

# Atlas Copco Blasthole Drills

## Pit Viper 275



### **Rotary and DTH drilling – Multi pass**

Hole diameter 6  $\frac{3}{4}$  in – 10  $\frac{5}{8}$  in (171 – 270 mm)

Maximum hole depth 195 ft (59.4 m)

*Sustainable Productivity*

**Atlas Copco**

# Built for performance

## Designed for comfort

**The Pit Viper 275 is designed for multi pass drilling, and with a 75,000 lb (34 tonnes) bit load capacity, the PV-275 can add unsurpassed productivity to your mining operations. The heavy and durable Pit Viper 275 features a 40 ft (12.2 m) tower and can drill a 37 ft (11.3 m) clean hole in a single pass, or multi-pass drill to a total depth of 195 ft (59.4 m) through a 4 rod carousel with 40 ft (12.2 m) rods.**

The PV-275 utilizes proven systems and technology, so there is no surprise at its reliability, and how easy it fits into any drilling operation. The unique “live tower” design enables the operator to raise and lower the tower with the rotary head at the top and the rods in place. As an option, the PV-275 can be delivered with the RCS computerized rig control system which allows incorporating optional functions such as; remote tramming, auto leveling, auto drilling, and GPS navigation..

### Atlas Copco Patented Feed System

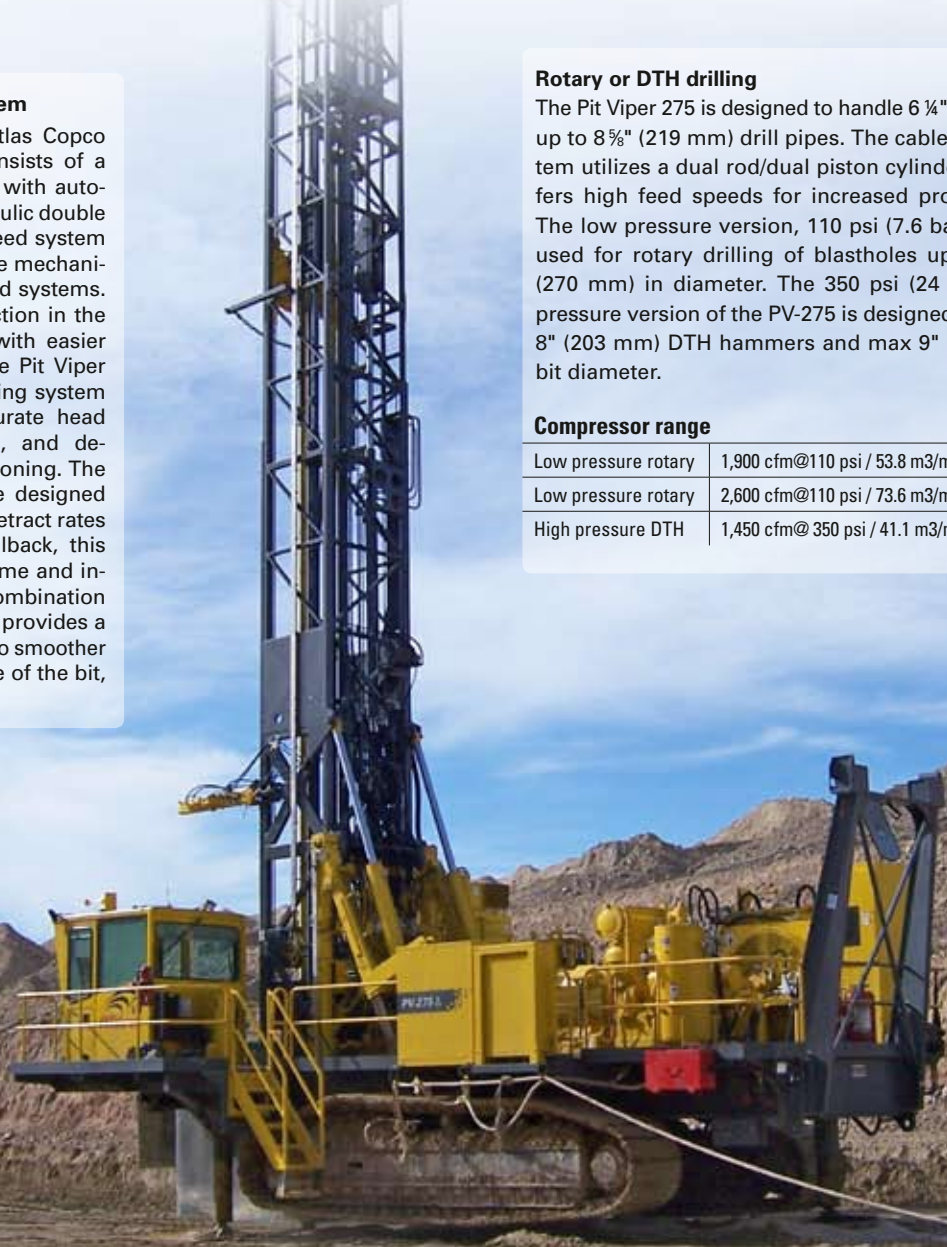
The Pit Viper 275 utilizes the Atlas Copco patented feed system which consists of a high strength cable feed system with automatic cable tensioning, and hydraulic double acting feed cylinders. The cable feed system provides two advantages over the mechanical (chain or rack and pinion) feed systems. It allows an overall weight reduction in the tower and feed system, along with easier wear detection. Derived from the Pit Viper 351, the automatic cable tensioning system on the PV-275 ensures an accurate head alignment, improved cable life, and decreased downtime for cable tensioning. The Atlas Copco feed cylinders were designed for optimal high speed feed and retract rates for the rated pulldown and pullback, this consequently reduces non-drill time and increases drilling efficiency. This combination of cables and hydraulic cylinders provides a more even feed force which leads to smoother drilling, and helps increase the life of the bit, drill string and feed system.

