Pit Viper 276

Rotary blasthole drill rigs

Hole diameter: 9 - 10 5/8 in (229 - 270 mm)

Epiroc



Proven performance. Ready for what's next.

The Pit Viper Series has become a mining industry staple, thanks to its proven performance and reliability.

With an 86,000 lb (39,009 kg) bit load capacity, the durable Pit Viper 276 is designed for adaptability, making it a reliable fit for a wide range of drilling applications.

If technology, productivity, long asset life, and the lowest total cost of ownership are your priorities, the Pit Viper Series delivers. Equipped with the standard Rig Control System (RCS), the Pit Viper 276 combines proven performance with a scalable platform that supports your automation journey.

Key benefits

Highly efficient drilling
Drills up to a 39 ft (12 m)[1] hole in a single pass, or up to 239 ft (73 m)[2] in multiple passes with a 5-rod carousel and 40 ft (12.2 m) rods.

Smooth operation with long life
Epiroc's patented cable feed system with automatic cable tensioning delivers smoother drilling, longer cable life, and easier wear detection — extending bit and drill string life.

Tailor-made for your application
Over 100 available options to configure the perfect rig for your application — and lower your total cost of ownership

Proven and reliable operating platform
The Rig Control System (RCS) operating platform provides scalable automation features.

Rig Control System

Flexibility for the future

Epiroc's Rig Control System (RCS) is based on proven CAN-bus technology and comes standard on the Pit Viper 276. RCS provides a number of safety and interlock features, as well as a foundation to add new functionality/options later without a major rebuild of the machine. With RCS, you can run your Pit Viper 276 with an operator on board using options such as Autodrill and Autolevel — or you can run with the operator off the drill, allowing one operator to run one or multiple units. You can even implement autonomous drilling with almost no human interaction with the drill.

Add-on features:

Autodrill
Executes fast, safe and efficient drilling processes in a consistent way.

Autolevel
Closes the gap between less experienced and expert operators.

Wireless remote tramming
Allows the operator to tram a Pit Viper from the bench within a 32.8 – 65.6 ft (10 – 20 m) distance.

Teleremote
Allows safe, productive and effective single- or multi-drill remote operations (control room and drill solutions sold separately).

Automatic Bit Changer
Enables hands-free bit changes so operators can effortlessly switch rotary tricone bits with a simple touch of a button, reducing downtime and boosting efficiency.

High-precision GPS hole navigation system
Imports drill plans to RCS and ensures that each blasthole is precisely positioned with accuracies of up to ±3.9 in (±10 cm), depending on installation and the number of satellites.

Office pack
Includes:

- **Common Communications Interface (CCI)**
  Allows data transfer to and from the RCS system.
- **Rig Remote Access (RRA)**
  Wirelessly sends files to and from the drill rigs.
- **Desktop Viewer**
  Allows remote access to the drill's operational screens.

Designed for maximum productivity and value



+ Operator comfort

The Pit Viper 276 features an insulated, pressurized cab with an air-ride operator seat — providing high suspension comfort with excellent visibility. The large cab is equipped with Rig Control System (RCS) controls, providing on-board automation capabilities as part of the standard drill package for added safety and productivity.



+ Ease of maintenance

The deck layout on the Pit Viper series offers easy access to all major service components. Ground-level, fast fuel fill connections are standard, and optional ground-level live sampling is available. Spool valves are also centrally located above the deck for accessibility.



+ Enhanced safety

The Pit Viper 276 is equipped with a number of features to help keep operators safe on the job. Features include a FOPS cab with double safety glass, as well as safety interlocks through the RCS system and safety shutdowns for temperature, low level, and pressure. Other features include spring-applied, hydraulic-released brakes on the tramming system, and automation options to further increase safety. Ground-level battery/tram/starter isolation is optional.

Live Work Elimination solutions

Safety + Ease of maintenance + Operator comfort

Epiroc's Live Work Elimination package for Pit Viper drills combines innovative safety solutions that reduce technician exposure to live and pressurized systems while simplifying routine maintenance. From automated oil sampling to protected hydraulic controls, each feature is designed to improve safety, maximize uptime, and keep your Pit Viper performing at its best.

