

INSPIRING TRENCHLESS TECHNOLOGIES



TRACTO-TECHNIK



**400** MIGHTY  
CALIBRE

■ MADE  
■ IN  
■ GERMANY

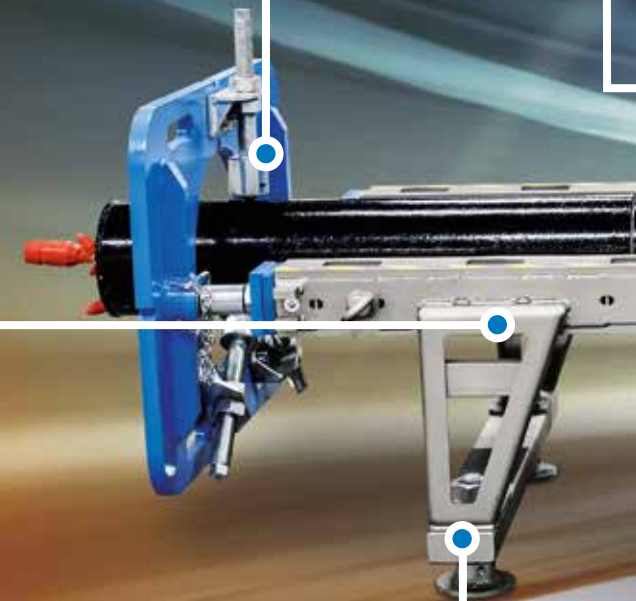
GRUNDOBORE<sup>400</sup>  
Auger boring unit



