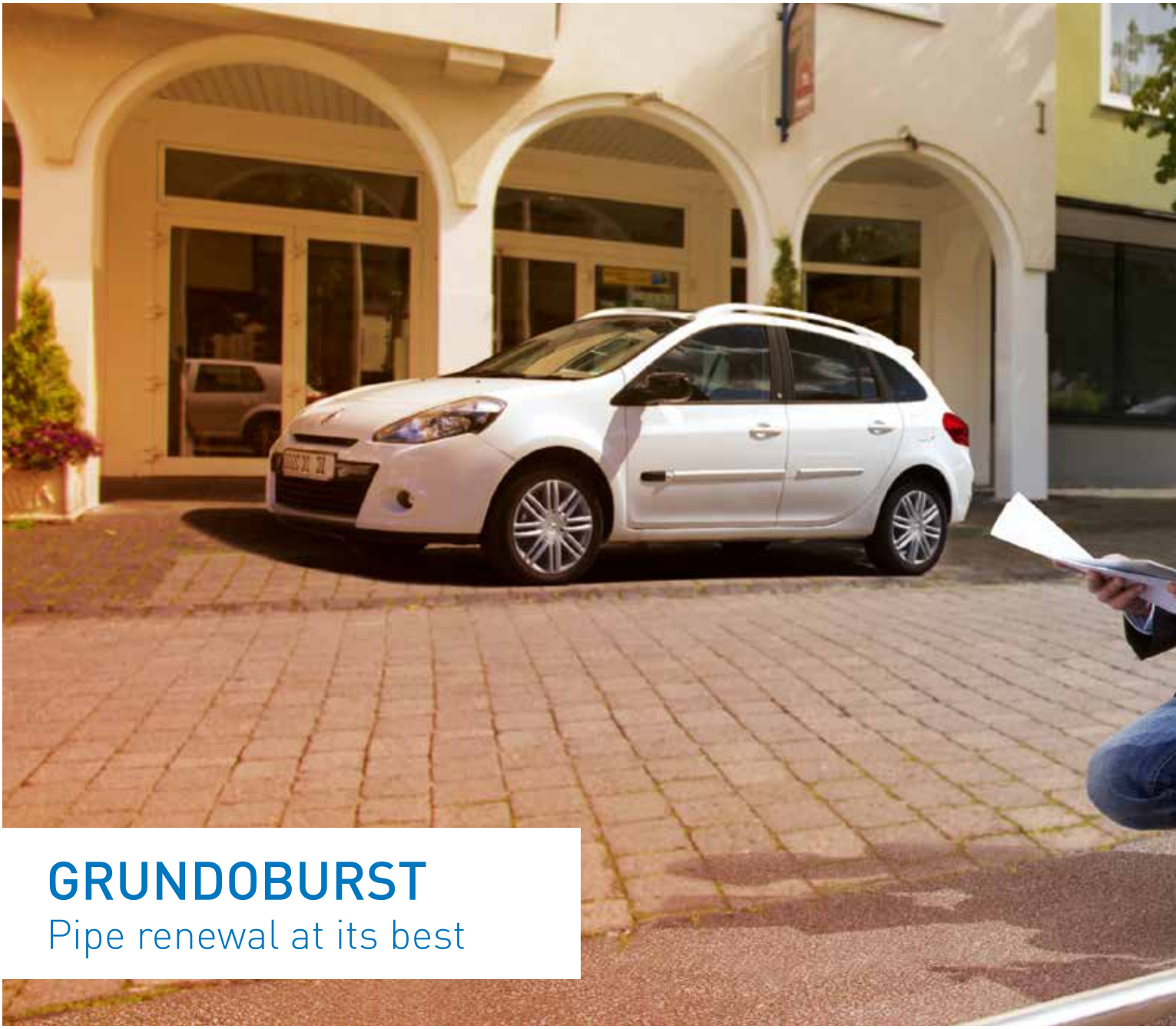
INSPIRING TRENCHLESS TECHNOLOGIES

TRACTO-TECHNIK

SOMETIMES YOU HAVE TO BREAK THE OLD TO CREATE SOMETHING NEW

GRUNDOBURST
Static Pipe Bursting Systems



GRUNDOBURST

Pipe renewal at its best

GRUNDOBURST rigs are perfect for pipe renewal using the static pipe bursting method. With the powerful and robust pulling rigs, damaged old pipes with diameters up to 1,200 mm (circular and oval profiles) can be renewed without the need for trenches. Pipe bursting is an acknowledged and, most important, sustainable method for renewing pressure and gravity gradient lines; it has been in use all over the world for the past 30 years. Old pipes (VCP, lead, PVC, PE, grey cast iron, ductile iron, AC,GFRP, steel etc.) are replaced by new pipes (PE, PP, VCP, ductile cast iron, GFRP, steel, PVC etc.) with identical, smaller or larger diameters.

