

Schmersal delivers the safety technology for the CARElift®

Safely to the top: New concept for wheelchair lifts

The company Hoffmann GmbH & Co. KG, a nationally active lessor of work platforms and other mobile equipment, has developed a new concept with the CARElift® for the vertical transport of wheelchair users. The new platform lift can be easily installed onto a building without any constructional changes and it is quite easy to operate.

Whoever wants to go high up with the facade technology and industrial maintenance has to use elevating work platforms. Also in other areas of industry and trade mobile and flexible working tools are often used. Hoffmann GmbH & Co. KG in Waghäusel is at home in this business of renting out work platforms. The company can demonstrate twenty years of experience and offer its customers a complete program of working platforms in various designs and lifting heights.

The working platform specialist is well established beyond the Rhine-Main region and receive requests which are somewhat off from their traditional field of activity. For example in 2010 a private house owner made a request because he wanted a lifting platform for access to his house.



Picture 1:
 With the CARElift® Hoffmann introduces a new concept for the barrier-free vertical transport of wheelchair users.

Aroused ambition - new business developed

Many companies may well have turned down such a request. But Hoffmann has a very customer oriented way of working and similar requests for repairs to stationary platforms can still be remembered. Also the ambition of the technicians in the company was aroused and the development of a stationary platform lift for outside vertical wheelchair transport began.

It was immediately clear to all that there really is a market for such lifts. Thomas Hoffmann, Managing Director and owner of the Hoffmann GmbH & Co. KG: „So that a wheelchair user can maintain their mobility in their own home, equipment often has to be installed later. A platform lift installed on the outside is more cost effective than constructing a lift within a building and there are fewer constructional restrictions. That was the basic idea when we started the design.“

The platform lift – standard-compliant safety

During the following months the designer Jens Brand developed the „CARElift®“ - a platform lift based on an existing scissor lift. This platform lift has its scissors in a lowered foundation so that the wheelchair user has access to the platform at ground level (Picture 1).

The standards research by Jens Brand shown that the entire construction must fulfil the requirements of DIN EN 81-41, which is a harmonized standard according to Machinery Directive 2006/42/EC. As part of the DIN EN 81 series of standards for the Lift Technology the requirements of these standards for „vertical

platform lifts for disabled persons“ is described. Such a platform is by definition a lift according to the machinery directives. Part of the safety equipment naturally belongs the query for the upper and lower end positions of the platform. This task is taken over by the position switch from the ZV7H range (Picture 2) out of the Schmersal range of products.

When considering the best way the doors are to be locked, the Hoffmann technicians consulted Schmersal sales, to be more accurate with the sales representative Christian Nagel, who conveniently also lives in Waghäusel. For this safety-relevant task he advised them to use the new safety locking device AZM 300, and actually there are several benefits in using this switching device.

Firstly, the new locking system is in the form of a turnstile (Picture 3). This allows approach to the locking system from three directions making it universally deployable. For this, the user does not require additional attachments such as a door stop or latching element as these are



Picture 2:
 Position switches provide the end position query for the platform lifts.

integrated into the locking system. The latching force is adjustable and the high protection class ensures the precondition for use of the safety locking device outdoors. Apart from that the AZM 300 has high level of manipulation protection. The position query cannot be „tricked“ by using magnets because a detection method is used that has been developed and patented by Schmersal.

Integrating the safety technology into the controller

A demanding task was the standard-compliant technical control interface of the individual safety elements. Jens Brand: „The platform is activated or called with a key. The hydraulic drive only starts when the door of the lift and the door on the upper entrance are closed. The outer door is locked as soon as the lift has moved away from the upper end position or unlocks as soon as the upper end position is reached.“

The interaction of position switches (lift position query) and locking mechanism (door latching) ensures the desired amount of safety for passenger and companion. The evaluation of the safety-related signals and their transfer to the superordinate controller is coordinated by two safety components; SRB 301 MC and SRB 211 ST V2. Operation is performed via the control panel from the Schmersal range of products. Naturally an emergency stop function is included.



Picture 3:
Hoffmann are one of the first users of the innovative safety locking device AZM 300.

Development completed – sales started

The development of the CARElift® took more than a year. During this time the drive for example had to be modified from the initial prototype. Jens Brand: „Originally we use a single-acting cylinder as with the mobile platforms. But this drive did not give the passengers the necessary comfort when moving downwards; we now use a double-acting cylinder that is driven up and down.

TÜV Nord has now approved the system. This included praise for the safety equipment – for example the fact that the platform can only be entered after the user has activated it using a key.

The first CARElifts® have already been installed and function trouble-free. Hoffmann offers different basic versions for lift heights of 1.5 m, 3 m and over 3 m. The versatility of the concept is demonstrated by that fact that one of the first CARElifts® reaches a height of 15 m, and another platform lift can access three different floors (Picture 5).

All of the installed systems have demonstrated that an outside platform lift is considerably less expensive than an indoor lift. Also the system has shown that it can be installed quickly: Once the foundation has been prepared the lift can be used after two to three hours and the owner does not need to make any constructional changes to the house.

Thomas Hoffmann and Jens Brand are confident that they will open up a new business area with the CARElift®-System next to the work platform rental. In the coming months the CARElift® is to be presented at different rehabilitation trade fairs. Thomas Hoffmann: „Up until now we have been developing and optimising. Now we are marketing the system.“ Each of the lifts are produced made to measure according to customer requirements. The safety technology is always at the same high level: „Naturally the price has to be correct as most buyers are private persons. However, with all that we do, we maintain a high level of quality and safety, which is always to the benefit of the customer.“ The Schmersal safety switchgear and above all the new safety locking device AZM 300 - where Hoffmann GmbH & Co. KG are one of the first users - delivers quite a contribution to this.

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Picture credits:

carelift/ Hoffmann GmbH & Co. KG;
K.A. Schmersal GmbH & Co. KG



Picture 4:
Also high levels and several stops can be achieved with the CARElift® concept.

Download:

Picture 1:

http://www.schmersal.net/Bilddata/fotos/diverse/bauwerke/1000x__008f102.jpg

http://www.schmersal.net/Bilddata/fotos/diverse/bauwerke/___008f102.zip

Picture 2:

http://www.schmersal.net/Bilddata/Si_f1/Zt235/Fotos/Katalog/1000xk235sf01.jpg

http://www.schmersal.net/Bilddata/Si_f1/Zt235/Fotos/Katalog/k235sf01.zip

Picture 3:

<http://www.schmersal.net/Bilddata/Azm/azm300/fotos/1000xkazm3f17.jpg>

<http://www.schmersal.net/Bilddata/Azm/azm300/fotos/kazm3f17.zip>

Picture 4:

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