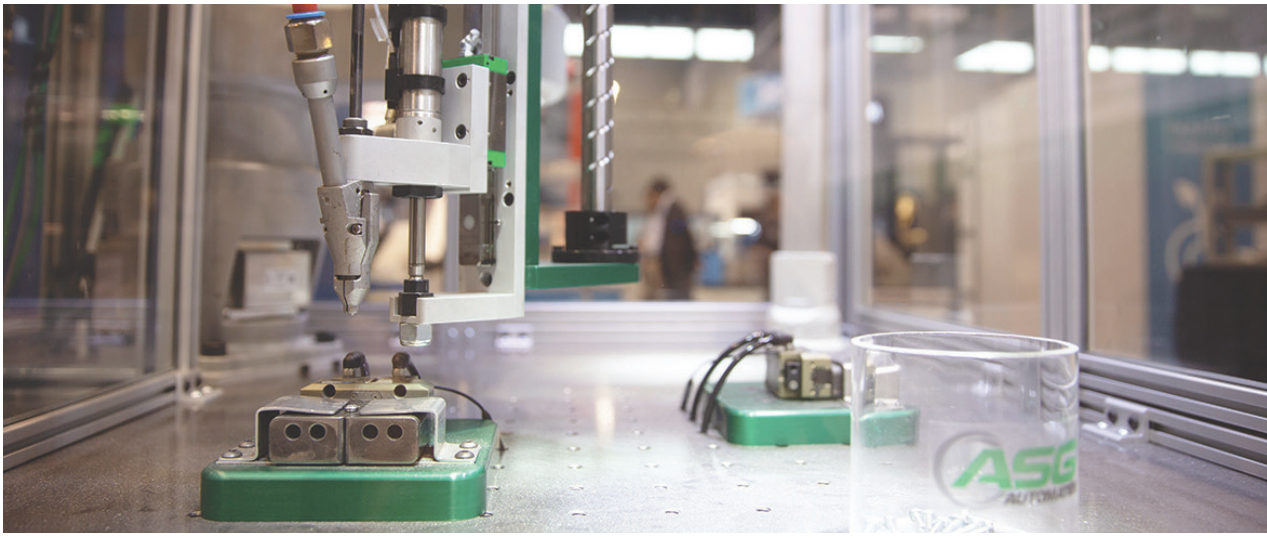


When to Automate?

A Closer Look at the Most Frequent Automation Applications

by Chris Emanuele, ASG Automation Project Manager

There are numerous factors that influence the decision to leverage automation to solve for an application-related process or safety improvement. Today we take a closer look at what we here at ASG Automation consider to be the main underlying factors which have led our customers to implement automation programs to streamline and improve their processes.

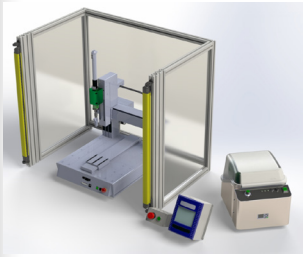
Messy Applications

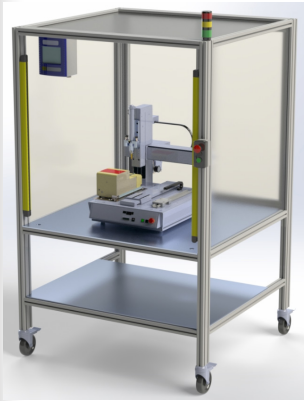
If your application process includes painting, coating application, welding, and/or fluid dispensing then you're well aware of the additional upkeep resulting from these somewhat messy applications.

Not only that, but you're likely feeling pressure to reduce scrap, limit PPE expenses, and mitigate any potential long-term health side effects for the operators.

Recently, ASG Automation was approached with a multifaceted application for a turn key solution which required precision fastening, the dispensing of an adhesive, and quality control measures of torque and angle verification inspection. The current inefficient operation was performed manually and in multiple steps requiring components to move from numerous stations across the production floor. The application of the adhesive was messy and dangerous. The technicians assigned to adhesive operations had to manually apply the liquid with flimsy and imprecise applicators leading to inconsistencies and overconsumption. The specific type of adhesive was caustic to the skin and required the technicians to wear both disposable gloves and face shields.

ASG designed an automation cell which allowed the entire assembly process to take place in one location. More importantly, it automated the adhesive application. The ASG Automation solution utilized a fully contained, pressurized adhesive dispensing system, which only required the occasional refilling of the adhesive, and preventative maintenance.