THE ADVANTAGES:

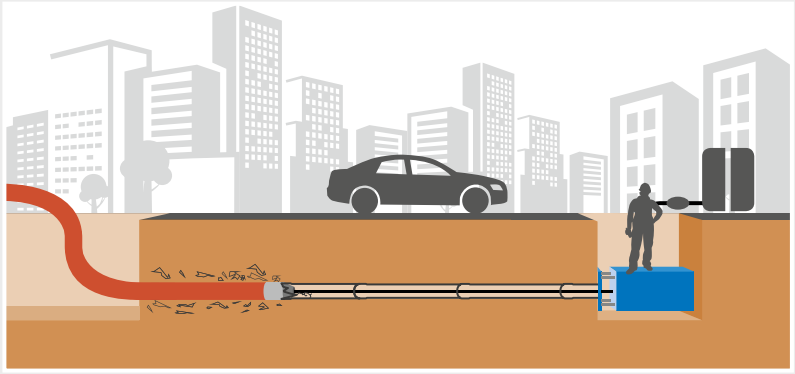
- Can be used for almost any types of damage and any kind of old pipe materials
- Long service life for the new pipe, 80 - 100 years
- The old pipe capacity can be scaled up by 1 - 2 nominal sizes
- QuickLock: simple and safe rod connections - engage with a click, no screwing together; even small bend radii can be accessed
- Short installation and set-up times
- Renewal of already existing pipe-line routes
- 40 % cost saving in comparison with open trench methods
- Traffic flow and the environment are hardly affected
- Almost no re-instatement costs due to ground settlement, groundwater interference and road damage after pipe bursting
- Safe application according to latest rules and standards

5 METHODS
Multifunctional GRUNDOBURST Technique

The methods at a glance

- **Pipe bursting**
  pulling in a new pipe of the same size or larger
- **Pipe relining**
  slight reduction of the pipe's cross-section
- **Calibre pipe bursting**
  damaged pipe sections are statically expanded
- **TIP method (Tight in Pipe)**
  the new pipe fits closely to the internal wall of the old pipe
- **Reduction method**
  the pipe's cross-section is temporarily reduced whilst being pulled in

Pipe bursting



Trenchless renewal in the existing pipe route.Installation of the new line with identical or larger nominal diameters.

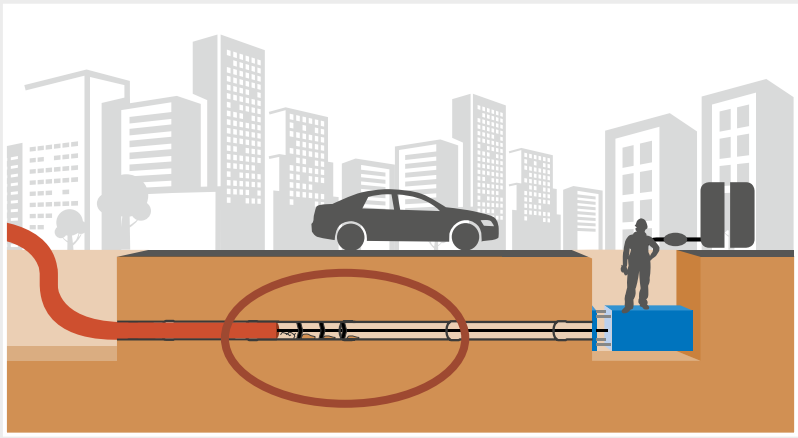
Application: water and gas pressure pipes and gravity gradient lines, nominal diameters DN 50 to DN 1,200, mains replacement lengths up to 300 m.

Types of damages: burst pipes, encrustation, drain blockage, substandard installation of sewage pipes, positional displacement (misalignment, gaps in the sleeve), cracks, leakage, mechanical wear.

Standards: DWA A125, DWA M143-15, A161, DIN EN 12889, DVGW GW 304, 312,323, 325, RSV M 8

MANY POSSIBILITIES
only one machine

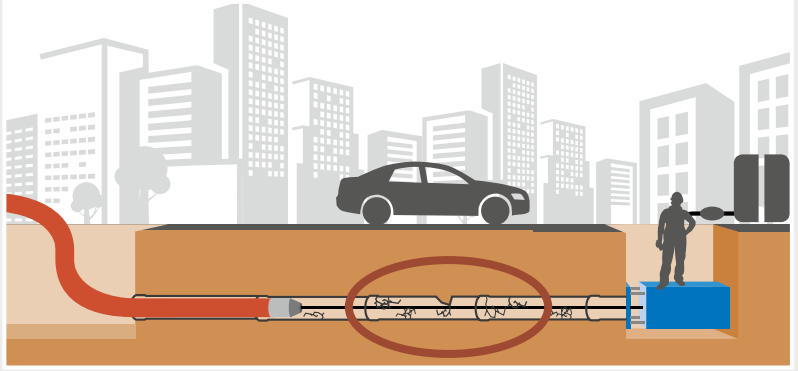
Pipe relining



With smaller dimensioned long and short pipes for encrusted old pipes; cleaning equipment can be carried along with the Quicklock rods while the pipe is being pulled in, the equipment loosens encrustation and pushes it out.
Application: pressure / gravity gradient lines with free cross sections in the old pipe
Types of damages: corrosion / encrustation, cracks, leakages, mechanical wear.

