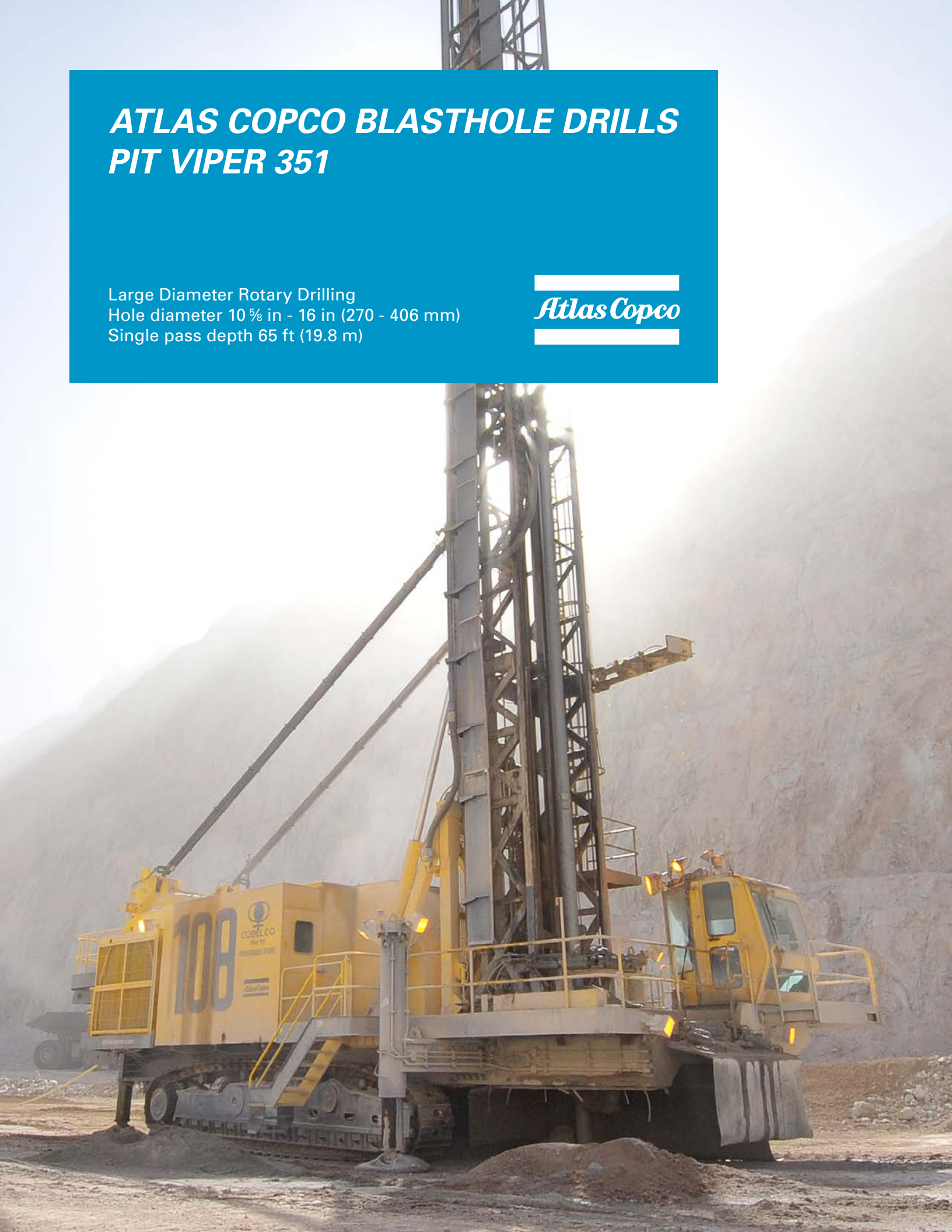
ATLAS COPCO BLASTHOLE DRILLS PIT VIPER 351

Large Diameter Rotary Drilling
Hole diameter 10 ⅝ in - 16 in (270 - 406 mm)
Single pass depth 65 ft (19.8 m)

Atlas Copco



Built for performance

Designed for comfort

The Pit Viper Series 351 blasthole drill offers new applications and technological solutions. It can be used for single pass drilling of angled or vertical holes down to a depth of 65 ft (19.8 m), and for drilling of blastholes up to 16 in. (406 mm) in diameter.

Since the introduction at MINExpo 2000, the PV-351 is the solution to your mining needs for superior productivity. With 125,000 lb. (56,700 kg) of bit load and 3,800 cfm (107,6 m3/min) of air at 110 psi (7,6 bar), the PV-351 is a powerful and highly capable drill. The track records and references from the PV-351 fleets operating in more than 10 countries are impressive.

