

ATLAS COPCO BLASTHOLE DRILLS PIT VIPER 235 SERIES

Rotary and DTH drilling
Hole diameter 6 in – 10 $\frac{1}{2}$ in (152 – 270 mm)
Maximum hole depth 240 ft (73.2 m)

Atlas Copco



Built for performance

Designed for comfort

The Atlas Copco PV-235 is a crawler mounted, hydraulic tophead drive, multi-pass rotary drilling rig that can be configured in many different ways to complement a wide variety of rotary and DTH drilling operations. It provides blasthole drilling to depths of 240 ft (73.2 m) with a 40 ft tower, and 210 ft (64 m) with the 35 ft tower. There is also a wide choice of low and high pressure compressors, with matching electric or diesel engines, single or two-speed rotary head.

The 40 ft option is capable of single pass drilling of a 40 ft (12.2 m) clean hole, which is ideal for 10 m bench heights. It has RCS (Rig Control System), which incorporate functions like: wireless remote tramming, auto leveling, auto drilling, reporting controls functions and GPS navigation.

Atlas Copco Patented Feed System

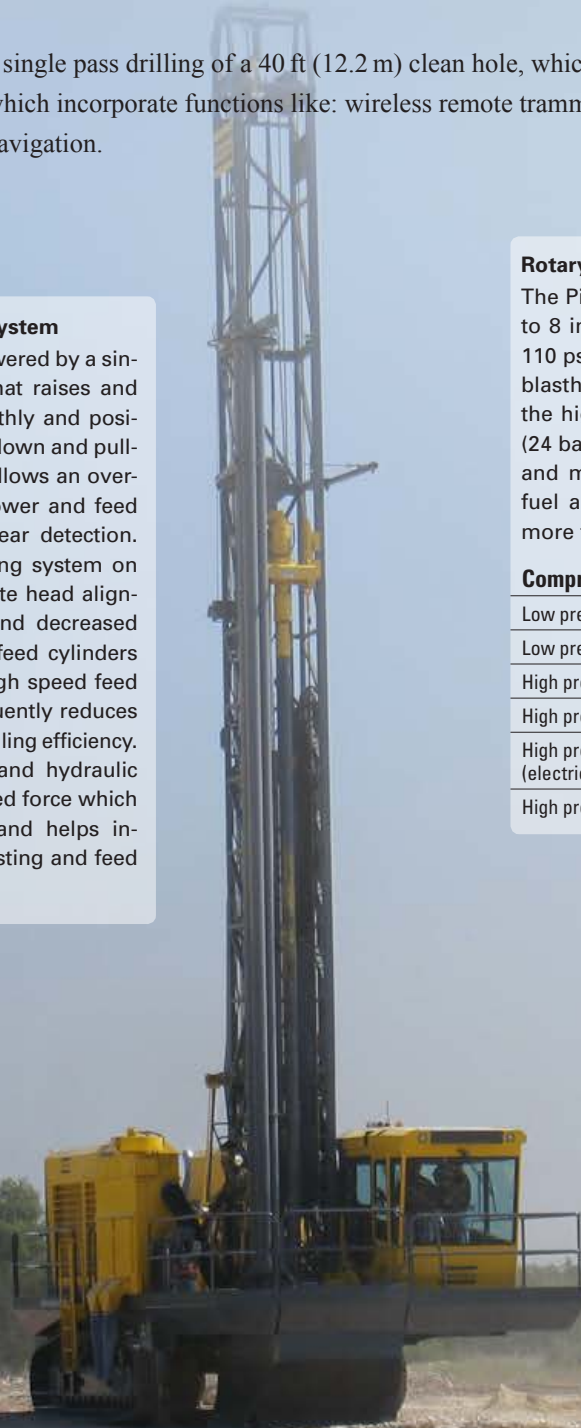
The PV-235 feed system is powered by a single hydraulic feed cylinder that raises and lowers the rotary head smoothly and positively by way of cable for pulldown and pull-back. The cable feed design allows an overall weight reduction in the tower and feed system, along with easier wear detection. The automatic cable tensioning system on the PV-235 ensures an accurate head alignment, improved cable life, and decreased downtime. The Atlas Copco feed cylinders were designed for optimal high speed feed and retract rates, this consequently reduces non-drill time and increases drilling efficiency. This combination of cables and hydraulic cylinders provides an 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 235 is designed to handle 4 ½ in up to 8 in drill pipes. For the low pressure version, 110 psi (7.6 bar) can be used for rotary drilling of blastholes up to 10 ⅝ in (270 mm) in diameter. On the high pressure version of the PV-235, 350 psi (24 bar) can be used for up to 8 in DTH hammers and max 8 ⅝ in bit diameter. The high capacity fuel and water tanks, makes it possible to drill more than 12 hours without refilling.

