

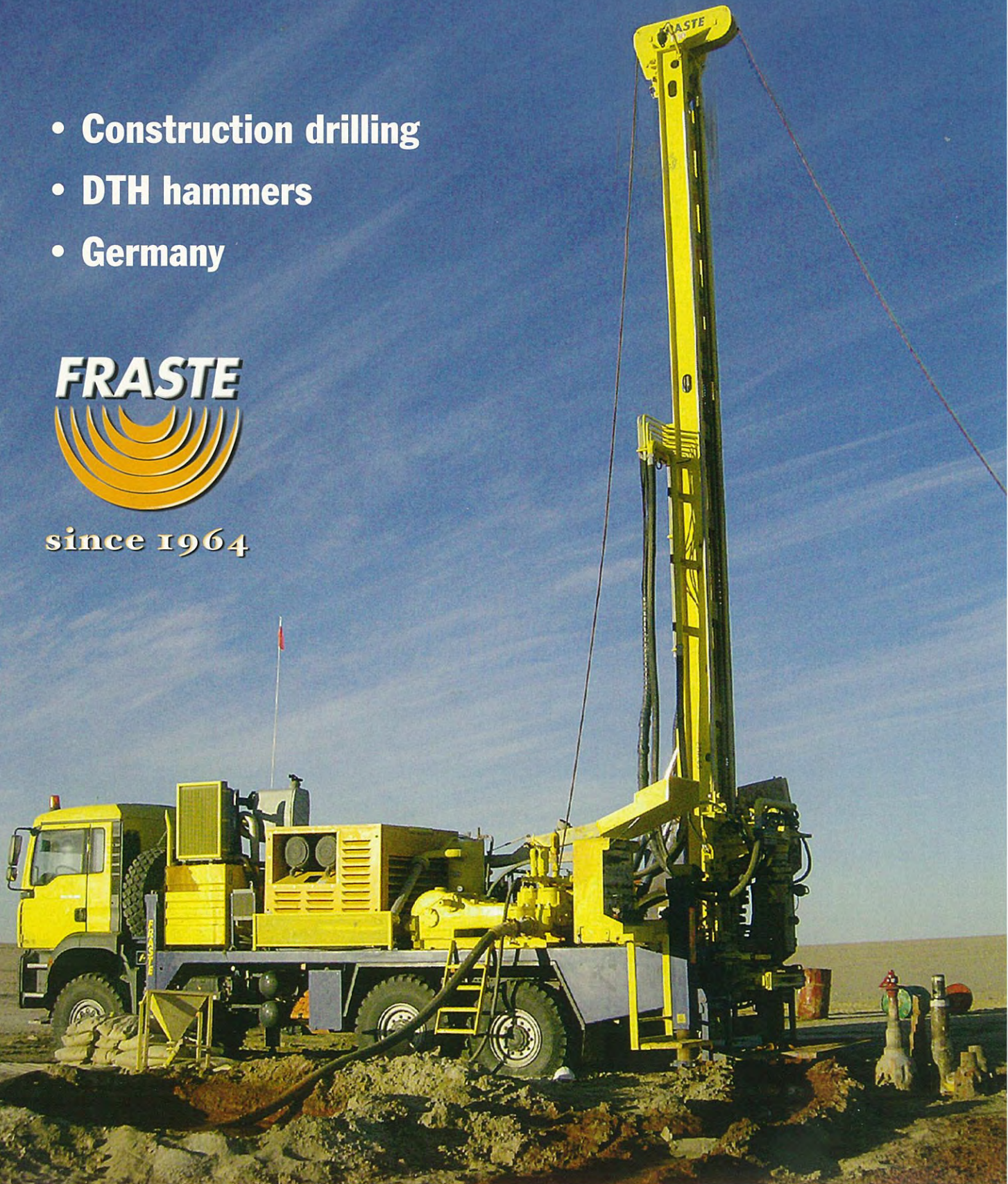
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Compact and versatile

Soilmec's SM-5 rig is a welcome addition to the small-diameter drilling rig market

The compact and versatile SM-5 hydraulic drilling rig from Soilmec is designed to meet the unique demands of the small-diameter drilling rig market. Manufactured at the Trevi Group's centre for the micro-drilling in Asolo, Italy, modularity and versatility are key concepts in the rig's design.

The SM-5 also features optimised mast articulation and a large range of rotary heads, making it suitable for a broad range of applications, including anchoring and tie-backs, micro-piles, jet grouting, coring, water-well drilling, tunnelling and radial soil consolidation.

Performance & specification

The SM-5 is a 5t class machine. Compact and versatile, it is designed for multiple applications relating to geotechnical

engineering, environmental and consolidation. Measuring just 2,181mm long by 1,600mm wide, the rig can be used in very confined spaces. Four ground stabilisers allow safe working even in the toughest soil conditions.

