

# Enabling innovation for an incredible 5D movie underwater experience

## RESULTS

- Enabled the ultimate 5D theater experience for immersive, water-based shows
- Provided a cost- and energy-efficient solution synced to theater controller signals
- Reduced material costs significantly through ongoing innovation



## APPLICATION

5D water park experience

## CUSTOMER

Attraktion!, Vienna, Austria

## CHALLENGE

A turnkey provider developing innovative experiences for the entertainment and leisure industry, ATTRACTION! creates next-generation 5D media-based, illusionist experiences. The audience uses all five senses and becoming an integral part of the story. With special seats and various integrated effects—featuring smells, air, or water jets—like in a flight simulator.

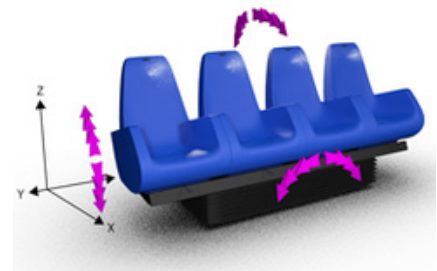
While 5D theaters have been established in Europe, for some time, the world's first water park theater opened in Abu Dhabi, in spring 2018. This 5D theater not only floods, but also enables movement simulation in the water. Since 2013 five years, Austrian company Attraktion! has focused on integrating systems for multimedia theme parks incorporating water features. But that presents its own challenges.

“We needed a solution that functions precisely with a fixed installation and that scores with a long service life,” explains Max Wieland, engineer and head of system planning & engineering at Attraktion!

**“We needed a solution that functions precisely with a fixed installation and that scores with a long service life. We knew that pneumatics were the only solution. The excellent references and constructive consultation convinced us that Emerson was the right partner to have at our side.”**

**Max Wieland**

Engineer and Head of System Planning & Engineering at Attraktion!



The 5D motion seats from Attraktion! equipped with pneumatics from AVENTICS.

### SOLUTION

“We knew that pneumatics was the only solution,” adds Wieland. “The excellent references and constructive consultation convinced us that Emerson was the right partner to have at our side.”

#### Pneumatics key to the 5D experience

At the heart of the design is the 5D motion seat base. Each set of four seats is synced with the movie’s images and sound. Different settings maneuver the seats back and forth, from side to side, and even up and down, enabling uncountable movement combinations.

Pneumatic components play an essential role. Emerson’s AVENTICS™ valves sync the movement of the seats with the theater control signals. Delivering a unique experience, each theater is equipped with a compressed air system consisting of a compressor and air tanks. Compressed air is forwarded to the ED02 series proportional valve system, combined with the MU1-RGS series.

The electropneumatic proportional valves from Emerson control the MU1-RGS series pressure regulators, supplying pressure for the system. The theater controller sends motion signals (0-10 V) programmed in sync with the film to the ED02 valve, which transforms the modulation into 0 to 6 bars and forwards it to the MU1 valve. The resulting system pressure is fed into the cylinders according to the control signal, making the seats move.

#### A simple solution for a grandiose theater experience

Due to close collaboration with Emerson, Attraktion! developed a cost-effective solution that can be implemented for years to come. While an initial technical implementation required three proportional valves and three pressure regulators per row, the current, a revised variant has cut material costs significantly, with three proportional valves now supplying nine pressure regulators.

“AVENTICS quickly identified the need for optimizations and assisted us with expert advice,” states Wieland. “The result? A simple, technical solution that is more energy-efficient and cost-efficient. Thanks to the competent consultation from our partner, we will benefit for the long term – even in new projects—and movie fans can look forward to truly unique theater experiences.”

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*The ED02 series electronically actuated proportional valves from AVENTICS pneumatically control the MU1-RGS series pressure regulators.*



*MU1-RGS high-flow pressure regulator from AVENTICS.*



*Pneumatic BCP bellows cylinders provide seat movement in sync with the image and sound.*

  
**EMERSON™**