



AUTOMATION



Automation Technology

Operational efficiency and streamlined production processes are critical to businesses around the globe. Columbus McKinnon and its dedicated Automation Division are working side by side with customers to **leverage automation technology to improve their safety, uptime, and productivity.**

Combining our skills as lifting specialists with the technology of our Magnetek® brand, we are **helping solve high-value problems** that are important to your business. Our efficient and reliable automation systems not only enhance system analytics and diagnostics, but also help prevent equipment damage through simplified maintenance, troubleshooting, and operation.



We'll partner with you every step of the way, from project evaluation and design to installation and aftermarket support, to ensure your application needs are met – every time.



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Why Automate?

Do you have technology in place to help you plan maintenance to prevent costly downtime? Do your processes suffer from complexity that causes variations in product quality? Do you lack skilled operators who know how to prevent and correct load swing?

Implementing automation in your systems and processes can have a big impact on your facility. Not only can it help increase **productivity** and maximize the **uptime** and performance of your operations, it can also improve product quality, optimize labor, increase energy efficiency, and provide numerous **safety** and health benefits.

Safety

PROGRAMMED SAFETIES

CONSISTENT, PREDICTABLE OPERATION

IMPROVED WORKING ENVIRONMENT

OPTIMAL ERGONOMICS

Uptime

INCREASED CYCLE TIME

REDUCED WEAR ON EQUIPMENT

PREDICTIVE MAINTENANCE

Productivity

CONSISTENT AND REPEATABLE PROCESSES

IMPROVED PROCESS EFFICIENCY

REDUCED RISK OF PRODUCT DAMAGE

LOWER CHANCE OF HUMAN ERROR





How Can We Solve Your High-Value Problem?

Columbus McKinnon provides technologically advanced automation solutions for your unique challenges, no matter the application or industry. As the **trusted experts**, we will work with you to transform your problem areas and process issues to improve efficiency and produce a superior product.

Columbus McKinnon offers a variety of system options, ranging from semi- to fully automated solutions.



Automation Solutions

For common crane applications, such as **off-center pick detection, no-fly zones, and auto dispatch**, we provide pre-engineered systems. **Our Intelli-Crane™**

family of built-to-order automation solutions is designed for ease of use, quick configuration, and feature short lead times to get your system up and running quickly. These systems are ideal for both new installations and retrofit applications.



PROTECT

INTELLI-PROTECT™ NO-FLY ZONE TECHNOLOGY

Implementing no-fly zones limits the risk of collisions, increases safety for equipment and personnel, and improves facility throughput. The Magnetek-brand Intelli-Protect system allows you to designate locations where a crane is programmed to slow down or stop, using motion control products such as variable frequency drives, radio remote controls, limit switches, and sensors. These versatile systems – ranging from simple two, three, and four-sided configurations to more complex systems with up to 31 protected areas – can be added to new or existing crane controls.

GUIDE

INTELLI-GUIDE™ AUTO-DISPATCH TECHNOLOGY

Auto-dispatch technology helps increase productivity in a facility. Utilizing radios, drives, motors, brakes, and automation programming, our Magnetek-brand Intelli-Guide system allows operators to program locations into a PLC or controller, then automatically send the crane to different areas within the facility with the push of a button. While the crane is moving on its own, the operator can work on a different task or start on the next step of the production process. These systems can be configured to include multiple locations depending on application needs.

LIFT

INTELLI-LIFT™ OFF-CENTER PICK, SNAG DETECTION, AND CORRECTION

Swinging loads, whether caused by misalignment or snags, are not only dangerous for your employees but can damage equipment, resulting in costly repairs and downtime. Magnetek-brand Intelli-Lift is a safe lifting feature that detects a load misalignment or snagged condition and alerts operators with a visible and audible warning before a dangerous situation occurs. Using sensors and a status control enclosure, the system activates lights and an optional warning horn if a side pull or off-center pick is detected. From there, the misalignment or snag can be corrected manually or automatically by the Intelli-Lift System.



