TYPE: SHK-D



SHK-D 'D' Type Crosby™ Cabled Load Shackle

Features

- Ranges from 1 tonne to 35 tonne
- High tensile carbon steel construction
- Environmentally sealed to IP67
- Simple installation and operation
- Shackle and load pin fully certified
- Optional load centralisng bobbin
- Can be supplied with integral signal conditioning
- Many other options available

Typical Applications

- Under-hook hoist/crane weighing
- Cable tension monitoring
- Towing/Mooring Tension
- Crane safe load monitoring

Description

The LCM range of load shackles is designed for lifting and weighing in rugged or harsh environments. The shackle pins are forged from high tensile stainless steel and are machined to an exacting specification. The basic shackle uses the Crosby G2150 series.

This range of loads cells is proof loaded to 150% of the normal rated load, and is available in a range from 1 tonne to 35 tonne. The SHK-D 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-D series can be supplied on its own or combined with our extensive range of instrumentation to provide a complete load monitoring package.

Specification

Rated load (tonnes)	1, 2, 3.25, 4.75, 6.5, 9.5, 12, 17, 25, 35	
Proof load	150% of rated load	
Ultimate breaking load	300% of rated load	
Output	Between 1.8mV and 2.4mV	
Non-linearity	<±1% of rated load (typically)	
Non-repeatablity	<±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 and offshore versions
- Lloyds, ABS or DNV witness testing
- TEDS option (when used with TR150 handheld display)
- ATEX version available (see SHK-A datasheet)

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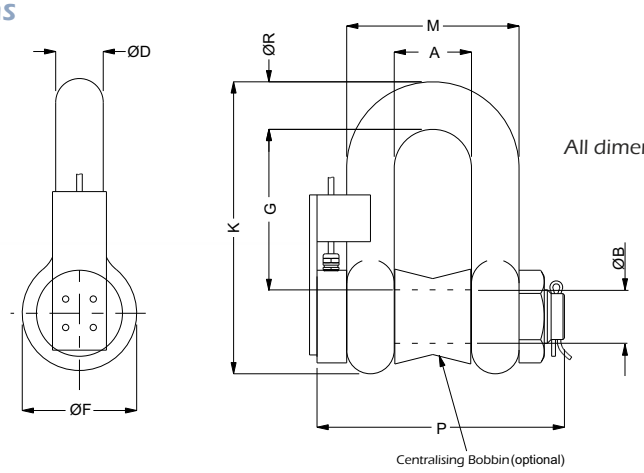
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Special Options

Special ranges	The SHK-D can be supplied in any range, between 1te and 35te 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-D cable exits the shackle pin via a gland and is connections restrained using the anti-rotation bracket. We can offer variations to the electrical connection method. For example, integral connectors, special cable length etc.
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) 0-5vdc 3-wire voltage output (8.5 to 28vdc supply) 0-10vdc 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 drawing below.
Subsea or offshore	We are able to offer fully submersible versions, which are normally supplied with underwater mateable connectors. 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.
Radio 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-D).

Dimensions



All dimensions are in mm

Model	Rated Load (tonnes)	A	ØB	ØD	ØF	G	K	M	P	R	Weight (kgs)	Resolution (tonnes)
SHK-D-1	1	16.8	11.2	9.65	23.1	31	58.5	35.8	55	9.65	2	0.001
SHK-D-2	2	20.6	16	12.7	30.2	41.4	77	46	84	12.7	2.2	0.002
SHK-D-3.5	3½	26.9	19.1	16	38.1	51	95.5	58.5	89.5	16	2.4	0.005
SHK-D-4.75	4¾	31.8	22.4	19.1	46	60.5	115	70	103	20.6	2.8	0.005
SHK-D-6.5	6½	36.6	25.4	22.4	53	71.5	135	81	120	24.6	3.5	0.005
SHK-D-9.5	9½	46.0	31.8	28.7	68.5	91	172	103	150	31.8	6	0.01
SHK-D-12	12	51.5	35.1	31.8	76	100	191	115	165	35.1	8	0.01
SHK-D-17	17	60.5	41.4	38.1	92	122	230	137	196	41.1	10	0.02
SHK-D-25	25	73.0	51	44.5	106	146	279	162	230	54	15	0.02
SHK-D-35	35	82.5	57	51	122	172	312	184	264	60	22	0.05

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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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