

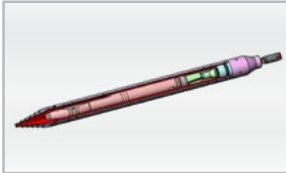


# TERRA-HAMMER Piercing Tool



# **TERRA**

Always one drill ahead



**TERRA-HAMMER**

Applications ..... 4

Your advantages ..... 5

TERRA-HAMMER Long version ..... 6

TERRA-HAMMER Short version ..... 7



**Traceable Accessories**

Traceable Head Adapters ..... 8 - 9

Locating Systems ..... 8 - 9



**Launching and Safety Accessories**

Aiming Staff ..... 10 - 11

Launching Cradle ..... 10 - 11

Oiler ..... 10 - 11

Non-Conductive Hoses ..... 10 - 11



**Pulling Accessories**

Pull Bows and Pulling Socks ..... 12

Cable Clamps and Pulling Cables ..... 13



**Expanding Accessories**

Interchangeable End Adapters - End Sleeves ..... 14

Interchangeable End Adapters - End Cones ..... 15

Expanders ..... 16 - 17



**Ramming Accessories**

Ram Rings for Steel Pipe ..... 18 - 19



**Connecting Accessories**

Air Supply Hoses ..... 20 - 21

Fittings and Hose Covers ..... 20 - 21

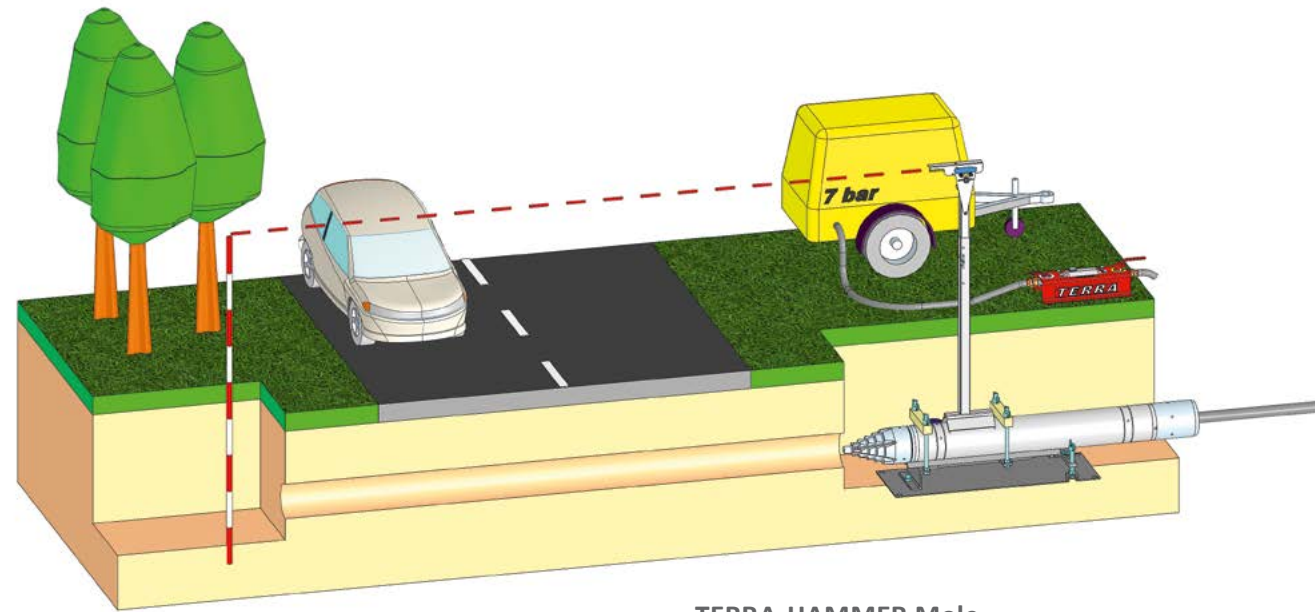


**Service**

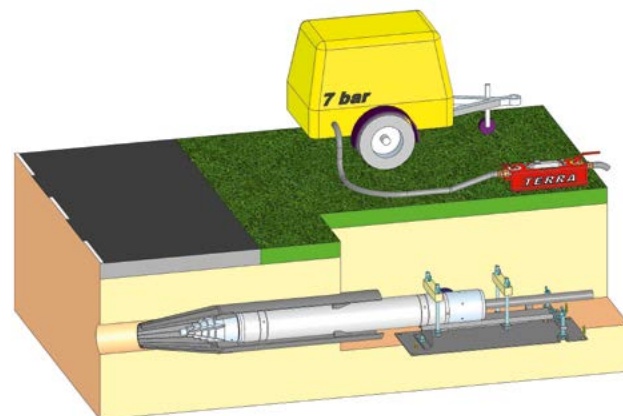
Complete Service for Trenchless Technology ..... 22

The World of Trenchless Technology ..... 23

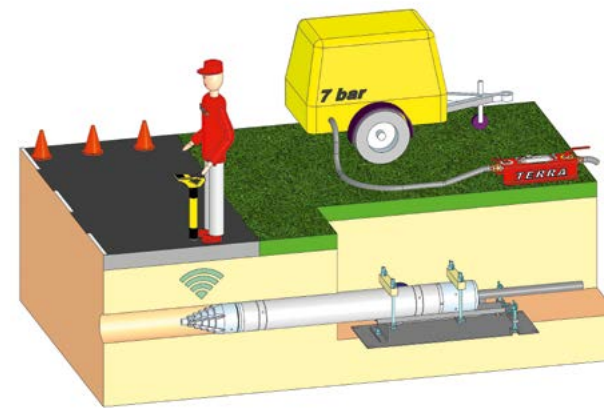
Summary Table ..... 24



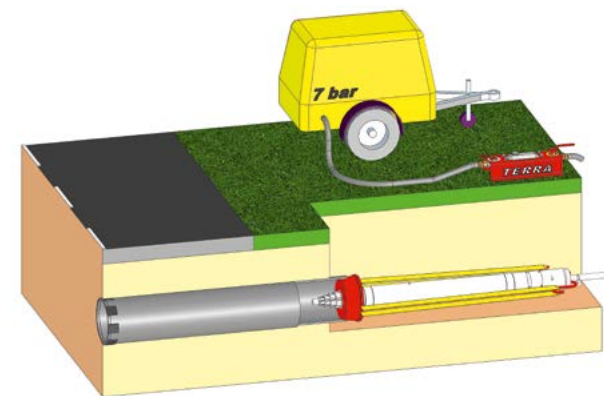
**TERRA-HAMMER Mole**  
Lengths up to 25 m, Ø 210 mm



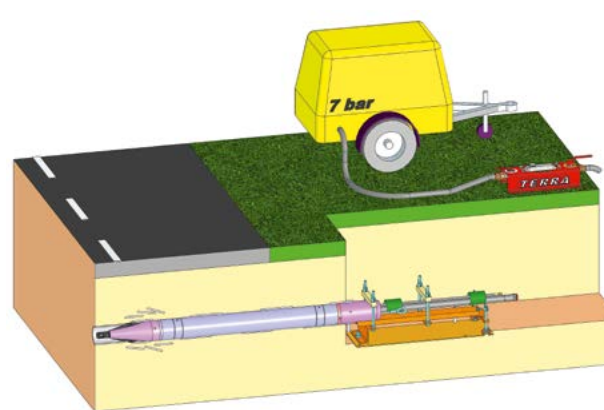
**Mole with expander**  
Expanding is achieved in two steps  
Lengths up to 25 m, Ø 300 mm



**Traceable Mole**  
Sonde in the head, depths up to 4 m  
Lengths up to 50 m, Ø 55 - 190 mm



**Steel pipe ramming using the mole**  
Horizontal and vertical  
without any modification required to the mole



**Pipe bursting and cutting using the mole**  
Interchangeable head adapters  
for old cast iron pipes and PE pipes

### The TERRA Piercing Tools: fast and precise

The TERRA-HAMMER uses pneumatically generated ramming energy to create underground earth tunnels by displacement, into which pipes and cables can be pulled or pushed. This method, which can be used for distances of up to 25 metres, is considered to be one of the simplest, but also one of the most efficient in the wide field of trenchless pipeline construction. Due to their shape, these displacement hammers are also known as "piercing tools". As a result of decades of experience and development work, the TERRA-HAMMER is characterised by robustness, durability, accuracy, operational safety and a diverse range of applications, whereby impact force maximisation and recoil minimisation have been successfully implemented.

