

# Installation instructions

## Chamber manifold series FRANK 750-T to 1500-T

### General information

- FRANK chambers are factory assembled and are supplied with pressure-tested manifolds.
- The chambers are designed for connecting geothermal probes, geothermal collectors and energy cages.
- No liability shall be assumed in the case of incorrect use or modifications of the product.

### Safety information



**Ventilate the chamber sufficiently before entry. Ensure an adequate supply of fresh air while inside the chamber.**



**At least one safety officer must remain outside the chamber.**



**Do not use the pipe spigots as grips. Use lifting eyes. Do not use pipes and valves as climbing aids.**

### To be agreed before installation:

- Clarify the traffic load prior to installation.
- The use of the chamber in groundwater, stratum water or slack water is only permitted if this has been taken into account in its static design.
- For installation in groundwater/stratum water, buoyancy protection may need to be provided by the client.
- Agree on the installation depth on the later top ground surface. For chambers with a telescopic section, the dimensions of the variable height adjustment must be taken into account.

### Bedding and installation

- The subsoil must have sufficient load capacity.
- The base of the trench and the soil surrounding the tank must be permeable.
- The contact surface of the chamber (granular subbase) must be horizontal and level.
- The working area must be measured in such a way as to provide a stress-free alignment of the pipe connections. The minimum working area width is 500 mm.

### Pipe connection

- The pipe lines must be connected to provide a permanent, stress-free connection.
- The circuit and heat pump lines are connected using welded fittings.
- The DVS guideline 2207 must be observed for the welding work.
- When using electro fusion fittings, remove the oxide layer of the pipe spigots using a rotational scraper.

### Backfilling

- Use graded, non-cohesive material for backfilling. Requirements according to ATV 127: soil group G1 (SW, SI, SE, GW, GI and GE) or G2 (GU, GT, SU, ST).
- The material used for filling must be compressible, permeable, shearing resistant, frost-proof and free of sharp objects.
- The maximum particle size of rounded gravel material must be no larger than 22 mm and 11 mm if broken material is used (crushed sand/grit mixture).
- Cohesive soils are not suitable for backfilling.
- Place the backfill material carefully and evenly in several layers around the chamber and compact with 1–2 steps per layer (see ATV A 139 / DIN EN 1610).
- During backfilling, make sure that the pipe connections are stress-free and permanently mounted.

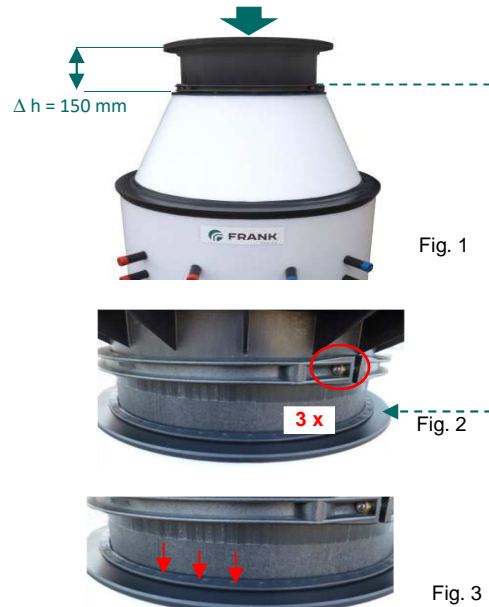
## Installation instructions

### Chamber manifold series FRANK 750-T to 1500-T

- Use only hand tampers to compact the filling material near the pipe connections.
- Maintain a sufficient distance if using a heavy compactor (e.g. vibrating rollers).

#### Adjusting the height of the telescopic section:

- For chambers with a telescopic section, the end height of the cover plate is variable within the adjustment range. (See figure 1).
- Lightly unscrew the 3 screws of the clamp (8 mm hexagon socket). (See figure 2).
- Before inserting the telescopic section, check that the seal is clean.
- Push the telescopic section down to the required height and fix the clamp into place by tightening the screws.
- If the height is adjusted by pulling the telescopic section up, check that the telescopic seal is seated correctly. (See figure 3).
- In case of any stiffness, apply some lubricant to the lip seal.
- If the telescopic plate is to be removed completely, remove the stop screws inside the collar beforehand.



#### Establishing the load capacity of the telescopic section:

- The cover plate and the contact surface of the telescopic section divert the traffic load to the (road) substructure.
- To ensure the smooth transfer of load, the bedding surface of the telescopic section must be supported and compacted according to the load class. (If necessary, using grit, sand or lean concrete).
- The bedding surface of the telescopic frame must be completely flat to ensure that it is free of point loads.
- Telescopic sections for load classes B and D can be vibrated with the paving surface. Use a protective plate. (Installation example, see figure 4).
- Make sure that there is no direct load transfer on the PE chamber.
- The telescopic sections are not suitable for flowing traffic.
- The chamber cover must not be covered with soil.

Technical data:	
Working temperature	-10°C to + 40°C
Operating pressure	max. 3 bar
Test pressure	max. 6 bar



No construction vehicles must run up to or over the chamber.



