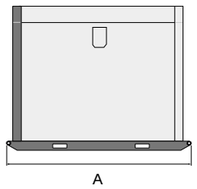
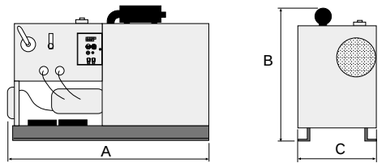
DIAMEC® U6 APC characteristics



Power unit Electrical



Power unit Diesel

Power Units

The power unit has two variable-flow hydraulic pumps, mounted in tandem. Supplied complete with 130 litre oil tank, water type oil cooler and filters. An air type oil cooler is optional.

	Electric		Diesel	
Motor rating	55 kW (75 hp) at 1450 rpm		88 kW (115 hp) at 2300 rpm	
Main pump				
max flow	130 l/min	(34.3 US gpm)	130 l/min	(34.3 US gpm)
max pressure	300 bar	(4350 psi)	300 bar	(4350 psi)
Service pump				
max flow	40,5 l/min	(10.7 US gpm)	50 l/min	(13.2 US gpm)
max pressure	300 bar	(4350 psi)	300 bar	(4350 psi)

Dimensions

Power unit version	Electric		Diesel	
	mm	in	mm	in
A	1845	73	2000	79
B	1250	49	1030	41
C	790	31	810	32

Weights

	Electric		Diesel	
	kg	lb	kg	lb
	1000	2200	980	2160

DIAMEC® U6 APC Application related accessories

1. Flush pump alternatives — **Flow** — **Pressure**

TRIDO® 80 H. . . . . 80 l/min (21 US gpm) — 50 bar (725 psi)

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

TRIDO® 80 H

2. Two Wireline hoists meet all drilling needs

Wireline hoist, version 425 m

Mounted on the positioner underneath the feed frame. The hoist is operated from the control panel.

Wireline hoist, version 1000 m

Mounted on the positioner arm and has adjustable levelwind angle. Does not need to be moved when changing drilling angle.

Data	Wireline hoist 425 m	Wireline hoist 1000m	
Capacity	425 m (1400 ft) of 4.75 mm (3/16 in)	1000 m (3280 ft) of 4.75 mm (3/16 in) wire rope	
Pull min	3640 N (820 lbf)	3600 N (810 lbf)	(Full drum)
max	7860 N (1770 lbf)	9700 N (2180 lbf)	(Empty drum)
Hoisting speed			
min	2.2 m/s (430 fpm)	1.8 m/s (360 fpm)	(Empty drum)
max	4.8 m/s (950 fpm)	4.8 m/s (950 fpm)	(Full drum)

Wire line hoist, version 425 m

Wire line hoist, version 1000 m

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Atlas Copco DIAMEC® U6 APC

Core drilling rig with automatic performance control for underground operations, with wireline (A-H) and conventional core barrels.

