moving limits

AERO® LIFT

CASE STUDY

Handling of precast concrete elements

The construction industry is booming. In the field of gardening and outdoor facilities, too, the manufacturers and dealers of precast concrete elements are confronted with a multitude of enquiries every day.

What is initially positive, at the same time brings with it a challenge in the handling and logistics of the readily used concrete components. Due to their shape, L-bricks place special demands on the handling technology used.

The challenge of a manufacturer of concrete products to remove its L-bricks easily and safely from the formwork systems and also to rotate them at the same time was the origin of a new product development by the vacuum specialists at AERO-LIFT.

„Our customer pours several tonnes of concrete angle stones every day in batteries, each containing moulds for 2-6 stones. These are moved on a rail system as part of the curing process. The casting of the individual components, some of which weigh several tonnes, is done upside down. During demoulding, the finished elements have to be turned and then placed on wooden pallets," says Sebastian Scherer, Sales Director at AERO-LIFT.

„In this process, an electrical centre of gravity adjustment is indispensable due to the varying sizes of the L blocks. In countless tests in our application technology, we have developed a solution ideally suited to this customer process, which allows the concrete blocks to be sucked in from both the outside and the inside."

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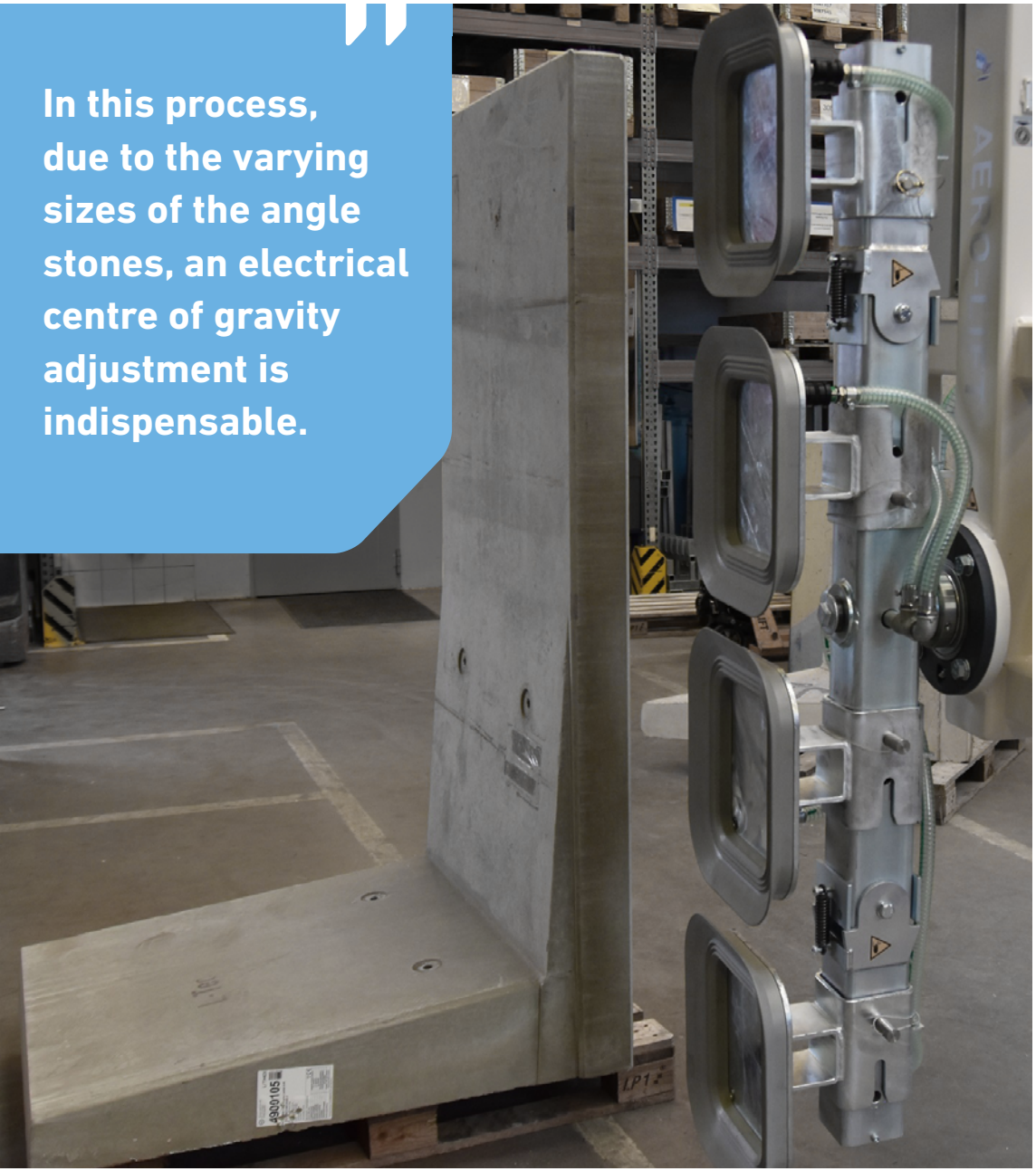


The vacuum lifting device, which was specially developed for the customer, can be operated ergonomically and safely by only one person due to its angled, two-legged manipulation handle. The handle can be flexibly adjusted and locked via a lifting magnet and thus covers an operating angle of 67.5° downwards and 90° upwards.

The solid rubber seals used for the suction plates can be replaced quickly and easily. They ensure robustness ideally matched to the concrete material and thus a long service life.

