



CHANGSHA DTH DRILL CONSTRUCTION MACHINERY CO.,LTD.



WHATSAPP



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REVERSE CIRCULATION 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.

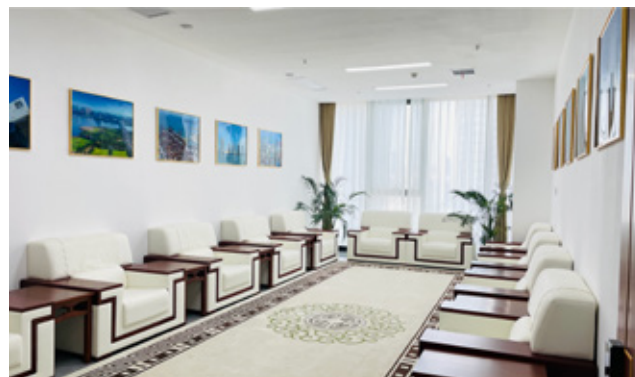
02

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.



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.



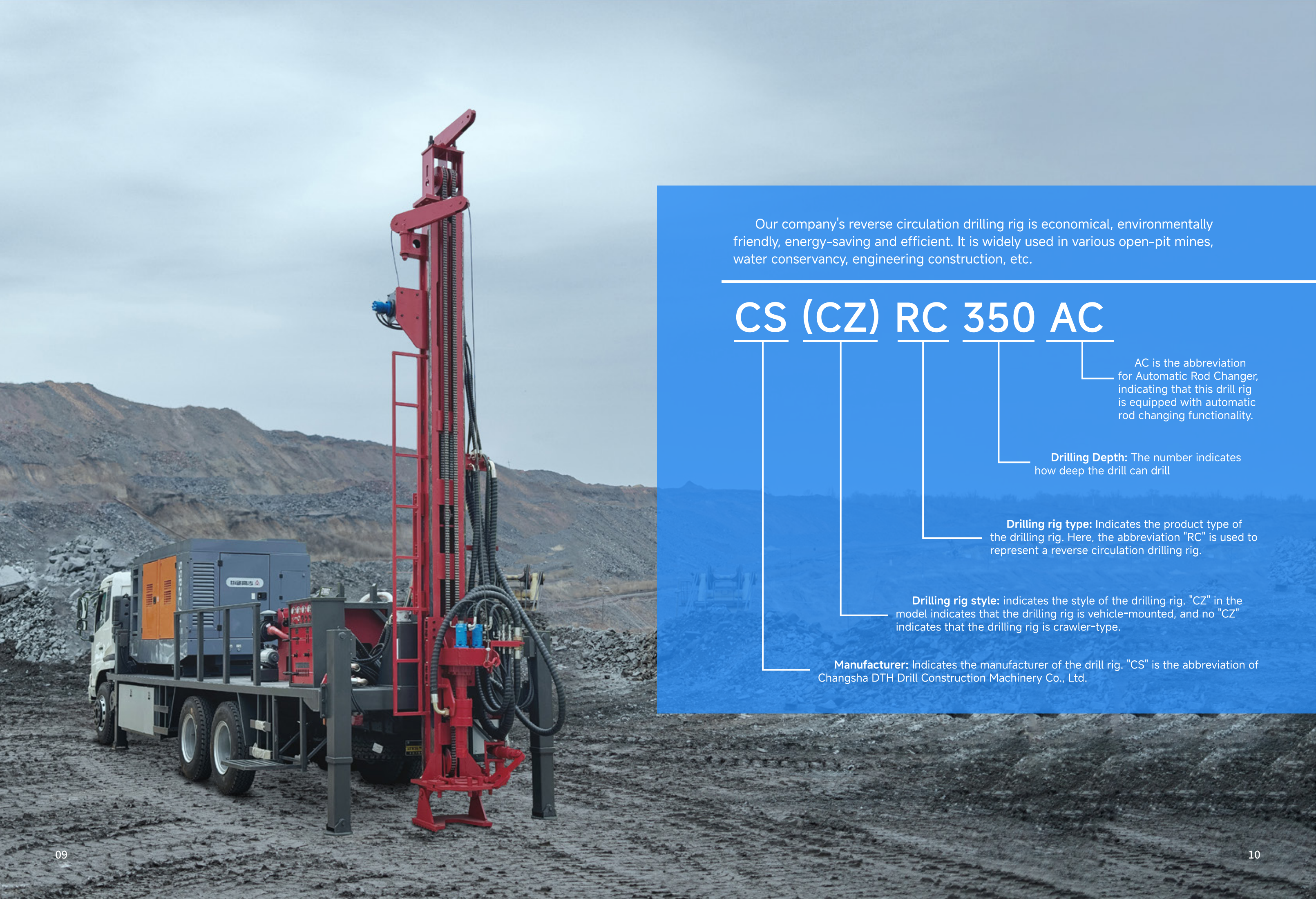
Production Line

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.



Our company's reverse circulation drilling rig is economical, environmentally friendly, energy-saving and efficient. It is widely used in various open-pit mines, water conservancy, engineering construction, etc.

