

INSPIRING TRENCHLESS TECHNOLOGIES



**N THE NEXT  
GENERATION**

■ MADE  
■ IN  
■ GERMANY

GRUNDOMAT<sup>™</sup>  
Soil displacement hammers





Versatile add-on facilities -  
for a multitude of applications

Optional **toothed housing**  
for ideal support  
in the ground

The housing, **chrome-plated inside  
and out**, guarantees long-lasting  
**peak performance**

The bore-head consists  
of several components - **wear parts  
replaced**

## THE INNOVATOR

Strikingly efficient

### PISTON SEAL, SLIDE BELTS, CUTTING HEAD SEAL

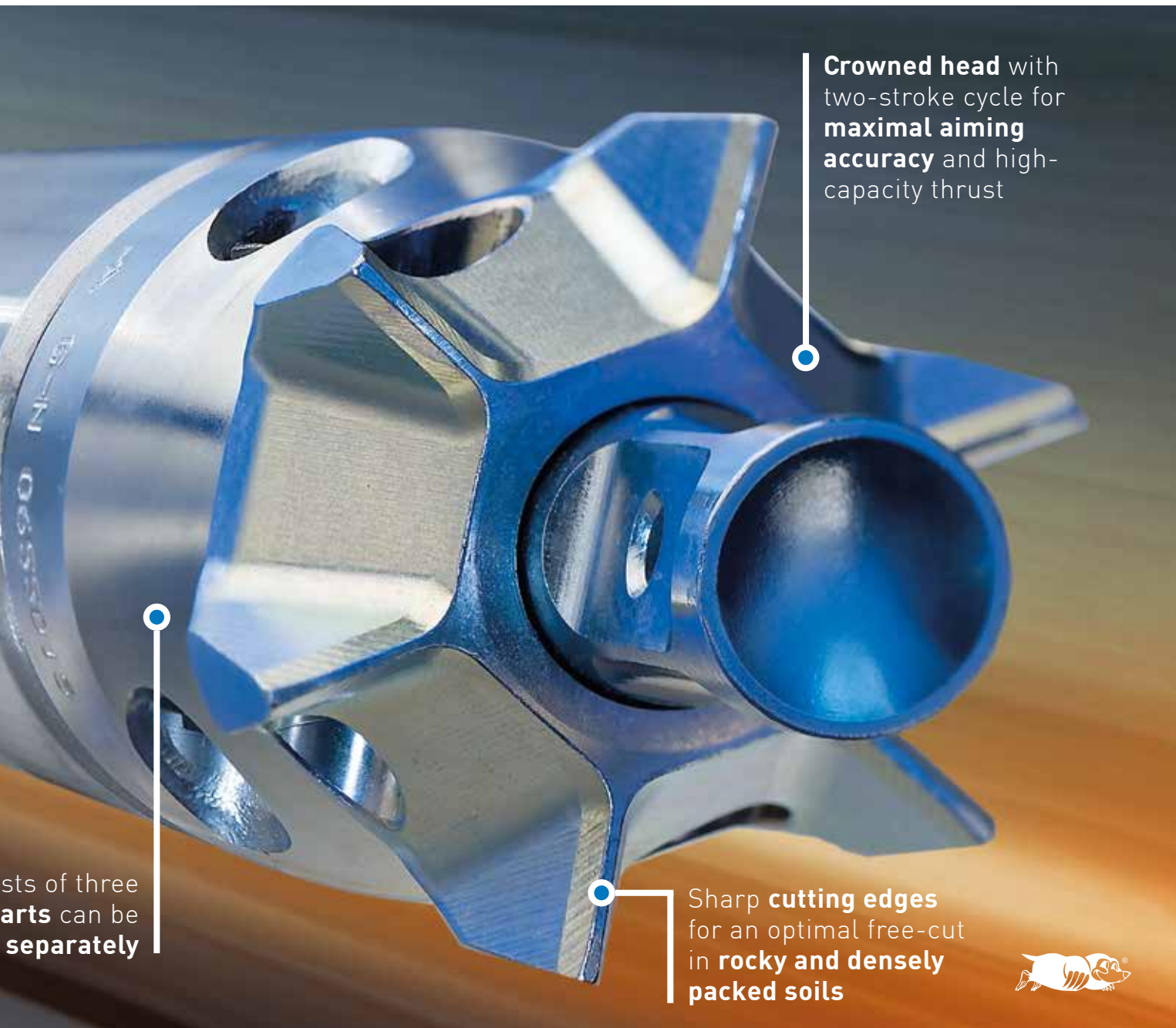
Guarantee high efficiency, low air consumption and prevent dirt from entering and causing lost power.



