

TRACTO

**Further Information
on GRUNDOPIT**

TRACTO.COM/GRUNDOPIT



GRUNDOPIT
FLUID-ASSISTED
MINI DRILL RIGS
SMALL POWER-
HOUSES



ADVANCED TRENCHLESS TECHNOLOGY

GRUNDOPIT FLUID-ASSISTED MINI BORE RIGS

STEERABLE, COMPACT & VERSATILE

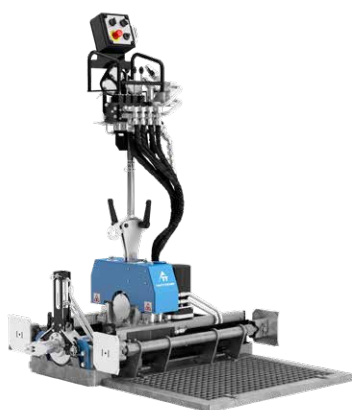
GRUNDOPIT Mini fluid-assisted HDD rigs are used wherever the installation of lines up to 100 m long or the manufacture of house connections demand the steerability of the bore head due to the required bore path. This is the case with bores within existing infrastructures, in restricted spaces, demanding terrains such as slopes and/or heavy soils. House connection service lines can also be installed with the GRUNDOPIT HDD rigs in a steerable manner up to a small pit in front of the building, directly into the building, or the basement and in the opposite direction. This way you can close the gap between non-steerable soil displacement hammers and steerable midi-sized HDD rigs.

The versatile models of the GRUNDOPIT series are compact, easy-to-handle mini bore rigs for quickly and economically establishing gas, water, electricity, fibre optic and wastewater house connections as well as parallel installations up to 100 m length. Depending on the soil, a water, water-polymer or Bentonite drilling fluid is used. Depending on the type of bore, pipe diameter, soil type, bore length and degree of difficulty, you can choose between units for pit, shaft or keyhole start.



GRUNDOPIT KS50

Innovative bore rig for the minimally invasive installation of house connections from the smallest possible, round keyhole pit



GRUNDOPIT PS40

Very compact pit machine for establishing near-surface service connections in existing infrastructures, especially out of the pavement



GRUNDOPIT PS60

Powerful pit machine for house connections and parallel installations, especially in difficult terrains and complex soils

GRUNDOPIT AT A GLANCE

GRUNDOPIT KS50

FLUID-ASSISTED MINI BORE RIGS

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GRUNDOPIT PS40

FLUID-ASSISTED MINI BORE RIGS

20-27

GRUNDOPIT PS60

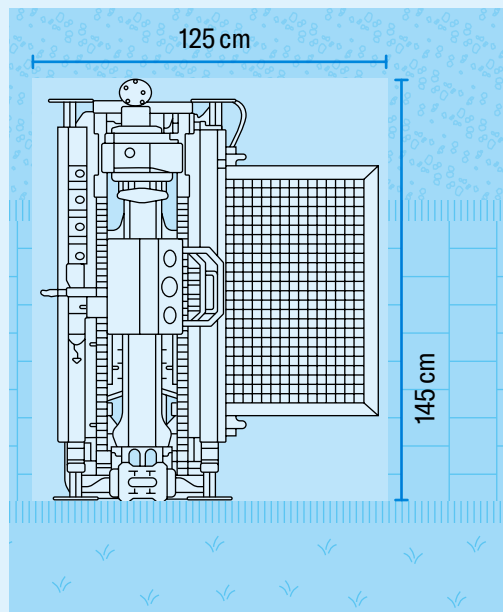
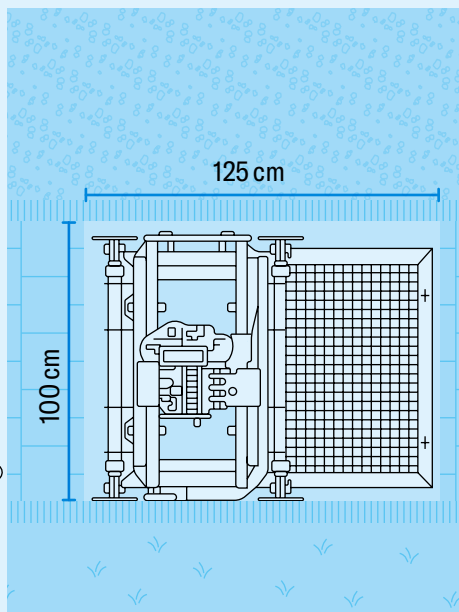
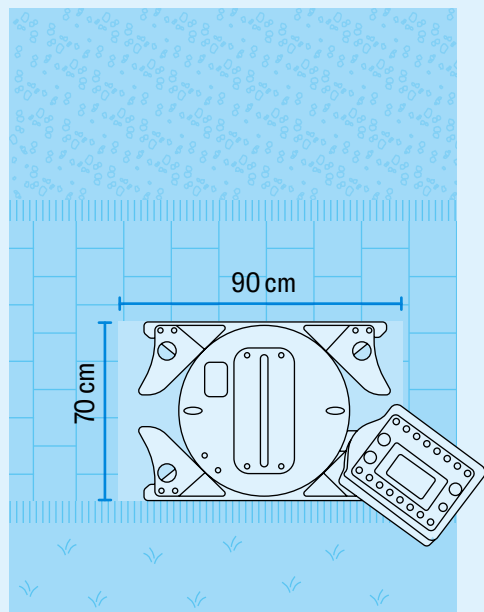
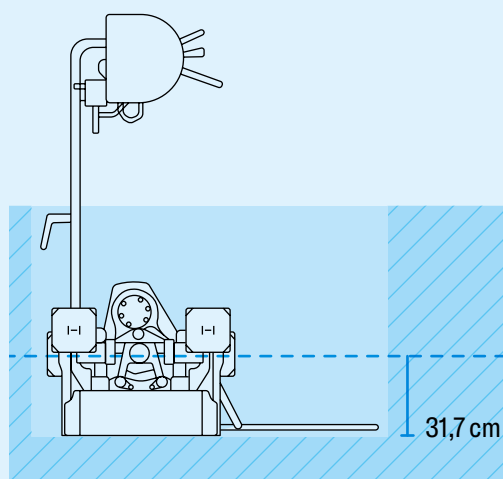
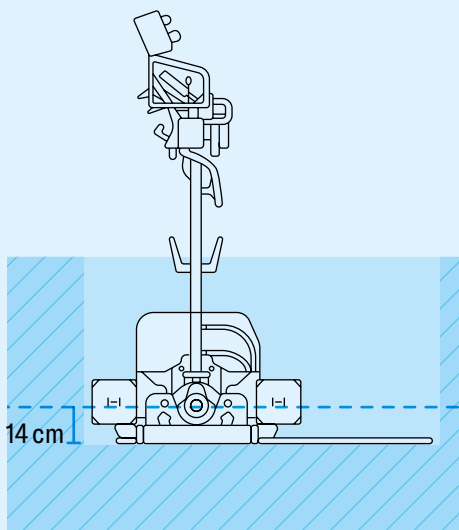
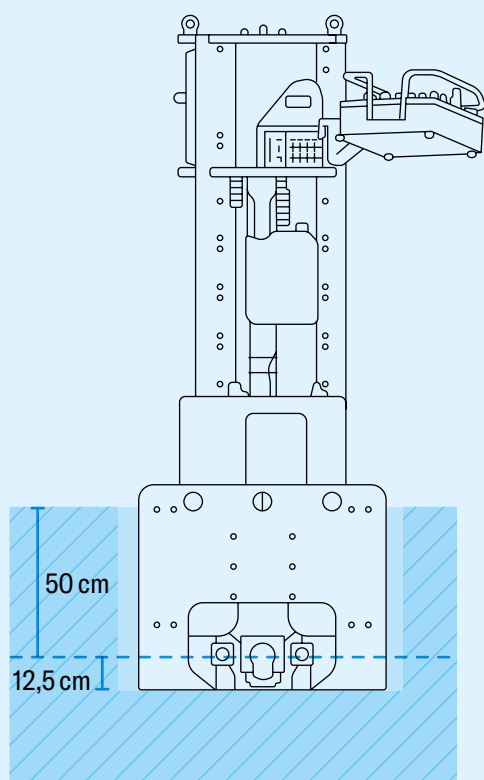
FLUID-ASSISTED MINI BORE RIGS

28-35

FITS IN EVEN THE SMALLEST PIT MINIMAL SIZE, MAXIMUM POWER

The compact dimensions of the GRUNDOPIT Mini HDD rigs are beneficial in a number of ways. Thanks to the small dimensions of the drill rigs, only small quick-to-produce excavation pits are required which cause only a minimum of excavation. This allows the machines to be used in restricted spaces and densely populated areas, especially since a truck-mounted crane or mini-excavator is sufficient for handling.

Due to the small distance between bore axis and pit floor, all GRUNDOPIT models can be used for flat bores simply crossing over existing pipeline networks. At the same time, the bore axes are deep enough to keep the required cover and the given installation depth – both when starting from a rectangular pit and a circular pit.