Main features

- The patented automatic cable tensioning ensures an accurate head alignment, improves cable life, and eliminates drill down-time for cable tensioning
- The cables used lead to smoother drilling, which helps increase the life of the bit and feed system
- The safe and ergonomical cabin is designed and tested to the same Falling Object Protective Structure (FOPS) as dozers.
- Excellent maintenance accessibility - safe access

The PV-351 cable feed system generates 125,000 lb (56,700 kg) of bit load and 60,000 lbf. (267 kN) of pullback. Retract speed is 158 ft/min (0.8 m/s). This lightweight and smooth operating system results in longer life and lower operating costs versus traditional chain or rack-and-pinion feed systems. Because of the cable system's light weight, the PV-351 can operate a "live" tower, allowing the tower to be raised and lowered without lowering the rotary head. An automated tensioning system adjusts the cable tension, eliminating down time for cable adjustment.

Consistent with the entire PV-351 drill design, the two-stage spur gear rotary head system is larger than life. It boasts a 7-inch (178 mm) face width main gear and variable displacement motors that allow adjustment of torque and rotation requirements to the materials being drilled. A small lube pump mounted at the bottom of the rotary head supplies forced lubrication to the input splines for the hydraulic motors. The cast case with a replaceable top cover drastically cuts rebuild time. This powerful head produces up to 19,000 lbf•ft. (25,7 kNm) of torque from stall to 87 RPM, yet can be adjusted to run up to 170 RPM. The extended rotary head guides on the tower hold the rotary head in place as it travels up and down the tower. The guides easily adjust for wear, and are replacable.

Comfortable

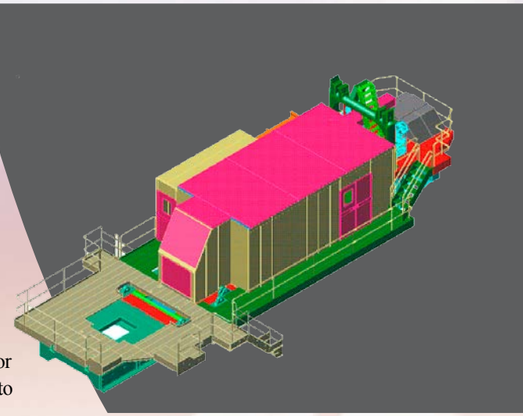
The operator's cab design for the PV-351 represents a major step forward for rotary drill rigs. The cab is thermally insulated, pressurized, with integrated heater and air conditioning systems and sound-rated to less than 80 dBA. Large, tinted, safety-glass windows located at all four sides gives the operator 360-degree visibility, including view ground. Windshield vipers and tinted windows are standard for both drill end and deck end. The Rig Control System (RCS) is standard on all PV-351 rigs; it utilizes the same controls, instrumentation buttons and graphical user interfaces as those across other Atlas Copco RCS machines. The RCS system is the latest technology and the graphic user interface provides multi language support, built in diagnostic system, different levels of access and menu based settings. All rig functions are controlled through an integrated control touch screen, two joy sticks and push buttons on the operator panels. The screen and joysticks are attached to the operator's seat, so as the seat swivels the joysticks and screen swivels in conjunction with the soperator's seat (so they are always in an optimal and ergonomical location).

Powerful

Diesel engine selections are Cummins QSK45 (1500 HP) or Caterpillar 3512 (1,650 HP), both run at 1,800 RPM. A diesel-powered drill offers the advantage of increased utilization, and the ability to move quickly from bench to bench or hole to hole, with no cables or transformers to accommodate. As an alternative to a diesel engine the PV-351 can be equipped with a 1,400 HP electric power unit. The WEG 6811 squirrel cage motor normally runs on a 50 or 60 Hz, 4,160-7,200 VAC power supply. The well proven Ingersoll Rand asymmetrical screw compressor delivers up to 3,800 CFM (107.6 m^3/min) at 110 psi (758 kPa), a pressure that ensures improved bit life.

Sturdy

The PV-351 utilizes a weld-fabricated mainframe constructed of 30-in. (762 mm) I-beam,which weighs approximately 326 lb/ft. (485 kg/m). This massive mainframe is the foundation for the other drill elements. A Caterpillar 385 custom undercarriage, the longest in the industry, provides a low center of gravity and additional stability when the tower is raised. The 385 undercarriage exhibits excellent slewing power and counter rotation ability. Pads and links can be replaced individually rather than as a unit, allowing the drill to operate if one pad is damaged or missing. The PV-351 propels at 1.0 mph (1.77 km) to quickly move from hole to hole.