Compressor range

Low pressure rotary	1,600 cfm@110 psi / 45.0 m3/min @ 7.6 bar
Low pressure rotary	1,900 cfm@110 psi / 53.8 m3/min @ 7.6 bar
High pressure DTH	1,250 cfm@ 350 psi / 35.4 m3/min @ 24 bar
High pressure DTH	1,450 cfm@ 350 psi / 41.0 m3/min @ 24 bar
High pressure DTH (electric motor)	1,040 cfm@ 350 psi / 29.8 m3/min @ 24 bar
High pressure DTH	1,300 cfm@ 435 psi / 37.6 m3/min @ 30 bar



Operator comfort

The FOPS designed PV-235 cab is an upgrade offering phenomenal visibility. The operator can always face the optimal direction for the best drilling and tramming views, no matter the situation. The low positioned pivot near the bottom of the tower will reduce the movement of the drill table and keep it within good view of the operator. The joystick controls are located on the armrests, allowing the operator finger tip control at all times. The cab has an integrated air conditioning and heating system, a more spacious layout, thermal insulation and a sound abatement less than 80 DB. Further options include a camera monitoring system, and a floor window for viewing cuttings under the dust flap.



Excellent Serviceability

With walkway access around the entire machine, the PV-235 provides more deck space than any other Atlas Copco drill. For situations when night work outside the cab is necessary, increased lighting has been added. Increased ladder and ramp options make the PV-235 one of the most accessible drills, available from Atlas Copco. All filters are located in one area for easy access, quick replacement and enhanced serviceability. Optional oil drain system, standard hands free auxiliary breakout wrench, standard 24V to 12V converter with pre-wiring for radio or CB, and optional Atlas Copco patent pending hydraulically operated automatic wet clutch are all examples of how the new PV-235 has been designed with service and maintenance in mind.



New platform

Starting at ground level, the Pit Viper 235 platform starts with the two-speed hydraulic excavator style Caterpillar 330 undercarriages (330L or 330EL). The Atlas Copco designed PV-235 main frame is a weld fabrication consisting of 3 in. (75 mm) thick steel plates for main rails, and crossbeams of 10 in. x 14 in. (254 mm x 356 mm) structural steel tubing. The plate steel frame is new to blasthole drill construction and was designed at Atlas Copco using finite element analysis. The material thickness is one third that of an equivalent welded steel plate construction and has a better fatigue life. The frame accommodates the ISO block, three point isolation mounted standard 450 U.S. gallon (1,703 liter) fuel tank and additional 600 U.S. gallon (2,271 liter) tank which can be used for additional fuel or water.



