Job Report Mining Dozer

PR 776

The Liebherr PR 776
Mining Dozer
in operation at Chernigovsky Mine,
Russia

LIEBHERR

Overview

The holding company Siberian Business Union (HC Sibirskiy Delovoy Souz, SDS) is one of Russia's largest multi-sectoral industrial corporations. It comprises more than 100 associated firms, with 35,000 employees in seven regions of the Russian Federation.

Coal mining plays a major role in SBU's business. In 2006, the company formed SBU-Coal, a specialized mining division, to ensure efficient production and processing of coal. Having produced 27 million tonnes in 2019, SBU-Coal ranks third among Russia's coal mining enterprises. It exports 97% of its products to Europe, Asia, Africa and South America.

SBU-Coal manages three open-pit mines, two underground mines, three enrichment plants and several service firms, with a combined workforce of more than 8,000 employees. SBU-Coal controls 1.8 billion tonnes in coal reserves. The largest coal producers under SBU-Coal´s management are AO Razrez Chernigovsky, which operates the Chernigovsky Mine, and OOO Shakhtoupravleniye Mayskoye, which operates the Pervomaisky Mine.

The Chernigovsky Mine is located in the Kedrovsko-Krokhalevsky Coal Deposit in the northern part of the Kemerovo Region. Local reserves available for open-pit mining amount to 220 million tonnes which will provide the mine with at least 30 years' worth of operation.

The Pervomaisky Mine lies in the Sokolovsky Stone Coal Deposit of the Yenurakovsky Geologic and Economic District. Local reserves amount to 623 million tonnes of Grade D long-flame coal that is characterized by high calorific value.

SBU holds firm to its values, among which are Initiative and Innovation. SBU-Coal has been implementing sophisticated solutions for automated control of mining and transportation machinery. Most of SBU-Coal's machines are equipped with GPS/GLONASS, fuel level monitoring devices, load management systems, sensors for inclination and tyre pressure control. This ensures efficient operations and real-time control over production processes.

The Challenge

In 2016, the management of SBU-Coal decided to complement the dozer fleet at the Chernigovsky Mine with a 70 tonne machine to speed up dumpsite works. Key requirements for the new dozer were high performance, moderate fuel consumption, ease of steering and continuous operation.

The Solution

SBU-Coal maintains high ecological standards, uses modern equipment and implements best available technologies for coal mining and processing. With this in mind, Liebherr offered a sophisticated solution by delivering to the Chernigovsky Mine a hydrostatically driven 73 tonne dozer, the first PR 776 in Russia. The machine's configuration featured an 18.5 m^3 semi-U blade at the front, a single shank ripper at the rear, and a 12 cylinder Liebherr engine with an output of 565 kW / 768 hp.

Liebherr additionally equipped the dozer with an arctic package to ensure reliable operation even at -40°C. Broad working platformswere mounted on the dozer for better access and safer maintenance work.

Russia's first PR 776 displayed great fuel efficiency. In the course of four years and 28,885 operating hours, the machine´s average fuel consumption was 39.5 l/h. This is significantly lower than the average fuel burn of comparable dozers from the competition.

Meanwhile the operators praised the dozer's performance, power, ergonomic controls, manoeuvrability, smooth travel, efficient lighting, good noise, and vibration proofing of the cabin. The Liebherr dozer met SBU-Coal's expectations. This prompted the company to order another PR 776 in 2018 for the Pervomaisky Mine operated by OOO Shakhtoupravleniye Mayskoye. By the second half of 2020, the second dozer accumulated 12,465 operating hours with an average fuel consumption of 41.3 l/h.

Technical Data

Engine	Liebherr D 9512 A7
Engine output according to ISO 9249 (FWD/REV)	565 kW / 768 HP
Operating weight	73,000 kg
Blade capacity	18.5 m^3 / 24.2 yd^3

Equipment

Semi-U Blade
Single shank ripper
LED lighting
Arctic package
Rear view camera

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Subject to technical modifications.

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