

As erected in November, the main boom of the Sarens SGC-250 was set at 118 metres and there was a 52 m jib on it, giving a total height of 160.5 m

International heavy lift and transport specialist Sarens has launched what it claims as the largest land-based crane in the world by size and capacity. *ICST* went to see it



The largest so far

The new SGC-250 super heavy lift ring crane from Sarens has a maximum load moment of 250,000 tonne-metres which enables it to lift 5,000 tonnes on the main boom to a radius of 40 metres. With the jib fitted capacity on the main hoist is still 4,250 tonnes at 40 m. The main boom as erected on site in Sarens' home country of Belgium for the unveiling on 9 November was 118 m. It can be extended to a maximum of 160 m.

The maximum of 5,000 tonnes is the equivalent of 20 Airbus A380 airliners or 1,408 elephants



Capacity of the jib as the crane was configured at its launch is 1,781 tonnes at a radius of 65 m. Extending the jib to its 100 m maximum, gives a maximum height of 250 m and a maximum radius of 275 m.

Impressive figures keep on coming: At a radius of 100 m the SGC-250 can lift 2,000 tonnes. At 165 m radius, capacity is 775 tonnes. Ground pressure remains under 25 tonnes per square metre (t/m²). This is achieved by having a large number of wheels on the four bogies that run on the double ring beam and the large area of spreader mats.

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Just over 5,000 tonnes of counterweight accounts for more than half of its 9,000 tonnes total weight

Full coverage

There are 80 mats under the ring, which have a total diameter of 52.8 m. Diameter of the double ring (with four rails) is 48.5 m.

Job site coverage is further increased by the crane's ability to relocate fully rigged from one lifting position to another. To do this, there are two sets of bogie wheels: one for slewing (360 degrees) and one travelling, which are hydraulically extended into position when required. There are 128 wheels

for slewing and lifting and 96 wheels for travelling. Sarens said this ability to relocate fully rigged is an industry first

Sarens said safety was a key focus when designing the crane. The SGC-250 has a full redundancy system for slewing and hoisting operations, in which all 12 of the 310 kW, Tier 4 compliant Caterpillar engines (contained in six power packs) are connected. The SGC-250 receives an EN ISO 13849-1 safety standard rating of 'PL E' – which Sarens says is the highest performance level possible. The SGC-250 can operate with two hook blocks: one on the main boom and one on the jib, which enhances its job site coverage. The crane's main hook block weighs 105 tonnes

Capacity of the SGC-250 as it was configured at the unveiling was 4,250 tonnes at a radius of 40 metres. Increasing the radius to 165 m still gives a capacity of 775 tonnes



All SGC cranes share the same hook blocks

and has a safe working load (SWL) of 3,200 tonnes while the jib hook weighs 58 tonnes and has a SWL of 1,600 tonnes.

A total of ten winches are fitted: six for load hoisting (four for the main hoist and two for the jib hook) while the other four are boom hoisting winches. Maximum line pull is 600 kN.

Double duty

Counterweight is up to 52 specially reinforced containers, which are also used to transport components of the disassembled crane. Each container, when filled with locally sourced sand or other ballast, provides counterweight of 100 tonnes. Assembling the crane takes eight to ten weeks. Construction of the components for the SGC-250 started in August 2017 and it was assembled in September 2018. It was about 18 months from the start of the project to its unveiling.

The SGC-250 was unveiled at the inland port of Ghent in Belgium on 9 November. Sarens CEO, Wim Sarens, and director of technical solutions, projects and engineering, Carl Sarens, presented the crane to an audience of more than 300 guests. Sarens described the crane as being the first of the third generation of SGC. It joins the SGC-120 and SGC-140 which are out at work in the UK and Kazakhstan, respectively. Smallest in the series is the SGC-90. At the inauguration event the new crane's name, Big Carl, was also announced.

The SGC-250 will work in the UK on the Hinkley Point C nuclear power station construction project. Sarens has been commissioned to use the crane to lift more than 600 pieces of pre-fabricated components on the project over about four years. ■



“ The Sarens slogan of 'nothing too heavy, nothing too high' befits Big Carl ”