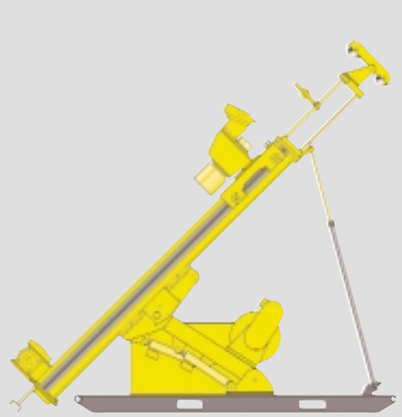


Fig. 1

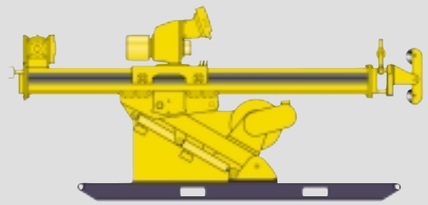


Fig. 2

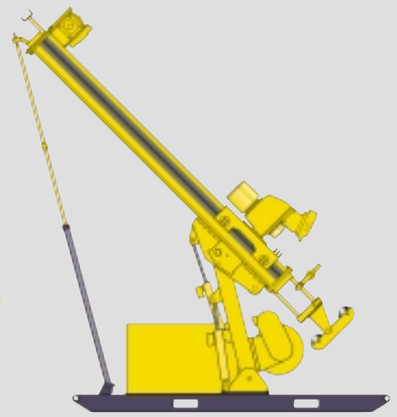


Fig. 3

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

A New Drill design

• Reliability has been increased by the use of a direct acting feed cylinder (no chains), a rod holder with a long-life gas cartridge, and a rotation unit with new distributor seals and a sealed gearcase. Hose connections with O-ring face seals prevent leakage.

• More Power is available for drilling from a 55kW 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.

• True One Man Operation is easier with the new positioner design which makes setups faster and easier and requires no moving of the wireline hoist from vertical down to vertical up drilling. The new APC control enables fully automatic drilling of a run.

• Flexibility of use is provided by rod tripping speed fast enough for conventional drilling, N and H size rotation units, and enough rotation power for 750m B wireline drilling.

• Safety and Ergonomics have been factored into the design. An improved E-stop on the drill unit is standard, a mechanical rod guard is optional. Use of a joystick and a rotary encoder combined with the touchscreen provide excellent ergonomic control of the drill with the APC console.

A New Computer Control System

• Canbus Control System minimizes hydraulic hoses and electrical wiring, gives improved diagnostics 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.

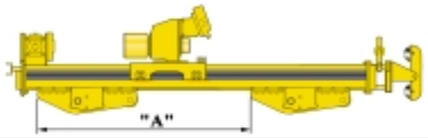
• PLC Control of valves has separate battery backup. In case of computer malfunction, a controlled shutdown is possible with rod pullback and flushing water for a predetermined time.

• 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.

Feed Frame

Two different stroke lengths are available, 1800 mm (standard) and 850 mm (optional). A direct acting feed cylinder is used.

Data, feed version		1800	850
Feed length	(mm)	1800	850
	(in)	(71)	(33,5)
Feed frame	(mm)	1800	850
extension “A”	(in)	(70.9)	(33.5)
Feed force-thrust	(kN)	65	65
	(lbf)	(14 600)	(14 600)
Feed force-pull	(kN)	65	65
	(lbf)	(14 600)	(14 600)
Fast travel speed			
	(m/s)	1.0	1.0
	(ftm)	(196)	(196)



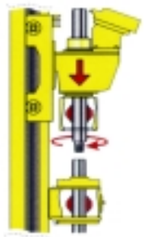
Capacities

Drill rod size	Approx. drilling depth	
A Wireline	960 m	3160 ft
B	750 m	2460 ft
N	570 m	1880 ft
H	390 m	1280 ft

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

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	89 mm	(3.5 in)
Bore (without jaws)	102 mm	(4.0 in)
Bore (without covers)	170 mm	(6.7 in)
Axial holding force	45 kN	(10120 lbf)
Axial holding force (TC insert jaws)	90 kN	(20240 lbf)

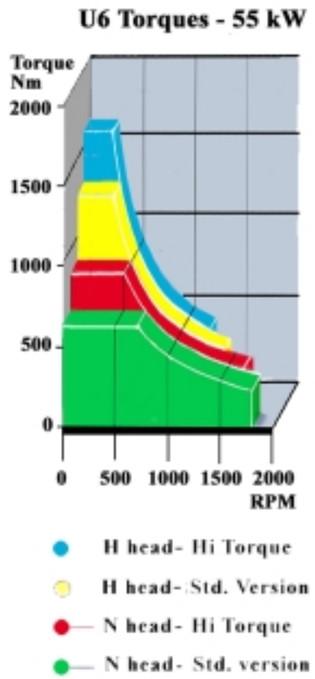
Rotation units

Two sizes of rotation units are available, a N size unit and a H size unit. The N size unit has two alternativs of rotation motors. The H size unit comes with a choice of two pressure/flow settings which affect the maximum torque and speed. The two sizes of rotation units are easily interchangeable.