CONNECT

INTELLI-CONNECT™ DIAGNOSTICS AND ANALYTICS

Columbus McKinnon's diagnostic solutions enable the quick and easy programming, maintenance, monitoring, and troubleshooting of your entire system, from the controls to the gearbox. Advanced diagnostics provide critical information, such as positioning and motion, equipment status, and energy use, to keep your system and products functioning effectively. Our diagnostic capabilities deliver this information in real-time, whether you're using a laptop, tablet, or human-machine interface (HMI), to help you manage equipment 24/7 from any location. With diagnostic information available at your fingertips, you can address issues more quickly, plan maintenance, and ultimately reduce downtime.



Automation Application Software

In addition to the Intelli-Crane family of automation products, Columbus McKinnon also provides a variety of crane and hoist application-based software for everything from sway control to drive synchronization. These intelligent software solutions can be used on their own or bundled together with our Intelli-Crane automated systems for a comprehensive automation solution specific to your application needs.



MEASURE

WEIGHT MEASUREMENT SYSTEM (WMS) SOFTWARE

Incorporating weight measurement software into your lifting systems can provide many safety and equipment maintenance benefits. The WMS offers increased safety by preventing a lift from overloading the crane system. It also helps prevent damage to the crane structure and wear and tear on equipment, increasing uptime and reducing maintenance needs. Our Magnetek-brand Weight Measurement System combines the functions of load summing and weight measurement in a convenient custom software. Programmed within IMPULSE®•VG+ Series 4 Drives, WMS can measure and sum loads across multiple hoists without the need for a PLC and detects overloads on individual or multiple hoists. These measurements can then be displayed on a scoreboard or external display.

SYNCHRONIZE

DRIVE SYNCHRONIZATION SOFTWARE

When there's a need to synchronize multiple drives, our IMPULSE® Drive Synchronization Software makes it easy. This customized Magnetek-brand software allows you to synchronize IMPULSE•VG+ Series 4 Drives to precisely control motion and prevent the operator from making an uneven lift, increasing operator and facility safety. It also helps improve productivity by eliminating the need for the operator to manually level the hoists. This software is ideal for operating a multiple hoist application independently or synchronized, as well as synchronizing a cable reel to a hoist, multiple trolleys on a single bridge, or multiple motions between two or more cranes.

OPERATE

BUCKET CONTROL SOFTWARE

When your application requires the use of multi-line clamshell or grapple buckets that utilize a holding and closing hoist, our Magnetek-brand Bucket Control software can help. This custom software utilizes two IMPULSE•VG+ Series 4 Drives to control the lifting, lowering, opening, and closing of these buckets. Although the close and hold drives operate independently, the software lets you control the various motions of the bucket without the need for a PLC, saving you money. You will also save time when replacing wire ropes by utilizing the built-in electronic programmable limit switch function, making this a much quicker and easier task.



CONTROL

SWAY CONTROL TECHNOLOGY

Magnetek-brand Sway Control Systems (SCS) help improve productivity by preventing load swing caused by the pendulum effect. The system also improves the accuracy of load placement and reduces material damage caused by incidental contact of swinging loads. This custom software is embedded in our IMPULSE•G+ Series 4 Drives for new or existing crane control systems without the need for external programmable logic controllers (PLC) or costly height measurement devices. Sway control can be installed in new and retrofit applications.



Automation System Components

Behind every automated system are two critical components: drives and radios. **IMPULSE variable frequency drives** are specially designed for material handling applications, providing a complete package of crane-specific capabilities far beyond a general-purpose drive's functionality. Safety features are integrated into every drive and radio, preventing harm to the crane structure and equipment and, most importantly, creating a safe working environment for operators.

We also offer **regenerative systems** designed to take surplus energy from the motor and return it to the AC power source. These systems not only reduce total energy consumption; they improve energy efficiency to reduce overall energy expenditures.



Our extensive portfolio of **Magnetek-brand radio remote controls** can be customized to meet the needs of almost any application. Our rugged handheld and bellybox systems provide equipment operators with better positioning for job visibility and safety, data feedback, and extended machine life. From traditional units to our most sophisticated systems, our product portfolio provides total radio control in an ergonomic, high-quality design.



