



Siemens electronic components power brand-new, mobile infrared oven from Infrabaker International

As yet, infrared does not have a firm foothold in the food industry, but if Infrabaker International (Int.) from Limburg has anything to do with it, things are about to change. The company develops, manufactures and sells infrared ovens – ‘Infrabakers’ – to treat meat, fish, vegetables and other foodstuffs. And for All Freez from Maasmechelen, no less than a complete new, compact mobile Infrabaker has been developed. The secret ingredient? Electronic components from Siemens.

“Infrared treatment offers a whole lot of advantages for food producers”, explains Simon Braeken, project leader at Infrabaker International. “There are various applications, from grilling meat or vegetables, to coloring for purely aesthetic reasons. The main advantage of infrared is that the nutrients aren’t lost. This enables producers to offer high-quality meat on a large scale, for instance.”

Infrabaker Int. and sheet metal producer Wegra together manufacture modular infrared ovens in one standard model. The basic set-up has a 3-meter-long housing that can be expanded depending on the capacity required. Fish and shellfish producer All Freeze from nearby Maasmechelen expressed interest in the advantages of infrared treatment. The food industry was on the lookout for a way of defrosting deep-frozen fish to a very specific temperature.

Business challenges

- All Freez was looking for a cost-efficient and time-saving alternative to the current process for defrosting fish, which involved a number of time-consuming manual actions. The company looked into the possibilities of infrared treatment.
- However, tests soon showed that the modular standard oven from Infrabaker International would be unable to meet all of All Freez’s requirements. The only solution was to develop a completely new oven that could successfully accomplish this specific task.

Technical challenges

- The capacity of the available standard set-ups from Infrabaker International was much too high, meaning that there could never be a return on the investment.
- What’s more, the dimensions of the standard ovens were also too large for All Freez. In addition, it had to be possible to deploy the machine at various locations in the manufacturing area, without having to dismantle and reinstall it. So not only does the Infrabaker have to be easy to move, but electricity cabinets and ventilation systems also need to be built in.
- Infrabaker International’s tests also showed that the standard infrared radiation from above would not be sufficient for All Freez’s specific processing. The fish would also have to be infrared-treated from below.

Solution

- With All Freez's specific requirements in mind, Infrabaker International began to develop a completely new compact and mobile infrared oven that satisfies the stringent regulations in the food industry.
- In the design phase it was decided to obtain all the drives, the PLC, and a number of other components from a single supplier: Siemens. To be specific, the SIPLUS HCS system that allows the strength of the infrared lamps to be regulated very precisely, the Siemens G120C and V90 drives, the S7-1500 PLC, the ET200SP remote IO, Sirius buttons and a Scalance S615 safety module and Siemens Safety and Comfort Panel. All components are integrated into Siemens' TIA Portal.
- For the engineering team, choosing Siemens had several important advantages, namely that all components are available at all times, and the various elements are always compatible with one another.

Results

- Choosing a single supplier allows the Infrabaker International team to gain a deeper understanding of the technology. The valuable expertise also means it is possible to intervene faster if there are any defects.
- In addition, because Siemens is a world player, it has the advantage of experience: there is a tried and tested scenario for virtually any potential problem or incident.
- Thanks to the VPN router from Siemens, the Infrabaker team can also track and check the status of machines online, so intervention can be performed remotely. This is no unnecessary luxury, when you consider that the company from Limburg is doing more and more business abroad, such as in South Korea or the US.

Project overview

- Industry: Mechanical engineering
- Customer: Infrabaker Int. – Wegra – www.infrabaker.com
- End customer: All Freez
- Region: Belgium
- Technology: SIPLUS HCS, G120C and V90 drives, S7-1500 PLC, ET200SP, Scalance S615, Comfort panel, Safety

The advantages of Siemens

- Customized total solutions: Siemens closely follows developments in the (international) world of production machines and assists customers to position and test their machine strategy. In doing so, we take account of the skills of the machine manufacturer and the specific requirements of the sector.
- Totally Integrated Automation (TIA): Siemens develops solutions to automate machine functions and to integrate them into the total production flow, one result being that engineering costs are scaled back considerably.
- Via Integrated Drive Systems, our integrated solution for the entire drive train, you also reap the benefits of greater efficiency, reliability and productivity.
- Extensive sector knowledge, experience in production technology and expertise in automation: three essential ingredients for machine manufacturing success that Siemens integrates with each other from end to end.
- Engineering support: we carry out full mechatronic studies and check the dimensioning of drives down to the last detail.
- Sharing experience: the experts from Siemens help machine manufacturers to master specialist production and automation techniques. In addition, their production is fully aligned to the quality and safety standards of each sector. Resulting in gains in efficiency.
- Outstanding service: implementation, product and system support, wherever and whenever needed.
- Wide experience in the field of retrofit and redesign.



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