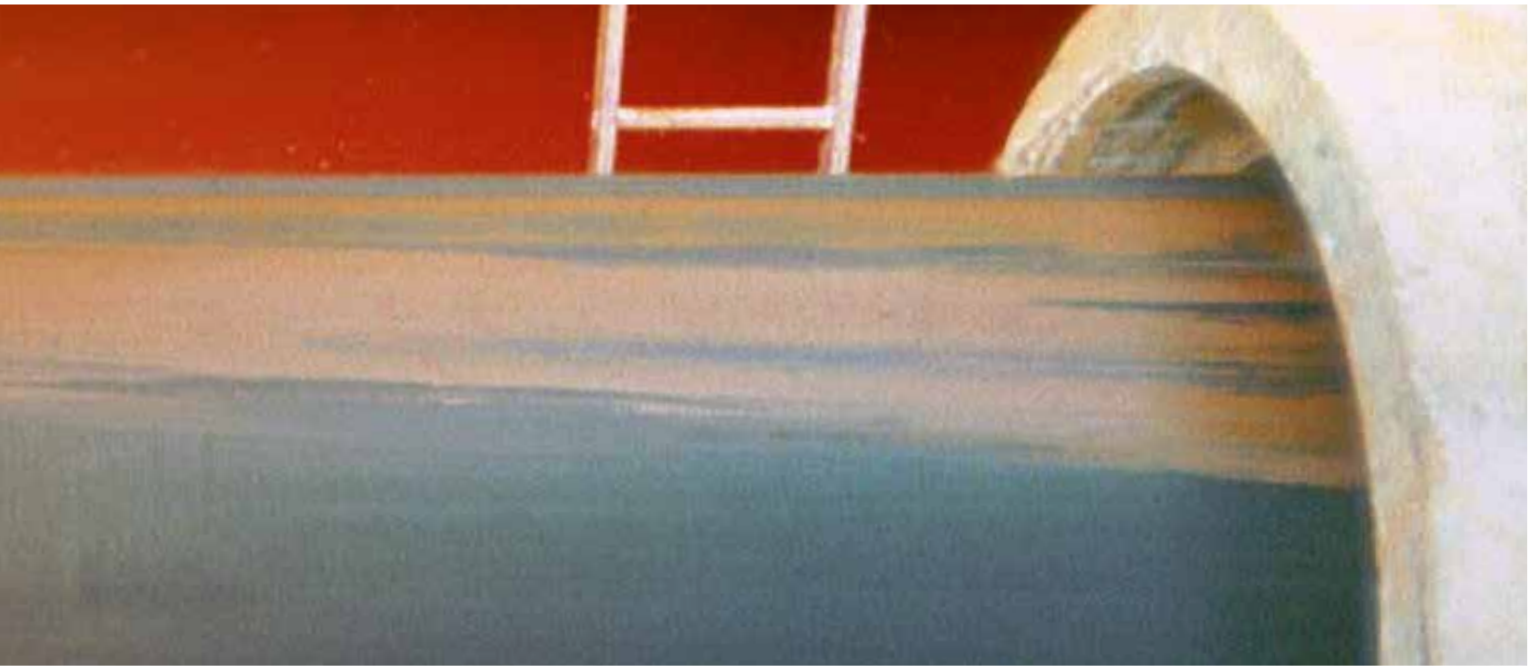
Standards: DVGW GW 320-1, 325, DWA M 143-12,13, ATV-M 127-2, RSV M3, EN 12889

Calibre pipe bursting

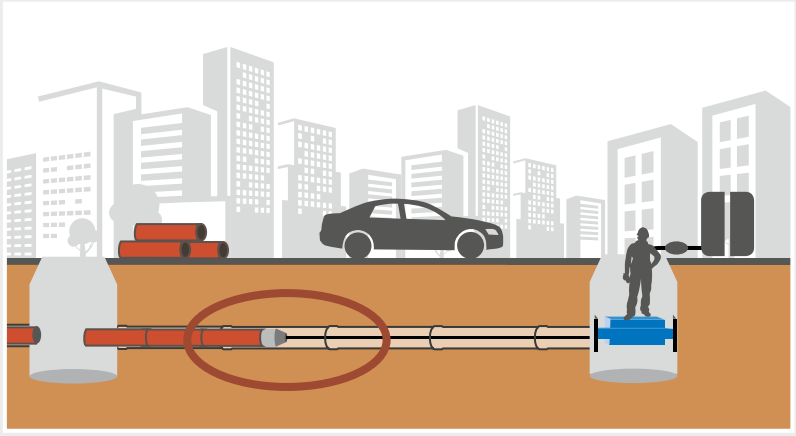


Partially damaged pipe sections are expanded statically with GRUNDOBURST, a new pipe is pulled in at the same time, thus, an annulus is generated which is usually grouted.
Application: pressure pipes and gravity gradient lines with free cross sections caused by collapse in the old pipe (drill free beforehand). A slight cross-section reduction is possible.
Types of damages: local deformation, cracks, displacement, burst pipes.

