

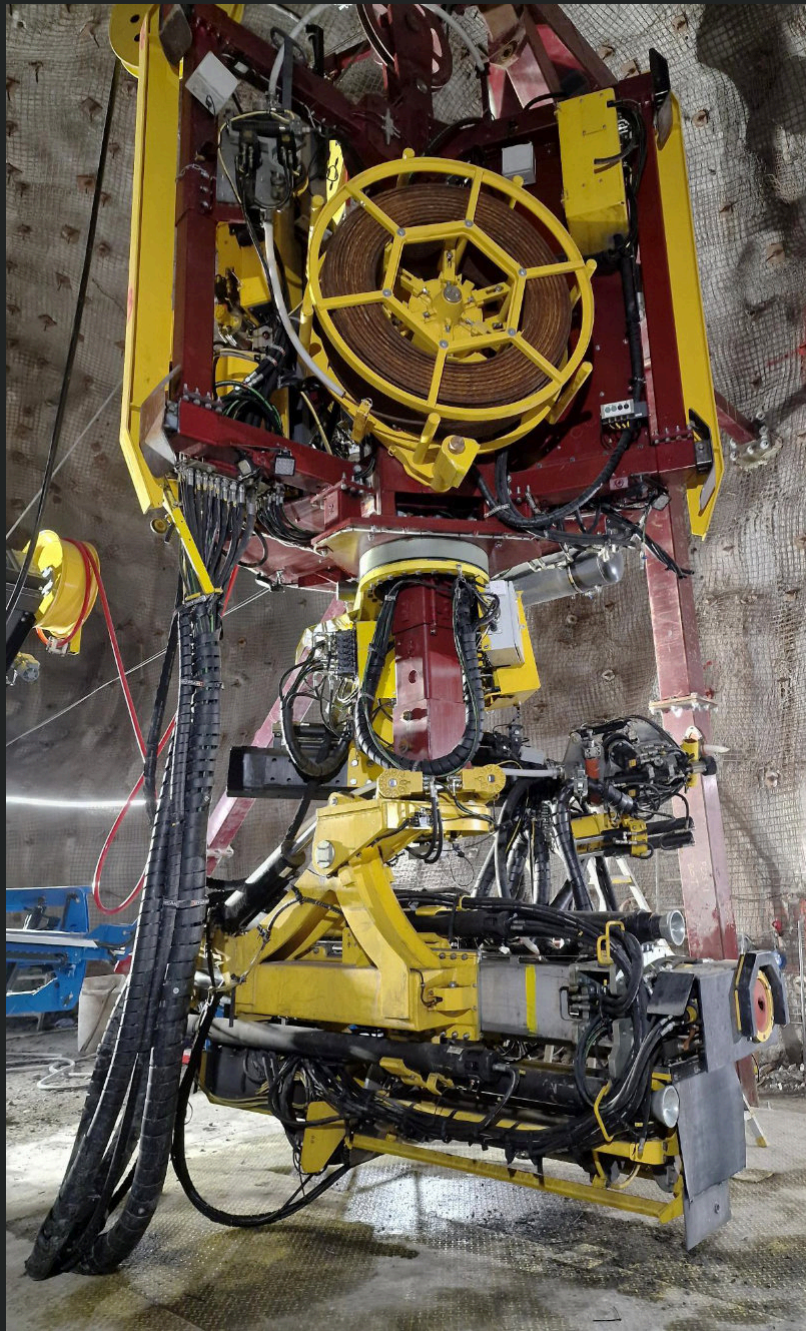
BERGTEAMET



SHAFT CABLE BOLT RIG

Cable bolter for shafts

Shaft Cable Bolt Rig



Bergteamet's Cable Bolt Rig for shafts has been developed for use in rock reinforcement with cable bolts in shafts.

The starting point for the development was the Epiroc Cabletec machine, a proven machine for cable bolting.



A NEW CABLE BOLTER FOR SHAFTS HAS BEEN DEVELOPED

A completely unique machine of its kind has been developed by Bergteamet. The first test of the new cable bolter has been carried out in LKAB's mine in Kiruna.

Concept

The concept involves all equipment for drilling and cable bolting being mounted on a completely new unit that can be lowered into the shaft and controlled from the control unit (base machine).

Assembly and Development

The assembly and development of the concept have taken place at Bergteamet's service workshop in Boliden.

