



CHANGSHA DTH DRILL CONSTRUCTION MACHINERY CO.,LTD.



WHATSAPP



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CRAWLER DOWN-THE-HOLE DRILLING RIG

CHANGSHA DTH DRILL CONSTRUCTION MACHINERY CO., LTD

The King of Drilling Rigs, Make Drilling Simple

ABOUT CSDRILL GROUP

The King of Drilling Rigs, Make Drilling Simple



Changsha CSDRILL Group was established in June 2021 as a comprehensive service provider specializing in mining rigs and drilling tools. One of the company's founders is Professor Zhao Mingchun from Central South University, who has been recognized by Stanford University as one of the top 2% scientists in the world for three consecutive years (2022, 2023, and 2024). Under the leadership of Professor Zhao Mingchun, Changsha CSDRILL Group focuses on research in the field of "development and construction of high-performance, high-quality metal materials for extreme environments." This includes research directions such as "heat treatment processes and technologies for high-performance wear-resistant materials in mining machinery," "hydrogen embrittlement, hydrogen-induced delayed fracture, and fatigue properties of high-strength steels," and "preparation, key control processes, and microstructure and performance regulation of ultra-high-strength steels." The company maintains close scientific collaborations with renowned research institutions, including the Institute of Metal Research of the Chinese Academy of Sciences and the University of Queensland in Australia, and jointly trains master's and doctoral students, following a path of integrated industry-academia-research development.

Changsha CSDRILL Group has factories in Xiangtan, Yueyang, Yiyang, and Linyi, with its global sales office located on the entire 13th floor of Building T2 in Changsha Greenland Intercity Space Station. The company's CSDRILL brand products, including reverse circulation drills, core drills, multi-function drills (reverse circulation/core/water well), blasting drills, water well drills, tunnel drills, and drilling tools, are exported to over 80 countries and serve more than 100 mines worldwide.

The products of Changsha CSDRILL Group are suitable for various types of mines, with a focus on drilling solutions for gold, copper, bauxite, coal, and stone mines. They are widely adaptable to harsh environments such as plateaus, permafrost, and rainy regions. The company provides one-stop drilling solutions for exploration, blasting, mining, oil wells, slope protection, anchoring, tunneling, and pile foundation construction (including solar energy applications).

Changsha CSDRILL Group is committed to becoming the king of drilling rigs, making drilling simple!

Welcome to visit our factory!

BUSINESS AND PRODUCTION

01

Our global sales headquarters is strategically located on the 13th floor of the Greenland Changsha Intercity Space Station T2 building.

02

CSDRILL Group operates state-of-the-art manufacturing facilities in Xiangtan, Yueyang, Yiyang, and Linyi.

潜钻集团
CSDRILL GROUP



《《 Sales Headquarters



《《 Manufacturing Factory
(Drilling Rig)



Manufacturing Factory
(Drilling Tools) 《《



ENTERPRISE STRENGTH



Top 2% Global Scientists

2022、2023 and 2024 Top 2% Global Scientists Selected by Stanford University in the United States.

20TH

20+Yrs Experience

20+ years of production experience of DTH drilling tools.

One Shop



Online Shop

One-stop Solution

water well drilling machines, coring drilling machines, reverse circulation drilling machines, tunnel drilling machines, and drilling tools.



Key Projects in Hunan

The new factory is a key project in Hunan Province.



3A Credit Certification

Certifies 3A credit by People's Bank of China.



School enterprise cooperation

Research and development team of School of Materials Science and Engineering, Central South University.



BUSINESS SCOPE



80⁺

CSDRILL Group's drilling rigs and drilling tools are exported to more than 80 countries and can fully adapt to a variety of extreme climatic and geographical conditions such as permafrost, plateau altitude, and tropical rainy season.

100⁺

CSDRILL Group providing one-stop drilling service solutions for more than 100 gold mines, copper mines, bauxite mines and other mines.



The King of Drilling Rigs
Make Drilling Simple



Own Factory

20 years of experience in professional drilling rig R&D and manufacturing.



Customized

A variety of drilling rigs can be customized, including core drilling rigs, reverse circulation drilling rigs, blasting drilling rigs, tunnel drilling rigs, water well drilling rigs, etc.



Production Line

We have a dedicated production and processing line, which is equipped with several CNC machine tools and advanced guide rail grinders, large gantry planers, vertical machining centers, horizontal machining centers and welding robots.

