



Reliable Service

JCDRILL provides customers with free installation guidance, on-site technical training, startup, and commissioning services.



Efficient Service

JCDRILL has established a fast information communication channel between the after-sales service team, technical department, parts department, and warehouse, ensuring customer issues are resolved promptly.



Continuous Service

Even the best equipment requires regular maintenance to ensure the drill's performance. JCDRILL offers comprehensive service solutions to maintain productivity while maximizing benefits, improving availability, and reducing operating costs.

**United in performance.
Inspired by innovation.**

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JC850

Integrated Hydraulic Down-the-Hole Drilling Rig





JC850

DTH Integrated Hydraulic Down-the-Hole Drilling Rig



JC850 DTH Integrated Hydraulic Down-the-Hole Drilling Rig

The JC850 is a fully hydraulic surface drilling rig equipped with a cab, an automatic rod handling system, and a dust collection system. It is easy and comfortable to operate, with stable and superior performance, high efficiency, and environmentally friendly operation. This equipment supports drilling diameters ranging from ϕ 115–152 mm, with a working pressure of 2.0 MPa and an air consumption of 19 m³/min. It provides reliable support for blast hole drilling in various open-pit engineering applications, including metallurgy, mining, building materials, railway construction, hydropower projects,



High-Efficiency Operation

The Atlas Copco air compressor is optimally matched with a Cummins engine, ensuring high drilling efficiency and low fuel consumption. Combined with the automatic drill rod handling system, auxiliary time is reduced, significantly improving overall drilling efficiency.



Excellent Maintenance Performance

The power unit is arranged in a longitudinal layout, making maintenance components easily accessible. The spacious internal service area facilitates routine maintenance and inspection, reducing equipment downtime and maintenance costs.

Intelligent Optional Features



01

Remote Control System

According to customer requirements, the remote control function can be added or reserved on high-spec models at any time. It enables precise operation within a 0–100 m range, allowing operators to safely control the rig from outside the cab in hazardous working conditions.

02

Smart Mine 5G System

To support mine digitalization, a 5G remote operation system can be added to the JCDRILL high-spec integrated rig. Through video and signal communication, it allows real-time monitoring of equipment operation data and safe operation of the integrated drilling rig.



03

Automatic Fire Extinguishing System

Operating temperature: -50°C to +80°C, with core components not requiring replacement within 5 years. Resistant to impact and vibration. Fine spray nozzles with wide spray angles and sensitive, reliable temperature detection.

