



HORSE REVEALS ITS PIONEERING FULLY DIGITAL 'MATRIX FLOW' PRODUCTION PROCESS

- HORSE unveils its innovative and fully digital Matrix Flow production line
- Cutting edge autonomous platforms replace traditional conveyor belt production line
- Pioneering technology used to build Power Electric Boxes for HEV and PHEV vehicles
- Advanced systems deliver greater flexibility and productivity in the move to electrification
- Huge energy savings of up to 50% as a result of faster and more streamlined processes

HORSE, a global leader in innovative and low emissions powertrain systems, is pioneering an advanced, fully digital automated production process aimed at enhancing productivity, quality and sustainability in its factories.

Known as Matrix Flow, the new process debuts in HORSE's Aveiro plant in Portugal. It replaces the existing, sequential conveyor belt-based production system with a highly efficient fleet of autonomous platforms and work stations known as Mobile Programmable Cobots (MPCs).

Already used in the manufacture of electronic goods and by multi-national logistics firms, HORSE is one of the first companies to tailor the process for automotive powertrain production using it to construct the Power Electronic Box (PEB) that manage the electric motors in Hybrid Electric Vehicles (HEV) and Plug-in Hybrid Electric Vehicles (PHEV).

Antonio Vaz, Chief Process Engineering Officer at HORSE said: *"Our new Matrix Flow Assembly line at Aveiro is a hugely significant moment for HORSE. This exciting development confirms our place as a global leader in powertrain development and production. By delivering unrivalled flexibility and efficiency, this fully digital production method allows us to be agile and responsive while continuing to deliver the highest quality products and meet our commitments to sustainable mobility."*

Developed in partnership with automated production specialists Prolynk (a project by OSE Group), these MPC can deliver the precise components and sub-assemblies needed to factory staff and robots at each stage of the production process. Up to 30 smaller MPC effectively act as mobile workstations and components kitting, ensuring employees always have the right parts and tools at the right time.

Managed by a carefully programmed fleet controller hub, the MPC wirelessly communicate with each other and can quickly adapt to changes in parts supply and production needs, delivering greater flexibility in the production process as well as huge reductions in costly downtime. It can also be quickly scaled up or down, allowing the factory to react quickly to changes in demand.

Production of PEB at the plant will start in the coming days, with an initial target of 150,000 units a year, rising to 200,000 by the end of 2024.

Enhanced Efficiency

By using the autonomous MPCs instead of a traditional sequential flow production line, HORSE has been able to reduce the physical footprint of its factory floor by 25%, and the size of the building overall by 30%.



With a smaller facility and streamlined production, HORSE has been able to slash energy use at the site by a significant 50%. Paper labels are also no longer required for any component as each is digitally identified, delivering more accurate and sustainable production.

Ready for an electrified future

HORSE's Matrix Flow concept puts it at the forefront of production technology as the automotive industry transitions to a fully electrified future. Without the need for a fixed production line, HORSE can quickly and efficiently scale production up or down to accept updated components or even a completely new product.

The Aveiro facility has been designed to deliver a clean, sterile and electro-static discharge (ESD) environment, crucial to the production of high technology electric powertrains. Effectively creating a 'cocoon' around the production line, this approach ensures the quality of the products and the safety of the staff.

HORSE has also invested heavily in its production staff, providing training that allows them to adopt the latest techniques and technologies. For instance, the use of virtual reality goggles and bespoke software allows employees to quickly and safely adapt to any changes in the Matrix Flow production processes before they're implemented.

HORSE: a leader in Innovative Powertrain Solutions

HORSE was created to provide highly efficient, low-emission engines, transmissions and technologies to meet the varying power generation needs around the world. HORSE is a truly global company, with eight production plants across seven countries, three R&D centres and a head office based in Madrid, Spain. The company produces 3.2 million units per year for its customers around the world.

Since its creation less than a year ago, HORSE has maintained an upward trajectory, thanks to its strong focus on R&D and cutting-edge technology as well as its ability to form new commercial partnerships.

Ends

About HORSE

HORSE is a global supplier of innovative power solutions. It believes that there is no one-size-fits-all solution to sustainable mobility and so is investing in technologies which will support the automotive industry, and other sectors requiring power generation, in their transition to a sustainable future. Inheriting decades of industrial know-how from Renault Group, HORSE develops, produces and supplies highly efficient full-hybrid, plug-in hybrid and internal combustion powertrains, and cutting-edge technologies (engines, gearboxes, full-hybrid and plug-in hybrid systems, and batteries).

Employing over 9,000 people in seven countries, it is headquartered in Madrid, Spain and has eight manufacturing plants and three R&D centres around the world (Argentina, in Córdoba; Brazil in Curitiba; Chile in Los Andes; Portugal in Aveiro; Romania in Bucharest, Mioveni and Titu; Spain in Seville and Valladolid, and Turkey in Bursa in partnership with Oyak).