

Atlas Copco Blasthole Drills IDM 70 series



Rotary Drilling - Multi pass

Hole diameter 9 - 10 $\frac{5}{8}$ in (229 - 270 mm)

Maximum hole depth 140 ft (42.6 m)

Sustainable Productivity

Atlas Copco

Built for performance

Designed for comfort

The Atlas Copco IDM 70 is a crawler mounted, hydraulic tophead drive, multi pass rotary drilling rig primarily designed for deep drilling of overburden in open pit mines in large coal mines. The heavy and durable IDM 70 was launched in early 80's and are being used at several of the largest coal mines in India.

The Atlas Copco IDM 70 rotary drilling rig is specifically designed for production of blasthole drilling to depths of 124 ft (38 m) with a 25 ft (7.62 m) pipe change and 140 ft (42.6 m) with the optional 35 ft (10.67 m) pipe change. Various carousel capacities are available for both the standard 25 ft (7.62 m) and the optional 35 ft (10.67 m) tower. Feed pressure generates a weight on bit force of up to 80,000 lbf (360 kN). Rotary head torque is up to 8333 ft-lb (11.29 kN-m). It is available in either diesel or electric version (3.3 kV or 6.6 kV)

Tower Assembly

The tower can be raised or lowered in seconds with a full complement of drill pipe in the carousel and under the rotary head. Tower pinning and pipe changing are performed remotely from the operator's cab. Drill pipe handling on the IDM 70 is accomplished through the rotary head, a hydraulically positioned carousel-type pipe changer, hydraulic breakout, auxiliary hoist and boom. An exclusive "key lock" securely locks in the drill pipes at the bottom and the top of the carousel. A No-Bump drill pipe change limits the feed force of the rotary head, while the carousel moves completely out. This prevents the carousel from operation unless the rotary head is at the top of the tower. Drill pipes can be handled by the standard auxiliary hoist/winch located at the top of the tower.

Rotary multi pass drilling

The IDM 70 is designed to handle drill pipe from 8" (203 mm) and 8 5/8" (219 mm). This drill rig is only available in the low pressure version where 100 psi (7 bar) is used for rotary drilling of blastholes up to 10 5/8" (270 mm) diameter. Bit rotation on the IDM 70 is provided by a hydraulic tophead drive assembly consisting of six variable displacement, motors driving a spur gear reduction, enclosed in a heavy steel body. The use of variable displacement pumps and motors allows the operator an infinite selection of rotation speed at variable torque values. The IDM 70 in-line drive train consists of a electric motor (or optional diesel engine) directly coupled to a compressor on one end and a three-hole hydraulic pump drive gearbox on the other end. The power pack assembly is mounted on its own sub base, which in turn is "shock" or "float" mounted to the rig main frame. This configuration maximizes mechanical efficiency. The power pack comes complete with filters, air intake, and exhaust.

Compressor range

Low pressure rotary	1,000 cfm @ 100 psi / 28 m ³ /min @ 7 bar
Low pressure rotary	1,200 cfm @ 100 psi / 34 m ³ /min @ 7 bar



Operator comfort

All operational functions are controlled from the FOPS certified operator cabin with a central console which is strategically located for full visibility while drilling and tramming. All gauges, as well as controls, are mounted on this console. Fluorescent lighting, pressurized and filtered air is provided in the cab. The operating voltage of all equipment within the cab is 110V or 24V DC. Heavy duty rubber floor mats for operator conveyance are provided. All doors, windows and vents have dust and weather proof seals. All control gauges and meters shall be clearly and permanently marked with easily recognizable symbols. The operator's seat is a fully adjustable bucket type with safety belt.



Machinery Housing

Machinery housing encloses the Power pack (electric motor, air compressor, hydraulic pumps and pump drive gearbox) and auxiliary equipment with ample room for maintenance and repair. Constructed out of metal and properly supported. A pressurising or ventilation system forces clean filtered air in to the machinery housing to prevent the entry of dust and to assure continuous flow of fresh air throughout. A removable roof cover provides adequate opening for equipment removal and reinstallation including the Power pack if necessary. For the diesel version, a canopy is provided in place of machinery housing.