Standard Equipment

- Spacious thermal insulated cab with FOPS and noise abatement less than 80 dB(A)
- Cab pressurizer / ventilator / heater
- Twelve quartz halogen night lighting package
- Dust hood with curtains and hydraulically raising dust flap
- Auxiliary hoist for drill pipe and accessory handling
- Heavy duty engine silencer / muffler
- Separate air intake filters with rubber dust evacuator for engine and air compressors
- Gear indexing carousel for 5 ½ in x 35 ft pipe
- Sliding hydraulic fork wrench for drill pipe breakout
- Hydraulically powered auxiliary breakout wrench
- 450 gallon fuel tank (1,700 liter)
- 4SV-2-10 two motor high speed rotary head with 0-160 RPM, and a maximum torque of 8,200 lbf•ft
- 35 ft drill pipe changer
- No-bump rod changer
- Battery and starter lockable master-switches with jump start receptacle at ground level
- Jack-up indicator lights
- Four 48 in (1.2 m) stroke leveling jacks
- Triple bar grousers 33.5 in (850 mm) wide
- Reinforced rectangular steel track frame with oscillation yoke
- Walkways and railings
- Remote tower pinning
- Back-up alarm
- RPM rotary head tachometer

A selection of features on Pit Viper 235 Series

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



Camera system

An optional four-camera system is available to increase visibility around the rig. A wide angle camera will be installed on the non-drill end for a tramming view. A color display will be mounted inside the cab

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 degrees. All controls for positioning the tower are located at the operator's control console inside the cab.

Optional Clutch

An Atlas Copco patent pending hydraulically operated automatic wet clutch between the engine and the air end. The benefit of this clutch is that it will disengage the air compressor from the engine when the air end is switched off. It is proportionally engaged when the switch in the cab is turned on.

Enclosure

The enclosure option will reduce noise and provide cold weather protection. The full length doors provide easy access for service and maintenance.

Technical data PV-235

Drilling Method	Rotary and DTH - Multi pass	
Hole Diameter	6 in - 10 5/8 in	152 mm - 270 mm
Hydraulic Pulldown	60,000 lbf	267 kN
Weight on bit	65,000 lb	29,500 kg
Hydraulic Pullback	27,000 lbf	120 kN
Single pass depth	35 ft, 40 ft	10.7 m, 12.2 m
Maximum hole depth*	240, 210 ft	73.2, 64.0 m
Feed speed	140 - 193 ft/min	0.7 - 1.0 m/s
Rotary head, torque	4,900 lbf-ft 8,200 lbf-ft	6.6 kNm 11.1 kNm
Estimated weight	128,000 lb	58 tonnes

Dimensions tower up (40 ft tower)

Length	34 ft 2 in	10.4 m
Height	42 ft 6 in	19 m
Width	17 ft 4 in	5.3 m

Dimensions tower down

Length	63 ft 5 in	19.3 m
Height	20 ft 4 in	6.4 m

Engine (3Tier III, 2Tier II, *Tier 4 options available)

Caterpillar	C18 ³	630HP@1800RPM (LP 1600)
Cummins	QSK15 ³	600HP@1800RPM (LP 1600)
Caterpillar	C27 ²	800HP@1800RPM (LP 1900 or HP 1250)
Cummins	QSK19 ²	755HP@1800RPM (LP 1900 or HP 1250)
Caterpillar	C27 ²	800HP@2100RPM (HP 1450)
WEG	6808	700HP@50-60 Hz

Drill pipe specification

Drill pipe diameter	Bit diameters	Thread
4 1/2" (114 mm)	6" - 6 3/4"	3" BECO
5" (127 mm)	6 3/4" - 7 3/8"	3 1/2" BECO
5 1/2" (140 mm)	6 3/4" - 7 7/8"	3 1/2" BECO
6 1/4" (159 mm)	7 7/8" - 9"	4" BECO
7" (178 mm)	9"	4 1/2" BECO
7 5/8" (194 mm)	9 7/8"	5 1/4" BECO
8" (203 mm)	9 7/8" - 10 5/8"	5 1/4" BECO

High pressure DTH drilling

Up to 8" DTH hammer and max 8 7/8" bit diameter

*Maximum hole depth is not achieved with all drill rod configurations pending weight limit of carousel.

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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