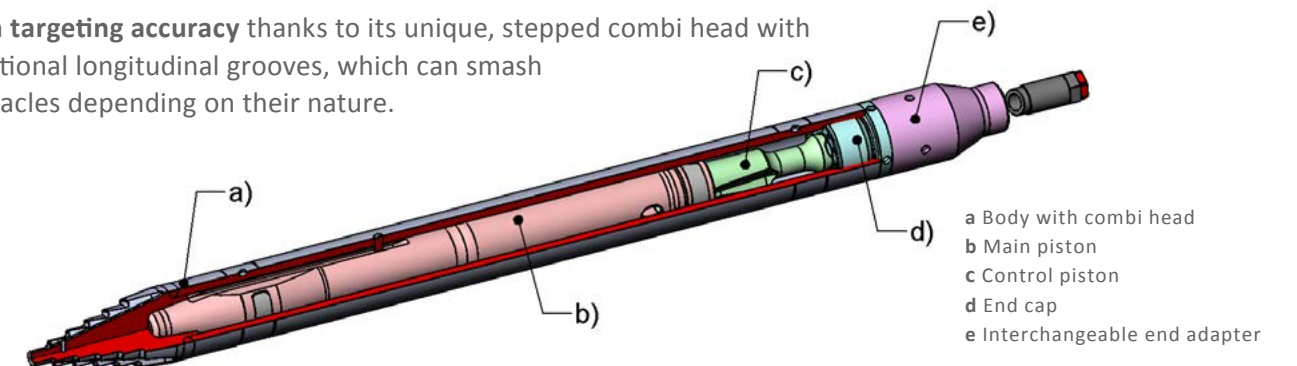
The TERRA-HAMMER is essentially characterised by the following properties:

**Long service life and high efficiency** thanks to the robust design with comparatively few components (only five essential components, including only one moving component).

**Simple design** with a minimum of components and susceptibility to repair; compressed air takes over damping, therefore no mechanical locking and damping elements should be installed.

**High efficiency** due to **high impact force** and **speed** thanks to lightweight housing and 25% heavier main pistons than comparable piercing tools.

**High targeting accuracy** thanks to its unique, stepped combi head with additional longitudinal grooves, which can smash obstacles depending on their nature.



### Advantages



Simple design with a minimum of components and susceptibility to repair.



High targeting accuracy thanks to its unique, stepped combi head with additional longitudinal grooves, which can smash obstacles depending on their nature.



Short design due to patented hollow-head design.



Reverse by hose control through 90° hose rotation when the machine is at a standstill for models Ø 45 - 105 mm.



High efficiency due to **high impact force** and **speed** thanks to lightweight housing and 25% heavier main pistons than comparable piercing tools.



For models with diameters from 105 to 210 mm, reverse by hose control using a reversing lever on the lubricator.



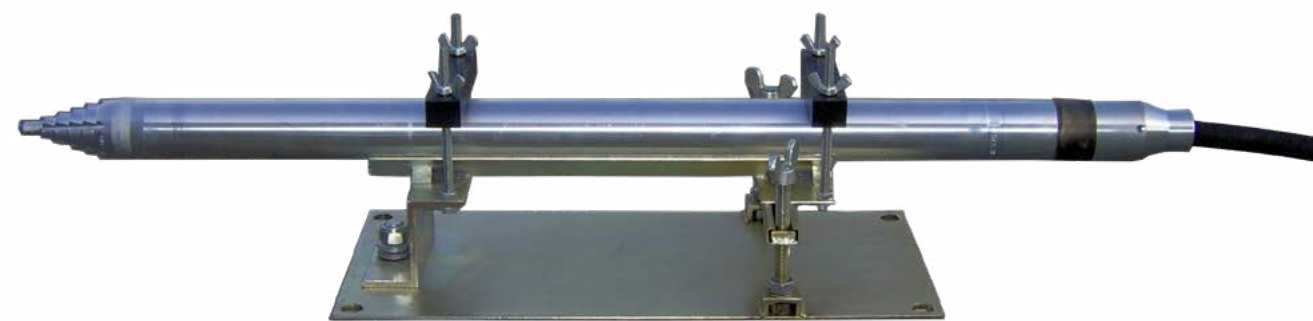
3-year warranty onto the main piston - unique worldwide.



Conversion-free use as a **steel pipe ramming system** using ramming accessories.

TERRA-HAMMER Long Version

Fast and Precise



Moles with Interchangeable Head Adapter



The extremely powerful and robust piercing tools from TERRA are convincing on every construction site. Thanks to the combi-head and low recoil, the TERRA piercing tool is fast and accurate. It is the perfect machine for laying pipes with diameters from 32 to 170 mm.

| TERRA-HAMMER Mole | Diameter [mm] | Length [m] | Weight [kg] | Frequency [1/min] | Air cons. [m³/min] | Pressure [bar] |
|-------------------|---------------|------------|-------------|-------------------|--------------------|----------------|
| TU 045 R          | Ø 45          | 1.04       | 9           | 475               | 0.6                | 6-7            |
| TU 055 R          | Ø 55          | 1.00       | 13          | 520               | 0.9                | 6-7            |
| TU 068 SK         | Ø 68          | 1.32       | 28          | 420               | 1.3                | 6-7            |
| TU 080 SK         | Ø 80          | 1.43       | 39          | 395               | 1.8                | 6-7            |
| TU 090 SK         | Ø 90          | 1.43       | 51          | 395               | 1.8                | 6-7            |
| T/TU 105 F1       | Ø 105         | 1.46       | 65          | 360               | 2.4                | 6-7            |
| T/TU 105 S        | Ø 105         | 1.46       | 65          | 360               | 2.4                | 6-7            |
| T/TU 135 Twin     | Ø 135         | 1.70       | 125         | 350               | 2.4                | 6-7            |
| T 155 F1          | Ø 155         | 1.84       | 172         | 285               | 3.8                | 6-7            |
| T 190 F1          | Ø 190         | 1.89       | 260         | 275               | 5.0                | 6-7            |
| T 210 F1          | Ø 210         | 1.90       | 319         | 275               | 5.0                | 6-7            |

T = fused head, TU = interchangeable head adapter, S = reverse by 1/4-turn, K = not glued, SK = Version S + Version K

Interchangeable Head Adapter

The TU model is equipped with an interchangeable head adapter. The head is threaded into the housing. There is no welding necessary, which makes the TU model more efficient than any other piercing tool with welded head adapter. This ensures a long lifetime of your piercing tool.

| Part Number  | Description      | Models [mm] |
|--------------|------------------|-------------|
| 2045.1121.00 | Head adapter 045 | Ø 45        |
| 2055.1121.00 | Head adapter 055 | Ø 55        |
| 2065.1121.05 | Head adapter 068 | Ø 68        |
| 2080.1121.03 | Head adapter 080 | Ø 80        |
| 2090.1121.00 | Head adapter 090 | Ø 90        |
| 2105.1121.02 | Head adapter 105 | Ø 105       |
| 2135.1121.06 | Head adapter 135 | Ø 135       |
| 5155.1121.00 | Head adapter 155 | Ø 155       |
| 5190.1121.00 | Head adapter 190 | Ø 190/210   |