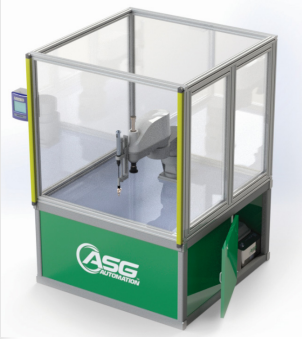


Repetitive Applications

High volume operations that require the same action to be performed in a repetitive fashion like label placement, fastening and screwdriving, or even spot welding can lead to quality issues, failures in the field, personal injury to the operator, and liability recalls which can be expensive and embarrassing to the brand.

A robotic compliment to such an operation, such as a collaborative robot (cobot), can perform hundreds of thousands of cycles before any sort of maintenance would be required.

This addition frees up personnel to perform higher level tasks that cannot be automated as easily. The use of robots all but eliminates potential health risks like repetitive stress disorder and carpal tunnel syndrome.



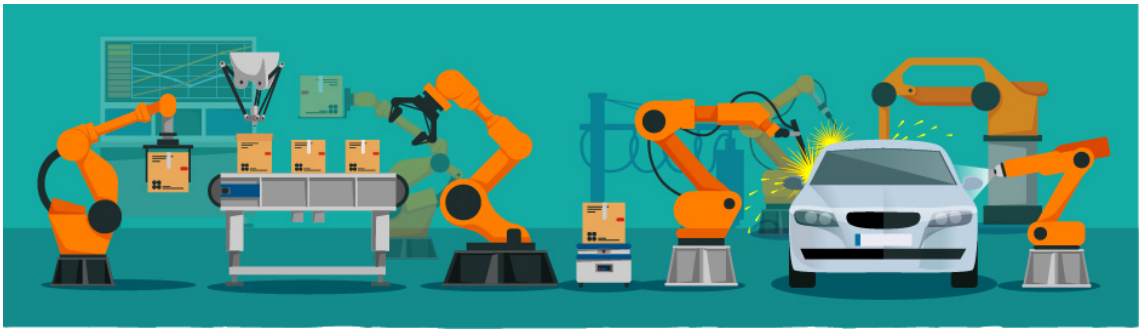
The foundation of ASG Automation is based on precision fastening and assembly through control and repeatability. One of ASG Automation's customers required a solution that met both a stringent torque requirement and recorded all the output torque data to their local server. The ASG Precision Fastening X-PAQTM System was used in this application. The X-PAQTM SD2500 is a transducerized electric driver which consistently applies precise and real time monitoring of torque to the fasteners in the application each and every time, while recording and transmitting the torque and angle data for the customer's database needs.

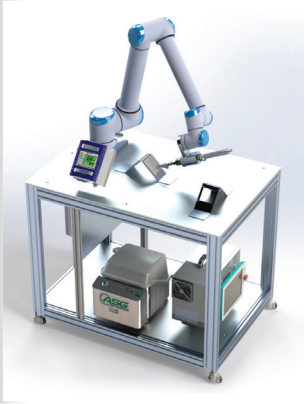
Applications Which Present a Safety Concern

Dangerous operations are any activities that pose the possibility of physical harm to the operator. The dangers can range from minor cuts and scrapes to unfortunately death. Safety is of the utmost importance when considering automation. Any operation that involves mechanized parts or equipment can present unsafe conditions whether it is pinch points, high voltage, extreme temperatures, or noise.

One danger that can be easily overlooked is the negative effect vibration can have on the human body. Some of these effects include Vibration-induced White Finger (VWF) or Hand-arm Vibration Syndrome (HAVS).

A recent customer of ASG Automation was alerted to these dangers following the initial safety audit conducted on their proposed system. The customer's product consisted of thick gage aluminum extrusions held together with large, long bolts. This procedure required very high torques, which required the use of pneumatic drivers. Several operators complained of fatigue, specifically in their hands after their shifts. Switching to an automated assembly system eradicated this health hazard by eliminating the need for the operators to physically hold the pneumatic drivers. It also allowed the operators to perform other secondary operations like applying custom decals and packaging of completed assemblies right at the machine. Production increased over three-fold.





There are many variables to take into consideration and questions that need to be answered when thinking about automation. Remember, automation is not meant to replace people, but rather be a compliment to them by making processes easier through increased productivity, improved quality, and repeatability of work.

ASG Automation always considers operator safety when designing and formulating all solutions. ASG Automation is an RIA Certified Integrator. This not only means ASG Automation uses the industry's best practices and procedures, but has been fully vetted by the RIA; their designs and procedures meet all industry benchmarks. All systems designed by ASG Automation are put through a rigorous safety audit to eliminate and mitigate potential hazards. Once performed, ASG Automation reviews the audit with the customer to assess the outcome.

ASG Automation is here to tackle all your company's custom automation needs.