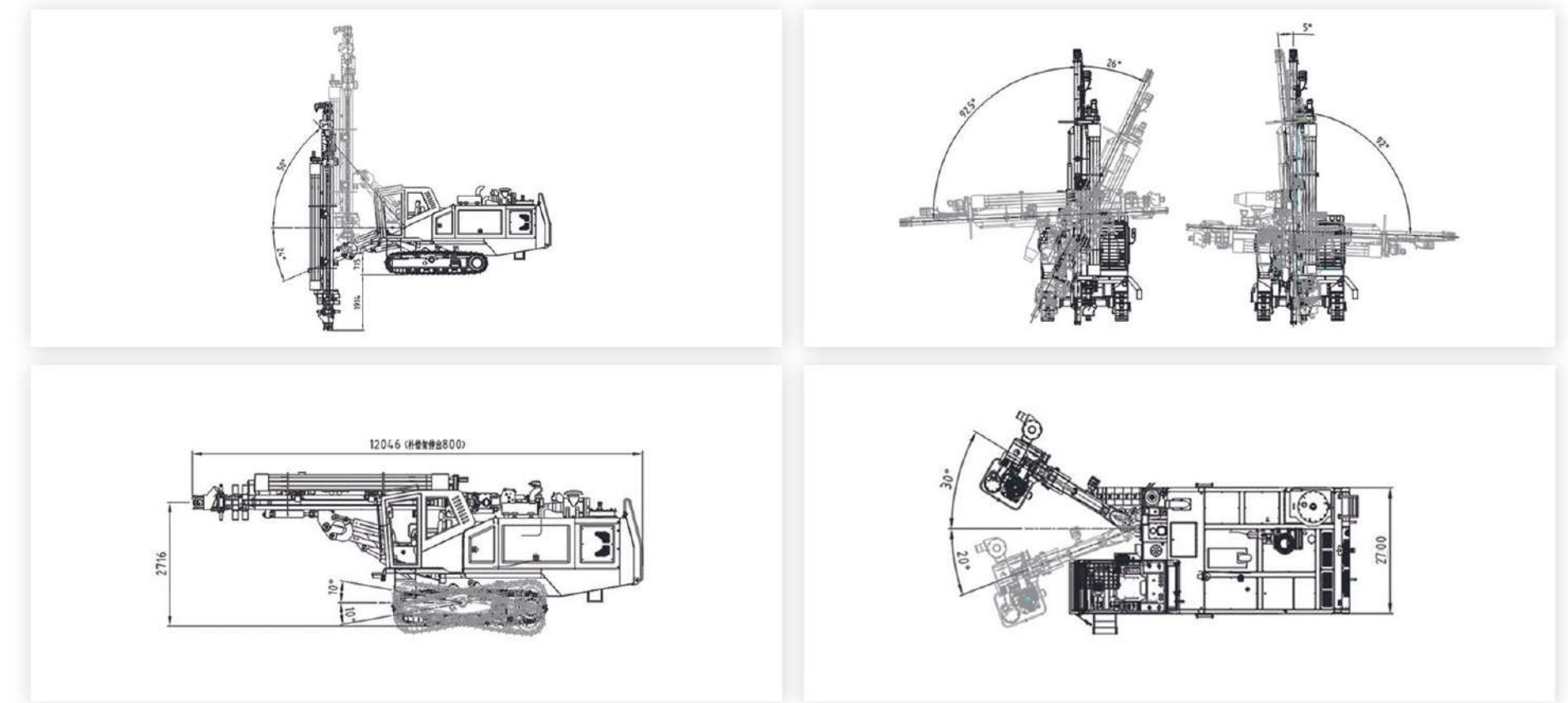
04

RTK Technology for Rig Layout and Hole Inspection System

Using high-precision RTK and 3D algorithms, the system automatically calculates the drill bit's target hole position and depth, displaying the information visually for the operator.