CS (CZ) RC 350 AC

AC is the abbreviation for Automatic Rod Changer, indicating that this drill rig is equipped with automatic rod changing functionality.

Drilling Depth: The number indicates how deep the drill can drill

Drilling rig type: Indicates the product type of the drilling rig. Here, the abbreviation "RC" is used to represent a reverse circulation drilling rig.

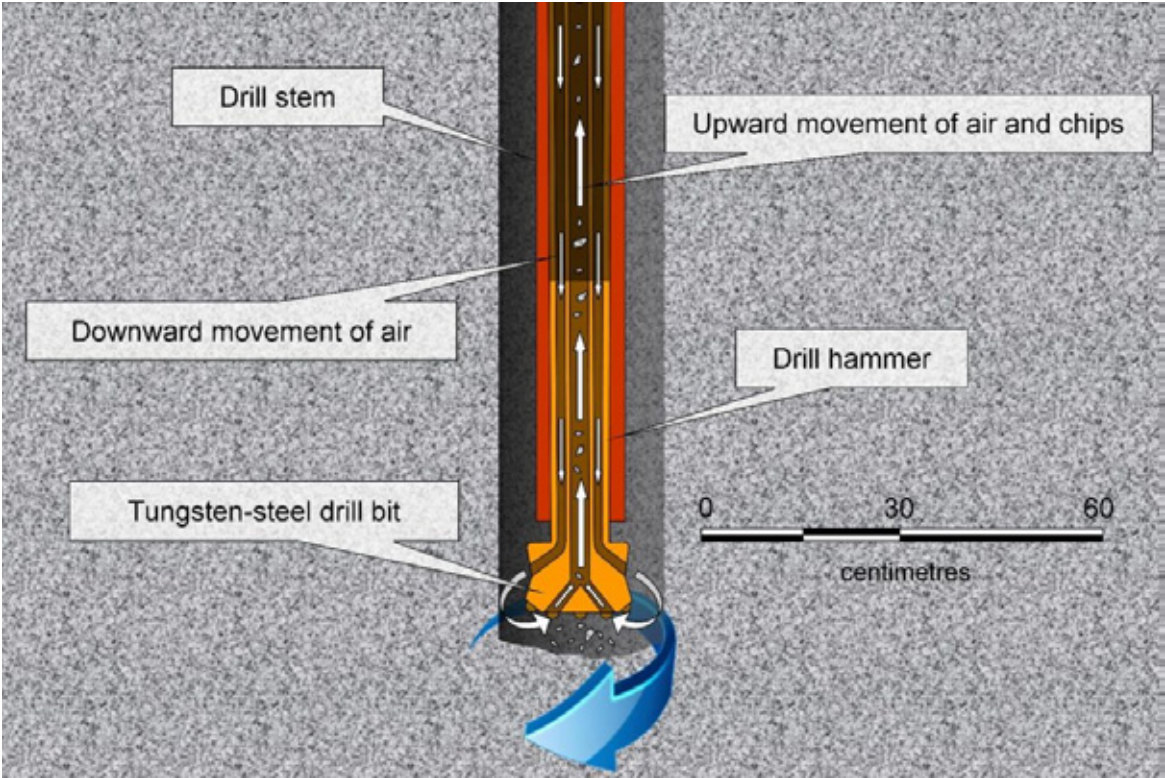
Drilling rig style: indicates the style of the drilling rig. "CZ" in the model indicates that the drilling rig is vehicle-mounted, and no "CZ" indicates that the drilling rig is crawler-type.