Interchangeable Head Adapter

TERRA-HAMMER Short Version

MINI Moles with compact design



MINI-Moles – short, compact and powerful



TERRA also offers the piercing tools in a short version. Due to the rigid head design (no longitudinally displaceable head), models with lengths of less than 1 metre can be produced. Ideal for short distances such as house connections.

| TERRA-HAMMER Mole | Diameter [mm] | Length [m] | Weight [kg] | Frequency [1/min] | Air cons. [m³/min] | Pressure [bar] |
|-------------------|---------------|------------|-------------|-------------------|--------------------|----------------|
| TU 045 R (mini)   | Ø 45          | 1.04       | 9           | 475               | 0.6                | 6-7            |
| TU 055 R (mini)   | Ø 55          | 1.00       | 11          | 520               | 0.9                | 6-7            |
| TU 068 SK (mini)  | Ø 68          | 0.96       | 20          | 480               | 1.1                | 6-7            |
| TU 080 SK (mini)  | Ø 80          | 0.92       | 24          | 550               | 1.8                | 6-7            |
| TU 090 SK (mini)  | Ø 90          | 0.92       | 38          | 550               | 1.8                | 6-7            |
| T 105 S (mini)    | Ø 105         | 1.07       | 44          | 540               | 2.4                | 6-7            |

T = fused head, TU = interchangeable head adapter, S = reverse by 1/4-turn, F = remote control, Twin = remote control (hose-in-hose solution), K = not glued, SK = Version S + V ersion K

„Ideal for manholes and confined spaces!“





# Traceable Piercing Tools

## Traceable Accessories

### Traceable Head Adapters

Need to locate your piercing tool?

With the interchangeable head adapter you can convert your current mole into a traceable mole directly on the jobsite.

| Part Number  | Description                         | Models [mm] |
|--------------|-------------------------------------|-------------|
| 2055.1121.07 | Traceable Head Adapter 055          | Ø 55        |
| 2068.1121.02 | Traceable Head Adapter 068          | Ø 68        |
| 2080.1121.07 | Traceable Head Adapter 080          | Ø 80        |
| 2105.1121.07 | Traceable Head Adapter 105          | Ø 105       |
| 2135.1121.04 | Traceable Head Adapter 135          | Ø 135       |
| 2068.1121.30 | Tool kit for traceable head adapter | Ø 55 - 135  |
| 2055.1121.12 | Front shock absorber                | Ø 55 - 135  |
| 2055.1121.13 | Rear shock absorber                 | Ø 55 - 135  |

### Heavy Duty C- and Ring Spanners

To change the head adapter, 1x heavy C-spanner and 1x ring spanner are used.

| Part Number  | Description             | Models [mm] |
|--------------|-------------------------|-------------|
| 2045.1603.01 | Heavy Duty C-spanner    | Ø 45        |
| 2045.1618.00 | Heavy Duty ring spanner | Ø 45        |
| 2055.1603.00 | Heavy Duty C-spanner    | Ø 55        |
| 2055.1618.00 | Heavy Duty ring spanner | Ø 55        |
| 2065.1603.00 | Heavy Duty C-spanner    | Ø 68        |
| 2065.1618.00 | Heavy Duty ring spanner | Ø 68        |
| 2080.1603.00 | SHeavy Duty C-spanner   | Ø 80        |
| 2080.1618.00 | Heavy Duty ring spanner | Ø 80        |
| 2090.1603.00 | Heavy Duty C-spanner    | Ø 90        |
| 2095.1618.00 | Heavy Duty ring spanner | Ø 90        |
| 2106.1603.10 | Heavy Duty C-spanner    | Ø 105       |
| 2105.1618.00 | Heavy Duty ring spanner | Ø 105       |
| 2135.1603.00 | Heavy Duty C-spanner    | Ø 135       |
| 2135.1618.00 | Heavy Duty ring spanner | Ø 135       |

### Locating Equipment

With the Vivax vLoc3-Cam you can locate the TERRA-HAMMER piercing tool in the front of the head. A shock absorber protects the sonde from damage.

| Part Number  | Description                            | Models [mm] |
|--------------|----------------------------------------|-------------|
| 1961.7314.00 | Vivax vLoc3-Cam (receiver) without bag |             |
| 1961.7315.00 | Bag for Vivax vLoc3-Cam                |             |
| 2068.1122.00 | Sonde D18 (33 kHz)                     | Ø 55 - 210  |
| 2068.1123.00 | Battery 3.0 V                          | Ø 55 - 80   |



Traceable Head Adapter



Sender D18 (33 kHz)



Heavy Duty ring spanner



Vivax vLoc3-Cam



**Aiming Staff and Launching Cradle**

The combination of aiming staff and launching cradle ensures the precise alignment of the piercing tool during the launch process. The skin friction generated by the launching cradle provides recoil damping of the TERRA-HAMMER and thus controlled, even penetration into the ground.

**TERRA Oiler and Special Oil**

The lubricator with shock valve is used in combination with the TERRA lubricant for metered lubrication of the TERRA-HAMMER. The special formulation of the TERRA lubricant prevents icing of the TERRA-HAMMER.

The hammering can be immediately stopped by a lever on the oiler ("emergency stop").

**Aiming Staff, Launching Cradle, Oiler**

Start and Safety Accessories

**Aiming Staff**

For the exact alignment of your mole.  
For accuracy of 5 cm per 25 m <sup>1)</sup>.

| Part Number  | Description         | Models [mm] |
|--------------|---------------------|-------------|
| 0000.1700.00 | Aiming staff, small | Ø 45 - 80   |
| 0000.1701.00 | Aiming staff, large | Ø 68 - 210  |
| 0000.1702.00 | Telescope           | Ø 45 - 210  |

<sup>1)</sup> depending on ground conditions

**Launching Cradle**

The accurate alignment is done with launching cradles.

| Part Number  | Description                              | Models [mm] |
|--------------|------------------------------------------|-------------|
| 2105.1760.00 | Launching cradle (045-135)               | Ø 45 - 135  |
| 5190.1760.00 | Launching cradle (155-210)               | Ø 155 - 210 |
| 0000.1736.00 | Tirfor cable winch 1.25 to <sup>2)</sup> | Ø 155 - 210 |

<sup>2)</sup> For continuous pipe and mole pushing

**TERRA Oiler and Special Oil**

| Part Number  | Description                                   | Models [mm] |
|--------------|-----------------------------------------------|-------------|
| 0000.1790.00 | Oiler, ECO                                    | Ø 45 - 210  |
| 0000.1792.00 | Oiler, Version S                              | Ø 45 - 135  |
| 0000.1791.00 | Oiler, Version F                              | Ø 105 - 210 |
| 5135.1741.00 | Oiler, Version Twin                           | Ø 135       |
| 0000.1793.00 | Option handle for lubricator Version S/F/Twin |             |
| 0000.1749.00 | TERRA oiler antifreeze, 5 litre               |             |
| 0000.1749.10 | TERRA oiler antifreeze, 25 litre              |             |
| 0000.1749.15 | TERRA oiler antifreeze, 50 litre              |             |
| 0000.1749.20 | TERRA oiler antifreeze, 200 litre barrel      |             |
| 1540.1749.11 | Barrel tap for 200 ltr-barrel                 |             |
| 0000.1661.00 | TERRA Cleaner Bio 500, 6x 0.5 litre           |             |

Version S: Quick reverse by 1/4 turn of the air hose

Version F: Quick reverse by remote control

Version Twin: Reverse by remote control (hose-in-hose solution)

**Non-Conductive Hoses**

The non-conductive hoses are assembled between the mole and air hose. This prevents electric shock in the event of an electric shock.