Custom-Engineered Solutions

For complex projects requiring unique, customized solutions, our engineered-to-order solutions are ideal for your specific applications. Designed by our highly technical team of software, design, and control engineers, **our custom solutions integrate our industry-leading products and software with programming specific to your needs.** These systems include everything you need for a complete system, including variable frequency drives, collision avoidance technology, PLCs, HMIs, wireless and RF communication, workflow monitoring, and more.





Not only do these systems bring the benefits of automation to your equipment and processes, they also **provide you with analytical and diagnostic tools to maximize the uptime of your operations.** These tools provide you with trends, alarms, and alerts, straight to your personal electronic device, to help you monitor the health of your crane and schedule planned maintenance to avoid unexpected downtime.

Whether you need to protect valuable assets and personnel with zone protection technology or increase productivity with fully automated crane solutions, **CMCO Automation is here to help you through every step of the process.**

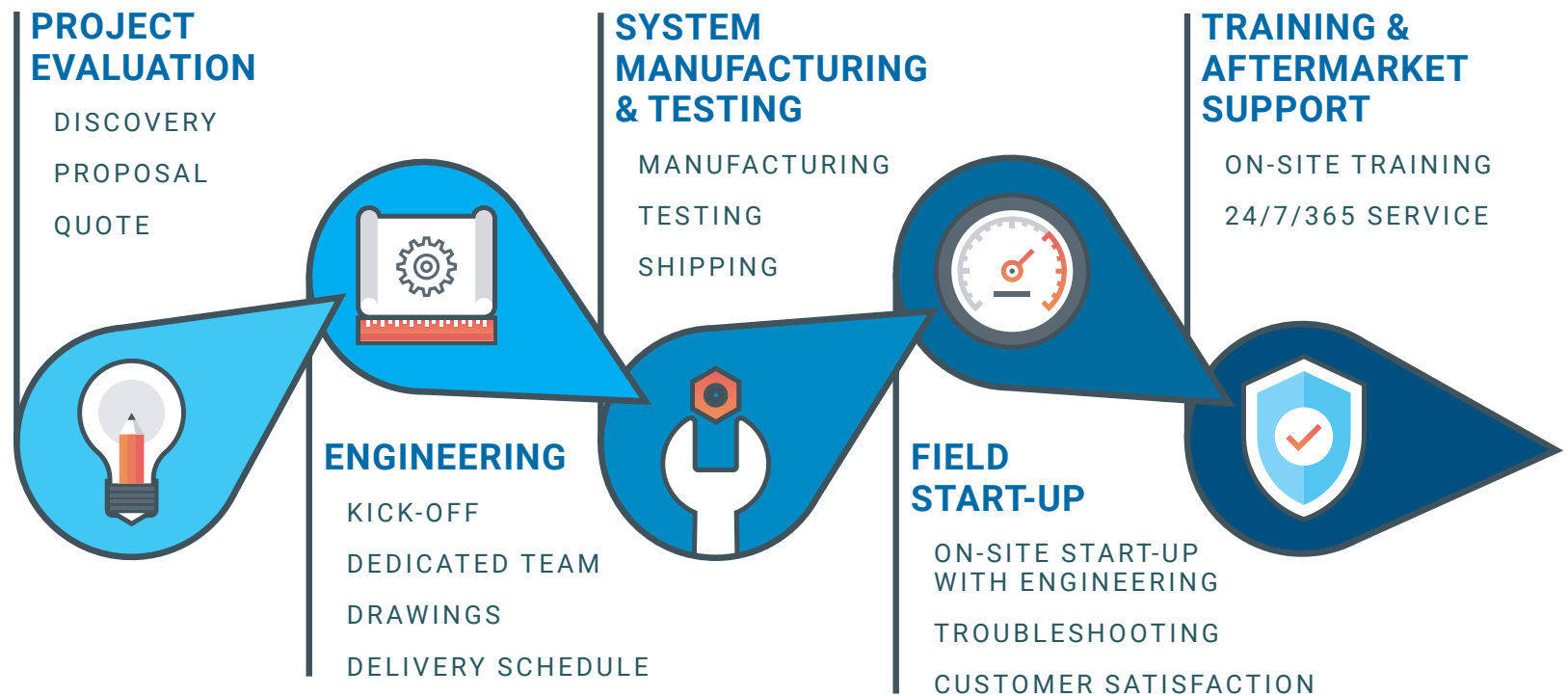


Why Partner with Columbus McKinnon Automation?

