

Advantage:

- >> Hole range: 90-115mm
- >> Hole depth: 21m
- >> 176kW YUCHAI engine
- >> Eaton hydraulic motor(USA brand)
- >> Automatic rod handle

JC103A

DTH ROCK INTEGRATED DRILLING RIG 潜孔钻机

INTRODUCTION 产品介绍

>> **JC103A** hydraulic down-the-hole drilling rig is designed to meet the demanding requirements of open-pit mining and quarry drilling. The upgraded control system integrates a humanized operating platform, enabling operators to perform all core functions with greater ease and precision. The fully automatic rod handling system allows for single-person operation, significantly improving working efficiency and reducing labor costs.

>> The rig is powered by a high-performance diesel engine (YUCHAI or optional CUMMINS) coupled with a hydraulic oil pump system. All drilling, feeding, lifting, and walking movements are driven by hydraulic motors and cylinders, ensuring smooth and efficient motion control.

>> The Eaton 6K series rotation motor delivers a maximum torque of 1700 N·m under 13 MPa pressure, ensuring powerful penetration in hard rock formations (f=6 – 20).

>> The double-stage screw air compressor system (15 m³/min, 18 bar) delivers strong, efficient airflow for deep hole drilling. A 14-core dust collector system with 14 m² filtration area effectively handles dust generated during operation.

>> Dual-stage air filters provide added protection in heavily dusty mining environments.

>> CHARACTERISTICS 产品特点

>> Humanized integrated control platform, easy to operate and user-friendly.

>> Imported electrical components with IP56 protection, dustproof and waterproof, more adaptable to harsh mining environments.

>> Fully automatic rod handling system, enabling simple and efficient single-person operation.

>> Extra-large maintenance space, making wear parts replacement more convenient.

Lightweight aluminum alloy feed beam ensures more efficient and stable drilling performance.

>> Two-stage screw air compressor, high efficiency and energy saving.

>> Eaton 6K series rotation motor, stable and efficient operation.

>> High-capacity Dust collector with large filtration area meets the requirement of 90 – 115 mm boreholes. Dual-stage air filtration system effectively removes impurities, ensuring clean air intake and stable engine operation even in dusty and extreme mining conditions.



Characteristics 产品特点

- >> Operating system: Humanized integrated control platform, simple and intuitive, reduces operator fatigue and improves efficiency.
- >> Electrical System: Imported IP56-rated components, dustproof and waterproof for reliable operation in harsh environments.
- >> Rod Handling: Fully automatic rod loading/unloading, enabling fast and easy single-person operation.
- >> Feed Beam: Lightweight aluminum alloy design for stable and efficient drilling.
- >> Air Compressor: Two-stage screw compressor, high efficiency with 15 m³/min air supply at 18 bar.
- >> Rotation Motor: Eaton 6K series, delivers 1700 N·m torque for stable drilling performance.
- >> Dust Collection: Large-area filtration system effectively reduces dust during drilling.
- >> Air Filtration: Dual-stage filter ensures clean air intake, protecting engine performance.
- >> Maintenance: Extra-large maintenance space simplifies wear part replacement and reduces downtime.

Specification 技术参数

Specifications	Unit	JC103A
Drilling Specifications		
Hole Depth	m	21
Hole Diameter	mm	90-115
Drilling Rod Diameter	mm	76
Drilling Rod Storage		6+1 (3m drill rods)
Rotation		
Rotation Torque	N·m	1700
Rotation Speed	r/min	0-150
Discharge Pressure	MPa	13
Rotation Motor		Eaton 6K series
Feed System		
Feed Type	Aluminum alloy beam + Hydraulic cylinder feed	
Feed Beam	Aluminum alloy	
Engine		
Engine Brand		YUCHAI
Rated Horsepower	kW	176
Air Compressor Demand		
Air Consumption	M ³ /min	15
Compressor Type		Two-stage compression
Working Pressure	bar	18
General Specifications		
Total Weight	t	12
Tramming Speed	km/h	Fast: 3 / Slow: 1.5
Control Valve		QIANGTIAN
Dust Collector		Xuanhua 14-core
Electrical System		Imported components, IP56 waterproof/ dustproof

具体参数变化以实物为准 The specific parameter changes are subject to the actual object.

