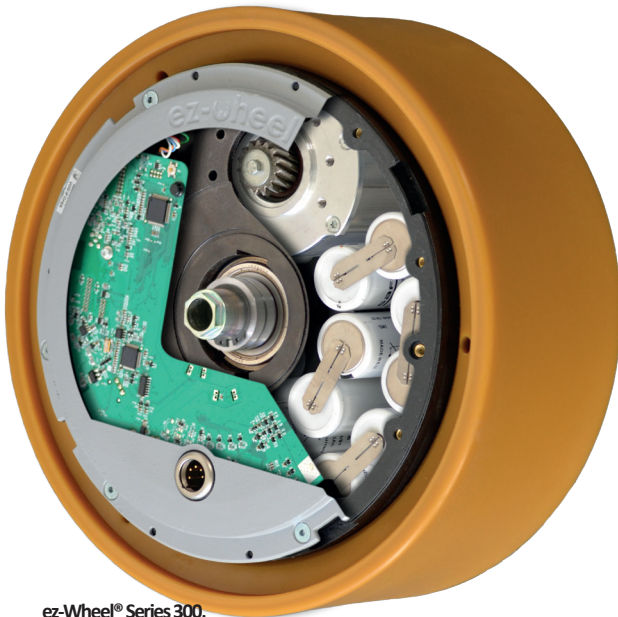


## EZ-WHEEL | Motorisation and autonomous wheels



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

## AN AUTONOMOUS WHEEL THAT PRESERVES OPERATORS

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

The technology has been adapted to industrial needs and can carry up to one ton, including in specific environments: *«In relation to the needs of the food processing industry, we have designed a completely waterproof and jet washable, 100% stainless steel solution, used for the transport of foodstuffs»*, Antoine Juan, president and founder of ez-Wheel.

Manufactured in France, the products are used in many factories in Europe including car manufacturers.

### A SOLUTION FOR EVERY INDUSTRY

As easy to integrate as simple castors, the ez-Wheel assistance solutions are designed to preserve the health of operators. Ergonomic, they allow pace increases, while preventing the risk of MSD.

- The first electric wheel, a safe, clean and quiet solution
- For automotive, food processing, logistics, medical and pharmaceutical industry
- Up to one ton moved per wheel, stability and manoeuvrability

## WITH EZ-WHEEL, **SCANIA** GAINS IN ERGONOMICS



Pierre Gelineau, engineer  
process at Scania Production  
Angers.

Pierre Gelineau, process engineer at Scania Production Angers, relates how the wheel ez-Wheel has transformed a transfer line.

**You have decided to test the ergonomics of ez-Wheel electric wheels. One year later, is the result up to your expectations?**

We were looking for a solution to a long-standing ergonomic problem on our production line. Specifically, to move from the «chassis» line to the «assembly» line, the operators had to put the chassis on a trolley and push it by hand. The wheels were not always well aligned, so a lot of effort was required. For a year now, this has no longer been an obstacle and we have finally been able to feminise our teams. The ergonomic ratings for these positions were very red; they are now green. With a fairly simple solution, the risk of accidents has been eliminated and the health of our operators has been preserved.

**What were the stages of this transformation?**

We had tested several solutions that were more difficult to implement in the process and then I discovered the ez-Wheel solution. As it was innovative and compact, we gave it a try: one wheel on each of the two trolleys on which a chassis rests. On the basis of this prototype, produced with the support of BIBUS France, the ez-Wheel distributor, we moved on to the industrial phase.

### In detail, what adjustments were needed?

The heavy load to be transported (over 2 tons) meant that the truck had to be as light as possible. It was also necessary to drive the two ez-Wheel® wheels from a single control, produced in partnership with the integrator DAO-BE. After the first tests, we deployed three complete sets. The result was impressive. The only thing left to do was to regulate the power supply to the trolleys to avoid having to recharge them every night: we preferred a system of copper rubbers which allows each wheel to be micro-recharged for only 15 minutes per rotation. Even if the energy demand is high, it holds!

**Good surprise: the autonomous wheel relieves the operators and also favours a reorganisation of the factory...**

Indeed, a transfer area between two processes, a source of professional risks and efficiency losses, has become a multi-station production area, conducive to the integration of value-added operations. The great advantage of ez-Wheel® is that it has eliminated ergonomic problems without fundamentally changing the flow, while maintaining flexibility.

### SCANIA PRODUCTION IN ANGERS



The company produces 75 trucks per day with a takt time of one truck every 5 minutes.

Almost 30 years after the first vehicle was launched in 1992, the French assembly site is hiring in preparation for its reorganisation into two shifts.

### PERFORMANCE

Each industry sector has its own specific constraints. For the project coordinators in charge of this line section, the main challenge was the load to be moved.



Here, the 40 trolleys were equipped with ez-Wheel® Series 300 wheels mounted on suspensions, in order to transport chassis weighing up to 2 tons. To operate them, an ergonomic wireless control box was specially designed.

### FLEXIBILITY



Between the two main assembly lines, «*this area, which used to be called a buffer zone, has now become a work area in its own right*» explains Pierre Gelineau.

Thanks to the ergonomic reorganisation of the line, it has been possible to install a pneumatic and electrical harness installation station in this transfer zone.

«*We gain space and we gain workstations* » he concludes.

### RESISTANCE

The wheel batteries are recharged during each cycle, rather than at the end of the day. 15 minutes are enough to complete up to 7 trips, knowing that take-off requires a thrust of 200 newtons.





## POSITIVE HEALTH RESULTS

The manual return of the trolleys was a source of professional risks.

The new AGV system coupled with the ez-Wheel solution, which retrieves the trolleys from the loading area and then pulls them to the beginning of the line, saves operators unnecessary trips.



On the ergonomic rating grids, workstations that were rated «red» have been changed to «green». The new electric wheel drive system significantly reduces pushing effort, so much that shifts are now mixed.



## 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 marketed 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.

## CONTACT

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