

The new era of energy drilling

Geothermal energy is one of the most efficient forms of sustainable energy. Geomachine's mission is to take geothermal well drilling into a new, more productive time era.

GM2000

www.geomachine.fi



 Geomachine

Heat from the ground, reliably and efficiently

The world needs alternatives to fossil fuels, and the demand for geothermal energy is growing rapidly. The need for heat output in projects is increasing, while the available land area for energy wells remains limited. This all creates a demand for deeper energy wells.

One 1500 – 2000 meter deep energy well replaces 20 – 30 traditional shallow ones. Deeper wells enable the utilization of geothermal energy at larger construction sites and in district heating networks.

Geothermal heat is a global solution available 24/7 for producing sustainable green energy. We are proud at Geomachine to lead the way at the forefront of energy transition by providing solutions for a greener and safer future.



In addition to machine delivery, Geomachine provides its customers with a comprehensive commissioning and lifetime service, including digital maintenance program and remote support, to keep the operations running.

A high production rate is the key to success

GM2000 is the first DTH drill rig in the world, designed and built to exploit geothermal energy from 2,000 meter deep wells. It is the first of its kind. It is designed to bring more value for the driller by maximizing the speed of the drilling process and, as importantly, by minimizing the down time of the rig.

GM2000 productivity is maximized through

- DTH technology
- 9 m Drill Rods with large inner diameter
- 60 ton lifting capacity
- Fast drill unit movements
- Automated Drill Rod Handling
- Drilling automation and visual control
- Remote control
- State-of-the-art hydraulic system
- Sufficient air supply and onboard water pump
- Easy transport and quick setup with autolevel function

Downtime is minimized through

- GM Weight-on-bit control
- Reliable components
- Preventive digital maintenance program





Geomachine's goal is to change the role of the operator from a driller to a process controller.

From a driller to a process controller

With GM2000 the drilling process is automated. Drilling value monitoring keeps the driller constantly aware of the critical drilling parameters – even when the work takes place several hundred meters below the surface.

GM2000 is operated using a CAN-bus control system. The system enables automated drilling with the GM Weight-on-Bit (WoB) control. The WoB keeps the drill bit pressure against the ground at predefined target level, optimizing the drilling speed and minimizing wear and damage to the bit. All the operations can be controlled and adjusted with a remote control.



GM2000 brings the measurement technology used in ground investigations to well drilling

With GMTracker, drilling parameters and rig performance are constantly monitored and data is stored in a cloud service for later analysis. The operator can report their own observations and drilling progress. Information across multiple sites can be analyzed enabling continuous learning and performance improvement.

GMTracker monitoring include e.g.:

- Weight on bit
- Feed and rotation speed
- Feed / lifting force
- Torque
- Air valve position
- Fuel consumption
- Water pump pressure

Note: Air pressure, air volume and compressor fuel consumption can also be logged in case Geomachine air compressor units are being used.



- Increases productivity
- Prevents breakdowns
- Reduces parts wear
- Brings down operational costs





60 ton lifting capacity

The drill mast is designed to provide the required lifting force to move the heavy drilling equipment rapidly and accurately. The rig penetrates fast, even in hard Scandinavian granite - thanks to DTH drilling technology.

Lifting capacity	60 ton
Feed force	20 ton
Movement speed of the rotary unit	1 m/s
Rotary unit movement range	10.5 m
Mast vertical movement	-0.6 m... +0.4 m
Mast support legs	Hydraulic, 2 pcs with -0.5 m movement
Winch	2 tons

GM2000 is the first DTH drilling rig designed to drill 2.000-meter-deep geothermal wells.

Automated drill rod handling

The tilting rotary head is automated to work together with the feeding table loading and unloading the drill string. Opening and tightening of the rod connections are made easy with a hydraulic clamp and sliding rod holder. All operations are protected by a safety radar system. GM2000 tilting rotary head, together with the automated feeding table makes drilling safe, fast, and easy for the operator.

Rotary head maximum torque	14 kNm
Rotary head maximum RPM	100
Rotary head tilting	90° forward with 30 kNm torque
Opener to release hammer / drill bit	Hydraulic
Safety area radars	2-4 pcs
Maximum diameter of a casing pipe	406 mm
Drill rod length	9 m
DTH Hammer	6-12 inch
Drill rod diameter	89-140mm



GM2000 tilting rotary head together with the automated feeding table makes drilling safe, fast, and easy for the operator.

