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Bonfiglioli @ SPS Italia takes center stage with its mechatronic solutions for automation

Calderara di Reno, Bologna, 13th Mai 2025 – Bonfiglioli is showcasing at SPS Italia, the highlight event for the intelligent, digital and sustainable industry, taking place in Parma from 13 to 15 May. At SPS Italia, Bonfiglioli presents its solutions for AMRs, smart and rolling conveyors, palletizers and packaging/flowpack machines, in the form of demo and static solutions. A special focus is also dedicated to the premium frequency inverter AxiaVert and its advanced safety function, as well as to electronics, with the solutions developed by Selcom.

Supporting material handling operations with systems for AMRs

Autonomous Mobile Robots are essential to simplify intralogistics process flows. For this sector, Bonfiglioli presents the **BlueRoll Platform** featuring a **compact low voltage wheel-mounted planetary gearmotor of the BMS Series**, which is compatible with electronic drives and can include 24 or 48-volt batteries. The BMS Series stands out for its compact, flange-free design, delivering **high torsional stiffness** and **low moment of inertia** — ideal for precision applications where accuracy and efficiency are critical. Thanks to its **space-saving architecture** and **versatile configuration options**, the BMS Series enhances performance by seamlessly combining the advantages of permanent magnet technology, low-voltage synchronous three-phase AC motors and precision planetary gearboxes. In Parma, the **Helko AMR** is showcased in action: the result of the close collaboration between Bonfiglioli and Eureka System S.r.l., Helko is a truck robot specifically designed to tow carts and workbenches weighing up to 250 kg. What truly distinguishes Helko is its **innovative lateral coupling mechanism**, offering unique technical and mechanical advantages. This groundbreaking feature ensures secure traction and optimal wheel grip, even on uneven surfaces, while its **motorized wheels** and **electric drive** developed by Bonfiglioli through a fully tailor-made approach are guarantee for maximized efficiency, flexibility and performance.

Bonfiglioli's top systems for high efficient material handling operations

For Material Handling applications, such as **smart conveyors**, Bonfiglioli presents a demo featuring **three A Series** helical bevel gearmotors, each covering a different torque range — A10, A20, and A30 — paired respectively with the BXN, BSR and BX motors, along with a sensorized DGM-MPM modular inverter. This setup showcases Bonfiglioli's broad offering of gears and motors, as well as the ability to connect multiple GMIs to a single EDGE IPC. The compact, globally certified IE3 BXN motor stands out for its wide voltage range, making it an ideal solution for automation applications. Meanwhile, the combination of the highly efficient **BSR reluctance synchronous motor** — free from rare earth elements and rated in the IE4 efficiency class — with the **DGM decentralized inverter** offers a significant advantage, improving both energy efficiency and the total cost of ownership (TCO) of machines and processes. The **BXN motor**, one of Bonfiglioli's key focus areas, is under continuous development and is now **made available up to size 132**. Its distinctive feature is its **intrinsic global nature**, offering flexibility in terms of voltage and frequency, making it technically suitable for various installations worldwide. Moreover, it is compliant with major international standards and can be sold on the European and American markets without any additional accessories, while the Global CN option makes it suitable for the Chinese, Indian and South American markets as well. Starting from July, the **global configuration** will also apply to the **brake**, which can therefore be installed without modification across different target markets. Completing the system is the **Z-Sensor, directly**

PRESS RELEASE



connected to the inverter without the need for additional cabling between the inverter and PLC. This sensor enables real-time on-site data collection, transmitted via Profinet Fieldbus and forwarded through OPC-UA to Bonfiglioli's IIoT platform, allowing for continuous gearbox monitoring and proactive failure prevention.

Bonfiglioli's excellence for optimized operations in intralogistics and packaging

For intralogistics processes, more specifically **rolling conveyor**, the static solution presented at SPS combines the **EVOX CP helical in-line gear unit**, with a modular, reliable and energy efficient **IE3 BXN asynchronous e-motor** and the **Premium Inverter of the AxiaVert** series. EVOX CP combines reliability, guaranteed by high-quality components, with exceptional mounting flexibility. It features a smooth surface and a standardized mechanical footprint, allowing for easy interchangeability with any equivalent product on the market. Additionally, the absence of an oil breather allows the gearbox to be mounted in any position while maintaining the same oil level, simplifying configurations.