Pump Nulling
Automatically maintains proper pump settings without manual re-nulling, reducing maintenance requirements while improving machine availability.

Remote Fan Speed Measurement
Monitor cooling fan speed directly from the operator interface without approaching rotating components, helping ensure optimal cooling while improving safety.

Spool Valve Guard
Prevents accidental or unauthorized manual actuation of hydraulic spool valves during maintenance, helping reduce the risk of unexpected machine movement.

Pressure Washer
Integrated pressure washer allows operators to clean critical machine components without exposure to pressurized hydraulic equipment.

Automatic Oil Sampler
Automates the oil sampling process to deliver repeatable, high-quality samples while reducing manual intervention and machine downtime.

Drill Deck Guarding System
Creates a monitored exclusion zone around the drill deck, ensuring maintenance is performed under controlled conditions while automatically preventing unsafe operations.



Service and support

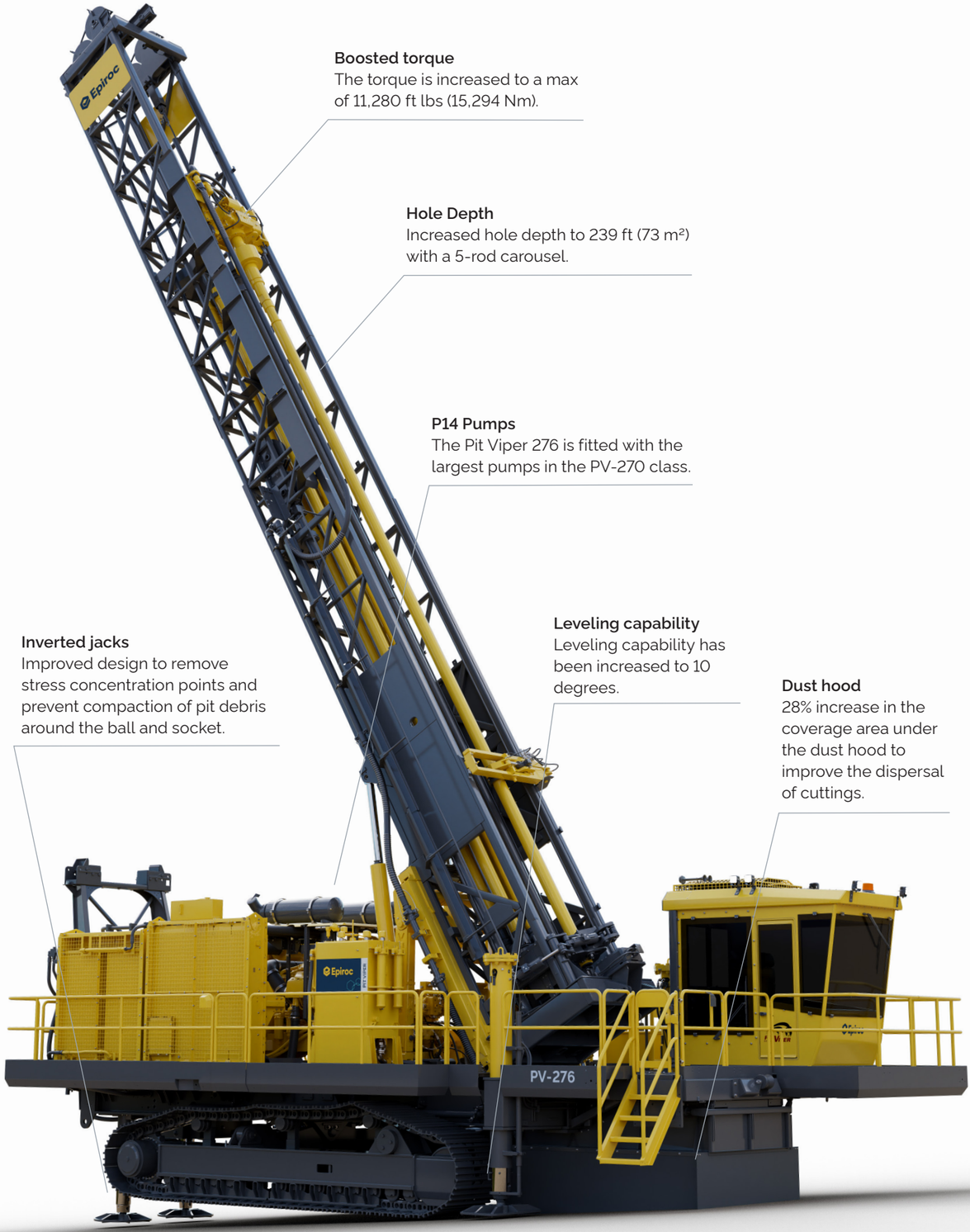
Epiroc offers several types of service agreements to meet your operational requirements and maximize your productivity:

