Rock drill impact frequency test method

In the production and manufacturing process of hydraulic rock drill, there are small impact energy and low impact frequency, and a fault diagnosis method based on the internal mechanism ...

In response to the issues of overheating of the shell and insufficient impact energy of the hydraulic rock drill, this paper focuses on the ...

Abstract A high frequency hydraulic rock drill drifter with sleeve valve is developed to use on arm of excavator. In order to ensure optimal working parameters of impact system for the new ...

To optimize and improve the impact performance of a hydraulic rock drill, it is helpful to test the stress waves of the drill and analyze the impact energy, ...

Initially, single-factor experiments were conducted to analyze the influence of critical engineering and geological parameters--including impact frequency, weight on bit (WOB), ...

The impact system of rock drill mainly consists of impact piston, reversing valve and high-pressure accumulator, which is a complex system of ...

The rock drill impact system is optimized using the orthogonal test method, resulting in an improvement in drilling efficiency of over 17.7%. Yong et al.7 explore the impact performance ...

In the production and manufacturing process of hydraulic rock drill, there are small impact energy and low impact frequency, and a fault diagnosis method based on the internal ...

The developed test method is based on a Charpy pendulum arrangement and utilizes, as in rock drilling, impact of cylindrical bars to achieve the high impact force sufficient to fracture the rock ...

The longitudinal vibration of the drilling string is not only adopted in sonic drilling rigs but also has been successfully applied to improve the drilling efficiency in deep rock ...

8.1 INTRODUCTION Laboratory rock testing is performed to determine the strength and elastic properties of intact specimens and the potential for degradation and disintegration of the rock ...

A drill bit motion model was developed to represent the dynamics of a drill bit impacted by a dropped piston and explain the impact stress propagation and rock-crushing ...

They employed an orthogonal experimental method with range and variance analysis to study the influence of

impact energy, impact frequency, rotation speed, drilling ...

Owing to the limited accuracy and measurement challenges of traditional rock drill testing methods like the stress wave method, a high-precision, non-contact ...

48 Hz, the velocity of the impact piston is increased from 9.7 m/s to 12.1 m/s, and the overall perfor-mance of the rock drill is greatly improved. e internal mechanism testing method reacts ...

Axial-torsional coupling impact drilling (ATCID) is a promising rock breaking method to excavate energy mineral resource from deep and hard formations. Nevertheless, the ...

Using a self-designed hydraulic impact drilling test-bed and rock core drill, six groups of cylindrical granite specimens (93 mm dia. × 200 mm) ...

Then, the velocity curve of impact piston was obtained after judging the striking point through the feature of rear-chamber"s pressure spike, so were the rock drill"s impact energy, impact ...

The results indicated that cutter penetration depth during rotary percussion drilling could be increased by 16.04% compared to that during conventional drilling. Under the same ...

Drilling methods using impact drills based on various models of impact tools can be optimised in accordance with the energy criterion of rock ...

The impact energy, impact frequency, and energy utilization rate of two different hydraulic rock drill pistons in low, middle, and high gear were ...

Finally, the field applications of compound percussive drilling were conducted. Matching higher impact frequency under low-speed conditions and ...

A drill bit motion model was developed to represent the dynamics of a drill bit impacted by a dropped piston and explain the impact stress ...

In rotary-percussion drilling, the impact frequency is a crucial variable that is closely linked to operational factors that determine the efficacy of the drilling process, such as the rate ...

Abstract In the production and manufacturing process of hydraulic rock drill, there are small impact energy and low impact frequency, and a fault diagnosis method based on the internal ...

Ever wondered what keeps your drilling operations smooth and trouble-free? Impact testing is crucial for ensuring DTH drill bits can withstand the intense forces they face ...

Rock drill impact frequency test method

Percussion rock drills have been widely used in mine development and civil engineering. During percussive rock drilling, a hammer in the rock drill collides with a shank ...

In rotary-percussion drilling, the impact frequency is a crucial variable that is closely linked to operational factors that determine the efficacy ...

In the production and manufacturing process of hydraulic rock drill, there are small impact energy and low impact frequency, and a fault diagnosis ...

The estimated impact frequency obtained with the three proposed methods for an experimental reference setup was consistent with values obtained from an independent analysis of pressure ...

This article addresses the impact-powerlessness problem associated with unconstant-pressurized cham-ber rock drills, particularly in the context of large holes and hard rock working conditions. ...

Abstract For the real-time characterisation of an inhomogeneous impact inhibiting constraint such as downhole rock layers, an unconventional method using machine learning ...

Web: https://staskowachata.pl