Standard Equipment

- RCS rig control system, computerized network
- Insulated, air conditioned cab
- 3000 CFM (84.9 m3/min) @ 110 psig (7.6 bar) air compressor
- Caterpillar 385 Custom undercarriage with hydraulic propel and automatic hydraulic track tensioning
- Hydraulic cylinder driven cable feed system
- Hydraulic motor driven rotary head
- Two rod carousel for 8-5/8" to 13-3/8" diameter x 35' drill pipe
- "No-bump" rod changer
- Hydraulically powered breakout wrench (fork chuck)
- Hands Free auxiliary hydraulic chain wrench
- 12,000 lb (5,440 kg) capacity auxiliary hoist
- Hydraulically retractable dust curtains
- Four 72 inch (1.83 m) stroke leveling jacks
- Cooling package
- 1,200 U.S. gallon (4,545 L) fuel tank
- Separate air intake filters for engine and air compressor
- Wide flange structural steel I-beam frame with oscillation yoke mounting
- Full deck service catwalks and railings
- Automatic lubrication system
- Nordic Night light package
- Attention horn, propel alarm
- Ground level shutdowns
- Decking in tower (when horizontal) above rod changer

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A selection of features on Pit Viper 351 Series

For a more comprehensive options list, please contact your local Atlas Copco Customer Center.

Angle drilling package

The optional Atlas Copco patented angle drilling package allows the tower to be positioned up to 30° from the vertical, in increments of 5 degree. All controls for positioning the tower are located at the operator's control console inside the cab.

Automated drilling

Optional function can be added to the RCS system, like auto leveling and auto de-leveling, GPS hole navigation, rig remote access with communication, wireless remote tramming, measure while drilling, teleremote operation, and autodrilling.

Cable reel

For the PV-351 electric units there is the option to include a cable reel on the non-drill end of the rig which will hold the electrical power cable. The cable reel is 5' (1.5 m) by 8' (2.4 m), and holds a maximum of 1,500' (457 m) of cable.

Cold weather package

The cold weather package allows for warm start-up, and drill operation while operating in extremely cold ambient conditions. There are several options available, fully utilized these allow the drill rigs to operate in arctic conditions.

Technical data PV-351

Drilling Method	Rotary and DTH - Single pass	
Hole Diameter	10 5/8 in - 16 in	270 mm - 406 mm
Hydraulic Pulldown	120,000 lbf	534 kN
Weight on bit	125,000 lb	56,700 kg
Hydraulic Pullback	60,000 lbf	267 kN
Single pass depth	65 ft	19.8 m
Maximum hole depth	135 ft	41.1 m
Feed speed	127 - 158 ft/min	0.6 - 0.8 m/s
Rotary head, torque	19,000 lbf·ft	25.7 kNm
Estimated weight	385,000 lb - 415,000 lb	175 tonnes - 188 tonnes
Dimensions tower up		
Length	53 ft 10 in	16.4 m
Height	103 ft 9 in	31.6 m
Width	26 ft 8 1/2 in	8.1 m
Dimensions tower down		
Length	98 ft	29.9 m
Height	27 ft 11 in	8.5 m
Compressor range		
Low pressure rotary	3,000 cfm@110psi / 84.9m³/min@7.6 bar	
Low pressure rotary (electric motor)	3,200 cfm@110psi / 90.6m³/min@7.6 bar	
Low pressure rotary	3,800 cfm@110psi / 107.6m³/min@7.6 bar	
Engine (Tier I)		
Caterpillar	3512	1650HP@1800RPM (1230kW)
Cummins	QSK45	1500HP@1800RPM (1119kW)
Weg motor	6811	1400HP/1044kW@50 or 60 Hz

Drill pipe specification

Drill pipe diameter		Bit diameters	Thread
8 5/8"	(219 mm)	10 5/8" - 11"	6" BECO
9 1/4"	(235 mm)	11" - 12 1/4"	6" BECO
10 3/4"	(273 mm)	12 1/4" - 13"	8" BECO
12 3/4"	(324 mm)	15" - 16"	8" BECO
13 3/8"	(340 mm)	16"	10" BECO

Visit **www.atlascopco.com/blastholedrills** for more information

Sustainable Productivity

We stand by our responsibilities towards our customers, towards the environment and the people around us. We make performance stand the test of time. This is what we call – Sustainable Productivity

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