Atlas Copco Blasthole Drills

Pit Viper 235 series



Rotary and DTH drilling

Hole diameter 6 in – 10 5/8 in (152 – 270 mm)
Maximum hole depth 240 ft (73.2 m)

Sustainable Productivity

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 compliment 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 pullback. 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 sting and feed system.

Rotary or DTH drilling

The Pit Viper 235 is designed to handle 4½ 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 8⅞ 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

Technical data		
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

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

Engine ([3]Tier III, [2]Tier II)		
Caterpillar	C18[3]	630HP@1800RPM (LP 1600)
Cummins	QSX15[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

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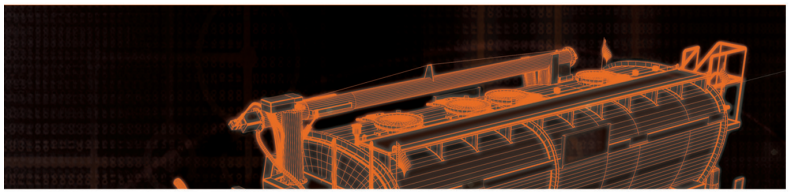
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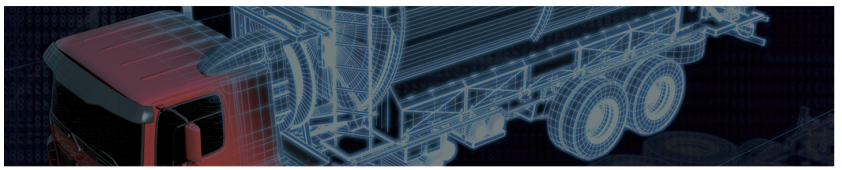


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MILODÓN
CARGUÍO DE ALTO TONELAJE









Milodón® / *Carguío de Alto Tonelaje*

- Sistema de fluidización en tolvas de nitrato de amonio.
- Sistema neumático para el equipo fábrica independiente del chasis.
- Apoyo flotante para el Auger vertical, que evita los sobre esfuerzos derivados del giro del vertical.
- Sistema cortacorriente para camión fábrica.
- Sistema de anclaje chasis-conjunto tolvas con polímero para mitigar los esfuerzos combinados por movimientos.

Innovación para voladuras más productivas

Milodón® es un camión fábrica del tipo Auger y Quadra para la mezcla de Nitrato de Amonio y Matriz, diseñado especialmente para la fabricación de Anfo y Anfos pesados vaciables y bombeables en voladura de rocas para minería a cielo abierto.

La gran capacidad de transporte y fabricación por voladura, constituye una de las principales características de Milodón®, pudiendo cargar hasta 28 toneladas de explosivos in situ, lo que le otrorga grandes ventajas productivas frente a las actuales alternativas disponibles.

Milodón® posee un sistema de fluidización en la tolva de Nitrato de Amonio, lo que impide la aglomeración del Prill, permitiendo que fluya correctamente para lograr una dosificación constante en la mezcla y un producto de alta calidad.

Entre otras características, Milodón® cuenta con un sistema de carguío mediante PLC, denominado e-controller, el cual automatiza y controla las Materias Primas (Nitrato de Amonio, Matrices y Petróleo) en el proceso de fabricación y lo efectivamente cargado en cada pozo. Se emite un voucher donde queda constancia de las materias primas y el producto cargado en cada pozo. Además, incorpora escotillas de apertura/cierre para sus tolvas accionadas en forma neumática.
Milodón® representa la más alta tecnología en materia de productividad para la realización de voladuras más eficientes y seguras.

MILODÓN
CARGUÍO DE ALTO TONELAJE



+ Productividad
Su gran capacidad de fabricación y transporte de materias primas permiten aumentar la productividad durante la operación de carguío.

+ Innovación
Diseño e Ingeniería desarrollada por enaex que logran un camión fábrica único en la industria y que permite un menor daño del Prill de Nitrato de Amonio.

+ Seguridad
Sistema de fluidización en la tolva de Nitrato de Amonio, que evita la aglomeración de N.A. y un sistema de lavado de residuo que hacen de Milodón un equipo altamente seguro.

Equipo Auger	Equipo Quadra
Especificaciones Técnicas · Año Fabricación: 2011 · Material Tolvas: 100% Acero INOXT 304 L. · Propietario: Enaex Servicios S.A. · Tipo Equipo: Fábrica · Modelo: AUGER AT	**Especificaciones Técnicas** · Año Fabricación: 2012 · Material Tolvas: 100% Acero INOX 304 L. · Propietario: Enaex Servicios S.A. · Tipo Equipo: Fábrica · Modelo: Quadra AT
Rendimiento de Carguío · Producto Vaciable: 400 - 500 Kg/min	**Rendimiento de Carguío** · Producto Bombeable: 250 - 350 Kg/min · Producto Vaciable: 400 - 600 Kg/min
Capacidad Nominal Tolvas (Ton) · Nitrato de Amonio: 15,0 · Matriz: 14,0 · Petróleo: 1,2 · Tara Equipo Fábrica: 8,7 · Tara Chasis: 11,7	**Capacidad Nominal Tolvas (Ton)** · Nitrato de Amonio: 8,6 · Matriz: 20 · Petróleo: 0,6 · Tara Equipo Fábrica: 9,5 · Tara Chasis: 11,7
	Especificaciones Técnicas del Chasis · Marca: Mercedez Benz · Modelo: Actros 4144 K · PBV: 50 ton (Peso Bruto Vehicular) · Potencia: 470 HP

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