

Painted car bumpers are placed in this LASE assembly cell to punch ultrasonic holes for parking sensors



Hand in Hand

The LASE Group in Belgium produces flexible and individual machines and assembly cells for the automotive industry – and places its trust in the close collaboration with Turck Multiprox



»Turck Multiprox is a good example of this intensive and partner-based cooperation.«
Gert Peetersem, LASE

The LASE Group, the name stands for "Labor Aiding Systems Europe", produces machines for the manufacture of automotive interiors such as dashboards, door panels, roof windows, seating systems or central consoles. However, the company also develops solutions for mounting car bumpers, spoilers or fuel tanks. Systems for assembling drive train systems are another pillar of the company. "Around 65 percent of our sales comes from the interior and bumper systems area," explains CEO Gert Peetersem. "Our systems are used by several OEMs."

Peetersem founded the LASE Group in 2001 because by his own admission he felt that a solution-oriented machine builder was needed to automate the assembly of car interiors. "Although car manufacturers had a certain design of their products in mind, they were unable to implement the manufacturing process in a satisfactory automation concept", Peetersem continued. "Our machines meet global standards, and so we have grown to become a globally active company. Today you can find our plants in all corners of the globe, from Australia to Europe, from North Africa to Russia."

Lase originally started out with the production of assembly cells for objects in vehicle interiors. However, further solutions gradually followed, such as fuel tanks and systems for bumper assembly. The company acquired a very good reputation as its experience and growing know-how increased. "We were already

engaged with several OEMs in the design process so that we could use our solutions to rationalize the production process of the customers straightaway."

Full vertical integration

As suppliers of turnkey solutions for the automobile industry, we have to be able to implement the requirements of customers quickly and reliably. And these requirements are continually changing. Digitalization, for example, has now become an important factor. Customers want information about the state of their processes and require a clear operator interface. At the same time, data acquisition is also becoming a more important priority on their wish list. Customers often want to manufacture several variants of the same component without any losses in production time and therefore preferably on the same machine.

The LASE Group has a specific approach to meet these requirements. Peetersem explains: "We do everything from day one with our own people. I don't want to depend on subcontractors or be faced with suppliers that cannot keep to the deadlines. This approach enables us to achieve fast throughput times for manufacturing our machines. It is also straightforward for our customers: At LASE they have one specific customer contact who takes full responsibility for the project. This clear structure is effective and also enables us to keep our prices competitive worldwide."

Component supplier must move forward as well

Peetersen also places demanding requirements on his component suppliers since they also have to adjust to the work method. "Turck Multiprox is a good example of this intensive and partner-based cooperation: We state the type of detection we require, specify the design and measuring distances and then work out a solution in consultation with Turck Multiprox. They are often also involved in the test phase." LASE uses a broad range of components from the Turck Multiprox offering: optical sensors, laser sensors, inductive proximity switches, I/O modules, tower lights, 2-hand controls etc. Turck's Ethernet multiprotocol I/O modules are ideal for machinery to be exported worldwide. These can communicate via Profinet, Ethernet/IP or Modbus TCP in the same module. This enables customers worldwide to use the local systems, for which they can also obtain local service and spares – a key benefit.

Integrated solution

The finishing touches to a bumper assembly cell had just been made during a visit to the production hall. The tremendous care taken in the development of these machines was clearly noticeable. For Peetersem it is very important that the cells are part of the entire production line. "Island solutions require too many logistical movements with the product, which would increase the risk of damage. This is one of the success factors of our approach." The average lead time for the development of a bumper assembly cell is 24 weeks. Everyone involved always has the overall picture in mind: the mechanical and electrical engineering, the software, the manufacturing of the parts and the assembly. All processes such as laser cutting, plasma cutting and prefabricated assembly are carried out by the LASE coworkers themselves.

Q4X laser distance sensor makes the difference

The painted bumpers are inserted in the first bumper assembly cell for punching the ultrasonic holes for the parking sensors. The brackets for the side reflectors are also fitted in this cell with ultrasonic welding. Although these side reflectors are not required for European cars, they are stipulated for cars on the US market. The machine can process all the variants without any problem and without any extensive retrofit times. This process doesn't start until after the painting has been completed, so that absolutely no processing marks are left on the bumpers. Sensors play an important role here.

In another assembly cell LASE uses the Q4X laser distance sensor from Turck's optoelectronics partner Banner Engineering. In its robust stainless steel housing this sensor plays an important role in efficient operations at the machine builder. With protection type IP67/69K, the Q4X can for one thing resist shock, overtightening or extreme vibration. The assembly cell secondly not only has to detect the presence of a bumper but also has to distinguish between a matt black and a brilliant black bumper. This is a particular challenge because black absorbs most of the light.



The Q4X laser distance sensor reliably measures the distance precisely down to one millimeter and also analyzes changes in light intensity

However, the Q4X not only has a high excess gain, but also "dual mode" detection. This enables the sensor to not only measure the distance but also analyze changes to light intensity. The Q4X therefore stands out from the sensors of other manufacturers. The sensor not only works very reliably on black objects but also on transparent objects in bright ambient light or with acute detection angles. It can measure differences in distance in a range from 25 to 300 millimeters down to one millimeter.

For Peetersem, the laser sensor is a paradigm for the good cooperation with suppliers like Turck Multiprox: fast, capable and one hundred percent reliable. "It is also thanks to these components that we manage to achieve a lead time of 30 seconds per bumper. Creating efficient, high performance machinery is what we're about," Peetersem explains.

Author | Johan Lepage is Sales Specialist at Turck Multiprox in Belgium

Customer | www.lase.be

Web code | more12152e

QUICK READ

Turnkey solutions for the automobile industry, fast and reliable – this is the specialty of the LASE group in Herk-de-Stad in Belgium. Thanks to the large vertical manufacturing depth, the company can quickly supply individual solutions for its customers for manufacturing and assembling automotive components – supported by quality components from the extensive range of Turck's Multiprox branch in Belgium.