

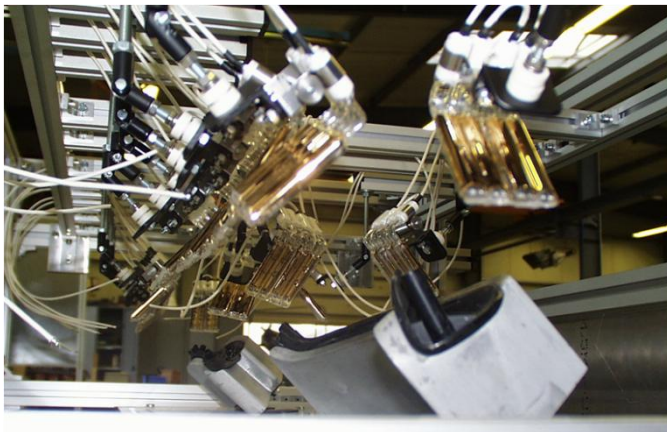
Infrared emitters for efficient deburring of glove compartments and door handles

The company Hahn, based in Sontra, in cooperation with Excelitas, designed an infrared system using small short-wave infrared emitters. Due to the three-dimensional arrangement and a fast energy transfer, the deburring of the products takes place so reproducibly that the process could be automated. The method is used successfully in door handles and glove compartments.

The cycle time for the deburring of internal car parts made of plastic is approximately 40 seconds, including part handling. This is made even more difficult if lacquered cladding parts, trim panels or glove boxes for right and left-hand drive vehicles are to be manufactured in the same plant. In order to remove these burrs, various methods were considered more closely. Mechanically, by grinding or milling, or thermally with a hot-air drier or a Bunsen burner. All these methods were carried out manually and the results were very different in quality, depending on the skill of the worker. The mechanical methods could have been automated by means of mechanical grinding or milling, but an intensive cleaning would have been necessary afterwards to remove the resulting chips. A hot air nozzle system proved to be very complicated in the production process and the process would have been very slow.

As a result, Excelitas developed an infrared system using small short-wave surface emitters. These emitters can be arranged well on the edges of three-dimensional products, are very controllable, and transfer relatively high energy in a short time to limited areas. A total power of 10,400W was installed, with the radiators located about 20mm away from the product edge. The deburring of the products takes place within 5 seconds and is reproducible in such a way that the process could be automated. In order to make a better decision, the Hahn company computed the total energy requirement for each deburring cycle, once with a hot-air drier and once with infrared emitters. According to this calculation, 42.5 watt-hours for hot air compare to 8.7 watt-hours for infrared emitters.

Hahn conducted a comprehensive analysis of the entire process, and CEO Rainer Stück is particularly convinced by the energy efficiency: "We have found that, according to our calculations, the infrared system already amortizes within half a year!"



Features

- Automated deburring of glove compartments
- Analysis of different deburring techniques
- IR heat superior to other deburring methods
- High energy efficiency

Technical Data

- IR system with small short-wave surface emitters
- Easy to arrange on product edges
- Very controllable
- Deburring takes place within five seconds