**High-power drive unit –**  
high torque of 6,000 Nm and  
thrust force of 400 kN

**Centring facility for the jacking pipe –**  
precise, dead-on-target pipe alignment

**Robust, compact frame design –**  
load resistant, extremely durable,  
easy to transport



## ENDURANCE RUNNER

Powerful and torque-proof

**Height adjustment at the  
base of the frame –** simple  
and precise alignment  
of the jacking frame

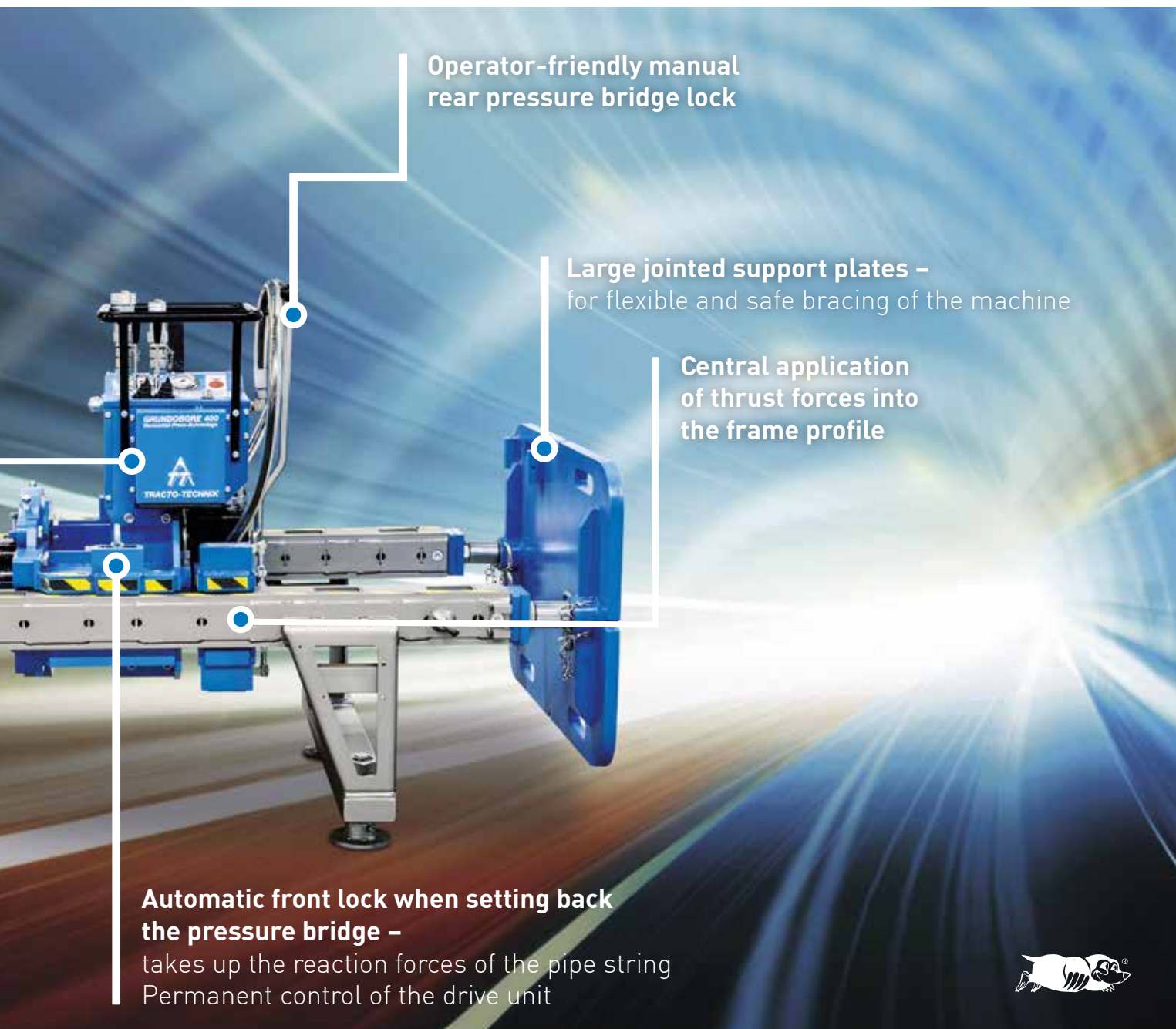
### GRUNDOBORE<sup>400</sup>

- With GRUNDOBORE<sup>400</sup> pipe lines can be installed with high positional accuracy from out of a pit.
- The auger boring unit is especially suitable for installing property sewer connections up to the manhole with product pipes and protection pipes up to OD 406.
- The main frame can be extended to 8.50 m, this allows for the installation of casing pipe strings in lengths up to 6 m.

### MEASURING TECHNIQUE

The bore progress is monitored precisely, either by video theodolite or walk-over system; both systems can even be used simultaneously if required.





**Operator-friendly manual rear pressure bridge lock**

**Large jointed support plates –**  
for flexible and safe bracing of the machine

**Central application of thrust forces into the frame profile**

**Automatic front lock when setting back the pressure bridge –**  
takes up the reaction forces of the pipe string  
Permanent control of the drive unit



### **PRESSURE BRIDGE LOCK**

The double-sided clamp lock of the pressure bridge guarantees straightforward pressing in of the pipe.



### **MAIN FRAME LENGTHS**

Two different pressing frame lengths of 1.6 m and 2.1 m allow for flexible application, even in limited spaces.