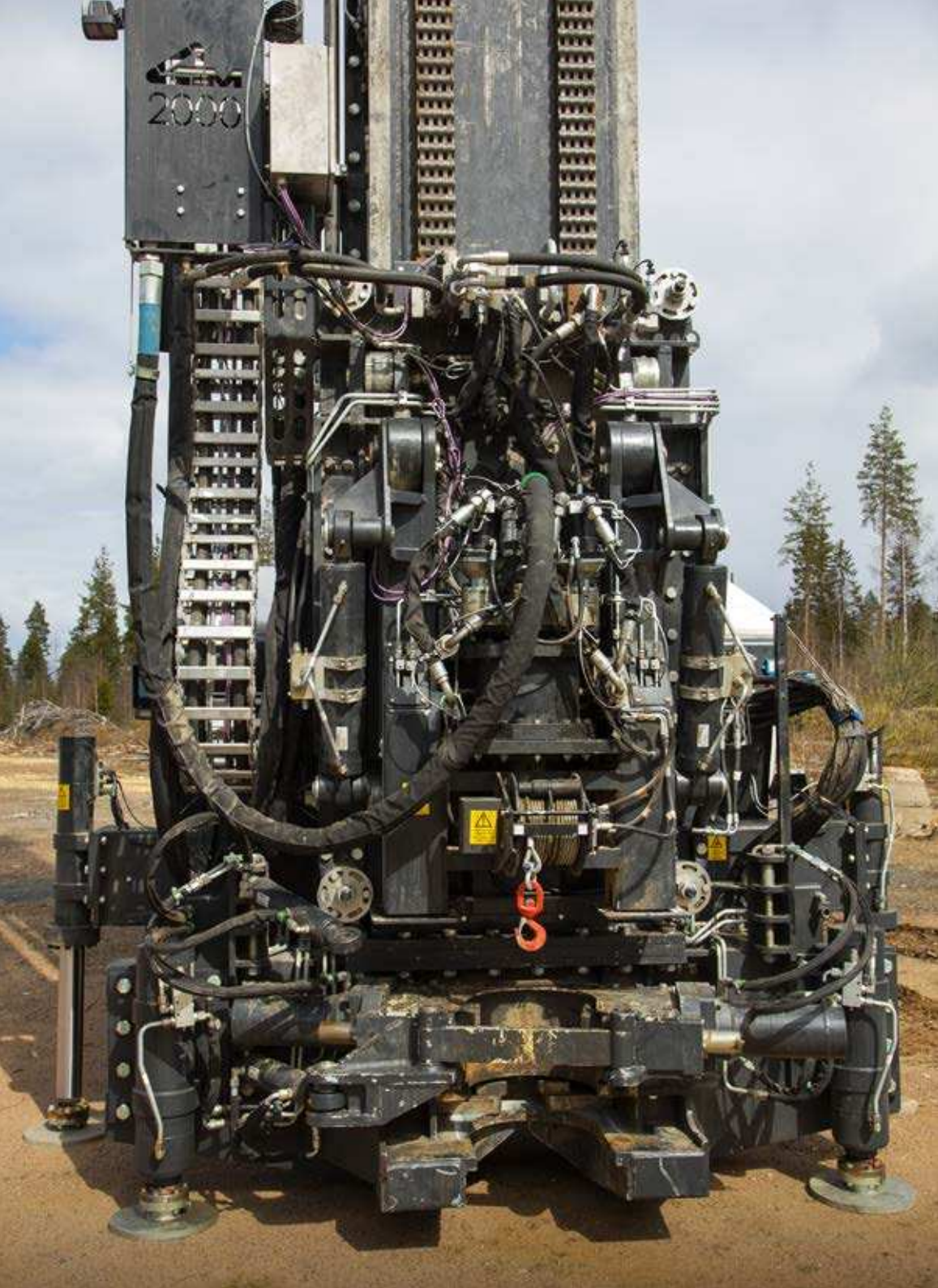


Easy to transport and fast to ramp up on site

Although GM2000 has the power to drill fast and go deep, it is small in size, easy to transport and fast to prepare for drilling.

GM2000 can also be equipped with an electric powerline.

Engine	Cummins B6.7 Stage V
Power	243 kW
Hydraulic system	Electric controlled, load sensing, 3 + 1 pumps
Oil flow	1200 l/min @ 1700 rpm
Max pressure	350 bar
Max driving speed	2,6 km/h
Hydraulic support legs	4 pcs
Hydraulic generator	Dynaset
Water pump	100 bar
Oiler	Automatic
Motor heater	Webasto
Weight	~42 tons
Length	15,2 m (in transport position)
Height	3,7 m (in transport position)
Width	3 m
Crawler track	600 mm x 3325 mm
Tractive force	225 kN
Ground clearance	350 mm



GM2000 is part of Geomachine's integrated geothermal product family

DTH Drilling

GM2000

Operating system
and IoT

GMair35
(2-3 pcs)

GMair80
Ariel

Air Compression

Geomachine Oy

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TAMPEREEN
KONEPAJAT

Geomachine is part of the Tampereen Konepajat Oy Group

GMair35

- GMair35 High Pressure Compressor is a 35 bar - 29 m³/min flow diesel-driven screw compressor designed for the conditions in the Nordic countries.
- Reliability has been the most important driver for the selected components in the compressor. The engine is Scania's 16-liter V8, and the screw is GHH Rand.
- The user interface is easy to use, special attention has been paid to usability and maintainability of the machine.
- Superior efficiency is achieved with hydraulic cooler fans with automatically adjusting speeds.
- The quiet running sound enables the use of compressor in densely populated areas.
- New options include upward direction of the radiator exhaust air, an additional compressed air tank, air cooling and drying system, and a remote control.
- Geomachine's data logger enables data collection and process monitoring remotely.

DIMENSIONS

Height	2.4 m
Width	2.5 m (frame 2.4 m)
Length	3.95 m / 4.2 m (with air guide)
Weight (dry)	7,5 t

ENGINE

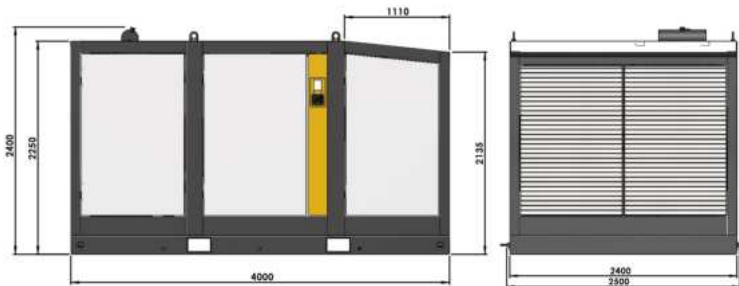
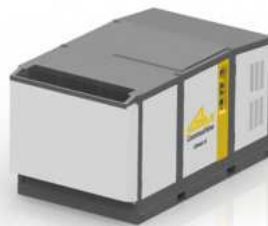
Manufacturer	Scania
Model	DC 16 317A (01-51C)
Max. power	478 kW
Emission class	Stage V
Fuel tank	1000 liters
DEF (Adblue) tank	70 liters

SCREW COMPRESSOR

Manufacturer	GHH-RAND
Model	CF1000H
Max. pressure	35 bar
Max. flow	29 m ³

OPTIONS

Engine heater	Webasto Thermopro 90 (9 kW)
Air cooling	●
Compressed air drying unit	●
Additional tank for compressed air	●
Remote control	●
Upward direction of exhaust air	●



THE GROUND
BREAKER

GMair35



Inspired by the Ice Age

Geomachine is designed for the most challenging conditions in the world. Since it can even drill into soil shaped by the Ice Age, we dare to promise it will work anywhere.