| Part Number  | Description                          | Models [mm] |
|--------------|--------------------------------------|-------------|
| 2055.1700.02 | Non-conductive hose (JIC)            | Ø 45 - 55   |
| 2080.1702.00 | Non-conductive hose adapter          | Ø 55 - 90   |
| 2080.1700.00 | Non-conductive hose DN 19 (L = 1 m)  | Ø 68 - 90   |
| 2135.1700.00 | Non-conductive hose DN 25 (L = 1 m)  | Ø 105 - 135 |
| 2080.1701.00 | Non-conductive rope Ø 6 mm (L = 2 m) | Ø 80 - 210  |



Telescope

Aiming Staff



Launching Cradle



Oiler Version S



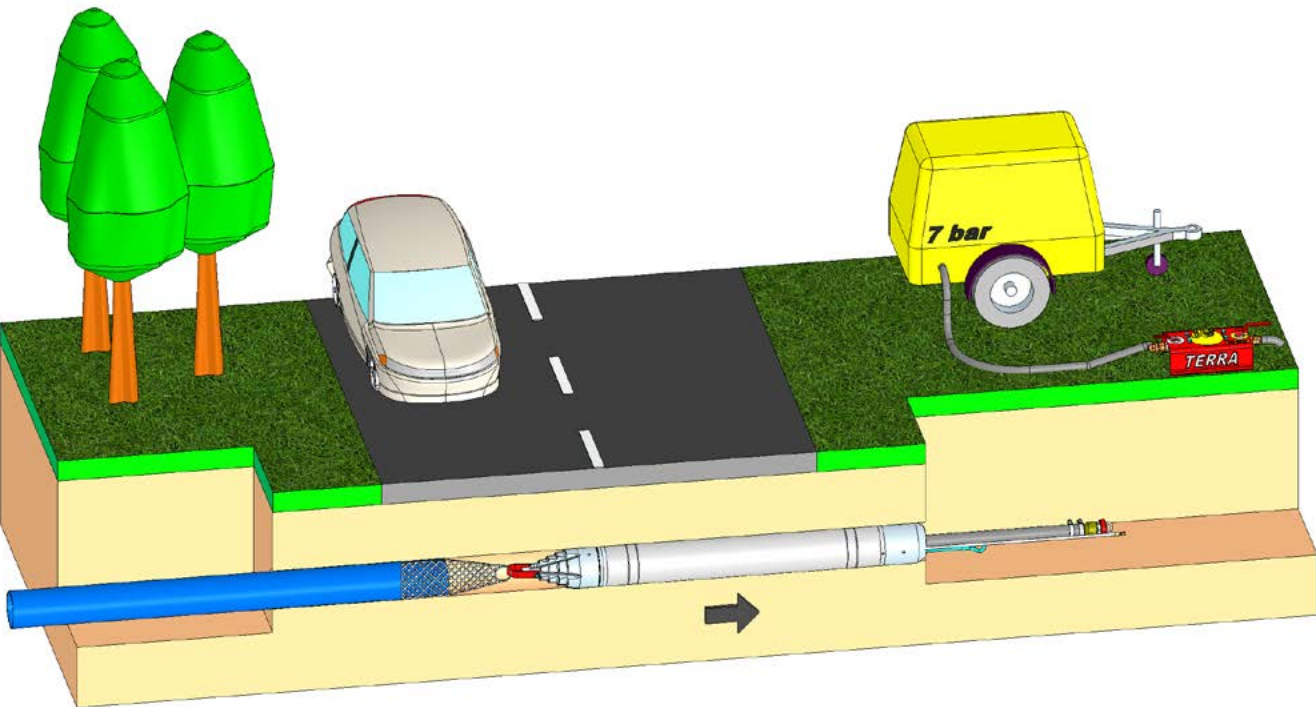
Oiler Version Twin



Non-conductive hose and rope

# Laying Pipes in the Reverse Mode

Pulling Accessories



## Pull Bow

A hole in the front area of the combi head enables the installation of a pull bow for the pipe retraction in the return.

| Part Number  | Description  | Models [mm] |
|--------------|--------------|-------------|
| 2045.1132.00 | Pull bow 045 | Ø 45        |
| 2055.1132.00 | Pull bow 055 | Ø 55        |
| 2068.1132.00 | Pull bow 068 | Ø 68        |
| 2080.1132.00 | Pull bow 080 | Ø 80/90     |
| 2105.1129.00 | Pull bow 105 | Ø 105       |
| 2135.1133.00 | Pull bow 135 | Ø 135       |
| 5155.1133.00 | Pull bow 155 | Ø 155       |
| 5190.1133.00 | Pull bow 190 | Ø 190/210   |



Pull bow

## Pulling Sock

Pulling socks are attached to plastic pipes for pulling in reverse mode. They are available up to OD 110 mm.

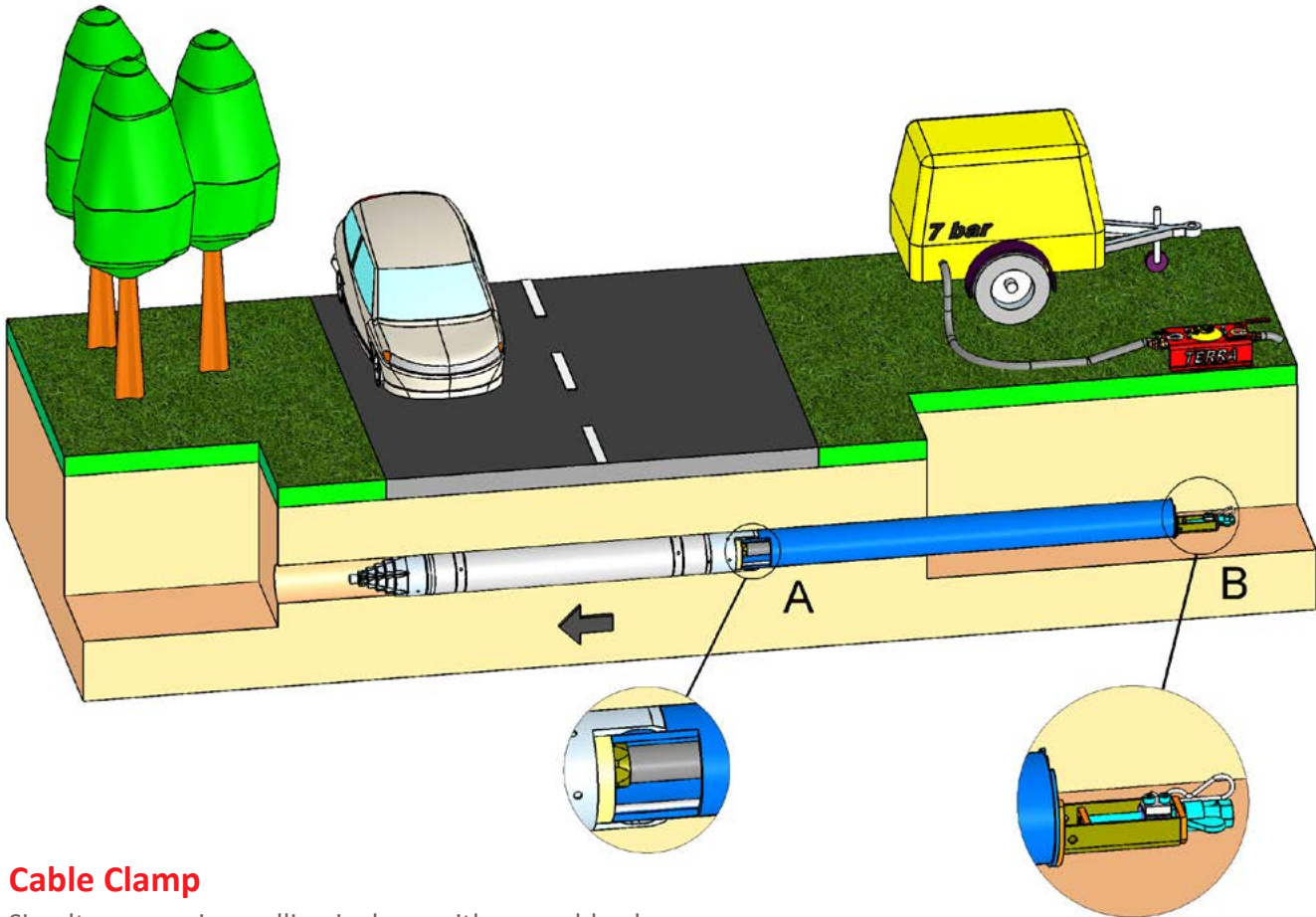
| Part Number  | Description            | For PE-Pipes |
|--------------|------------------------|--------------|
| 1900.5503.08 | Pulling sock DA 15-20  | 15-20        |
| 1900.5503.10 | Pulling sock DA 20-25  | 20-25        |
| 1900.5503.20 | Pulling sock DA 25-30  | 25-30        |
| 1900.5504.00 | Pulling sock DA 30-40  | 30-40        |
| 1900.5505.00 | Pulling sock DA 40-50  | 40-50        |
| 1900.5506.00 | Pulling sock DA 50-60  | 50-60        |
| 1900.5507.10 | Pulling sock DA 60-70  | 60-70        |
| 1900.5508.00 | Pulling sock DA 70-85  | 70-85        |
| 1900.5508.30 | Pulling sock DA 85-110 | 85-110       |



