

Crawler drill rig AN 160

The crawler drill AN 160 is intended for heavy duty anchor drilling and micropile drilling applications requiring large-diameter or long-reach drill holes.

The machine frame houses a robust 171 kW liquid-cooled Deutz Diesel engine with latest turbo-charger and intake-air cooling system. This power unit features an eco-friendly fuel-saving EMR (electronic engine control) speed governor which means no exhaust-smoke discharge when load changing.

The hydraulics unit operates on the load-sensing principle and can run on biologically degradable oils. The high drive power output ensures that the drill heads are always well supplied even when the drill rig is operating at maximum duty when equipped with large version of TIS doublehead system.

The drill mast mounted on the AN 160 is designed for running 3 m extension drill rods when fitted with doublehead drill system.

A new type of patented rod/casing magazine allows the drill string to be fitted and removed quickly and safely. The magazine can hold as many as 7 double-rod units, comprising 3 m long sections of inner rods and outer casings up to 219 mm in diameter.



The drill-strings are lifted from the magazine racks by a hydraulic manipulator, which then swings them into line with the drilling axis. The same procedure is employed for drill-string removal, with the manipulator returning the inner rods and outer casings to their racks.

For overburden drilling, as used for example for anchor jobs, the inner string is detached first and replaced in the rack. After the anchors have been inserted in their holes the outer casings are slid back into the racking system over the inner rods. The sections are then ready for the next twin-rod drilling phase. A time-consuming part of the working cycle is eliminated and the overall drilling time is significantly reduced.

The twin-impact system also helps cut down on the drilling time. The TIS allows rotary-percussive drilling with both the inner rod and outer casing simultaneously, even with the two drill strings counter-rotating. As the Twin-Impact System allows to drill rotary-percussive both with inner rods and outer casing even in counter-rotation, this results in a reduction of drilling time.

For easy drilling jobs the system operates as a conventional doublehead system. The inner rod is in rotary or rotary-percussive mode, depending on the procedure selected, while the outer string is rotary driven.

When drilling in hard strata, for example when boring through erratic boulders or when bonding anchors in solid rock, the standard equipment is often unable to achieve a satisfactory drilling performance because the outer drill string cannot keep pace with the drilling advance of the inner string. In such circumstances the hydraulic drifter fitted to the TIS unit is advanced by a hydraulic cylinder towards the rotary drive so that part of the percussive energy is transferred to the outer drill string via a striker insert mounted on the shank end of the drifter and a movable sleeve which flits along the rotary drive. This energy can then be used to boost the drilling performance available at the annular drill bit, thereby substantially reducing the hole drill-out time.

Technical data:

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Drive engine	Deutz BF 6M 1013 C; liquid cooled 171 kW at 2,300 rpm
Diesel tank capacity	350 l
Pump output	2 x 270 l/min + 1 x 24 l/min
Max. operating pressure	320 bar
Hydraulic tank capacity	800 l
Hydraulic fluids	mineral oils, biologically degradable oils
Length excl. driver's stand	9.20 m
Length incl. driver's stand	9.55 m
Width	2.59 m / 3.00 m
Height (in parking position)	3.00 m
Weight	21,000 kg
Spec. ground pressure	7.0 N/cm ²
Ground clearance	400 mm
Pendulum range of crawlers	+18.5° / -11.5°
Travel speed	2.5 km/h
Max. Traction	198 kN
Mast length	8,600 mm
Feed travel (single sled)	5,600 mm
Feed travel (doublehead)	4,320 mm
Feed force	120 kN
Retraction force	120 kN
Feed rate	0 – 7 m/min
Retraction rate	0 – 7 m/min
Rapid feed	0 – 60 m/min
Rapid retraction	0 – 60 m/min
Recommended hydraulic drifter	B 2000 R / B 1500 R
Recommended doublehead system	DK 2000 / DK 1300
Twin Impact System (TIS)	DK 2000 SH / B 1500 R
Recommended rod/casing magazine	KBM 130 / KBM 150 / KBM 180 / KBM 220
Additional equipment	jet grouting mast extension radio remote control auxiliary winch displaceable sleds clamp/break device for up to Ø 450 mm

