HABA-BETON
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Microtunnelling

Jacking pipes | Caisson shafts

DIN EN 1916/DIN V 1201 | ÖNORM EN 1916/ÖNORM B 5074

Pipe jacking 9 metres below groundwater level







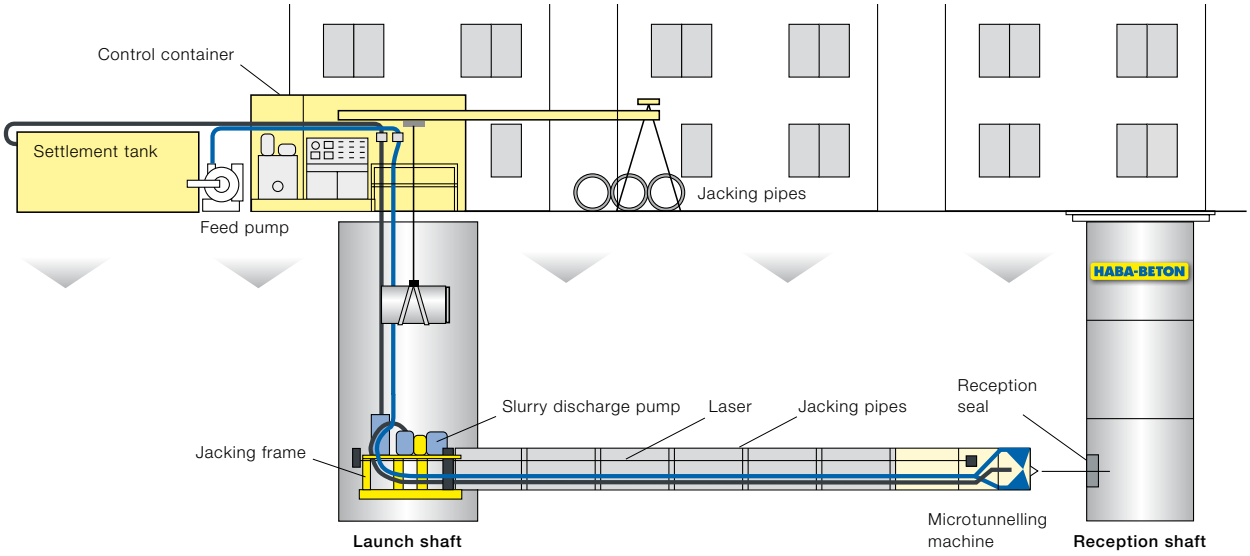
Concrete Excellence

Microtunnelling is a reliable method when it comes to trenchless pipe installation with minimal impact on the surrounding environment. HABA-BETON supports your microtunnelling projects by supplying state-of-the art technology and products made of premium quality material.

Over the last decade microtunnelling has established itself as a reliable process for installing pipes underground. It is especially suitable for driving pipes through the earth in considerable depths, e.g. underneath a river or road. As it requires little space on the ground surface, microtunnelling is the ideal method when it comes to completing projects in densely built-up areas. The high forces affecting reinforced concrete pipes during the microtunnelling process call for extremely solid and robust piping material.
HABA-Beton is your specialist producer of reinforced concrete pipes for microtunnelling. We produce jacking pipes in accordance with applicable European standards, while at the same time customising the product to the specific requirements of your individual project. We also offer you our professional support during the planning phase and advise you with respect to tenders.

HABA-BETON is your expert partner for microtunnelling projects. We ensure reliable, on-time delivery no matter what size your order takes. We put our customers' needs first.

Microtunnelling: the ideal method for installing pipes in built-up areas (see image below)







Products & services:

Manufacture of reinforced concrete jacking pipes DN 300 - 3200

Manufacture of lead pipes, end pipes and intermediate jacking stations

Customised pipe lengths

Connecting pipes

Reducing elements

Intermediate units
(lead pipe – standard pipe
standard pipe – lead pipe)

Manufacture of launch and reception shafts

Design of the lubrication mechanism

Manufacture and fitting of steel collars and sealing systems
37.2 (galvanized) steel, weathering steel (Resista – Corten A7B), V2A steel, V4A steel

Linings
e.g. HDPE lining

Grounding and installation
of anchor channels possible in any configuration

Premium quality **jacking pipes**

HABA-BETON produces solid and robust jacking pipes that are highly durable. Always taking into account the individual requirements of our customers, we are the ideal partner for your microtunnelling project.

