

■ **Monogram Aerospace Fasteners, USA**

# More Uptime and Higher Productivity

Monogram Aerospace Fasteners uses remote access and condition monitoring from Siemens to troubleshoot and reduce machine tool service calls by over 25 percent.

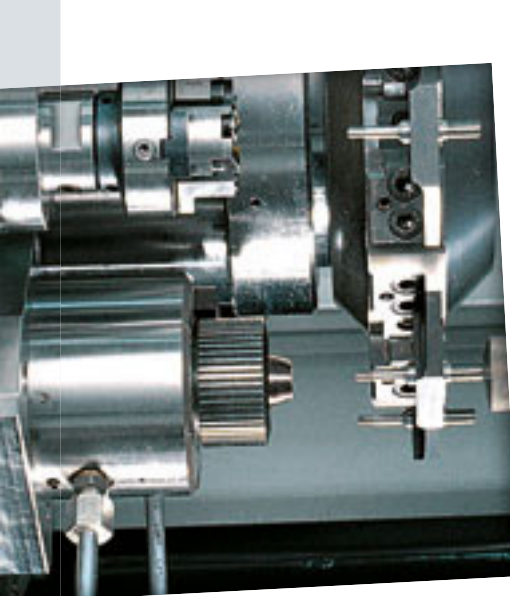
**M**onogram Aerospace Fasteners (MAF) is a leading producer of high-strength blind bolts for aircraft assembly, temporary fasteners for fixturing and alignment, as well as installation, finishing and removal tools. With manufacturing expertise spanning more than 120 years, the company has pioneered a number of fastener innovations, like its Visu-Lok®, Composi-Lok®, Radial-Lok®, or OSI-Bolt® brands. Likewise, the company's fastener designs have evolved with the times and technology to incorporate various features required for semi- or totally automated assembly operations, as well as to meet the unique fastening requirements of today's composite aero structures. The company boasts numerous industry certifications (AS9100, ISO9001 and NADCAP), plus supplier awards for quality, delivery and its achievements in driving the technology forward.

## Definite solution

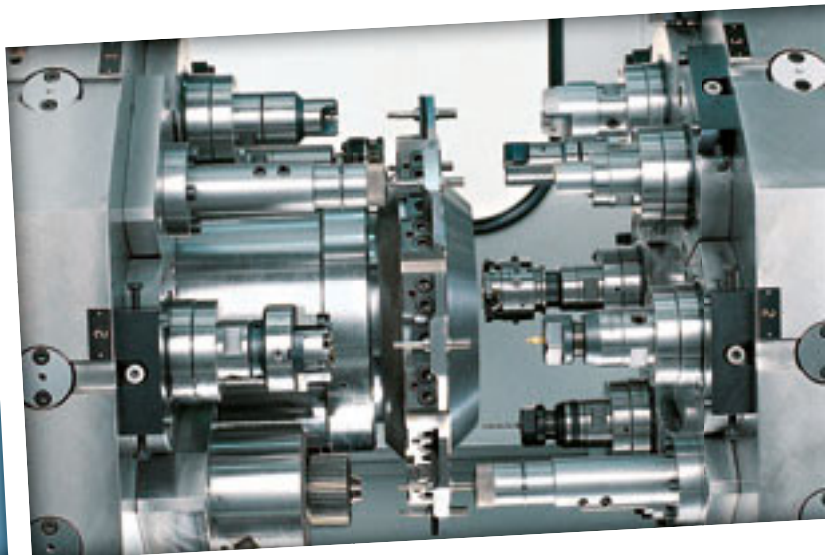
Recently, MAF purchased four new Eubama S6 CNC turning machines. This German machine tool builder, with its local office in Elkhart, Indiana, provided the

S6 line to MAF, specifically for the high volume of fastener families produced at the company. A key to the S6 design is the centerline clamping, two-jaw chucking system that allows fast diameter changeovers for the rapid production of workpiece families. The powerful Sinumerik 840D CNC on the S6 permits nearly immediate restart of the cutting cycle with the proper feed speed and rapid traverse, after a fast tool and clamp jaw change, made possible by the configuration of the machine design. The CNC was considered by MAF as a critical step up from the conventional hydraulic or hydromechanical control typically found on such machines. It was a definite solution to the small and medium batch production needs at the fastener manufacturer.