Variable-price repairs
Service when you need it.

Fixed-price repairs
Service with controlled costs.

Equipment audit
Scheduled equipment quality control.

Preventive maintenance programs
Peace of mind so you can focus on your core business.



Boosted torque
The torque is increased to a max of 11,280 ft lbs (15,294 Nm).

Hole Depth
Increased hole depth to 239 ft (73 m²) with a 5-rod carousel.

P14 Pumps
The Pit Viper 276 is fitted with the largest pumps in the PV-270 class.

Inverted jacks
Improved design to remove stress concentration points and prevent compaction of pit debris around the ball and socket.

Leveling capability
Leveling capability has been increased to 10 degrees.

Dust hood
28% increase in the coverage area under the dust hood to improve the dispersal of cuttings.

Substructure

Mainframe 162 lb/ft (241 kg/m)	
• Weld fabricated I-beam type using wide flange structural steel beam for both rails and crossbeams • Designed by Epiroc, and weld fabricated by certified welders • Designed with the latest FEA technology and verified by dynamic strain gauging	
Leveling jack	
Type	Hydraulic cylinder
Quantity	Four jacks
Calculated jack pad bearing pressure	Drill end: 68.9 psi (475 kPa) Non-drill end: 66.7 psi (460 kPa)
Position indication	"Jack up" indicator lights on console or RCS screen
Capacities	
Fuel tank	350 gal (1,325 L); optional 612 gal (2,317 L)
Water tank	400 gal (1,514 L) or 662 gal (2,506 L)
Optional additional water tank	422 gal (1,597 L)
Hydraulic tank	150 gal (568 L)
Undercarriage and propel system	
Make	Caterpillar 345XL
Mounting	Oscillating walking beam: 5° each side, total 10°
Total length	Caterpillar 345XL: 21 ft 3 in (6.48 m)
Ground contact	Caterpillar 345XL: 17 ft 11 in (5.46 m)
Take-up adjustment	Grease slack adjustment; spring recoil
Rollers	13 lower / 3 upper
Location	Equally spaced between idler and sprocket
Roller bearings	Sealed for life
Track pads	Type: Triple bar grouser — for increased grip and reduced ground pressure Ground pressure: 13 psi (89.6 kPa)
Drive	Hydrostatic closed loop through speed reducer to drive sprockets
Propel motors	Two - Hydraulic, axial piston, rating (each): 170 HP (126.8 kW)
Propel speed range	Caterpillar: 0 - 1.1 mph (0 - 1.8 km/h)

Cab and controls

Cab	
• Quiet, single piece design with no seams or leaks (tested @ less than 80 dBA) • Insulated, pressurized with heater and under cab mounted air conditioning • Falling Object Protective Structure (FOPS) certified • Ergonomically designed control system and excellent visibility (with unobstructed view to drill table)	
Controls (Standard Rig Control System – RCS)	
RCS Control	**Integrated control touchscreen** (penetration rate, rotation torque, rotation pressure, pulldown force, pulldown pressure, hole depth indicator, etc.) **Two joy sticks** (attached to the operator's seat) and push buttons on the operator panel controls (propel and leveling jack, pulldown feed control, holdback feed control) **Standard interlocks/features**
Hydraulic system	
• Four-hole pump drive gear box driven off the engine (optional electric motor) through a drive shaft • Two main pumps - drilling functions (drill feed and rotation) or tram functions (propel) • Dual tandem pumps for fan/auxiliary circuits	