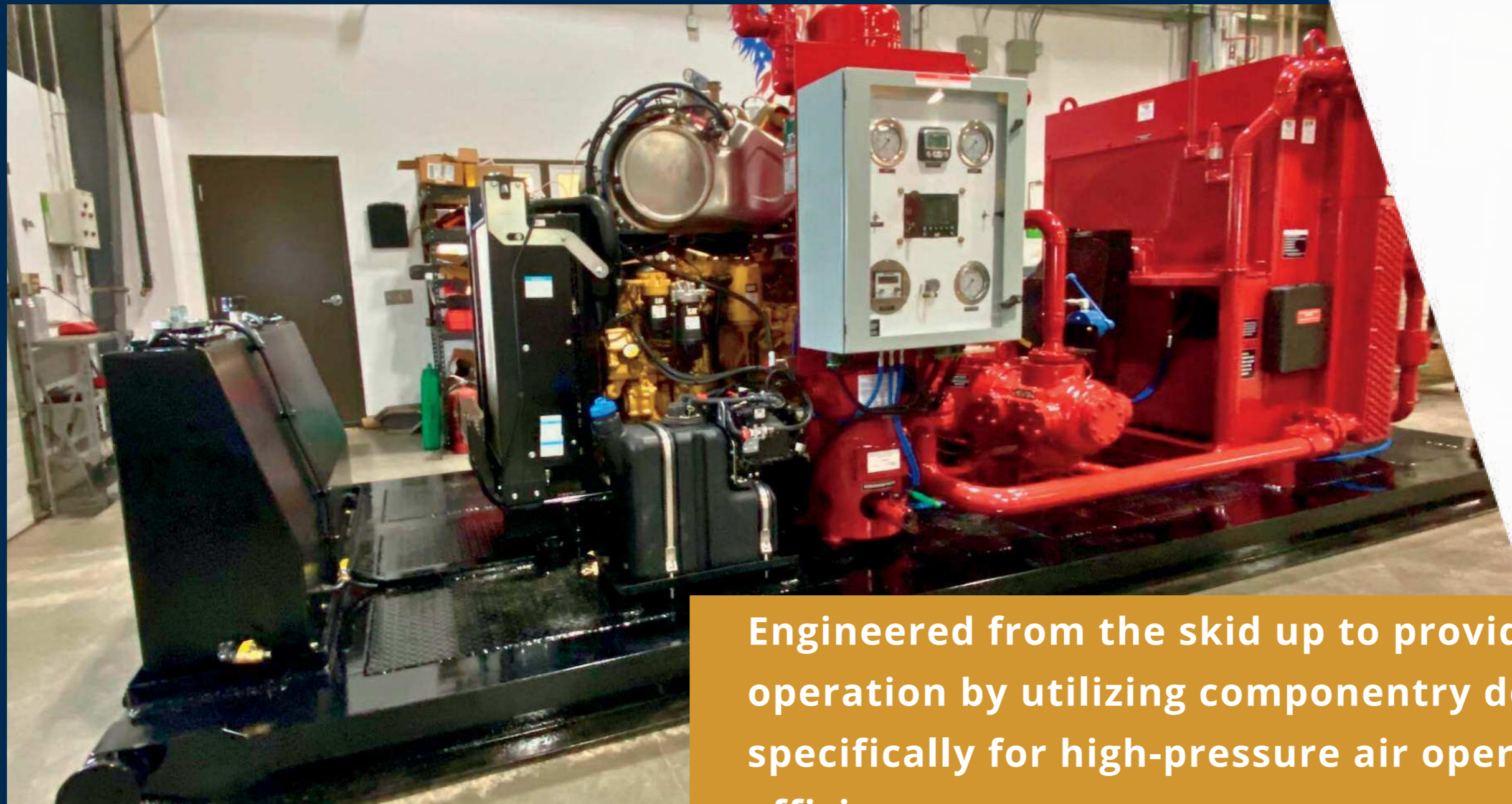


KEYSTONE ARIEL SINGLE-STAGE AIR BOOSTER^{CE}



A TRUSTED PARTNER

KEYSTONE ARIEL SINGLE-STAGE AIR BOOSTER



Engineered from the skid up to provide continuous duty operation by utilizing componentry designed specifically for high-pressure air operation and efficiency.

CATERPILLAR C7.1 EU STAGE V



- C7.1 ACERT EU STAGE V
- SPEED RATED(RPM) 1800
- BHP at Rated Speed 186kW (250bhp)
- FUEL/COOLING DIESEL/WATER

CATERPILLAR POWERED

CONSERVATIVE HORSEPOWER RATING

ARIEL JGQ-2 SINGLE-STAGE



- ARIEL JGQ-2
- SINGLE - STAGE HORIZONTAL OPPOSED
- RPM - 1800
- DOUBLE ACTING/JG
- STROKE 76.2mm

ARIEL 85.7MM (3.375")

Specifications on Keystone Ariel 85.7mm (3.375") Single-Stage Air Booster - Heavy Duty Skid

Booster	
Make	Ariel
Frame	JGQ-2
Type	Single Stage Horizontally Opposed
RPM (Maximum)	1800
Stroke - mm (in)	76.2 (3)