Working Range Diagram and Technical Parameters

Working Range Diagram

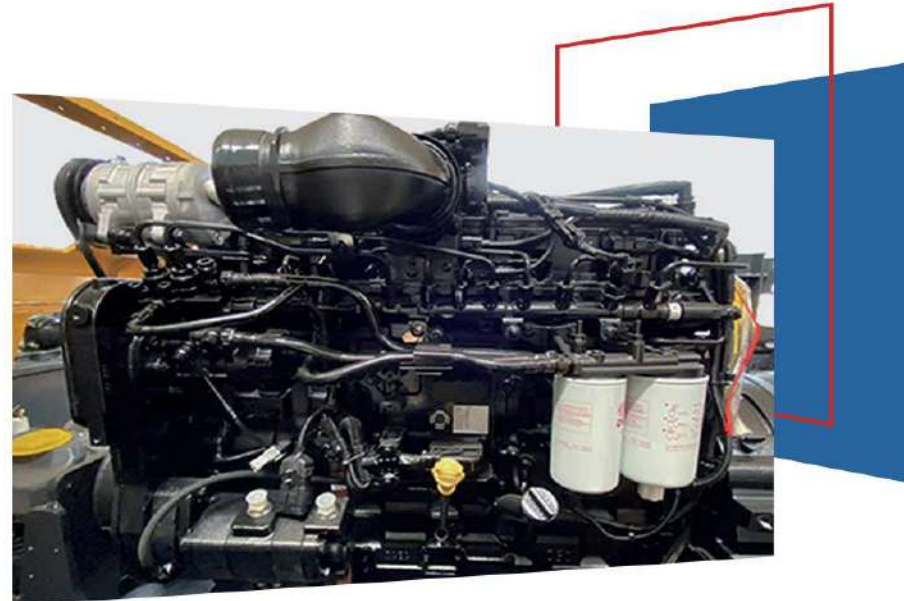


Technical Parameters

Specification	Unit	JC850
Rock Hardness		F=6-20
Hole Diameter	mm	115-152
Hole Depth	m	21
Drill pipe	mm	76/89
Rotary Head		
Rotation Torque	Nm	3400-4300
Rotation Speed(Normal and Fast)	rpm	0-100
Feeding System		
Feed stroke	mm	4860 / 5860
Feeding force	kN	20
Feeding speed	m/min	75
Lift speed	m/min	75
Mast		
Max Swing of Mast	°	92
Max Dump of Mast	°	0-142
Engine		
Manufacturer		Cummins
Rated Horsepower	Kw	264
Fuel tank capacity	L	600
Air Compressor		
Brand		Atlas Copco
Flow rate	M ³ /min	19
Pressure	Bar	20
Dust Collector		
Motor speed	Rpm	3500
Filter area	m ²	30
General		
Max. Travel Speed(Slow/Fast)	Km/h	0-3.5
Gradeability	°	25
Net Weight	kgs	19500
Shipping Dimension(L*W*H)	mm	12000×2700×3100
Ground Clearance	mm	420

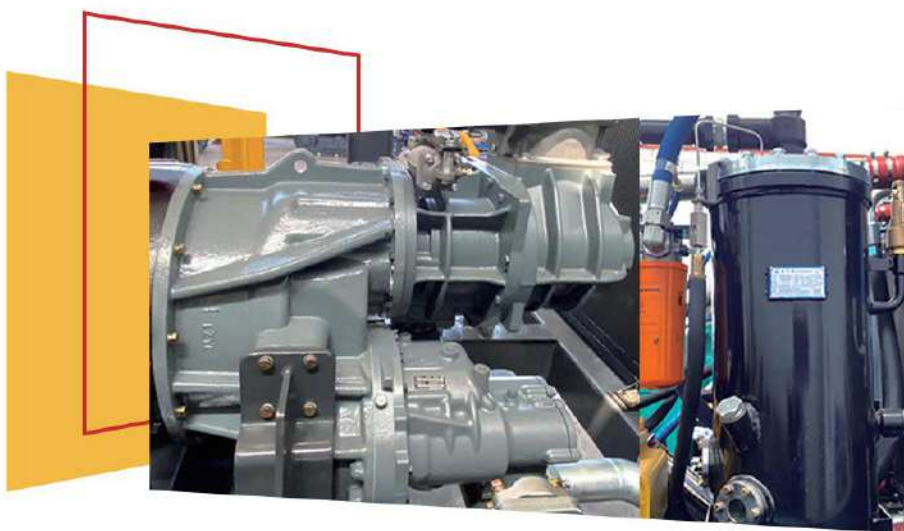
▶ Outstanding Power Performance and Fuel Efficiency

Powered by a Cummins engine, the rig drives a two-stage screw air compressor and a load-sensing hydraulic system, forming the core power source of the integrated drilling unit.



▶ Turbocharged Water-Cooled Engine

The rig uses a turbocharged, water-cooled engine from Cummins, rated at 260 kW / 1850 rpm, delivering strong power with energy-saving and environmentally friendly performance.



▶ Two-Stage Screw Air Compressor

Equipped with an original two-stage screw air compressor and control system components from Atlas Copco, delivering an air output of 19 m³/min at a working pressure of 2.0 MPa. This ensures sufficient drilling pressure and high penetration efficiency.



▶ Dual-Fan Cooling System

Uses a dual-fan cooling system driven by independent hydraulic motors, providing strong heat dissipation. The system can maintain normal operation even at ambient temperatures up to 50°C. It can also be adjusted according to seasonal and regional temperature differences to better protect the equipment.