Main Structure 主要结构

Powerful Mobility

Can tow air compressor, climbs slopes easily.



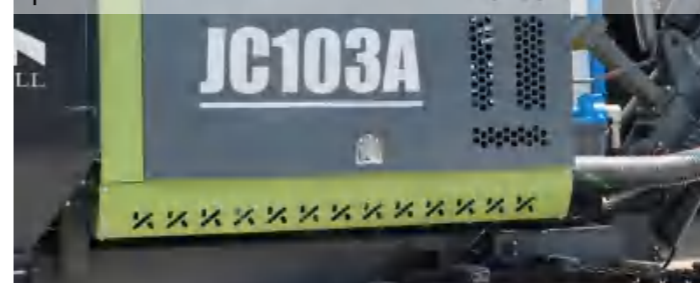
Dual-Motor Rotation

Increases torque and speed for various rock conditions.



Air Compressor

15 m³/min air supply at 18 bar pressure.



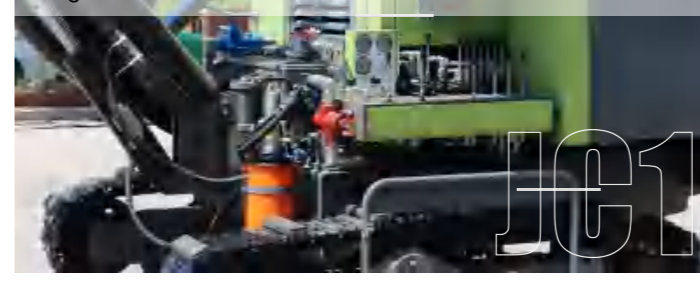
Dust Collection System

Large-area filtration reduces dust during drilling.



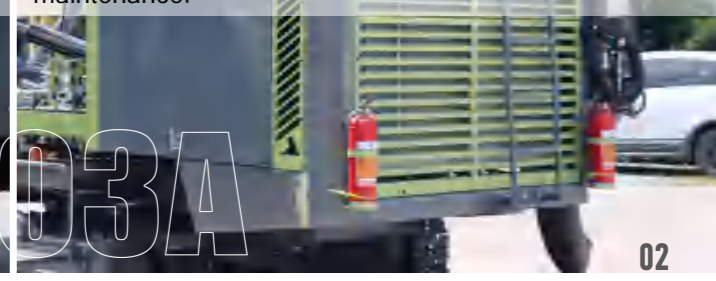
Control Panel

Easy to operate, reduces operator fatigue.



Protective Cover Design

Aesthetic design with easy access for maintenance.



JC103A

DTH Drilling Know How

Down-the-hole drilling (DTH) essentially involves a drilling hammer at the bottom of a drill string. It relies on three elements for drilling holes: bit loading (weight), rotation and air. These active elements combine to be efficient at crushing rock. As the drill string slowly rotates, the drilling hammer is forced into the rock repeatedly. Striking power is provided by compressed air driving a piston inside the hammer.

Where is it used?

DTH drilling is often used in the mining industry (blast hole drilling), on construction sites, drilling water wells, and in the oil and gas industry.