GRUNDOPIT KS50

GRUNDOPIT PS40

GRUNDOPIT PS60

GRUNDOPIT KS50

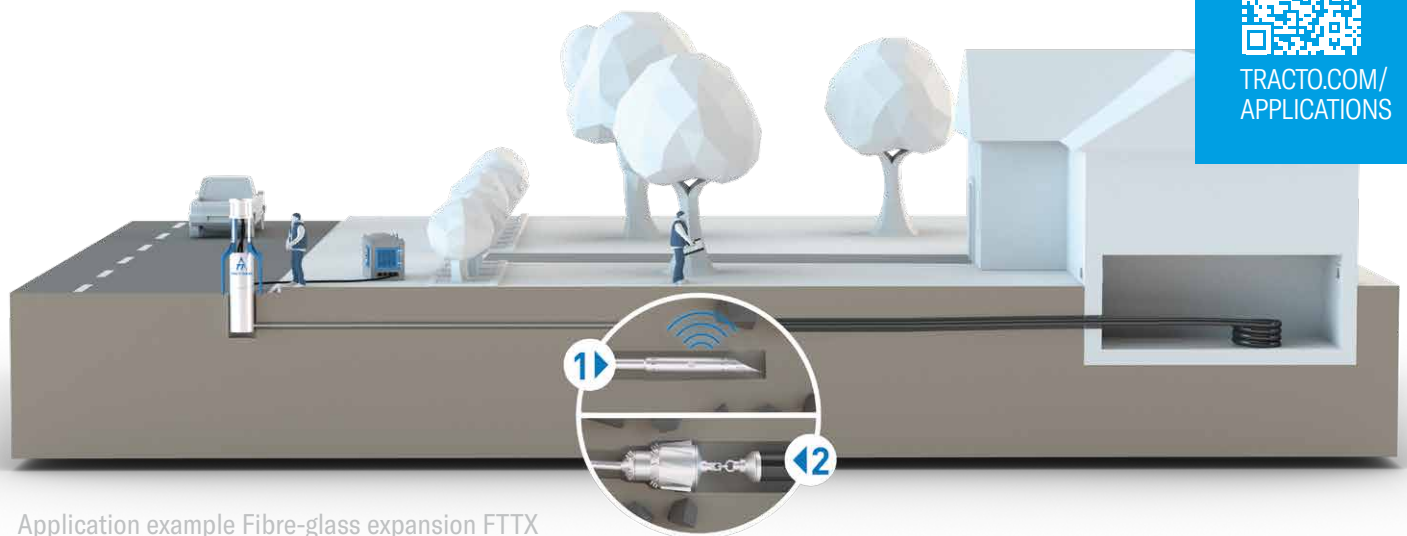
MINIMALLY INVASIVE

With the GRUNDOPIT KS50, gas, water, electricity and FTTH house connections are installed from the main line in the road in the smallest possible, round work pit (keyhole of just Ø 65 cm) or a narrow pit of just 65 cm in width directly into the house or into a small assembly pit in front of the house.

- Drilling from the smallest round work pit, Ø 65 cm keyhole
- Directional drilling with continuous detection
- Simple operation via control panel with colour display
- No work pits on private properties, bores directly into the basement possible

- Minimum excavation work – less is simply impossible
- Only very small work area required, minor traffic impairment
- Eco-friendly and gentle installation method
- Minimal drilling fluid requirements
- No elaborate asphaltting necessary for restoring the keyhole
- All connection jobs are carried out from the surface
- Drilling lengths up to 50 m
- Pipe diameter up to 90 mm

APPLICATION

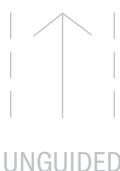


GRUNDOPIT
Application
Videos at

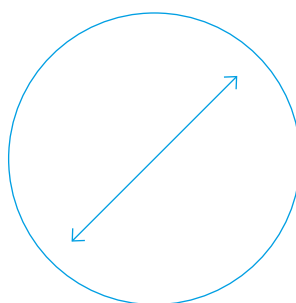


TRACTO.COM/
APPLICATIONS

BORE TYPE



BORE DIAMETER



Ø 58 - 130 MM

MAIN APPLICATIONS

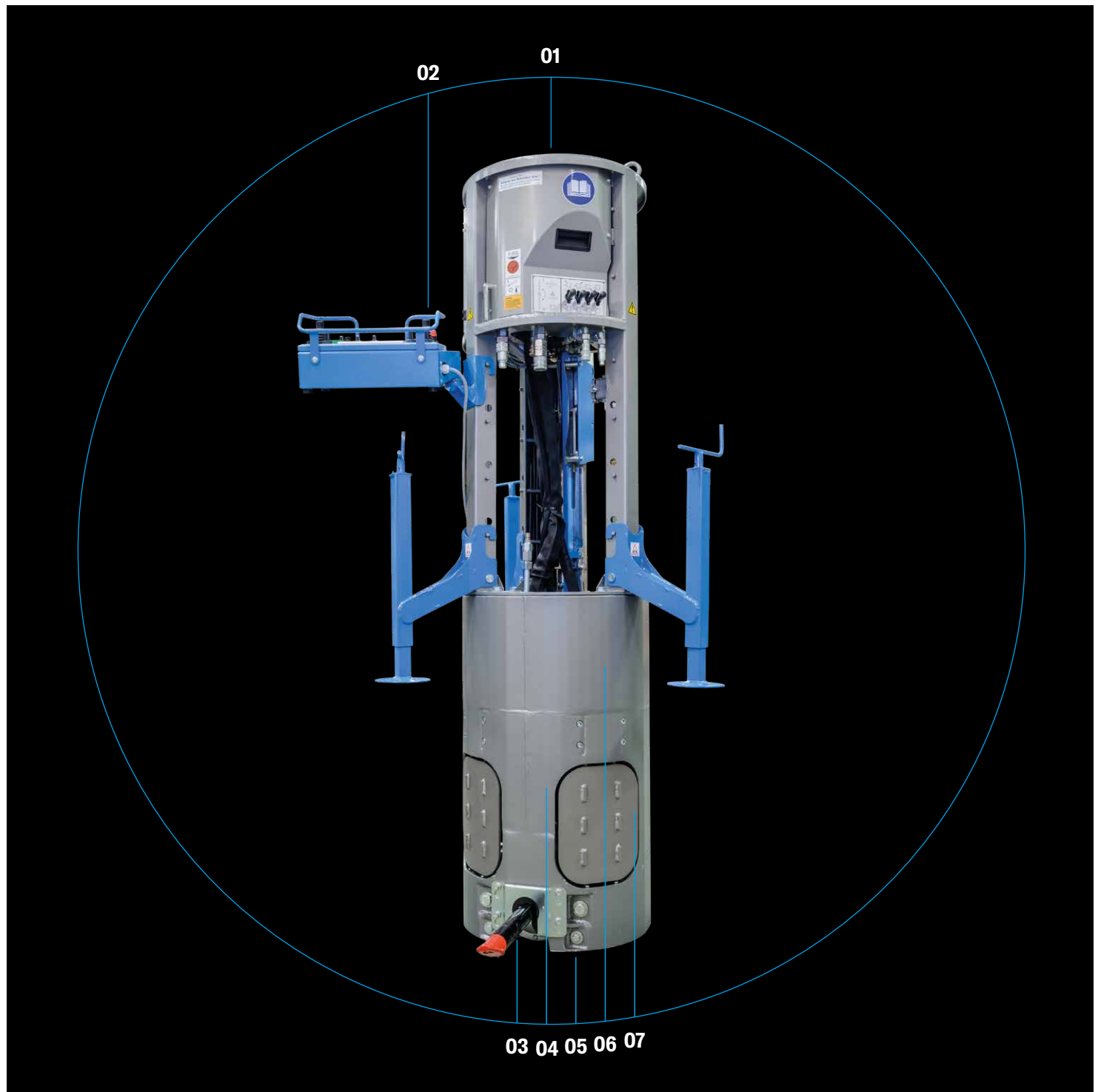
**HOUSE
CONNECTIONS***

**LONGI-
TUDINAL
BORES***

**UNDER-
CROSSINGS***

*Bores from a
minimal pit or
keyhole from
Ø 650 mm

OVERVIEW



01 Fluid-assisted displacement drilling technique

No 'flushing out of the bore cuttings'

02 Integrated machine control fully automatic drilling

03 Small space between bore axis and bottom edge of machine

direct connection of service pipe to the main line

04 Integrated rod cleaning by means of high-pressure washing jet

05 Minimally invasive drilling from out of the smallest possible working pit, Ø 650 mm 'Keyhole'

06 Closed round frame design stably, flexibly directional (machine can rotate freely inside the keyhole)

07 Integrated hydraulic tensioning system short set-up times, safe installation

INNOVATOR SMART, GENTLE, FAST

Control Panel

- Fully automatic drilling
- Operation from the surface
- Ergonomic mode of operation according to the latest standards
- Directional detectable bore
- High safety for the operator
- Clearly arranged colour display with icons
- Infinitely variable adjustment of the optimal drilling parameters

Rod change

- Fully automatic rod handling
- Ergonomic, quick, safe

Rotary DRIVE

- Rotary drive with hollow shaft – maximum rod length for the smallest installation space
- Positive-fitting rod link – soiling-resistant, material-friendly
- Torque-dependent thrust regulation – optimal utilisation of the machine output

Truck platform (complete system solution)

- Flexible Transportmodule

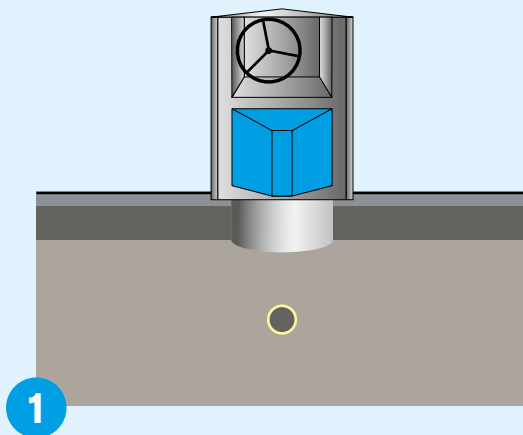


Pit application

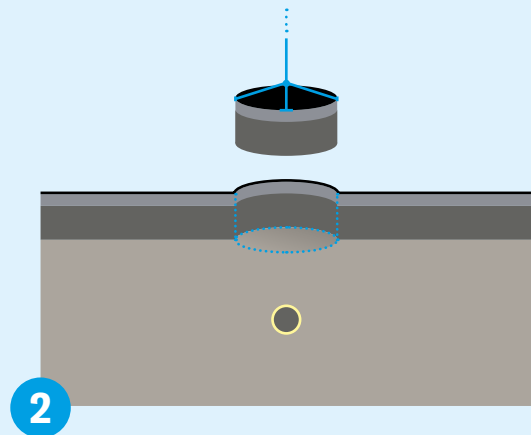
Only the GRUNDOPIT KS50 can manage this: with a special pit application a hole can be drilled steerably from a pit only 60 cm wide.