Tower, carousel and drill rod handling

Tower		
Tower construction	Four main member, open front ASTM A500 Grade B rectangular tubing; cold sawed and welded	
Tower raising	Two hydraulic cylinders; live tower (raise and lower with full carousel and rotary head at top of tower)	
Rod support	Hydraulic cylinder clamping and actuation to center drill rod	
Rated capacity		
Single pass depth with manual bit breaking basket	37 ft (11.3 m)	
Single pass depth with ABC[1]	39 ft (12 m)	
Multi-pass depth with manual bit breaking basket	237 ft (72 m)	
Multi-pass depth with ABC[2]	239 ft (73 m)	
Carousel (carousel internal to the tower with key-lock retention)		
Rod length	40 ft (12.2 m)	
Capacity	Five pieces	
Actuation	Two hydraulic cylinders	
Safety	• Drill pipe is held securely in carousel by "key lock design" mechanism • No bump system to prevent damage if carousel not stowed	
Drill rods		
Drill pipe diameter	**Thread**	**Suggested bit diameter**
7 in (178 mm)	4-1/2 in BECO	9 in - 9-7/8 in (229 mm - 251 mm)
7-5/8 in (194 mm)	5-1/4 in BECO	9-7/8 in – 10-5/8 in (251 mm – 270 mm)
Rotary head		
Speed range	Variable 0 – 180 RPM	
Torque	Max torque 11,280 ft-lbs up to 130 RPM 10,474 ft-lbs at 150 RPM	
Number of motors	Two	
Type of motor	Variable displacement axial piston	
Reduction	(15.077:1)	
Horsepower	181 HP (135 kW) at 100% efficiency	
Travel length	46.5 ft (14.17 m)	
Feed system		
Pulldown capacity	Up to 70,000 lbf (up to 311 kN)	
Weight on bit**	Variable, 0 - 86,000 lb (0 - 39,009 kg)*	
Mechanism type	Two dual rod, dual piston hydraulic cylinders (patented design)	
Number of cables - diameter	Two pulldown - 1.125 in (28.57 mm); two pullback - 1 in (25.4 mm)	
Number of sheaves - outside diameter	Six - 23.5 in (597 mm); four - 24.0 in (609.6 mm)	
Automatic tensioning	Hydraulic motor driven jackscrews for pulldown cables; hydraulic cylinders for pullback cables (patented design)	

Power package

Airend	
	2,600 cfm / 110 psi (73.6 m3/min / 7.6 bar)
Diesel engine	
Diesel engine – non Tier 4	CAT C32 T2 - 1125 HP (839 kW)
Electronic Air Regulation System (EARS)	
• Standard on the PV-276 • Deliver variable air volume control (within system capacity), while still maintaining constant air pressure • Optimal fuel efficiency while hole collaring • Reduced wear on drill string components	