DTH advantages

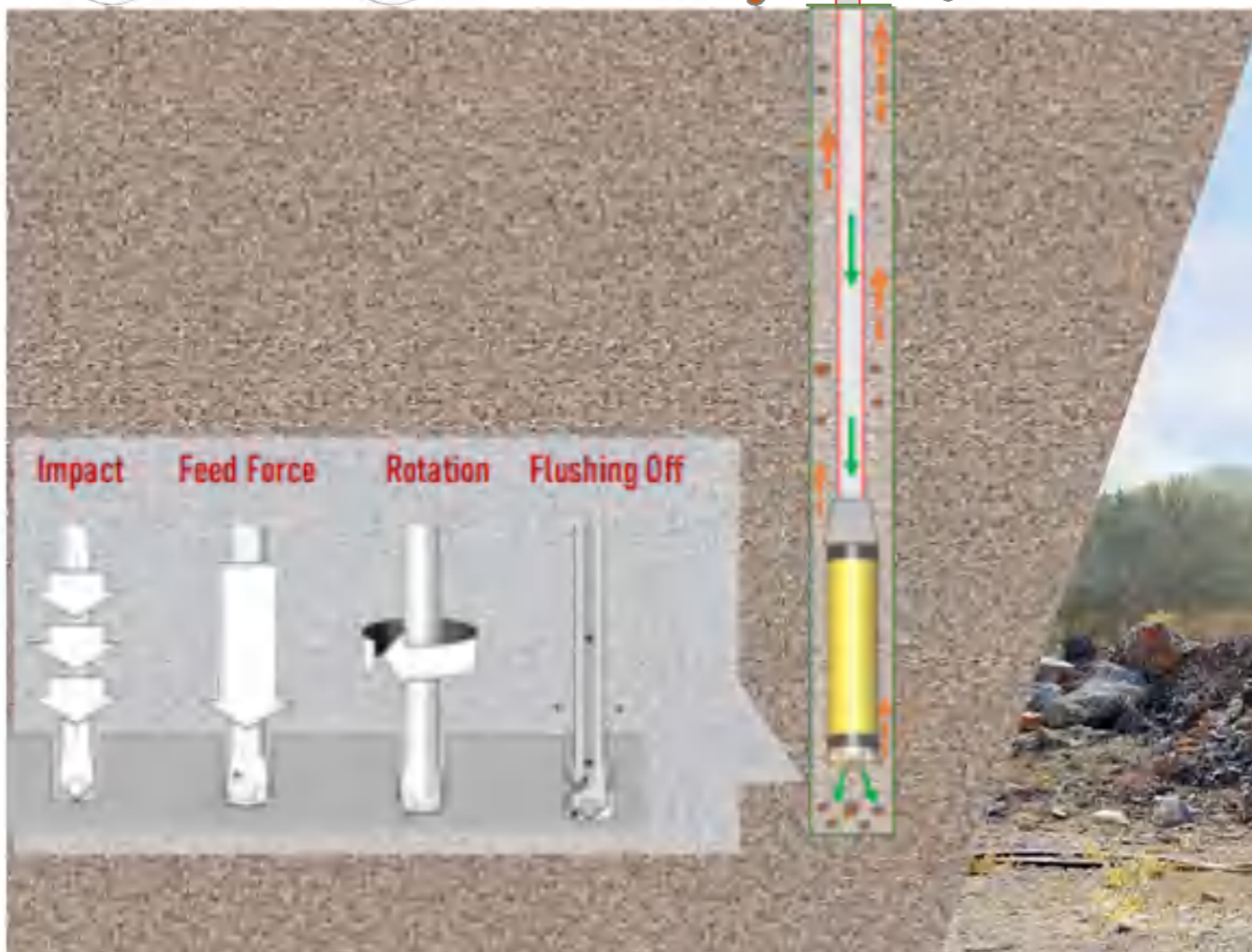
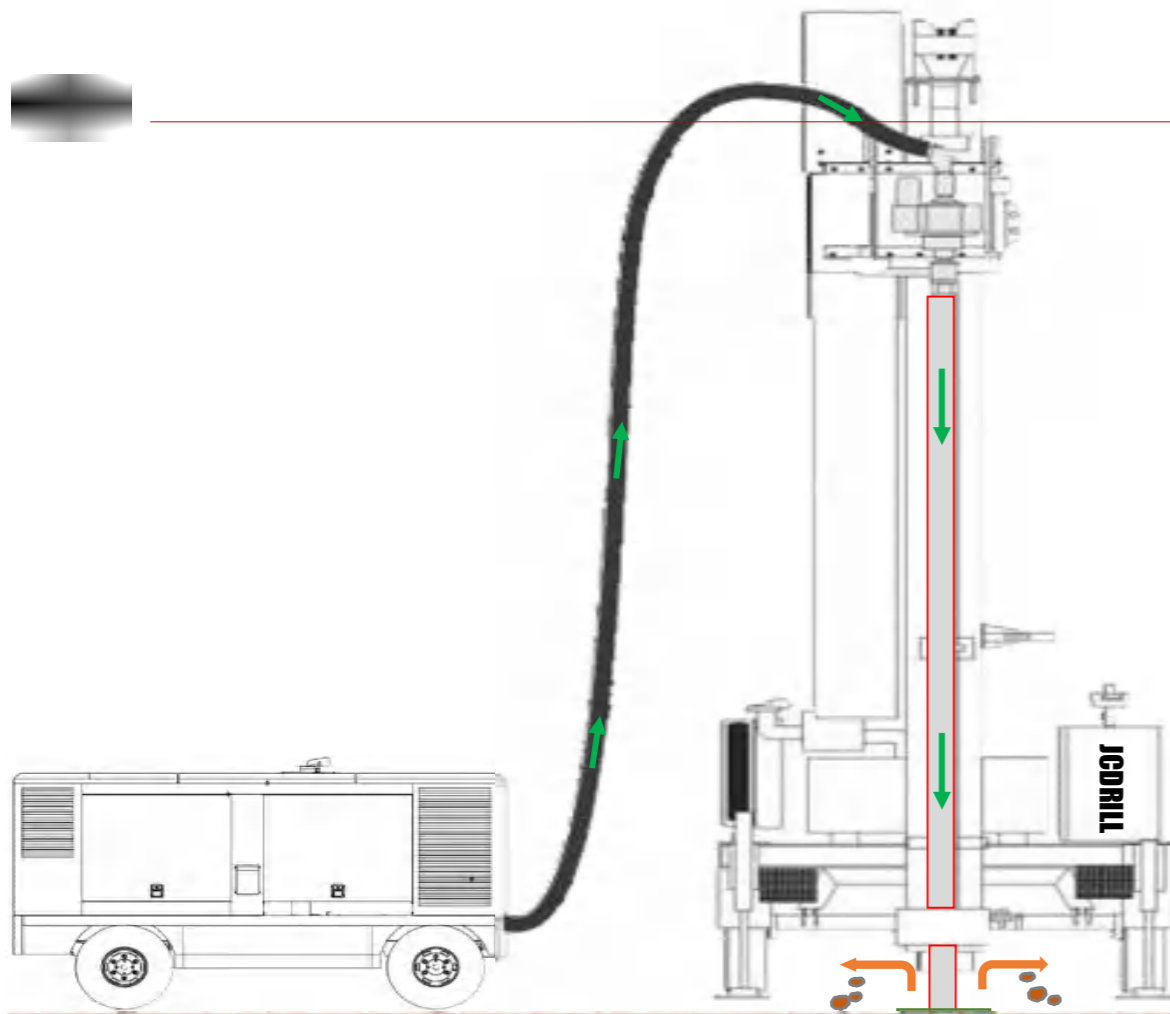
DTH drilling offers several advantages over top-hammer drilling for larger, deeper holes in medium-hard formations. Because the hammer is at the bottom of the hole, power loss is minimal as the hole deepens. That means energy is not lost in the drill string and penetration rates do not markedly decline with depth—provided that back pressure does not rise significantly in the borehole.

Compressed air power

The DTH hammer is pneumatically powered, with the compressed air propelling it forward to impact and fracture rock. Compressed air also travels through the drill bit into the hole (air exhaust), which blows the chips and dust out of the hole.

Quieter drilling

From environmental and social perspectives, DTH is a good option because it produces much less noise and vibration than many other drilling methods.



JCDRILL



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