Left Cylinder (Throw #2)	
Cylinder Bore - mm (in)	85.7 (3.375)
Style	Double Acting / JG
MAWP - bar (psi)	88 (1270)
Cooling	Air

Right Cylinder (Throw #1)	
Cylinder Bore - mm (in)	85.7 (3.375)
Style	Double Acting / JG
MAWP - bar (psi)	88 (1270)
Cooling	Air

Coolers	
Construction	Steel Tube and Fin
Precooler MAWP - bar (psi)	47 (675)
Aftercooler MAWP - bar (psi)	88 (1270)
CE/PED Certified	
ASME Code Stamp and National Board Registered	

Scrubber Bottle	
Rated MAWP - bar (psi)	41 (600)
CE/PED Certified	
ASME Code Stamp and National Board Registered	

Engine	
Make	Caterpillar
Model	C7.1 ACERT EU Stage V
Speed Rated (rpm)	1800
Speed Idle (rpm)	1000
BHP @ Rated Speed - kW (bhp)	186 (250)
Fuel/Cooling	Diesel/Water
Electrical System (volts)	24
Fuel Tank (Day or Fuel)	Fuel Tank
Capacity - L (gal)	322 (85)
Starting System	Electric, 24V

Heavy Duty Skid Details	
(4) 203mm (8") Wide Flange Beams	
Cross Braced/Reinforced	
Top Plated - 3mm (1/8") Material	
Bottom Plated - 6mm (1/4") Material	

Approximate Unit Dimensions	
Overall Length - mm (in)	6248 (246)
Overall Width - mm (in)	2426 (95.5)
Overall Height - mm (in)	2286 (90)
Weight, Working - kg (lbs)	8165 (18000)

Miscellaneous	
Inlet Piping Size, NPT - mm (in)	51 (2)
Number of Piping Inlets	2
Disch. Piping Size, NPT- mm (in)	51 (2)
Number of Piping Outlets	1
Final Safety Relief Valve Set Pressure - bar (psi)	86 (1250)
(Booster M.A.W.P.)	

Unit Includes the Following Safety Shutdowns and Gauges:	
Booster Shutdowns	Engine Shutdowns
High Discharge Temp, Each Cyl. - 160°C (320°F)	Caterpillar ECM with Standard Shutdowns
High Oil Temperature Shutdown - 88°C (190°F)	
Low Oil Pressure Shutdown - 3.1 bar (45 psi)	
Low Oil Level / No Oil Flow Shutdown	
Booster Vibration Shutdown	
Manual Liquid Drain on Scrubber Bottle	



Booster Gauges
Suction Pressure
Discharge Pressure
Booster Oil Pressure
Booster Oil Temperature
Suction Temperature
Discharge Temperature* (Each Cylinder)
* Temperatures Displayed on Temp Scanner

Engine Gauges *
Voltmeter
Tachometer/Hour Meter
Engine Oil Pressure
Engine Water Temperature
* Displayed on Caterpillar Panel

Additional Comments
Booster Bypass Piping Included
All Piping Is 100% Hydrotested
Booster Oil Cooler and Thermostatic Valve Included
Manual Vent to Atmosphere Valve

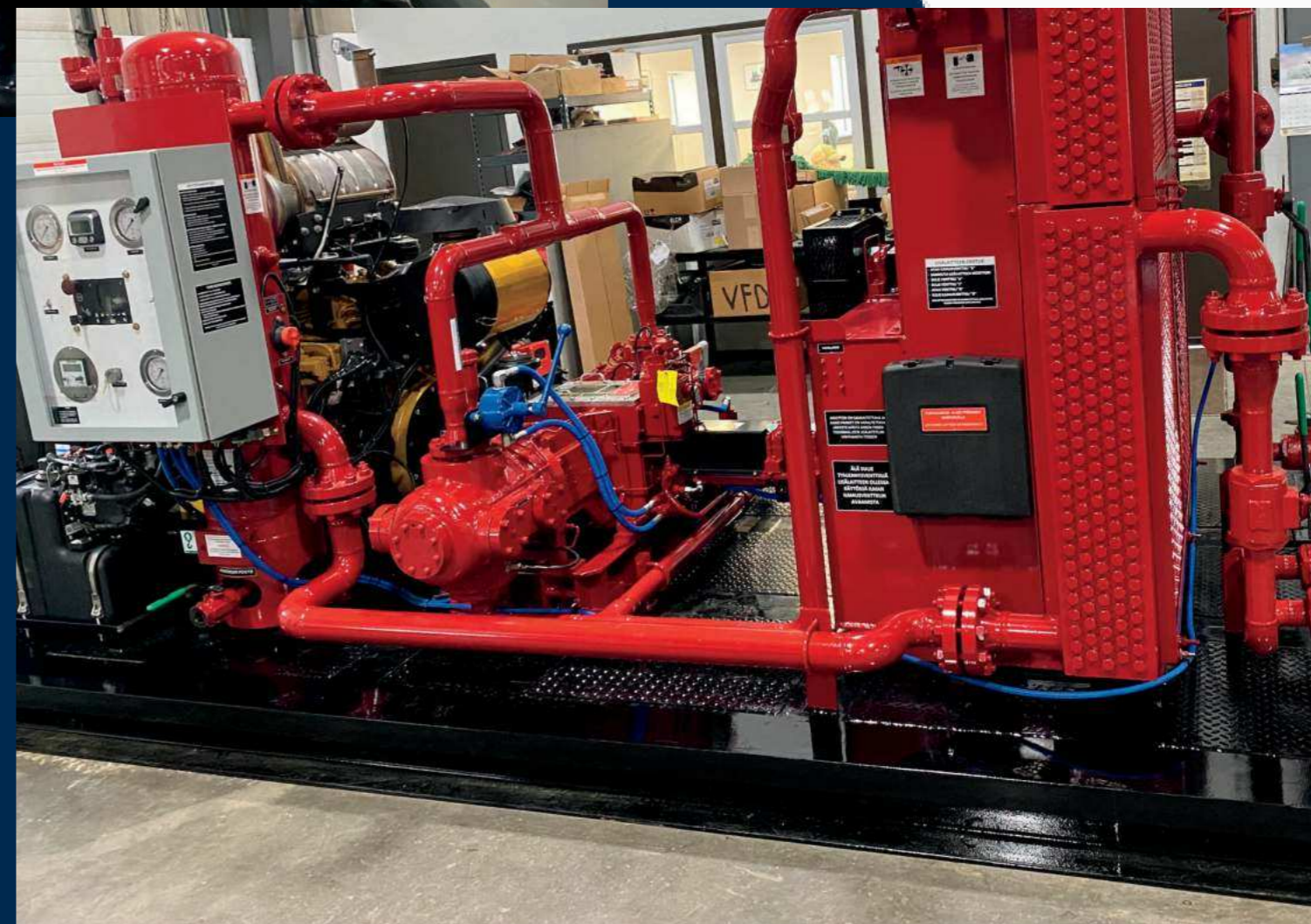
Performance of Keystone Ariel 85.7mm (3.375") x 85.7mm (3.375") Air Booster				
Engine RPM	Booster RPM	Suction Pressure	Disch. Pressure	Flow
1800	1800	31 bar (450 psi)	55 bar (800 psi)	74 m ³ /m (2853 cfm)
1800	1800	31 bar (450 psi)	62 bar (900 psi)	71 m ³ /m (2516 cfm)
1800	1800	31 bar (450 psi)	69 bar (1000 psi)	69 m ³ /m (2427 cfm)
1800	1800	31 bar (450 psi)	76 bar (1100 psi)	66 m ³ /m (2339 cfm)