From project evaluation to aftermarket support, we are here to ensure your success. **Every automated system from Columbus McKinnon is designed, engineered, and built in-house by our expert team of engineers and automation specialists.** With a suite of industry-leading products and decades of automation experience from our Magnetek team, we will develop a high-performing system to your exact requirements, complete with drawings, control fabrication, and comprehensive testing.

You'll also benefit from a dedicated controls engineer who will manage your project from start to finish, ensuring your system is delivered on time to your exact specifications. Not only will they write the PLC code for your system, they will handle on-site field startup and training for your project.





We are experienced. Columbus McKinnon has worked with customers in a variety of industries to implement automated solutions. Our application experience includes steel and aluminum processing; storage and retrieval; automotive manufacturing; aerospace manufacturing; waste-to-energy; hydro-electric power generation; heavy machinery; shipbuilding; ports and transportation; and more.

We understand the benefits and challenges of automation. Using our expertise, we will assess your application needs and work side by side with you to transform your systems and processes with our industry-leading automation technology.

Success Stories

COMMUNICATION Automated Aerospace Assembly System

Automating a wing assembly monorail control system, we implemented **Magnetek-brand IMPULSE•VG+ and G+ Mini Variable Frequency Drives, Flex VUE® and ATEX-approved XLTX radio remote controls with Flex M receivers, and SBP2® Pendant Pushbutton Stations**. The highly sophisticated system utilizes PLCs, HMIs, Ethernet/IP wireless communication, and barcode scanning for tracking and process control of bridges and monorail carriers.





EFFICIENCY

Waste-to-Energy Bridge Crane Automation

Updated bridge cranes with semi-automated controls increased speed, reliability, and productivity, nearly doubling throughput from 200 to 400 tons of processed waste per day. All-new **Magnetek-brand IMPULSE•VG+ and G+ Variable Frequency Drives and hoist motors** were installed, as well as PLC interfaces to ensure continuous operation and maximum performance.



EXPERTISE

Hoover Dam Crane Control Modernization

The Hoover Dam Power Plant houses four 300-ton cranes that are used to move and maintain the 17 main vertical hydraulic turbines. Improving productivity, safety, and reliability, we supplied **Magnetek-brand IMPULSE•VG+ and G+ Variable Frequency Drives and XLTX radio remote controls** on each of the cranes. We also provided crane-to-crane communication for PLC assisted synchronized motion control on hoists, trolleys, and bridges.