▶ Air Intake System

Both the engine and screw compressor intake systems use automatic pulse-jet air filters with a filtration efficiency $\geq 99.9\%$. The screw compressor retains the original intake filter from Atlas Copco. When the machine is powered off, the filter is automatically cleaned using low-pressure air from the compressor, preventing premature wear caused by neglected maintenance.

▶ Automatic Drill Rod Handling System and Drilling System

The Malta-type automatic rod handling mechanism is adopted. When equipped with a rod carousel holding 5 rods of 5 meters each, and with one additional rod on the rotary head, the drilling depth can reach up to 30 meters. The automatic rod handling system is also equipped with an automatic lubrication system for drill thread connections, ensuring extended service life of drilling tools.

▶ Integrated Braking Feed System

Equipped with an integrated braking feed motor from Eaton, paired with an 800 Nm brake. The structure is compact, with feed force and lifting force up to 20 kN, ensuring safe, reliable operation and easy maintenance. A 24A drive chain is used for enhanced durability.

▶ Feed Beam (Sliding Frame)

The feed beam and guide rail are made of manganese steel combined with high-molecular wear-resistant materials, ensuring long service life and durability.

▶ Rotary Power Head

Features a high-torque spur gear rotary reducer with a simple structure for easy maintenance. By adjusting rotation speed and torque, optimal working conditions can be achieved to handle both soft and hard rock drilling applications.

▶ Floating Shock-Absorbing Joint

Reduces thread wear during rod disassembly and extends drill rod service life by approximately 3–4 times. It also minimizes the recoil impact of the hammer, reducing vibration damage to the rotary head and the entire machine.

▶ Rod Carousel and Manipulator

Features a Malta-structure rotating rod carousel with a reinforced mechanical manipulator. By reducing reliance on electronic control sensors, it enhances rod-changing stability and operational safety.

▶ Drill Boom

The straight boom design combined with a four-bar linkage allows a tilting angle of up to 150°, enabling multi-angle operation under various working conditions.

▶ Clamping Device

Equipped with a clamping and positioning device that enables accurate drilling alignment and drill tool disassembly, improving overall operational efficiency.

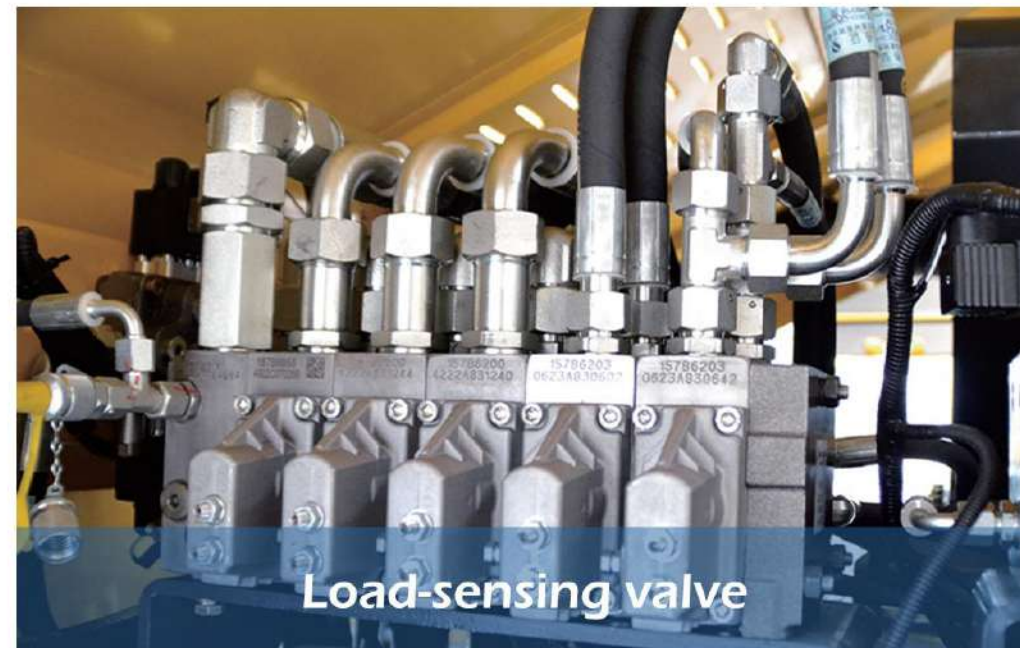


▾ Load-Sensing System

The machine is equipped with a load-sensing system composed of a load-sensing pump, load-sensing valves, and a hydraulic pilot control handle. Compared with traditional gear pump systems, this setup offers smoother control, higher efficiency, lower energy consumption, and improved fuel savings.



