

EZ-WHEEL | Motorisation and autonomous wheels



ez-Wheel® Series 300,
integrating motor batteries
and electronics.

AN AUTONOMOUS WHEEL IN ASEPTIC ENVIRONMENTS

Based in Angoulême, in South-West France, ez-Wheel has, since its creation in 2009, developed the first autonomous electric wheel with a motor and batteries. This French innovation, the result of four years of R&D, provides electric assistance to all types of rolling/motion equipment, both indoors and outdoors.

The technology has been adapted for use in severe environments (white rooms, cleanrooms, and aseptic environments) and can carry up to one tonne. « *To meet the needs of the food processing industry, we have designed a completely waterproof and jet washable, 100% stainless steel solution, used for transporting foodstuffs* », adds Antoine Juan, President and Founder of ez-Wheel.

Manufactured in France, the products are used in many factories around Europe, in particular within the pharmaceutical industry.

A SOLUTION FOR EVERY INDUSTRY

As easy to integrate as simple castors, ez-Wheel assistance solutions are designed ergonomically with the health of the operator in mind, allowing for increased speed whilst at the same time preventing the risk of MSDs.

- The first electric wheel, a safe, clean and quiet solution, stainless steel finish, hygienic design
- For the medical and pharmaceutical industry
- Up to one ton moved per wheel, stability and manoeuvrability

WITH EZ-WHEEL, LILLY GAINS IN ERGONOMICS



Jérôme Welterlin, Laboratories Technical Services Team Leader at LILLY.

Jérôme Welterlin, Laboratories Technical Services Team Leader at LILLY, tells how the wheel ez-Wheel has helped to control and secure the sterilization process of their stainless steel containers.

You have been using trolleys equipped by electric assistance for almost 2 years. What is your assessment?

In the past, we had several incidents related to the transport and handling of stainless-steel containers. We had instances where the container derailed because the tools to secure the transport weren't up to the task. Since the replacement of the trolley fleet in 2019, there have been no incidents relating to the overall loading and unloading, which is a great indication of success!

What are the ergonomic advantages?

The wheel makes the docking maneuver to the autoclave easier whilst at the same time being easier on the posture. The operator can walk beside their trolley, which can be up to 600kg (500kg for the container and almost a hundred more for the trolley), as easily as if they were operating an electric pallet truck. They can handle the load with one arm effortlessly and safely. For me, the real gain is the reduction in physical strain!

Tell us how ez-Wheel® products were introduced into your process?

We were looking for a solution that would make the process more secure and at the same time be flexible and

compact enough to fit into a small premises, as well as ensuring adherence to environmental constraints. We deliberately stayed with preparation methods that were almost totally human-dependent because the operator is at the center of the handling process. It was an ergonomics specialist from our HSE department who brought the ez-Wheel assistance solutions to our attention. From there, we contacted the BIBUS company (ez-Wheel distributor) and Mr. Dugard, Technical Salesperson, delivered us 8 sub-assemblies: 4 that we installed outside the aseptic zone and 4 inside the aseptic zone.

What challenges have you faced in deploying trolleys with electrical assistance?

The project team faced a double challenge: technical, but also human. The technical challenge was to integrate the wheel into the trolley. An integration company, Balin, adapted a wheel support by welding it to an existing chassis. Cylinders were added to compensate for the electrical torque, which is quite strong. Then finer adjustments were made to the rate of speed increase and the maximum speed, so that the operators don't need to run behind the trolleys and they can brake easily. Here the ez-Wheel solutions were a real plus! Balin also developed a stainless-steel control box that fits perfectly with the design of the container carrier.

Were the operators easily convinced?

Not straightaway ; change can often be frightening. But thanks to the intervention of Mr. Gradt, our production contact, the new trolleys, with assistance, were adopted by the operators. He encouraged us to use the product and he helped us to train the teams: from the handling to the use of the machines. He really contextualized the product by considering its use in the production environment, with all the ensuing constraints.

LILLY PRODUCTION FEGRSHEIM



accounts for 5% of biotechnology jobs in France ; in 2020 they produced 119 million units and packaged 242 million units. The company specializes in injectable medicines and its products are commercialized in more than 100 countries.

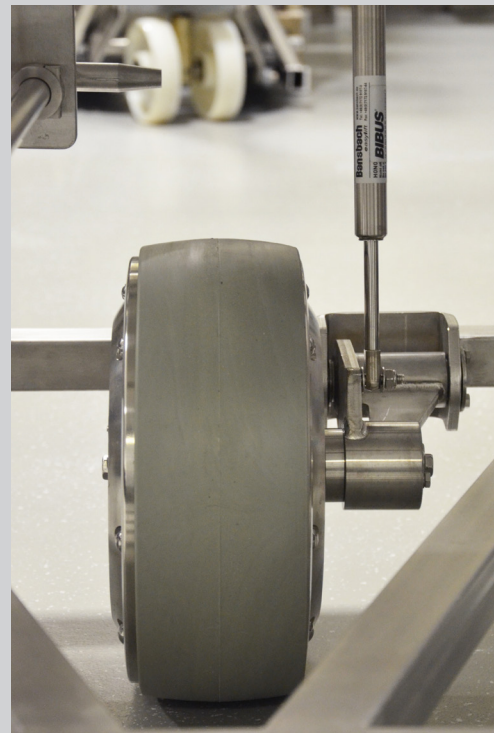
A PRECISION LOGISTICAL FLOW



Over a complete cycle, including loading and unloading of autoclaves and return to the material preparation workshop, the electric trolleys are used for 10 to 15 minutes.

4 trolleys are used in the safety zone and 4 others are used in the aseptic zone without ever crossing each other.

A PROJECT AWARDED BY THE CORPORATION



The team in charge of this flow optimization project received an Engineering Safety Award from the corporation. «The project was truly innovative. The solution was perfectly adapted to the context and provided safety and quality guarantees», comments Jérôme Welterlin.

NEW PERSPECTIVES

After two years of use, the team is considering deploying the solution on other workflows.



« Both industry and technology are evolving. The flexibility that this wheel offers is really an advantage. We were able to branch out into other areas using the same means », concludes Jérôme Welterlin.



EZ-WHEEL in brief

- **2010** The development of the wheel integrating motorisation, mechanical transmission, battery and control electronics.
- **2020** The safety wheel drive for AGVs and AMRs wins the Handling Award in the «Automation» category.
- **1.000 kg** The weight moved by a wheel, up to 5 km/h.
- **4.000** The number of wheels installed at customer sites.
- **30** The number of countries in Europe and Asia where the industrial wheels are commercialized and protected by several patents.
- **16** The department where the company was founded, and where it is located, (Charente - France). 90% of suppliers are located within a 100 km radius.

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