Standards: DWA M 143-12,13, A161, EN 12889, RSV M8



Renovation with the Tight In Pipe method (TIP)



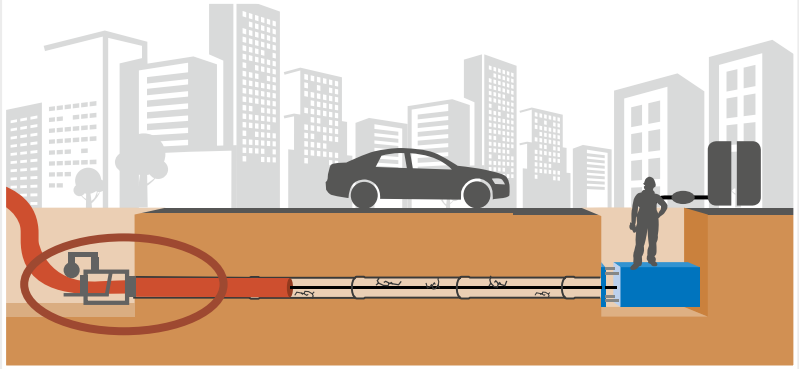
Standards: DWA M 143-12,13, RSV M 2.2, DWA A 127-2

The TIP method is a method for re-lining concrete and vitrified clay pipes with single pipes (short pipe) or pipe strings (long pipe). In the first place, a new pipe made of polypropylene (PP-HM) is installed to fit closely inside the old pipe (tight-in-pipe). The tiny annulus needs no grout after fill.

Application: renovation of sewer lines made of asbestos cement, concrete and vitrified clay.

Types of damages: burst pipes, deformation up to 20 %, misalignment up to 10 % of the cross-section, corrosion, drainage blockup, cracks and leaks, mechanical wear, encrustation (must be removed beforehand).

Reduction Method



Standards: ATV-M 143-11, DVGW GW 320-2, DWA 127 -2, RSV M2

The reduction method is a re-lining technique for which the outer diameter of the long PE pipe is mechanically reduced. As soon as it is pulled in, the reduced PE pipe string elongates inside the old pipe and covers the wall in a close fit.

Application: rehabilitation of circular cross-sections from DN 100 to app. DN 1,200 within the domain of gas, water and sewage.

Types of damages: corrosion, cracks, leakage, mechanical wear, encrustation, (to be removed before installation).

TECHNOLOGY AND DIVERSITY
that will inspire you

PRODUCTS FROM THE GRUNDOBURST SERIES

- Compact dimensions for small pits
- Can be applied in both directions - from a single pit
- Rapid working cycles and high performance
- Quick rod thrust and pipe pulling of the new pipe into the old
- Fast machine start
- All machine types have remote control
- Light weight for simple transportation
- Accessories for specific methods
- Stable and job-site specific construction for increased demands
- Long service life and minimal maintenance requirements
- Ergonomic operation and all-round working safety
- CE certification

MADE IN GERMANY

EXPERT INSPECTION
Statutory expert equipment inspection

TRAINING
Wide-ranging training and further education courses

INTERNET
Please visit www.TRACTO-TECHNIK.com

GRUNDOBURST400G

GRUNDOBURST400S

GRUNDOBURST800G

GRUNDOBURST1250G

GRUNDOBURST1900G

GRUNDOBURST2500G

GRUNDOBURST ACCESSORIES
to keep it running

THE PERFECT BURSTING RODS

- Quick locking couplings without thread (QuickLock), no lubrication required, therefore no time consuming screwing together required
- Quick rod insertion and removal
- The rods are connected faster than threaded rods
- Absolutely push and pull resistant
- Able to negotiate bends
- Integral production, therefore highly resistant to stress
- Robust, low-wear as clamping is not required
- No slipping back of the rods, due to direct force transmission
- Rod system with convenient rod accessories
- Longer service life than screwed rods

QuickLock pipe bursting rods are available with 35 mm diameters, suitable for pipes from DN 50 on.
Other rod diameters: 54 mm, 75 mm, 100 mm, 120 mm and 140 mm

Elbow rods

Rod adapter

Expanding connector

GRUNDOBURST ACCESSORIES
to keep it running

ROLLERBLADE

Rollerblade for cutting
open old pipe lines
from DN 50 to DN 1,000 mm

Rollerblade Ø 100 mm

Rollerblade
Ø 1.000 mm

TENSIONING SHORT PIPES

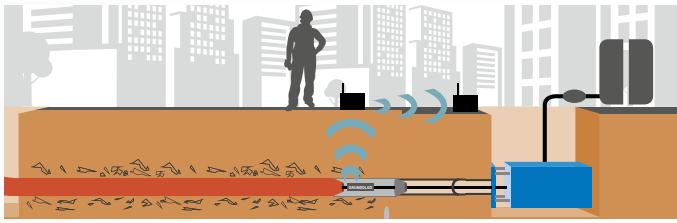
BURSTFIX with 200 kN, 400 kN or 800 kN bracing power for tight-fitting connections when pulling in short pipes from DN 200 to DN 1200
Pulling in short pipes made of PP, PE, PVC, concrete, VCP, GFRP etc