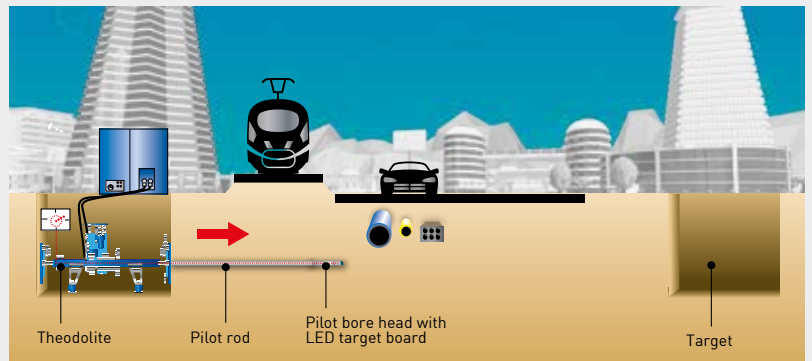
# DIRECTIONAL OR NON-DIRECTIONAL

That is the crucial question

## Directional pilot pipe installation

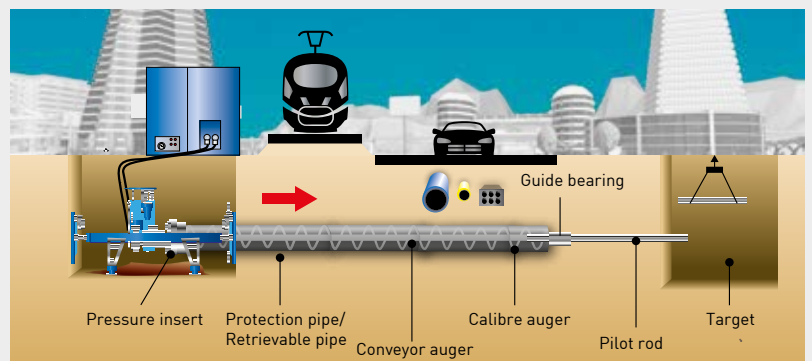
### PHASE 1

With linear bore paths exactly determined, a pilot rod with a pilot bore head is pushed forward precisely and in the correct position from out of the pit simultaneously displacing the soil en route.



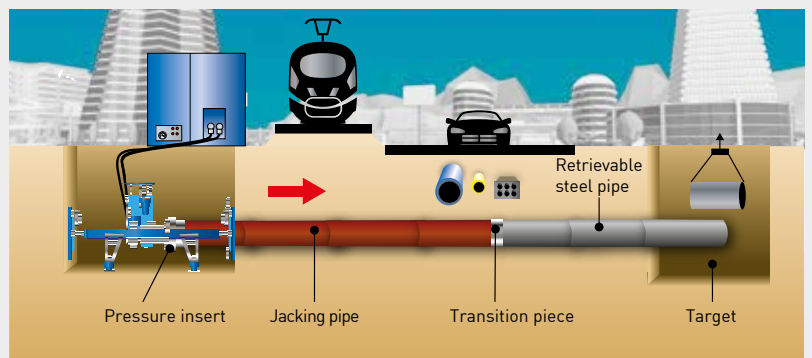
### PHASE 2

On arrival in the target pit, an auger bore lead by the exactly placed pilot pipe string is carried out using steel protection pipes or retrievable pipes reamed with a bore head and conveyor auger.



### PHASE 3

While pushing in the product pipes, the retrievable pipes are pushed into the target pit and are recovered in sections.

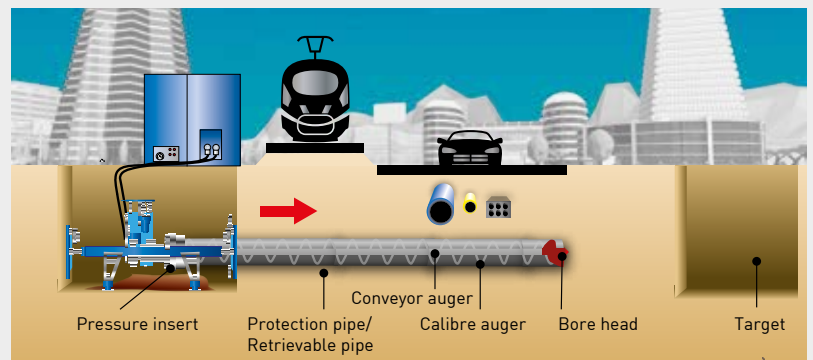




## Non-directional pilot pipe installation

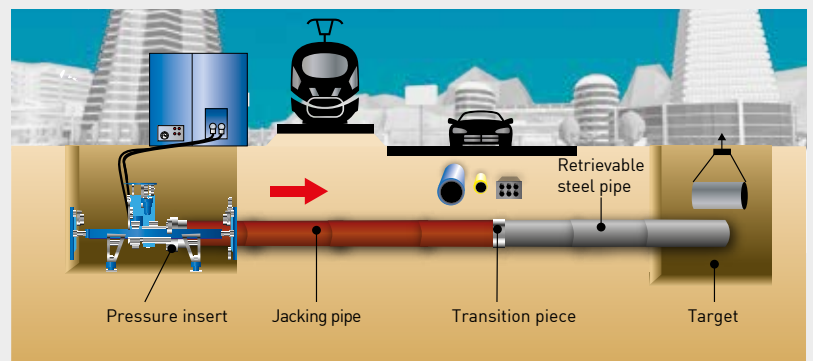
### PHASE 1

If the linear bore path is not exactly defined, protection pipes or retrievable pipes can be pushed in directly, i.e. without pilot pipe installation, then the bore head loosens up the soil which is then conveyed through the augers into the target pit.