### Rotary or DTH drilling

The Pit Viper 275 is designed to handle 6 ¼" (159 mm) up to 8 ½" (219 mm) drill pipes. The cable feed system utilizes a dual rod/dual piston cylinder and offers high feed speeds for increased productivity. The low pressure version, 110 psi (7.6 bar) can be used for rotary drilling of blastholes up to 10 ½" (270 mm) in diameter. The 350 psi (24 bar) high pressure version of the PV-275 is designed for up to 8" (203 mm) DTH hammers and max 9" (229 mm) bit diameter.

### Compressor range

|                     |   |
|---------------------|---|
| Low pressure rotary | 1,900 cfm@110 psi / 53.8 m3/min @ 7.6 bar |
| Low pressure rotary | 2,600 cfm@110 psi / 73.6 m3/min @ 7.6 bar |
| High pressure DTH   | 1,450 cfm@ 350 psi / 41.1 m3/min @ 24 bar |





## Comfortable

The PV-275 series cab is engineered to keep the operator safe and comfortable. Designed and tested to the same Falling Object Protective Structure (FOPS) standard as dozers, the cab protects operators against falling objects. Large windows ensure clear visibility while drilling and tramming from hole to hole. The ergonomic PV-275 series console is designed to ensure operator comfort. The controls are logically separated into drilling and non-drilling functions, making the PV-275 easy to operate. The drilling functions are angled to allow for easy visibility of the drill table, while large cab windows ensure that the operator has clear visibility, further enhancing the safety of the machine.



## Excellent serviceability

The Pit Viper 275 is designed to be a maintenance friendly machine. The structure is laid out to allow for safe, easy movement and good access to service points. The rig is equipped with central service fill which provides a central location and ease of access to fill and evacuate fluids. The hydraulic system utilizes a leak-free, clean specification with a single gear box and a three pump configuration. The valve stand is located above the deck and all filter elements are easy to reach. Long component life, single pass operation and automatic cable tensioning contribute to reducing the time spent on maintenance.



## Sturdy and powerful

To ensure long frame life without rebuilds, the design and testing process followed the concept used for the PV-351. The I-beam used is 24" (610 mm) thick with a cross section of 162 lb./ft. (141 kg/m). The structure has a low center of gravity providing stability and reduced drilling vibrations. The power system setup for the PV-275 includes a choice of matched engines and compressors for rotary or down-the-hole drilling operations. The power pack consists of a diesel engine (or an electric motor) directly coupled to an air compressor on one end, and a three-hole hydraulic pump drive gear-box on the other end. This complete power package assembly is mounted on its own sub base, which is then mounted to the rig main frame. This mounting arrangement isolates torsional vibrations from the mainframe to the power package, as well as vibrations from the power pack to the mainframe.



