

R 9100

Job report: Mining excavator

The Liebherr R 9100 G6 excavator
Thar desert, Sindh province, Pakistan

LIEBHERR

Mining excavator



Situation

Thar Block-1 is an open-pit coal mine located in the Thar Desert, 410 kilometres northeast of Karachi, in Sindh Province, Pakistan – an area known for its abundant lignite reserves. The environment in the Thar Desert is harsh – arid conditions, temperatures as high as 50 °C, an average annual rainfall of 100 mm and constant dust are all part of the daily reality.

Thar Block-1 is Shanghai Electric's first Build-Own-Operate project. Shanghai Electric has been a trustworthy brand with global influence and widely recognised professional capabilities since it was established in 1902. The company

became involved in open-pit mining at Thar Block-1 in 2019. In that same year, the business relationship between Shanghai Electric and Liebherr Mining began when the company placed an order for 28 R 9100 mining excavators. Since then, more R 9100 excavators have been purchased by Shanghai Electric, bringing the company's total number to 32. At the time of publication, this was the largest fleet of R 9100s in the world.



The power behind the R 9100

The R 9100 is powered by the Liebherr D9512 engine, a 24-litre V12 engine designed and produced in Switzerland by Liebherr Machines Bulle SA that is engineered to withstand the intense conditions on a mine site. Integrated into more than 450 Liebherr mining excavators and clocking up more than 9 million hours worldwide in various working conditions and temperatures, the D9512 has proved its value in terms of reliability and durability.

Shanghai Electric's R 9100 specifications

Operating weight
113 tonnes / 125 tons

Motor output
565 kW / 757 HP

Bucket capacity
(at 1.8 t / m³ [3,035 lb/yd³])
7.5 m³ / 9.8 yd³

Max. digging force
(ISO 6015)
415 kN / 93,296 lbf

Max. breakout force
(ISO 6015)
560 kN / 125,893 lbf

Max. oil flow
1,725 l/min / 456 gpm

Onsite performance

At Thar Block-1, R 9100s have played a critical role in both coal extraction and overburden removal. Their exceptional digging and breakout forces, combined with fast cycle times, make them ideally suited for the demanding tasks in the desert climate. Shanghai Electric's R 9100 fleet is currently being used to load coal and overburden into 60-tonne mining trucks in just 4–5 passes with their 7.5 cubic metre (9.8 cubic yard) buckets.

Availability rate

In 2023, the R 9100 fleet reached an average of 95% availability, highlighting the strength and reliability of these machines, even in the toughest conditions.



95 %
availability rate



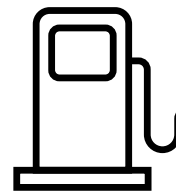
719
tonnes per hour

Production

From January 2023 to December 2023, the R 9100 fleet moved an average of 719 tonnes (793 tons) of overburden per hour.

Fuel consumption

Shanghai Electric reported that the R 9100s consumed an average of 84 litres of fuel (22.2 US gallons) per hour in 2023. The R 9100s rank among the best for fuel consumption within machines in the same class that are working on site.



84 litres
per hour (on average)

Engineered for extreme conditions

After four years in operation, Shanghai Electric has reported that its fleet of Liebherr R 9100s meet, and exceed, the company's expectations in terms of production, availability and fuel consumption. The D9512 engine within the excavators provides additional benefits such as reduced noise pollution as well as more efficient maintenance and minimal downtime due to the reliability of its components.

Furthermore, Shanghai Electric has not experienced any significant problems with its R 9100 fleet in the four years since the first machine arrived on site.



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Subject to technical modifications. All comparisons and claims of performance are made with respect to the prior Liebherr model unless specifically stated