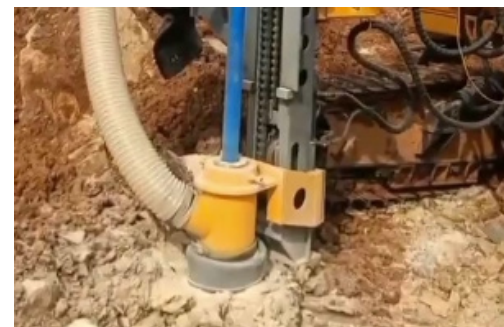


Technical Support

We are online 24 hours a day to provide professional drilling rig knowledge answers and any consulting services.

01 Working Principle of Down-The-Hole Drilling Rig

The working principle of the down-the-hole drilling rig is the same as that of the ordinary impact rotary pneumatic rock drill. Pneumatic rock drills combine the impact slewing mechanism, and transmit the impact to the drill bit through the drill rod; while the down-the-hole drilling machine separates the impact mechanism (impactor) and dives into the bottom of the hole. No matter how deep the drill is, the drill bit is directly installed on the impactor, and the impact energy is not transmitted through the drill pipe, which reduces the loss of impact energy.



With the increase of drilling depth of down-the-hole drilling rig and rock drilling machine, the loss of rock-drilling capacity of down-the-hole drilling rods and joints (medium hole, deep hole drilling), etc. increases, the drilling speed decreases significantly, and the cost decreases. In order to reduce production loss, improve Drilling efficiency, a down-the-hole drilling rig is designed in actual engineering. The down-the-hole drilling rig is also powered by compressed air, and its working principle is that the pneumatic impactor of the down-the-hole drill is installed on the front end of the drill pipe together with the drill bit. When drilling, the propulsion mechanism keeps the drilling tool moving forward, exerts a certain axial pressure on the bottom of the hole, and makes the drill bit contact with the rock at the bottom of the hole; Under the action, the piston reciprocates and impacts the drill bit to complete the impact on the rock. Compressed air enters from the rotary air supply mechanism and reaches the bottom of the hole through the hollow rod, and the broken rock powder is discharged from the annular space between the drill pipe and the hole wall to the outside of the hole. It can be seen that the essence of down-the-hole rock drilling is the combination of two rock crushing methods, impact and rotation. Under the action of axial pressure, the impact is intermittent and the rotation is continuous. Under the action, the rock is continuously broken and sheared. force and shear force. In down-the-hole rock drilling, impact energy plays a leading role.

02 Classification of Down-The-Hole Drilling Rigs

The structure of the down-the-hole drilling rig is divided into two types: integral type and split type.

The integral down-the-hole drilling rig is a single-body down-the-hole drilling rig composed of a head and a tail. It is simple to process and convenient to use, which can minimize the loss of energy transmission. The disadvantage is that when the working face

of the down-the-hole drilling machine is damaged, it will be scrapped as a whole. The model down-the-hole drilling rig is separated from the tail (drill tail) of the down-the-hole drilling rig, and the two are connected with special threads. When the head of the down-the-hole drilling rig is damaged, the drill tail can still be retained to save steel. However, the structure is more complex, and the energy transfer efficiency is reduced.

03 How to Choose the DTH Drilling Rig

To choose the right DTH drilling rig, consider the following factors:

Drilling Purpose: Determine the specific purpose of the drilling project, such as water well drilling, mining exploration, geotechnical investigation, or construction. Different applications may require different types of rigs.

Geological Conditions: Evaluate the geological formation you will be drilling into, including the hardness, abrasiveness, and composition of the rocks. Some rigs are better suited for soft formations, while others excel in hard or abrasive formations.

Drilling Depth and Diameter: Determine the required depth and diameter of the boreholes. Consider the capabilities of the rig in terms of maximum drilling depth and hole diameter it can accommodate.

Rig Mobility: Assess the accessibility of the drilling site and the need for mobility. If the site has limited space or requires frequent relocation, opt for a compact and easily transportable rig.

Power Source: Decide on the power source for the drilling rig, such as diesel, electric, or hydraulic. Consider factors like availability of power supply, environmental regulations, and operational preferences.

Rig Capacity and Performance: Consider the drilling speed, torque, and drilling capacity of the rig. Higher-capacity rigs can handle larger projects more efficiently.

Support and Service: Evaluate the availability of spare parts, technical support, and after-sales service from the manufacturer. A reliable support network ensures seamless operations and timely maintenance.

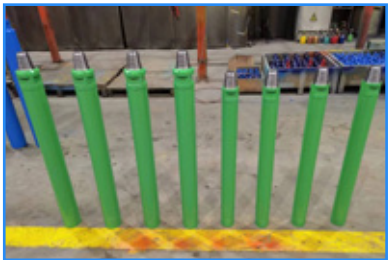
Budget: Set a budget and compare prices from different manufacturers or suppliers. Consider the long-term cost of ownership, including maintenance, spare parts, and operational expenses.