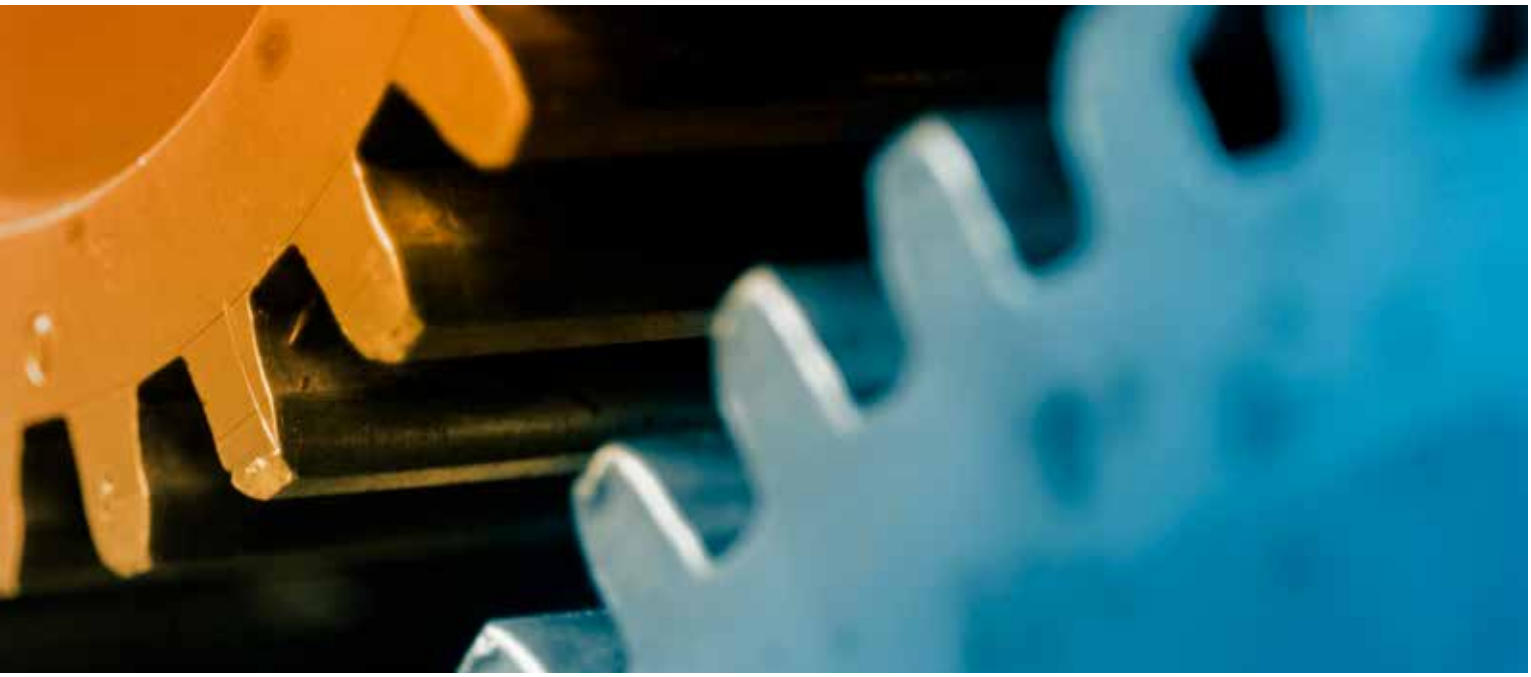
BURSTFIX^{400} in operation

BURSTFIX^{200} in the manhole

PULLING FORCE MEASUREMENT WITH GRUNDOLOG

Product pipes must not be overstrained and the permissible tensile forces during pipe installations have to be taken into consideration. According to standards, the pulling forces affecting the new pipe shall be measured and recorded continuously. The measurements are performed with the GRUNDOLOG which works with modern DMS measuring technology and a large data storage.





HYDRAULIC POWER UNITS

TT HP-031 for 400G, 400S, 800G

L x W x H:	1,520 x 800 x 1,300 mm
Weight (full tank):	680 kg
Hydraulic oil tank:	110 l
Diesel tank:	50 l
Engine power output:	31.3 kW at 2,000 rpm
Max. hydraulic pressure:	250 bar