Load-sensing pump



Load-sensing valve



Rod handling control lever



Suction and return oil filters

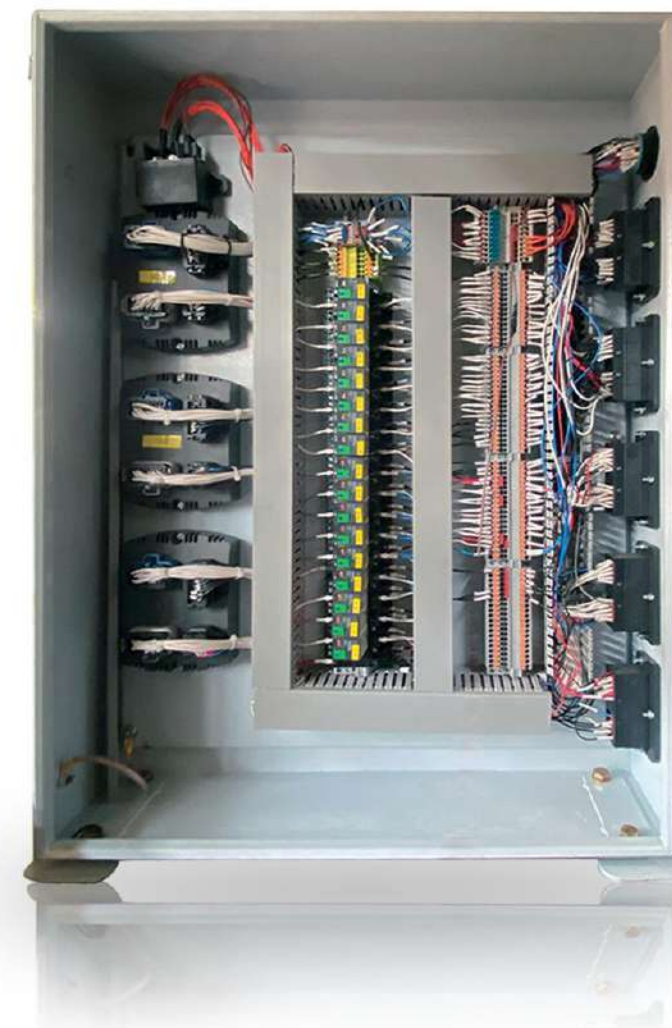
▾ Electrical control system

► Standard configuration

The centralized electrical control panel simplifies daily maintenance and circuit diagnostics. Major electrical components are from international brands such as Schneider Electric, Nikes (NKS), and Deutsch, all with protection ratings \geq IP66, ensuring stable performance and easy maintenance.

► Optional configuration

The optional controller system enhances integrated control and provides a foundation for future intelligent upgrades.



▾ Cab and Control System

The rig features a modern, streamlined cab with FOPS (Falling Object Protective Structure) and ROPS (Roll-Over Protective Structure) certification, compliant with internationally recognized safety standards in China.

The cab is equipped with a reliable heating and cooling system, with interior noise levels \leq 85 dB. The ergonomically designed control system includes integrated left and right control handles for comfortable operation, and a clear, easy-to-read instrument layout. A rearview camera system is also included, providing operators with a convenient, safe, and wide field of vision. (For high-temperature regions, sun-protection film is applied at the factory.)

