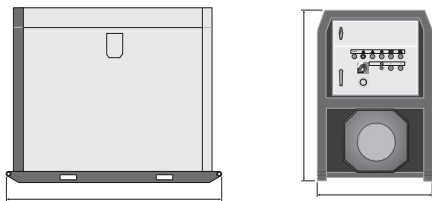
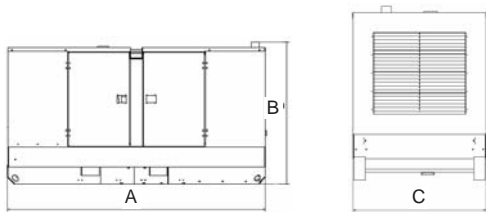


DIAMEC® U8 APC characteristics

Power Pack



Power unit Electrical



Power unit Diesel

The power pack consists of a rugged skid frame on which is mounted the 110 kW electric motor or 150 kW diesel engine, with two hydraulic pumps. The main pump powers rotation, fast travel, wireline hoist and high water speed. The service pump powers low water speed, feed and the manual release of chuck and clamp.

The large 130 L (34 gal US) reservoir provides flooded suction for all pumps. Hydraulic oil can only be added to the tank through a hand pump and filter preventing contamination of the hydraulic system. An external sight gauge allows easy monitoring of hydraulic oil level and temperature. A full flow, 10 micron beta rated return filter with visual indicator keeps the hydraulic oil clean. A water or air cooled heat exchanger cools the hydraulic oil. Automated shut down is provided in case of low oil level or high temperature.

	Electric		Diesel		CAT 3126B	
Motor rating	110 kW at 1450 rpm		149 kW at 1800 rpm			
Main pump						
max flow	195 l/min	(50 US gpm)	195 l/min	(50 US gpm)		
max pressure	315 bar	(4500 psi)	315 bar	(4500 psi)		
Service pump						
max flow	65 l/min	(17 US gpm)	65 l/min	(16 US gpm)		
max pressure	240 bar	(3480 psi)	240 bar	(3480 psi)		

Dimensions

Weights

Power unit version	Electric		Diesel		Electric		Diesel	
	mm	in	mm	in	kg	lb	kg	lb
A	2023	79	3112	122	1400	2800	2360	5200
B	1400	55	1715	67				
C	890	35	1300	51				

DIAMEC® U8 Application related accessories

1. Flush pump alternatives

Flow

Pressure

TRIDO® 140 H	140 l/min (37 US gpm)	70 bar (1000 psi)
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TRIDO® 140

2. Wireline hoist

Wireline hoist with levelwind.

Data	Wireline hoist	
Capacity	2000 m (6565 ft) of 4.8 mm (3/16 in) wire rope	
Capacity	1200 m (3940 ft) of 6.5 mm (1/4 in) wire rope	
Pull min	3600 N (810 lbf)	(Full drum)
max	9700 N (2180 lbf)	(Empty drum)
Hoisting speed		
min	1.8 m/s (360 fpm)	(Empty drum)
max	4.8 m/s (950 fpm)	(Full drum)
Weight	96 kg	

3. Mast extension



Surface: Length 3 m



Underground: Length 2 m

Atlas Copco DIAMEC® U8 APC

Core drilling rig with automatic performance control with wireline (B-H) and conventional core barrels.



Improved performance and reliability with a well proven drill design and third generation computer control (APC).

Features

- * **Deep hole** underground or surface hydraulic drill. Outstanding for wireline drilling to H size. Rod holder pass P remain shell
- * **Depth** rated to 1500 m N Rod.
- * **High efficiency** long stroke feed cylinder eliminates chains or wire. Feed cylinder push equals pull is ideal for underground applications.
- * **Three-module design** allows quick set-up in confined areas.
- * **Proven reliability** in world wide applications.
- * **Integral skid** with hydraulic feed frame raise and dump feature provides 360° drilling capability.
- * **Rod handling** feature (automatic chuck and rod holder synchronization).
- * **Power float** of rotation unit during breaking / making joints prevents thread damage.
- * **More Power** is available for drilling from a electric 110kW or diesel 150 kW power unit, a more efficient rotation unit and hydraulic system. The result is higher rpm and penetration rates to the bottom of the hole. The optional waterpump can be run at full flow and pressure for faster pump in.
- * **Environmental** friendly

APC Computer Control System

- * **Canbus Control System** minimizes hydraulic hoses and electrical wiring, gives improved **selfdiagnostics** for easy trouble shooting. Flexibility of this control system allows easy addition of future options and accessories.
- * **Touch Screen Control Panel** combined with a joystick and rotary encoder provides easy input and adjustment of control parameters. All drilling information is provided for easy overview of automatic drilling or for manually controlled drilling.
- * **Windows Based Environment** provides a flexible system and makes many features (some optional) available. Remote troubleshooting and link-up by internet (where connections available), **logging**, and screen display of manuals and parts lists.
- * **PLC Control** of valves has separate battery backup. In case of computer malfunction, a controlled shutdown is possible with rod pullback and flushing water for a predetermined time.
- * **Rugged Construction** of console makes the electronics tolerant to shock and vibrations. The computer is isolator mounted and the CPU meets military specifications. High quality connectors cope with harsh environmental conditions.