Pulling sock

# Simultaneous Pipe Pulling

Pulling Accessories



## Cable Clamp

Simultaneous pipe pulling is done with our cable clamps and pulling cable.

| Part Number  | Description                      | D [mm] | Models [mm] |
|--------------|----------------------------------|--------|-------------|
| 0000.1747.03 | Cable clamp, small tensioner     |        | Ø 55 - 90   |
| 0000.1707.02 | Cable clamp, large tensioner     |        | Ø 105 - 210 |
| 0000.1707.04 | Auxiliary clamp for 000.1707.02* |        | Ø 105 - 210 |
| 0000.1734.00 | Centering adapter 075            | 75     | Ø 105       |
| 0000.1733.00 | Centering adapter 095            | 95     | Ø 135 - 155 |
| 0000.1737.00 | Centering adapter 120            | 120    | Ø 155 - 190 |
| 0000.1738.00 | Centering adapter 150            | 150    | Ø 155 - 210 |

D = smallest inner diameter of the pipe \*for „endless“ tensioning



Cable clamp, small

## Pulling Cable

| Part Number  | Description                            | Models [mm] |
|--------------|----------------------------------------|-------------|
| 0000.1725.02 | Pulling cable, long (20 m), mit APAG** | Ø 55-90     |
| 0000.1724.00 | Pulling cable, long (25 m), eyelets    | Ø 105-210   |
| 2055.1930.00 | Pulling cable, short, M10 (055)        | Ø 55        |
| 2080.1930.12 | Pulling cable, short, M10 (080)        | Ø 68/80/90  |
| 2105.1930.01 | Pulling cable, short, eyelets (105)    | Ø 80/105    |
| 2130.1930.01 | Pulling cable, short, eyelets (135)    | Ø 135/155   |
| 2130.1930.02 | Pulling cable, short, M16 (135F)       | Ø 135*      |
| 1190.1930.00 | Pulling cable, short, eyelets (190)    | Ø 190/210   |
| 2125.1729.00 | Shackle, dimension 10                  | Ø 105-210   |

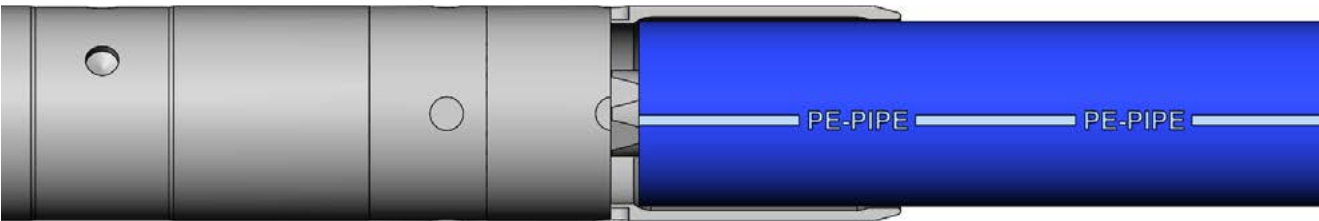
\*for stepped end cone E-135-94-75 \*\*APAG = with threaded end



Long pulling cable with eyelets

Interchangeable End Adapters - End Sleeves

Expanding Accessories



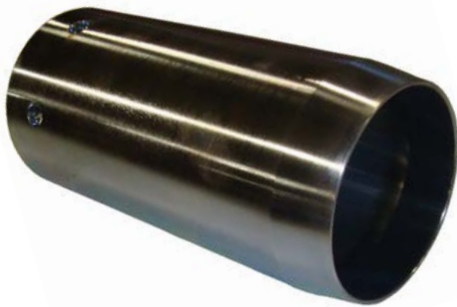
End sleeve

End Sleeves

End Sleeves are ideal end adapters for simultaneous pipe pulling. All end adapters can easily be changed on the jobsite.

| Part Number  | Description          | OD [mm] | ID [mm] | Models [mm] |
|--------------|----------------------|---------|---------|-------------|
| 2055.1406.00 | End sleeve A-55-51   | 55      | 51      | Ø 55        |
| 2065.1406.04 | End sleeve A-68-64   | 68      | 64      | Ø 68        |
| 2080.1406.04 | End sleeve A-80-70   | 80      | 70      | Ø 80        |
| 2090.1406.00 | End sleeve A-90-77   | 90      | 77      | Ø 90        |
| 2105.1406.01 | End sleeve A-105-93  | 105     | 93      | Ø 105       |
| 2135.1406.01 | End sleeve A-135-114 | 135     | 114     | Ø 135 S/F   |
| 2135.1406.08 | End sleeve A-135-114 | 135     | 114     | Ø 135 Twin  |
| 5155.1406.02 | End sleeve A-155-142 | 155     | 142     | Ø 155       |
| 5190.1406.00 | End sleeve A-190-172 | 190     | 172     | Ø 190/210   |

OD = Outer diameter End Sleeve = max. diameter of the bore  
ID = Inner diameter End Sleeve = max. outer diameter of the pipe



End sleeve

Oversized End Sleeves

End sleeves are also available in oversized versions. This means that larger pipes than the diameter of the piercing tool can be laid.

| Part Number  | Description          | OD [mm] | ID [mm] | Models [mm] |
|--------------|----------------------|---------|---------|-------------|
| 2065.1406.03 | End sleeve A-75-65   | 75      | 65      | Ø 68        |
| 2080.1406.06 | End sleeve A-90-77   | 90      | 77      | Ø 80        |
| 2080.1406.07 | End sleeve A-95-87   | 95      | 87      | Ø 80        |
| 2090.1406.01 | End sleeve A-96-87   | 96      | 87      | Ø 90        |
| 2105.1406.03 | End sleeve A-110-94  | 110     | 94      | Ø 105       |
| 2105.1406.17 | End sleeve A-130-114 | 130     | 114     | Ø 105       |
| 2135.1406.03 | End sleeve A-145-127 | 145     | 127     | Ø 135 S/F   |
| 2135.1406.11 | End sleeve A-145-127 | 145     | 127     | Ø 135 Twin  |
| 2135.1406.07 | End sleeve A-160-142 | 160     | 142     | Ø 135 S/F   |
| 2135.1406.09 | End sleeve A-160-142 | 160     | 142     | Ø 135 Twin  |
| 5155.1406.03 | End sleeve A-180-166 | 180     | 166     | Ø 155       |

