

Innovation enabling the 5D movie experience—in water

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

Underwater 5D Media Experience

CUSTOMER

Attraktion!, Vienna, Austria

CHALLENGE

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

But creating 5D motion seats that can be used in the water adds another dimension. “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!

SOLUTION

“We knew that pneumatics were the only solution,” continues Wieland. The excellent references and constructive consultation convinced us that AVENTICS™ 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, a row of four seats that move in time to the movie track. The theater seat moves according to what is happening in the film, in sync with image and sound. Different settings maneuver the seat back and forth, from side to side, and even up and down, enabling uncountable movement combinations.

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Max Wieland
Engineer and Head of System Planning & Engineering at Attraktion!



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

Pneumatic components play a crucial role in the technology behind it all. AVENTICS valves control seat movement in sync with the theater controller 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 AVENTICS control the MU1-RGS series pressure regulators, which supply the pressure to 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 in the motion seats according to the control signal.

Future Development: World Firsts

Packed with special effects from waterfalls, moving seats, and water explosions Abu Dhabi's Yas Waterworld Cinesplash was the first water park theater with flooding and other special effects. The unique movie experience of being right in the middle of a theater that is suddenly flooded with water, where moviegoers are immersed in warm water up to their belly buttons, is becoming a reality. Water rises from below, flooding the theater and matching what is happening in the film. Wave machines perfect the illusion, rounded off with waterfalls that flow to the left and right of the screen.

A simple solution for a grandiose theater experience

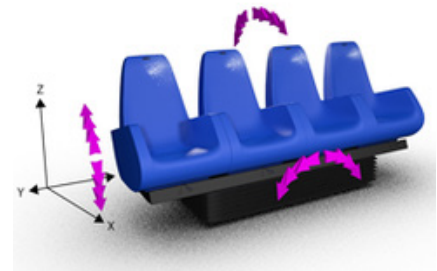
Thanks to the collaboration with AVENTICS, Attraktion! has managed to develop a cost-effective solution that can be implemented for the long term. While an initial technical implementation required three proportional valves and three pressure regulators per row, the current, revised variant has cut material costs significantly since three proportional valves now supply nine pressure regulators.

"AVENTICS quickly identified the need for optimizations and assisted us with expert advice. 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," explains Wieland. "And movie fans can look forward to truly unique theater experiences."

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



MU1-RGS high-flow pressure regulator from AVENTICS.

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