

Technology Brief

Q & A Format

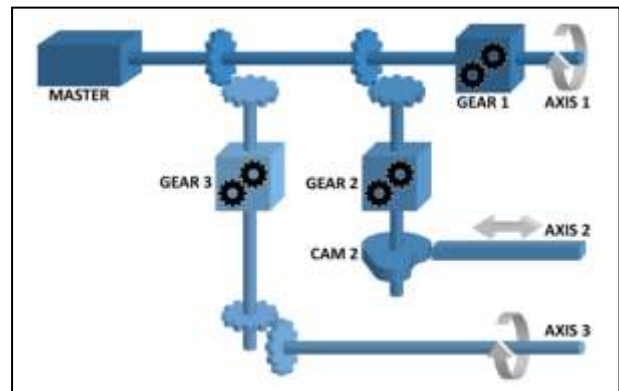
INSIGHT TO PACKAGING MACHINE CONTROL TRENDS

Use of robotics (i.e. Delta Robots) and control flexibility to integrate machine modules and/or options dynamically is increasing. As OEMs push the envelope of machine throughput, features and methodologies historically reserved for other market segments are being widely utilized. Choosing a supplier with diversified expertise will become more critical to achieve sustainable advancements.

As a machine builder, what packaging machine control problems exist today that are relatively easy to solve? As a user, what improvements can be made?

With an increased global sensitivity to energy conservation, more packaging OEMs are looking to electrification of their designs. Few companies can invest in hiring neither the necessary expert nor experienced engineers. With intuitive motion control programming tools like Kollmorgen's [Pipe Network™](#), even novice mechatronics engineers can develop flexible and highly advanced motion.

More so than ever, end-users are sensitive to improving productivity through reducing scrap and waste, achieving higher accuracy and increasing uptime. All Kollmorgen automation controller products include non-volatile memory storage which eliminates position resetting to minimize waste after power-failure, emergency stop, and material change over situations. Our highly integrated [Kollmorgen Automation Suite™](#) platform is optimized with an intuitive interface for saving critical machine information.



Pipe Network™ concept through mechanical analogy

What machine control problems remain to be solved?

Communication network bandwidths will need to increase to keep up with machine performance demands for more integrated machine data processing. Islands of automation, once a problem in the automotive industry, can still be an issue today when a processor needs to integrate various packaging machines, conveyors and inspection systems.

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Insight to Packaging Machine Control Trend



Robots are becoming more flexible (easier to program) because of teaching tools. Packaging machine equipment has not always been known to be very flexible. What changes in controls, sensors and motion equipment are letting processors to make product changes with minimal time to “re-program” a packaging machine and/or line?

Building and changing over processing lines quickly and easily is now a reality using soft PLCs (IEC61131-3 standard) and motion controllers that provide graphical cam and gearing design (such as Kollmorgen’s [Pipe Network](#)™). Built-in machine simulators allow designers and users a low risk way to iterate machine designs quickly and easily as machine and motion elements are developed and changed to meet production requirements.

What advances in sensing equipment (video, proximity sensors, etc.) are adding flexibility and value to packaging equipment?

Vision systems are making great advancements. Some companies are providing more intelligence built into their sensors as well as providing additional connectivity.

From process feedback to inspection, sensors such as the “Checker” are bundling vision, inspection, and logic into a single package that is easier to apply.

What advances in motion and position controls (including robotics) are adding flexibility and value to packaging equipment?

New [motion controller](#) and drives technologies with faster processing speeds are helping machine builders develop higher performing machines — small footprint and flexible with higher productivity.

Kollmorgen is enabling machines builders to design machines for scalability with Kollmorgen Automation Suite – a software platform that transcends multiple hardware platforms. Machine builders realize code reuse and reduced development time for machines from 1 to 128 axes of motion.

What advances in controls and interfaces (HMIs) are making it easier for operators to make changes (especially if English is not their primary language)?

[Kollmorgen Visualization Builder](#)™ is a graphical tool for building the software that defines the human machine interface.

An integral part of the total [Kollmorgen Automation Suite](#)™ development environment, Kollmorgen Visualization Builder gives a quick, easy way to create your HMI program and transfer it to the target hardware, whether it’s a touch panel PAC or a standalone HMI panel.

In addition, it offers multilingual features and automatic translation services through Google Translate or Microsoft Bing Translator.

Kollmorgen Automation Suite™ is a complete, integrated set of software tools and hardware components designed to accelerate the development of high-performance machines. Its pre-integrated components and easy-to-use rapid software development tools help bring better machines to market faster and more affordably. By using this automation platform, OEMs can create machines that produce the highest-quality products with optimum throughput, minimal waste and outstanding OEE.

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Insight to Packaging Machine Control Trend

Food safety has been an issue on the processing side. What is being done to make packaging equipment even safer? Easier to clean?

A range of machine automation product solutions are coming to market which give machine builders options to meet the demanding and variable hygienic needs of food processing and packaging.

Round, smooth surfaced [stainless steel housed and sealed servomotors](#) offer machine builders a machine-ready option to meet the most demanding processing and cleaning requirements. Sealed standard servomotors with special washdown ready coatings are also available for areas with less demanding



Kollmorgen's Stainless Steel W Series

cleaning processes. Also coming to market are sealed servo drives with special washdown ready coatings. These servo drives may be mounted on the machine frame near a servomotor — saving cable run lengths and control cabinet space.

What else is important to consider?

Continuing advancements in operational productivity require tight integration with machine safety thus requiring machine designers to keep abreast of machine international machine safety requirements and regulations. PMMI trade association has been instrumental in including international requirements and regulations while developing the new ANSI/PMMI B155.1-2011 Safety Requirements for Packaging Machinery and Packaging Related Converting Machinery standard which went in effective in September 2011. The B155.1 standard provides design safety guidelines for industrial and commercial machinery and contains several control design options. The standard is available to purchase from the American National Standards Institute (ANSI).

ABOUT KOLLMORGEN

Kollmorgen is a leading provider of motion systems and components for machine builders around the globe, with over 70 years of motion control design and application expertise.

Through world-class knowledge in motion, industry-leading quality and deep expertise in linking and integrating standard and custom products, Kollmorgen delivers breakthrough solutions unmatched in performance, reliability and ease-of-use, giving machine builders an irrefutable marketplace advantage.

For more information visit www.kollmorgen.com, email support@kollmorgen.com or call 1-540-633-3534.