

# TRACTO

**All information  
about mixing systems**

[TRACTO.COM/MA](https://tracto.com/ma)



## MIXING SYSTEMS AND DRILLING FLUID LOGISTICS THE OPTIMAL RINSE



**ADVANCED TRENCHLESS TECHNOLOGY**

# RELIABLE MIXING TECHNOLOGY IN FULL FLOW

## **The mixing systems from TRACTO**

First-class drilling fluid technology is an important component of successful drilling. Together with the bore rig and drilling tools, TT drilling fluid technology forms an optimum unit for efficient work, even in difficult soil conditions. High-performance mixing systems and pumps guarantee a high flow rate and optimum quality of the drilling fluid.

## **The drilling fluid in HDD technology**

The drilling fluid made of water and Bentonite in HDD drilling technology has many indispensable functions. It is used, among other things, to loosen the soil and support the free cut, to discharge the cuttings, to seal the borehole and to reduce the wear of the drilling and expanding tools. However, the most important function of the HDD drilling fluid is to stabilise the drilling channel because gravity permanently acts on the horizontal borehole. The mud must ensure that the drill channel does not collapse and that the dislodged cuttings are continuously discharged. And this works most reliably with Bentonite, which consists of natural, particularly swellable clay minerals.

## **Valuable mixture without alternative**

The specific nature of the clay minerals makes Bentonite an indispensable carrier for the drilling fluid in the HDD. Other drilling fluids are not suitable for horizontal drilling due to the special conditions. High-quality bentonites consist to 60 - 80% of a highly swellable clay mineral called montmorillonite.

In the mixing system, the drilling mud required for loosening and transporting the soil as well as for supporting the borehole is mixed, by taking into account the soil properties found and pumped internally through the drill rod to the drilling or expander head by a powerful mud pump.

In order to achieve optimal soil penetration, it is essential to adapt the parameters of the drilling fluid to the prevailing soil conditions. Therefore, a sophisticated mixing technique is crucial in the HDD process.

The drilling fluid is mixed in a mixing chamber. The mud additives enter the mixing tank via a mixing funnel and a Venturi nozzle, where they are circulated several times. After a short swelling time, the drilling fluid is fed to the bore rig via powerful and robust pumps. The mixing systems are driven via hydraulic power units, power generators or the truck's auxiliary drive.

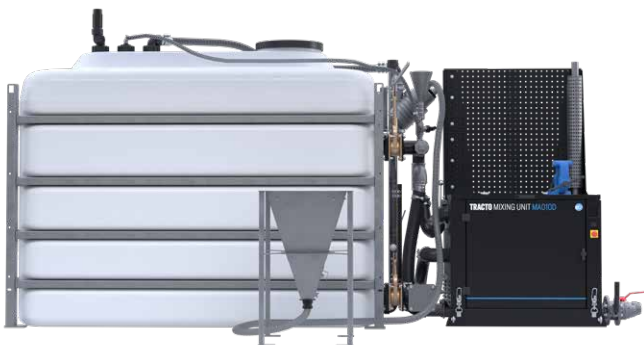
TRACTO offers suitable mixing systems for bore rigs up to the 30 tonne class. Depending on the size of the bore rig and the intended use, the right machine can be selected from the wide product range. The systems differ, for example, in the number and capacity of the mixing tanks and the power of the pumps. Furthermore, various drive concepts as well as numerous other options are available. Larger mixing systems can be individually mounted on trucks or integrated.