Manufacturer: Indicates the manufacturer of the drill rig. "CS" is the abbreviation of Changsha DTH Drill Construction Machinery Co., Ltd.

1 What is reverse circulation drilling rig?

Reverse circulation drilling is a drilling method that uses a double-walled drill pipe that consists of an outer drill pipe and an inner tube. These hollow inner tubes allow the cuttings to flow back to the surface in a continuous and steady manner. Unlike diamond drilling, RC drilling obtains cuttings samples rather than cores. The drilling principle is to break up the rock formation by driving a tungsten steel drill bit through a pneumatic hammer. Repeated pneumatic reciprocating pistons called hammers, which in turn drive tungsten steel drill bits, which are used to break up hard rock. When the compressed air blows out, the pressure offset creates a reverse circulation, which drives the cuttings upward into the inner tube. When the cuttings reach the surface, they are connected to a cyclone separator through a hose for sample reduction, and the samples then fall into sample bags from the bottom opening. These sample bags are marked with the location and depth of the collected samples and can be transported directly to the laboratory for analysis.

2 Drilling principle diagram



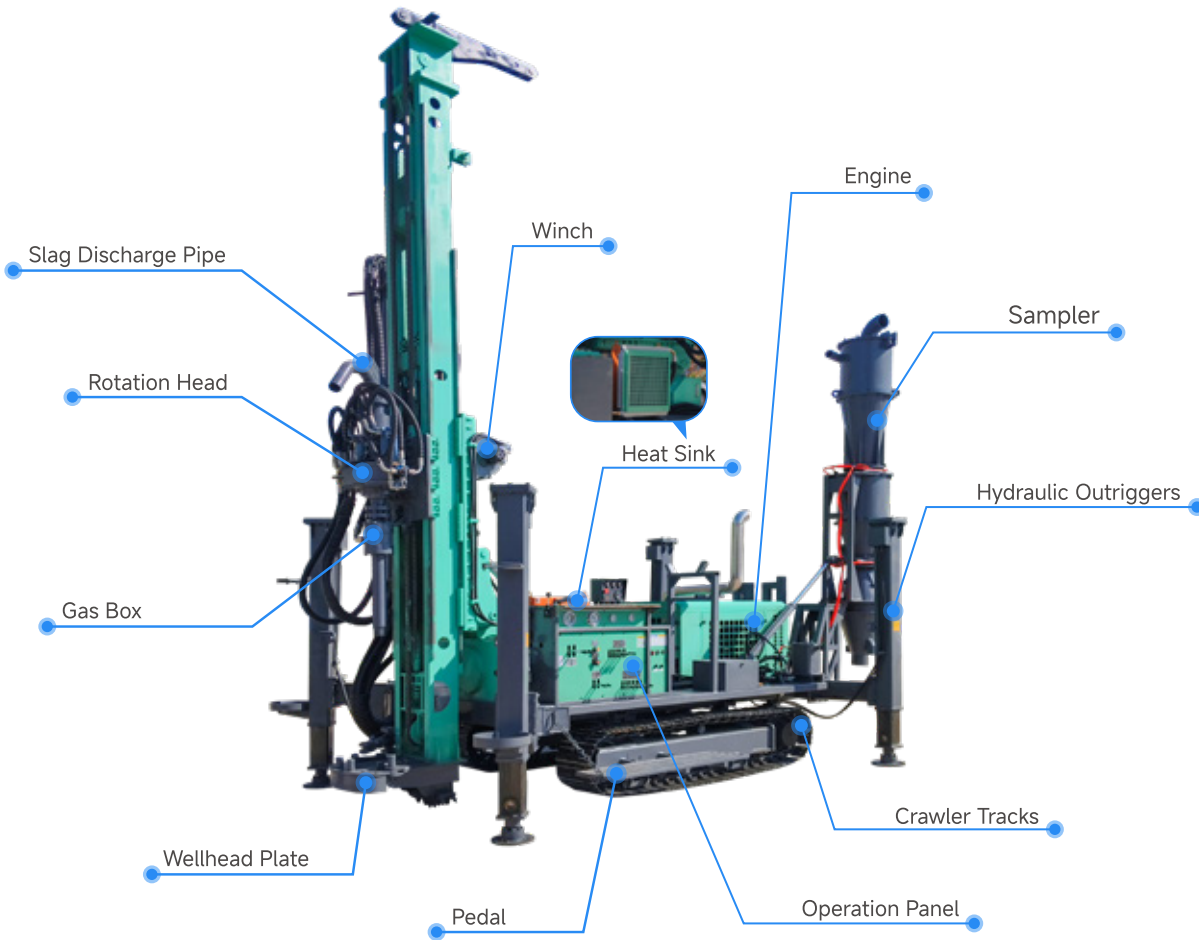
A sketch of an RC drill stem showing the drill bit and hammer. The direction of air flow is shown with white arrows. The blue arrow represents the rotation of the drill string.

