MUCKING/ORE CLEANING

In narrow reef mining operations with mining heights below 1.7 m, the most used method for removing ore from the stope is the scraper winch system. Although widely used, scraper systems are associated with a relatively high rate of incidents, which often result in Lost Time Injuries (LTI) and, in severe cases, Fatal Injuries (FI). The presence of moving cables in confined working spaces and the need for personnel to operate within unsupported or hazardous areas significantly increase operational risks.

The XLPD, XLP H4, and the NRE dozer have been specifically designed to operate in production stopes with heights starting from 1.1 m, where they provide a mechanized alternative to traditional scraper winches. The compact dimensions and small turning radius make them particularly well suited for true dip and breast mining layouts commonly found in narrow reef operations. At the same time, the machines can also be effectively deployed in room-and-pillar mining environments.

The tracked carriage and the weight of the machines enable continuous and stable contact with the ground surface, ensuring excellent traction and operational stability even in difficult underground conditions. Their capability and power allow them to push substantial volumes of ore during a single working cycle, enabling efficient material movement within confined stope areas.

An approximate production capacity of 50–100 tonnes per hour allows them a rapid and efficient cleaning of production panels. In conventional mining methods using scraper winches, it is common for a single panel to require an entire shift to be cleaned, often involving several workers in the process. In contrast, the machines can reliably clean up to two stopes per day, significantly improving productivity while reducing manpower requirements.

An additional and critical advantage of the machines is its remote-control operation. By allowing operators to control the machines from a safe distance, personnel are removed from hazardous and unsupported areas within the stope. This greatly reduces worker exposure to underground risks and contributes to safer mining operations.

By combining compact design, high maneuverability, strong pushing capability, and remote operation, the XLPD, XLP H4, and the NRE Dozer represent an efficient and safer mechanized solution for stope cleaning in narrow reef mining environments.

Slika 1 XLPD cleaning ore from stope