## Standard Equipment

- Insulated, pressurized, air conditioned cab with tinted glass and suspension operator seat
- Caterpillar 345SSL undercarriage with hydraulic track tensioners
- Hydraulic cylinders driven cable feed system
- Hydraulic motor driven rotary head with spline lubrication, maximum torque 8,700 lbf-ft (11.8 kNm); speed range 0 - 150 rpm.
- Rotary head tachometer on operator console
- Remote hydraulic tower pinning
- Four-rod carousel for 6 1/4" (159 mm) to 8-5/8" (219 mm) drill rods
- "No-bump" rod changer
- Hydraulically powered breakout wrench (fork chuck)
- Hands Free auxiliary hydraulic wrench
- 8,000 lb (3,629 kg) capacity auxiliary hoist
- Hydraulically retractable dust curtains
- Hydraulic Test Station
- Two 48" (1.2 m) and one 60" (1.52 m) stroke leveling jacks
- Cooling package
- 350 U.S. gallon (1,325 L) fuel tank
- Separate air intake filters for engine and air compressor
- Wide flange structural steel beam frame with oscillation yoke mounting
- 12-light night lighting package- 70 watt halogen
- Full deck service catwalks and railings

# A selection of options on Pit Viper 275 Series

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



## Automated drilling

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

## Angle drilling package

The optional Atlas Copco patented angle drilling package allows the tower to be positioned up to a maximum of 30 degrees (specified from the vertical, in increments of 5 degrees). All controls for positioning are located at the operator's control console inside the cab. This system changes the pivot point on the tower to drill deck level.

## Four jack system

Stability is important for the drilling operations. As an upgrade option to the standard "tripod jack arrangement" the PV-275 can be supplied with a four jack configuration, where the non-drill end jacks are tied together acting as one outrigger.

## Electronic air regulation

An option available on the PV-275 is the Electronic Air Regulation Control System (EARS). This system is designed to deliver variable air volume control (within system capacity), while still maintaining constant air pressure. This allows for a reduction in power needed, and savings in fuel consumption.

## Technical data PV-275

### Technical data

|                     |                             |                 |
|---------------------|-----------------------------|-----------------|
| Drilling Method     | Rotary and DTH - Multi pass |                 |
| Hole Diameter       | 6 3/4 in - 10 5/8 in        | 171 mm - 270 mm |
| Hydraulic Pulldown  | 70,000 lbf                  | 311 kNm         |
| Weight on bit       | 75,000 lb                   | 34,000 kg       |
| Hydraulic Pullback  | 35,000 lbf                  | 156 kNm         |
| Single pass depth   | 37 ft                       | 11.3 m          |
| Maximum hole depth  | 195 ft                      | 59.4 m          |
| Feed speed          | 127 ft/min                  | 0.6 m/s         |
| Rotary head, torque | 8,700 lbf-ft                | 11.8 kNm        |
| Estimated weight    | 185,000 lb                  | 84 tonnes       |

### Dimensions tower up

|        |            |        |
|--------|------------|--------|
| Length | 41 ft 6 in | 12.6 m |
| Height | 67 ft      | 20.4 m |
| Width  | 18 ft 4 in | 5.6 m  |

### Dimensions tower down

|        |            |        |
|--------|------------|--------|
| Length | 63 ft 6 in | 19.4 m |
| Height | 22 ft 1 in | 6.7 m  |

### Engine (Tier III)

|                    |       |                                  |
|--------------------|-------|----------------------------------|
| <b>Caterpillar</b> | C27   | 800HP / 597 kW@1800RPM (LP 1900) |
| <b>Cummins</b>     | QSK19 | 755HP / 563 kW@1800RPM (LP 1900) |
| <b>Caterpillar</b> | C32   | 950HP / 708 kW@1800RPM (LP 2600) |
| <b>Caterpillar</b> | C27   | 800HP / 597 kW@2100RPM (HP 1450) |
| <b>Cummins</b>     | QSK19 | 755HP / 563 kW@2100RPM (HP 1450) |
| <b>Weg motor</b>   | 6808  | 700HP / 521 kW@ 50 or 60Hz       |
| <b>Weg motor</b>   | 6811  | 900HP / 671 kW@ 50 or 60Hz       |

### Drill pipe specification

| Drill pipe diameter | Suggested bit diameters | Thread      |
|---------------------|-------------------------|-------------|
| 6 1/4" (159 mm)     | 6 3/4" - 9"             | 4" BECO     |
| 7" (178 mm)         | 9" - 9 7/8"             | 4 1/2" BECO |
| 7 5/8" (194 mm)     | 9 7/8" - 10 5/8"        | 5 1/4" BECO |
| 8" (203 mm)         | 9 7/8" - 11"            | 5 1/4" BECO |
| 8 5/8" (219 mm)     | 10 5/8"                 | 6" BECO     |

### High pressure DTH drilling

Up to 8" DTH hammer and max. 9" bit diameter

