





Reference name:

Single-purpose machine for checking the tightness of BMW E92LCI headlights

Supplier:	ELVAC a.s.
Customer:	AUTOMOTIVE LIGHTING s.r.o.
Market segment:	Automotive industry
Year of implementation:	2009

Introductory text:

The Automotive Lighting company announced a tender for the supply of 2 test stations for checking the tightness of headlights for the new version of the BMW E92LCI, which will be produced in the first quarter of 2010. These were new workstations where the operator performs light tightness testing with a classic halogen bulb and the second for testing light with LED lighting.

The basic idea was a workplace where the operator only inserts the finished headlights into the test station, performs the test and removes the headlight from the station.

The requirements of the Automotive Lighting employees were also supplemented during the creation of the workplace design. ELVAC had to react flexibly in the design, project and implementation phases. We satisfied the customer also thanks to our adaptive order management system.

Application description:

The workplace is equipped with a rotary table on which two stations for clamping lights are located. The operator manually inserts the headlight (glass up) to be tested and fixes it in the station. After that, he manually rotates the rotary table. This positions the headlight in the position where the actual testing is performed. It is now possible to start the headlight tightness test. The test cycle starts after securing the carousel in the working position. Automatic testing of one headlight lasts 20 seconds and takes place inside the machine. During this operation, the operator removes the previously tested headlight and then inserts and clamps another headlight into the pallet on the station's rotary table. The new light must be ready for testing. The machine registers the presence of the light. At the same time, an automatic test is performed on the second loading pallet.

After the automatic cycle is completed, the operator is prompted to start the next cycle. The rotary table rotates manually and the loading pallets are replaced.

The headlight tightness test is performed automatically. First, all holes are plugged and then the headlamp is pressurized. The pressure drop is monitored over a period of 8 seconds.

At the test position, the following is performed:

- Checking the completion of vulcanization
- Checking the presence of connecting clips
- · Checking the tightness of the headlight according to customer requirements
- Checking the headlight barcode
- Checking the Matrix code

The device evaluates the measured values and clearly displays the result on the control panel display. Everything is done in automatic mode. The customer requested a cycle length of less than 30 seconds. The device can meet the requirement – time within 15 seconds.



Products and technologies used:

The machine frame consists of a modular system of BOSCH Rexroth AL profiles. Bosch CL 200 control system and BT5 display unit, with ZE 200 – DP processor card, BT5 with Profibus DP, inputs and outputs with Profibus DP. Rotary table made of AL plate. Leakage control with Phönix pressure sensor. FESTO pneumatic elements. HIWIN linear slides.

The solution of ELVAC a.s. the customer received the following benefits:

The benefit for the customer is a shortening of the cycle by roughly half and a reduction in the proportion of manual work.

Photo:







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