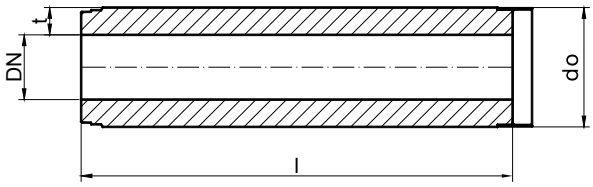
Jacking pipes for microtunnelling are made of reinforced concrete. They often come with invert channels to contain the dry weather flow and are manufactured either in a dry-cast or a wet-cast process (see table on the following page). During wet-casting, the concrete is left to harden in the mould. This technique is currently considered state-of-the-art in pipe manufacturing and is particularly suitable for projects with high demands on both dimensional accuracy and surface quality.
Reinforced jacking pipes offer many advantages: they are extremely robust, structural loads can be calculated, they are designed to withstand heavy loads, and they are characterised by high dimensional stability. Furthermore, they are highly resistant to abrasion and highly durable, with a service life.
Upon your request, HABA-BETON will also manufacture jacking pipes of ultra high performance concrete or supply pipes with partial or full linings such as HDPE liners to ensure maximum resistance to mechanical and chemical exposure from the inside and the outside.
Apart from jacking pipes, our product range also includes lead and end pipes as well as intermediate jacking stations. In addition, our comprehensive delivery programme is complemented by customised special components such as tangential manholes, bends and intermediate/reducing units.

HABA-BETON manufactures state-of-the-art jacking pipes and caisson sinking shafts.



Jacking pipe Typ 2 SB-VT-VM **technical data**

DIN EN 1916/DIN V1201 | ÖNORM EN 1916/ÖNORM B 5074
Design: circular jacking pipe with steel collar and integrated sealing





DN [mm]	t [mm]	do [mm]	l [m]	kg [m]		
Nominal diameter	Wall thickness	Outside diameter	Pipe length (standard)	Weight	dry-cast	wet-cast
300	130	560	2,00	440	●	○
300	180	660	2,00	680	○	●
300	230	760	2,00	950	○	●
400	130	660	2,00	540	●	●
400	180	760	2,00	820	○	●
500	80	660	2,00	365	○	●
500	130	760	2,00/3,00	645	●	●
600	80	760	2,00	430	○	●
600	130	860	2,00/3,00	745	●	●
700	80	860	2,00/3,00	490	○	●
700	130	960	2,00/3,00	850	●	●
800	80	960	2,00/3,00	555	○	●
800	150	1100	2,00/3,00	1120	●	●
900	100	1100	3,00	785	○	●
900	190	1280	3,00	1630	●	●
1000	140	1280	3,00	1260	●	●
1000	155	1310	3,00/4,00	1410	●	●
1200	145	1490	3,00/4,00	1535	●	●
1200	170	1540	3,00/4,00	1830	●	●
1300	210	1720	3,00/4,00	2490	○	●
1400	160	1720	3,00/4,00	1960	●	●
1400	170	1740	3,00/4,00	2100	○	●
1500	160	1820	3,00/4,00	2117	○	●
1500	170	1840	3,00/4,00	2230	●	●
1600	170	1940	3,00/4,00	2365	●	●
1600	180	1960	3,00/4,00	2520	●	●
1600	190	1980	3,00/4,00	2670	○	●
1600	220	2040	3,00/4,00	3145	●	●
1700	170	2040	3,00/4,00	2500	●	●
1800	180	2160	3,00/4,00	2800	●	●
1800	200	2200	3,00/4,00	3140	●	●
1800	220	2240	3,00/4,00	3490	○	●
1800	250	2300	3,00	4020	○	●
2000	200	2400	3,00/4,00	3455	●	●
2000	225	2450	3,00	3930	○	●
2000	250	2500	3,00/4,00	4420	○	●
2200	250	2700	3,00/4,00	4830	○	●
2200	300	2800	3,00/4,00	5890	○	●
2300	250	2800	3,00/4,00	5010	○	●
2400	250	2900	3,00/4,50	5200	○	●
2400	300	3000	3,00/4,50	6360	○	●
2500	250	3000	3,00/4,00	5400	○	●
2600	250	3100	3,00/4,00	5600	○	●
2600	300	3200	3,00/4,00	6830	○	●
2800	400	3600	3,00/4,00	10050	○	●
3000	300	3600	3,00/4,00	7775	○	●
3200	300	3800	3,00/4,00	8247	○	●
3200	400	4000	3,00/4,00	11300	○	●

Larger sizes and more detailed information on outside diameters (do_{nom} and do_{max}) on request.
Subject to dimensional tolerances and design changes. Also available with special cross sections, such as V-shaped or dry weather flow channels.