TT HP-055 for 400G, 400S, 800G, 1250G ,1900G

L x W x H:	1,640 x 840 x 1,650 mm
Weight (full tank):	1,400 kg
Hydraulic oil tank:	230 l
Diesel tank:	110 l
Engine power output:	55.1 kW at 2,300 rpm
Max. hydraulic pressure:	250 bar

stepless pressure and litre volume adjustment via cable controller

TTB250 for 2500G

L x W x H:	2,700 x 1,400 x 2,400 mm
Weight (full tank):	2,600 kg
Hydraulic oil tank:	945 l
Diesel tank:	165 l
Engine power output:	127 kW at 2,000 rpm
Max. hydraulic pressure:	250 bar

stepless pressure and litre volume adjustment via cable controller


TRACTO-TECHNIK

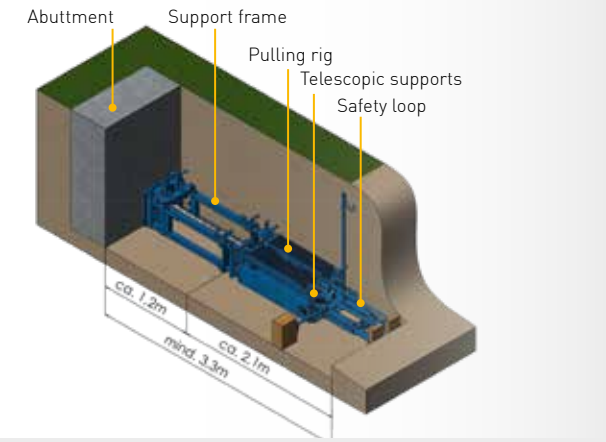

x. 400kN

TECHNICAL DATA
400 - 800 kN

Model

GRUNDOBURST400G

- For pressure and sewer lines ND 50 - ND 250 up to approx. 100 m lengths (procedural)
- Compact dimensions for small pits
- Rapid work cycles and high performance
- Fast rod pushing in the old pipe and pulling in of the new pipe
- Light weight for simple transportation
- Can be applied in both directions - from a single pit
- Simple installation and rapid machine start
- One-man operation with remote control
- Accessories for specific methods

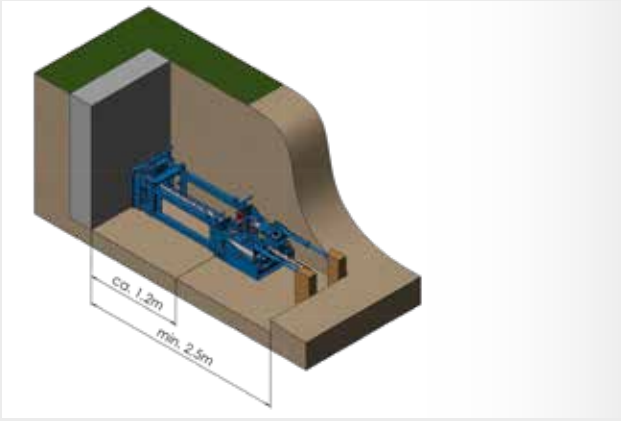


Performance data

Dimensions pulling rig L x W x H [mm]:	1.420 x 560 x 520
Weight of the rig [kg]:	560
Thrust force [kN]:	275
Pulling force at 250 bar [kN]:	400
Pit size L x W [mm]:	3.300 x 1.100
Axle height [mm]:	230
Recommended hydraulic power unit:	TT HP-031 or TT HP-055
Drive capacity[kW]:	55,1 at 2.300 rpm., 24,4 at 3.000 rpm
Hydr. operating pressure [bar]:	250
Old pipe Ø [mm]:	ND 50 - ND 250
For pipe materials:	VCP, PVC, PE, grey/ductile cast iron, AC, GFRP, steel
New pipe Ø [mm]:	up to OD 280
For pipe materials:	PE, PP, VCP, ductile cast iron, GFRP, steel
Bursting rod Ø [mm]:	54 (standard) or 35, max. 200 kN
Bursting rod weight [kg]:	7,5
Bursting rod effective length [mm]:	700

GRUNDOBURST[400S]

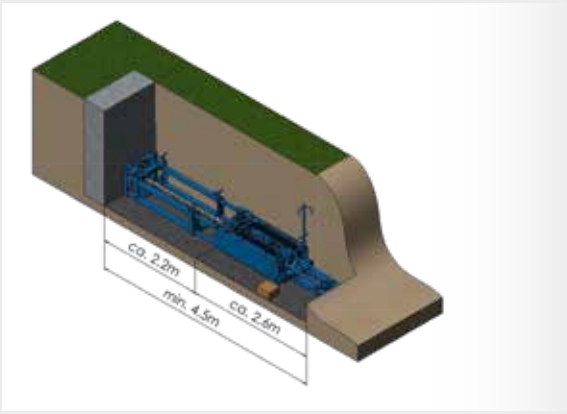
- For pressure and sewer lines ND 50 - ND 250 up to app. 100 m length (procedural)
- Pulling rig length only 60 cm
- Effective rod length in the manhole: 470 mm
- Relatively simple operation in the manhole
- No excavation when working from manhole to manhole
- All-round working safety



600 x 490 x 340
200
275
400
2,500 x 1,100, manhole min. Ø 1,000
Pit: 220 | manhole: 140
TT HP-031 or TT HP-055
55.1 at 2,300 rpm , 24.4 at 3,000 rpm
250
ND 50 - ND 250
VCP, PVC, PE, grey /ductile cast iron, AC, GFRP, steel
up to OD 280
PE, PP, VCP, ductile cast iron, GFRP, steel
54 (standard) or 35, max. 200 kN
5
470