3 Advantages of reverse circulation drilling rigs

High drilling efficiency, fast cuttings discharge, reduced repeated crushing, and drilling speed increased by 30%-50% compared with traditional drilling rigs. Suitable for complex geological conditions such as hard rock and broken strata.

The cuttings enter the sample collector through the inner tube of the drill pipe and will not contact other areas, thus avoiding cross contamination and obtaining high-quality, reliable samples. The samples are easy to classify and track, with exact location and depth, and can be accurately determined as mineralized locations.

4 Reverse Circulation Drilling Rig Composition Diagram



5 Reverse Circulation Drilling Rig Accessories



CSRC350

Product Features:

1. The slag discharge pipe on the power head is made of special steel and thickened to extend the service life by more than 10 times. The diameter of the slag discharge pipe is increased to 89MM, which reduces the possibility of slag blockage.
2. Low failure rate, small model and large torque. The rotation speed can be adjusted according to different working conditions to effectively improve the impactor footage efficiency.
3. The hydraulic system is equipped with an independent hydraulic oil radiator to ensure that the drilling rig can work continuously under outdoor high temperature climate conditions.
4. High-efficiency drilling, equipped with a Weichai 129KW engine for strong power, rapid rock cuttingsremoval.
5. Reliable and efficient air pre-filter system, which effectively filters out dust in the intake air, is easy to clean and maintain, effectively reduces engine wear, extends service life, improves work efficiency, and makes it suitable for harsh working conditions.



Specification Parameter

Model/Item	Unit	CSRC-350
Weight	kg	8000
Dimension (Transport)	mm	5900x2100x2500
Dimension (Working)	mm	4200x3000x6100
Drilling Depth	m	350
The Hole Diameter	mm	105-400
Drill Pipe Diameter	/	Φ89 Φ102
Drill Head Lift Force	kN	260
Drill Head Feed Force	kN	130
Rotary Speed	rpm	40-160
Max. Torque	N.m	10000
Drill Head Feed Stroke	mm	3300
Drill Mast Slide Stroke	mm	800
Hydraulic Pumps	/	160ml/r. 16MPa
Hydraulic Cooling System	/	Air Cooling
Mechanical Winch Capacity	kN	15
Power Unit	/	Weichai 6-cylinder engine 129kw
Air Pressure	MPa	1.7-3. 5
Air Consumption	m³/min	17-42
Equipped with Hammer	/	Medium and High pressure series
Crawler Climbing Angle	°	25
Crawler Walking Speed	km/h	2-3

● 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.

CSRC500

Product Features:

1. The rotary sample divider uses a design structure similar to that of Atlas. It is integrated on the drilling rig, saving the trouble of transportation.
2. The main pump, hydraulic motor, hydraulic valve and other key components of the drilling rig all use the well-known brand - Huade
3. The slag discharge pipe on the power head is made of special steel and thickened, which extends the service life by more than 10 times. The diameter of the slag discharge pipe is increased to 102MM, reducing the possibility of slag blockage.
4. Using Cummins 132kw engines, it is easier to buy spare parts abroad and easier for maintenance personnel to maintain and repair.



