
R 9600

Job report: Mining excavator

The Liebherr R 9600 G8 excavator
Mount Pleasant, NSW, Australia

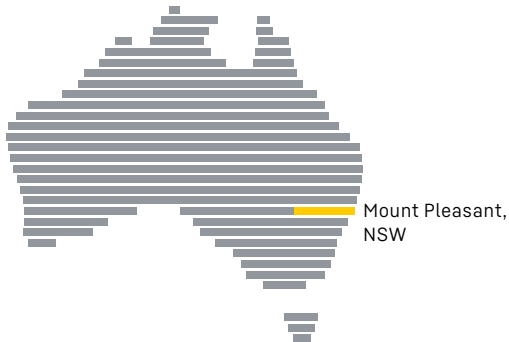
LIEBHERR

Mining excavator



Situation

Australia



Thiess Pty Ltd (Thiess) provides a full mining service at Mount Pleasant Operation, an open-cut coal mine located 2.5 kilometres from Muswellbrook in the Upper Hunter Valley, New South Wales, Australia. The mine began operations in November 2017.

Thiess' contractual operation includes overburden removal and haulage, equipment maintenance, coal mining and run-of-mine rehandling services, pit dewatering and progressive rehabilitation.

Thiess and Liebherr's relationship spans more than thirty years. During this time, Thiess has been a key partner in acquiring Liebherr's pre-series equipment on many occasions, assisting the validation processes for the R 996, R 9800, and R 9600 excavators. This R 9600 at Mount Pleasant Operation was Thiess' fourth of that model.

At present, Thiess' Australian fleet includes more than 55 Liebherr excavators and 30 Liebherr trucks. Five of these 55 excavators, are working at Mount Pleasant Operation, ranging from 350-tonne to 600-tonne class machines.

R 9600 performance

The R 9600 is the successor to the popular R 996B 600-tonne excavator and has been in production since 2021. As a Generation 8 machine, the R 9600 is equipped with the most advanced Liebherr mining technologies to date. This machine excels in its category, with top-tier bucket capacity, digging forces, hydraulic strength, and fuel efficiency – all designed to offer outstanding performance, safety, and comfort.

Operating weight

633 tonnes / 698 tons

Motor output

2,500 kW / 3,350 HP

Bucket capacity (1.65 t/m³)

40 m³ / 52.3 yd³

Max. digging force (ISO 6015)

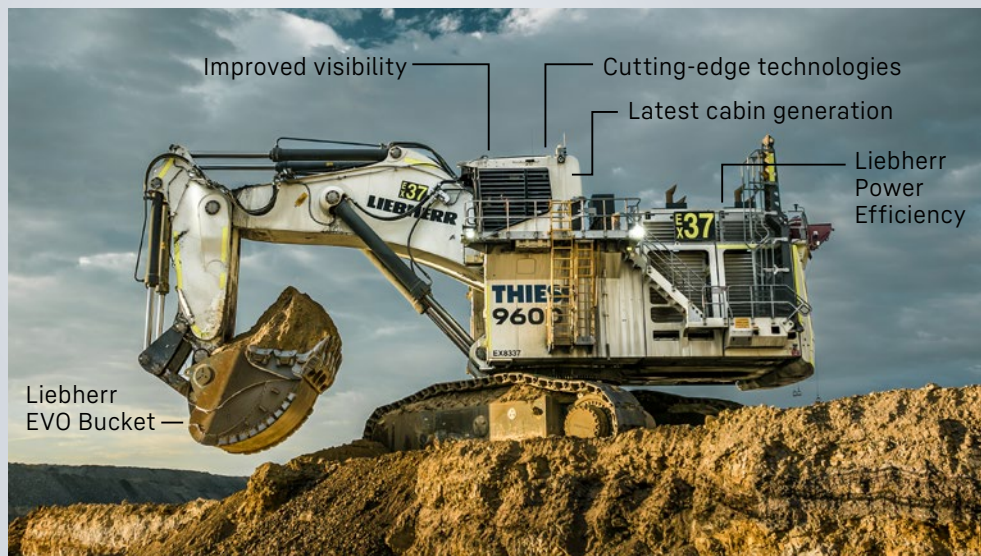
1,560 kN

Max. breakout force (ISO 6015)