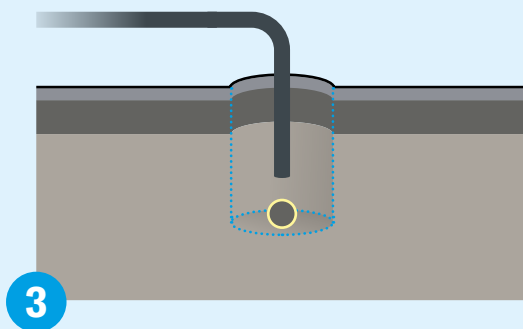
GRUNDOPIT KS50 PROCEDURE KEYHOLE APPLICATION



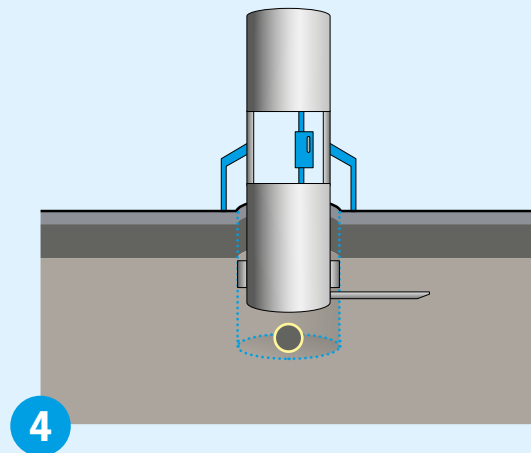
1
Creating the core bore with
core drill unit by TRACTO



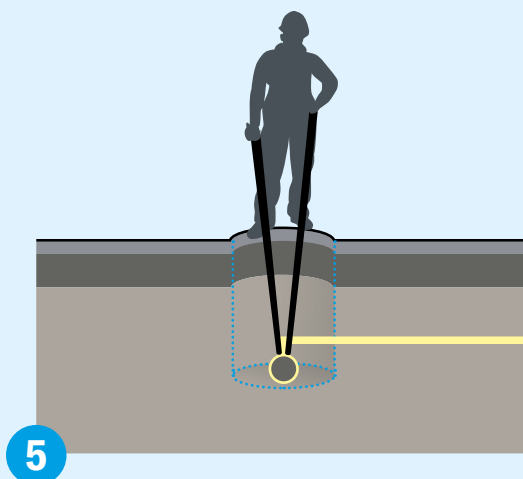
2
Removing the core



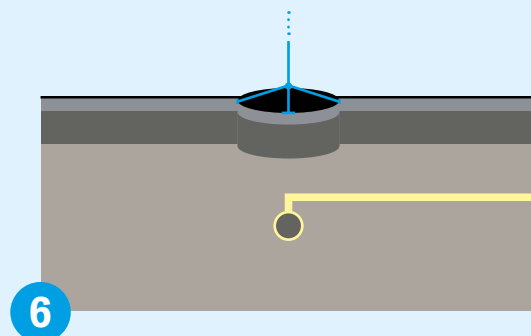
3
Extracting the keyhole



4
HDD drilling and pipe pulling with
GRUNDOPIT KS50 by TRACTO



5
Installation work with
Long Handled Toolings (LHT) by TRACTO



6
Reinstatement

VARIATIONS

Minimally
invasive
Innovative
Drilling rig



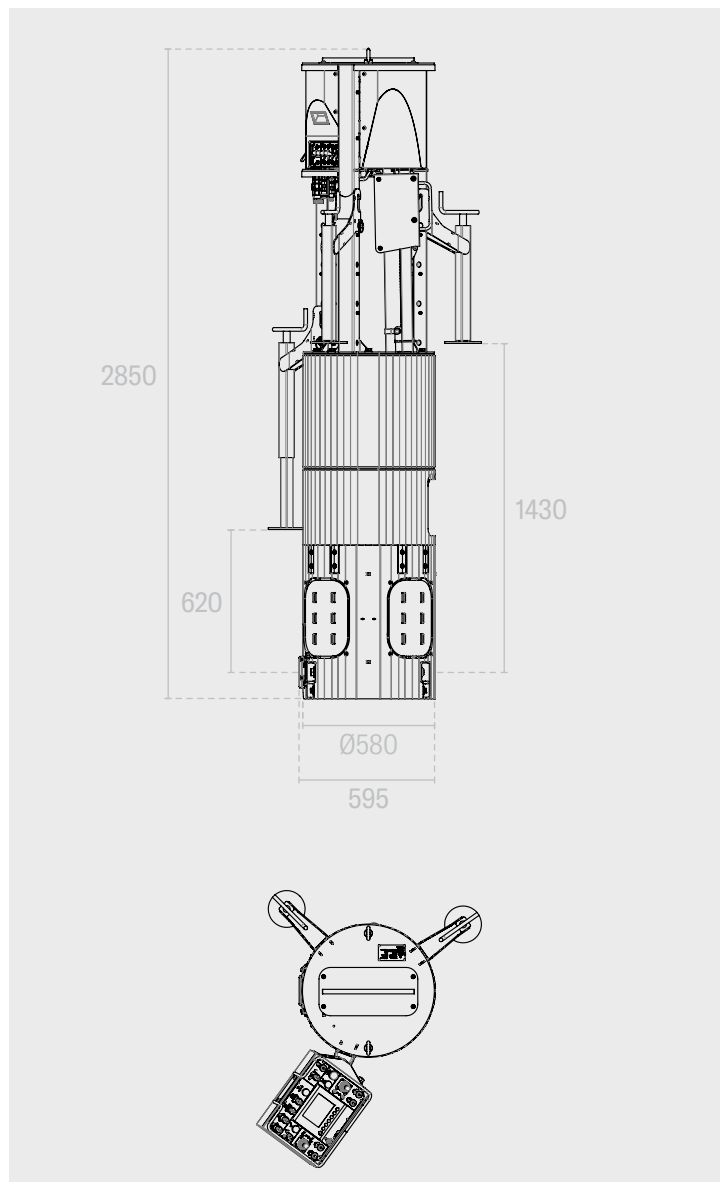
GRUNDOPIT KS50 INNOVATOR

FEATURES

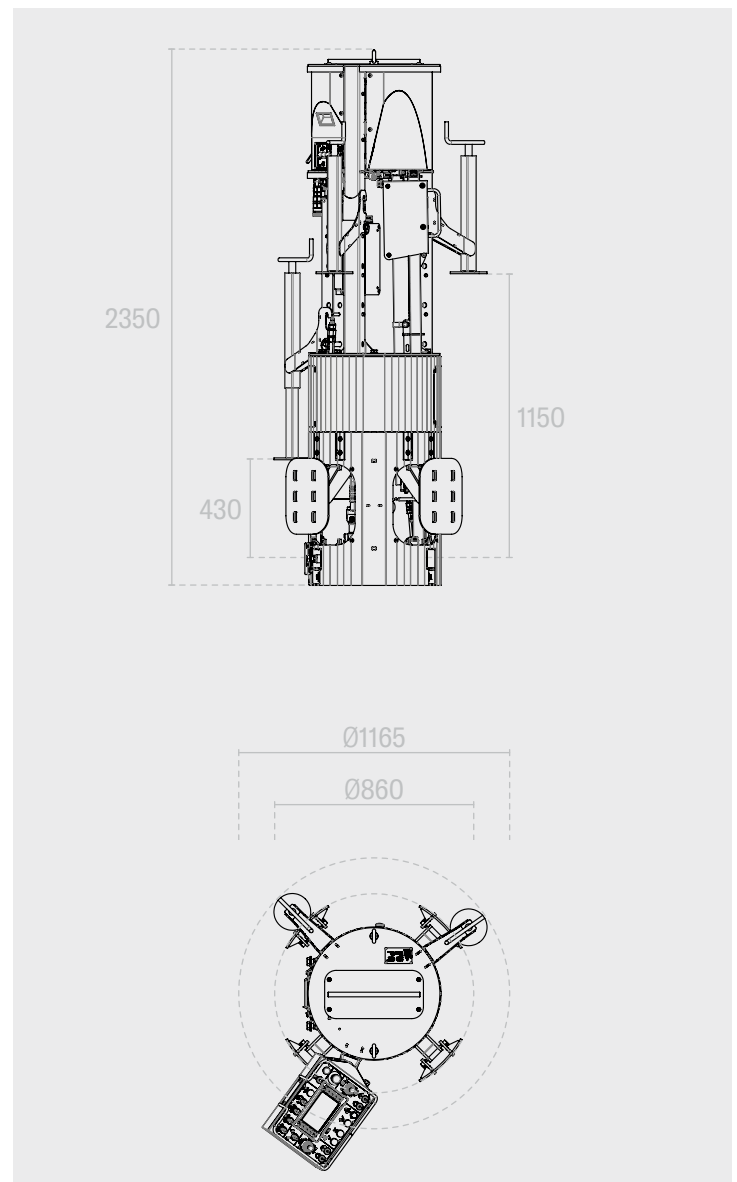
- Drilling out of the smallest possible working pits,
Ø 650 mm keyhole
- Integrated machine control with fully automatic drilling operation
(except steering movements)
- Infinitely variable adjustment of the drilling parameters
- Fully automatic rod handling

- Enclosed round frame design
- Clearly arranged colour display with icons
- Rotary drive with hollow shaft
- Torque-dependent thrust regulation
- Integrated rod cleaning system
- Integrated hydraulic bracing system

LONG VERSION



SHORT VERSION



VARIATIONS



TECHNICAL DATA

| | METRIC | | IMPERIAL | |
|---------------------------|--------------|---------------|--------------|---------------|
| | long version | short version | long version | short version |
| Height | 2.850 mm | 2.350 mm | 112.2 in | 92.5 in |
| Ø diameter | 595 mm | 595 mm | 23.4 in | 23.4 in |
| Weight | 620 kg | 550 kg | 1,367 lbs | 1,213 lbs |
| Content of rod box | 100 m | | 328 ft | |
| Thrust and pullback force | 50 kN | | 11.240 lbf | |
| Max. torque | 1.200 Nm | | 885 lbf ft | |
| Max. spindle speed | 70 rpm | | 70 rpm | |
| Pilot bore Ø | 58 mm | | 2.3 in | |
| Drill rods Ø | 50 mm | | 2 in | |
| Effective rod length | 250 mm | | 9,8 in | |
| Drill rod weight | 2,4 kg | | 5,29 lbs | |
| Upsizing Ø | 130 mm | | 5.1 in | |
| Outer pipe Ø | 90 mm* | | 3,5 in* | |
| Bore length | 50 m* | | 164 ft* | |
| Min. bore radius | 50 m* | | 164 ft* | |

