

# Case Study: Kawasaki Robots Package Bags of Dental Plaster in Dust-Filled Environment

Application: Palletizing & Assembly  
Robot Model: Kawasaki ZX130S Palletizing Robot

## OVERVIEW

Since the 1880s, German dental company ERNST HINRICHS Dental has developed and manufactured dental impression and model plasters worldwide. The company only uses high-quality natural and synthetic raw materials without the addition of allergenic substances for their products.

As ERNST HINRICHS began to experience high demand for their products, they implemented a Kawasaki ZX130S robot to palletize bags of dental plaster in an automated end-of-line system. With the help of automation, their product portfolio, sales and the company grew steadily. Today, ERNST HINRICHS Dental is the international market leader, supplying dental wholesalers and private labels worldwide.



## CHALLENGES

### Dusty Environment

Historically, dusty industrial environments have not been ideal for automation. However, ERNST HINRICHS Dental has successfully used their Kawasaki Z series palletizing robots for the packaging of dental plaster for years.

### Custom Gripper

To avoid a time-consuming tool switch, this application required a gripper that could accomplish three tasks simultaneously. ERNST HINRICHS' system integrator Wehling Anlagen-und Maschinenbau developed and constructed a multi-function gripping tool to grip bags of varying sizes, orient them properly, and compress them in the finished boxes.

## SOLUTION

- Dental plaster is finished, packaged and sealed
- Kawasaki ZD130S robot picks bags from conveyor and places into boxes
- Case erector is used to construct boxes

The entire filling and packaging facility consists of a carton erector, sagging plant, case sealer, Kawasaki ZD130S robot and multiple conveyor systems. Several products can be processed at the same time, with minor variations depending on the product category.

To begin the process, the dental plaster product is finished in the sagging plant. Then, the plaster is packaged and sealed in 20 kg bags. From there, a Kawasaki ZD130S robot picks the bags off a conveyor using a multi-functional gripper and loads them in a box produced by a carton erector.

If the bags are not properly positioned inside their boxes, they could swing in a pendulum movement when shipped. To counteract this movement, the robot places the bags into the boxes along a sliding plate and compresses the bags. Next, the boxes are properly sealed for distribution.

### Reliable, High Performance Robots

Kawasaki robots are known in the industry for their reliability and 10,000 hour maintenance intervals, which translates to automation users can rely on day in and day out. From a technical standpoint, the general-purpose Z series combines a large payload capacity with a long reach for a minimal amount of dead space, wide work envelope and greater flexibility. These robots use high-output, high-revolution motors and advanced motion control technology to reduce cycle time and maximize production.

“The robot allowed us to increase production significantly and relieve our employees from exhausting physical labor.”

