CASE STUDY

OMRON
AUTOMATION & SAFETY

Automation Domination – Filling the coffee market with faster, smarter and more reliable equipment

Houston, Texas-based Automation Supply and Engineering (AS&E) has been around since 1987, specializing in precise auger filler systems for granular products, mainly in the coffee industry. Thanks to a unique business philosophy, their auger fillers can be found in small roasting houses, co-packing facilities as well as transnational corporations. They accomplished this success by continuously listening to the needs of their customers and delivering world-class automation to exceed their goals. AS&E's reluctance to settle for anything less than world-class performance has led to intensive partnerships with suppliers like Omron Automation and Safety.

Driving Innovation

Today's coffee roasters operate in a competitive market where consumers demand higher quality products at an economical price. Investing in high-performance production machinery is no longer a luxury – it is necessary to stay profitable in a competitive market.

AS&E designs auger fillers that perform at a level of accuracy, speed and dependability that has driven them to the forefront of technical innovation in the coffee industry. Based on proprietary algorithms and engineering prowess, their machines deliver nearly net zero product give-away, even in high-speed production environments up to 150 bpm. The robust electronic and mechanical design is virtually maintenance free. The company stands behind their statement that "when the start button is pressed, the machine will run 24 hours per day, 7 days per week."

Weight accuracy is key to coffee roasters' product quality and profitability. Consumers expect the same taste profile in each cup of coffee, which means the weight of each bag or cup packaged must be precise. The bag weight must be at the declared label weight or above, but too much over-pack is money given away. AS&E achieves nearly net zero product give-away by closing the "weight loop." The product weight, either continuously measured or statistically sampled, is sent to the auger filler's logic controller which accurately adjusts fill levels based on the difference between label weight and actual weight. This automatic technique is performed with little or no operator involvement, ensuring the operator can concentrate on other tasks at the end of the line instead of repetitively taking weight measurements.

With their unparalleled dedication to world-class performance, AS&E turned to Omron Automation and Safety. Ken Kunze, president of AS&E, notes that the performance of the G5 servo and control systems exceed the requirements of the machinery. The high-speed G5 servo motor starts and stops on a dime – the low inertia and high torque is exactly what is required for the application. Kunze also notes the dependability of Omron components lend to 24/7 operation, where unscheduled downtime is not acceptable. "In over 20 years, I can count on one hand the number of times Omron equipment has failed," states Kunze. Having the Omron dependability is a factor in AS&E's expansion in the market.

Building the Value

AS&E has maintained a policy of engineering and retrofitting equipment that is advanced, unique and futuristic.

AS&E uses Omron automation and motion systems on their auger fillers and form-fill-seal controls to create a value proposition so prevalent that most bagged coffee is metered or packaged on their fillers and control systems. Their machines and controls allow the customer to substantially lower product giveaway (shrink), increase production rates and increase up-time (OEE).

They have a reputation as a pioneer in their market, making their equipment difficult to replicate in a more expansive competitive space. Kunze attributes their long-term success to their business philosophy of creating exceptional value for their customers.

15 years ago, AS&E partnered with one of the top coffee packagers in the U.S. "At that time, 'connectivity within the plant' was still a buzz phrase," said Kunze. "The electronic flow of information was just a vision; it was not being implemented or even recognized, least of all on a mass scale like it is in today's global marketplace." Being an engineer himself, Kunze had the foresight to require connectivity in each system being installed at the customer's facility – recognizing that the time would come when equipment on a production line would need to communicate seamlessly and transmit data to the enterprise for complete operational visibility.

While technology has advanced in the past 15 years, AS&E now addresses connectivity within the plant by using Omron's NJ5 machine automation controller. The NJ5 synchronously controls all equipment on a production line, regardless of manufacturer. "When working with coffee processors that package anywhere from single-serve to 5-pound bags, accurately managing recipes is critical," states Kunze. He notes that it is imperative that the parameters of each recipe get communicated to the individual pieces of equipment. "We incorporate high-tech products to produce world-class equipment and the NJ5 offers nothing less than world-class performance."

Getting More from the Plant Floor

The SQL version of the NJ5 machine automation controller allows for direct access to SQL databases. With regulations becoming more prevalent worldwide, especially in regard to weight tolerances for filling, the NJ5 with SQL client functionality is ideal for reliable data logging and quality control. "With native SQL database access on the NJ5, I can set up SQL database tables in the controller software, query the SQL database at the customer's site, populate the database tables and when finished, send the data back for analysis and recordkeeping," says Kunze.

AS&E is all about creating value for their customers. "We build equipment that allows our customers to be more competitive," states Kunze. "We do that by packaging the right equipment and components into a solution that will address their pain points." And one pain point that Kunze commonly sees is the need to access production line data and equipment status anywhere in the plant – and without geographic boundaries.

Omron partners with InduSoft to provide real-time access to data through mobile devices. "This gives our customers the information they need to make decisions that will help them better manage their equipment and their operations," states Kunze. "If a customer is running 20 production lines, they can stand anywhere in the plant and see the status of any piece of equipment on any production line." The ability to analyze real-time data and immediately execute plant floor decisions can save a company tens of thousands of dollars in waste or downtime.

With AS&E's business philosophy of aligning world-class automation with the values of their customers, coffee roasters have it within their grasp to achieve new levels of performance in production – adding value in an ever more competitive market.

OMRON
AUTOMATION & SAFETY

Omron Automation and Safety is a leading global provider of machine safety and automation solutions, with more than 80 years of service experience in the controls and sensing business. Our customers can rest assured the automation strategy developed will meet the needs of today and include pathways for practical expansion and modification to address the many challenges of the future.

Learn more at omron247.com

OMRON AUTOMATION AND SAFETY
THE AMERICAS HEADQUARTERS
Chicago, IL USA • 847.843.7900 •
800.556.6766 • www.omron247.com