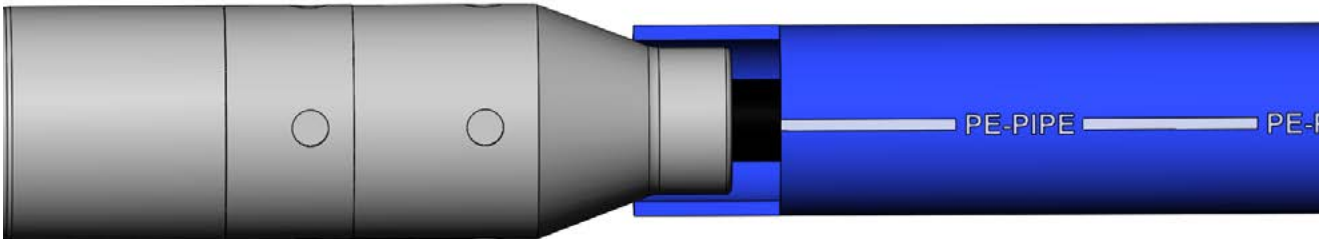
OD = Outer diameter End Sleeve = max. diameter of the bore  
ID = Inner diameter End Sleeve = max. outer diameter of the pipe



Oversized end sleeve

Interchangeable End Adapters - End Cones

Expanding Accessories



End cone

End Cones

End Cones are the ideal end adapters for laying pipes during the reverse mode. Due to the conical shape no soil can enter into the mole.

| Part Number  | Description       | OD [mm] | OD-1 [mm] | ID [mm] | Models [mm] |
|--------------|-------------------|---------|-----------|---------|-------------|
| 2045.1404.02 | End cone B-33     | 45      |           | 30      | Ø 45        |
| 2055.1404.03 | End cone B-36     | 55      |           | 36      | Ø 55        |
| 2065.1404.01 | End cone E-47-39  | 68      | 47        | 39      | Ø 68        |
| 2080.1404.03 | End cone E-50-42  | 80      | 50        | 42      | Ø 80        |
| 2090.1404.00 | End cone E-50-42  | 90      | 50        | 42      | Ø 90        |
| 2105.1404.01 | End cone E-68-58  | 105     | 68        | 58      | Ø 105       |
| 2135.1404.01 | End cone E-80-70  | 135     | 80        | 70      | Ø 135 F     |
| 2135.1404.02 | End cone B-76     | 135     |           | 76      | Ø 135Twin   |
| 5155.1404.00 | End cone E-100-88 | 155     | 100       | 88      | Ø 155       |
| 5190.1402.00 | End cone B-127    | 190     |           | 127     | Ø 190/210   |

OD = Outer diameter End Cone = max. diameter of the bore  
ID = Inner diameter End Cone



End cone

Oversized End Cones

End cones are also available in oversized versions. This means that larger pipes than the diameter of the piercing tool can be laid.

| Part Number  | Description          | OD [mm] | OD-1 [mm] | ID [mm] | Models [mm] |
|--------------|----------------------|---------|-----------|---------|-------------|
| 2065.1404.03 | End cone B-75-39     | 75      | 39        |         | Ø 68        |
| 2080.1404.07 | End cone E-90-50-42  | 90      | 50        | 42      | Ø 80        |
| 2090.1404.01 | End cone E-96-50-42  | 96      | 50        | 42      | Ø 90        |
| 2105.1404.03 | End cone E-110-68-58 | 110     | 68        | 58      | Ø 105       |

OD = Outer diameter End Cone = max. diameter of the bore  
OD-1 = Outer diameter End Cone first step = Inner diameter of the pipe  
ID = Inner diameter End Cone



Oversized end cone

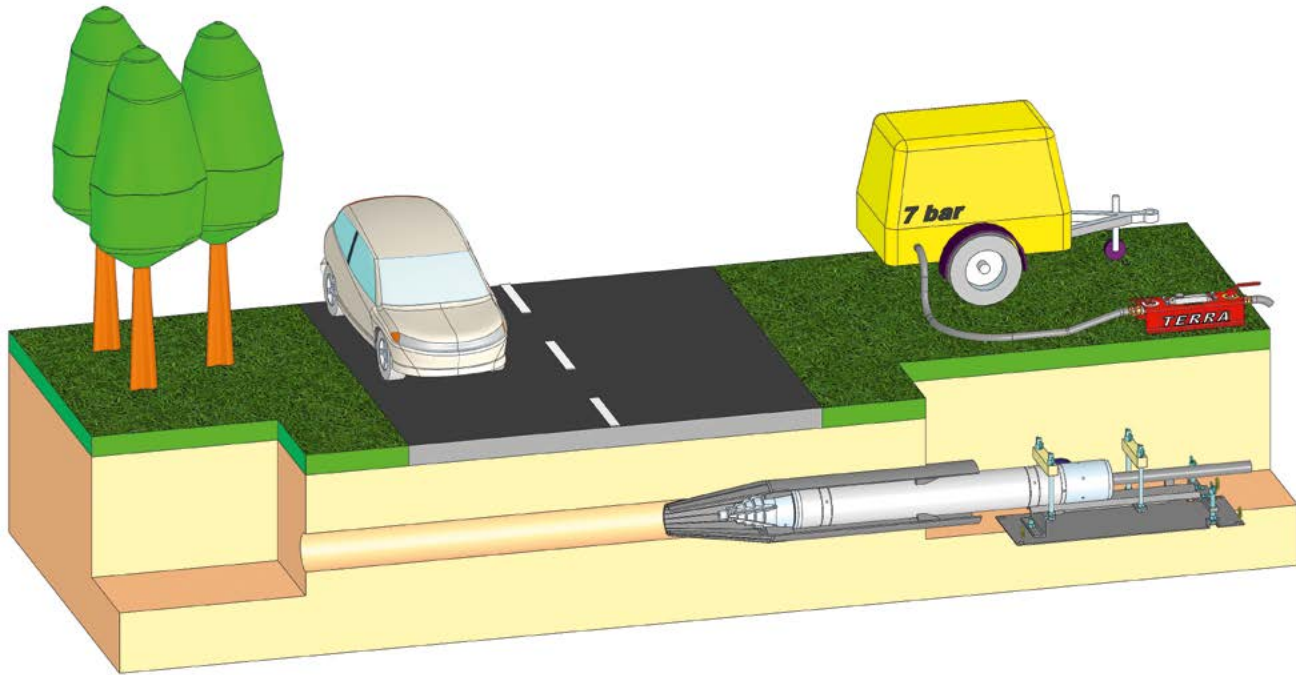


**Expanders**

With expanders, significantly larger displacement tunnels can be produced in a second bore. Expanders are often used when laying larger pipe diameters.