Specification Parameter

Model/Item	Unit	CSRC-500
Weight	kg	12000
Dimension (Transport)	mm	6300x2100x2500
Dimension (Working)	mm	4500x3000x6800
Drilling Depth	m	500
The Hole Diameter	mm	105-400
Drill Pipe Diameter	/	Φ89 Φ102 Φ114
Drill Head Lift Force	kN	300
Drill Head Feed Force	kN	150
Rotary Speed	rpm	40-160
Max. Torque	N.m	12000
Drill Head Feed Stroke	mm	3300
Drill Mast Slide Stroke	mm	1000
Hydraulic Pumps	/	160ml/r. 16MPa
Hydraulic Cooling System	/	Air Cooling
Mechanical Winch Capacity	kN	20
Power Unit	/	Cummins 6-cylinder engine 132kw/2400
Air Pressure	MPa	1.7-3. 5
Air Consumption	m³/min	17-42
Equipped with Hammer	/	Medium and High pressure series
Crawler Climbing Angle	°	25
Crawler Walking Speed	km/h	2-3

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CSRC500AC

Product Features:

- 1. The drill rig's automatic rod-handling system enables continuous operation, significantly reducing downtime and minimizing manual intervention to lower accident risks.
- 2. The main pump, hydraulic motor, hydraulic valve and other key components of the drilling rig all use the well-known brand - Huade
- 3. The slag discharge pipe on the power head is made of special steel and thickened,which extends the service life by more than 10 times. The diameter of the slag discharge pipe is increased to 102MM, reducing the possibility of slag blockage.
- 4. Using Cummins 132kw engines, it is easier to buy spare parts abroad and easier for maintenance personnel to maintain and repair.



Specification Parameter

Model/Item	Unit	CSRC-500AC
Weight	kg	11000
Dimension (Transport)	mm	7685x2100x2465
Dimension (Working)	mm	5345x2900x7685
Drilling Depth	m	500
The Hole Diameter	mm	140-400
Drill Pipe Diameter	/	Φ76 Φ89 Φ102
Drill Pipe Length	m	1.5/2/3
Drill Head Lift Force	kN	300
Drill Head Feed Force	kN	150
Rotary Speed	rpm	40-160
Swing Torque	N.m	8000-12000
Drill Head Rapid Rise Speed	m/min	20
Drill Head Fast Feeding Speed	m/min	40
One-time Advance Length	m	4.7
The Penetration Efficiency	m/h	12-40
Mechanical Winch Capacity	kN	20
Power Unit	/	Cummins 132kw
Air Pressure	MPa	1.7-3. 5
Air Consumption	m³/min	17-42
Equipped with Hammer	/	Medium and High pressure series
Crawler Climbing Angle	°	30
Crawler Walking Speed	km/h	2.5

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CSCZRC350

Product Features:

- 1. Adopting the well-known brand HOWO 4x6 chassis, 2 front and 8 rear.
- 2. Equipped with Weichai 129KW engine, it has strong power and can remove rock chips quickly.
- 3. The hydraulic system is equipped with an independent hydraulic oil radiator to ensure that the drilling rig can work continuously under high temperature outdoor climate conditions.
- 4. The movable slide can slide with the compensating cylinder to press against the ground working surface during drilling operation, which improves the rigidity of the drilling rig and ensures the working stability of the drilling rig.
- 5. The reliable and efficient air pre-filter system can effectively filter out dust in the intake air, is easy to clean and maintain, effectively reduces engine wear, prolongs service life, and improves work efficiency, making it suitable for harsh working environments.



