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New FANUC ROBOSHOT helps injection moulding shops take control

Enhanced control and software functionality is among a myriad of new customer-focused benefits provided by the ROBOSHOT Alpha-SiB

With the release of the FANUC ROBOSHOT ALPHA-SiB series of injection moulding machines, FANUC is building on its already strong market position in the European plastics industry. Numerous enhancements to the machine's control, software and performance provide customers with countless advantages while maintaining the FANUC ethos of high performance, high sustainability and ease-of-use through its all-electric design. Both OEM mould shops and contract moulding facilities serving sectors such as medical, automotive, electrical, optical and packaging – to list but a few – will all benefit from this advanced new machine.

“In the ALPHA-SiB we have a new ROBOSHOT injection moulding platform that brings major advantages in functionality and performance, coupled with established FANUC cornerstones such as all-electric, energy-efficient operation, the demand for which continues to accelerate,” explains Andrew Armstrong, Head of Sales - ROBOSHOT Europe. “The common FANUC motion-control platform is another factor that gives the ROBOSHOT ALPHA-SiB a unique market position, which of course extends to the potential seamless integration of plug-and-play FANUC robots. Then we have arguably our number one USP: reliability. Put simply, ROBOSHOT cost-of-ownership is potentially the lowest in the marketplace. Our customers significantly benefit from the low consumable costs along with market leading energy efficiency.”

Large, high-resolution display

Central to the enhancements in the FANUC ROBOSHOT ALPHA-SiB is the new high-performance FANUC PANEL *iH* Pro user interface, which features a large 21.5” display with full HD resolution, thus improving on the previously available resolution by a factor of 2.6. Supported by additional keys for more functionality, the new HMI facilitates quicker set-ups, enhanced data viewing and improved graphics. Moreover, with its Windows 10 IoT-based operating system, the PANEL *iH* Pro makes data collection easy, particularly with multi-USB connectivity for memory sticks (USB 3.0 capable), camera, 2D code reader, RFID devices and more.

The new control offers a flexible screen layout, including split-screen display capability that provides customers with dual functionality. As a result, ROBOSHOT ALPHA-SiB

operators can - for example - view the machine's setting pages while simultaneously interacting with peripheral devices, such as a robot or temperature control device. The machine's manual can also appear on the display, helping users if they need support with a particular setting function or operation.

FANUC's PANEL *iH Pro* ensures intuitive operation via swipe or multi-touch commands akin to a smartphone. Notably, the HMI's capacity is now larger in relation to data storage, process monitor history, alarm history and machine operation log. Users can therefore gather more information, helping moulding shops provide their customers with data requirements like validation, or perhaps when investigating process conditions, issues or trends.

Expanded AI functionality

Increased software functionality is a major feature of the new FANUC ROBOSHOT ALPHA-SiB. For instance, now added to the standard ROBOSHOT software package are functions that include auto-shutdown sequence, pre-suck back function, automatic start-up parameter change, operator management function (option with RFID access) and resin character evaluation (when Linki2 is installed).

The optional FANUC Linki2 production and quality information management tool now supports web browsers on PC and tablet devices. Linki2 can also run on the ROBOSHOT screen, while thanks to embedded OPC-UA communications capability, interfaces are available for EUROMAP 77 and 63 to permit data exchange with ERP or MES systems.

Another software enhancement set to benefit customers is preventative maintenance through machine learning (expanded AI functionality). The ROBOSHOT ALPHA-SiB can estimate wear levels on the sliding valve within the screw based on check ring behaviour. Here, AI backflow monitoring detects waveform changes in relation to the amount of wear, alerting customers to a forthcoming issue before impacting the process. The presence of wear can extend reaction times and affect process consistency, so this feature is extremely beneficial to ROBOSHOT users.

Faster injection rates

In support of the faster response times provided by the PANEL *iH Pro* HMI, notable machine performance enhancements include increased injection rates of up to 350 mm/s, helping customers to boost productivity. Among further performance-related improvements are higher standard injection pressures, expanded screw diameter availability and the potential for up to four-axis servo-core control.

This latter point picks up on the integration of servo-electric control for mould core movements, in place of traditional hydraulic cylinders. Like previous generation models, the new ROBOSHOT ALPHA-SiB is all-electric. However, to avoid having a tool that features hydraulic cores, ROBOSHOT customers benefit from all-electric FANUC servo motors and inverter drives, thus negating the need for hydraulics anywhere in the process.

Aside from better environmental credentials, electric technology is far cleaner and more convenient than hydraulics (no oil disposal), making this advance important for sectors

such as medical, where the absence of particulates and vapours in cleanroom environments is paramount.

Finally, the ALPHA-SiB builds on the ROBOSHOT platform's reputation for precision with high repeatable accuracy, a concept that complements the machine's reliability and ease-of-maintenance. The ROBOSHOT ALPHA-SiB also conforms fully to ISO 20430, the international safety standard for injection moulding machines.

Lifetime machine support

Thanks to a comprehensive Europe-wide network of service centres, FANUC can offer lifetime support for its machines, providing complete peace-of-mind for customers in the rare event of an issue.

The ALPHA-SiB series is initially available in 50, 100, 130, 150 and 220-tonne models, with various injection capacities. Higher tonnages models (250, 300 and 450 tonne) are set to follow. Already available for order intake, FANUC intends to give the ROBOSHOT ALPHA-SiB its European premiere at the forthcoming EMO (Italy) and FAKUMA (Germany) exhibitions, assuming they proceed as scheduled in October 2021.

About FANUC

The FANUC Corporation is one of the worldwide leaders in factory automation for CNC control systems, robots and production machinery (ROBODRILL, ROBOCUT, ROBOSHOT and ROBONANO). Since 1956, FANUC is the pioneer in the development of numerically controlled machines in the automation industry. With more than 264 FANUC locations worldwide and more than 8,000 employees, FANUC offers a dense network in sales, technical support, research & development, logistics and customer service.

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