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. Both steel jaws and jaws with Tungsten Carbide inserts are available.

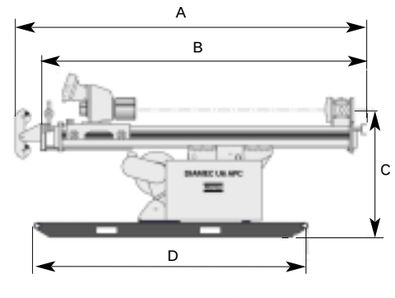
The rotation speed is adjustable from the control console. The chuck and rod holder are synchronized.

Rotation size		Rotation Unit - N size Standard	Rotation Unit - N size High torque	Rotation Unit - H Standard	Rotation Unit - H High torque setting
Drill Rod Size		A-N	B-N	B-H	B-H
Maximum rotation speed	(rpm)	1800	1600	1400	1200
Maximum torque	(Nm)	645	860	1275	1590
	(ft lbf)	(475)	(635)	(940)	(1170)
Rotation motor	(cc)	60	80	110	110
Spindle inner	(mm)	78	78	101	101
diameter	(in)	(3.07)	(3.07)	(3.97)	(3.97)
Chuck axial	(kN)	100	100	150	150
holding force	(lbf)	(22 000)	(22 000)	(33700)	(33700)

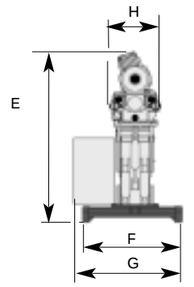


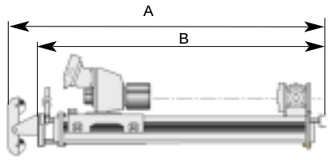
DIAMEC® U6 APC characteristics

Measurements in mm (in.)



Drill unit, 1800 mm feed





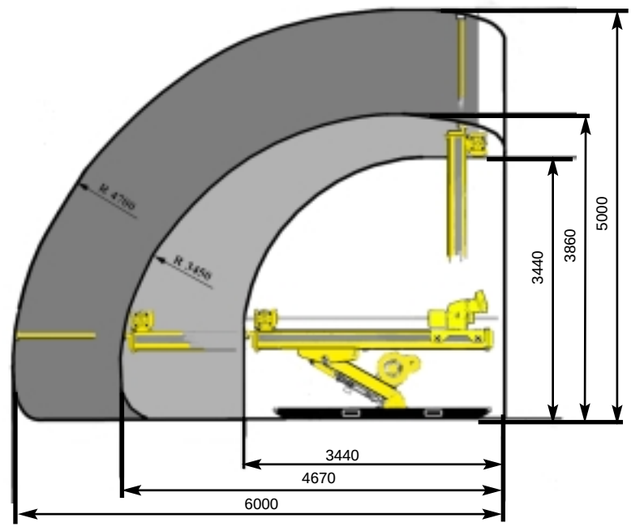
Drill frame, 850 mm feed

Dimensions

Feed version	850		1800	
	mm	in	mm	in
A	2440	96.0	3440	135.4
B	2100	82.7	3100	122.0
C			1230	48.4
D			2700	106.3
E			1470	57.9
F			850	33.5
G			950	37.4
H			440	17.3

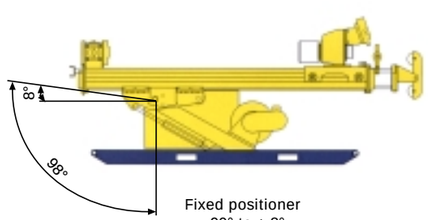
Weights

Feed version	850		1800	
	kg	lb	kg	lb
	1500	3310	1580	3490



Optional positioners

- Turn table
- Fixed positioner (shown)
- Crawler mounting
- Fixed positioner with swing table (shown for gallery drawing)



Fixed positioner
- 90° to + 8°

Gallery drawing, fixed positioner with swing table.
360°