### BRACED THREAD

Facilitates simple servicing and quick conversion.





**Crowned head** with two-stroke cycle for **maximal aiming accuracy** and high-capacity thrust

Parts of three **parts** can be **separately**

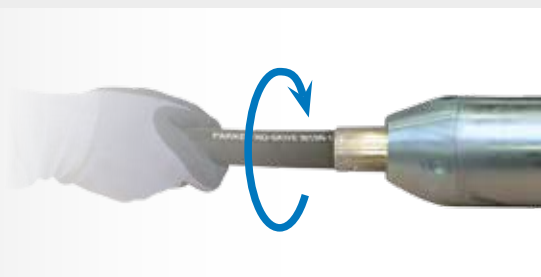
Sharp **cutting edges** for an optimal free-cut in **rocky and densely packed soils**



### SIMPLE SWITCH-OVER

Simple switching between two forward gears and one reverse gear, for optimal adaptation of the impact frequency to achieve greatest propulsion speed.

#### Manual control



Switching over from two forward to one reverse gear under operating pressure by 1/4 turn to the left of the compressed air hose.

#### Servo control



Optional switching over between forward and reverse gears under operating pressure by throwing the lever.



# SUCCESS STARTS WITH THE HEAD

Crowned or stepped – hits the mark in every soil

## Choice between crowned and stepped head

### WORKING PRINCIPLE CROWNED HEAD



The crowned head is perfect for incohesive, rocky and densely packed soils. The tip of the cutter bit starts a preliminary pilot bore and the crown cuts the soil. The crushed soil is relocated to the ducts, lead to the rear and displaced outwards. Due to this working principle the crowned head features highest precision and penetrating power, even if the ground is hard and stony. The pressure cone generated in front of the crowned head is bundled and targeted.

### WORKING PRINCIPLE STEPPED HEAD



The stepped head is universally applicable as it can work in every kind of displaceable soil. The tip of the cutter bit starts a preliminary pilot bore and then the soil is gradually displaced to the outside. The steps of the head first shatter the obstacles and then discharge them, so high running stability is guaranteed, a strong, wide pressure cone generated in front of the stepped head.



## Two-stroke principle

### STROKE ONE



Stroke one applies impact to the cutter bit with the piston, thus forcing the head to generate the bore hole and eliminate obstacles. The impact energy is concentrated on the cutter bit head and the bore head.

### STROKE TWO



During the second stroke, the bore head moves freely in the bore hole and the piston aims the impact right up to the casing. The impact power of the piston is concentrated on the casing and the complete machine (with the pipe attached) moves up from behind.

The two-stroke principle helps to overcome peak resistance and coat friction so the highest possible directional stability of the GRUNDOMAT is achieved.

## Application

### ■ UNDERCROSSINGS

Beneath roads, railway tracks, gardens, buildings and other valuable surfaces

### ■ PROPERTY SERVICE CONNECTIONS

For gas, water, waste-water, electricity, broadband (FTTB) to the house or directly from the house

### ■ GEOTHERMAL HEAT

Installation of geothermal heat loops

### ■ PIPE RAMMING FROM TYPE 130 ON

For driving steel pipes by attaching different ramming cones

### ■ PIPE RENEWAL FROM TYPE 95 ON

With modified displacement moles using the dynamic pipe bursting method (cracking).