Safety Features: Ensure the rig complies with safety standards and features necessary safety measures to protect the operators and the drilling operation itself.

Reviews and Recommendations: Research and gather feedback from industry professionals, drilling contractors, or other users who have experience with different types of rigs.

• Note: The above content is for learning and communication only.

04 Down-The-Hole Drilling Rig Accessories



● DTH Hammer



● DTH Drill Bit



● Drill Pipe



● Adapter



● Air Compressor



● Air duct
(connecting air compressor)

05 How Should the Daily Maintenance of the Down-the-Hole Drilling Rig Be Maintained?

a Regularly check the Hydraulic Oil

① Open the hydraulic oil tank and observe whether the color of the hydraulic oil is clear and transparent. If it has emulsified or deteriorated, it must be replaced immediately. If the drilling frequency is high, the hydraulic oil is generally replaced every six months. Do not mix two hydraulic fluids!

② The hydraulic oil equipped with the drilling rig is wear-resistant hydraulic oil, which contains antioxidants, anti-rust agents, anti-foaming agents, etc., which can effectively prevent early wear of hydraulic components such as oil pumps and hydraulic motors. Commonly used wear-resistant hydraulic oils are: YB-N32.YB-N46.YB-N68, etc. The larger the endnote number, the higher the kinematic viscosity of the hydraulic oil. According to different ambient temperatures, YB-N46 or YB-N68 hydraulic oil with higher viscosity is generally used in summer, and YB-N32.YB-N46 hydraulic oil with lower viscosity is used in winter. In view of the fact that there are still some old models of wear-resistant hydraulic oil, such as YB-N68, YB-N46, YB-N32 and so on.

b Regularly Clean the Oil Tank and Oil Filter

① The improved oil suction filter is installed under the oil tank and connected with the oil suction port of the oil pump. Because of its self-locking function, that is, after the filter element is removed, the oil filter can automatically close the oil port without leakage.

When cleaning, just unscrew the filter element and rinse it with clean diesel oil. The oilsuction filter should be cleaned once a month. If the filter element is found to be damaged, it should be replaced immediately!

② The oil return filter is installed above the oil tank and connected with the oil return pipe. When cleaning, just unscrew the filter element and rinse it with clean diesel. The oil return filter should be cleaned once a month. If the filter element is damaged, it should be replaced immediately!

③ The oil tank is the intersection of oil suction and oil return, and it is also the place where impurities are most likely to deposit and concentrate, so it should be cleaned frequently. Open the oil plug every month, flush part of the oil out of the impurities at the bottom, clean it thoroughly every six months, release all the oil (it is recommended not to use it or filter it multiple times), and add new hydraulic oil after cleaning the oil tank.

c Clean the Lubricator in Time and Add Lubricating Oil

The down-the-hole drilling rig realizes percussion rock drilling through the impactor. Good lubrication is a necessary condition to ensure the normal operation of the impactor. Because there is often water in the compressed air and the pipeline is not clean, after a period of use, a certain amount of water and impurities often remain at the bottom of the lubricator, which will affect the lubrication and service life of the impactor. Therefore, when it is found that there is no oil in the lubricator or there is moisture and impurities in the lubricator, it should be removed in time. When adding lubricating oil, the main intake valve must be closed first, and then the shock valve should be opened to eliminate the residual air in the pipeline to avoid damage. Operation without lubricating oil is strictly prohibited!

d Do a Good Job in Diesel Engine Running-in and Oil Replacement

The diesel engine is the source power of the entire hydraulic system, which directly affects the climbing ability of the drilling rig. Propelling (improving) force, rotating torque, rock drilling efficiency, and timely maintenance are the prerequisites for the drilling rig to perform well.

① New or overhauled diesel engines must be run-in before use to improve the reliability and economic life of the diesel engine. Run for 50 hours at less than 70% of rated speed and 50% of rated load.

② After running-in, release the oil in the oil pan while it is hot, clean the oil pan and oil filter with diesel, and replace the oil and filter.

③ After the break-in period is over, replace the oil and filter every 250 hours.

④ Carefully read the manual of the diesel engine and do other maintenance work well.