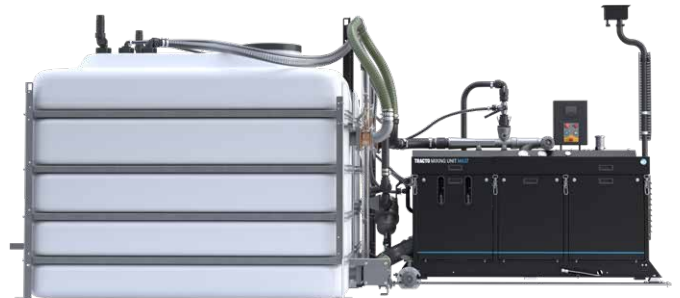
RINSING UNIT FU01



MIXING SYSTEM MA09



MIXING SYSTEM MA010D



MIXING SYSTEM MA07



VACUUM SUCTION BARREL



TRUCK SUPERSTRUCTURE

# RINSING UNIT FU01

## THE ECONOMIC

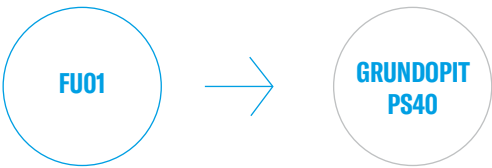


The compact water flushing unit is particularly suitable for short reaches and trenchless installation of smaller diameter pipes. For these applications, it is not necessary to add Bentonite. Flushing of the bore, as well as lubrication and cooling of drilling tools and the rod is done with water only. The absence of Bentonite thus makes the GRUNDOPIT PS40 pit drilling rig in conjunction with the FU01 an economical solution for short crossings and house connections.

# VARIANTS

## FEATURES

- Compact and lightweight tool for short bore paths
- No admixture of Bentonite required
- Water tank with 300 litre tank capacity
- Eyelets for easy transport on the construction site
- High-pressure pump with 14.6 l/min flow rate and 40 bar pressure
- Pump can also be used as a washing device by changing the suction to fresh water
- Filling opening on top for the addition of polymers
- Operation in combination with hydraulic power units HP19 and HP28



TECHNICAL DATA	FLUSHING UNIT FU1
Length x Width x Height	1,240 x 835 x 1,000 mm
Weight (empty)	approx. 120 kg
Tank volume of fresh water tank	300 l
Max. flow rate of high-pressure pump	14,6 l/min
Max. pressure of high-pressure pump	40 bar
Hydraulic oil quantity	13 l/min
Max. hydraulic oil pressure	85 bar
Sound power level Lwa	< 80 dB(A)

# MIXING SYSTEM MA09

## QUICK CONNECTION

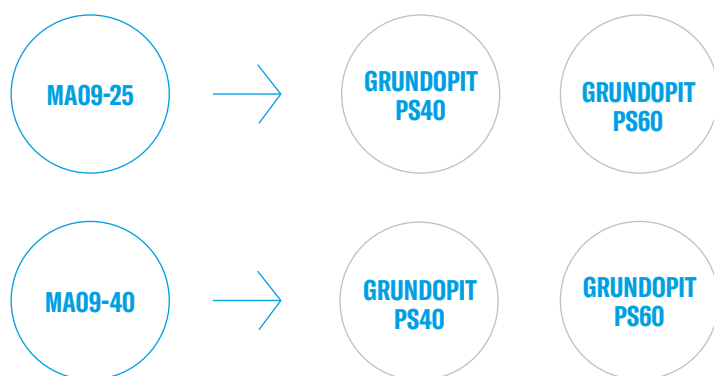
The compact, powerful MA09 Bentonite mixing system is ideal for smaller mud drilling rigs such as the GRUNDOPIT PS40 and PS60 but can also be used for other bore rigs. The high circulation rate of the mixing pump (500 l/min) enables extremely fast Bentonite fluid mixing with just short breaks from drilling. Low space requirements of just 1.45 x 1.40 m and an empty weight of just 370 kg make transport easy.



# VARIANTS

## FEATURES

- Circulating pump for mixing with 500 l/min
- Mixing tank with capacity of 1,100 l and internal distribution system
- Venturi nozzle
- High-pressure pump with max. 40 l/min (depends on version)
- Large Bentonite funnel for easy filling
- Hot-dip galvanised base frame with forklift pockets and eyelets for easy transport
- Optional 200 l fresh water tank, high-pressure pump can also be used as a washing device by changing the suction to fresh water
- Operation in combination with hydraulic power units HP19, HP28 or HP 37