Instrument Panel and Display



1. Feed pressure gauge
2. Rotation pressure gauge
3. Impact pressure gauge
4. High exhaust temperature indicator
5. Feed/return indicator light
6. Charging indicator light
7. Display screen



Instrument Panel and Display



8. Rod handling control lever
9. Lower clamp tighten/loosen
10. Rod support open/close*
11. Rod handling / dust collection selector switch

Instrument Panel and Display



15. Emergency stop switch
16. Ignition switch
17. Throttle control switch
18. Drilling/travel mode selector
19. Travel & drilling control handle
20. Chassis floating control
21. Feed beam compensation
22. Feed beam tilt
23. Feed beam swing
24. Drill boom swing
25. Drill boom lifting
26. Water-cooling reverse blow switch (optional)
27. Oil-cooling reverse blow switch (optional)
28. Feed pressure adjustment
29. Remote control
30. Air compressor load/unload control
31. Horn
32. Forward/reverse switch
33. Pulse switch
34. High/low travel speed selector
35. Parking / regeneration disable switch
36. Left/right track locking switch

High-Efficiency and Environmentally Friendly Dry Dust Collection

The rig uses a two-stage dust collection system combining cyclonic and laminar flow designs. Imported filter materials are built in and paired with a Parker fan motor, ensuring high dust collection efficiency and long service life.



Dust Collector

24-filter dry dust (Image A area): Filtration area is 30 m², effectively filtering dust, significantly reducing the impact of dust on the environment, and protecting



Cyclone Device

Cyclone Device (Image B area): Uses centrifugal force to settle larger dust particles and debris, thereby improving dust collection efficiency.

High-efficiency and environmentally friendly wet dust collection

According to construction environment requirements, either a standard wet dust collection system or a heated wet dust collection system (Image C area) can be selected. Equipped with a standard 230 L wet dust water tank to handle drilling in suspended dust areas, geological water holes, and similar working conditions.

