

Job Report

Mining Excavator

R 9200

The Liebherr R 9200 Mining Excavator
at Beeshoek iron ore mine, South Africa
Operated by Assmang Pty. Ltd.



LIEBHERR



Key Facts

- Iron ore mine in Northern Cape province
- 3.4 million tonnes a year
- 100 t dump trucks loaded in 5 passes
- Super-fast cycle times as measured at 23 seconds
- 1,850 tonnes per hour
- Availability exceeding 90 %

Situation

The Beeshoek Iron Ore mine is situated approximately 65 km south of Assmang's flagship Khumani Iron Ore mine, near the town of Postmasburg in the Northern Cape province of South Africa. Composed of five open-cast pits, Beeshoek's production output is around 3.4 million tonnes a year. The mine is jointly managed by ARM Ferrous (a subsidiary of African Rainbow Minerals) and Assore, through Assmang. Beeshoek undertakes its own mining but also contracts out a smaller proportion of its mining requirement through a Plant & Hire contract, attributed to South Africa based company, Basil Read. This company is active in opencast mining, civil engineering projects, road construction, building, mixed

integrated housing developments, property development and related services, and is among Liebherr's major customers. As of 2015, Basil Read holds a fleet of twenty Liebherr mining excavators, including five units operated at Beeshoek mine. To sustain Assmang's ambitious stripping target and initially as part of a pre-series agreement with Liebherr, Basil Read was the very first operator of the new R 9200 since February 2015. As this machine demonstrated high performances and has performed successfully by exceeding production expectation continuously, not Basil Read but Assmang itself decided to own it for Beeshoek Mine.

First Class Serviceability Maximizing Availability

During the field tests, the observed availability on the R 9200 working at Beeshoek exceeded 90%. The machine has been developed to promote easy and fast maintenance: its service flap is accessible from the ground level and offers direct access to fuel, engine oil, grease, hydraulic oil refilling points. Fitted with Wiggins quick couplings for all fluids as a standard feature, the required time to refill each fluid is consistently reduced to minimize machine downtime. In addition, all major service points

are centralized for easy access from the unique central service platform, with all systems and design solutions simplified to facilitate maintenance. All of these features promote fast service enabling to reduce the average service time to minimum. The R 9200's high uptime is also possible thanks to its 30 hours of fuel autonomy in standard configuration and its remarkable fuel burn efficiency.

Outstanding Reliability in Extreme Conditions

R 9200 has been designed to fully answer requirements of the mining industry. In addition to the massive integration of components designed in-house by Liebherr, the R 9200 design is inspired from larger, proven Liebherr mining shovels and new technologies of the new generation excavators. Undercarriage employs the "Hook & Key" system with horizontal bolting to link between its side frame and central piece for highest torsion resistance and is equipped with heavy

duty rock protections preventing accidental component damage. To promote hydraulic components and diesel engine continuous efficiency, the R 9200 includes numerous advanced features to support cooling efficiency of sub-systems avoiding overheating. This is particularly appreciated in such conditions like Beeshoek, where temperatures frequently reach up to 50°C (122°F).

Setting New Productivity Standards in 200 t Class

The R 9200 is powered by a single Cummins QSK38 diesel engine, delivering a gross power output of 810 kW (1,086 HP). Ensuring the optimal balance of energy consumption and power output, the R 9200 maximizes net power which is available for the working process. Fitted with the Liebherr-patented Litronic Plus system for intelligent power management and using a closed-loop swing circuit (unique in 200 t class), the R 9200

achieves super-fast cycle times as measured at 23 seconds at Beeshoek. Fitted with a 10 m³ (13.08 yd³) XHD bucket to load material with a loose density of 2.3 t/m³ (3,878 lb/yd³), Basil Read's R 9200 efficiently loads 100 t dump trucks in five passes. A performance study conducted at Beeshoek demonstrated the R 9200 able to achieve an average production of 1,850 tonnes per hour.





Technical Data

Operating weight	205 tonnes / 225 tons
Engine model	Cummins QSK38, 12 cylinder
Engine output	810 kW / 1,086 HP at 1,800 rpm
Fuel tank	4,500 l / 1,189 gal

Attachment

Bucket capacity @ 2.3 t/m ³ (3,878 lb/yd ³)	10 m ³ / 13.08 yd ³
Ground engaging tools model	Z120
Max. digging force (SAE)	650 kN / 146,126 lbf
Max breakout force (SAE)	740 kN / 166,359 lbf