Complete Equipment

The unit that is lowered into the shaft is fully equipped with all the equipment needed to drill and installing of the cable bolt into the rock. The cement is mixed on-site with dry mortar and water. Fully loaded with concrete, the unit weighs about 17 tons and is 7.5 meters high. The cord between the control unit and the Shaft Cable Bolt Rig is a specially manufactured 1000-volt cable designed for self-suspension in the shaft. The cable is over 220 meters long.

Remote Control from the Machine

The shaft cable bolter is operated by the machine operator from the control unit, which supplies the platform with electricity, water, and control signals. The shaft cable bolter is lowered and raised in the shaft with the help of a robust fixed hanging frame and an upgraded winder.

Test Run and Adjustment

During 2024, the wire setter has been test-run and adjusted by wiring a ore shaft of 145 meters in LKAB's mine in Kiruna. At the end of the test, production was up to about 800 meters/week (2 shifts), drilling, and installation of cable bolts. The method is being evaluated by LKAB.

Estimated Capacity

The capacity is comparable to a Cabletec in tunnel operation, but positioning and refilling of concrete and drill bits are more time-consuming and vary depending on the level of the shaft. It can wire shafts down to about 200 meters deep with existing equipment. The units can be driven up and down for refilling at a speed of about 3 meters/min.

A cable bolter built on experience

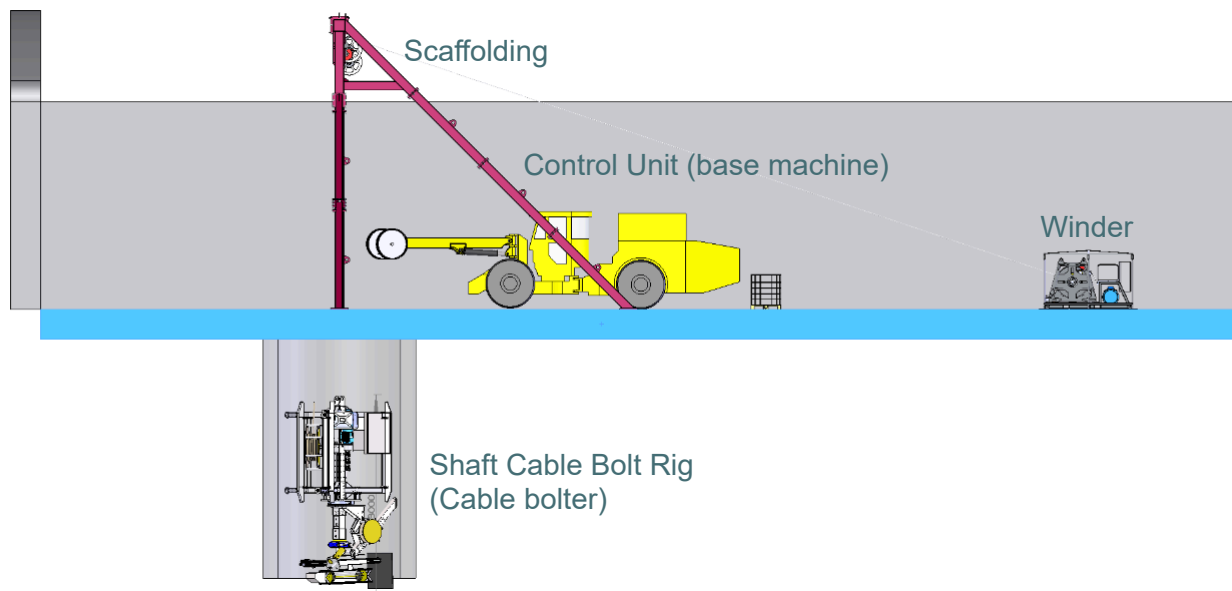
Bergteamet has long experience in shaft work and continuously develops improved methods and equipment for increased safety and efficiency.

Shaft reinforcement is an area that Bergteamet has worked on for a long time and has taken several steps in development over the years, both through various remote-controlled equipment and new reinforcement methods. The advantage of cable bolts is that it can be set longer than the diameter of the shaft.

SETUP

Remote control

The Shaft Cable Bolt Rig is operated by the machine operator from the control unit (base machine), which supplies the platform with electricity, water, and control signals. The unit is lowered and raised in the shaft with the help of a robust fixed shaft hanging frame and an upgraded winder.



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