Mitsubishi Solutions

Vertical Form, Fill & Seal

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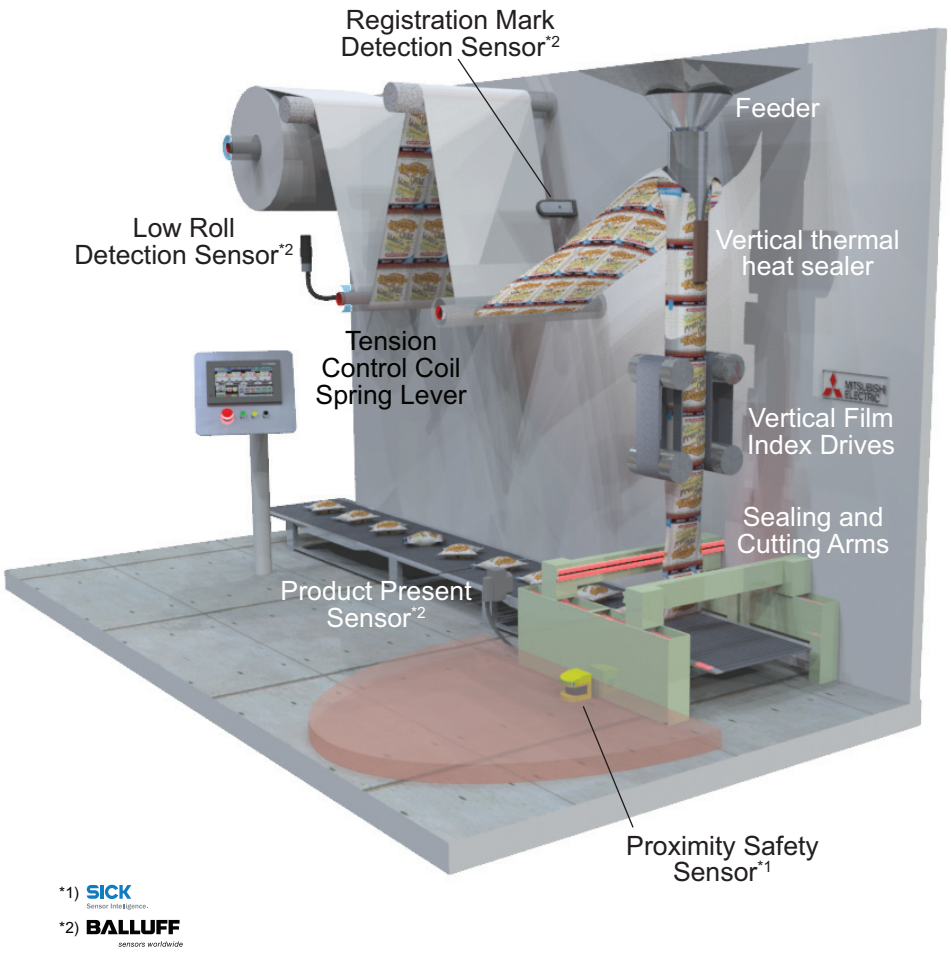
iQ Platform Stand-Alone Motion Controller: **Q170MCPU**
Servo Amplifier: **MR-J3-B**
Servomotor: **HF-KP, HF-JP**
Graphic Operation Terminal: **GOT1000**
VFD: **E700**



Example Applications

Applications suitable for vertical form, fill & seal operations include but are not limited to:

- Food/beverage bag filling
- Pouch packaging
- Industrial powder filling

Overview

Vertical form fill & seal applications utilize servo motor technology to accurately pull and feed plastic film material from a roll stock to be heat formed, volume dosed with a product, and then sealed and cut to be carried away by an unloading conveyor. While the methods for filling and sealing vary from machine to machine, vertical form fill & seal applications are essentially organized into two categories; Continuous motion bagging machines and intermittent motion bagging machines. Product entering the feeder can vary from a viscous fluid to a solid material and will often play a key role in how the machine is designed.

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Features	Advantages and Benefits
Combined motion controller + PLC • High-speed processing times with direct memory sharing • Built-in I/O and encoder input with mark registration capability	• Reduced overall cost ◦ Reduced inventory cost (only one unit) • 25% improved machine throughput ◦ 0.44ms refresh time for servo network ◦ Industry leading memory sharing speeds
VFD control from the HMI • Direct access to all parameters: Change speed on the fly • Monitoring status screens	• Reduced wiring costs and labor: Direct control from one component • Less downtime: Easy to remotely monitor and troubleshoot problems from an HMI
SSCNET III fiber optic servo network • Easy to set up and configure: Automatic parameter transfer • Noise immunity	• 20% reduced wiring cost • Reduced setup time: (plug & play) 
Mechanical support language with virtual axes: Easy to design complex motion profiles using motion development software, MT Works2.	• 50% reduced programming time • Reduced labor cost • Reduced machine cost (less mechanical and electrical components) 
High resolution absolute encoders: Smooth and accurate positioning with 18-bit resolution (262,144 ppr) absolute encoders.	• Reduced overall cost ◦ Reduced inventory cost (absolute encoder is standard) ◦ Reduced machine & maintenance costs (eliminate switches) • Reduced setup time ◦ Re-homing not necessary after power down ◦ Direct setting for start/stop positions
Real-time model adaptive auto tuning: MR-J3 amplifiers tune automatically and continuously, eliminating the need to re-tune or adjust manually.	• 30% reduced machine setup time • Increased machine lifetime • Improved productivity
Options for expansion: • Connectivity to SICK Safety Devices • Connectivity to Balluff sensors	• Protection against injury creating safer working environment • Increased machine throughput and efficiency SICK Sensor Intelligence. BALLUFF sensors worldwide

Note: The values listed above are based on a real world application.

Customer Testimonials

- *"The Mitsubishi hardware really is bullet-proof. We've been using the same hardware for 10 years without any failures."*

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