| Part Number  | Description       | Models [mm] | Expand-Ø [mm] | Pipe-Ø [mm] |
|--------------|-------------------|-------------|---------------|-------------|
| 3065.1801.00 | Expander 068 /085 | Ø 68        | 85            | 75          |
| 2080.1803.00 | Expander 080 /105 | Ø 80        | 105           | 90          |
| 2080.1805.00 | Expander 080 /120 | Ø 80        | 120           | 110         |
| 2080.1808.00 | Expander 080 /135 | Ø 80        | 135           | 125         |
| 2090.1805.00 | Expander 090 /120 | Ø 90        | 120           | 110         |
| 2090.1808.01 | Expander 090 /135 | Ø 90        | 135           | 125         |
| 2090.1810.00 | Expander 090 /155 | Ø 90        | 155           | 140         |
| 2090.1815.00 | Expander 090 /170 | Ø 90        | 170           | 160         |
| 2105.1808.00 | Expander 105 /135 | Ø 105       | 135           | 125         |
| 2105.1810.00 | Expander 105 /155 | Ø 105       | 155           | 140         |
| 2105.1815.00 | Expander 105 /170 | Ø 105       | 170           | 160         |
| 2105.1820.00 | Expander 105 /195 | Ø 105       | 195           | 180         |
| 2135.1810.00 | Expander 135 /155 | Ø 135       | 155           | 140         |
| 2135.1815.00 | Expander 135 /170 | Ø 135       | 170           | 160         |
| 2135.1820.00 | Expander 135 /195 | Ø 135       | 195           | 180         |
| 2135.1825.00 | Expander 135 /205 | Ø 135       | 205           | 180         |
| 2135.1830.00 | Expander 135 /245 | Ø 135       | 245           | 200         |
| 2135.1835.00 | Expander 135 /275 | Ø 135       | 275           | 225         |
| 5155.1820.00 | Expander 155 /195 | Ø 155       | 195           | 180         |
| 5155.1825.00 | Expander 155 /205 | Ø 155       | 205           | 180         |
| 5155.1830.00 | Expander 155 /245 | Ø 155       | 245           | 200         |
| 5190.1830.00 | Expander 190 /245 | Ø 190       | 245           | 200         |
| 5190.1832.00 | Expander 190 /300 | Ø 190       | 300           | 250         |

The expanders only work in displaceable ground conditions.

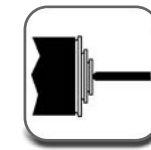




## Ram Rings for Steel Pipes

### Ramming Accessories

#### Ram Rings



Each mole can ram steel pipe without any modification to the head. Another advantage that sets TERRA apart from conventional piercing tools.

#### Please tell us:

- Outer diameter, thickness and inner diameter of the steel pipe
- Size, model and serial number of your TERRA mole

We will offer you the most suitable ram ring.

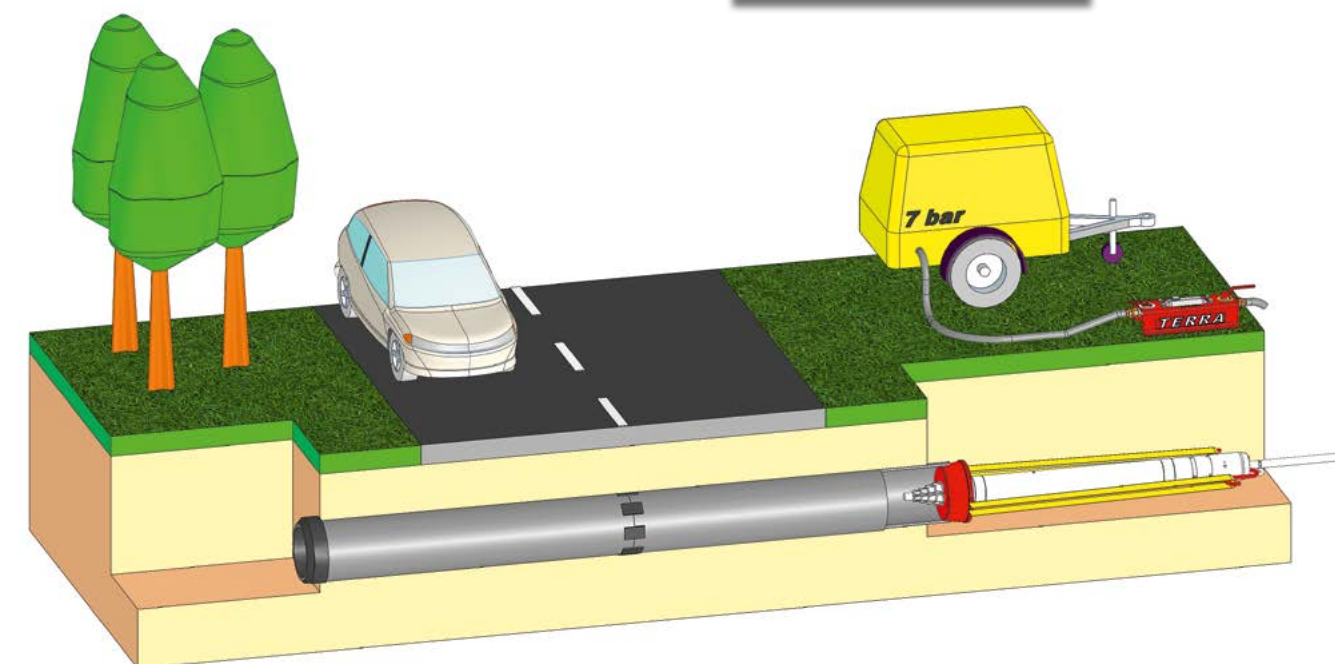


Ram rings

#### TERRA-HAMMER Steel Pipe Ramming

Please see our TERRA-HAMMER Steel Pipe Ramming catalog for more details.

TERRA AG offers rams up to Ø 565 mm, for steel pipes up to Ø 3 m.





**Flexible Hoses**  
TERRA offers for each mole a 15 m, 20 m or 25 m hose. The hoses can be installed quickly so you don't lose any time on the job site.

Air Supply Hoses

Hose Connecting Accessories

Air Supply Hoses

The special air hoses and extension hoses ensure a safe air supply for your piercing tool.

The Ø 45 - 105 mm models are reversed by a 1/4 turn of the special air hose. Thanks to the double steel armoring, the twist of the 1/4 turn is very easy.

The Ø 105 - 210 mm models are available with remote control of the lubricator.

| Part Number  | Description                  | Models [mm]      |
|--------------|------------------------------|------------------|
| 2055.1710.10 | Air supply hose DN16/15m     | Ø 45/55 R        |
| 2055.1711.12 | Air supply hose DN16/20m     | Ø 45/55 R        |
| 2055.1712.10 | Air supply hose DN16/20m     | Ø 45/55 R        |
| 2080.1710.10 | Air supply hose DN19/15m     | Ø 68/80/90 SK    |
| 2080.1711.10 | Air supply hose DN19/20m     | Ø 68/80/90 SK    |
| 2080.1712.10 | Air supply hose DN19/25m     | Ø 68/80/90 SK    |
| 2135.1710.00 | Air supply hose DN25/15m     | Ø 105 S          |
| 2135.1711.00 | Air supply hose DN25/20m     | Ø 105 S          |
| 2135.1712.00 | Air supply hose DN25/25m     | Ø 105 S          |
| 5135.1710.01 | Air supply hose DN25+DN5/15m | Ø 105 F1         |
| 5135.1711.01 | Air supply hose DN25+DN5/20m | Ø 105 F1         |
| 5135.1712.01 | Air supply hose DN25+DN5/25m | Ø 105 F1         |
| 5135.1750.00 | Air supply hose DN32+DN6/10m | Ø 135 Twin       |
| 5135.1751.01 | Air supply hose DN32+DN6/20m | Ø 135 Twin       |
| 5190.1710.00 | Air supply hose DN38+DN5/15m | Ø 155/190/210 F1 |
| 5190.1711.00 | Air supply hose DN38+DN5/20m | Ø 155/190/210 F1 |
| 5190.1712.00 | Air supply hose DN38+DN5/25m | Ø 155/190/210 F1 |



Air supply hose  
DN16/15m



Air supply hose  
DN19/20m



Air supply hose  
DN25+DN5/25m

Quick Couplers

Optional quick couplers are available for the TERRA moles Ø 45 - 90 mm. These quick couplers are equipped with JIC threads at both ends. This allows quick assembly of the short whip hose to the long air hose. Quick couplers enable disconnection of the long air hose in seconds without the need for extra tools.

| Part Number  | Description                         | Models [mm] |
|--------------|-------------------------------------|-------------|
| 2055.1908.00 | Quick coupling 055 box, mit JIC pin | Ø 45-55     |
| 2080.1911.01 | Quick coupling 080 box, mit JIC pin | Ø 68-90     |
| 2055.1910.00 | Quick coupling 055 pin, mit JIC box | Ø 45-55     |
| 2080.1912.01 | Quick coupling 080 pin, mit JIC box | Ø 68-90     |



Quick coupler  
Female- and Male

# Complete Service for Trenchless Technology

Always One Drill Ahead



## Technicians on site

Our experienced technicians provide professional on-site support. Our service is provided directly from the manufacturer's factory at standard regional conditions or by qualified authorized dealers. You have direct access to the TERRA service hotline, where we connect you to our service team. A service package is offered with every machine to ensure a long lifetime of your machine. You have very low follow-up costs or repair costs. Swiss Made Quality requirements instead of expensive repair costs - that is our claim for Trenchless Technology.