Before closing the chamber, clean the seals and contact surfaces of the cover

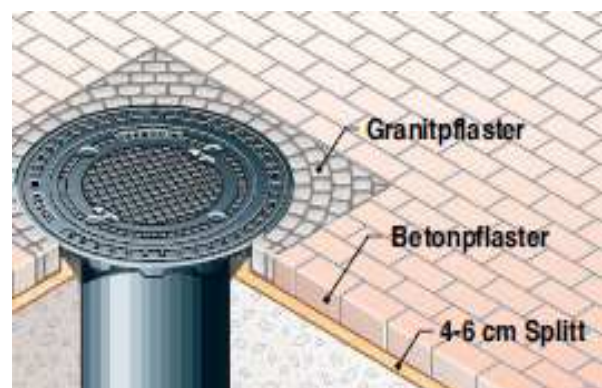
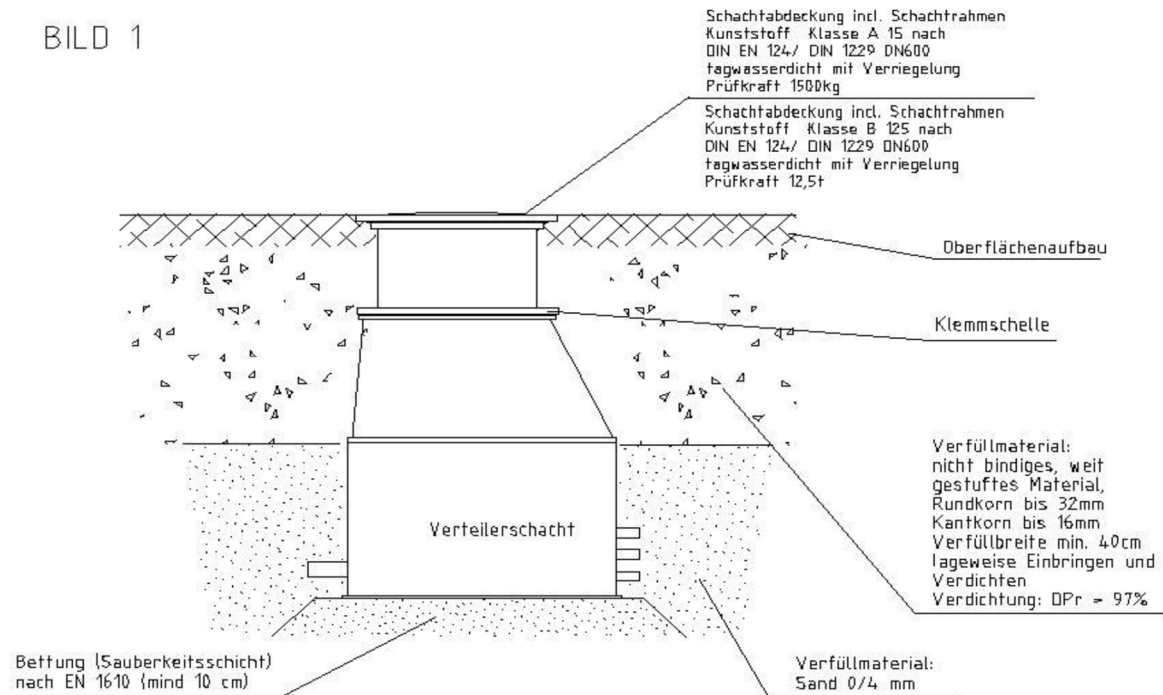


Fig. 4: installation example

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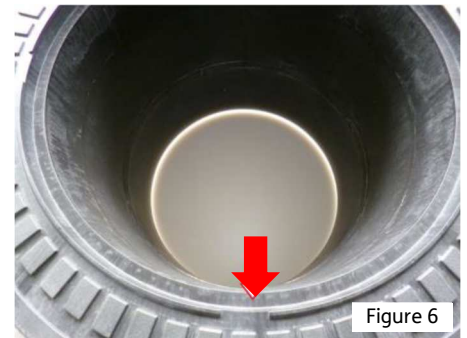
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### Schematic diagram of chamber installation:



### Cover plate class B 125 and D 400

- Before inserting the cover plate, the seal provided must be used for cast iron covers. (See figure 4).
- To do so, install the bonnet gasket with the narrow seal lip facing outwards into the groove that runs around the plate. (See figure 5).
- Clean the sealing surface on the telescopic section and grease it evenly using the lubricant provided. (See figure 6).
- Clean and grease the seal before placing the cover down.



# Installation instructions

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### Applicable standards and regulations:

- Existing standards and regulations must be observed for the planning and installation of a chamber.
- The accident prevention regulations must also be observed.

Standards and regulations	Contents
ATV A 127	Static Calculation for the Rehabilitation of Drains and Sewers
ATV A 139	Installation and Testing of Drains and Sewers
DIN EN 1610	Construction and Testing of Drains and Sewers
DIN 18196	Earthworks and Foundations - Soil Classification for Civil Engineering Purposes
DIN 1054	Subsoil - Verification of the Safety of Earthworks and Foundations
DIN 4123	Excavations, Foundations and Underpinnings in the Area of Existing Buildings
DIN 4124	Excavations and Trenches - Slopes, Planking and Strutting Breadths of Working Spaces
DIN 4084	Soil - Calculation of Embankment Failure and Overall Stability of Retaining Structures
DIN 18920	Vegetation Technology in Landscaping - Protection of Trees, Plantations and Vegetation Areas During Construction Work
DVGW W400-2	Engineering rules for water supply systems

Standards for road construction:	
ZTVE-StB 94	German Technical Terms and Conditions of Contract and Guidelines for Earthworks in Road Construction
RSto	German guidelines for the standardisation of pavement structures of traffic areas