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CSBP431H

Product Features:

1. The drilling rig is equipped with a Yuchai four-cylinder engine, which has a light and durable structure, is easy to operate and has low maintenance costs. .
2. The drilling rig's rotating head is driven by dual motors to increase the rotary torque and speed, increase the lifting cylinder and chain, and improve the lifting force and reliability.
3. The drilling rig is equipped with automatic rod change and full hydraulic dust collector, which has good dust removal effect and extends the service life of the machine. The automatic rod change is easy to operate, reduces work intensity and improves drilling efficiency.
4. The swingable crawler chassis is easy to level, has high ground clearance, good passability and strong maneuverability.
5. Strengthen the heat dissipation system to avoid high temperature shutdown and reliable performance.
6. The control valves are centrally arranged to facilitate the operation and control of the drilling rig. The system is reliable and simple with low maintenance costs.



Specification Parameter

Model/Item	Unit	CSBP431H
Drilling Diameter	mm	90-127
Max. Hole Depth	m	21
Drilling Pipes	mm	Φ60x3000
Rod Changing Method	/	Automatic
Engine	/	YC6J220-T300 162kw/2200rpm
Fuel Tank Capacity	L	250
Air Compressor Producer	/	Bowes BSC
Air Flow at Normal Working Pressure	m ³ /min	13
Max. Air Pressure	bar	18
Main Hydraulic Pump Max. Pressure	MPa	25
Main Pump Flow	ml/r	32
Auxiliary Pump Flow	ml/r	32+32
Max. Torque	N.m	1500
Rotation Speed	rpm	135
Feed Travel Stroke	mm	3700
Feed Max. Pull Force	kn	31
Feed Max. Feed Force	kn	7.5
Feed Max. Feed Speed	m/s	0.5
Dust Collector Filter Area	m ²	20
Max. Walking Speed	km/h	3. 2
Max. Climable Angle	°	25
Pitch Angle	°	±14°
Dimensions(Transport)	mm	7480x2300x2750
Weight (Standard Configuration)	kg	9100

● Note: Photographs and illustrations, parameters are for reference only and do not represent the standard version of the equipment. The company reserves the right to make changes without prior notice.

CSBP590-3

Product Features:

- 1. The drilling rig is equipped with a Yuchai four-cylinder engine, which has a light and durable structure, is easy to operate and has low maintenance costs. .
- 2. The drilling rig's rotating head is driven by dual motors to increase the rotation torque and speed, increase the lifting cylinder and chain, and improve the lifting force and reliability.
- 3. The fully hydraulic dust collector has a good dust removal effect, extends the service life of the machine, and ensures the safety of the operator.
- 4. The swingable crawler chassis is easy to level, has a high ground clearance, good passability, and strong maneuverability.
- 5. Strengthen the heat dissipation system to avoid high temperature shutdown and reliable performance.
- 6. The control valves are centrally arranged to facilitate the various operation controls of the drilling rig. The system is reliable and simple, and the maintenance cost is low.



Specification Parameter

Model/Item	Unit	CSBP590-3
Drilling Depth	m	30
Drilling Diameter	mm	Φ90-Φ180
Pipe Length	m	3
Working Pressure	Mpa	1.2-2.5
Rock Hardness	/	F=6-20
Feeding Stroke	mm	4140
Max. Horizontal Drilling Height	mm	3400
Max.Rotation Torque	N.m	6000
Rotation Speed	rpm	0-120
Walking Speed	km/h	2-4
Grade Ability	mm	30
Power	kw	77.3
Brand	/	Yuchai shares
Dimension	mm	7050x2200x2150
Weight	kg	7100
Dust Collector(Optional)	/	Hydraulic dry tpye dust collecting/wet type

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CSBP452 (WITH CAB)

Product Features:

- 1. The drilling rig is equipped with a Cummins 194kw engine, which is powerful and provides sufficient power for work. Subsequent maintenance is more convenient.
- 2. The drilling rig's rotating head is driven by dual motors to increase the rotation torque and speed, increase the lifting cylinder and chain, and improve the lifting force and reliability.
- 3. The drilling rig is equipped with automatic rod change and full hydraulic dust collector, which has good dust removal effect and extends the service life of the machine. The automatic rod change is easy to operate, reduces work intensity and improves drilling efficiency.
- 4. The drilling rig is equipped with a cab, which is convenient for observing the situation during operation. The cab is equipped with a radio, electric heater, etc.
- 5. Strengthen the heat dissipation system to avoid high temperature shutdown and reliable performance.
- 6. The control valves are centrally arranged to facilitate the operation and control of the drilling rig. The system is reliable, simple and has low maintenance cost.



