

Liebherr machines in use worldwide in the quarry industry

- Liebherr wheel loaders, crawler and mining excavators and crawler tractors successfully put to use in quarry operations
- From Germany to New Zealand, Liebherr customers are impressed by the high productivity of Liebherr machines
- Liebherr offers robust, specialist designs and reinforced components specifically for the quarrying industry

Biberach / Riss (Germany), 30 June 2015 – The Liebherr product portfolio contains a large number of machines for the mining industry with a range of wheel loaders, crawler and mining excavators and crawler tractors that perform a wide range of tasks both efficiently and reliably. Liebherr machines can both mine and process many varieties of rock. They can load crushers and sieving plants and transport the extracted material in the quarry. Liebherr customers from Germany to New Zealand confirm that the powerful machines impress with their performance, efficiency and high productivity in a variety of quarry operations.

Large series Liebherr wheel loaders in quarrying operations in New Zealand

Robust designs make the large Liebherr wheel loaders (L 550 to L 586) particularly well suited to quarrying operations. Using more than six decades of experience, Liebherr has developed and constructed key components for these machines including engines, hydraulic cylinders and electronic components. As a result, Liebherr is able to guarantee manufacturer quality in every aspect. In addition to this, Liebherr wheel loaders can be set up for intensive mining operations with a variety of equipment options including specialist tyres with tyre protection chains, windscreen guards, and special rock or HD variant buckets.

Liebherr engineers in Bischofshofen, Austria, have developed a clever solution for engine installation by installing the engines in the rear of the machines. The centre of gravity is moved to the rear of the wheel loader so that the diesel engine and the variable displacement pump counterbalance each other. This means that Liebherr can

dispense with any ballast, which achieves lower operating weights and higher tipping loads. For example, when handling heavy rock material, a high tipping load is an advantage as this enables contractors to use larger buckets and move larger loads. The lower operating weight also reduces fuel consumption.

The Liebherr customer, Southern Screenworks from Christchurch, New Zealand, were won over by these advantages. The company operates a quarry on New Zealand's South Island with ten mobile crushing and sieving plants. Directors Brett Swain and Alan King purchased their first Liebherr wheel loaders in 2007. Three more followed as a result of their positive experience with the machines. Today, a fleet consisting of an L 564, L 566, L 576 and L 580 moves more than 1,500 cubic metres of rock material per day. This is equivalent to approximately 3,000 tons. "Before we buy a new machine, we compare efficiency, performance and reliability. We opted for Liebherr, because other suppliers had nothing on Liebherr in terms of these criteria," explained Brett Swain.

Liebherr wheel loaders are driven hydrostatically - a real plus in terms of efficiency. Under the same working conditions, they consume up to 25 percent less fuel. Director Brett Swain was impressed by the hydrostatic driveline, commenting, "Our wheel loaders work for 12 hours per day at the quarry face. The tear-out force of the machines is enormous, and this is achieved even with very low fuel consumption. This is due to the hydrostatic driveline which is not only efficient, but also improves the level of comfort for our operators due to its quiet operation. We also have virtually no brake wear due to the hydraulic braking action of the drive."

Liebherr "Super Mass Excavation" (SME) crawler excavator in raw material excavation

Liebherr has ensured its SME crawler excavator is well prepared for operations in the mining industry. To increase the robustness, Liebherr has installed the components from the next largest machine in each case - for example, the R 970 SME has the adapted undercarriage of the R 976. The construction machinery specialist has also reinforced the undercarriage for the SME variants. Heavier ballast weight increases the stability of the machine. This means Liebherr customers can then use shovels with greater holding capacity. In addition, more powerful cylinders and optimised lift arm

improve the tear-out and breakout power. In the quarry, these measures improve the performance and productivity of the Liebherr crawler excavator.

A large number of mining companies worldwide have put their faith in Liebherr crawler excavators. Liebherr develops and manufactures these machines in Colmar (Alsace), France. The A2C Matériaux group near Paris commissioned one of the first R 970 SME crawler excavators in France. The machine, which meets the Stage IIIB/ Tier 4 emission standards, delivers engine output of 330 KW / 449 hp with an operating weight of 78 tons.

In Dornap, Germany, Recycling GmbH Lahnau operates a Liebherr R 970 SME crawler excavator in the limestone quarry. The machine already has over 2,000 operating hours, much to the satisfaction of Ralph Lang, who is technical manager and member of the management. "Our Liebherr crawler excavator operates for approximately 50 hours per week. The downtimes are minimal and we are very satisfied with the machine". Based on their positive experience, the company ordered a second R 970 SME crawler excavator, which was delivered in April 2015.