The middle suction plates can be shifted and slid off the main beam by 70 mm to suit the immersion depth and the distance between the pallets or the width of the blocks. The outer suction plates can be moved 140 mm on the main beam. All suction plates can be switched on and off individually via manual slide valves, so that the highest possible flexibility is achieved in the handling of different L-stone formats.

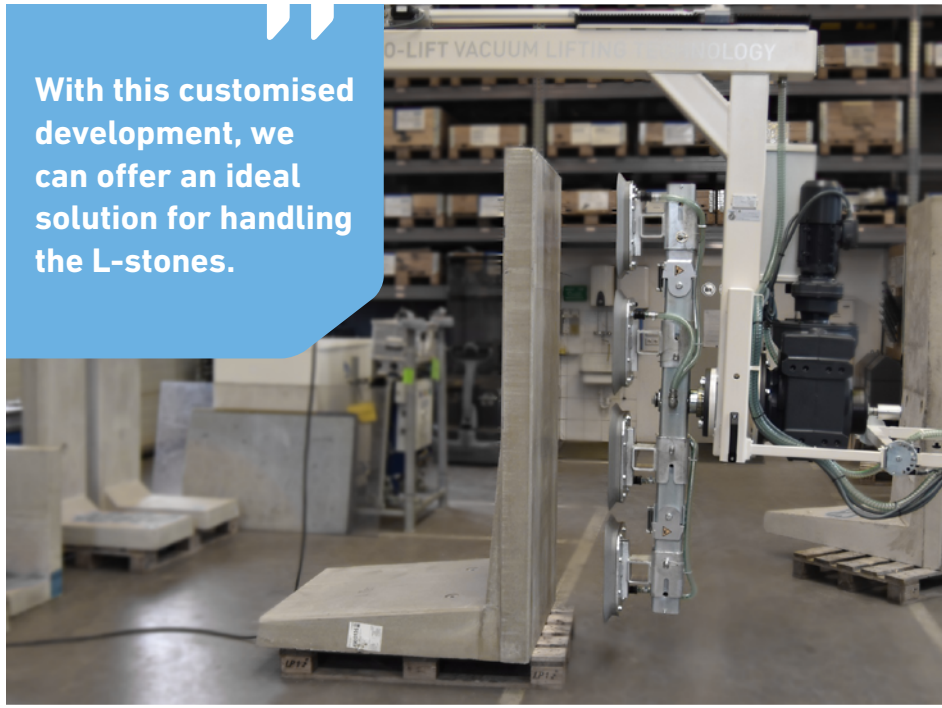
The material to be transported can be picked up vertically or rotated 360° endlessly. The maximum required load capacity of 1,080 kg is already achieved by using three of four suction plates. An electric centre-of-gravity adjustment allows the centre-of-gravity to be set at the touch of a button, even under load.

The AERO-LIFT unit is equipped with the usual features: The „suction-release“ function is carried out by means of a manual slide valve with safety lock, and vacuum monitoring guarantees the safety of the entire system. The intelligent electronic warning device reacts to a vacuum drop below 60 / 80 % or power failure by means of an acoustic warning signal, so that the load can be switched off in time if necessary. All AERO-LIFT vacuum lifting devices are designed and manufactured in accordance with the current safety standards according to EN 13155 and ASME B30, as well as tested and documented according to the valid accident prevention regulations BGR 500 and Machinery Directive 2006/42/EC, Annex II A.

The final acceptance test is carried out according to VDE 0113 and EN 60204. An electronic swivel gear enables stepless rotation from 0° to 360°. A complete rotation process takes about 46 seconds, control is via ergonomic push-buttons. A vacuum level selection allows the working vacuum (60% or 80%) to be determined by the operator. This allows the working vacuum to be limited in individual cases (pump switches off) and the pores of these concrete blocks are less stressed if necessary.

In order to achieve the necessary load-bearing capacity, the correct working vacuum must be set by the operator via the selector switch before suction is applied. „We are pleased to be able to offer an ideal solution for handling L-stones with this customised development,“ says Sebastian Scherer. „In addition to the ergonomic and safety aspects, our customer was able to make his production processes much more efficient and flexible by using our vacuum lifting technology.“

With this customised development, we can offer an ideal solution for handling the L-stones.



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Are you looking for an efficient and ergonomic handling solution specifically for your challenge? Then AERO-LIFT is the right choice for you.

We would be happy to use our experience from numerous industries and areas of application to bring your company forward together! Contact us with your enquiry without obligation:

AERO-LIFT Vakuumtechnik GmbH has been internationally successful in the field of vacuum handling technology for over 30 years. The family business was founded in Geislingen-Binsdorf/Baden-Württemberg, where the company's headquarters are still located today. With several strategic business fields, AERO-LIFT is broadly positioned: From tube lifters, vacuum lifters, large-area grippers for automation technology to components, crane systems and services, the customer gets everything from a single source. This broad spectrum requires great innovative strength and flexibility. A wide variety of customers from the construction and trade, automotive, chemical, food, energy, logistics, metal and woodworking industries benefit from the broad expertise and the Swabian inventive spirit. With the help of solutions from the vacuum specialists at AERO-LIFT, they improve their workflows, efficiency and production flow, relieve and motivate their employees and thus meet the requirements for health protection and ergonomics. For more information on AERO-LIFT's vacuum lifting technology, please visit **www.aero-lift.de/en.**

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