### PHASE 2

If product pipes are being pressed in, the applied retrievable pipes are pushed into the target pit at the same time and then recovered.



### PILOT PIPE INSTALLATION CONTROL

The pilot pipe steering head is controlled by an electro-optical video theodolite measuring system. With this measuring system an LED target board is built into the steering head at the front of the pilot pipe string. The LED pictures generated there are transferred to a monitor with the help of a CCD camera in the theodolite. Even the tiniest deviations from the planned drilling axis are recorded and can be corrected by the steering head.



**100% ON TARGET**



**STRONG**



VARIABLE



GUIDANCE

A MATTER OF PERSPECTIVE

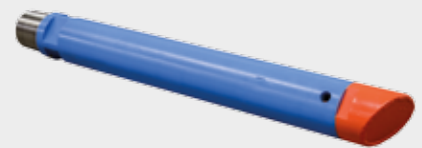


PUSHING IN

# ACCESSORIES

For all applications

**HOUSING WITH STEERING HEAD**  
directional



**RETRIEVABLE THREADED PIPE**



**CONVEYOR AUGER**



**SHOE PIPE**



**PULLING SLEEVE/ADAPTER**



**SPANNFIX  
FOR INSTALLING SHORT PIPES**



**PULLING CHAIN  
for SPANNFIX**

**PIPE STRING BRACKET**







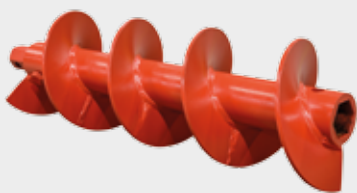
**STANDARD BORE HEAD**  
non-directional