Booster Rated Discharge Pressure (RDP) = 79 bar (1,150 psi)



EFFICIENT COOLING SYSTEM:

Advanced cooling mechanisms maintain optimal operating temperatures during prolonged use, preventing overheating, and ensuring consistent performance.





DIGITAL CONTROL PANEL:

User-friendly digital control panel for easy monitoring of equipment parameters, allowing precise adjustments and enhancing overall control.

SAFETY FEATURES:



- Final safety relief valve set
- Manual Vent to atmosphere
- Caterpillar ECM standard shutdown



Integrated safety mechanisms, such as pressure relief valves and automatic shut-off, prevent over-pressurization and enhance user safety.

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A TRUSTED PARTNER

Off-Road Exploration Drill Rig

Geomachine's GM200GL is the right choice for exploration drilling at sites with difficult access. The rig's specially designed boom makes it the best tool both for ore sampling from rock surface as well as diamond coring in several hundred meters deep.

GM200GL

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 Geomachine

Goes where the others don't

What makes GM200GL so superior is its versatility, off-road capability and usability. The rig performs flawlessly in varying soil and difficult terrain conditions and reaches the places that no other rig can. Rig is designed to make the explorer's work easier, safer and more productive.

Versatility

GM200GL's exploration boom has a dual drill table, allowing quick and easy switch between drilling methods. The correct rotation unit configuration is selected based on used equipment and the target drilling depths. Chuck's maximum diameter of 77,5 mm enables drilling with various equipment. With an extension boom also wireline equipment can be used.

Safety and comfort

Rig has a working platform and rod magazine which enable easy operations in different boom angles. Advanced safety features make working fluent and safe.

Emission-free

When a drilling rig is equipped with a hybrid unit, its power source can be changed from diesel engine to electric motor and majority of rig's operations can be completed without emissions.





Double Drill Table Features

	Left	Right
Rotation unit	V500 / V700	V900
Rotation speed	V500: 0-90 rpm, V700: 0-70 / 0-35 rpm	0-1900 / 0-600 rpm
Max Torque	V500: 2800 Nm, V700: 3250 / 6200 Nm	240 / 740 Nm
Equipment	Soosan SQ35 hammer V700 option Doofoor 550	Hydraulic chuck, max diameter 77,5 mm
Options	Different adapters and water hose connections based on used equipment	Epiroc U4, SPT/DSPT Unit, CPTu equipment, Field vane test equipment, GM V800 T56

Exploration Boom Specs

BOOM PERFORMANCE	
Feed type	Direct cylinder feed
Feed length	3500 mm
Lifting capacity	14 ton
Feedforce	9 ton
Movement speed	0,2 m/s down, 0,15 m/s up
Mast vertical displacement	1500 mm
Mast Tilting	10 degrees front and side ways
Rod locks	Hydraulic opener, roll lifter
Min. Hydraulic Oil flow	200 l/min
Min. Hydraulic pressure	200 bar
Weight (depends on configuration)	2000 kg
BOOM OPTIONS	
Mast winch	Electrical, 363 kg
Light rod opener	●
Galge	●
Roll lifter	●
Wireline winch	●
Boom extension	●

Carriage Specs

MAIN DIMENSIONS

Weight	ca. 10 ton
Length	610 cm
Width	240 cm
Height	265 cm
Ground clearance	480 mm

POWER PACK AND HYDRAULICS

Engine type	Cummins
Engine power	140 kW
Fuel tank	200 litres
Hydraulic pumps	2 pcs (load sensitive)
Hydraulic tank	280 litres

TRACKS

Tracks	400 mm rubber belts with steel profiles
Driving motors	2 pcs
Wheels	8 pcs (2 track pairs)
Tensioning	Hydraulic
Travelling speed	0-6 km/h

STANDARD EQUIPMENT

Compressor	5,0 m3 / 7 Bar
Waterpump	90 Bar / 60-142 L/min
Winch	Hydraulic (8160/13600 kg)
Motor heater	Electric 220 V & Eberspächer
Rod magazine	Hydraulic
Warning and working lights	Led
Manual flushing valve with flow and pressure meter	●
Tool cabinets	All with locks
Bulldozer blade, Vise, Hitch, Fire extinguisher	●
Electricity outlets	2X24 V

OPTIONS TO CARRIAGE

Hybrid readiness	●
Hybrid	400 V
Extra battery pack	121 kWh
Generator	220 V
Hydraulic grinder	Dynaset
Spray rinse system	●
Hydraulic outlet	●
Fuel pump	●
Electric valve for flushing air and water	●
Additional rod magazine on bulldozer blade	●
Additional box for inner rods (1m)	●
Hydraulic waterhose reel	●
Heated waterpump cabin	●
Working Platforms with safety cage	●
Rubber tracks	400 mm wide



Intelligence that makes difference

In exploration drilling, information is the product.