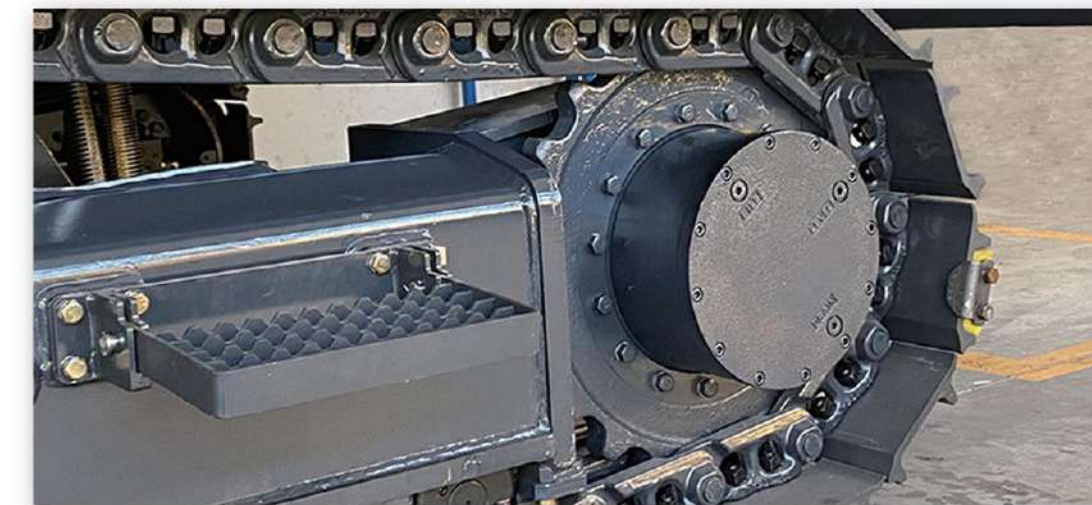


Stable Travel System



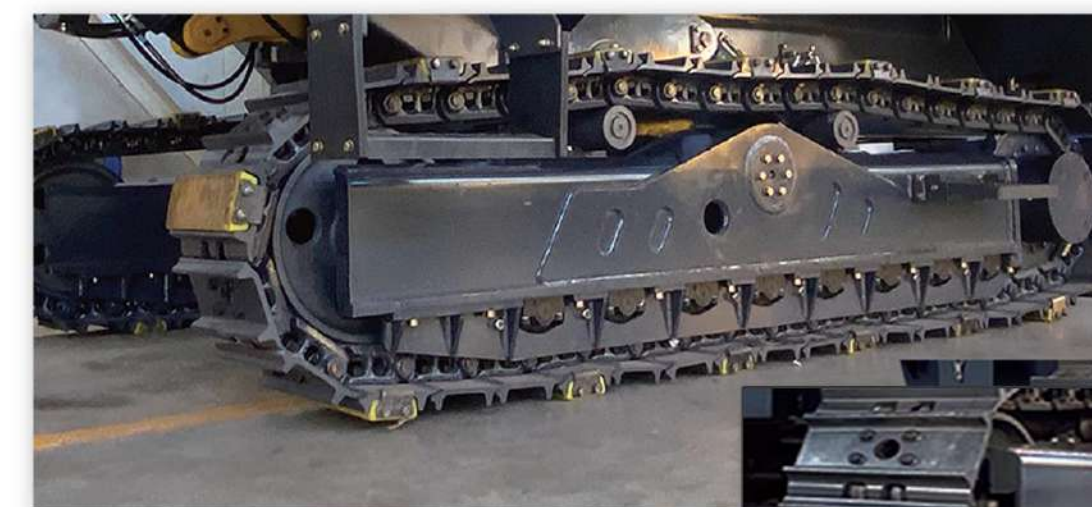
Gravity Axle

The chassis uses a gravity axle design, providing high load-bearing capacity and enhancing the connection between the body and tracks. Compatible with excavator undercarriages, it effectively ensures the stability of the rig during travel.



Travel Motors

High-torque piston travel motors with responsive and reliable braking. Strong traction ensures the rig can carry up to 20 tons. Dual-speed switching function adapts to different working conditions.



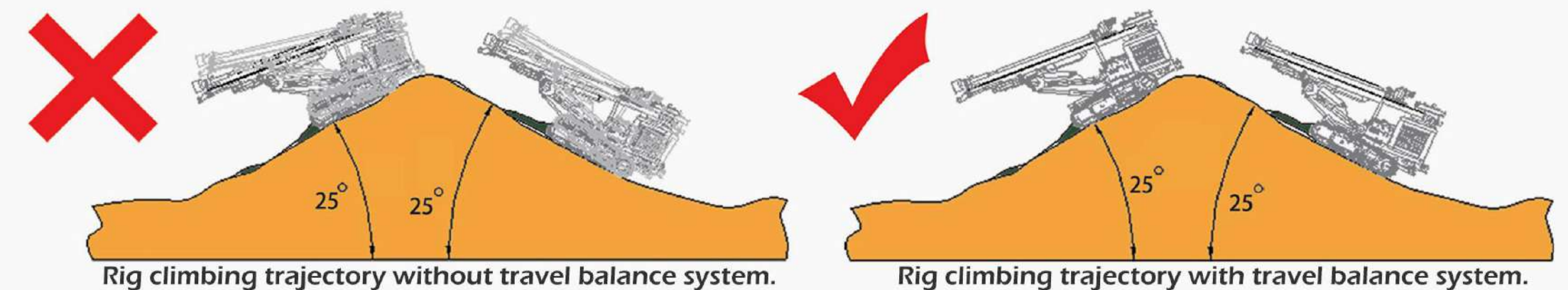
Maintenance-Free Undercarriage

Track plates feature mud discharge grooves to prevent jamming; track guards prevent chain derailment. Maintenance-free support rollers eliminate complicated upkeep. Unique double-rib track plates provide better maneuverability than single-rib plates and stronger grip than triple-rib plates, ensuring stable travel.

Travel Balance System

WBS

The rig chassis has a ground clearance of 420 mm. Combined with a ±10° chassis float system, it can travel smoothly even over complex terrain.



Rig climbing trajectory without travel balance system.

Rig climbing trajectory with travel balance system.