**FOLDING ROCK BORE HEAD**  
non-directional



**CALIBRE AUGER DRILL**



**STANDARD BORE HEAD**  
directional



**GUIDE BEARING**



**HYDRAULIC BREAKAWAY FACILITY FOR PILOT RODS**



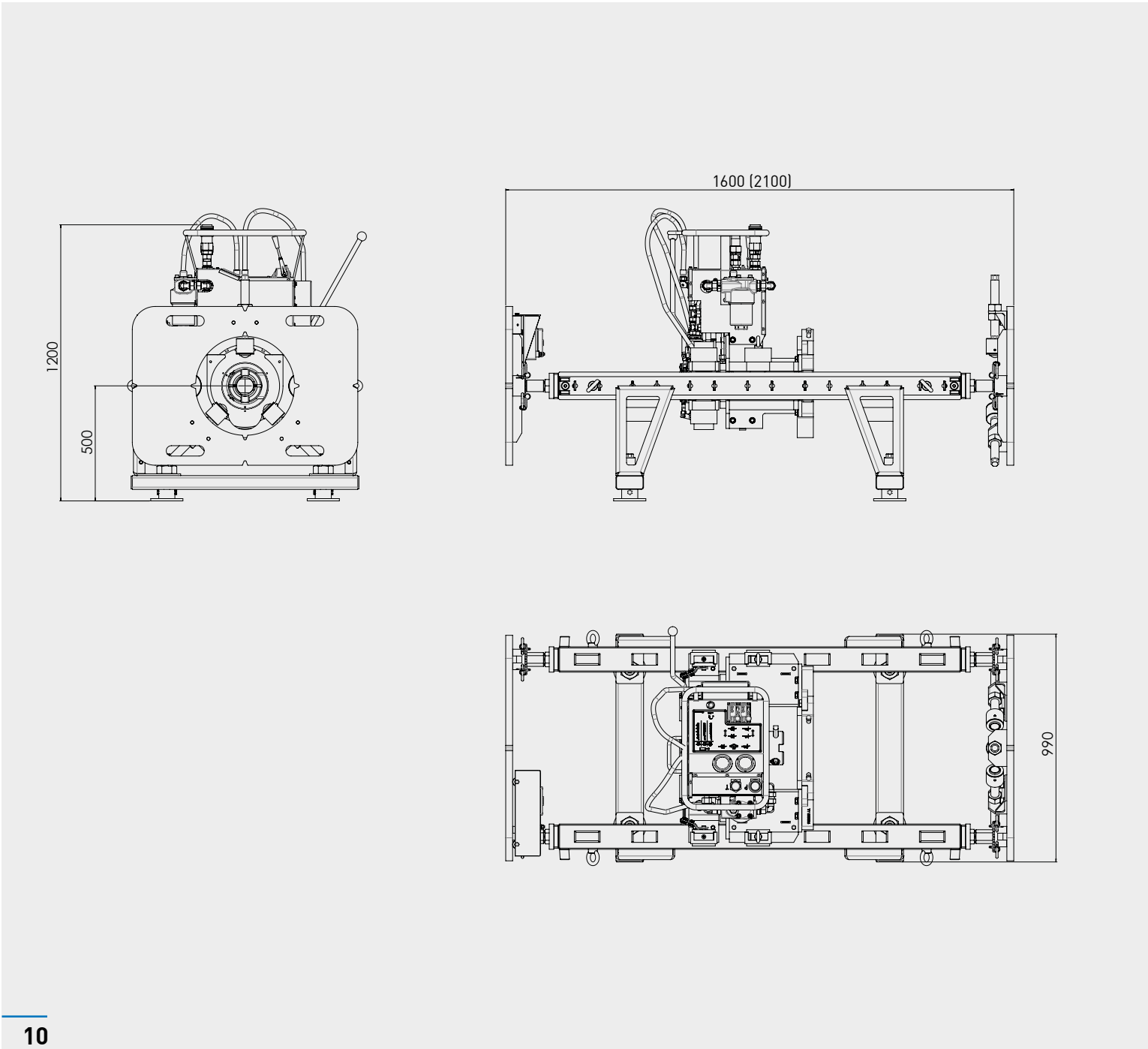
**HYDRAULIC UNIT TT HP-031**





# ACHIEVEMENT-ORIENTATED

Technical specifications





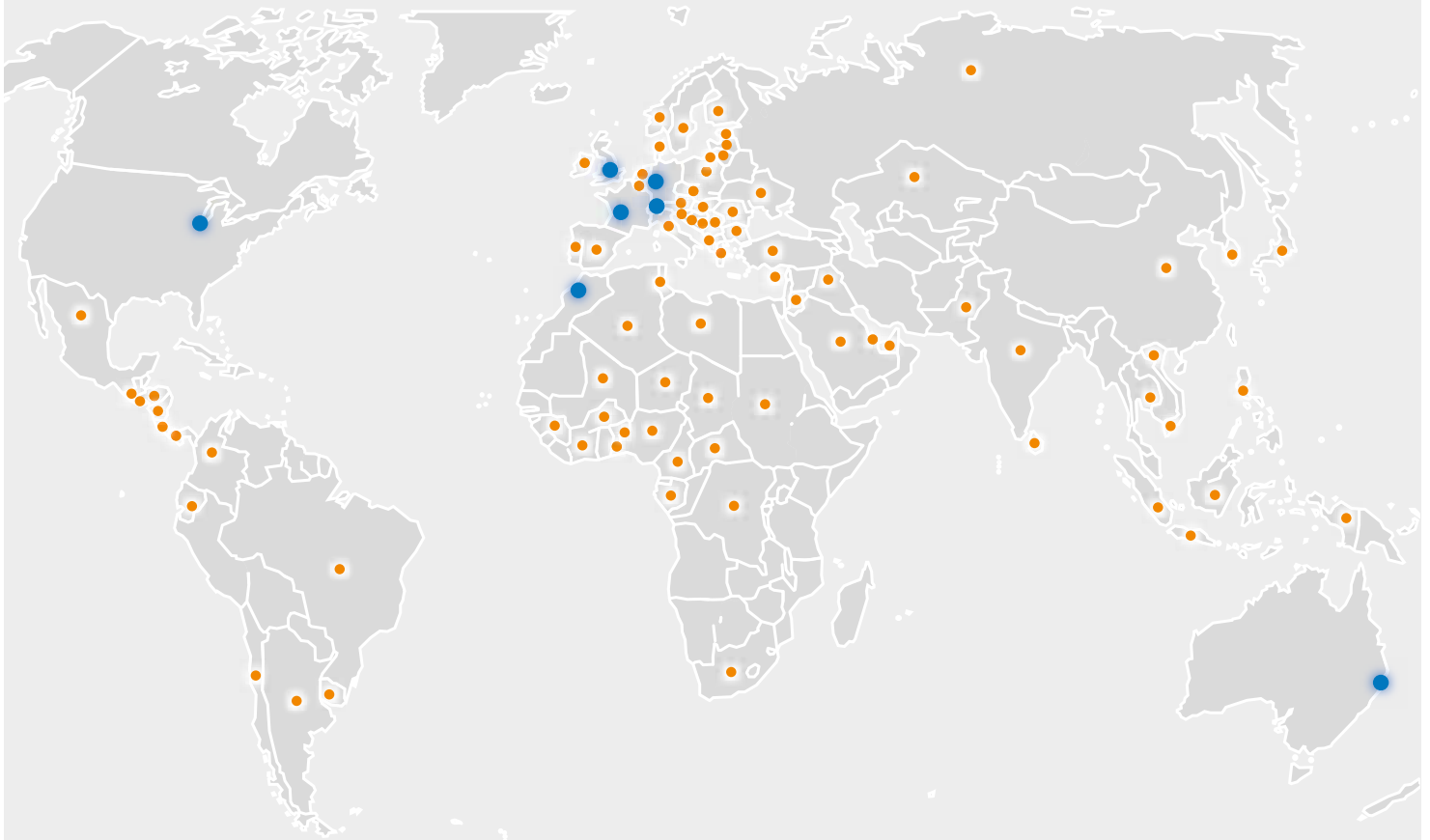
## Technical data

### GRUNDOBORE<sup>400</sup>

Max. thrust force	400 kN
Max. pulling force	315 kN
Cylinder stroke	280 mm
Max. thrust speed	2.8 rpm
Max. torque	6,000 Nm
Max. spindle speed	45 rpm
Max. hydraulic pressure	250 bar
Length x Width x Height	2,100 x 990 x 1,200 mm
Weight	1,095 kg
Axis height	500 mm
Length launch pit (basic rig)	2.2 m
Length target pit	1.1 m
Retrievable pipe/effective length pilot rod	1 m
Diameter pilot rods	88 mm
Max. pipe OD	406 mm
Max. installation length (depending on soil conditions)	50 m

# TRACTO-TECHNIK

worldwide



Germany  
**TRACTO-TECHNIK GmbH & Co. KG**  
**TT Headquarters**  
Paul-Schmidt-Straße 2  
