

Shank adapter: shank adapter is an important part of the drilling tool. When it works, it directly bears the high-frequency impact and strong torsional force of ...

Considering the insufficiency of numerical study on the percussion characteristic of hydraulic rock drill, which restricts the improvement of ...

The simulation and experimental results had consistency. The system cavitation was detected by the high-frequency pulsating pressure ...

The three-arm hydraulic drilling rig is equipped with a high-performance imported rock drill. If the rock drill fails frequently during tunnel excavation, it will seriously affect the construction ...

When rotary drilling rig is in functional mode, the torque provided by power head is actualized on drilling pipe and drilling tool, to keep drilling head rotating and cutting the underground object, ...

Rock drill operations are classified as top hammer drilling (THD), down-the-hole drilling, or rotary drilling. The rock drill in the THD method consists of a percussion drill rig ...

the analysis of the working principles of hydraulic rock drills with a sleeve valve. The influences of oil flow rate, pre-setting pressure of the relief valve and charging pressure of the ...

Rock Drill is a kind of digging machinery, which is widely used in road construction, infrastructure construction, mining and other industries. Rock ...

Aim at improving the energy saving and transmission efficiency of directional drilling rig, the load sensing technology and constant-pressure variable technique are adopted to ...

The lack of research on the double damper system seriously restricted the impact power's increase of hydraulic rock drills. The structure and working principle of the double ...

Mineral resources serve as the material foundation for social and economic development and are ubiquitous in industrial production. The hydraulic impact hammer, a key ...

As a technological innovation of high-power hydraulic rock drill, double damping system has a very important effect on impact performance. The double ...

For the phenomenon of a hydraulic rock drill based on an underlapped reversing valve, the mechanical structure of the overlapped reversing form was ...

The rock cuttings are discharged by using flushing water or air. Under the action of propulsion provided by the hydraulic cylinder, the drill continuously impacts, rotates, and discharges rock ...

Conclusion As efficient and energy-saving drilling equipment, hydraulic rock drills play a crucial role in modern mining and tunnel ...

PDF | As a technological innovation of high-power hydraulic rock drill, double damping system has a very important effect on impact ...

According to the principle and state analysis of the hydraulic rock drill, it can be seen that the pressures in the front-rear chambers and the left-right valve chambers are the key to the ...

The hydraulic rock drill features alternating front and rear return chambers, ensuring a continuous oil discharge, minimal pressure fluctuations, and ...

Hydraulic oscillators can meet the frequency and axial force requirements of drilling at lower drilling fluid flow than general hydraulic oscillators.

Based on this assumption, the principle of composite rock drilling shown in Figure 1 is proposed. To determine the appropriate diameter, drilling experiments on ...

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

Download scientific diagram | Schematic diagram of the percussive drilling. from publication: Percussion characteristic analysis for hydraulic rock drill with no ...

In this work, a numerical model of rock breaking was established based on the AUTODYN code to reveal rock-breaking mechanisms and explain the principal of crack ...

Abstract Rock drilling is widely used in various types of rock engineering. Rock boring is often used in tunneling, underground mining, and nuclear waste depository. This ...

A new approach to the numerical analysis of the dynamic interaction of rock and the drill string structure for sonic drilling of wells by using a ...

The hydraulic rock drill is an efficient rock-breaking tool widely used in mining, tunnel excavation, and

construction engineering. Powered by a hydraulic system, it achieves rock fragmentation ...

Chapter 2 Principles of drilling 2.1 Introduction Drill-bit seismic started when geophysicists working with conventional seismics experi- mented with the idea of measuring ...

The impact system of a high frequency rock drill drifter was modeled. The structure and working principle of the impact system are presented. A performance test system was ...

Summary The principal drilling methods used in mines today are mechanical ones in which a drill drives cutting tools into rock by means of static or dynamic force. Percussion rock drills are the ...

The Structure of the novel rotary percussion drilling tool. 1 - top joint; 2 -drop defence; 3 -stator and rotor; 4 -shell; 5 -versatile spindle; 6 - water valve; 7 -hard alloy ...

Abstract Considering the insufficiency of numerical study on the percussion characteristic of hydraulic rock drill, which restricts the improvement of efficiency and reliability, ...

Download scientific diagram | Drilling mechanism of three types of rock drill machines. (a) Top hammer drilling; (b) Down the hole drilling; (c) Rotary ...

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