Specification Parameter

Model/Item	Unit	CSCZRC-350
Weight	T	14 (Excluding Air Compressor)
Dimension (Transport)	mm	11000x2700x3100
Drilling Depth	m	350
The Hole Diameter	mm	105-400
Drill Pipe Diameter	/	Φ89 Φ102
Drill Head Lift Force	kN	260
Drill Head Feed Force	kN	130
Rotary Speed	rpm	40-160
Max. Torque	N.m	10000
Drill Head Feed Stroke	mm	3300
Drill Mast Slide Stroke	mm	800
Hydraulic Pumps	/	160ml/r. 16MPa
Hydraulic Cooling System	/	Air Cooling
Mechanical Winch Capacity	kN	15
Power Unit	/	Weichai 6-cylinder engine 129kw
Rated Speed	rpm	2200
Air Pressure	MPa	1.7-3. 5
Air Consumption	m³/min	17-42
Equipped with Hammer	/	Medium and High pressure series
Climbing Angle	°	25
Walking Speed	km/h	0-80

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CSCZRC500

Product Features:

- 1. Adopt the well-known brand HOWO 4x6 chassis, 2 front and 8 rear.
- 2. Equipped with Cummins 132KW engine, powerful and quick to remove rock chips.
- 3. The hydraulic system is equipped with an independent hydraulic oil radiator to ensure the continuous operation of the drilling rig under high temperature outdoor climate conditions.
- 4. The movable slide can be pressed against the ground working surface through the compensating oil cylinder when the drilling rig is operating, which improves the rigidity of the drilling rig and ensures the working stability of the drilling rig.
- 5. The reliable and efficient air pre-filter system effectively filters out dust in the intake air, is easy to clean and maintain, effectively reduces engine wear, prolongs service life, improves work efficiency, and makes it suitable for harsh working environments.



Specification Parameter

Model/Item	Unit	CSCZRC-500
Weight	T	14 (Excluding Air Compressor)
Dimension (Transport)	mm	11000x2700x3100
Drilling Depth	m	500
The Hole Diameter	mm	105-400
Drill Pipe Diameter	/	Φ89 Φ102 Φ114
Drill Head Lift Force	kN	300
Drill Head Feed Force	kN	150
Rotary Speed	rpm	40-160
Max. Torque	N.m	12000
Drill Head Feed Stroke	mm	3300
Drill Mast Slide Stroke	mm	1000
Hydraulic Pumps	/	160ml/r. 16MPa
Hydraulic Cooling System	/	Air Cooling
Mechanical Winch Capacity	kN	20
Power Unit	/	Cummins 6-cylinder engine 132kw
Rated Speed	rpm	2400
Air Pressure	MPa	1.7-3. 5
Air Consumption	m³/min	17-42
Equipped with Hammer	/	Medium and High pressure series
Climbing Angle	°	25
Walking Speed	km/h	0-80

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MULTIFUNCTIONAL—CSMF500

Product Features:

- 1. The drilling rig has two uses: everse circulation drilling rig, and diamond core drilling rig.
- 2. Low failure rate, small size, and high torque. The rotation speed can be adjusted according to different working conditions to effectively improve the impactor penetration efficiency.
- 3. The hydraulic system is equipped with an independent hydraulic oil radiator to ensure that the drilling rig can work continuously under high temperature outdoor climate conditions.
- 4. The reliable and efficient air prefilter system effectively filters out dust in the intake air, is easy to clean and maintain, effectively reduces engine wear, extends service life, and improves work efficiency, making it suitable for harsh working conditions.



Specification Parameter

Model/Item	Unit	CSMF-500
Weight	kg	10500
Dimension	mm	6300x2200x2400
Drilling Depth BTW	m	1800
Drilling Depth NTW	m	1500
Drilling Depth HTW	m	1000
Drilling Depth PQ	m	500
Power Head Stroke	m	3.6
Total Mast Height	m	9
Maximum Lifting Force	T	20
Maximum Feed Force	T	6.5
Drilling Angle	°	45-90
Lifting Force	KN	100
Winch Rope Capacity	m	30
Maximum Rope Winding Speed	m/min	30
Power Unit	/	Dongfeng Cummins 264kw
First Gear Rotational Speed and Torque	/	1300rpm/700Nm
Second Gear Rotational Speed and Torque	/	560rpm/1700Nm
Third Gear Rotational Speed and Torque	/	150rpm/6000Nm
Mud Pump	/	BW320
Cooling Method	/	Air Cooling
Battery	/	The Elephant God 12V-100A*2
Crawler Climbing Angle	°	20
Crawler Walking Speed	km/h	2.5

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APPLICATION CASES

The King of Drilling Rigs,Make Drilling Simple