## Long-term spare parts service - High investment protection

We keep a large stock of spare parts. Owing to intelligent digital control, essential spare parts are immediately available. We keep spare parts even 20 years after delivery of your machine. Within Europe we deliver spare parts within 24 hours. Lean logistics and a fast process organization make this possible. With every machine delivered, you receive spare parts catalogs and operating manuals. If service is required, our team of experts can help you quickly and competently.



## Service hotline

Our service hotline connects you directly to the service department with a technician. Thanks to good documentation, we can quickly localise your problem and help you further. Even with machines that have been in use for a very long time, good documentation ensures that we can continue to help you even years later. This offers you a high level of investment protection.



## Fleet management (telematics)

TERRA offers fleet management for all HDD machines. This allows you to keep track of your TERRA machine. With the telematics, all machine data is transferred to a cloud, which can be viewed on your tablet or mobile phone. Thanks to this intelligent solution, you can intervene quickly in the event of an emergency. The data is directly connected to our service department, where experts can help you quickly and reliably.



## Training with TERRA certificate

Our experienced staff offers training for your crews available on the jobsite or in the classroom. With our insider knowledge we make you run your drill like no one else. Your crew will be faster, more productive and more efficient on the jobsite. After the successful training you will receive a TERRA certificate which allows you to operate the machine at its best.



## Theory and practice

Well-trained operators are an important cornerstone for successful deployment. The comprehensive theoretical training includes topics on process engineering, machine technology and how to handle your newly acquired machine. On request your crew will be made familiar with the machine at the jobsite. Well-trained staff pays off for your investments in our machines.



## Lucrative financing offers

TERRA offers lucrative financing for new and used machines. Whether you want an operate lease, finance lease or installment plan - talk to our experts about the best solution for you. Even repurchases of existing equipment can be discussed individually.

# More Terra Products

The World of Trenchless Technology

## Directional Rod Pusher

TERRA-JACK



## Horizontal Directional Drill (HDD) Machines

TERRA-JET



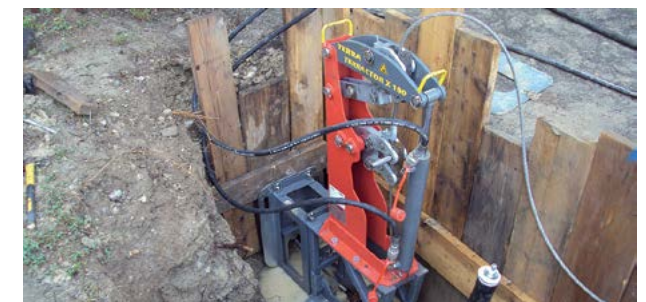
## Rod Burster

TERRA-HYDROCRACK



## Cable Bursters

TERRA-EXTRACTOR



## Steel Pipe Ramming Equipment

TERRA-HAMMER Series TR



# Full listing of available piercing tools

## Technical Data

| TERRA-HAMMER Piercing Tools | Diameter [mm] | Length [m] | Weight [kg] | Frequency [1/min] | Air cons. [m³/min] | Pressure [bar] |
|-----------------------------|---------------|------------|-------------|-------------------|--------------------|----------------|
| TU 045 R                    | Ø 45          | 1.00       | 9           | 475               | 0.6                | 6-7            |
| TU 055 R                    | Ø 55          | 0.97       | 13          | 520               | 0.9                | 6-7            |
| TU 055 R (locatable)        | Ø 55          | 1.16       | 16          | 520               | 0.9                | 6-7            |
| TU 068 SK                   | Ø 68          | 1.31       | 28          | 420               | 1.3                | 6-7            |
| TU 068 SK (locatable)       | Ø 68          | 1.51       | 33          | 420               | 1.3                | 6-7            |
| TU 068 (mini)               | Ø 68          | 0.93       | 20          | 480               | 1.1                | 6-7            |
| TU 080 SK                   | Ø 80          | 1.41       | 39          | 395               | 1.8                | 6-7            |
| TU 080 SK (locatable)       | Ø 80          | 1.51       | 42          | 395               | 1.8                | 6-7            |
| T 080 SK (mini)             | Ø 80          | 0.88       | 24          | 550               | 1.8                | 6-7            |
| TU 090 SK                   | Ø 90          | 1.44       | 51          | 395               | 1.8                | 6-7            |
| TU 090 SK (locatable)       | Ø 90          | 1.51       | 33          | 420               | 1.3                | 6-7            |
| T 090 SK (mini)             | Ø 90          | 0.88       | 38          | 550               | 1.8                | 6-7            |
| T 105 F                     | Ø 105         | 1.40       | 60          | 360               | 2.4                | 6-7            |
| TU 105 F (locatable)        | Ø 105         | 1.50       | 71          | 360               | 2.4                | 6-7            |
| T 105 S                     | Ø 105         | 1.40       | 60          | 360               | 2.4                | 6-7            |
| TU 105 S (locatable)        | Ø 105         | 1.50       | 71          | 360               | 2.4                | 6-7            |
| T 105 S (mini)              | Ø 105         | 1.08       | 44          | 540               | 2.4                | 6-7            |
| T 135 Twin                  | Ø 135         | 1.70       | 120         | 350               | 2.4                | 6-7            |
| TU 135 Twin                 | Ø 135         | 1.70       | 125         | 350               | 2.4                | 6-7            |
| TU 135 F (locatable)        | Ø 135         | 1.80       | 138         | 350               | 2.4                | 6-7            |
| T 155 F                     | Ø 155         | 1.84       | 170         | 285               | 3.8                | 6-7            |
| T 190 F                     | Ø 190         | 1.89       | 258         | 275               | 5                  | 6-7            |
| T 210 F                     | Ø 210         | 1.90       | 317         | 275               | 5                  | 6-7            |

Technical specifications can be changed without previous notice.

The mole has to be at least 10 % bigger than the biggest outer diameter of the pipe.

T = TERRA-HAMMER with fused earth displacement head

S = TERRA-HAMMER with interchangeable head adapters

S = TERRA-HAMMER Version S, with quick reverse by 1/4 turn of the air hose

F = TERRA-HAMMER Version F, with quick reverse by remote control

Twin = Reverse by remote control (hose-in-hose solution)

K = TERRA-HAMMER Version K, not glued, can be serviced without heating

SK = TERRA-HAMMER Version S + Version K

## TERRA Piercing Tool – a must have for every contractor!



### LUBRICATOR

The lubricator together with the biodegradable special oil lubricates your piercing tool and ensures a smooth entering into the ground.



### PULLING ACCESSORIES

For simultaneous pipe pulling in difficult ground conditions, TERRA offers pulling accessories such as cable clamps or towing heads.



### Quick Couplers

Quick couplers allow quick assembly of the short whip hose to the long air hose. Quick couplers enable disconnection of the long air hose in seconds without the need for extra tools.



### CUSTOMER SERVICE

Satisfied clients worldwide and a great customer service are the result of our constant progress. The TERRA-JET Directional Drill is a must have for every contractor!