GRUNDOBURST[800G]

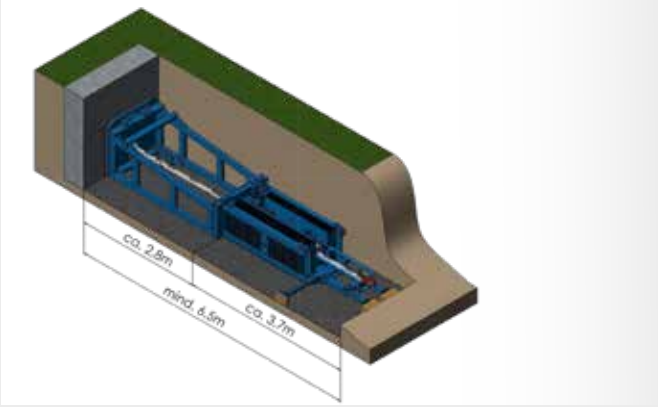
- For pressure and sewer lines ND 80 - ND 400 up to approx. 100 m lengths (procedural)
- Compact dimensions for small pits
- Rapid work cycles and high performance
- Fast rod pushing into the old pipe and pulling in of the new pipe
- Can be applied in both directions - from a single pit
- Rapid machine start
- One-man operation with remote control
- Accessories for specific methods



1,700 x 720 x 670
1,450
256
769
4,500 X 1,500
250
TT HP-031 or TT HP-055
55.1 at 2,300 rpm
250
ND 80 - ND 400
VCP, PVC, PE, grey/ductile cast iron, AC, GFRP, steel
up to OD 400
PE, PP, VCP, ductile cast iron, GFRP, steel
75 (standard) or 54 max. 400 kN
13
750

TECHNICAL DATA
1250 - 2500 kN

Model

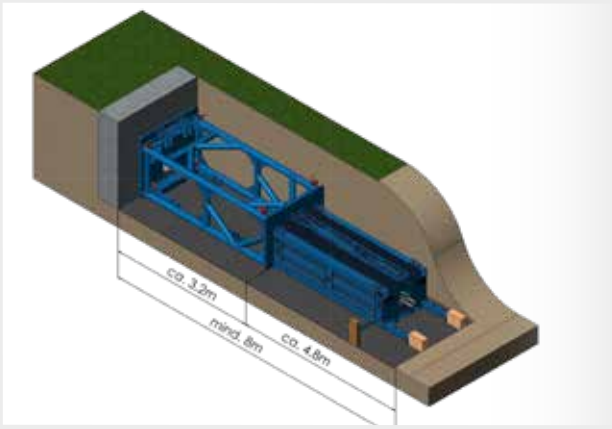


Performance data

Dimensions pulling rig L x W x H [mm]:	2,300 x 1,100 x 875
Weight of the rig [kg]:	3,120
Thrust force [kN]:	395
Pulling force at 250 bar [kN]:	1,272
Pit size L x W [mm]:	6,500 X 1,700
Axle height [mm]:	360
Recommended hydraulic power unit:	TT HP-051
Drive capacity[kW]:	55.1 at 2,300 rpm
Hydr. operating pressure [bar]:	250
Old pipe Ø [mm]:	ND 150 - ND 600
For pipe materials:	VCP, PVC, PE, grey/ductile cast iron, AC, GFRP, steel
New pipe Ø [mm]:	up to OD 630
For pipe materials:	PE, PP, VCP, lead, ductile cast iron, GFRP, steel
Bursting rod Ø [mm]:	100
Bursting rod weight [kg]:	85
Bursting rod effective length [mm]:	1,700

GRUNDOBURST 1900G

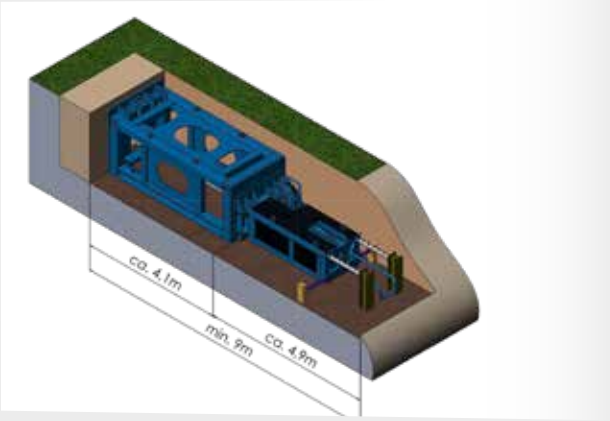
- The GRUNDOBURST 1900G generates a max. pulling force of 1,900 kN (190 t). This allows renewal of defective pipes from ND 250 to ND 800 in lengths of 300 m max.
- The rods are 2.25 m long and weigh 165 kg each, the permissible bending radius is only 55 m.