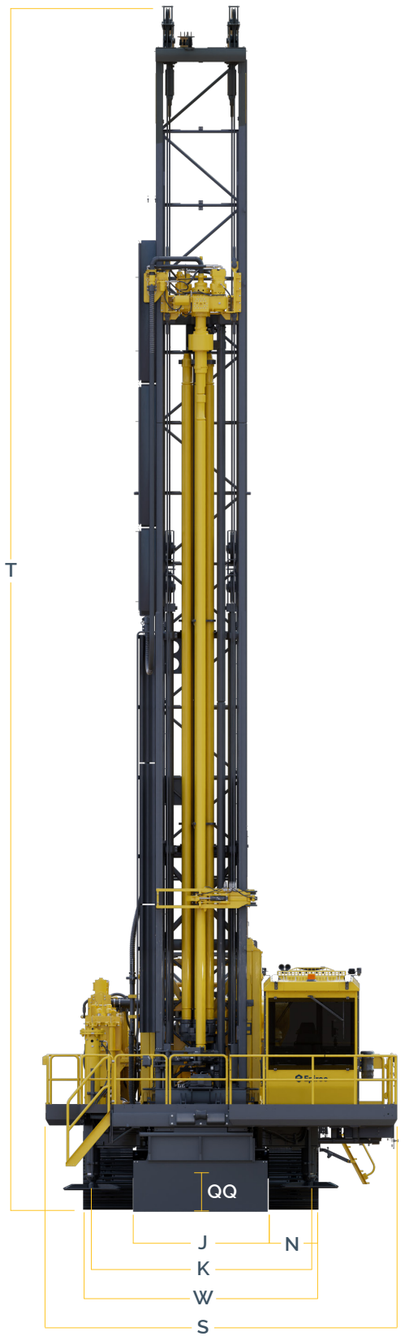
** Performance specifications are theoretical and based off 100% system efficiency.*
***Varies on pipe size*

Shipping dimensions and weight (standard machine)*

Tower	
Length	67 ft (20.42 m)
Width	7 ft 4 in (2.23 m)
Height	8 ft (2.44 m)
Gross weight	45,000 lb (20.4 tonnes)
Main frame (stripped)**	
Length	40 ft (12.19 m)
Width	17 ft (5.18 m)
Height	15 ft (4.57 m)
Gross weight	135,000 lb (20.4 tonnes)
Operating weight	
Estimated weight	Max of 250,000 lbs (113.4 tonnes)

Operating dimensions*

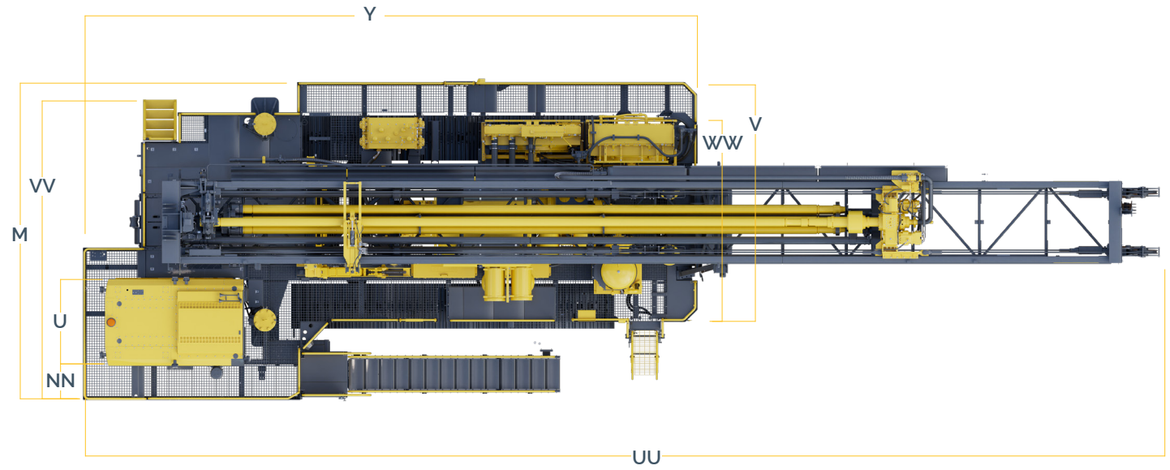
	Description	Dimensions ft (m)
B	Length – Tower up	42' 7" (13.0)
D	Length – Undercarriage	21' 3" (6.49)
E	Length – Jack center to jack center	26' 6" (7.92)
F	Height – Jack to ground non drill end	1' 2" (0.36)
G	Height – Decking to ground	4' 9" (1.49)
H	Height – Tower down, non drill end	22' 4" (6.82)
J	Width – Track inside to track inside	8' 1" (2.46)
K	Width – Jack center to jack center	12' 9" (3.93)
M	Width – Overall	24' 2" (7.37)
N	Width – Track	2' 3" (0.70)
P	Height – Tower off	16' (4.87)
Q	Height – Ground to cab top	13' 8" (4.20)
S	Width – Drill end, less dust collector	20' 6" (6.27)
T	Height – Tower up	71' 5" (21.79)
U	Width - Cab	5' 7" (1.73)
V	Width – Decking extended	15' 4.5" (4.70)
W	Width – Undercarriage assembly	14' (4.24)
X	Width – Decking cab end to undercarriage edge	4' 5" (1.37)
Y	Length – decking	40' 4" (12.31)
BB	Height – jack to ground drill end	1' 2" (0.36)
CC	Length – cabin to undercarriage edge, front view	12' 1" (3.68)
DD	Length – cabin to jack center, front view	10' 5" (3.20)
KK	Height – ground to engine exhaust	13' 8" (4.20)
MM	Length – decking edge to cab edge	1' 5" (0.45)
NN	Width – decking edge to cab edge top view	2' 3" (0.70)
QQ	Height – ground to oscillation yoke top bottom	1' 6" (0.48)
SS	Length – tower front view	65' 6" (20.0)
UU	Length – tower down	70' 7" (21.54)
VV	Width – ladder	19' 7" (6.0)
WW	Width – decking, standard	13' 4.5" (4.20)