-Stefan Schuetze ERNST HINRICHS Dental Head of Procurement

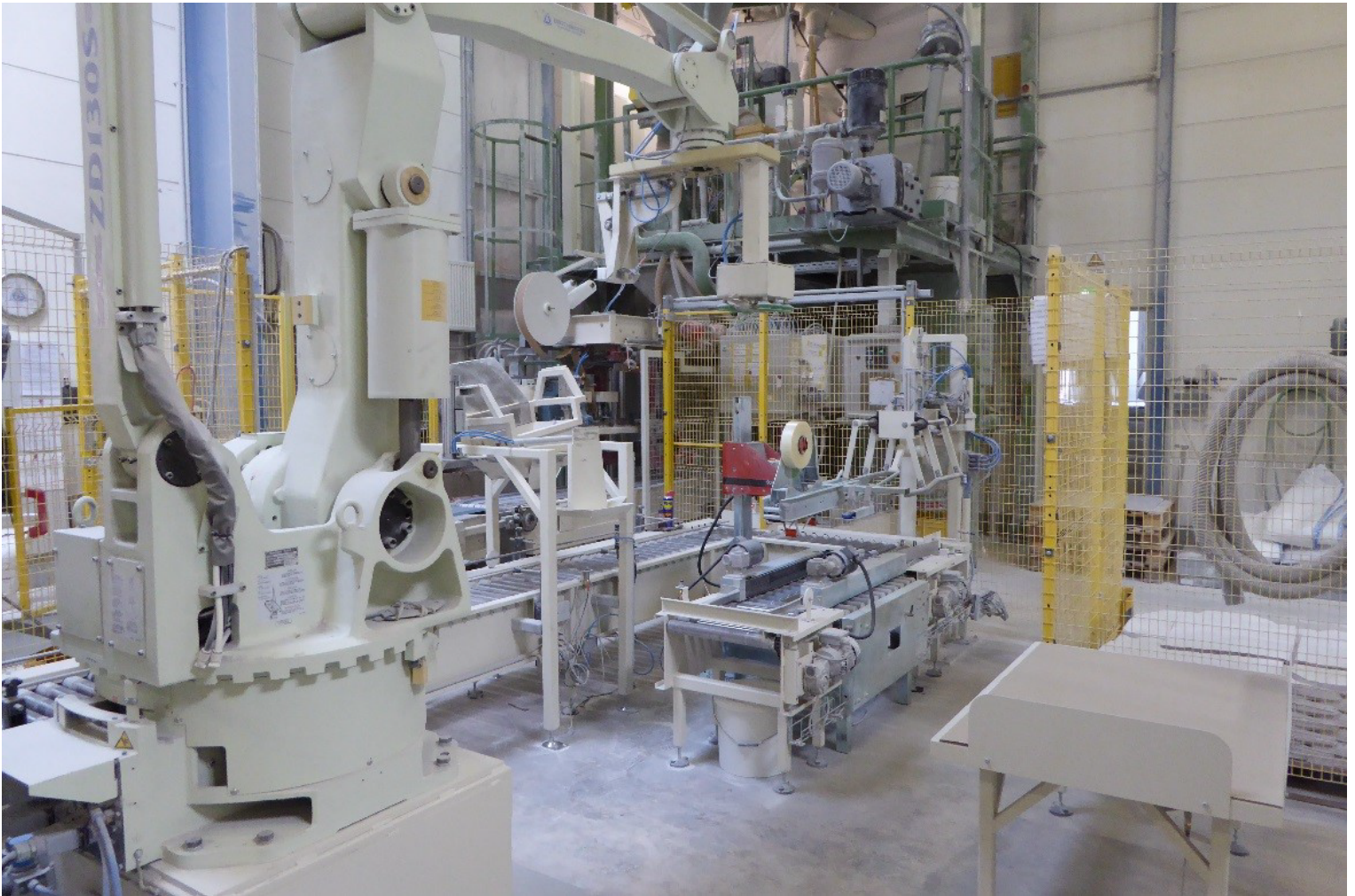
## RESULTS

- System packs 120 boxes per hour and 2,000 boxes per day
- ERNST HINRICHS Dental increased production and flexibility
- Employees relieved of ergonomically challenging tasks

By automating their packaging process, ERNST HINRICH Dental has increased production and flexibility, which allows them to get product into their customers' hands quicker than ever before. They can also relieve employees of physically taxing end-of-line tasks, creating a safer and more pleasant workplace.

Automation also allowed ERNST HINRICHS Dental to transition from a three-shift to a two-shift operation. They are currently producing roughly 120 boxes per hour and 2,000 boxes (40,000 kg) of dental plaster per day.

Since implementation, ERNST HINRICHS Dental's system has proven to run smoothly and be user-friendly. Stefan Schuetze, Head of Procurement, explained that automation has had a positive impact on their company: "The robot allowed us to increase production significantly and relieve our employees from exhausting physical labor."



### Kawasaki Robotics (USA), Inc.

Corporate Headquarters for Americas  
28140 Lakeview Drive, Wixom, MI 48393, U.S.A.  
Phone: +1-248-446-4100 Fax: +1-248-446-4200

[KawasakiRobotics.com](http://KawasakiRobotics.com)