1,730 kN

Max. oil flow

8,520 l/min



Onsite performance

Study conditions

The performance of Thies's R 9600 at Mount Pleasant Operation was studied from January to December 2023 to assess its operational efficiency as an individual unit after reports of record-breaking productivity emerged in May of the same year. This machine is used in a conventional digging application, loading 320-tonne class trucks in five passes.

Mount Pleasant Operation took great care to ensure that the R 9600 was set up for success when planning and preparing the excavator's work area. This area was well-prepared, clean, and levelled by ancillary equipment for both the R 9600 and the trucks operating alongside it. The work area was designed to have a nominal bench



height of 5 metres as well as an optimal bench width to enable continuous, productive digging for the R 9600. The R 9600 is equipped with a 40 m³ bucket suitable for digging the well-fragmented material present within the area.

Productivity

From January to December 2023, the R 9600 cumulated more than 6,400 hours and reached a production of 15.5 M of BCM.

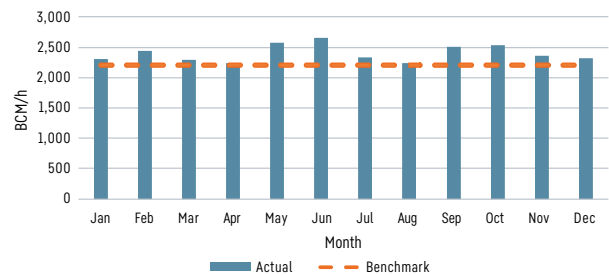
This R 9600 consistently moved more than 2,200 BCM/h (bank cubic metres) – the benchmark production target for R 9600s working in the Australian coal industry. The highest recorded monthly production rate during the study period was 2,650 BCM/h – reported in June.

The excavator reached a record BCM movement for Mount Pleasant Operation of more than 1.6 M of BCM in May 2023. Slight drops in BCM movement observed earlier in the year can be partially attributed to rainfall in the region, which affected operating conditions.

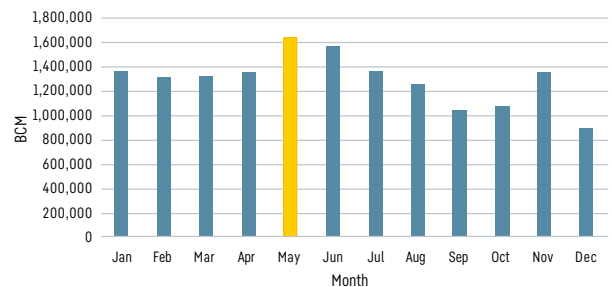


1.6 M of BCM
moved in May 2023

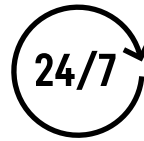
Productivity rates



Total BCM moved



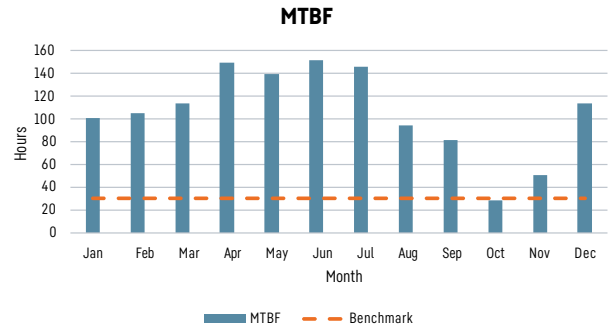
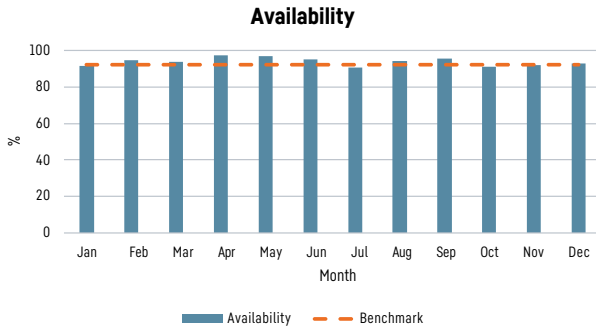
Reliability