*depending on soil | Subject to change

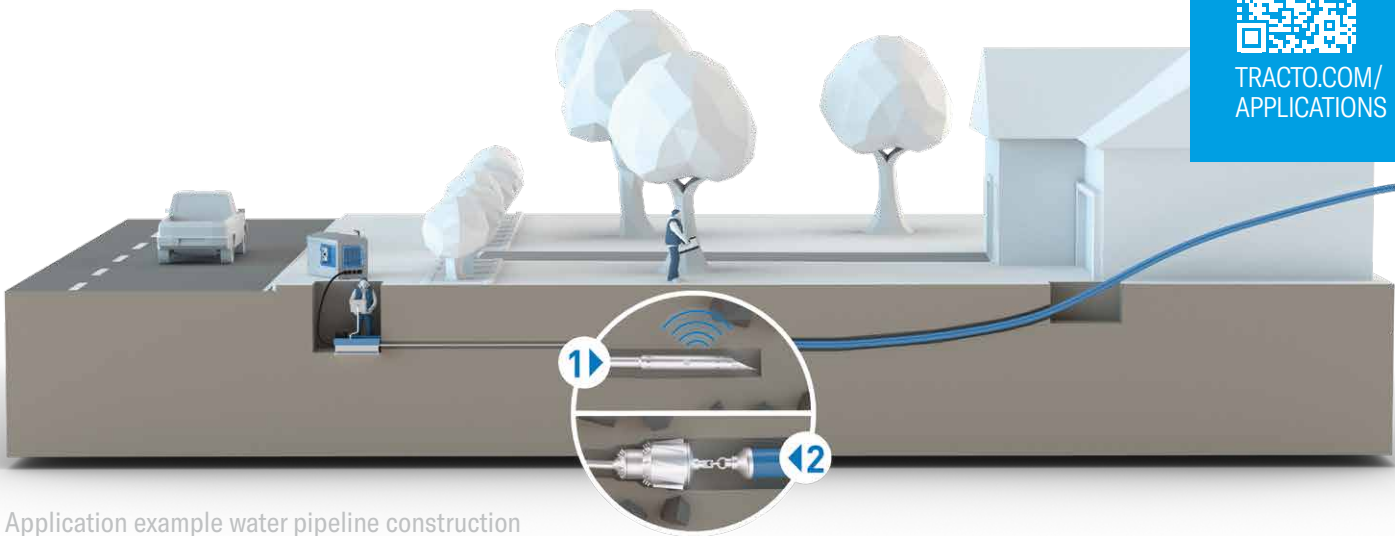
GRUNDOPIT PS40

SPEEDY HIGH-FLYER

The GRUNDOPIT PS40 was specially developed for the quick near-surface production of house connections. The extremely compact Mini-HDD rig is suitable for particularly small, only 1 metre wide pits which fit into the pavement. That is why the GRUNDOPIT PS40 is ideally suitable for FTTH connections directly from out of the pavement under which the public fibre optics infrastructure usually runs. Due to the low distance between the bore axis and the bottom of the starting pit, the bores can be started directly above the existing underground network from out of a flat starting pit.

House connections for water or electricity can also be installed easily with the GRUNDOPIT PS40 within the existing infrastructure up to or into the building. A core drill for drilling through manhole and basement walls allows direct installation here without a head hole. Thrust and pulling forces up to 4t enable the installation of pipes up to Ø 100 mm over max. 50 m length, even through challenging soils.

APPLICATION



GRUNDOPIT
Application
Videos at



TRACTO.COM/
APPLICATIONS

BORE TYPE

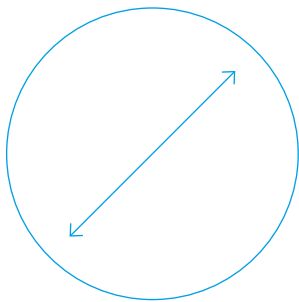


GUIDED



UNGUIDED

BORE DIAMETER

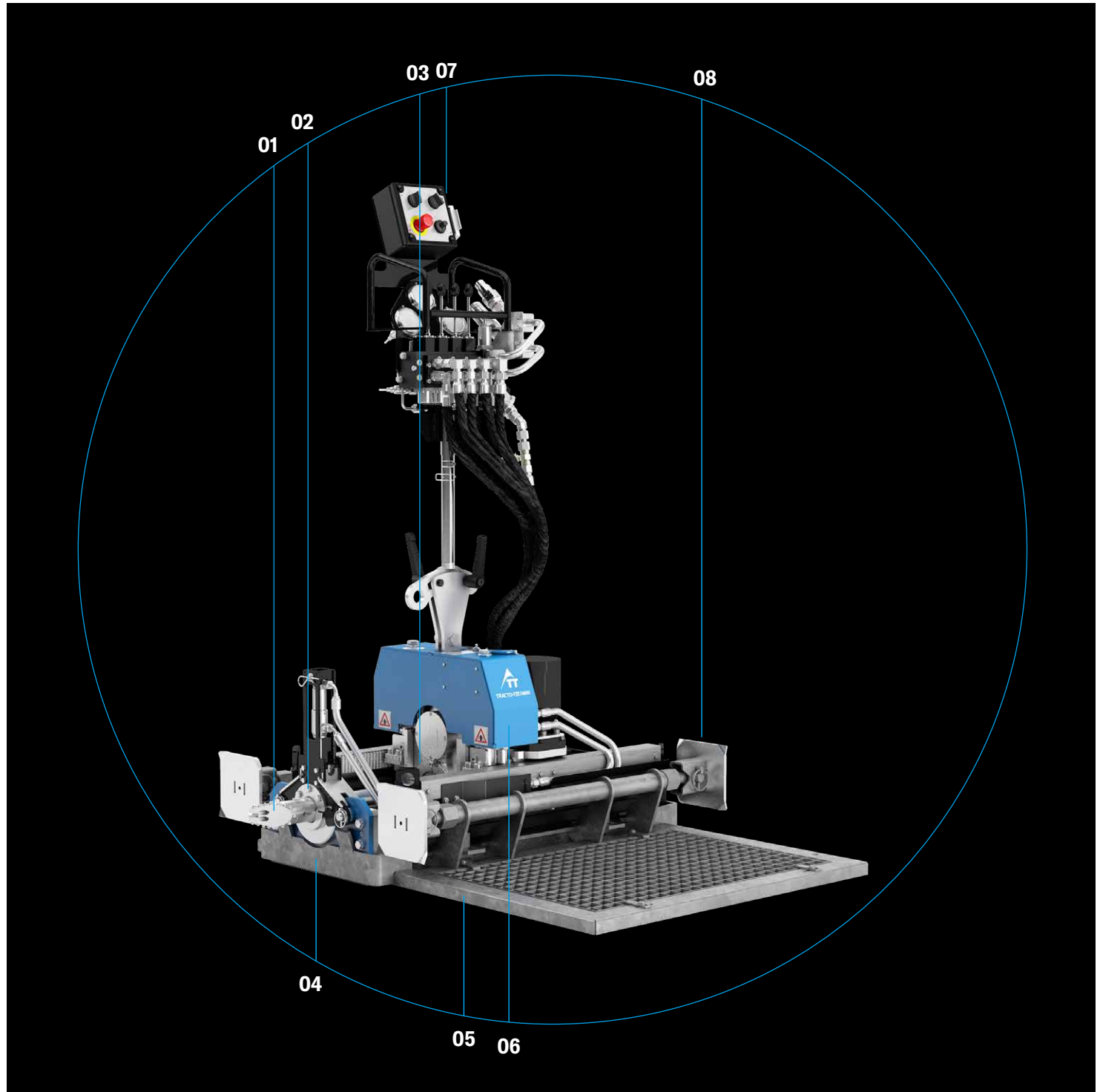


Ø 65 - 150 MM

MAIN APPLICATIONS



OVERVIEW



01 Drill rod effective length 500 mm with a rig length of only 1.174 m – allows quick and productive work even in extremely tight working spaces

02 Hydraulic Clamping Device – safer, comfortable, quick drill rod exchange

03 Thrust via rack and pinion drive – rigid construction, low maintenance and wear

04 Small distance between bore axis and bottom edge of machine – start from very flat pits, directly above the available infrastructure

05 Working platform with safe and clean stand, earthing the machine operator

06 Removable rotary drive with lifting unit especially compact construction and ergonomic drill rod handling

07 Fold-out control panel – compact transport position, quick set-up

08 Optional: Mechanical or hydraulic tensioning inside the pit short-set-up times, ergonomic work and high stability

HOME-FRIENDLY SMALL, FAST, FLEXIBLE

1 | Control panel

Well laid-out, swivelling control panel for comfortable handling and control of the bore rig from any position.

2 | Unfolding clamp

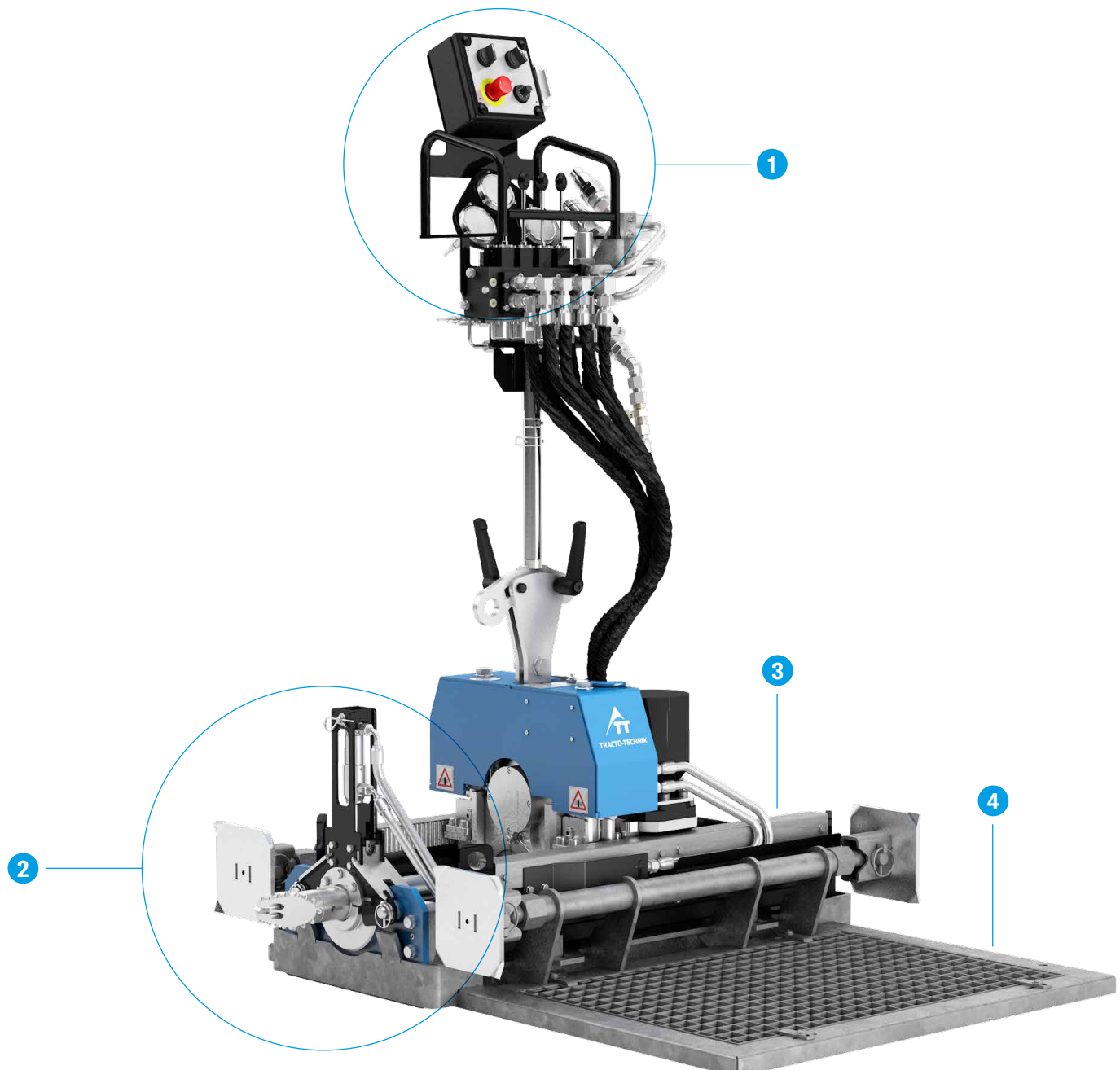
Large backreamers up to max. OD 150 mm can be pulled directly into the rig – no extension frame required.