Jacking pipes with channels

Jacking pipes are also available with V-shaped or dry weather flow channels, combining the benefits of channel pipes and trenchless pipe installation.

Benefits of channel pipes:

- Hydraulically efficient
- Excellent self-cleaning properties
- Easy maintenance



Intermediate jacking stations

- for jacking pipes DN 800 to DN 3000 (short/long stroke)
- with adjustable seal
- black/white version available
- variable installation lengths

SW-Beton and protective lining

If higher requirements apply, our acid-resistant concrete SW-Beton11 is deployed. This can be used to manufacture all products hardened with formwork. This is high-strength (C50/60), smooth and low pore concrete and is suitable for environmental conditions in exposure class XA3 (pH 3.5). In the case of higher levels of aggressiveness, DIN EN 206 / DIN 1045-2 requires additional protection for the concrete. Here, for example, we offer durable PE lining. HABA-BETON supplies pipes with integrated linings. During production, they are securely fitted on the inside of the pipes. Not only are these pipes highly resistant to aggressive media due to their protective lining, but at the same time the use of reinforced concrete ensures that the pipes will withstand high loads.



Our products

Unique

FBS-certified concrete components are high-performance underground champions.

- Outstanding leak-tightness up to 2.5 bar
- Proven durability
- Extremely efficient compared to other materials
- Range of cross-sectional shapes and variety of applications
- Unique position stability
- No deformation as a result of external stresses
- Optimal hydraulic properties and minimal friction coefficient
- High temperature resistance, for example, in connection with damaged or dangerous goods
- Individual solutions for special applications such as conveying aggressive acids or alkalis

Caisson shafts – the clever solution

Caisson shafts ensure a more comfortable working environment with minimal ecological impact.

Caisson shafts offer many advantages for microtunnelling projects: Little space is required on the ground surface around the launch and reception shafts, and no time is wasted on constructing additional support walls. As a result, caisson shafts can easily be sunk in urban, densely populated areas. At the same time, this method causes minimal impact on the surrounding environment when, for example, tunnelling underneath a motorway. Furthermore, no dewatering is required: After the shaft has been sunk, the water is simply pumped from the bottom. Additionally, caisson shaft sinking is also highly economical, saving the costs for traffic diversions or even road closures. After the shaft has been sunk, the time and effort put into restoration works is relatively low.



A shaft ring is being transported to the building site.



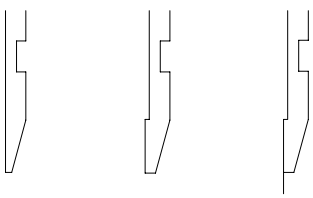
Special anchors facilitate easy sinking.

Technical data

Caisson shaft

Base units are supplied with different kinds of cutting shoes for use in different soil conditions. Upon request, HABA-BETON will design and produce customised steel cutting shoes for special soil conditions.

Cutting shoe geometry



Without overbreak | With overbreak | With overbreak and steel blade

Diameter **DN [mm]**	1500	2000	2500	2600	2800	3200	3500	3600
Wall thickness **t [mm]**	150	160	200	200	300	260	400	350
Max. height of base unit **Hu [m]**	2,90	3,00	3,00	3,00	3,16	3,00	2,70	2,70
Weight base unit approx. **[kg/m depth]**	1850	2714	4100	4150	7304	7065	11500	10200
Max. height of shaft unit **Ho [m]**	2,75	2,80	2,75	2,80	3,00	2,90	2,50	2,50
Weight shaft unit approx. **[kg/m depth]**	1850	2714	4100	4150	7304	7065	11500	10200
Launch/reception hole **D [mm]**	300-500	300-500	500-1200	500-1300	500-1300	500-1300	500-1300	500-1300
Installation anchor weight class **[t]**	6-10	6-10	6-10	6-10	12-20	12-20	12-20	12-20