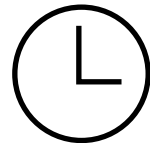
94 %
availability rate

For the majority of the study period, the R 9600 achieved or performed beyond its benchmark availability, set by Liebherr. This demonstrates that the machine experienced no unplanned issues that impacted Mount Pleasant Operation’s mining activities during this time.

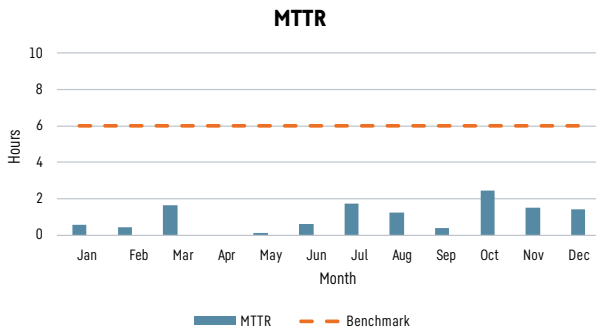
This unit achieved longer uptimes, reaching beyond the R 9600’s design expectations, resulting in higher mean time between failure (MTBF), indicating the excellent reliability of the machine and its ability to perform for long intervals between breakdown events.



The rapid turnaround time for repairs, or mean time to repair (MTTR), indicates that any repairs conducted on the machine were resolved quickly. Liebherr’s advanced diagnostics helped facilitate these speedy repairs by ensuring precise and efficient fault identification with the support of innovative digital solutions like the Troubleshoot Advisor, a digital application that aids in streamlining issue resolution.



MTTR
-16 %
of benchmark



Troubleshoot Advisor

The Troubleshoot Advisor (TSA) is an application engineered to analyse machinery failures, aiding users by offering direct links to support articles with step-by-step guides for recognising and addressing issues. Liebherr Mining has pioneered this cutting-edge software tool to minimise downtime while optimising troubleshooting efficiency.

*Disclaimer:
Please note that the availability, MTBF, and MTTR data sets do not include data from planned shutdown periods. This includes weeks 39, 40, 41, and 52.

Conclusion

For the duration of the study period, the R 9600 displayed above benchmark results, which highlights that this 600-tonne class machine is a consistent high performer. The outstanding performance in May 2023 can be attributed to a combination of factors, such as low MTTR, excellent availability, and optimal weather conditions. However, the most important factor was that the R 9600 was set up for success by Thies. With a combination of excellent time utilisation, effective operational strategies, and a highly motivated crew, together with favourable work area conditions, mining companies can realise the full potential of Liebherr's R 9600 and achieve exceptional results that will fulfil their production targets. And while the operational performance has been outstanding, more importantly, the operation has been managed safely. Safety underpins everything Thies does. No matter the job or position, everyone has a role in ensuring safety every day.

Thies's R 9600 continues to increase onsite productivity and maintain high availability while also increasing overall efficiency at Mount Pleasant Operation. In January 2024, the site moved over 40,000 BCM in one shift with the R 9600. This further proves the reliability and capability of the Liebherr R 9600.

WATCH THE VIDEO



Scan the QR code or click the link to see a testimonial from Thies about the Liebherr R 9600.





Opportunities

The impressive performance of this machine, coupled with the R 9600's reputation within the 600-tonne class, has cemented this excavator as an important part of Thiess' Australian fleet. The company's latest R 9600 was commissioned in early September of 2024 at a coal mine in the Hunter Valley, New South Wales, which expanded their number of R 9600s nationally to eight machines.

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

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