57368 Lennestadt - Germany  
Tel: +49 2723 808-0 · Fax: -180  
export@tracto-technik.de  
www.TRACTO-TECHNIK.com

Switzerland  
**TRACTO-TECHNIK**  
**Schweiz AG**  
Tel: +41 79 8203897  
info@tracto-technik.ch  
www.TRACTO-TECHNIK.ch

United Kingdom  
**TT-UK Ltd.**  
Tel: +44 1234 342566  
Fax: +44 1234 352184  
info@tt-uk.com  
www.TT-UK.com

France  
**TRACTO-TECHNIK France**  
Tél: +33 5 53538983  
Fax: +33 5 53093941  
info@tracto-technik.fr  
www.TRACTO-TECHNIK.fr

Presented by your TT partner:

USA  
**TT TECHNOLOGIES Inc.**  
Tel: +1 630 851 8200  
Fax: +1 630 851 8299  
info@tttechnologies.com  
www.TTTECHNOLOGIES.com

Australia  
**TT ASIA PACIFIC Pty Ltd.**  
Tel: +61 734205455  
Fax: +61 734205855  
info@tt-asiapacific.com  
www.TT-ASIAPACIFIC.com

Morocco  
**TRACTO-TECHNIK Afrique**  
Tel.: +212 53740 1363/64  
Fax: +212 53740 1365  
info@tracto-technik.ma  
www.TRACTO-TECHNIK.ma

**INSPIRING TRENCHLESS TECHNOLOGIES**

