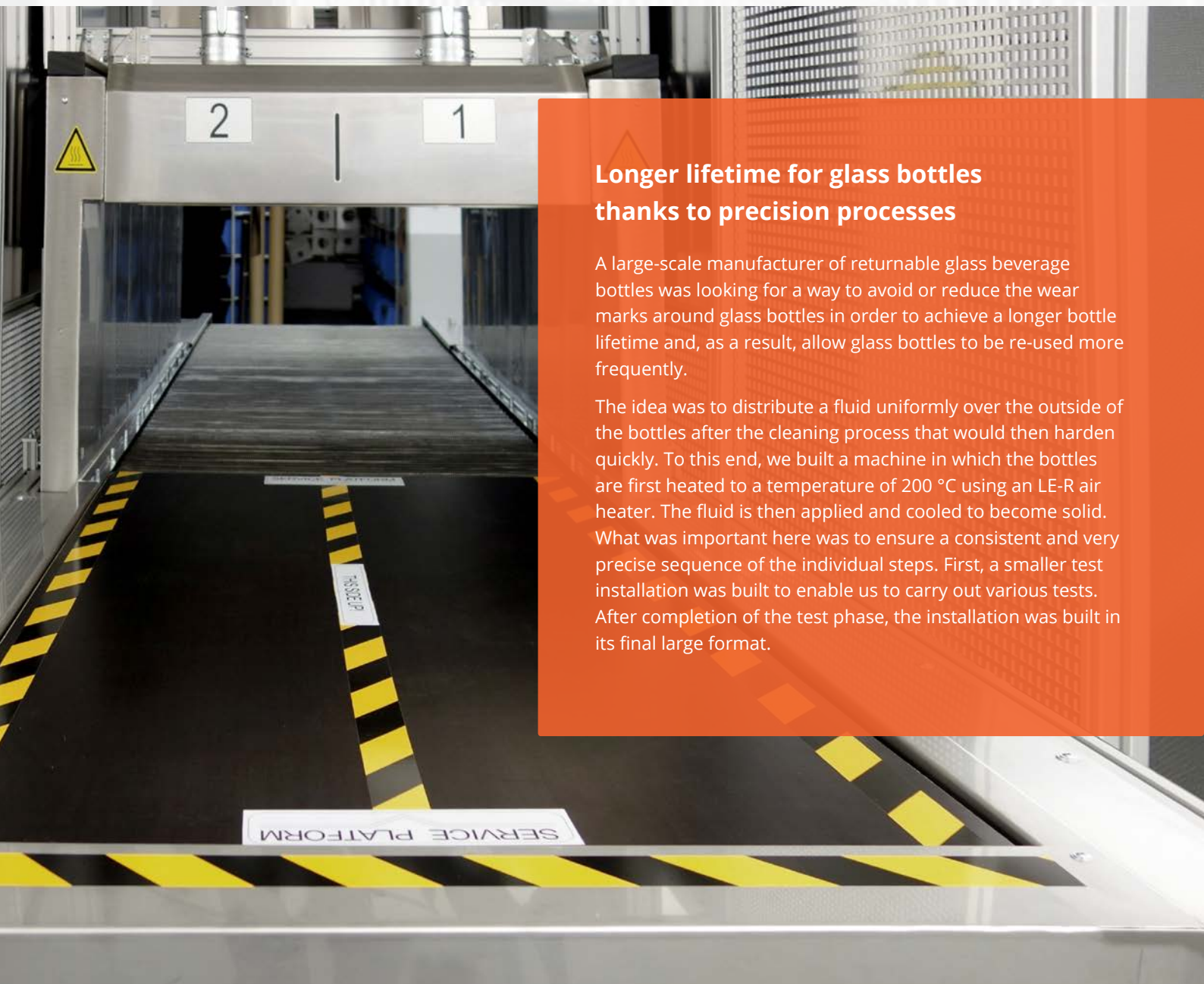


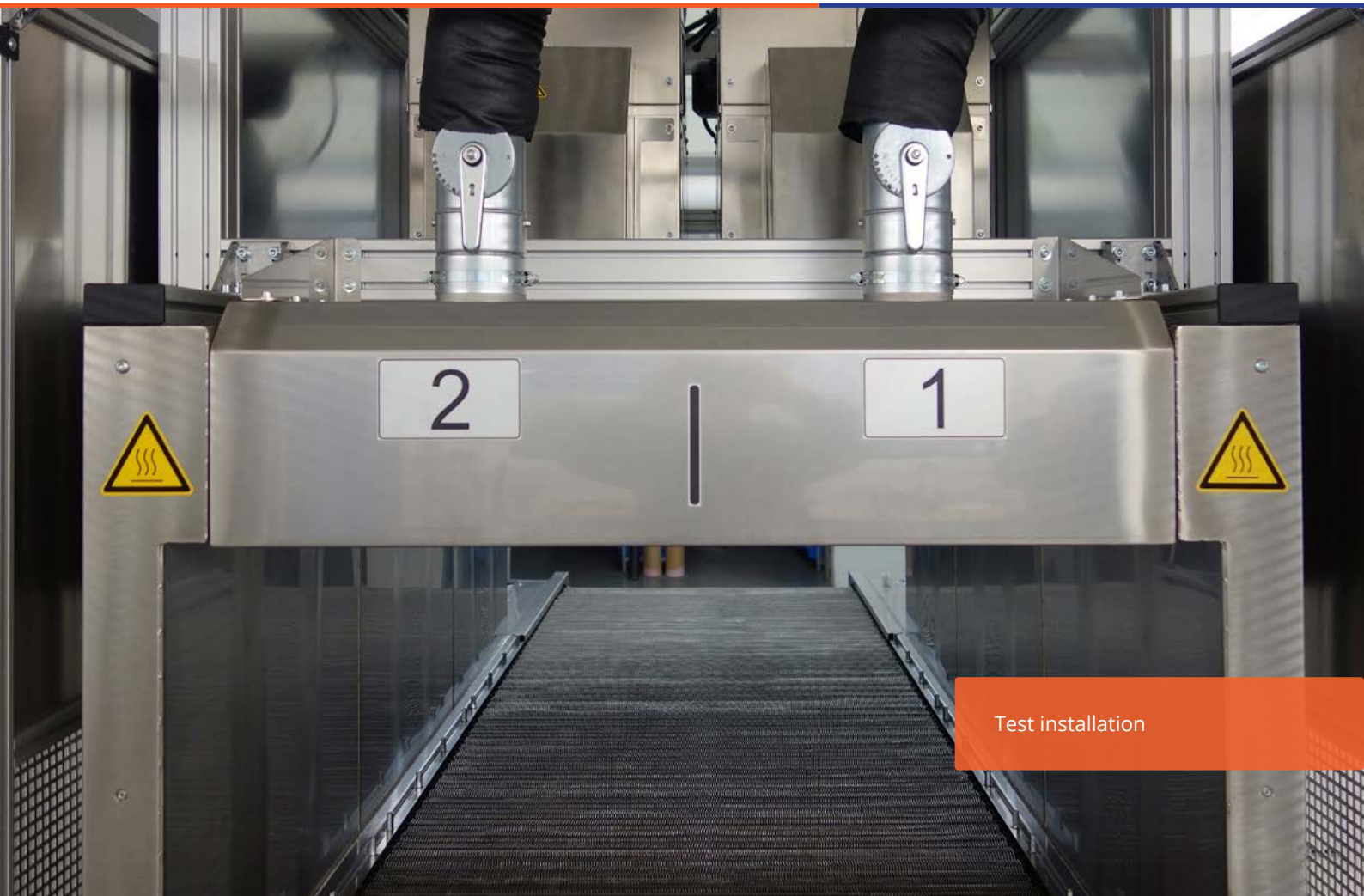
Case study: **Preheating and cooling glass bottles**



Longer lifetime for glass bottles thanks to precision processes

A large-scale manufacturer of returnable glass beverage bottles was looking for a way to avoid or reduce the wear marks around glass bottles in order to achieve a longer bottle lifetime and, as a result, allow glass bottles to be re-used more frequently.

The idea was to distribute a fluid uniformly over the outside of the bottles after the cleaning process that would then harden quickly. To this end, we built a machine in which the bottles are first heated to a temperature of 200 °C using an LE-R air heater. The fluid is then applied and cooled to become solid. What was important here was to ensure a consistent and very precise sequence of the individual steps. First, a smaller test installation was built to enable us to carry out various tests. After completion of the test phase, the installation was built in its final large format.



Test installation



HAPRO Case study:
**Preheating and cooling
glass bottles**



Detail view of the
air heaters in the frame

Many thanks to ESGE Tech, Moers, for the authority to show the photos.

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Case study:

Preheating and cooling glass bottles

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Technical data of the installation

Air heater

LE-R

Output: 18kW

 **HAPRO**
Thermodynamic Engineering.
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