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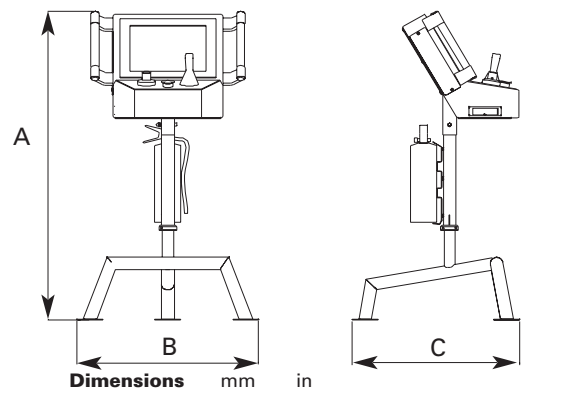
Atlas Copco reserves the right to make modifications without prior notice.

Control Panel

The Automatic Performance Control of the rig marks the achievement of operation.

Features that reflect user needs. The DIAMEC U8 APC operates in a Microsoft Windows® environment and has a new interface that is easier to learn and use. Other advances over the earlier APC models include:

- **Screen-based control panel.** A touch screen and a single control knob are provided for easy input and adjustment of control parameters. Drilling information presented on screen. Symbols used instead of words. Numbers are displayed large enough to be read easily from a distance. And a joystick is provided for manual control of wireline, fast travel, and rotation.
- **New functions.** These include **automatic wireline, powerful self-diagnostics, screen display of manuals and parts lists, and remote trouble shooting.**
- **State-of-the-art hardware and software.** The APC features the latest generation Can bus control, which minimises the hydraulic plumbing and electrical wiring. The electronics are very rugged and cope extremely well with harsh environmental conditions.



Dimensions	mm	in
A	1240	49
B	700	27 1/2
C	644	25 1/2

Weight	kg	lb
Control panel (incl. hoses)	30 kg	80 lbs

With Automatic Performance Control, the drilling operation is supervised by a computer – giving the driller time for emptying core barrels, preparing bits, etc. Once the driller has entered all necessary drilling parameters, the APC computer takes over control and maintains the penetration rate. The APC acts instantly on any change in rock formation that calls for adjustment in feed force, rotation speed or torque, or even a complete shutdown.

Feed Frame

The feed frame is fabricated from rectangular hollow section providing a robust drill platform. Bolted, replaceable sliding rails provide an accurate guide for the drill head cradle.

The feed cylinder is situated between the drill slide members. It is of a unique design which allows 1.8m (71 in) of head travel without the use of chains or wire ropes. The cylinder consists of a stationary centre rod and two nested cylinders, the outer cylinder sliding over the intermediate cylinder.

The design has the advantage of doing away with chains and sprockets, or wire ropes and pulleys, resulting in higher efficiency and less maintenance. The feed cylinder sliding surfaces are hard chromed for maximum wear and corrosion resistance. The feed cylinder circuit is equipped with dual counter balance valves for smooth control of heavy rod loads. The feed frame is raised and dumped hydraulically.

Maximum Pull and Thrust	133 kN (29 000 lbf)
Fast travel speed, rod handling	0.73 m/sec
Feed Cylinder Stroke	1.8 m (71 in)
Feed Frame Hyd. Raise	Standard
Feed Frame Hyd. Dump	Standard

Rod Holder

The rod holder is hydraulically opened, and closed by gas pressure. In case of loss of hydraulic pressure, the rod holder closes instantly. The gas pressure can be conveniently monitored.

Max. rod size	117,5 mm	(4.6 in)
Bore (without jaws)	124 mm	(4.9 in)
Axial holding force	133 kN	(29950 lbf)
Number of jaws	2	

Capacities

Drill rod size	Approx. drilling depth	
B Wireline	2000 m	6558 ft
N	1500 m	4920 ft
H	1000 m	3280 ft

“The above capacity values only serve as a guideline, and refer to vertical, downward drilling in homogeneous rock”.

Rotation Unit

The B-H size unit has two alternatives of rotation motors which affect the maximum torque and speed.

