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**Building on a Legacy of over 80 Years of Manufacturing Excellence –
Gemcor Production Solutions Delivers Advanced Factory Integration with
Automated Fastening Systems under Ascent Aerospace**

Gemcor provides flexible automated solutions for precision-based drilling and fastening applications, blending proven reliability with next-generation technology

MACOMB, MI, December 17, 2024 – Since 1937, Gemcor Production Solutions (Gemcor) has installed over 2,000 automated fastening systems worldwide, integral to the manufacturing process of aerostructures throughout modern history. Acquired by Ascent Aerospace in 2016, its advantage is its heritage—a patented, roller-screw technology that provides manufacturing flexibility with many benefits, including shorter cycle times, extended life, and cost savings.

“Gemcor products truly set the standard in the industry. With over 80 years of innovation and 100 installations alone in the last ten years, nothing is as reliable or adaptable as a quality-tested factory solution for airframers,” shared Dan Friz, Vice President of Business Development and Sales at Ascent Aerospace.

Automation and integration were central to Gemcor’s evolution under Ascent. “Working directly with legacy Gemcor customers, we were able to pinpoint steps in the production process where opportunities existed to innovate,” said Michael Hinckley, Director of Strategic Programs at Ascent Aerospace. “To provide a turn-key solution, we incorporated an automated fastener loading system and integrated a maintenance platform and equipment into the overall production system.”

For Ascent’s customers, quality and cycle-time reductions were key factors in Gemcor’s innovation. “The enhanced visual quality inspection with machine learning capabilities, built-in cycle time optimization, and the ability to enable future ‘lights-out’ operations are just a few of the added benefits of Gemcor’s offerings,” added Hinckley. “Each of these improvements allows

our customers to ramp up production and save on costs, with zero compromise on quality. Our customers trust the legacy capabilities of the Gemcor product line, and the integration into Ascent Aerospace has not only solidified the brand, it has enhanced the overall capabilities.”

Gemcor’s latest technology boasts a fully integrated wing panel assembly production system and six large C-Frame Gemcor machines that provide fastener feed, drill, countersink, sealant application, swage, shave, and multiple inspection capabilities. In addition, two product lines with Gemcor accessibility from both sides of the product, as well as eight automated positioning systems for positioning and holding wing panels. A traffic controller that provides coordinated movement between positioning systems, Gemcor machines, and material handling has been developed to provide personnel safety. In addition, a remote control operation station enables a single operator to safely monitor and run multiple machines simultaneously.

“We worked directly with Siemens to develop a new motion control solution within Gemcor that supports the SINUMERIK software platform,” shared Friz. “The ability to execute closed-loop force feedback with drilling and riveting operations with Siemens’ state-of-the-art controller has reduced cycle times while providing a familiar solution for our customers. We pride ourselves at Ascent on our ability to be flexible throughout our design and engineering process, where we work closely with each customer to provide systems that meet specific facility needs and exceed quality expectations.”

Gemcor products offer fastening applications to provide efficient fastening rates and high productivity for airframers. Gemcor’s latest in a range of technological enhancements includes incorporating continuous improvement processes into its SCADA system to provide critical data for customer-defined KPIs and clear, customizable reports. “This will allow manufacturers to access a user-friendly dashboard that shows how the system is performing,” shared Nick Battle, General Manager - MI at Ascent Aerospace. “Using machine learning, this feature will also provide predictive maintenance and process action suggestions, OEE, and Statistical Process Control (SPC).”

The integration of machine learning is just one important development of many when it comes to Gemcor’s capabilities. Additional features using the latest technologies to enhance Gemcor’s systems for customers include various software integrations and the use of AI deep learning to optimize performance and reduce cycle times.

“Our goal at Ascent with Gemcor product development has been to increase accuracy, repeatability, and reliability while saving our customers time and resources throughout their manufacturing life-cycle. We have achieved this with the help of industry partners and the dedication and hard work of our talented employees,” added Battle.

Ascent is continuously adapting Gemcor to meet customers’ changing needs as technology advances. “From process engineering to build and installation, our process is to work closely with customers to develop their projects and see them through to ensure we are providing an efficient and cost-effective solution.”

Additional Gemcor Production Solutions features:

- Quality inspection capabilities through SCADA machine-level and factory-level integration
- Modernized solutions using smart manufacturing that save on cost
- Vision-based solutions for quality inspection with integrated machine-learning capabilities for increased efficiency
- Process control enhancements to include fastener verification, sealant optimization, edge and feature detection for resync, and debris and chip detection for smoother production
- Reduce cycle times with all-electric head configurations and Gemcor's high-speed linear head
- Active Panel Protection (APP) with pressure foot force feedback, deflection, monitoring, and compensation for quality control
- Ascent Offline Programming (in-house solution), Vericut Drilling and Fastening Simulation System (VDAF), and other software integrations available by request

With offerings for a range of applications – from fuselages, wings, to engine nacelles and ducts, to its complete range of system regulations to include stand-alone riveters, semi-automatic systems, full multi-access CNC systems, and robot-based systems – Gemcor is a proven leader in automated drilling and fastening systems and is the factory solution to meet current demand across aerospace markets.

Ascent Aerospace is a world-renowned, factory solutions provider of production and automated assembly systems for space, defense, and commercial aerospace industries. In addition to Gemcor Production Solutions, Ascent produces a full suite of both mold and assembly tooling required for the aerospace manufacturing market, including the largest Invar molds ever made— making Ascent the largest tooling group in the industry. As a true factory solutions partner, Ascent has the technology to support customers' builds throughout the lifecycle of their program. For inquiries regarding Gemcor Production Solutions, contact Al Bolen at al.bolen@ascentaerospace.com. Learn more at: <https://ascentaerospace.com/>

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