2,850 x 1,150 x 1,000
3,320
716
1,900
8,000 X 2,000
400
TT HP-051 or TT-B250
55.1 at 2,300 rpm, 127 at 2,000 rpm
250
ND 250 - ND 800
VCP, lead, PVC, PE, grey/ductile cast iron, AC, GFRP, steel up to OD 900
PE, PP, VCP, ductile cast iron, GFRP, steel
120
165
2,250

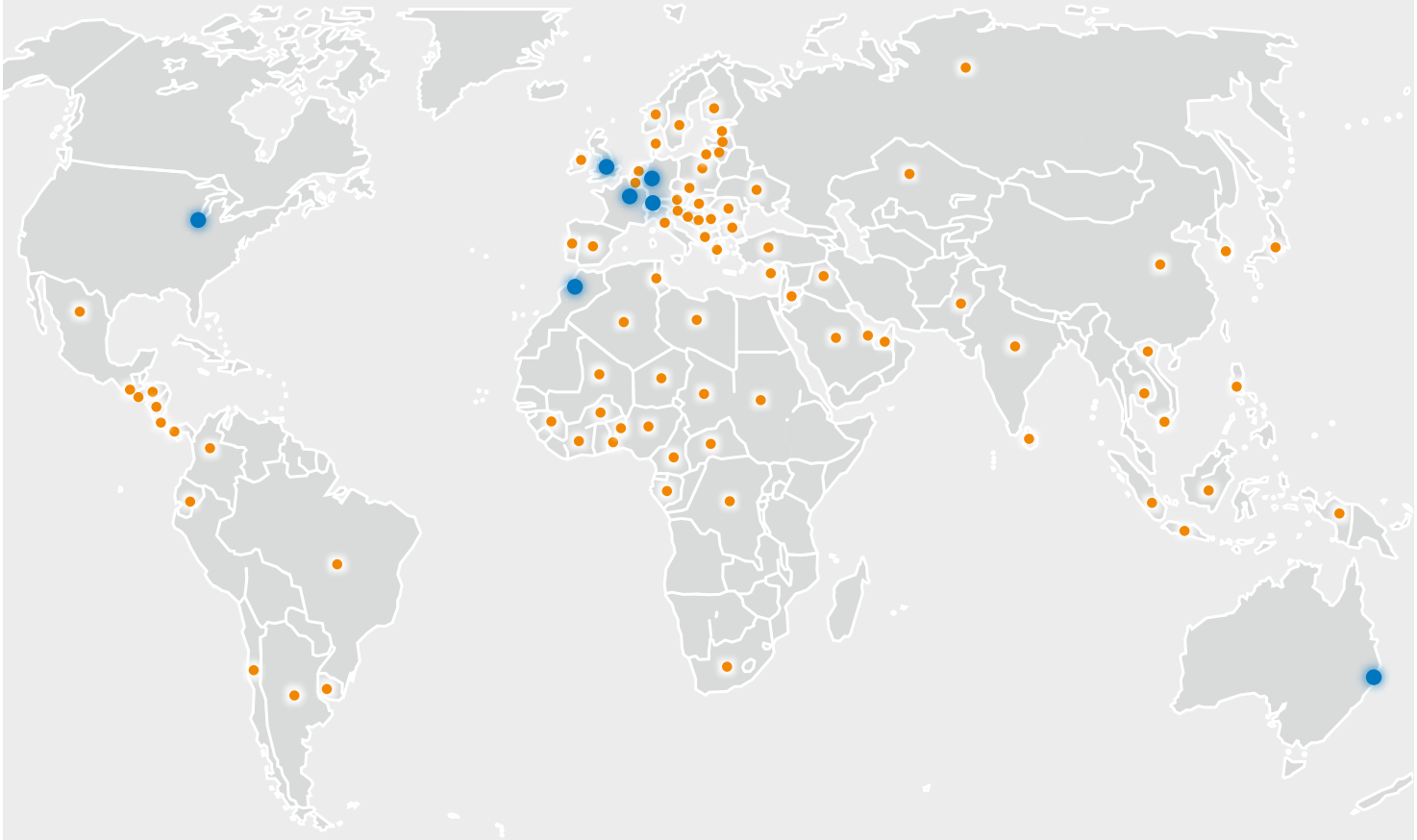
GRUNDOBURST 2500G

- The GRUNDOBURST2500G sets the benchmark for trenchless pipe renewal. It generates a maximum pulling force of 2,550 kN (255 t). This allows the renewal of old pipes from ND 300 to ND 1,200.
- The rods are 2.20 m long and weigh 210 kg each. For steel pipe relining projects, mains lengths up to 1,280 m can be pulled in.



2,950 x 1,600 x 1,500
4,100
1,055
2,550
9,000 x 2,500
500
TT-B250
127 at 2,000 rpm
250
ND 300 - ND 1,200
VCP, lead, PVC, PE, grey/ductile cast iron, AC, GFRP, steel up to OD 1,200
PE, PP, VCP, ductile cast iron, GFRP, steel
140
210
2,200

TRACTO-TECHNIK
worldwide



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