### ■ PILE FOUNDATIONS

Vertical application for foundations, i.e. for placing piles and shields

### ■ DRIVING OUT STEEL PIPES

With attachment mandrel for simultaneous pulling-in of new pipes



ON TARGET



GROUNDING PILES





TRACKING



GEO THERMAL HEAT

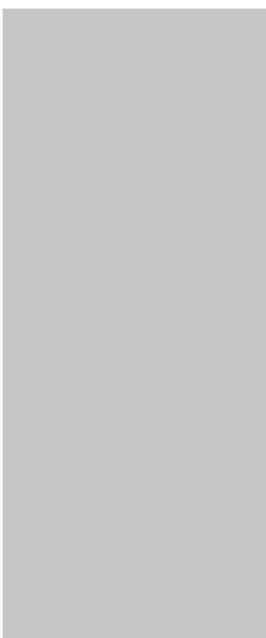


RAMMING



SIGHTING

PASSING UNDERNEATH



# ACCESSORIES

For any use



## DRIVING OUT STEEL PIPES

Attachment Mandrel for driving out old steel pipes up to ND 50 and simultaneously pulling in new pipes.



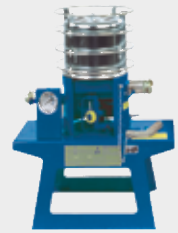
## PIPE RENEWAL (CRACKING)

From type 95 on, dynamic pipe bursting method with towing eye and expansion.



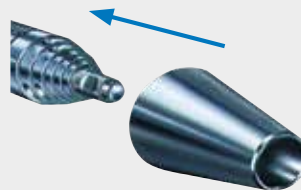
## UNITHERM COMPRESSED AIR HEATER

Protecting the machine from freezing up.



## STEEL PIPE DRIVING

Up to ND 400 with attachment ramming cone.



## PRECISE TRACKING

The bore course can be closely monitored with transmitter and receiver. The tracking system can also be used for the preliminary search of external lines.



Telescopic aiming frame  
GRUNDOSCOPE 1.5 - 2 m  
with telescopic sight

3.3 l oil fog lubricator

Compressed air hose

Flat hose

Height adjustable  
starting cradle

Earth stake

Transmitter

Traceable  
displacement  
hammer





## Pipe installation

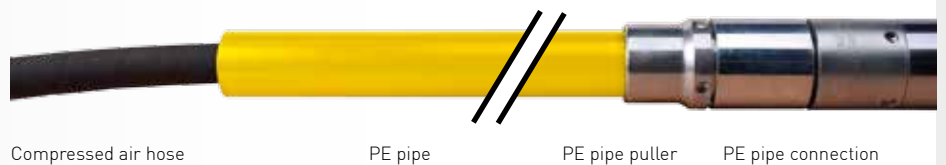
### REVERSE PULLING IN VIA PULLING ADAPTER



