



# The Pirk Dam

Application:	Dams and hydropower
Place:	Pirk, Germany
Date:	2021
Products:	2x VAG RIKO® Plunger Valves DN 2000 PN 10 2x VAG RIKO® Plunger Valves DN 400 PN 10

## Project description

With its 10.7 million m<sup>3</sup> total pondage, the Pirk Dam located in the Free State of Saxony serves for the supply of service water, low-flow augmentation and power generation in the county of Vogtland.

In the course of a refurbishment of the more than 80-year-old plant by Saxony's State Dam Administration, the bottom outlet valves were to be replaced, too. The new bottom outlet valves were to enable a lower discharge volume with less than 1 m<sup>3</sup>/s in throttled state and ideally also control the same maximum volume with a higher volumetric flow rate. Consequently, a considerably wider range of applications was asked for.

VAG's experts supported the project from A to Z from the first request and the design of the valves up to their delivery, contributing project-related CFD studies and the first technical design ideas. The proposed solution comprised two VAG RIKO® Plunger Valves DN 2000 PN 10 as well as two further VAG RIKO® Plunger Valves DN 400 PN 10 for the base load.



The new bottom outlet valves in operation



Delivery of the large plunger valves



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Here, a second challenge was to be met: In the 1970s, a crane system with a maximum load-bearing capacity of 15 metric tons was installed in the listed valve house. Yet, a cast-iron plunger valve with the required nominal diameter of DN 2000 weighs about 25 metric tons. Consequently, a weight reduction of about 10 tons was necessary – and VAG's team of developers set to work.

The solution was a body made of fabricated steel, statically and flow optimised to ensure higher efficiency. In this way, a weight of less than 15 tons could be achieved.

The first bottom outlet valve DN 2000 was completed in the autumn of 2021 in VAG's Mannheim plant and the second one in the summer of 2022.



Due to a special design, the weight of the valve could be reduced to 15 tons.



Installed VAG RIKO® Plunger Valve DN 2000