TECHNICAL DATA	MIXING SYSTEM MA09-25 AND MA09-40
Length x Width x Height (with fresh water tank)	1,450 x 1,400 x 2,050 mm
Length x Width x Height (without fresh water tank)	1,450 x 1,400 x 1,550 mm
Weight empty, without/with fresh water tank	370/390 kg
Weight full, without/with fresh water tank	1,500/1,700 kg
Mixing tank volume	1,100 l
Tank volume of fresh water tank	200 l
Max. flow rate of mixing pump	500 l/min
<b>MA 09-25, IN COMBINATION WITH GRUNDOPIT PS40 AND HYDRAULIC POWER UNIT HP28</b>	
Max. flow rate of high-pressure pump	25 l/min
Max. pressure of high-pressure pump	40 bar
Required hydraulic oil quantity	20 l/min
Required max. hydraulic fluid pressure	180 bar
<b>MA 09-40, IN COMBINATION WITH GRUNDOPIT PS60 AND HYDRAULIC POWER UNIT HP37</b>	
Max. flow rate of high-pressure pump	40 l/min
Max. pressure of high-pressure pump	40 bar
Required hydraulic oil quantity	30 l/min
Required max. hydraulic fluid pressure	180 bar



# MIXING SYSTEM MA010D

## HIGH-PRESSURE FILL-UP

The MA010D Bentonite mixing system is ideal for all drills with their own Bentonite high-pressure pump. The tank system is available with one or two mixing tanks. Thanks to the 1300 l/min. mixing and transfer pump, the Bentonite fluid is supplied almost instantly and can be conveyed to the bore rig at up to 650 l/min.





VARIANTS

FEATURES

- Self-priming, completely maintenance-free, 1300 l/min. centrifugal pump
- 6% mixing ratio possible
- Mixing tanks with level indicator and integrated distribution system for optimum circulation of the drilling fluid
- 3 bar maximum pressure (for long conveying distances)
- Fuel intake optionally directly from the truck diesel tank
- Stepless adjustment of engine speed and flow rate
- Particularly compact design
- Integrated workbench with vice and tool wall
- Large Bentonite funnel
- Optional transport frame for flexible use (see fig.)
- Filling filter (eddy current filter)
- Numerous options available for truck superstructures

- Mixing system configurations
- 1 mixing tank, 4,000 l
  - 1 mixing tank 4,000 l + 1 fresh water tank 4,000 l
  - 2 mixing tanks, each 4,000 l



