

Controlling air pressure at the wastewater treatment plant in Hangzhou, China

VAG RIKO® Plunger Valves are as reliable in air pressure systems as they are in water supply systems



Situated on the east coast of China, the city of Hangzhou harmoniously combines ancient tradition with modern technology. With a history going back 4,700 years, the area around Hangzhou is the cradle of Chinese civilization. In the 13th century, Marco Polo spoke of 'one of the finest and most beautiful cities in the world'. Traditional silk making huts and plantations of exquisite green tea characterize the landscape.

The metropolis of eight million has the same pioneering spirit when it comes to modern technology. Hangzhou Wan Bay has the longest trans-oceanic bridge in the world and the connection to the Shanghai Maglev train line is due to be completed in 2013. The wastewater treatment plant at the lower course of the Qiantang river, which was completed in 2009, is one of the largest and most modern in the world.

杭州排水公司



Project overview

Project: Hangzhou Qi Ge WWTP Project

Valves: 7 VAG Plunger Valves DN 350
4 VAG Plunger Valves DN 350
18 VAG RIKO® Plunger Valves DN 500

Project period: 2002 to 2009

Customer: Hangzhou Water Drainage Company

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VAG On-Site

During the planning of the 700 acre plant in 2002, the Hangzhou Water Drainage Company chose a sustainable activated sludge process. The improved A/A/O activated sludge process is used for denitrification and the biological removal of phosphor. The harmful substances are removed by bacteria in the sludge. The bacteria are assisted in their action by an exact dose of oxygen: too much or too little air can render the process ineffective and affect the quality of the processed water.

Because the plant is designed to run around the clock, the hope was that accurately controlling the air pressure would reduce operating costs.

The Butterfly Valves that are traditionally used around the world for this application do not control the air as accurately as Plunger Valves.

Needless to say, the Hangzhou Water Drainage Company was very pleased with VAG's professional presentation and technical advice about the RIKO Plunger Valve. With its linear flow curve and longer control path, it guarantees a far more accurate and smooth control.



Cross section of the VAG Plunger Valve

VAG delivered a total of 29 Plunger Valves with Auma electric actuators in the nominal dimensions 350 to 500 for all three of the project's construction phases between 2003 and 2009.

The valves were installed by the plant's own assembly team, who were assisted by VAG's Service Team.

The staff of the new wastewater treatment plant were very surprised by the results of the different acceptance tests: VAG's RIKO Plunger Valves lost considerably less pressure than the traditional Butterfly Valves, meaning that only half of the compressors that are installed have to be run.

Mr Fei, Chief Engineer at HWDC, was very enthusiastic: 'VAG has every right to call itself a worldwide technology leader. They really impressed us with their solution! By giving us the valves that are best-suited to regulate air pressure, VAG helped us reduce our operating costs to a level we never thought possible.'



Today, the plant's capacity is above 1.2 million m³ a day. With a wastewater treatment system covering 1.3 million km², the city of Hangzhou substantially improved its status as environmentally conscious city.

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