3 | Rotary drive with quick rod connector

Simple and quick connection of the rod to the rotational drive, without screwed fittings enable immediate paddle function.

4 | Hydraulic pit-start frame

For short set-up times, ergonomic work and high stability





GRUNDOPIT PS40 MINIMALLY INVASIVE DRILLING



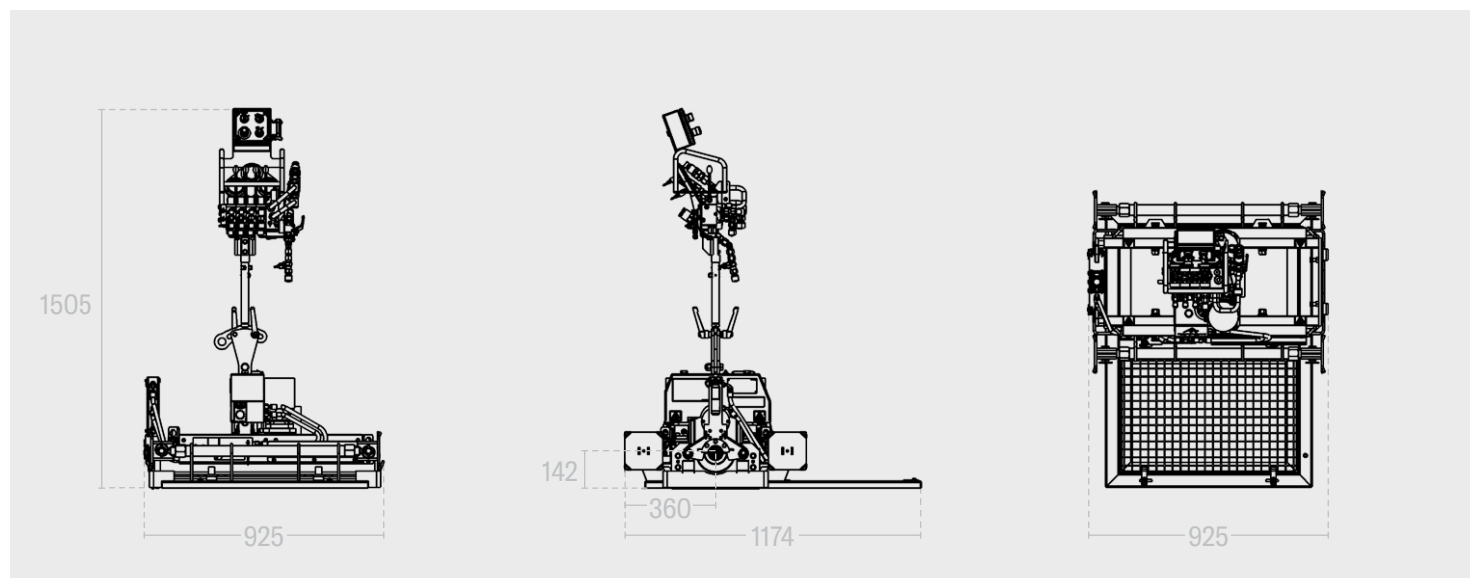
VARIATIONS

GRUNDOPIT PS40 SPEEDY HIGH-FLYER

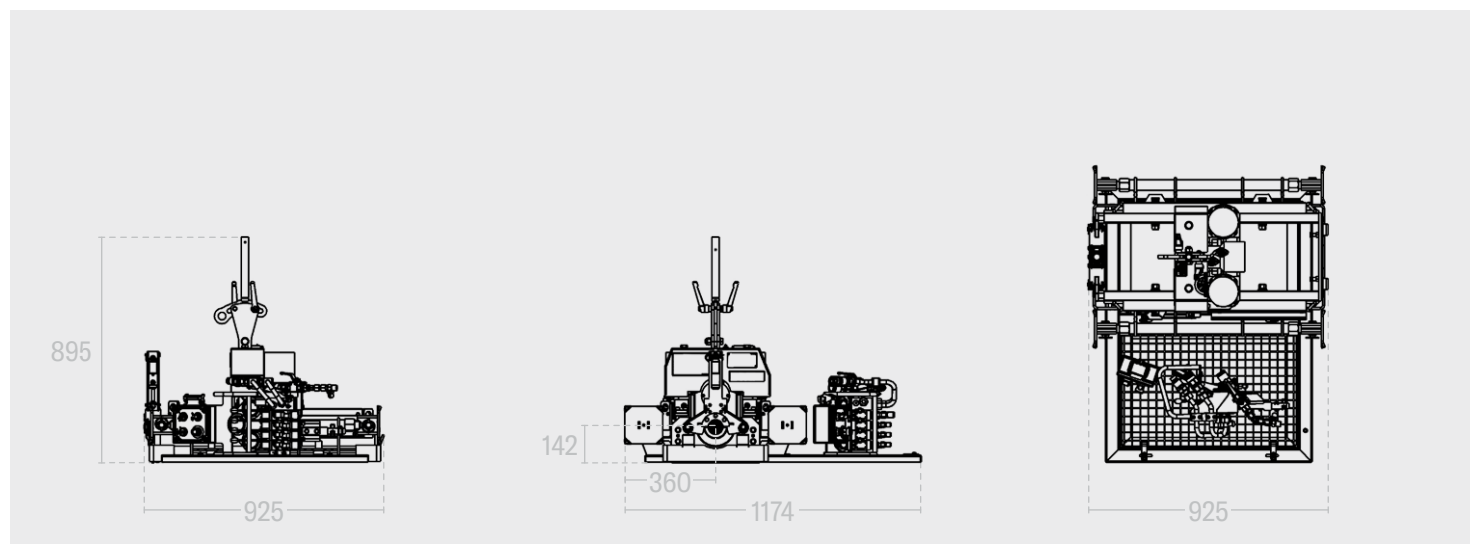
FEATURES

- Very compact HDD pit bore rig for the quick manufacture of house connections (especially FTTH) and parallel installations up to 50 m
- Shallow launch from a small pit of only 1.00 x 1.25 m, which fits exactly in the footpath
- Holes to the building with core drill units
- Small distance between bore axis and pit floor allows holes above the existing pipeline network
- Tensile and thrust force up to 40 kN at max. torque of 1,000 Nm

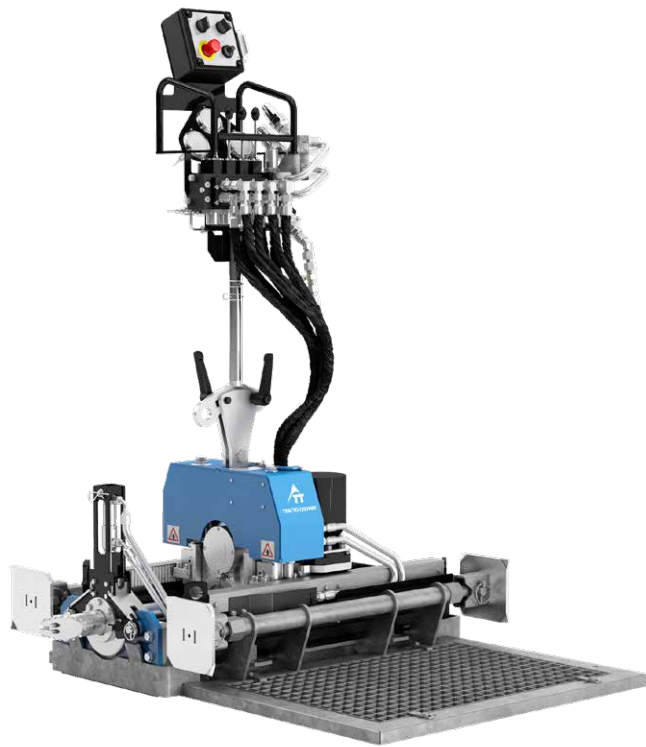
WORKING POSITION



TRANSPORT POSITION



VARIATIONS



TECHNICAL DATA

DRILL ROD TYPE TR 34

| | METRIC | IMPERIAL |
|--|------------------------------|-----------------------------|
| Thrust and pullback force | 40 kN | 9 lbf |
| Installation speed (without load) | 5 m/min | 16 ft/min |
| Max. torque | 1.000 Nm | 738 lbf ft |
| Max. spindle speed | 70 rpm | 70 rpm |
| Bore rod Ø | 45 mm | 1.8 in |
| Effective rod length | 500 mm | 20 in |
| Rod weight | 3,7 kg | 8 lbs |
| Pilot hole Ø | 65 mm | 2,6 in |
| Min. drilling radius | 26,5 m | 87 ft |
| Length x Width x Height (transport position) | 955 mm x 1.175 mm x 1.500 mm | 37.6 in x 46.3 in x 59.1 in |
| Length x Width x Height (working position) | 955 mm x 1.175 mm x 1.500 mm | 37.6 in x 46.3 in x 59.1 in |
| Weight mech. tension | 313 kg | 690 lbs |
| Weight hydr. tension | 335 kg | 739 lbs |
| Upsizing Ø ≤ | 150 mm* | 5.9 in* |
| Outer pipe Ø ≤ | 110 mm* | 4.3 in* |
| Bore length ≤ | 40 m* | 131 ft* |
| Required hydraulic fluid volume** | 60 l/min | 2 cfm |
| Required max. hydraulic fluid pressure | 230 bar | 3.336 psi |

* depending on soil | ** depending on the system min., here with FU01 | Subject to change.