SAFETY

Automated Hot Metal Monorail System

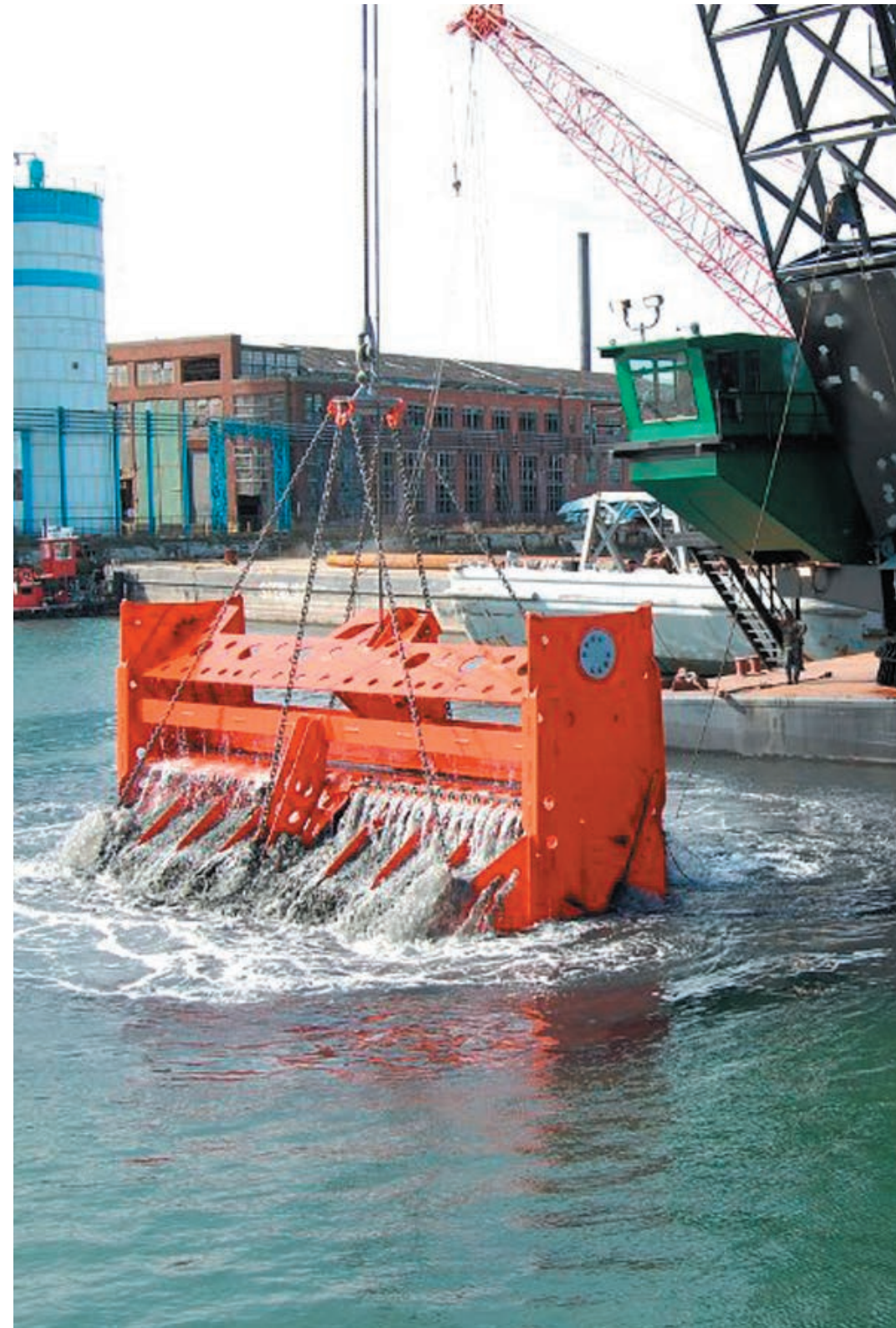
Continuous, repetitive motions increase the likelihood of fatigue, resulting in safety concerns for operators, equipment, and other personnel. Automating a hot metal monorail system with **Magnetek-brand IMPULSE•VG+ and G+ Variable Frequency Drives, a PLC**, and precise positioning technology, optimized throughput and provided a more effective workplace and safer operating environment.



TECHNOLOGY

Dredge Crane Project

Magnetek-brand IMPULSE•VG+ and G+ Variable Frequency Drives with Bucket Control Custom Software were paired with Blue Max® Motors to control the highest-producing dredge crane operating in North America. With the new system, the crane's service life was extended from 20,000 hours to more than 200,000 hours.





PRODUCTIVITY

Fully Automated Solution for Mill Scale Clarifier

To replace manually operated controls for a mill scale clarifier system, we developed a **fully automated solution complete with IMPULSE•VG+ and G+ Variable Frequency Drives with custom crane-specific software, IMPULSE®•Link Software, PLCs, and HMIs**. Connected via Ethernet communication, the system continuously reports analytics and diagnostic information to keep operators informed of system status and executes tasks without human intervention.



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