

## Geothermal bores on the Pizol/ Switzerland



On the Pizol/ Switzerland two close-by homes changed their heating system to geothermal power. The fore courts were only 2.0 m (7 ft.) wide. Therefore large drilling machines could not be used. These were ideal jobs for the vertical drill TERRA-DRILL 4407 V, which is only 0.95 m (37.4") wide in its transportation mode. The power pack is not assembled on the drill rig. It is installed outside of the fore courts. Therefore the TERRA-DRILL 4407 V weights only 2.1 tons (4'600 lbs). It was lifted with the truck crane into the drilling position.

Each bore was 125 m (415 ft) deep. The first 12 m (40 ft) loose ground had to be protected by 178 mm (7") casings. Then the 150 mm (5.9") bores drilled through rock with a strength of 100-150 MPa (14'500-22'000 psi).

**Vertical drill  
TERRA-DRILL 4407 V**



← The TERRA-DRILL 4407 V is lifted with the truck crane onto the truck.

→ The complete drilling system TERRA-DRILL 4407 V with accessories is loaded on the truck.



← The TERRA-DRILL is driven to the 1'800 m (6000 ft) high job site.

→ The TERRA-DRILL is lifted with the truck crane to the 2 m (7 ft.) wide fore court.



**Vertical drill  
TERRA-DRILL 4407 V**



Although the space was very limited, all components of the TERRA-DRILL were installed along the road. Right the air compressor, in the middle the TERRA power pack and the drill rigs, left the closed mud container.



The drilling operation can begin. The 125 m (415 ft) deep bore is drilled through the hard rock with a drilling speed of 12-18 m (40-60 ft.) per hour.

**Vertical drill  
TERRA-DRILL 4407 V**



←  
The rock surface was reached after 12 m (40 ft.). The casings OD 178 mm (7") must not be drilled deeper.



←  
The bayonet is released. The 5" DTH hammer with the 150 mm (5.9") drill bit continues alone.  
↓



↓ The earth heat sonde 4x OD 40 mm (1.6") with 25 mm (1") filler pipe is prepared and lowered down into the bore  
↑



↑ The bore is finished.