### IMMEDIATE INSTALLATION OF SHORT PVC PIPES

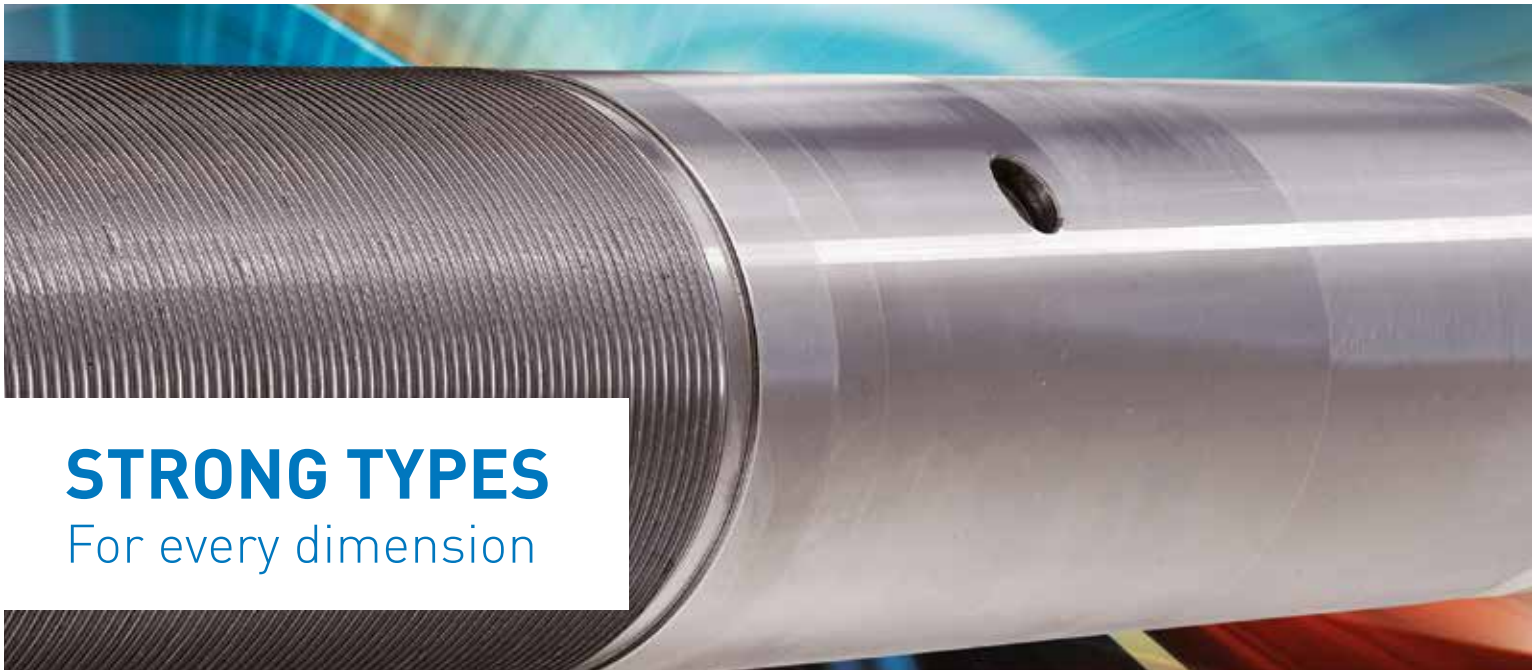


### IMMEDIATE INSTALLATION OF LONG PE PIPES



### SUBSEQUENT INSTALLATION OF LONG PE PIPES WITH COMPRESSED AIR HOSE





## **STRONG TYPES**

For every dimension

### N Standard version

All machine types can be equipped either with a crowned head or a stepped head.





## NK Short version

Short displacement hammers are excellent for the application in confined spaces. The short construction length of the NK machines is achieved with the special design of a fixed head.



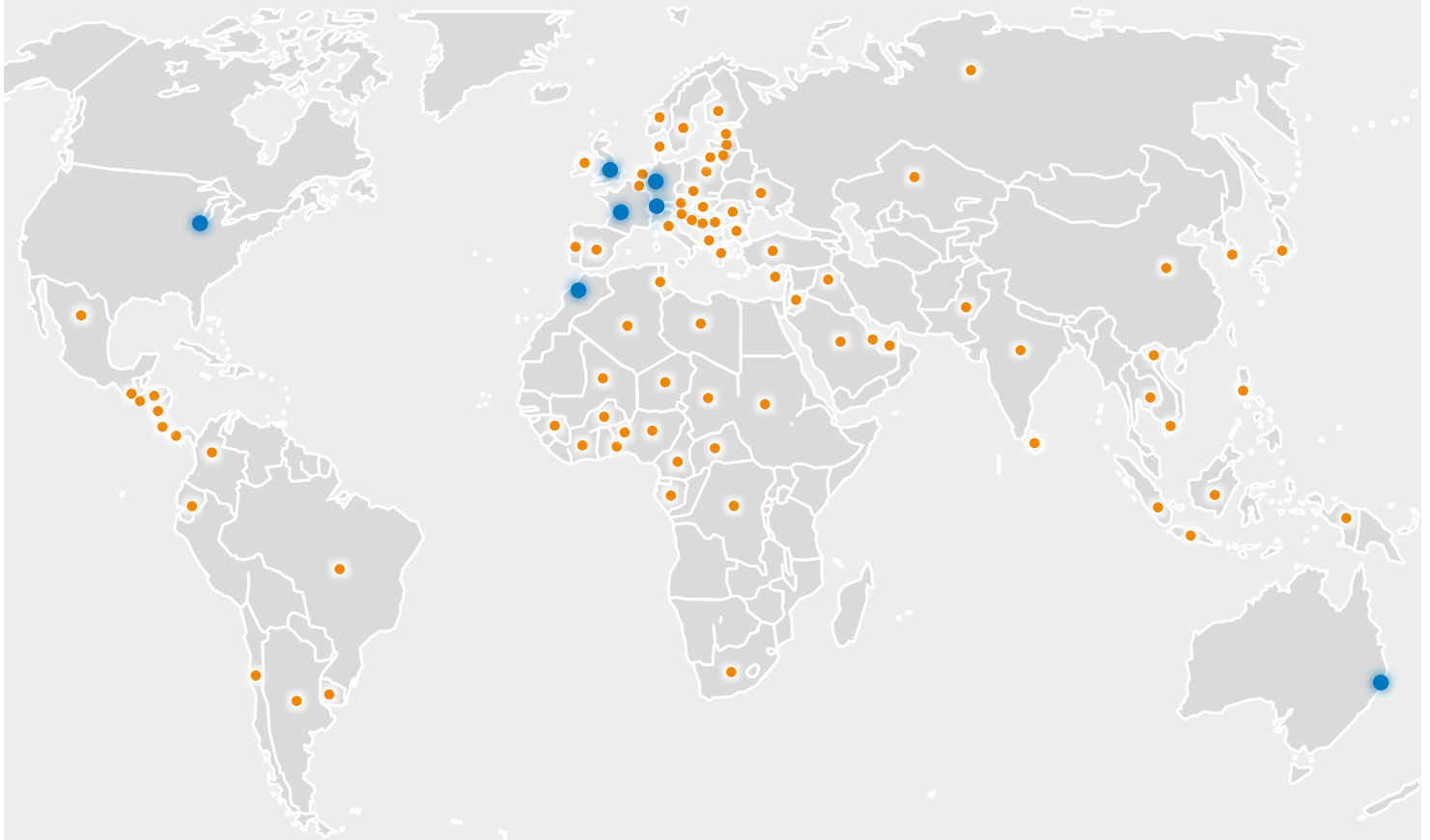
This version is shorter than the basic version.