GRUNDOPIT PS60

SMALL POWER PACK

Property house connections for gas, water, electricity, glass fibre cables and sewer pressure pipes can be installed quickly and economically with the fluid-assisted mini drill rig GRUNDOPIT PS60. The GRUNDOPIT PS60 can be launched from a small pit or, if applicable, directly from a utility room in the basement. If the bore is carried out directly into the building, the brickwork is sealed with a wall duct; so a head access hole in front of the building wall is not required. As well as the installation of house connections, crossings beneath traffic ways, rivers and brooks are also easily achieved.

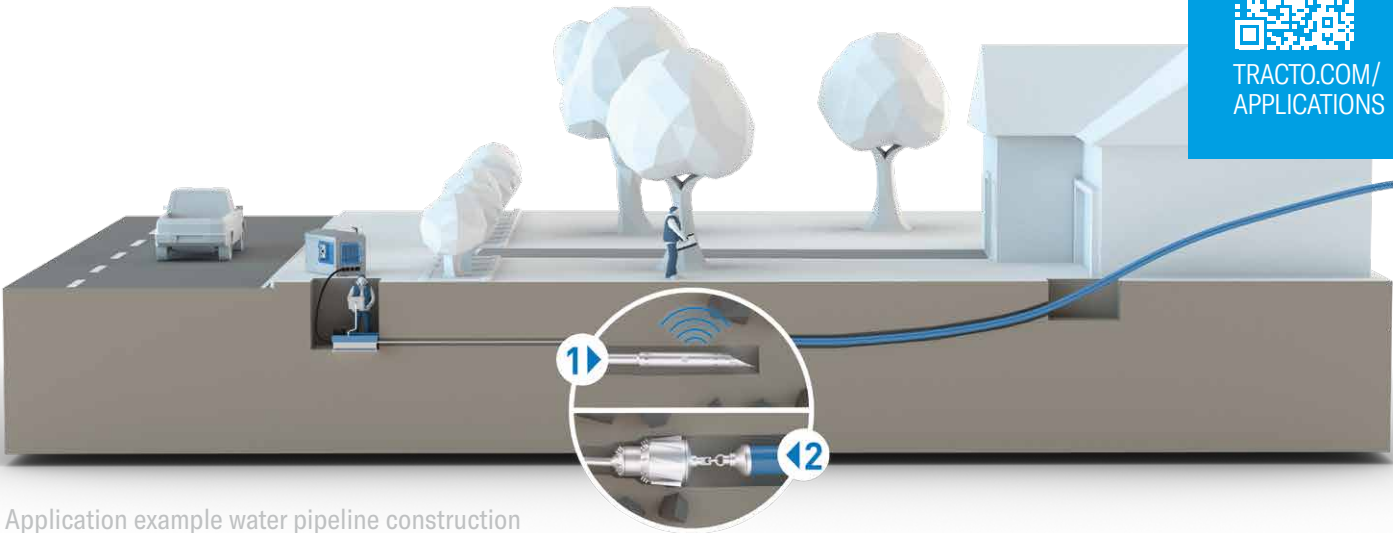
Despite its small external dimensions, the GRUNDOPIT PS60 provides a powerful stroke, allowing for the application of rods with an effective length of 750 mm. With its high torque of 1,500 Nm, the maximum rotation number of 150 rpm and pushing and pulling forces of up to 6 t, working in difficult soil conditions is relatively trouble free.

APPLICATION

GRUNDOPIT
Application
Videos at



TRACTO.COM/
APPLICATIONS



Application example water pipeline construction

BORE TYPE

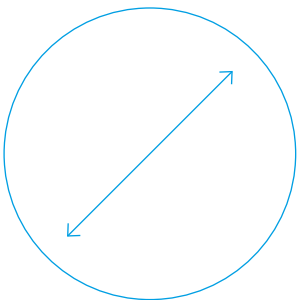


GUIDED



UNGUIDED

BORE DIAMETER



Ø 80 – 250 MM

MAIN APPLICATIONS

HOUSE
CONNECTIONS

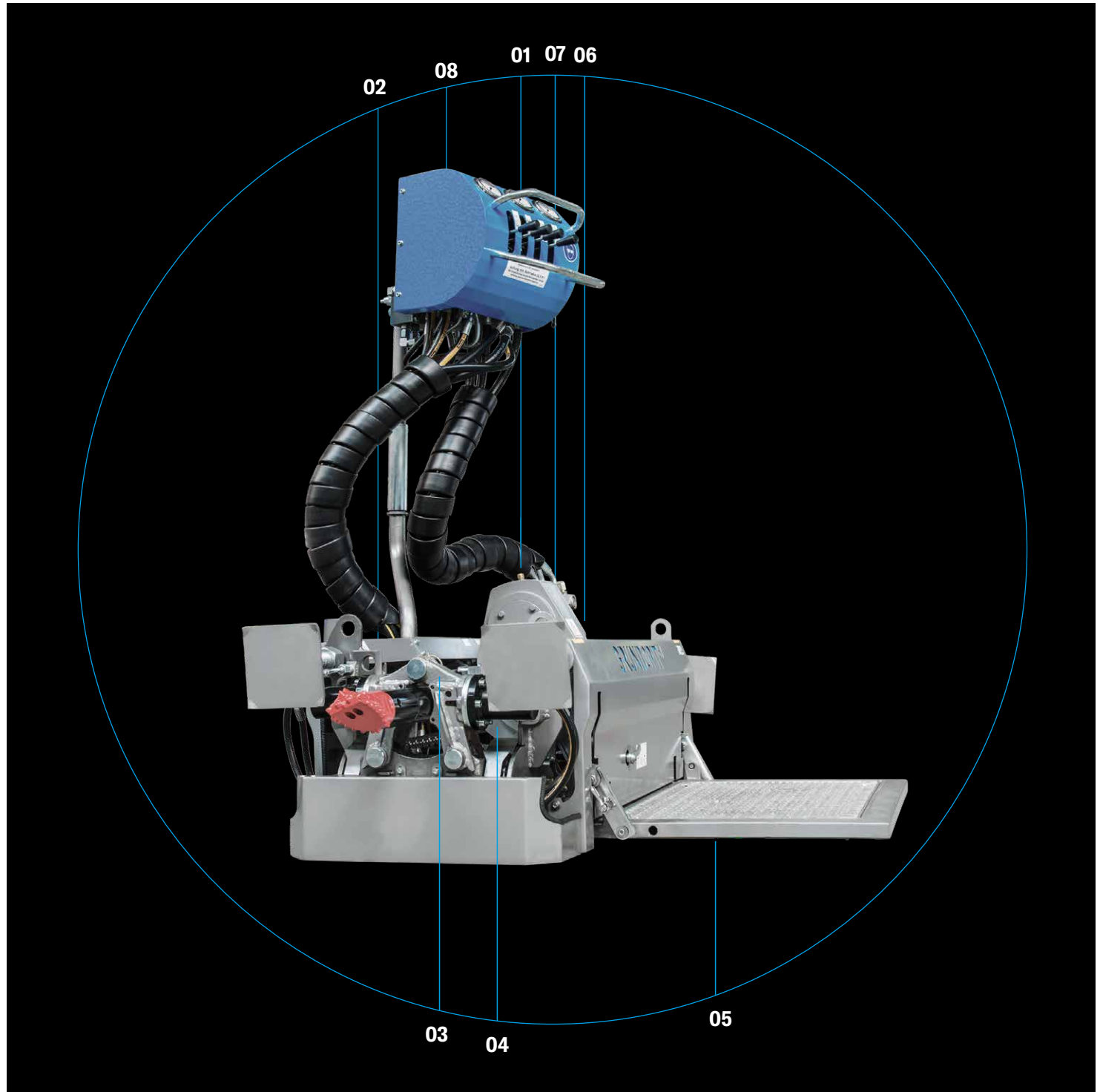
DRAINAGE

UNDER-
CROSSINGS

SPECIAL APPLICATIONS

USE
IN ROCK

OVERVIEW



01 Coupling of the hydraulic lines directly to the rig
operator protection

02 Effective rod length 750 mm with only 1,370 mm rig length
for fast and productive work, even in extremely limited spaces