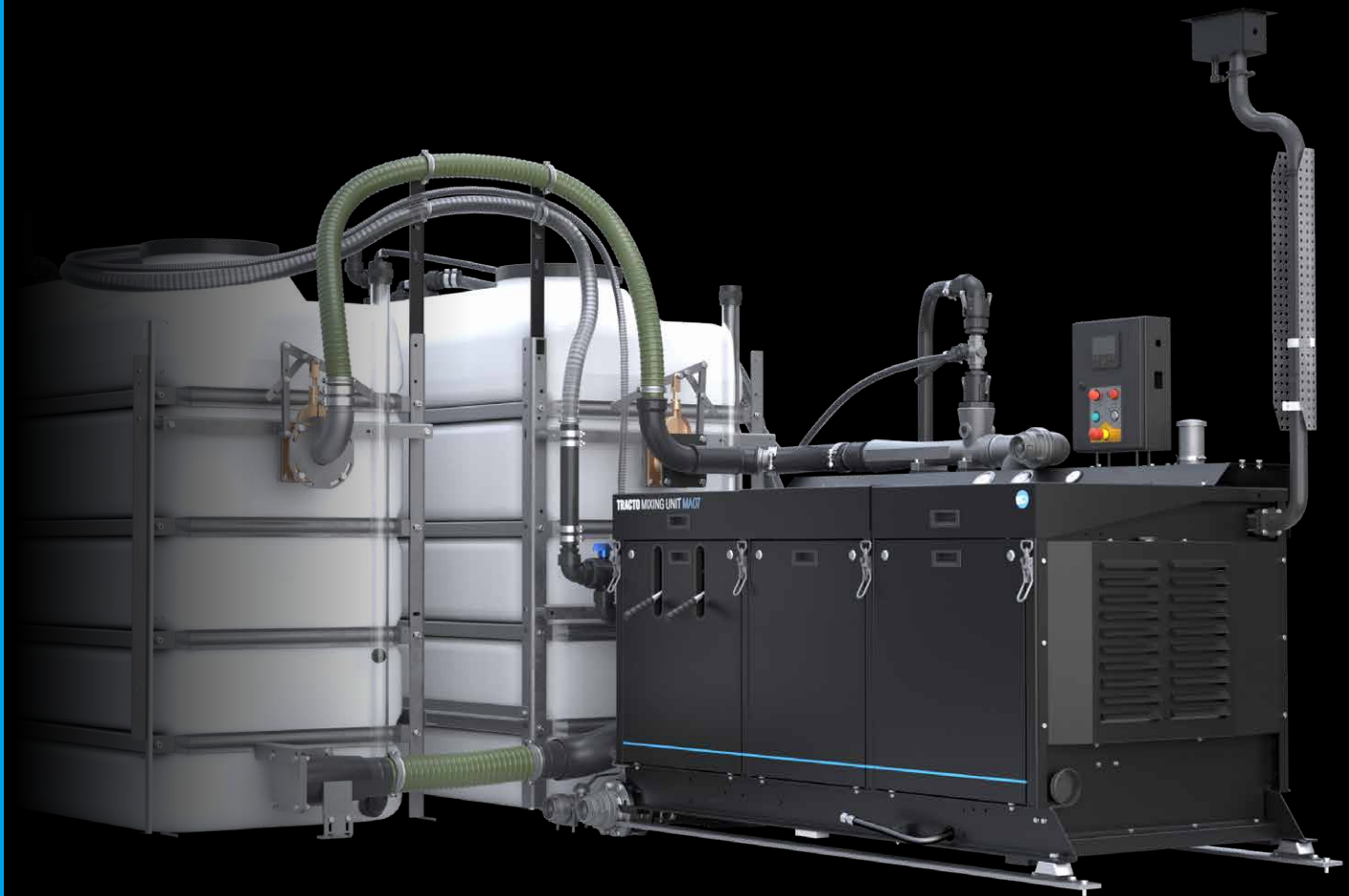
TECHNICAL DATA	MIXING SYSTEM MA010-D
Length x Width x Height (mixing block without tank system)	1,060 x 800 x 1,800 mm
Mixing system weight	460 kg
Weight of mixing tank empty (1-tank system)	660 kg
Weight of mixing tank and auxiliary tank, empty (2-tank system)	1,260 kg
Weight of mixing system, 2 tanks filled	9,720 kg
Mixing tank volume	4,000 l
Tank volume of auxiliary tank	4,000 l
Max. flow rate of mixing and transfer pump	1,300 l/min
Max. pressure of mixing and transfer pump	3 bar
Engine manufacturer	Hatz
Engine model	1D90Z
Emissions standard	Tier V
Max. engine power	10,7 kW
Max. engine speed	2,800 rpm
Number of cylinders	1 unit
Displacement	722 ccm
Diesel tank capacity	10 l

# MIXING SYSTEM MA07

## LONG-TERM SUPPLY

The MA07 mixing system is a continuous Bentonite mixing and supply system for all HDD fluid drills with integrated Bentonite high-pressure pump. The special tank and pump system ensures continuous mixing and parallel provision of the Bentonite drilling mud. The MA07 is available in 2 drive versions:

**MA07D with integrated 28 kW Kubota diesel engine and MA07E for operation with power generator.**



# VARIANTS

## FEATURES

- Continuous operation with simultaneous mixing and pumping of drilling fluid in two 4,000 l mixing tanks possible
- 2 independent, self-priming centrifugal pumps, completely maintenance-free, for simultaneous mixing and pumping of the drilling fluid
- Mixing tanks with level indicator and integrated distribution system for optimum circulation of the drilling fluid
- Filling filter (eddy current filter)
- The Bentonite funnel with powerful Venturi nozzle processes more than 25 kg of dry Bentonite per minute

- The 1,500 l/min. mixing and circulating pump supplies the drilling fluid suspension almost instantly
- The transfer pump conveys the drilling fluid suspension to the bore rig at a rate of 650 l/min
- Fast, convenient cleaning
- Numerous options available for truck superstructures

## MIXING SYSTEM CONFIGURATIONS

- 2 mixing tanks, each 4,000 l
- 2 mixing tanks, each 4,000 l + 1 fresh water tank 800 l



