WACHENDORFF
Automation GmbH & Co. KG

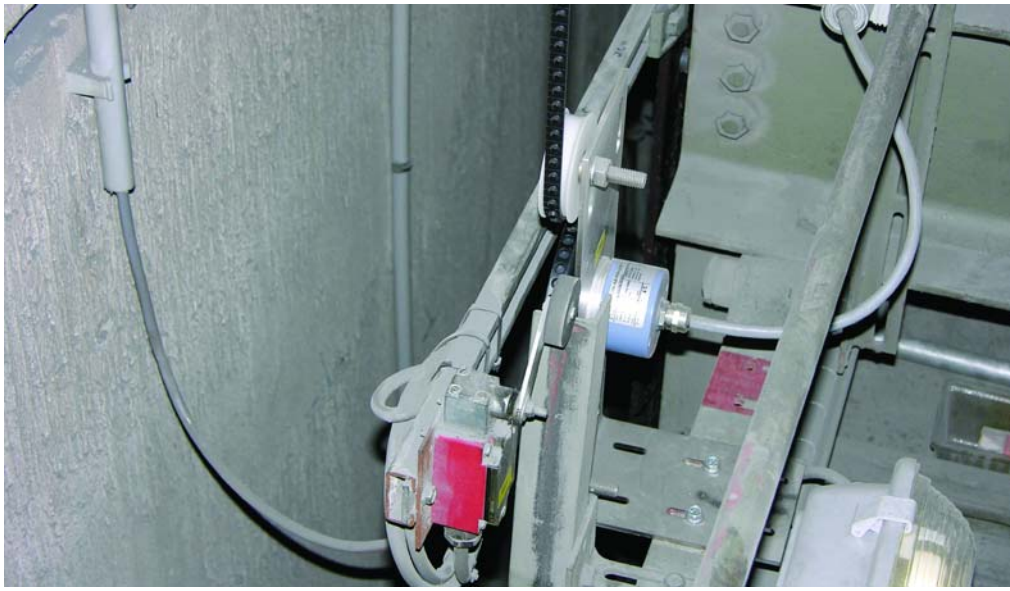
Elevator

Aiming high with Silent Move

- Smooth running system, quietest in the world
- Fast up to 4 m/s
- For heights up to 180 m
- Complete system, easy to mount
- Incremental and absolute measurement

WA0601engl

Rugged & Tough



Aiming high with Silent Move

A new belt system from Wachendorff ensures silence in the lift shaft. In the Ibbenbüren power station digital shaft copying has been employed in quite exceptional circumstances.

For many decades the high towers and chimneys of the colliery and power station have dominated the landscape of the town of Ibbenbüren. Even the generator building, in which the steam-turbine of the power station is housed, is more than 100 metres in height. Anyone wishing to aim so high needs reliable lift technology, with qualities that meet the highest standards. For this reason the Silent Move measuring system from Wachendorff has been employed.

Energy and power have traditionally been key factors in the economy of Ibbenbüren. Coal has been mined here for 450 years and even today the 1545 metre colliery shaft is one of the deepest in the world. High-grade anthracite is mined - one of the highest value types of coal. Already back in 1954 coal power generation was begun at this location, in order to extract electrical energy from the available raw material. Then in 1985 the current power station went into operation; today this is equipped with state-of-the-art filter technology and equipment for flue gas desulphurisation.
80 percent of the required coal arrives at the power-station via an enclosed conveyor-belt bridge, where it is subsequently ground to a fine dust and then blown into the molten ash chamber boiler. The Ibbenbüren boiler, in which the particularly hard anthracite is burned, is the largest of this kind in the world. Around 2200 tons of water an hour are heated via piping systems and the resulting steam drives the paddle wheels of the turbine shaft. An electrical generator then transforms this mechanical movement into electrical power.

Self-guiding special belts
The turbine and the generator are housed in their own building, where workshops and stores are also to be found over a total of 24 floors. On the outside a lift travels the 116 metres up to the roof, from where there is a breathtaking view over the whole area. For the purposes of determining the position in the shaft a digital shaft-copying system from Wachendorff is used. The Silent Move system is new and ensures not only outstanding running characteristics, but also has the advantage of being maintenance-free with a long service-life.
The special feature here lies in the fact that the belt is not flat but has nubs, which keep it on-track as it moves over a belt-pulley that has been designed with matching grooves. It runs securely, with no sliding or slipping, and with no need for lateral guides. The big advantage is that no friction occurs on the sides, so there is very little wear, and maintenance, such as the regular application of talcum powder, can be dispensed with completely.

Exceptionally quiet in operation
The self-guiding belt runs very quietly through the sound deadening overhead suspension and the noise reducing wheel. Test measurements taken directly next to the guide pulley gave a result of 68 dB, whereas conventional systems produce a noise level of over 90 dB. This currently makes Silent Move the quietest belt system in the world. Sounds generated in this fashion should not be underestimated when in an industrial environment, as there is virtually no noise dampening in large halls and with smooth concrete and metal walls. In fact, in certain circumstances, the noise can actually be magnified and echo throughout the whole building.

High measurement accuracy
One particular challenge posed by the Ibbenbüren application is the total of 24 stops. These are not at regular intervals, but rather extremely irregular, due to the varying heights of the halls. This calls for high precision - guaranteed thanks to the WDG incremental encoders with their accuracy of up to 0.08 mm. Another option is to use WDG multiturn encoders,

which also offer CAN-, Liftopen- or SSI interfaces. For heights up to 70 metres there is a circumferential alternative - however in Ibbenbüren a guided-belt shaft copying system was used that is ideal for heights up to 120 metres. All Wachendorff encoders benefit from proven ruggedness in industrial use, as well as from a long service life. They also act as bearings, so no additional intermediate bearings are required for the special pulley.

Complete systems that can be tailored to suit

The quiet Silent Move shaft-copying systems are already preassembled and can be installed quickly and easily in the shaft. All the installation components required for standard installation to the lift cab rail or on the wall are supplied. Alternatively the encoder can be predefined - on request it can be supplied with individual values for the resolution and maximum operating frequency. For the belts, either a standard length can be selected or an individual size can be ordered.
Wachendorff is also happy to offer individual solutions, for instance to lift manufacturers. All Silent Move components can be designed to suit special types of lift and then supplied as a system ready for installation. The flexible production department can manufacture more or less any quantity and even offers an express service with a delivery time of just 48 hours.

Image 1
panorama

Image 2
on top

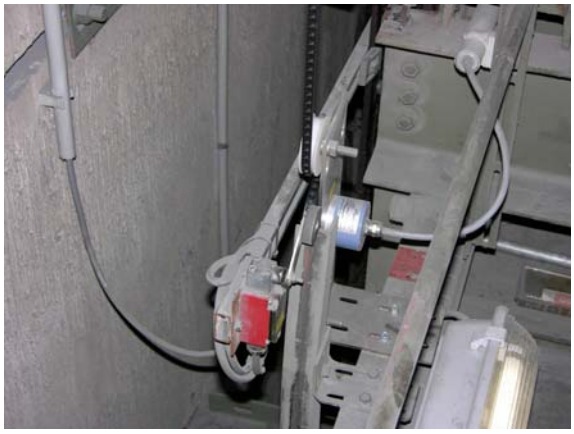


Image 3
encoder

Image 4
power plant

Image 5
controller

Any Questions? Just call Dieter Schömel +49 (0) 67 22 / 99 65-10, send him an E-Mail at sco@wachendorff.de or call your local distributor.

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