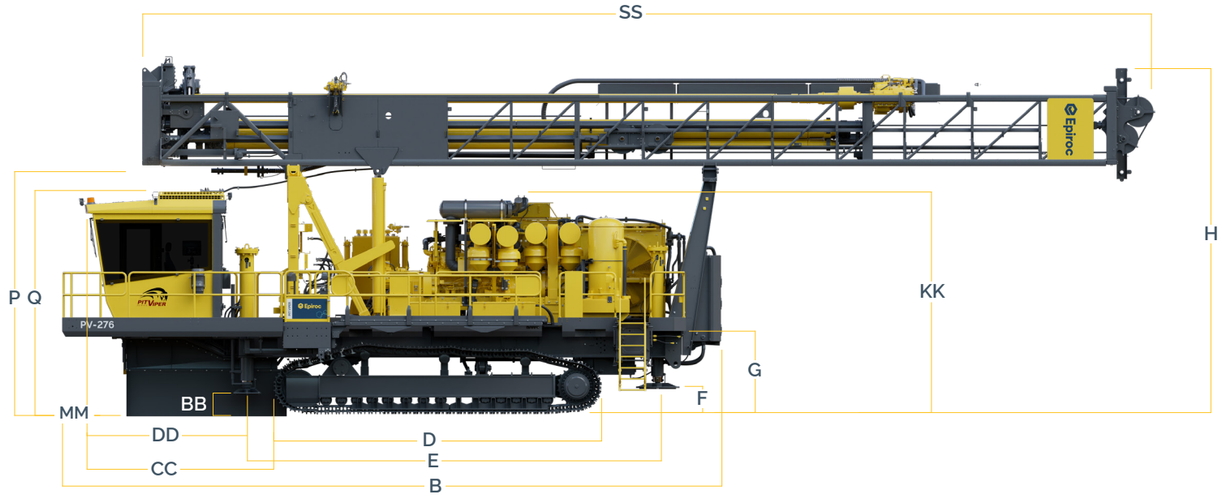


*(Dimensions for Pit Viper 276 Diesel with Catepillar tracks; dimensions may vary by machine and options)

* Approximate shipping dimensions for crated PV-276 (actual dimensions will vary based on rig configuration).

**Fall off will vary greatly by machine and options.





Optional equipment

Following are some examples of available options. For a comprehensive list, please contact your local Epiroc Customer Center.

- Hydraulically operated automatic wet clutch between airend and engine
- Cold-weather options for drill operation in extremely cold ambient conditions (-45° C)
- Automatic thread lubrication
- Hydraulic retractable stair
- Water injection system
- Angle drilling package
- Fast service options
- Video camera
- Dust collector
- Live work elimination pressure washer
- Live work elimination automatic oil sampling
- Spool valve guards
- Drill deck guarding system
- Hydraulic filter handles

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