03 Hydraulic clamp – safe, comfortable, quick and easy rod
exchange, clamping is possible in every position

04 Thrust via cylinder drive – full power is provided from the start

05 Fold-out footboard for safe and clean standing

06 Two-step rotation – optimal adaptation to the soil conditions/
upsizing diameters

07 Hydraulic tensioning in the work pit – short setup times,
high self-support

08 Fold-out control panel – compact transport position,
quick set-up

QUICKSTARTER COMPACT, POWERFUL, PROFITABLE

1 | Control panel

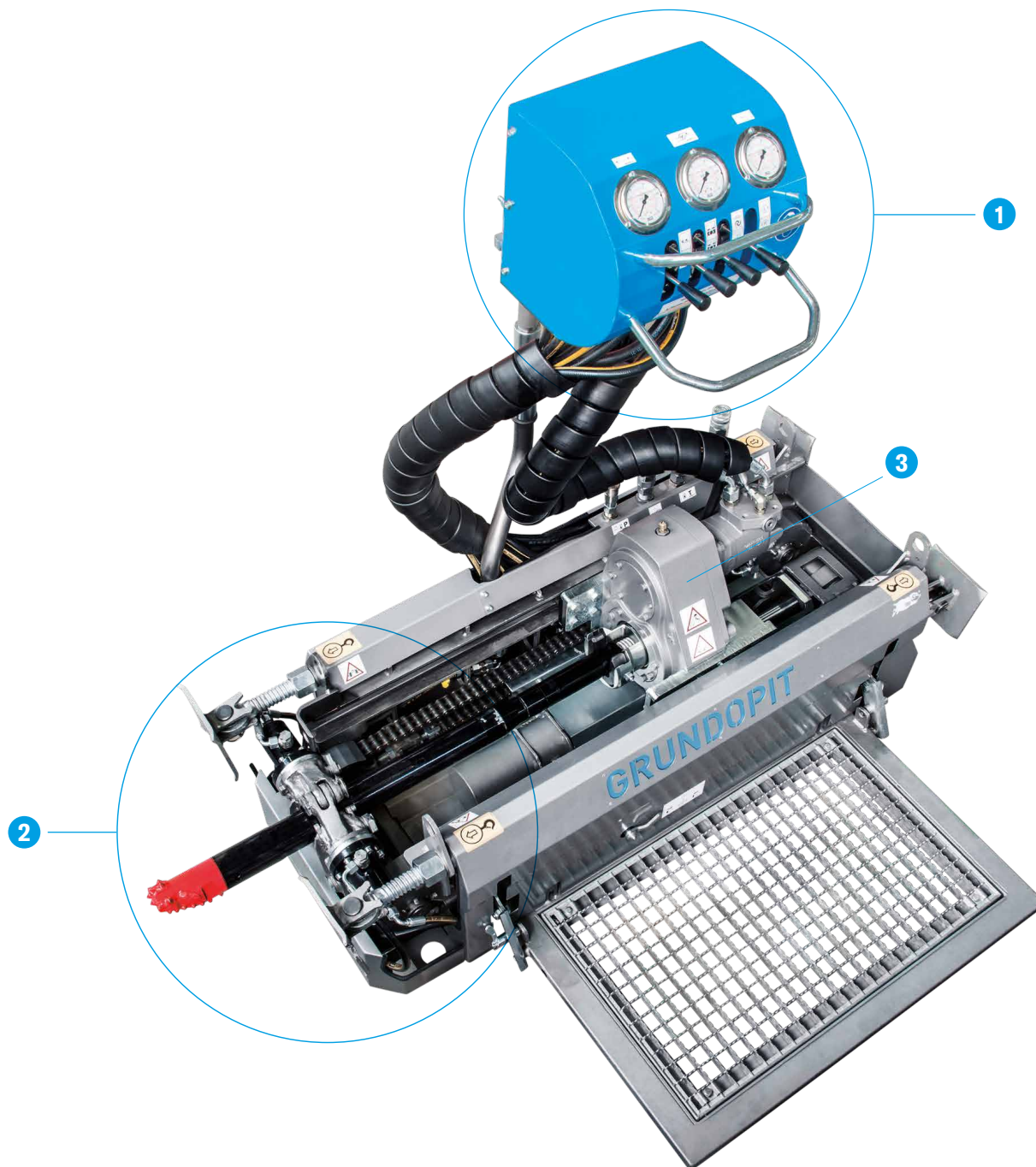
The well laid-out, swivelling control panel is made for comfortable handling and control over the drill rig from every position.

2 | Unfolding clamp

Pulling of large backreamers up to max. OD 200 mm directly into the rig is possible – no attachment frame required.

3 | Rotary drive with quick rod connector

Simple and quick connection of the rod to the rotational drive without screwed fittings enables immediate paddle function.





GRUNDOPIT PS60 MINIMALLY INVASIVE DRILLING



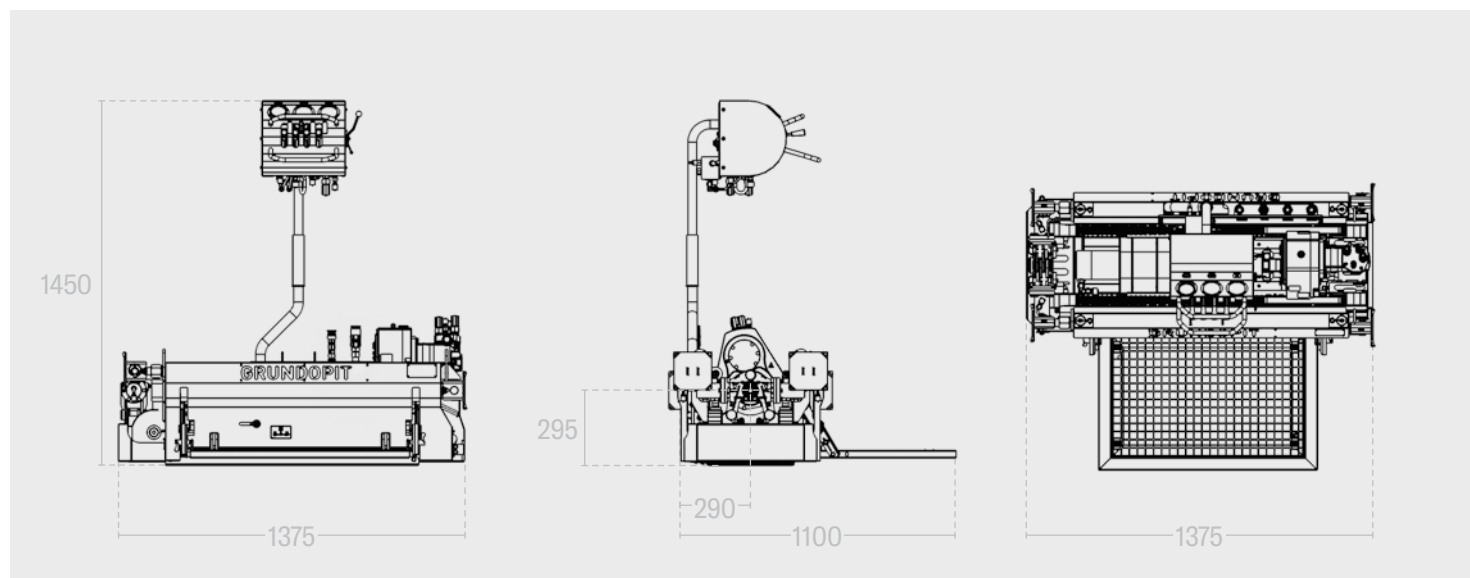
VARIATIONS

GRUNDOPIT PS60 SMALL POWER PACK

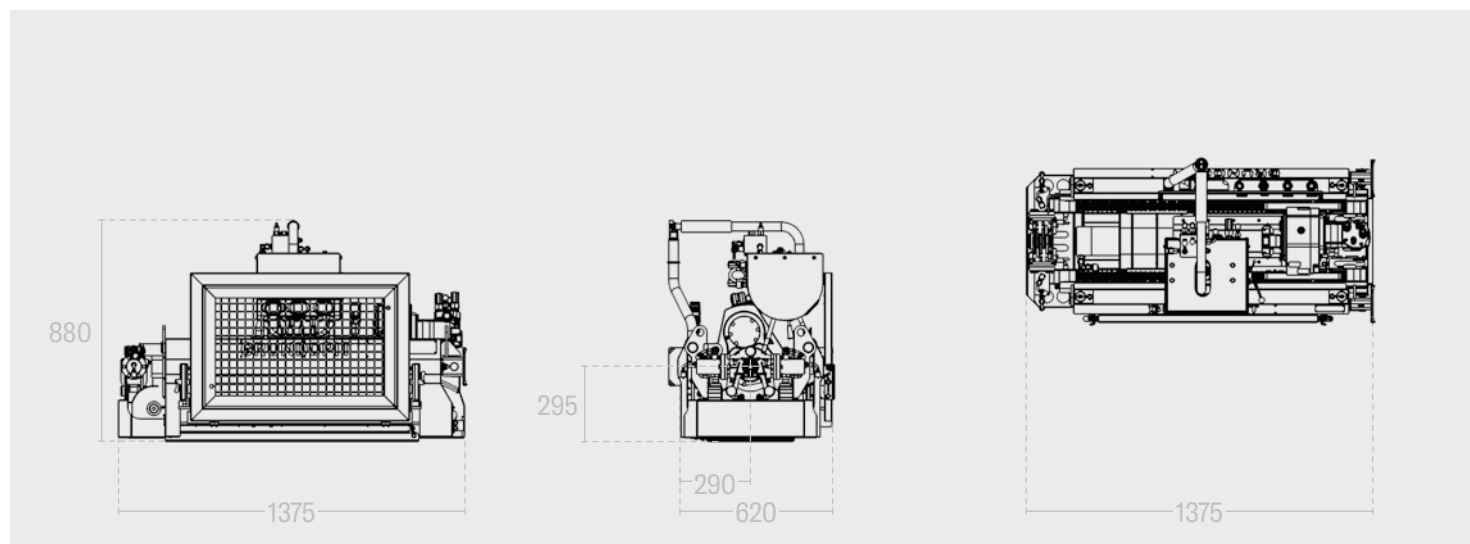
FEATURES

- Two-stage rotation
- Hydraulic clamping
- Effective length of rods 750 mm with a rig length of only 1.370 mm
- Thrust via cylinder
- Fold-out control board
- Hydraulic bracing in work pit
- The hydraulic line is coupled directly with the rig
- Rotary drive with quick-locking rods (replacement of single wear parts)
- Unfolding clamp

