



Case story

# Faster, quieter, more energy efficient Smooth elevators use VLT® Lift Drives

New lifting machinery and a Danfoss VLT® Lift Drive specially optimised for elevators took the agony out of unstable elevator operation, replacing it with a quiet, comfortable ride in two-story senior residence.

The hydraulic Schindler elevator that moves the elderly inhabitants between floors was installed in 1989 and is the only one in the residence. After years of use, it eventually began to show its age. Regular stops during periods of heavy use due to high oil temperatures, which demanded forced ventilation, turned what should have been a comfortable ride for the senior citizens to an unstable and noisy experience. Something had to be done.

In cooperation with long-time partner and drives supplier, Danfoss, IBA Lift Components embarked in 2010 on a comprehensive upgrade of the aging elevator. A Danfoss VLT® Lift Drive LD 302 with optimised software for operating

hydraulic lifts was installed together with a new aggregate. The lift system and cabin remained the same as always.

“Danfoss frequency converters are known as one of the most innovative and reliable drives worldwide. The outstanding Danfoss quality standards make this drive perfect for the elevator market,” says Mr. Detlev Abraham, CEO at IBA.

### Faster, quieter, and energy efficient

The new components immediately moved both the performance and comfort of the elevator to higher levels. Among several operational improvements, the new system provided a faster, more reliable and energy efficient daily operation, even improving the energy rating of the lift by one class.

“The modular LiftDrive LD302 enables us to control the motor as well as the hydraulic valves. It resulted in a perfect riding comfort with less energy consumption,” continues Mr Abraham.

**58%**

more energy efficient

operation was achieved. Low noise levels and jolt-free start and stop now provide a quiet, comfortable ride. Owners also benefited from a reliable, contactor-free system that saved installation costs.





### As good as new

Furthermore, the fact that new VLT® drive uses Danfoss patented technology, which enables it to function contactor-free, has almost made the elevator silent, something also made possible by being able to without forced ventilation of the hydraulics due to high oil temperature.

“With the LiftDrive LD302 we are able to turn an aged hydraulic lift drive to a modern, energy saving lift with good riding comfort. It is an optimal drive for modernisation as well as for new applications,” concludes Mr. Abraham.

### About the VLT® Lift Drive LD302

The VLT® Lift Drive is built on the same technology platform as the VLT® AutomationDrive and has been adapted to the conditions of lift control, providing reliable operation, easy adjustment and a comfortable elevator ride.

Read more about VLT® Lift Drives at [www.danfoss.com/drives](http://www.danfoss.com/drives)



Danfoss frequency converters are known as one of the most innovative and reliable drives worldwide. The outstanding Danfoss quality standards make this drive perfect for the elevator market.

Detlev Abraham, CEO  
IBA Lift Components



	Old system	New system	Improvement
Travel needs	143 Wh	59.9 Wh	-58%
Max power	13.68 kW	7.18 kW	-47.5%
Max current	26.62 A	13.4 A	-49.7%
Oil temperature	65°C (with additional forced ventilation)	31°C (with no ventilation)	-34°C, no ventilation necessary
Speed	0.33 m/s	0.41 m/s	+24.5%
Acceleration	0.462 m/s <sup>2</sup>	0.57 m/s <sup>2</sup>	+23,4%
Jerk	2.27 m/s <sup>3</sup>	0.44 m/s <sup>3</sup>	-80,6%
Energy efficiency	F	E	+1

The combination of the Danfoss VLT® drive, new controls new hydraulics has improved all significant technical parameters. The result is a more reliable, comfortable and energy efficient experience for owners and passengers.