

# NO-DIG

## INTERNATIONAL

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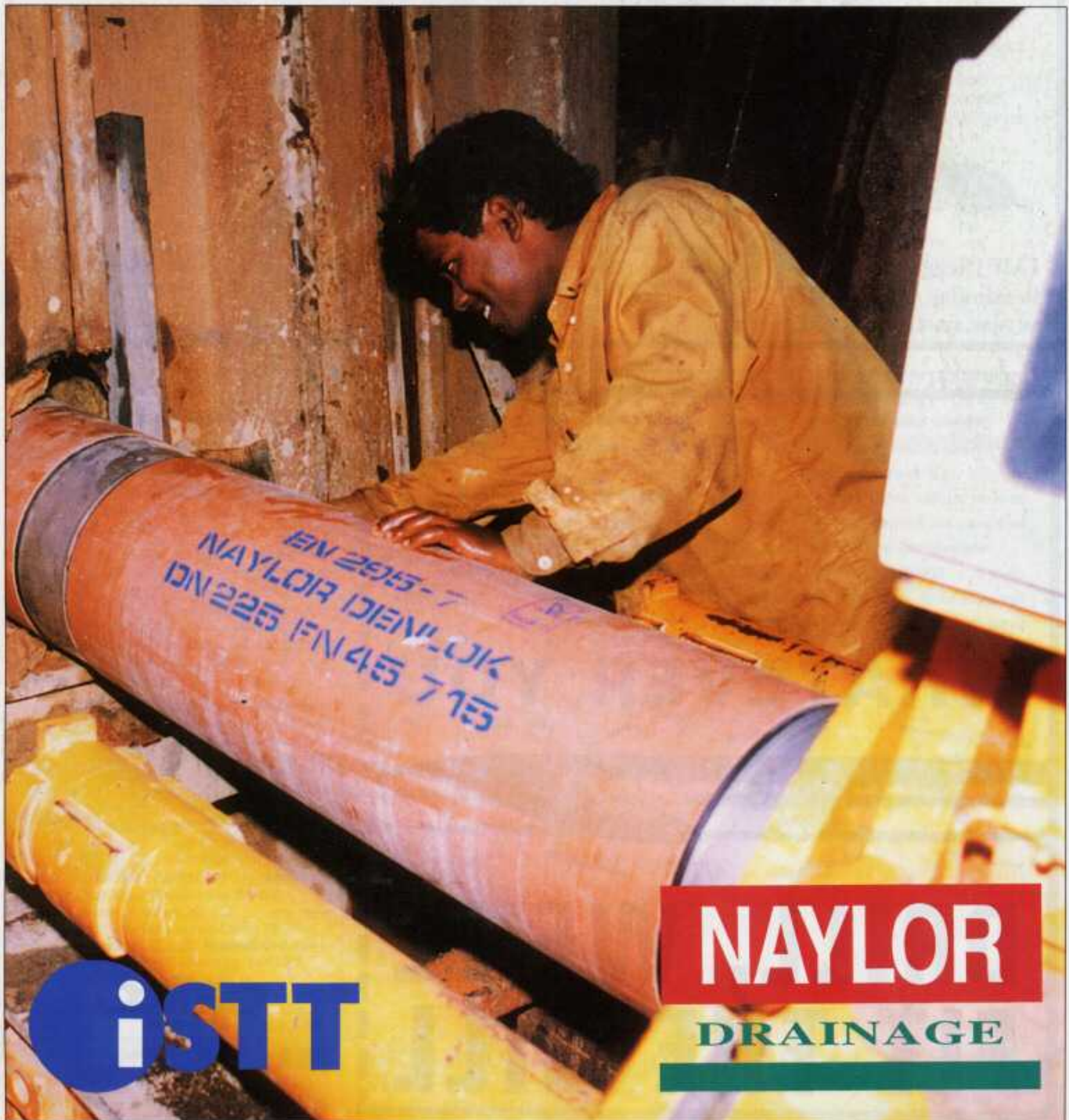
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**NAYLOR**

**DRAINAGE**

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# EQUIPMENT UPDATE

## NEW NAVIGATOR

Vermeer has recently upgraded its range of self-contained drilling rigs with the introduction of the D50x100a Navigator, offering several feature enhancements and available with an optional NAVTEC control system.

With a pullback power of 22,500 kg, the D50x100a can handle large diameter pipe and long distance applications such as sewer projects and river crossings. A rotational torque of up to 13,650 Nm enables the D50x100a to handle adverse conditions such as boring through certain types of rock and other hard material. An increased capacity mud pump, capable of delivering 510 l/min of drilling fluid, allows the rig to handle larger diameter projects and power a mud motor for rock drilling applications. It also features a more powerful 185 HP Cummins 6BTA 5.9 engine.

