

## The Client

SAJ Holdings  
Johor, Malaysia

## The Challenge

- Frequent reservoir overflows
- Ongoing repairs to ball-float valve
- Difficult access to valve inside reservoir

## The Solution

Singer's 301-4  
Altitude Pilot

## The Result

- Manages high-pressure ratings
- Stopped reservoirs from overflowing
- Eliminated costly repairs

## Altitude Pilot Stops Malaysian Reservoir Overflowing

Johor Bahru, Malaysia – Johor is Malaysia's third largest state and one of the most developed. SAJ Holdings is a water utility company based in the state capital of Johor Bahru. It is responsible for Johor's water supply system including water treatment and potable water distribution. To service a population of more than 2.7 million, the company must ensure that the state's water infrastructure is reliable and effective.



But, like most water systems, problems arise. Problems like overflowing water reservoirs.

At one reservoir in Johor, SAJ Holdings realized the ball-float valve that maintained the water level demanded frequent repairs due to high pressure. Flooding there and in other reservoirs was a common occurrence.

“The altitude pilot is a three-way pilot that precisely controls the water level in a reservoir because it senses the hydrostatic head.” – Eugene Bahia, Singer Valve Inc.

“Unfortunately, the valve was installed deep inside the reservoir so it was troublesome to access and repair,” says Zainuddin Ghazali, operations manager for SAJ Holdings. “Using a ball-float valve to control the level caused the diaphragm to wear out sooner due to the frequency that the valve would open and close.”

In search of a solution, Ghazali contacted Singer Valve's Malaysia representative Anand Anandarajah. He recommended the Singer 301-4 Altitude Pilot. Upon hearing that the valve body can be serviced without removing the pilot and that the inner valve can be replaced without disconnecting the pilot tubing, Ghazali felt confident about the Singer solution.

The results were impressive.

“Singer's 301-4 Altitude Pilot has benefited us in many ways,” says Ghazali. “By reducing the number of overflows we had at the reservoir, we increased our supply of revenue-generating water.”

The company also saved tremendous repair costs because the Singer altitude pilot requires minimal manual maintenance.

How does the Singer altitude pilot work?



“The altitude pilot is a three-way pilot operated by a spring and diaphragm,” says Eugene Bahia, a Singer Valve instrumentation specialist. “The pilot precisely controls the water level in a reservoir because it accurately senses the hydrostatic head.”

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## Did You Know...

The three-way body of the Model 301-4 Altitude Pilot Valve can be serviced without removing the pilot from the valve. The inner valve can be replaced through the bottom of the pilot so the pilot tubing does not need to be disconnected while being serviced.

## Benefits of Singer's 301-4 Altitude Pilot

- Requires minimal maintenance
- Precisely controls reservoir water levels
- Adjustable closing speeds, avoiding destructive water hammers

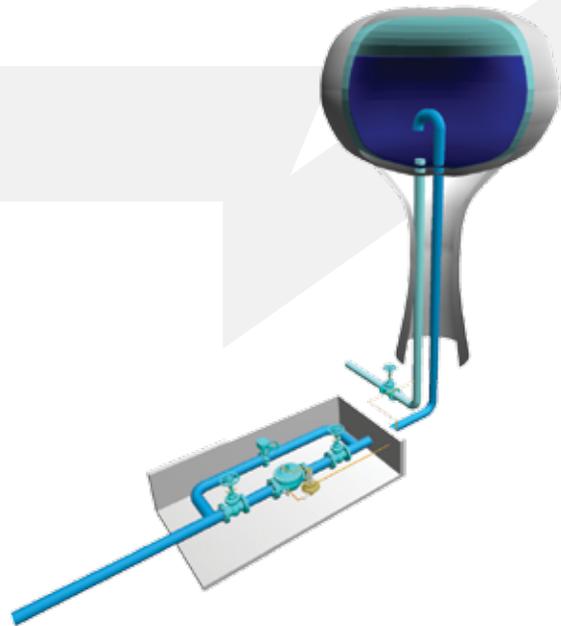
## How It Works

Singer's Altitude Pilot valves are spring and diaphragm operated that control the water level in a reservoir by sensing the hydrostatic pressure (height) of the tank.

When the hydrostatic pressure equals the Altitude Pilot's set point, the Pilot connects the inlet pressure to the bonnet of the main valve, and then the main valve closes. When the hydrostatic pressure drops a certain amount below the Altitude Pilot's set point, the Pilot connects the bonnet of the main valve to atmosphere, and the main valve opens.

## Singer Clients Who Use It

- Donnacona Institution, Donnacona, Quebec, Canada
- Los Angeles Department of Water & Power, California
- Sedapal, Lima, Peru
- Aguas de Barcelona, Barcelona, Spain



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