TECHNICAL DATA	MIXING SYSTEM MA07
Tank volume of mixing tanks	4,000 l
Number of mixing tanks	2 units
Max. flow rate of mixing pump	1,500 l/min
Max. pressure of mixing pump	3,5 bar
Max. flow rate of transfer pump	700 l/min
Max. pressure of transfer pump	3 bar
DRIVE OF MIXING SYSTEM MA07D	
Length x Width x Height (mixing block) MA07-D	2,300 x 1,120 x 1,800 mm
Weight of mixing system MA07-D	1,160 kg
Weight of mixing tank, empty	1,300 kg
Weight of mixing system + mixing tanks, full MA 07-D	10,460 kg
Engine manufacturer	Kubota
Engine model	D1803
Exhaust emissions standard*	3A/Tier 4 or Tier V
Max. engine power	28 kW
Max. engine speed	1,840 rpm
Number of cylinders	3 units
Displacement	1,826 l
Diesel tank capacity	60 l
Sound pressure level L <sub>Pa</sub>	79 dB(A)
Sound power level (L <sub>W</sub> A)	101,4 dB(A)
DRIVE OF MIXING SYSTEM MA07E	
Length x Width x Height (mixing block) MA07-E	2,200 x 1,120 x 1,800 mm
Weight of mixing system MA07-D/MA07-E	790 kg
Weight of mixing tank, empty	1,300 kg
Weight of mixing system + mixing tanks, full MA 07-E	10,090 kg
Power generator, at least (upon consultation)/recommended <sup>†</sup>	45/60 kVA
Engine power of mixing pump	18,5 kW
Engine power of transfer pump	5,5 kW

# STS V-1.5 | STS V-2.0

## VACUUM SUCTION BARREL



A suction barrel is the optimal solution for keeping the excavation pit free of drilling mud, sludge or other liquids.

The vacuum suction barrels of the STS VS series from Schmies Metallbau are specially designed for demanding construction site use.

Intelligent details make everyday work easier for the user. One of the distinguishing features of the STS series is that the suction hoses do not have to be dismantled for travel and are secured in a holder on the side. The 360° freely rotatable boom of the suction hose offers a very user-friendly application and ensures a fast and safe working process.

# VARIANTS

## EQUIPMENT

- Continuously welded V-drawbar for maximum stability
- Sturdy mudguards with metal lamp housing
- Identical track width to passenger car and Sprinter ensures optimum driving and helps prevent lurching
- Lowest possible centre of gravity of the suction barrel
- Suction unit tilted for better cleaning
- Flushing opening to remove impurities or blockages without opening the container lid
- Stainless steel level indicator with colour scale
- 2 safety levels as standard to prevent damage to the compressor
  - Syphon separator
  - Overflow valve with 2 balls and sight glass
- Pressure gauge on oversuction set
- Protective bracket to protect pressure gauge and oversuction set
- Holders for quick attachment of the suction hoses by means of a rubber strap
- Suction hose and suction lance do not have to be disconnected from the suction connection after finishing work
- Enclosure of the drive unit made of aluminium to avoid dirt in the engine unit (powder coating as standard in desired colour)
- Storage facility for tools and accessories between engine housing and suction barrel
- Petrol industrial engine B&S Vanguard 13 hp equipped with oil sensor and fuel tank as well as electric start
- Low-maintenance V-belt drive for engine-compressor unit:  
Vacuum compressor MEC 3000 with 3,500 litres air performance
- All engine components and accessories housed in lockable engine box

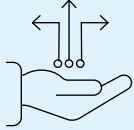
## APPLICATION EXAMPLES



TECHNICAL DATA	STS V-1.5	STS V-2.0	STS V-2.0 with suction arm 360° rotatable for easy intake of liquids	STS V-2.0 with rear tipper tiltable up to 60°
Length (mm)	4,850	4,850	4,850	4,850
Width (mm)	1,850	1,850	1,850	1,850
Height (mm)	1,850	2,050	2,330	2,150
Unladen weight (kg)	1,100	1,200	1,290	1,330
Tank capacity (l)	1,500	2,000	2,000	2,000
Low loader Tandem chassis (t)	2,8	3,5	3,5	3,5

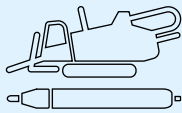
# FULL SERVICE FOR TRENCHLESS TECHNOLOGY

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.



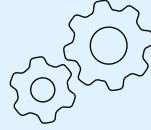
## Financing

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.