A mobile and stable platform

The IDM 70 utilizes an excavator-type undercarriage built to Atlas Copco Specifications. It is equipped with nitrogen cylinders to absorb heavy shocks during tramming. Tracks are driven by a planetary gear system and two hydraulic motors rated at 100 hp (75 kW) each. Both tracks are individually controlled and act as an independent unit. The tracks are hydraulically adjustable with a spring recoil system and equipped with replaceable triple bar grouser pads. The Atlas Copco designed IDM 70 main frame is a weld fabrication of IS 2062 Gr "Fe 410 W B" (ASTM A 36 EQ), 24 in. x 87 lb/ft (60 cm x 129 kg/m) high strength, low alloy "I" beam. A "walking beam" oscillation yoke allows the rig to propel over uneven ground, while reducing torsional stresses on the main frame.



Standard Equipment

- FOPS certified operator cab
- Electric / diesel prime mover
- Rotary screw air compressor
- Compressor and hydraulic oil cooler package
- Hydraulic pumps drive
- Hydraulic reservoir
- Oil separator / air receiver
- Rotary head complete with hydraulic motors and chain drive arrangement
- 3-point leveling system
- Enclosed operator's cab with centralized control panel

- Tower to handle 25 ft or 35 ft drill rods
- Night lighting
- Hydraulic Breakout wrench
- NVE type dust collection system
- Switch board panel for electric drills
- Hydraulic tower raising cylinders
- Machinery housing / Canopy
- Undercarriage track assembly complete with hydraulic motors, direct hub drive arrangement and track oscillation.
- Centraliser
- Tower locking arrangement
- Hydraulically powered carousel

Optional Equipment

- Shock Sub
- DEI
- Lubrication system
- Cable reel drum (150ft or 300 ft)
- Wiggig central system

A selection of features and options for the IDM 70

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



Operator's Cabin

The cabins are FOPS certified and have an option for AC fitment. The new cabins provide better operator comfort and visibility. It is designed to keep the noise level minimum inside the cabin.



Dust Control System

The Dust Collector is an airdust separation system which controls the dust particles released to the environment during drilling. Non visible emission (NVE) type dust collector is a standard feature supplied with the machine.



Angle Drilling Package

The optional angle drilling package allows tower to be positioned from 0° to 20° from the vertical position, in 5° increments. All controls are located at operator's control console inside the cab.



Fire Suppression System

The optional auto fire suppression system gives Safety Provision against ABC fires as per National Fire Protection Association.

Technical data IDM 70

Technical data

Drilling Method	Rotary - Multi pass	
Hole Diameter	9 in - 10 5/8 in	229 mm - 270 mm
Hydraulic Pulldown	70,000 lbf	311 kN
Weight on bit	80,933 lb	36,788 kg
Hydraulic Pullback	59,260 lbf	264 kN
Single pass depth	25 ft or 35 ft	7.62 m or 10.67 m
Maximum hole depth*	124 ft or 140 ft	38 m or 42.6 m
Feed speed	32.6 ft/min	9.6 m/min
Rotary head, torque	8,333 lbf-ft	11.29 kNm
Estimated weight	146,740 - 148,940 lb	66.7 - 67.7 tonnes

Dimensions tower up

Length	48 ft 3 in	14.7 m
Height	56 ft 7 in	17.25 m
Width	18 ft 11 in	5.78 m

Dimensions tower down

Length	54 ft 8 in	16.67 m
Height	20 ft 11 in	6.4 m

Compressor

Low pressure rotary	1,000 cfm @ 100 psi / 28 m ³ /min @ 7 bar
Low pressure rotary	1,200 cfm @ 100 psi / 34 m ³ /min @ 7 bar

Main Drive

Diesel Engine	QSX 15 - 550 hp/411 kW @ 1800 rpm
Electric Motor Squirrel Cage Induction	450 hp /366 kW @ 50 Hz (3 phase)

Drill pipe specification

Drill pipe diameter	Suggested bit diameters	Thread
8" (203 mm)	9 7/8"	6" BECO
8 5/8" (219 mm)	9 7/8"	6" BECO

Customer Centers

www.atlascopco.in/inus/Contactus/constructionandmining