

Modern Motion Control Solutions in Practice



The Challenge

Why do many people have strange sensations in their stomachs each time a lift accelerates and decelerates?

The intention of modern lift systems, and a sign of quality, is to move the cabin without any noticeable jerk and without letting the users feel any movement at all.

The Solution

All humans are very sensitive to the changes in acceleration that can be experienced inside most common lift cabins. Modern control systems enable electric and hydraulic drives to make gentle, almost imperceptible movements. In total, there are four different motion sequences between the starting and stopping of the lift that cause various passenger sensations. These sequences must be handled by the control system using optimized motion patterns and parameters.

Motion control modules and software from zub machine control AG offer special features to limit the jerk by defining the maximum change in acceleration per control cycle [ms] for each motion sequence. This allows the maximum jerk to be adjusted so that the lift cabin feels as if it has not moved even though it has reached the next level when the door opens again.

One of the world's leading manufacturers of frequency converters relies on the knowledge and software of zub machine control AG. The modern control algorithms guarantee a maximum comfort for all users of lifts powered by these frequency converters.

P.S.:

The same "jerk limitation" technology is in use by machines to accelerate and move different kinds of "slippery" or lightweight products in highly precise ways without any slip. Typical applications can be found in cable and electronics production.

The Conclusion

Even complex process tasks seem to be simple in the end if the right product is combined with a highly efficient engineering service that understands the application's demands.

Application videos and further product information:

- Video links showing modern lift solutions based on zub's control software:
[Lift with an electric motor](#) / [Lift with a hydraulic system](#)
- Links offering white papers, press releases and data sheets of zub AG:
[Jerk Limitation Basics](#) / [Field Oriented Control](#) / [MACS5 info](#) / [MACS5 data sheet](#)

Your Partner

zub machine control AG provides highly sophisticated motion control modules and software for drive positioning and synchronization.

The MACS motion control modules are the intelligent link in between the PLC or PC and the drive unit. Standardized hardware and software interfaces combined with free programmability offer maximum compatibility without any limitation for the integration of application-specific features and add-ons.

zub AG offers supplementary consulting and engineering services to assist their customers in a very focused and most efficient way.

Take the opportunity to reduce your time to market, your development costs, and your risks. Count on a partner like zub AG, who provides products and engineering services focused on highly-sophisticated but still cost-optimized motion control solutions.

We are happy to accept your challenge. Please [contact](#) us for an initial discussion.

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