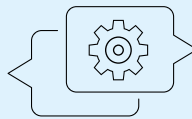
## Geoservice

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

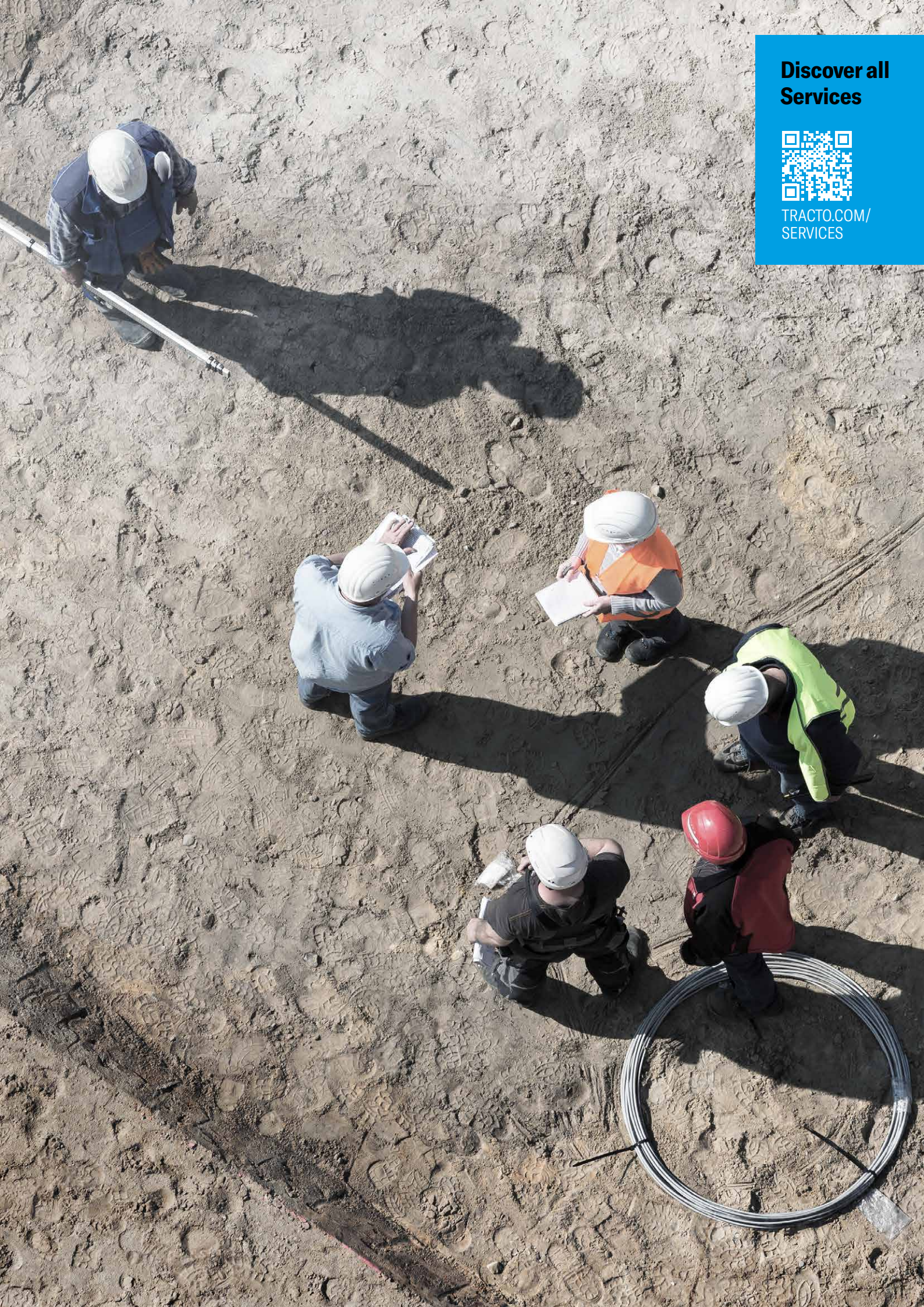
Via our worldwide service network we are always there for you, even after the purchase. A total of five TRACTO plants and seven customer centres in Germany, as well as our worldwide sister companies and sales partners guarantee fast supply of spare parts and immediate availability. Our competent service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



**Discover all  
Services**



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