Geomachine's GMTracker data-logger informs the explorer of the machine and site characteristics and stores the drilling data in the GMCloud service for later analysis.

In addition to being a data storage, the GMCloud is also helpful in work planning. It allows the necessary sampling coordinates to be transferred directly to the drill rig, making it easy to navigate the machine to the desired site.

Drilling methods, automation and IOT

INVESTIGATION METHODS	
Core sampling in rock	Equipment with OD smaller than 77 mm
Casing drilling	Through demanding ground
Sampling (SU, NI, NE)	Sampling in deep soil layers
Percussion drilling (PO)	Demanding applications
Groundwater standpipe (VP)	Demanding ground formations
DTH Drilling (DTH)	With DTH equipment
Static (dynamic) penetration test; SPT and DSPT (HP)	With attachment
CONTROL SYSTEM AND DATA MANAGEMENT	
Control system	IQAN
Remote operation	Scanreco
Automation	Automated drilling programs, Mast automatic erection
Safety mode	Secure operation mode for rod handling
Datalogging	GM Tracker with needed sensing as standard, support for EURO code methods
Cloud service	Integrated inspection data, fleet maintenance and workflow management





Contact us!

We would be more than happy to provide you with more information on our products, services, and innovations. Our complete contact information can be found at www.geomachine.fi.

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THE GROUNDBREAKER

Ground investigation drill rigs



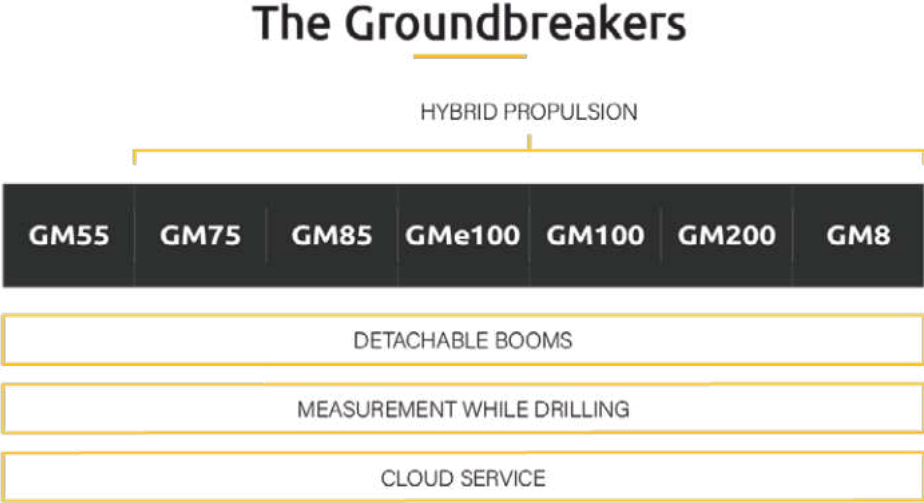
Technical Specifications

1/2024

 **Geomachine**

GROUND INVESTIGATION DRILL RIGS

- Our geotechnical drill rig range is the largest on the market. The smallest rig in the fleet, the two- tonne GM50, can be transported on a car trailer. At the other extreme, the eight-wheeled flagship model GM8 is a mammoth that can traverse even the most difficult terrain with low ground pressure.
- Our intelligent geotechnical drill rigs come with an electronic control system and the GMTracker data-logging software that allows the soil investigation and rig operating data to be uploaded to a cloud service for further use and analysis.
- The rigs are modular and can be configured with a boom and drilling accessories to suit the needs of individual users. The booms can also be installed on carriages other than Geomachine ones if they have the necessary hydraulics.
- Geotechnical drill rigs can be fitted with an optional electric power pack for emission-free and silent drilling.



CONTROL SYSTEM AND DATA LOGGING

GM drill rigs are controlled by CAN BUS control system. GMTracker data-logging software collects all process and machine data. The data can be uploaded to GM cloud service for further use and analysis.

CONTROL SYSTEM AND DATA MANAGEMENT

Control system	IQAN
Remote operation	Scanreco
Automation	Automated drilling programs, mast automatic erection.
Safety mode	Secure operation mode for rod handling.
Datalogging	GMTracker with needed sensing as standard, support for EURO code methods (Rufco, Envi, and Geotech as options*).
CPTu system	Geotech acoustic system available to work with GMTracker.
DGPS	GMTracker has inbuilt GPS system to help in navigation to the investigation points. As an option an accurate (3 cm) DGPS system is available to automate the accurate coordinates management with rig.
Cloud service	Integrated inspection data, fleet maintenance and workflow management.



INVESTIGATION METHODS

We manufacture multipurpose drill rigs. All major eurocode ground investigation methods can be completed with our rigs.

