

# Water for Ankara



## 128 km water pipeline through Anatolia

### Project fact file

- Approx. 2500 ERHARD Valves
- Total length 128 km
- Three parallel pipes (2 x DN 1600, 1 x DN 1400)
- 9,000 l/sec flow rate
- Level distances up to 500 m
- Five pumping stations and ten large water storage facilities

## 128 km pipeline through mountainous terrain

In 2008, in a major project, the drinking water supply of Ankara was comprehensively extended and a large dimension water pipeline was laid from a reservoir located the southeast to the north part of Ankara. Since then almost 2500 ERHARD valves have ensured reliable water flow.

There they extend 128 kilometres through the mountainous landscape of Anatolia – two parallel pipes with DN 1600 nominal size and another with DN 1400, through which 9,000 litres of drinking water per second are pumped in the direction of the Turkish capital.

The topography of the landscape created particular challenges for the project. For example, level differences and gradients of up to 500 metres had to be overcome, which necessitated, among other things, construction of five pumping stations and ten large water storage facilities along the route.



Ten gigantic water storage facilities were created along the route – all equipped with ERHARD valves, whose correct installation was checked on site by ERHARD experts. Ankara's Mayor, Melih Gökçek visited the Heidenheimer plant in 2007, to check the quality of the butterfly valves in person.

### Full service from a single source: Consulting, production, logistics, installation

Due to the difficult topographical conditions, complicated water hammer calculations had to be performed first for the pumping stations and the inclined sections, which the ERHARD engineers performed for the entire system in cooperation with Professor Josef Hochstatter of the Institute for Product Development and Construction Technology at Cologne's University of Applied Sciences. The scientific data, together with performance tests with our own test field in Heidenheim, were the basis for the final product list.

For ERHARD, this order for millions of euro was the second-largest contract in the company's history. Almost 2500 valves, including needle valves with a nominal size up to 1400, butterfly valves up to 1600 nominal size, gate valves, ball valves and air valves were delivered by ERHARD in three sub-phases.

Due to the pressure of time – supply for the population was acutely at risk due to several dry years – all valves were produced in only four months. ERHARD also took care of the logistics. 52 complete truck loads left Heidenheim on their journey to the construction site more than 2,000 km away in Turkey and reliably reached their destination.

There ERHARD technicians monitored the installation on site, provided support for acceptance of the system and trained the Turkish operator's personnel – and therefore ensured a smooth and on-schedule commissioning of the system.

The comprehensive ERHARD product range made it possible to provide all the valves from a single source.

#### Product list:

- Gate Valves  
(DN300 / PN16-25)
- Air Valves  
(DN300 / PN10-25)
- Ball Valves  
(DN300 / PN10-40)
- Butterfly Valves  
(DN600-2500 / PN10-25)
- Needle Valves  
(DN1000-1400 / PN10-40)



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