



FACT SHEET

**Comacchio
Sonic GEO 601**

**SONIC AND ROTARY
CORE COMBINATION
DRILL RIG**

Achieve excellent core recovery
in soft overburden materials

LEVEL 1 - B-BBEE

www.geogroup.co.za





GEOMECH AFRICA



GEOMECHANICS

Why Sonic?

The sonic rig bores 2-3 times faster (depending on soil conditions) while only introducing a limited amount of fluid for the casing to advance. As a result, sonic drilling can be employed in many applications including geotechnical, geothermal, environmental investigations, and mineral exploration.

The Comacchio GEO 601

The GEO 601 is a uniquely designed, **sonic and rotary core combination drill rig**. It is a specialist drill rig, equipped with both a Tone Sonic drill head (Sp8000) with proven reliability and a standard hydraulic high-speed rotary core drill head (R1000HS) gives the user the best of both worlds. The rig is also fitted with a hydraulic trip hammer for conducting SPT's.

The reason for the two drill heads is to allow the operator to achieve excellent core recovery in soft overburden materials while maintaining the advantage of being able to conduct conventional or wireline rotary core drilling efficiently and competitively priced, with the same drill rig.



How Sonic Works

Sonic drilling can be employed in virtually any application where good core recovery is a requirement in softer ground.

These include use in geotechnical and geothermal projects, in loose alluvial or soft clays and silts, environmental investigations and mineral exploration for grade control in mineral sands.

The Sonic drill head works by sending high frequency resonant vibrations down the drill string to the drill bit, while the operator controls these frequencies to suit the specific conditions of the prevailing geology.

SONIC GEO 601 GEOTECHNICAL & EXPLORATION DRILLING

Benefits of Sonic Drilling

Sonic drilling technology offers several distinct advantages over conventional drilling in overburden ground conditions:

Superior Information

Sonic drilling provides a continuous, relatively undisturbed core sample of unparalleled quality and accuracy through any type of formation. When using the Iso-Flow groundwater profiling system, hydrogeological and geochemical data can be easily obtained.

Waste Reduction

Sonic drilling reduces waste by up to 80% relative to conventional methods by other competitors.

Increased Speed

Sonic drilling is two to three times faster than conventional overburden drilling methods when sampling in sands and soils.

Superior Well Construction

Sonic drilling causes minimal disturbance to the surrounding bore hole wall, resulting in more efficient well development and performance.

Risk Minimisation

Sonic drilling greatly reduces the risk of project failure due to unknown or difficult subsurface conditions. Projects finish on time and on budget. Sonic drilling obtains the lowest total project cost possible.

Flexibility

Sonic drilling advances a temporary outer casing as the borehole is drilled, allowing you to do more within a single borehole.

The sonic vibration, which is developed in the sonic head by high revolution hydraulic motors, fluidises the soil particles at the bit face, allowing for fast and easy penetration through most geological formations.

An internal air spring isolates these vibrational forces from the rest of the drill rig. By providing the necessary rotational and vibrational forces, the sonic rig can core and case holes in any overburden material, drilling where most other rigs can't.

Geomech Africa(Pty) Ltd, has a Level 1 B-BBEE rating and a 6CE CIDB rating



GeoGroup Companies



The GeoGroup comprises of a group of companies, each a leader in it's own field, that provide a range of services to the Geotechnical, Civil, Exploration, and Mining industries.



The GeoGroup

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Technical Specifications

Undercarriage

- Wheel base 1.900 mm / 6.2 ft
- Max width: 1.600-2.300 mm / 5,2-7,6 ft
- Pad width: 300-400 mm / 11,8-15,7 ft
- Max. climbing ability: 36 %
- Max. Speed: 1,5km/h / 0.93 mph

Power Pack

- HIGH TECH LINE engine:
DEUTZ TCD 3.6 L04 (step 3B / TIER 4FINAL)
- HIGH TECH LINE engine power:
100 Kw (134 HP) 2.200 rpm
- Oil tank: 300 l / 79.2 gal
- Fuel tank: 130 l / 34.3 gal

Mast

- Feed stroke: 3.500 mm / 11.4 ft
- Total length: 5.250 mm / 17.2 ft
- Feed force: 4.500 daN / 10,116 lbs
- Retract force: 6.500 daN / 14.612 lbs

Clamps

- Clamping range:
 - o 45 – 225 mm / 1,7 – 8.9 in
 - o 45 – 260 mm / 1.7 – 10.2 in
 - o 45 – 325 mm / 1.7 – 12.8 in
- Clamping force: 180 KN / 40.465 lbs
- Breaking torque: 2.050 daNm / 15,120 lb * ft
- Weight: 9.000 - 10.000 kg / 19.500 - 22.000 lbs

Specifications	
ROTARY HEAD	R1000/R1000HS
GEARS	6
MAX TORQUE	630 - 1.100 daNm 4.644 - 8,113 lb*ft
MAX SPEED	210 - 980 rpm
HEAD PASSAGE	78mm / 3.0 in