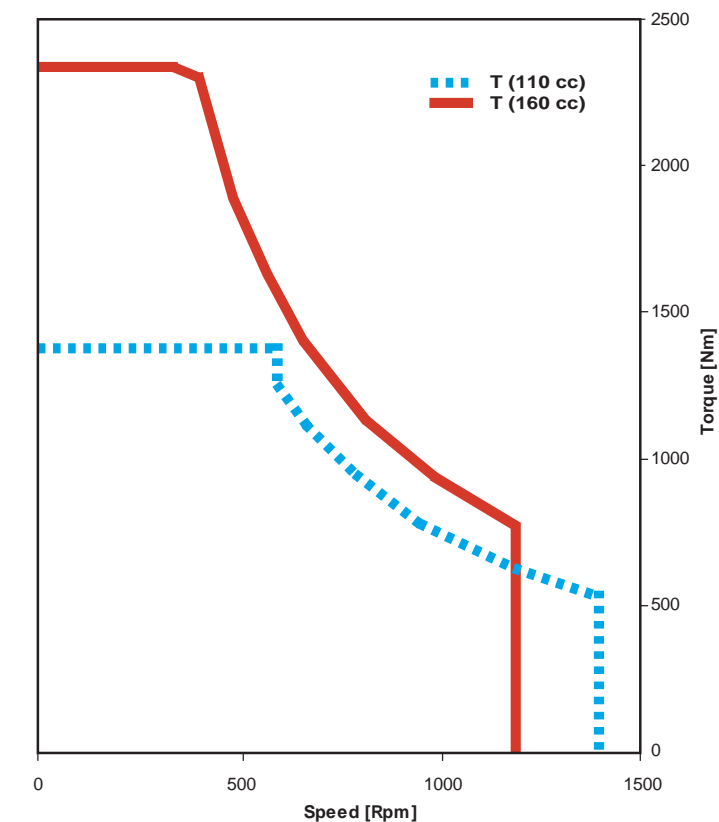
The rotation unit consists of a hydraulic motor, a sealed gear box, a hollow spindle and an Atlas Copco patented hydraulic chuck. The chuck grips the rod by hydraulic pressure which is adjustable. The chuck jaws are quick change type.

The rotation speed is adjustable from the control console. The chuck and rod holder are synchronized.

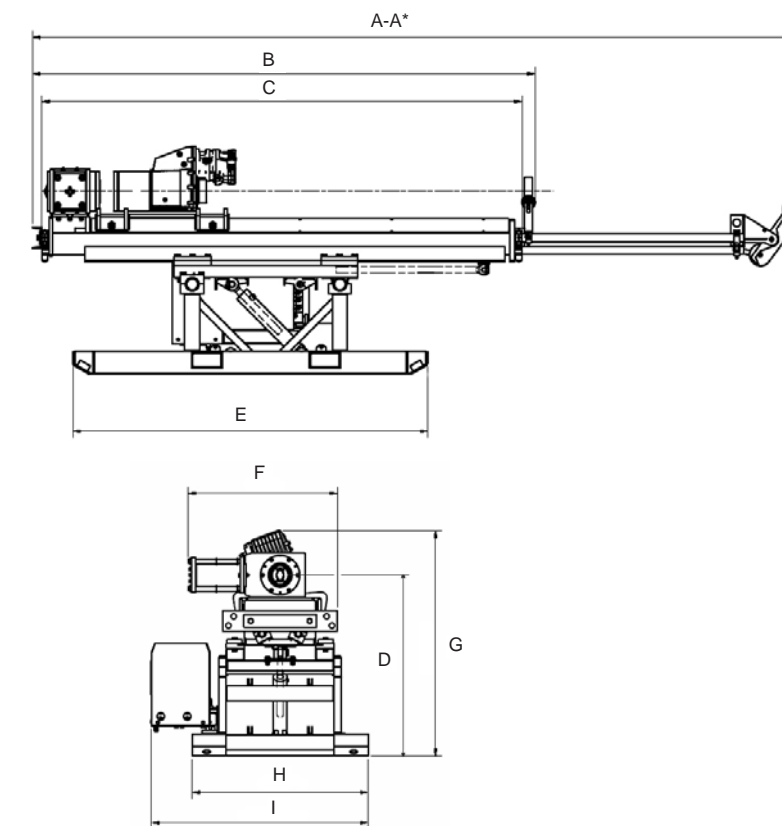
Rotation	Rotation Unit B - H size	
	Standard	High torque version

Drill Rod Size	B-H	B-H
Maximum rotation speed	(rpm) 1400	1200
Maximum torque	(Nm) 1275 (ft lbf) (940)	2300 (1629)
Rotation motor	(cc) 110	160
Spindle inner diameter	(mm) 101 (in) (3.97)	101 (3.97)
Chuck axial holding force	(kN) 150 (lbf) (33700)	150 (33700)

B-H rotation head



Measurements in mm (in.)



Dimensions

Feed version	Dimensions	
	mm	in
A	3755	147,8
A*	5050	199
B	3287	129
C	3140	123
D	1197	47
E	2320	91
F	986	38,8
G	1488	58,6
H	1162	45,7
I	1432	56,3

Weight	kg	lb
Drill feed frame assembly incl. Skid and Wireline Hoist	2500 kg	5510 lbs

* Length including underground mast extension