An additional solution, designed for palletizers, features a **BMD servomotor** that delivers superior dynamic performance and resistance to high overloads, paired with a **precision planetary inline gearbox from the TQ Series**, known for its high torque density, excellent overload capacity, exceptional precision, and minimal backlash. The solution is completed by the **servo inverter series ANG Active Next Generation**, which integrates a micro controller featuring new enhanced functionalities such as cyclic synchronous positioning mode with cubic interpolation, brake control and evaluation of feedback contact. For flow pack packaging processes Bonfiglioli showcases solution incorporating a **BMD synchronous servomotor**, a **helical bevel gearmotor** of the **A Series** and the **AxiaVert inverter**.

AxiaVert: Bonfiglioli's premium frequency inverter with enhanced functionalities

A special focus is dedicated to **AxiaVert**, the premium series of frequency inverters offering integrated functional safety, precision and control for any industry and process. At SPS, AxiaVert is showcased in two hybrid systems. In the first, it is paired with a **BMD servomotor**, and in the second, with a **BMS servo gearmotor**. Both systems feature innovative **single-cable technology** which simplifies installation, saves space and operates in PTP or Master/Slave mode. The high-resolution encoders used in the BMD/BMS motors enable extremely precise positioning, making them the ideal choice for demanding applications, particularly in motion control, labeling and filling. Thanks to its **modular design**, AxiaVert is a drive that seamlessly integrates into any Bonfiglioli technology and automation network, ensuring **compatibility with** the most used Fieldbus protocols – Profinet, Ethercat, Ethercat IP and Powerlink – using a single product code via a multiprotocol board. This enhances production optimization in line with Industry 4.0 standards. Prioritizing functional safety, Bonfiglioli's AxiaVert provides all **key safety functions** required by the market, including STO, SS1, SBC, SLS, SLP and SOS. Its various Functional Safety variants allow for optimized configuration, reducing the need for external safety components while ensuring safe and controlled operation to meet industry standards. Furthermore, AxiaVert excels in Fieldbus EtherCAT FSoE communication integration, significantly reducing labor and cabling costs by transmitting all safety communications between the inverter and PLC via the fieldbus. Among AxiaVert's new functionalities a plus is represented by the reliable **spindle control** for both **synchronous** and **asynchronous motors**, **ideal for multi-axis CNC systems**.

Bonfiglioli and Selcom: the best combination for powerful mechatronic solutions

PRESS RELEASE



Selcom, a member of the Bonfiglioli Group, is also showcasing its custom electronic solutions at SPS Italia. The company offers a broad portfolio of **high-performance mechatronic** and **system integration technologies**, reflecting its **commitment to industry-leading standards** and **tailored customer solutions**. Featured products include PLCs, sensors, TFT touchscreens, DC-DC converters for battery-powered applications, inverters, and an induction welding generator—each illustrating Selcom's versatility and client-focused approach. A new product is in the spotlight: an Industrial PC boasting 7 GBIT Ethernet ports able to control six different networks, plus an exclusive commissioning port. Moreover, the 4 USB ports and the display port allow for great flexibility.

Bonfiglioli's presence at SPS Italia highlights its extensive expertise in developing steering and traction systems, offering a product range known for its efficiency, reliability, low-noise design, flexibility, scalability and environmental sustainability.

Bonfiglioli Group

Bonfiglioli is a worldwide designer, manufacturer and distributor of a complete range of gearmotors, drive systems, planetary gearboxes and inverters, which satisfy the most challenging and demanding needs in industrial automation, mobile machinery and renewable energy. The Group serves more industries and applications than any other drives manufacturer and is a market leader in many sectors; its three business areas - Industry & Automation Solutions, Mobility & Wind Industries, Selcom Group - embody all the expertise and experience acquired over the years in the respective industries. Established in 1956, Bonfiglioli operates worldwide in 80 countries with 23 commercial sites, 18 production sites, a wide distribution network comprising more than 550 partners, and can count on over 4,700 professionals. Excellence, innovation, and sustainability are the drivers behind the growth of Bonfiglioli as a company and team and represent the guarantee of the products and services quality offered its clients.

More information available at www.bonfiglioli.com.

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