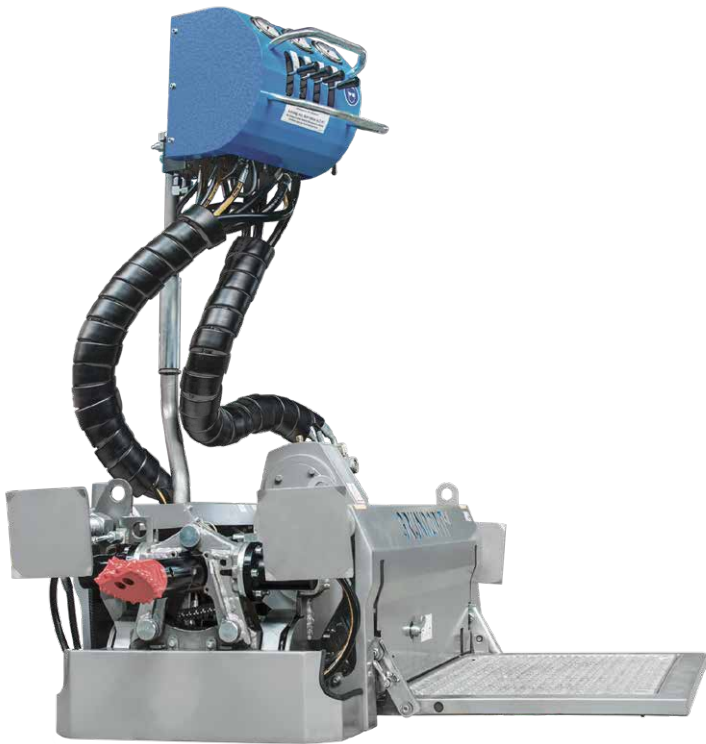
WORKING POSITION



TRANSPORT POSITION



VARIATIONS



TECHNICAL DATA

| | METRIC | IMPERIAL |
|--|--------------------------|-----------------------|
| Thrust and pullback force | 60 kN | 13,489 lbf |
| Installation speed (without load) | 5 m/min | 16 ft/min |
| Max. torque | 1.500 Nm | 1,106 lbf ft |
| Max. spindle speed | 150 rpm | 150 rpm |
| HP Bentonite pump (not included) | 40 l/min** | 10.6 gpm** |
| Bore rod Ø | 51 mm | 1.89/1.50 in |
| Effective rod length | 750 mm | 30 in |
| Rod weight | 6,3 kg | 13.9 lbs |
| Pilot hole Ø | 80 mm | 3.15 in |
| Min. drilling radius | 26,5 m | 87 ft |
| Length x Width x Height (transport position) | 1.385 x 620 x 880 mm | 54.5 x 24.4 x 34.6 in |
| Length x Width x Height (working position) | 1.375 x 1.100 x 1.450 mm | 54.1 x 43.3 x 57.1 in |
| Max. weight | 490 kg | 1,080 lbs |
| Upsizing Ø ≤ | 250 mm* | 9.84 in* |
| Outer pipe Ø ≤ | 200 mm* | 7.87 in* |
| Bore length ≤ | 80 m* | 262 ft* |
| Required hydraulic fluid volume without MA09 | 70 l/min | 2.47 cfm |
| Required hydraulic fluid volume with MA09 | 100 l/min | 3.53 cfm |
| Required max. hydraulic fluid pressure | 250 bar | 3,626 psi |

* depending on soil | ** in combination with hydraulic power pack HP37 and mixing unit MA09 | Subject to change

WELL EQUIPPED IS HALF WAY THERE

Drilling tools perfectly tailored to the drilling unit guarantee optimum drilling advancement in any type of ground. It goes without saying that all parts are tough and durable.



BORE HEAD WITH
TRANSMITTER HOUSING



HAMMER BORE HEAD



CORE HOLE DRILL

For wall duct



QUICK-CONNECT



BACKREAMER



UPSIZING TOOLS

For installing short pipes



DETECTION TECHNOLOGY



HOLEOPENER



RETRIEVAL TOOL

For upsizing

SYSTEM COMPONENTS



DRIVE UNIT TT HP19
for GRUNDOPIT PS40



DRIVE UNIT TT HP28 / HP37
for GRUNDOPIT PS40, PS60, KS50



RINSING UNIT FU1
for operation with water or water/polymer
drilling fluid



MIXING SYSTEM MA04
for operation with bentonite drilling fluid



MIXING SYSTEM MA09
for operation with bentonite drilling fluid

SPECIAL ACCESSORIES FOR KEYHOLE SYSTEM



SUPPORT PLATES
for use in narrow pits

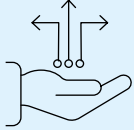


LONG HANDLED TOOLING (LHT)
for installation work in the keyhole

Request a copy of our brochure on mixing plant and hydraulic stations!

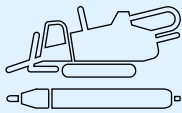
FULL SERVICE FOR TRENCHLESS TECHNOLOGY

Whether its before, during or after the purchase, whether in person or online – we are always at your side with advice and support. Our wide-ranged service is specially tailored to the requirements of trenchless pipe installations, so you can concentrate fully on your core business.



Digital Solutions

Our website offers you the whole world of trenchless technology in digital form. Find out more about our company, our products and their applications. Discover the digital tools for the HDD drilling technology and many other intelligent solutions. Always stay up to date by using the links to our social media channels. Or you can order machines, accessories and spare parts in our eSHOP – easy and conveniently via PC, smartphone or tablet.



Nodig Product Specialists

You can truly rely on our product specialists for all technical questions regarding the function and application of our steerable and non-steerable NODIG-systems. With comprehensive knowledge in each of their special fields, you can be sure they will find the best solution for your trenchless projects and advise you competently on setting up your jobsite.



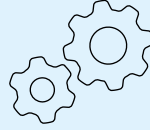
Financing

We offer attractive financing solutions for new and used machines to our customers and sales partners through the TRACTO-TECHNIK Finance GmbH. Be it financing, hire purchase, various types of leasing or insurance: we provide extensive expert advice, individually and personally, in order to find the tailored solution for you. Discretion goes without saying.



Training

Qualified training enables you to apply trenchless technology even more effectively and profitably. Our wide range of training courses for machine operators, construction professionals as well as planners and clients cover all aspects of NODIG technology, including special topics. Certified trainers also instruct you, in theory and practice according to your individual requirements, either at one of our numerous company locations, or directly on your own premises or online, independent of time and place.



Specialised Civil Engineering Service (Application Technology)

The specialised civil engineering service for application technology provides support for all your trenchless construction sites. Our experts demonstrate the steerable and non-steerable NODIG technology live in practical use, show your drilling teams how to use it or actively assist with special projects.



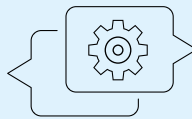
Geoservice

Precise knowledge of the soil is the key to successful trenchless projects. Our Geoservice team provides you with this professional knowledge. Our expertise puts you in a position to master every type of soil. Based on geoscientific maps and existing construction files, we supply information on the soil, which will help you with calculations or supplements.



Used Equipment

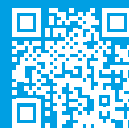
If you want to sell a used machine at an attractive price or are looking for the right equipment for your tasks, our full service for used NODIG machines will take the workload off your hands – from appraisal and price determination to professional repair and certification, through to achieving the best price for you via our used machine website with access to one of the world's largest construction machinery platforms.



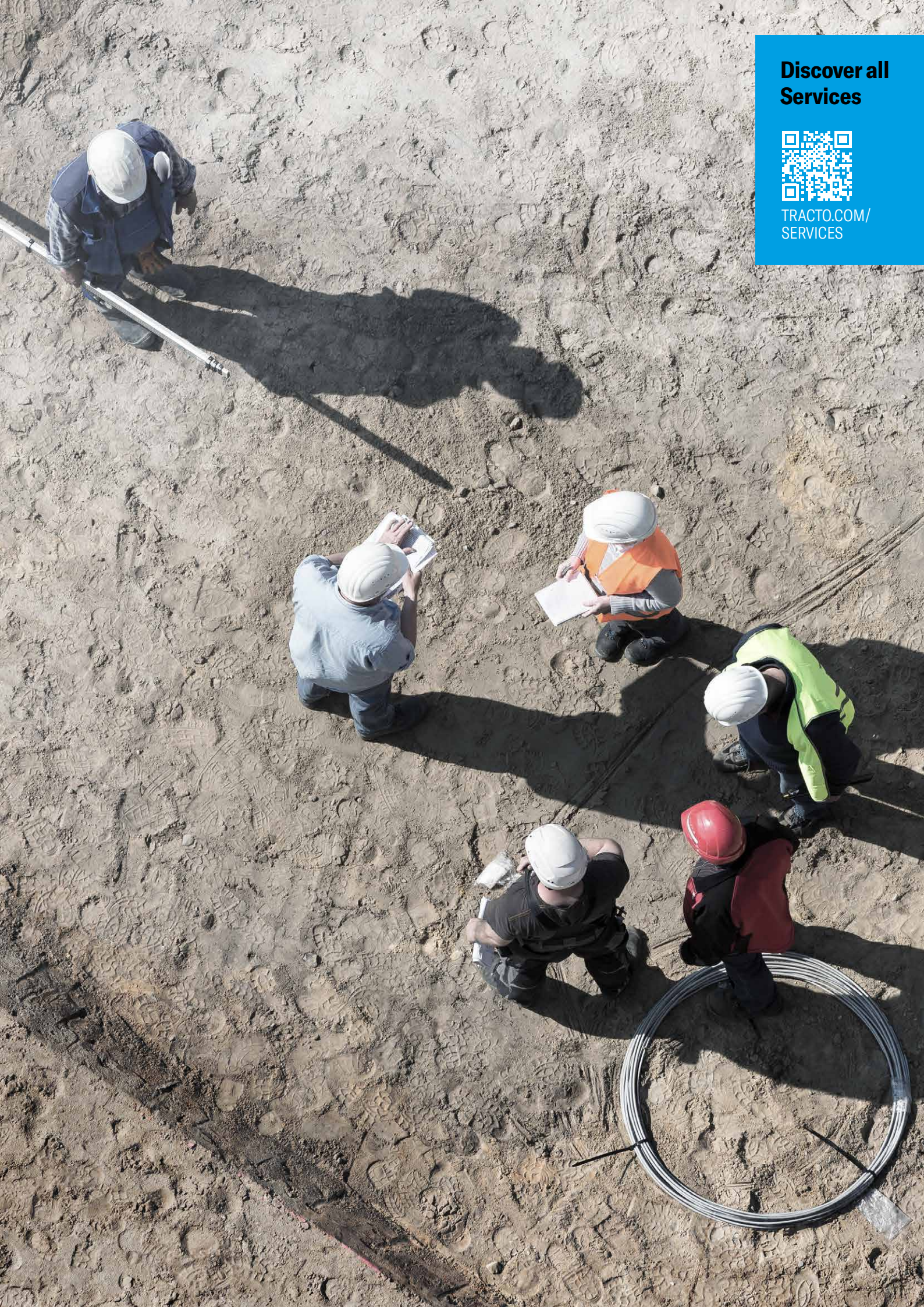
After Sales

Via our worldwide service network we are always there for you, even after the purchase. A total of five TRACTO plants and seven customer centres in Germany, as well as our worldwide sister companies and sales partners guarantee fast supply of spare parts and immediate availability. Our competent service staff offer fast assistance, to ensure you don't lose any time.

**Discover all
Services**



[TRACTO.COM/
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