RIG MODEL	GM55	GM75	GM85	GMe100	GM8	GM100	GM200
INVESTIGATION METHOD SUPPORT							
Installation groundwater standpipes (VP)	X	X	X	X	X	X	X
Sampling	X	X	X	X	X	X	X
Dynamic probing (HE)	X	X	X	X	X	X	X
Weight sounding (PA)	X	X	X	X	X	X	X
Percussion drilling (PO)	Openings	X	X	X	X	X	X
Casing drilling		X	X	X	X	X	X
Static (dynamic) penetration testing; SPT and DSPT (HP)	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment
Piezocene penetration testing; CPT and CPT-u (CU)	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment
DTH Drilling (DTH)		-	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment
Core sampling in rock		-	With needed equipment	With needed equipment	With needed equipment	With needed equipment	With needed equipment

CARRIAGE SPECIFICATIONS

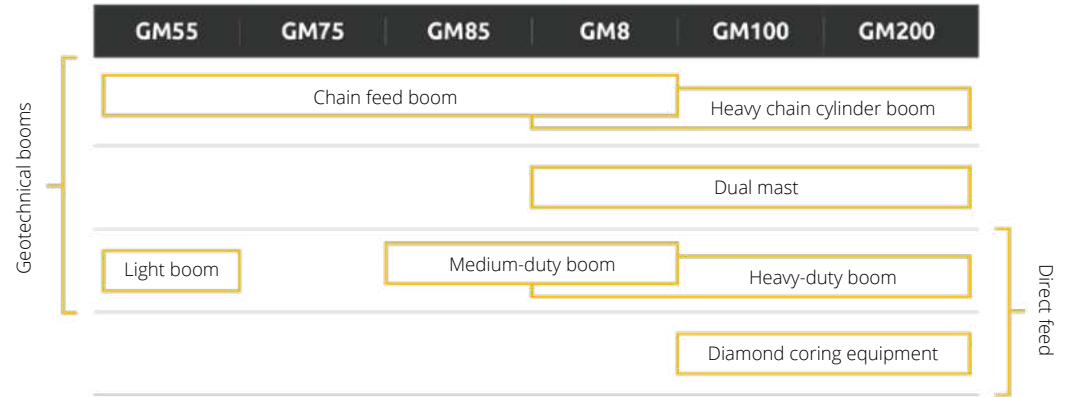
Bigger rigs provide more power and functionality.
Unfortunately they also come in a bigger package.

RIG MODEL	GM55	GM75	GM85	GMe100	GM8	GM100	GM200
MAIN DIMENSIONS							
Weight (based on options)	c. 2 ton	c. 4,5 ton	c. 5,5 ton	c. 10 ton	c. 9 ton	c. 8 ton	c. 10 ton
Length	270 cm	400 cm	430 cm	685 cm	685 cm	580 cm	610 cm
Width	130 cm	186 cm	210 cm	215 cm	215 cm	210 cm	240 cm
Height	176,5 cm	212 cm	225 cm	230 cm	230 cm	250 cm	265 cm
Ground clearance	280 mm	330 mm	400 mm	440 mm	700 mm	480 mm	480 mm
POWER PACK AND HYDRAULICS							
Engine type	TBD	Perkins	Cummins	Electric	Cummins	Cummins	Cummins
Engine power	55 kW	100 kW	129 kW	60 kW + 38 kW (nominal)	140 kW	129 kW	119 kW
Fuel tank	50 litres	120 litres	210 litres	N/A	340 litres	200 litres	200 litres
Hydraulic pumps	1 pcs	2 pcs (load sensing)	2 pcs (load sensing)	1 pcs (load sensing)	2 pcs (load sensing)	2 pcs (load sensing)	2 pcs (load sensing)
Hydraulic tank	50 litres	120 litres	300 litres	340 litres	340 litres	280 litres	280 litres
TRACKS							
Tracks	Rubber belts with steel profiles	Rubber belts with steel profiles	Rubber belts with steel profiles	Rubber belts with steel profiles	8 wheels, no tracks	Rubber belts with steel profiles	Rubber belts with steel profiles
Driving motors	2 pcs	2 pcs	2 pcs	2 pcs	8 pcs	2 pcs	2 pcs
Tensioning	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Travelling speed	0-4 km/h	0-5 km/h	0-5 km/h	0-5 km/h	0-5 km/h	0-6 km/h	0-6 km/h

RIG MODEL	GM55	GM75	GM85	GMe100	GM8	GM100	GM200
STANDARD EQUIPMENT							
Compressor	-	2,5 m3 / 7 Bar	5,0 m3 / 7 bar	2,5/5,0 m3 - 7 bar	5,0 m3 / 7 bar	5,0 m3 / 7 bar	5,0 m3 / 7 bar
Waterpump	50 bar / 50 l/min	50 bar / 50 l/min	90 bar / 60-142 l/min	90 bar / 60-142 l/min	90 bar / 60-142 l/min	90 bar / 60-142 l/min	90 bar / 60-142 l/min
Winch	Electric	Hydraulic (6800 kg)	Hydraulic (6800 kg)	Hydraulic (8160 kg)	Hydraulic (9000 kg)	Hydraulic (8160/13600 kg)	Hydraulic (8160/13600 kg)
Motor heater	Electric 220 V	Electric 220 V & Eberspächer	Electric 220 V & Eberspächer	N/A	Electric 220 V & Eberspächer	Electric 220 V & Eberspächer	Electric 220 V & Eberspächer
Rod magazine	Rigid rod case	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Warning and working lights	Led	Led	Led	Led	Led	Led	Led
Manual flushing valve with flow and pressure meter	-	X	X	X	X	X	X
Tool cabinets	All with locks	All with locks	All with locks, 1 with heating	All with locks	All with locks, 2 with heating	All with locks, 3 with heating option	All with locks
Bulldozer blade, Vise, Hitch, Fire extinguisher	X	X	X	X	X	X	X
Electricity outlets	2x12 V	2x12 V	2x24 V	12 V, 24 V, 220 V	12 V, 24 V	2x24 V	2x24 V
OPTIONS TO CARRIAGE							
Hybrid readiness		X	X	N/A	X	X	X
Hybrid		400 V 63 a	400 V 63 a	N/A	400 V 63 a	400 V 63 a	400 V 63 a
Extra battery pack		121 kWh	121 kWh	121 kWh	121 kWh	121 kWh	121 kWh
Generator					220 V, Dynaset	220 V, Dynaset	220 V, Dynaset
Hydraulic grinder	Dynaset	Dynaset	Dynaset	Dynaset	Dynaset	Dynaset	Dynaset
Spray rinse system		X	X	X	X	X	X
Hydraulic outlet		X	X	X	X	X	X
Fuel pump	X	X	X	X	X	X	X
Electric valve for flushing air and water		X	X	X	X	X	X
Additional rod magazine on bulldozer blade		X	X	X	X	X	X
Additional box for inner rods (1m)		X	X	X	X	X	X
Hydraulic waterhose reel		X	X	X	X	X	X
Heated waterpump cabin		-	X	X	X	X	X
Working Platforms with safety cage		-					X
Rubber tracks		300 mm wide	300 mm wide	400 mm wide		400 mm wide	400 mm wide