For many years, Liebherr crawler excavators have also been also used outside Europe for mining operations, for example, in the Mandula Coal Mining Co. Ltd. in China. The company currently operates 15 Liebherr crawler excavators under extreme conditions at their coal mine in Inner Mongolia. This fleet includes two new Liebherr R 944 C SME crawler excavators. Both machines are equipped with an S-HD undercarriage, a stick length of 2.6 metres and a mono boom of 6.45 metres. With a backhoe holding 2.5 cubic metres, the company achieves a high handling capacity.

Liebherr mining excavators for maximum productivity in the mining industry

The first time Liebherr presented the R 9150 mining excavator at a European trade fair was at the Steinexpo 2014. The machine is equipped with robust components, specifically designed for mining purposes. These components, developed and produced by Liebherr, are the basis of the machine's high reliability. The backhoe and shovel are designed as standard for a nominal volume of 8.3 cubic metres. The optimised Liebherr bucket and the specific wear protection package ease penetration

into the material. This means excavator operators can loosen solid material in the quarry and fill the bucket more easily. Remarkable performance and quick cycle times make the R 9150 an extremely efficient excavator. Its high productivity makes it a serious competitor, even for machines in the 200-ton class.

In quarries worked by Schiewe GmbH & Co. KG in Ostwestfalen-Lippe, Germany, Liebherr mining excavators are extracting shell limestone from the Triassic period. In order to be able to cope with the enormous quantities of between 600,000 and 700,000 tons annually, the company examines the machines in terms of their efficiency and sustainability prior to purchase. Together with the Liebherr dealership, Grote-meier in Bünde, the R 984 mining excavator with 7.5 cubic metre capacity bottom-dump bucket was found to be the most effective equipment for direct excavation. Since this excavator was able to impress with its high level of performance, Schiewe invested in an additional R 9150 with an 8.0 cubic metre bottom-dump bucket.

"Our latest acquisitions, the Liebherr R 9150, as well as the R 984, have proved to be equally well-suited to the extraction process in the quarry. Both the Liebherr excavators have the right operating weight and more than sufficient hydraulic power for the direct excavation method. A feature of both machines is also their tremendous efficiency," commented director Rolf Schiewe, emphasising his satisfaction with the Liebherr machines. He values the low fuel consumption, but not only for reasons of efficiency. "Environmental protection is important for us. We make a real effort to ensure we control the impact of our business activities on the environment. Fuel savings are an important step in this direction."

Liebherr crawler tractors for tear-out operations and moving material

Liebherr develops and produces the Group's crawler tractors in Telfs, Austria. For tough tear-out operations or for moving heavy material, mining industry businesses mainly use larger crawler tractor models such as the Liebherr PR 756 and PR 764 crawler models which are ideally suited with their 40- and 50-ton operating weight. The hydrostatic drive lines transfer the engine output with no loss of traction and without slippage to both drive chains. Accordingly, material can be steadily loosened and removed efficiently.

In addition to various Liebherr wheel loaders and mobile excavators, a PR 734 crawler tractor is used in quarry operations at Holemans GmbH. The company has been mining gravel and sand between the Ruhr district and the Netherlands for many years. The business also trialled a PR736 crawler tractor over a six-month period as part of product development. The machine has an electronic drive control with integrated Eco function and proactive power adaptation. Contractors can choose between high-performance capability and maximum possible efficiency. "The most important thing for us is pushing with force. This is 90 per cent of our operation," explained Thomas Derksen, technical manager of Holemans GmbH. "The performance of the PR736 is really impressive compared to the preceding models. And this is achieved with fuel consumption still at a similar level."

Image captions

liebherr-wheel-loader-l566-quarrying.jpg

Equipment options such as specialist tyres with tyre protection chains, or special rock variant bucket set up Liebherr wheel loaders, such as the L 566, for tough operations in the quarry. A protective grill for the windscreen protects the driver from flying stones.

liebherr-crawler-excavator-r970-sme.jpg

In order to increase robustness, Liebherr has installed the components of the next largest machine in each SME crawler excavator. For example, the R 970 SME has the adapted undercarriage of the R 976.

liebherr-mining-excavator-r9150.jpg

Liebherr sets a benchmark in terms of reliability and cost efficiency with the new, R 9150 mining excavator (weighs approximately 130 tons). Its high productivity means the R 9150 can even compete with the larger machines in the 200-ton class.

liebherr-crawler-tractor-pr736.jpg

Pushing with force is one of the core strengths of the Liebherr crawler tractor PR 736. Despite this, fuel consumption remains low.

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