Further technical details upon request.
Subject to dimensional tolerances and technical changes

Your advantages at a glance

- Shaft sinking method requires minimal space on the ground surface
- No dewatering
- Facilitates tunnelling in considerable depths
- Design of shafts according to load case and soil conditions
- Launch and exit holes at any angle due to circular section
- Smooth outside pipe surface ensures less friction and low energy tunnelling
- Suitable for jacking pipes up to DN 800



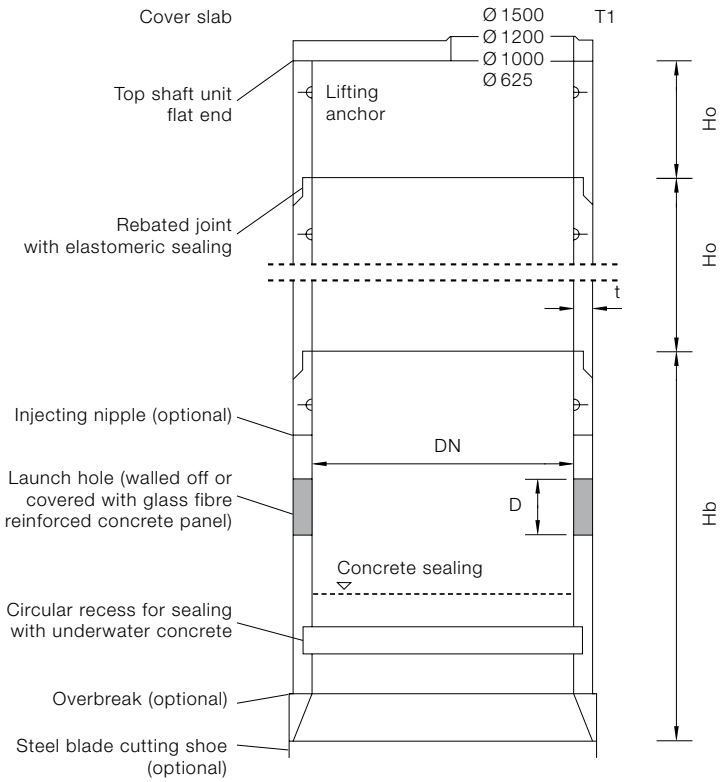
Joints between shaft units are fitted with seals.



Tremie concreting to create a watertight seal



Pipe jacking system





Locations

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4 D-84576 Teising +49 / 86 33 / 509 64-0 5 D-92708 Mantel +49 / 9605 / 9203-0 6 A-5431 Kuchl +43 / 6245 / 82 400 7 A-3134 Nußdorf +43 / 27 83 / 41 38
8 PL-47-143 Ujazd +48 / 77 / 405 69-00 *Paving-stone plants:* 9 D-84577 Tüßling +49 / 86 33 / 50 77-0 10 D-86842 Türkheim +49 / 82 45 / 96 01-0

Our sales offices: 1 CH-9300 Wittenbach +41 / 71 290 18 60 2 CH-5313 Klingnau +41 / 56 245 46 00 3 HU-2890 Tata +36 / 30 / 4749-341
For further information about our locations, please refer to **www.haba-beton.eu**

Product Range

Pipes


Circular pipes


Invert channel pipes


Ovoid pipes


Arch pipes


Other pipes
(joints: rebated, mortar)


Rectangular units


Special components

Shaft/chamber systems


Perfect shaft


Base units


Chamber unit
(joints: rebated, rubber sealing)


Chamber unit
(joints: rebated, mortar)


Auxiliary equipment

Microtunnelling


Jacking pipes


Caisson shafts

Monolithic containers


Pump chambers


Auxiliary equipment

Environmental technology


Wastewater treatment
(circular)

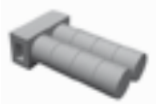

Wastewater treatment
(monolithic)


Waste disposal shafts


Settlement plants

Water storage

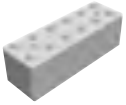

Rainwater
storage


Drinking water
storage

Surface drainage


HABA drain

Wall system


HABA block


L-shaped retaining walls

Paving stones


www.haba-pflastersteine.de

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