

Emulsification pump accumulator for mining

How to improve emulsion pump stability in coal mining face?

Using advanced intelligent control method to realize the real-time response of emulsion pump under different working conditions is the key to improve the stability of fluid supply in the face. However, the current intelligent fluid supply technology in the coal mining face cannot ensure the speed and stability.

What is the fluid supply system of full-mechanized coal mining face?

The fluid supply system of full-mechanized coal mining face consists of emulsion pump station, accumulator station, fuel tank, fluid supply and return pipeline and its accessories, etc. As the power source, the emulsion pump station can supply fluid and power for the hydraulic support of the working face 1.

Can emulsion pump station control the fluid supply system at the working face?

The control method of emulsion pump station in the fluid supply system of the working face is the key to realize the stable fluid supply technology of the working face. In this paper, a new on-line adaptive learning technique is proposed to design the optimal tracking control of the fluid supply system at the working face.

Why is accumulator station important in coal mining?

It can only play an auxiliary role to upgrade the long-distance fluid supply circuit and configure an accumulator station in terms of improving the stability of fluid supply in the coal mining face. But it can reduce pressure loss, alleviate hydraulic shock, and compensate system flow to a certain extent.

Can emulsion pump control reduce energy consumption?

Ting and Hong 5 studied the coal mining face fluid supply system, and obtained a conclusion that controlling the start and stop of the emulsion pump based on pressure sensor can effectively reduce energy consumption. Zhao et al. 6 proposed an intelligent variable frequency speed control system to reduce the energy consumption of the station.

What is emulsion pump station?

Scientific Reports 13, Article number: 20002 (2023) Cite this article Emulsion pump station is widely used to provide power for full-mechanized coal mining face equipment.

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How to pump emulsified explosives with maximum safety. However, this explosive requires special pumping conditions. For example, the Employer's Liability Insurance Association regulations (BGV) for solid uniform explosives and volatile oils stipulate that the pumps should prevent dangerous stressing of the substance or

segregation of the emulsion.

Emulsion pump station is widely used to provide power for full-mechanized coal mining face equipment. With the development of the mining technique of longwall face and the extensive use of large mining height and high working resistance of the hydraulic support, the fluid supply pressure is more unstable and the pressure impact is increasingly intensified. The ...

The mining accumulator is an Invention device that gains charges whenever the player lands a critical strike whilst Mining. When it reaches 100% completion, it can be studied for 2,500 Mining experience, which destroys the accumulator. If Mining accumulators are bought on the Grand Exchange, this gives them a cost of 35.39 coins/XP.. Using this device requires the completion ...

High-pressure pumps for underground coal mining for roof support and dust suppression. DE; EN; Skip navigation. Home; About us. ... we offer a complete mobile emulsion pump system for the pressure supply of the shields (hydraulic longwall mining) in underground coal mining. ... Hydraulic accumulators dampen the pressure surges during switching ...

A kind of mine-used emulsion pump energy saving discharge mechanism, constitute by control valve, execution valve, have two valve pockets in the valve body, one logical fluid passage is communicated with two chambeies, the change in location of first spool can make logical fluid passage communicate with liquid entering hole, leakage hole respectively, and the change in ...

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The mining emulsion pump is mainly used on a fully mechanized coal mining face, but it is rarely used on other occasions, so research on its loading test method is relatively limited. This paper proposes the application of a digital relief valve to the emulsion pump loading test. In addition, the small number of plungers in the emulsion pump will lead to large flow ...

In order to solve the problem of unstable fluid supply pressure and serious impact caused by the complicated and changeable working condition of a fully mechanized mining face in coal mines and the sluggish response of the fluid supply system to the fluid demand for the hydraulic support, a control method based on online updating generalized regression neural ...

hard rock mining, mines worldwide have used thousands of A64 products to date. ... party emulsion systems. o Hydraulic gear pump installed to match third-party emulsion ... o Brake accumulator pressure gauge o Brake accumulator low-pressure warning o Park brake applied indicator light o Audio/visual alert for high engine

temperature

BRW series mine emulsion pump product introduction BRW series mine emulsion pump station is mainly to provide high pressure emulsion for mining face, as the power source of hydraulic support and passage of the working face conveyor. BRW series emulsion pump station is composed of two emulsion pum...

iMining's advanced pump technology ensures cost-effective and safe blasting operations with energy-efficient emulsion pumping systems. These pumps provide durability, reduced maintenance, and significant energy savings. Our surface and underground loading systems, equipped with live monitoring and precise control features, enhance efficiency and productivity ...

A novel energy regeneration system based on cylinders and a rectifier valve for emulsion pump tests is presented and studied. The overall structure and working principles of this system are introduced. ... Accumulator-pump-motor as Energy Saving in Hydraulic Boom, ... China University of Mining and Technology, Xuzhou, 221116, China.

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The induction motor and its connected VDP serve as the energy source of the whole system, converting electric energy into hydraulic energy. The VDHM which is actuated by the output oil of both VDP and the rectifier valve drives the test emulsion pump, converting the hydraulic energy of oil first into mechanical rotational energy and then back into hydraulic ...

Hauhinco high-pressure systems for longwall hydraulics include Triplex EHP-3K or Quintuplex EHP-5K plunger pumps with electric motors, emulsion tanks, high-pressure and return filters, piping, hydraulic accumulators, control modules, explosion-proof measurement instruments such as flow meters and provision for data transfer and visualisation.

Emulsion High Pressure Pump Stations Hauhinco designs customer-specific water hydraulic high pressure pump stations for the roof supports used in shortwall and longwall mining. Hauhinco high pressure pumps generate the necessary pressure to support the shields against the pressure from the roof at the shortwall or longwall.

Homogeneous & Emulsification pump are multi-purpose compound & emulsifier equipment with advanced technology. Its professional technic and manufacture precision is leading international similar product. Homogeneous emulsion pump is an efficient type product with mix, dispersion, breaking, dissolution, refinery, homogenization, emulsifying.

of the emulsion pump station and optimized the flow output of the emulsion pump station. Si et al. [22] proposed an immune particle swarm optimization fuzzy neural network PID algorithm to realize the pressure stabilization control of the fluid supply system of a fully mechanized mining face. The simulation results showed that the load ...

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