BOOM SPECIFICATIONS

Due to the configurability of our drill rigs right boom can be chosen to right carriage based on customers drilling needs



BOOM TYPE	LIGHT	CHAIN CYLINDER	MEDIUM DUTY	HEAVY DUTY	HEAVY CHAIN CYLINDER	EXPLORATION	DUAL MAST	
BOOM PERFORMANCE								
Feed type	Direct cylinder feed	Chain cylinder Feed	Direct cylinder feed	Direct cylinder feed	Chain cylinder feed	Direct cylinder feed	Direct cylinder feed	Chain cylinder feed
Feed length	1400 / 2200 mm	2400 mm	2400 / 2700 mm	2700 mm (3500 mm as an option)	2400 mm	3500 mm	1200 mm	2400 mm
Lifting capacity	6 ton	7 ton	10 ton	14 ton	10 ton	14 ton	16 ton	8 ton
Feedforce	4 ton	5 ton	7 ton	9 ton	7 ton	9 ton	20 ton	10 ton
Movement speed	0,3 m/s	0,4 m/s down, 0,3 m/s up	0,25 m/s down, 0,2 m/s up	0,2 m/s down, 0,15 m/s up	0,3 m/s down, 0,25 m/s up	0,2 m/s down, 0,15 m/s up	0,2 m/s down, 0,25m/s up	0,4 m/s down, 0,5 m/s up
Mast vertical displacement	500 mm	600 mm	900 mm	1500 mm	1100 mm	1500 mm	600 mm	
Mast Tilting	10 degrees front and side ways	10 degrees front and side ways	10 degrees front and side ways	10 degrees front and side ways	10 degrees front and side ways	10 degrees front and side ways	10 degrees front and side ways	
Rod locks	Hydraulic rod lock	Hydraulic double rod lock, upper one with opener	Hydraulic double rod lock, upper one with opener	Hydraulic double rod lock, upper one with opener	Hydraulic double rod lock, upper one with opener	Hydraulic opener, roll lifter	Hydraulic	Hydraulic double rod lock, upper one with opener
Anchoring	Option	Option	Option	Option	Option	-	Option	
BOOM OPTIONS								
Drill table	Single	V300	V300 / V700	V700	V700	V900	-	V300
Electric safety radar	X	X	X	X	X	X		X
Mast winch	Electrical, 363 kg	Electrical, 363 kg	Electrical, 363 kg	Electrical, 363 kg	Electrical, 363 kg	Electrical, 363 kg	Electrical, 363 kg	
Light rod opener	X	X	X	X	X	X		X
Galge		X	X	X	X	X		X
Aluminium boom extension	X		X	X				
Roll lifter						X		
Wireline winch						X		
Boom extension						X		

DRILL TABLES

GM rigs have double drill table that is configured according to investigation and drilling needs

TABLE TYPE	Single		V300		V500/700 Large		V900	
	Center	Left	Right	Left	Right	Left	Right	
Rotation unit	V300	V300	V300	V500 / V700	V500	V500 / V700	V900	
Rotation speed	0-80 rpm	0-80 rpm	0-80 rpm	V500: 0-90 rpm, V700: 0-70 / 0-35 rpm	0-90 rpm	V500: 0-90 rpm, V700: 0-70 / 0-35 rpm	0-1900 / 0-600 rpm	
Max Torque	1900 Nm	1900 Nm	1900 Nm	V500: 2800 Nm, V700: 3250 / 6200 Nm	2800 Nm	V500: 2800 Nm, V700: 3250 / 6200 Nm	240 / 740 Nm	
Equipment	Lifton LH180 hammer, Hydraulic chuck 32-55 mm /19-45 mm above table	Hydraulic chuck 32-55 mm /19-45 mm above table	Soosan SQ30 Hammer	Soosan SQ35 hammer V700 option Doofoor 550	Hydraulic chuck 32-55 mm /19-45 mm below table	Soosan SQ35 hammer V700 option Doofoor 550	Hydraulic chuck, max diameter 77,5 mm	
Floating table	Standard	Standard	-	-	Option	-	-	
Options	SPT / DSPT Unit, CPTu equipment, Field vane testing equipment, Different adapters and water hose connec- tions based on used equipment	SPT/DSPT Unit, CPTu equipment, Field vane test equipment, GM V800 T56	Different adapters and water hose connec- tions based on used equipment	Different adapters and water hose connec- tions based on used equipment	SPT/DSPT Unit, CPTu equipment, Field vane test equipment, GM V800 T56	Different adapters and water hose connec- tions based on used equipment	Epiroc U4, SPT/DSPT Unit, CPTu equipment, Field vane test equip- ment, GM V800 T56	