The D50x100a is available with Vermeer's NAVTEC control system, a computer-assisted steering system for consistent boring in adverse soil conditions such as tightly-compacted sand, dense clay and certain types of rock with a compressive strength up to 5,000 lb/in<sup>2</sup> (35 MPa). NAVTEC is capable of maintaining stored settings when boring in challenging materials, bridging the gap between mud motors and conventional drilling. NAVTEC includes a simple clear LCD display, and provides operators with an instant benchmark for consistent drilling. NAVTEC can be linked to any standard laptop computer. All boring using the NAVTEC is done in a clockwise direction, reducing the risk of loosening the drill stem.

Other upgraded features on the D50x100a include a 3-speed rotational gearbox and a floating drive head which makes it easier to thread and unthread the pin-box connection without stripping or rolling threads. There is also a catwalk allowing easier operation of wireline systems.

The D50x100a shares the features of a standard D50x100 Navigator, including Vermeer's forged Firestick drill rods and the Power Vice which eliminates the need for pipe wrenches and a second person on the rack during pullback. The Navigator can also be adjusted to provide the best point of entry under varying conditions.

For details contact: Vermeer Manufacturing Co, PO Box 200, Pella, Iowa 50219-0200, U.S.A. Tel: (+1 515) 628 3141, Fax: 621 7734.

Circle RSC No. 201.



*Powermole's new dry rock directional drilling system in action.*

## DRY ROCK DRILLING

Powermole International has introduced a new dry rock directional drilling system which it hopes will have a major impact on the directional drilling industry.

Most conventional rock drilling systems use mud motors with bentonite for lubrication, but the financial and social costs of this approach can be high. A mud mixing plant is required on site, and the lubricant has to be recovered and recycled or disposed of. The possible contamination of the surrounding soil is a further complication.

Powermole's new system, developed by the group's Italian partner, SE Technology, is claimed to be the first of its kind capable of drilling through even the hardest rock without the use of bentonite. Instead, the drilling system uses high-pressure air with a small amount of biodegradable additive, leaving no fluid residue.

Hydraulics are used to drive both thrust and pullback actions, as well as rotation. During the drilling process, the compressed air removes all debris, leaving a clean hole.

The new machines come in a range of sizes, from the PM250CB pit-launched model up to the PM903. This latter unit has a pullback and thrust capacity of 26,000 kg and 19,650 kg respectively, with a torque of 12,000 Nm. It is capable of drilling holes up to 400 mm diameter in shale and 250 mm in solid rock.

The drilling rigs have only a small footprint, as they do not require mixing plants or bulk water storage. Progress of the head can be monitored with a standard detector via a sonde unit housed in a shock-absorbent housing, allowing it to function effectively during the drilling operation.

During a recent demonstration, a 125 mm diameter PE pipe was installed by the PM 903, and a cluster of 3 x 50 mm cable ducts by the PM 503. The PM250CB was shown drilling through an outcrop of rock. PE pipe for the demonstration was supplied by Uponor and the compressors were supplied by Compare Holman.

The new technology has been successfully deployed in Italy, where some 70 km of cable have already been installed for state-owned telecommunications company Telecom Italia. The company is engaged in the installation of new wide-band, fibre-optic and Socrates multimedia programme networks in a bid to maintain its market leadership in the run-up to privatisation. For details contact: Powermole International Ltd, 35 Church Road Business Centre, Church Road, Sittingbourne, Kent ME10 3RS, U.K. Tel: (+44 1795) 425425, Fax: 477177.

Circle RSC No. 202.

## SUBSURFACE IMAGING

Sensors & Software Inc has introduced a new subsurface imaging system that combines the latest ground penetrating radar (GPR) technology with affordability. The Noggin 250 is a simple, lightweight package which can be used for a wide range of subsurface investigations, eliminating the need for multiple locating tools.

Applications of the Noggin 250 include plastic, concrete, and metallic underground utility location, subsurface void and object detection, groundwater location, and tunnel and trenchless installation route planning.

The Noggin provides user-friendly one person operation, and is bundled with a free copy of SPIView software which allows data display settings to be changed during the survey, produces high quality colour images for use in reports and presentations, allows output to common printers and exports images in PCX file format. No GPR experience is necessary to operate the system.

For details contact: Sensors & Software Inc, 1091 Brevik Place, Mississauga, Ontario, L4W 3R7, Canada. Tel (+1 905) 624 8909, Fax: 624 9365, Email: radar@sensoft.on.ca

Circle RSC No. 203.