## Technical data

| GRUNDOMAT-Type        | Ø (mm) | Length (mm) | Weight (kg) | Air consumption (m³) | Impact rate min <sup>-1</sup> |                      | Pipes (max. outer Ø mm) |
|-----------------------|--------|-------------|-------------|----------------------|-------------------------------|----------------------|-------------------------|
|                       |        |             |             |                      | 1 <sup>st</sup> Gear          | 2 <sup>nd</sup> Gear |                         |
| 45N (2-gear control)  | 45     | 997         | 9           | 0,35                 | 530                           | 615                  | 40                      |
| 55N (2-gear control)  | 55     | 1,131       | 15          | 0,4                  | 470                           | 565                  | 45                      |
| 65N (2-gear control)  | 65     | 1,290       | 24          | 0,8                  | 450                           | 550                  | 50                      |
| 75N (2-gear control)  | 75     | 1,399       | 33          | 1,0                  | 385                           | 480                  | 63                      |
| 85N (2-gear control)  | 85     | 1,528       | 46          | 1,0                  | 380                           | 470                  | 75                      |
| 95N (2-gear control)  | 95     | 1,762       | 65          | 1,4                  | 325                           | 425                  | 85                      |
| 110N (2-gear control) | 110    | 1,700       | 96          | 1,6                  | 320                           | 380                  | 90                      |
| 130N (2-gear control) | 130    | 1,802       | 117         | 2,6                  | 330                           | 390                  | 110                     |
| 130N (servo control)  | 130    | 1,802       | 117         | 2,6                  | 330                           | -                    | 110                     |
| 145N (servo control)  | 145    | 2,033       | 168         | 3,5                  | 325                           | -                    | 125                     |
| 180N (servo control)  | 180    | 2,280       | 260         | 4,5                  | 255                           | -                    | 160                     |
| <b>Short version</b>  |        |             |             |                      |                               |                      |                         |
| 45NK (1-gear control) | 45     | 875         | 8           | 0,35                 | 530                           | -                    | 40                      |
| 65NK (1-gear control) | 65     | 933         | 16          | 0,7                  | 570                           | -                    | 50                      |
| 75NK (1-gear control) | 75     | 1,100       | 24          | 0,8                  | 490                           | -                    | 63                      |
| 95NK (1-gear control) | 95     | 1,393       | 50          | 1,3                  | 370                           | -                    | 85                      |

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