Specification Parameter

Model/Item	Unit	CSBP452(with cab)
Drilling Diameter	mm	90-200
Max. Hole Depth	m	21
Drilling Pipes	mm	Φ76x3000
Rod Changing Method	/	Automatic
Engine	/	Cummins 194kw/2200rpm
Fuel Tank Capacity	L	250
Air Compressor Producer	/	Bowes BSC
Air Flow at Normal Working Pressure	m³/min	15
Max. Air Pressure	bar	18
Main Hydraulic Pump Max. Pressure	MPa	25
Main Pump Flow	ml/r	32
Auxiliary Pump Flow	ml/r	32+32
Max. Torque	N.m	6000
Rotation Speed	rpm	0-135
Feed Travel Stroke	mm	3700
Feed Max. Pull Force	kn	31
Feed Max. Feed Force	kn	7.5
Feed Max. Feed Speed	m/s	0.5
Dust Collector Filter Area	m²	20
Max. Walking Speed	km/h	3. 2
Max. Climable Angle	°	25
Pitch Angle	°	±14°
Dimensions(Transport)	mm	8800x2300x3100
Weight (Standard Configuration)	kg	10150

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CSBP452A(WITHOUT CAB)

CSBP452 down-the-hole drill rigs are divided into 452A, 452B and 452 with cab. The common point between 452A and 452B is that they do not have cab and automatic rod change function, and the difference between them is different engines. 452 with cab has cab air compressor integrated machine, Cummins 194KW engine, automatic rod change, and dust collection.

Specification Parameter

Model/Item	Unit	CSBP452A
Drilling Diameter	mm	90-200
Max. Hole Depth	m	21
Drilling Pipes	mm	Φ76x3000
Number of Pipes	/	6+1
Rod Changing Method	/	Manual Operation/Automatic(Optional)
DTH Hammer	inch	3.5"
Engine Model	/	Yuchai
Rated Power/ Rotation Speed	kw/rpm	176/2200
Fuel Tank Capacity	L	250
Air Comprosser Producer	/	Bowes BSC
Air Flow at Normal Working Pressure	m³/min	15
Max. Air Pressure	bar	18
Main Hydraulic Pump Max. Pressure	MPa	25
Main Pump Flow	ml/r	32
Auxiliary Pump Flow	ml/r	32+32
Max. Torque	N.m	6000
Rotation Speed	rpm	0-135
Feed Mode	/	hydraulic cylinder+chain
Feed Travel Stroke	mm	3700
Feed Max. Pull Force	kn	31
Feed Max. Feed Force	kn	7.5
Feed Max. Feed Speed	m/s	0.5
Dust Collector Filter Area	m²	20
Number of Filter Elements	pcs	20
Max. Walking Speed	km/h	3. 2
Max. Climbable Angle	°	25
Pitch Angle	°	±14°
Dimensions(Transport)	mm	8800x2300x3100
Weight (Standard Configuration)	kg	10000

● Note: Photographs and illustrations, parameters are for reference only and do not represent the standard version of the equipment. The company reserves the right to make changes without prior notice.

CSBP452B(WITHOUT CAB)

CSBP452 down-the-hole drill rigs are divided into 452A, 452B and 452 with cab. The common point between 452A and 452B is that they do not have cab and automatic rod change function, and the difference between them is different engines. 452 with cab has cab air compressor integrated machine, Cummins 194KW engine, automatic rod change, and dust collection.

Specification Parameter

Model/Item	Unit	CSBP452B
Drilling Diameter	mm	90-200
Max. Hole Depth	m	21
Drilling Pipes	mm	Φ76x3000
Number of Pipes	/	6+1
Rod Changing Method	/	Manual Operation/Automatic(Optional)
DTH Hammer	inch	3.5"
Engine Model	/	YC6J220-T300
Rated Power/ Rotation Speed	kw/rpm	162/2200
Fuel Tank Capacity	L	250
Air Comprosser Producer	/	Bowes BSC
Air Flow at Normal Working Pressure	m³/min	15
Max. Air Pressure	bar	18
Main Hydraulic Pump Max. Pressure	MPa	25
Main Pump Flow	ml/r	32
Auxiliary Pump Flow	ml/r	32+32
Max. Torque	N.m	6000
Rotation Speed	rpm	0-135
Feed Mode	/	hydraulic cylinder+chain
Feed Travel Stroke	mm	3700
Feed Max. Pull Force	kn	31
Feed Max. Feed Force	kn	7.5
Feed Max. Feed Speed	m/s	0.5
Dust Collector Filter Area	m²	20
Number of Filter Elements	pcs	20
Max. Walking Speed	km/h	3. 2
Max. Climbable Angle	°	25
Pitch Angle	°	±14°
Dimensions(Transport)	mm	8800x2300x3100
Weight (Standard Configuration)	kg	10150

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