc. For more details contact our office.
Integral signal conditioning	We can offer various integral signal conditioning options: Analogue Signals 4-20mA 2-wire current output (7.5 to 30vdc supply) 4-20mA 3-wire current output (10 to 30vdc supply) 0.1 - 5.1vdc 3-wire voltage output (8.5 to 28vdc supply) 0.1 -10.1vdc 3-wire voltage output (13 to 30vdc supply) Digital Signals RS232 digital - various protocols (5.4 to 18vdc supply) RS485 digital - various protocols (5.4 to 18vdc supply)
Centralising bobbin	We can offer an optional centralising bobbin. This helps improve the overall accuracy in certain cable tension applications. The bobbin is shown pictorially in the dimensions drawing.
Telemetry	We have a version available that requires no cable connection, using radio telemetry to transmit data. There is a separate data sheet available for this product (TELSHACK-B).
Subsea or offshore	We are able to offer fully submersible versions, which are normally supplied with underwater mateable connectors, making them suitable for use in environmental pressures up to 10,000psi. These versions can also be pressure tested by LCM and witnessed by a third party at any point through the manufacturing process. We regularly have ABS, Lloyds or DNV inspectors on site. See below for examples of our submersible load shackles.



SHK-B Bow Type Crosby™ Cabled Load Shackle

Dimensions



All dimensions are in mm

Rating (tonnes)	A	ØB	C	ØD	ØE	ØF	H	L	ØN	P	Weight (kgs)	Resolution (tonnes)
1	16.8	11.2	36.6	9.65	26.2	23.1	63	45.2	9.65	90	2	0.001
2	20.6	16	47.8	12.7	33.3	30.2	83.5	58.5	12.7	97	2.3	0.002
3.25	26.9	19.1	60.5	16	42.9	38.1	106	74.5	17.5	96	2.8	0.005
4.75	31.8	22.4	71.5	19.1	51	46	126	89	20.6	111	3	0.005
6.5	36.6	25.4	84	22.4	58	53	148	102	24.6	122	3.2	0.005
9.5	46	31.8	108	28.7	74	68.5	190	131	31.8	156	5.2	0.01
12	51.5	35.1	119	31.8	82.5	76	210	146	35.1	171	8	0.01
17	60.5	41.4	146	38.1	98.5	92	254	175	41.1	201	12	0.02
25	73	51	178	44.5	127	106	313	225	57	236	18	0.02
40	73.2	50.8	178	44.5	127	106	313	224	57.2	236	18	0.05
55	82.6	57.2	197	50.8	146	122	347	258	61	269	25	0.05
85	105	69.9	267	66.5	184	148	455	324	79.2	351	45	0.1
120	127	82.6	330	76.2	200	165	546	371	92.2	387	85	0.1
150	170	108	400	102	275	230	671	479	102	475	160	0.1
200	180	125	500	120	290	260	813	530	120	520	235	0.2
250	205	140	540	125	305	260	865	555	125	560	285	0.2
300	205	150	600	130	305	305	958	565	130	570	340	0.5
400	230	175	680	165	325	350	1108	655	165	655	560	0.5
500	255	185	700	180	350	370	1158	710	180	720	685	0.5
600	285	205	700	195	375	405	1200	765	195	815	880	0.5
700	310	217	700	205	400	435	1231	810	205	860	980	1
800	310	217	700	210	400	435	1236	820	210	870	1100	1
900	330	230	700	220	420	465	1268	860	220	910	1280	1
1000	350	240	750	230	420	480	1290	880	230	950	1460	1



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Due to continual product development, LCM Systems Ltd reserves the right to alter product specifications without prior notice.

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