One of the main features of the SM-5 is the wide range of mast movements that it offers, making the machine one of the best in its class for convenience and flexibility.

The SM-5 features a new articulation design, including two slew rings. One is located on the lower frame to allow drilling over the side of the crawler. It offers rotation of +/-90° with respect to the rig's longitudinal axis. The second is located on the back of the mast and secures +/-180° rotation for radial drilling.

A telescopic zoom with a stroke of 400mm and four different mast lengths,



offering a 1,400mm, 1,900mm, 2,400mm and 3,400mm feed stroke, allow the rig to be used in low headroom spaces with complete flexibility. In addition, a hoist force of 51kN ensures the rig offers high performance and greater drilling depths.

The rig can be equipped with a hydraulic ▶

Railway work

The SM-5 and SM-5E rigs have been used in a number of railway infrastructure projects in Italy.

• Case study 1: Rome

Trevi used the new Soilmec SM-5E electric version at the new Mirti square underground station in Rome. The job consisted of radial consolidation drilling in a very confined space within a pre-existing tunnel, where there was heavy water leakage and a requirement for zero exhaust emissions.



• Case study 2: Arcisate

The Soilmec SM-5E is also in use in Arcisate to complete a double railway connection between Malpensa Airport and Lugano. The stacked, twin bore will reuse an existing 19th century tunnel, which measures 323m long and was one of the first to be built in Italy. Trevi is drilling rows of 114mm-diameter boreholes for grout injection, raking from vertical in the tunnel centre out to a 40° angle.

• Case study 3: Bologna

The SM-5 rig is also at work in Bologna at an extension of the railway station. The work consists of a series of piles of 300mm diameter, completed with sectional augers of 1,500mm length. The SM-5 has been equipped with a special 320mm-diameter clamp.





- ▶ clamp and breaker of 50-220mm diameter, with a maximum clamping force of 140kN and a top breaking torque of 3,000daNm. A wide range of rotary heads is available, from 690-970daNm torque and 98-860rpm drilling speed, to provide excellent productivity in every geological condition.

For operator comfort and safety, the SM-5 offers a remote control option in addition to hydraulic functions. The rig offers numerous safety features as well as easy access for maintenance, and is available in diesel and electric models.

The SM-5E maintains the same high performance and productivity of the diesel rig from which it is derived.

Powered by an ABB electric engine (four poles, 50Hz, 380/660V), the machine offers a maximum rated power of 75kW at 1,450rpm.

The SM-5 is particularly suited to the UK market as it is a multipurpose, versatile and compact machine for restricted access and reduced space sites. The machine comes complete with a powerful

"The SM-5 is particularly suited to the UK market as it is a multi-purpose, versatile and compact machine"

Soilmec delivers SM-5 to UK

In February, Soilmec delivered the first SM-5 into the UK to WJ Groundwater. In addition to the standard rig specification, the customer asked for the rig to be customised with a hydraulic casing extractor on the clamp.

Soilmec provided a 200mm stroke casing extractor, giving an extraction force of 11,000daNm.

In addition, WJ Groundwater opted to increase the specification of the rig to include a catalytic convertor and complete radio remote control for tracking, set-up and drilling controls.

According to WJ Groundwater contracts director Richard Fielden, the SM5 is the ideal rig when the requirement is for a small, but powerful rig to operate in restricted access urban construction sites and inside tunnels. "We needed a machine with a high degree of articulation to drill at any angle or alignment, but with sufficient power to drill at up to 200mm diameter and up to 40m depth. With our own in-house designed safety guard and modern, clean diesel engine, the rig is well equipped to carry out a range of work on the Crossrail project," he declares.

engine, advanced articulation and high-performance rotaries to handle a wide range of civil engineering projects.

Soilmec is recognised for excellent design and production of machinery for foundation applications, and the company continues to satisfy requests from construction sites worldwide.

The products are characterised by a high-quality, sophisticated design and high performance. Together with the

experience of the Trevi Group, they provide reliability and efficiency in the most demanding environmental and geological conditions.

Soilmec always remains close to operators and sensitive to real drilling problems. The company is committed to developing innovative solutions to facilitate the work of drillers, increasing comfort and safety, while reducing fuel consumption and on-site costs. ▼

For further information, visit www.soilmec.co.uk

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BOODE U.K. Ltd - U.K.
Brindley Road, Dodwells Bridge,
Hinckley, Leics., LE10 3BY
tel: +44 (0)1455 61 13 17
fax: +44 (0)1455 61 09 71
Email: info@boodeuk.com

BOODE b.v
P.O. Box 27, NL 2760 AA
Zevenhuizen, Holland
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