There was also some consideration being given to a further enhancement, namely, an ongoing condition monitoring system offered by Siemens that would substantially improve the predictive maintenance capabilities at MAF. While many companies do preventive maintenance in a regular pattern and set time period, predictive maintenance would key the



Eubama designed the S6 with centerline quick-change jaws and rapid tool change capability to further reduce downtime



activities of the MAF personnel to the actual performance and onsite utilization of the machine tools.

As Daniel Martinez from the Siemens Aerospace Center of Competence describes it, "Monogram was seeking a total service solution, where the service contract would be extended in functionality by giving our service department the ability to look into their Eubama machines on very short notice. We convinced Monogram's management that the enhanced service and remote access capabilities of our Electronic Production Services [ePS] were a less-costly investment, compared to the increase in service and inside maintenance needed."

The condition monitoring system would track five key conditions (called triggers) with SMS/e-mail notification. Additionally, production part count would be plotted graphically, for easy access by the production team. The five triggers included a maintenance task involving backups on each machine, part counts per shift, spindle temperature, alarm log and current status of each machine, plus a notification if the machine was in e-stop condition for more than 30 minutes.

From the Siemens technical support side, engineer Brad Cornell commented, "By accessing the Eubama machines at MAF with our ePS, we eliminated additional calls to identify part numbers and software versions. I could look into the error log, versions display and machine data instantly to get actual values. By utilizing ePS remote viewing, we minimized time spent on the diagnosis of a failure."

### Better support in less time

As an example of the functionality of the system, MAF recently contacted the Siemens Technical Center in Elk

Grove Village, Illinois, regarding a fault on one of the Eubama S6 turning centers. The remote access session was initiated by the MAF operator directly on the machine's CNC and the technical support was able to see the alarm log directly onscreen to diagnose the issue. It was immediately determined that an onsite field service call was needed. However, prior to the use of ePS, this incident would likely have required 3–4 additional calls and as much as 300 percent more time to resolve. The obvious savings to the MAF production scenario were substantial.

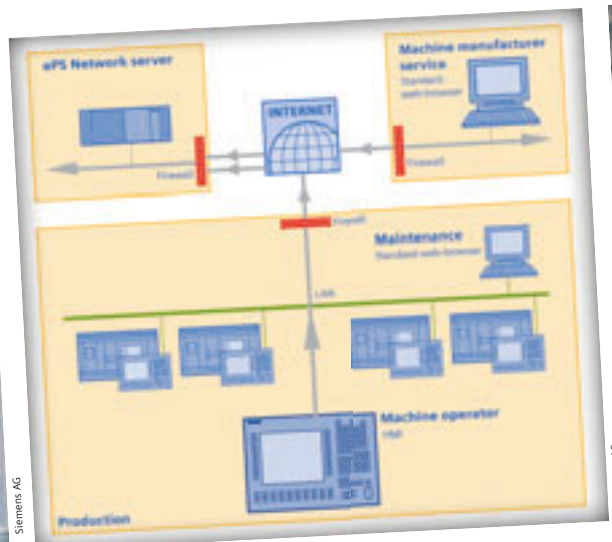
Through ePS, all HMI action logs, machine data and CNC status data are captured in real time. A PLC trace enables the prior actions to be taken as a snapshot for instant analysis of alarms. Alerts generated by the system can take the form of text or e-mail messages, both internally, to the MAF personnel and externally to the Siemens Technical Support.

### Flexible system

The trigger determinations of ePS can vary substantially with the customer. It is not a one-size-fits-all proposition, because the production variables monitored are driven by customer and machine needs. Condition monitoring services are not designed only for large production departments. A shop of any size can benefit almost immediately from this service, especially where "lights-out machining" takes place. In a smaller shop, where there is often no distinct maintenance personnel, the operator and shop owner alike can use condition monitoring to their advantage. ■

info  
contact

[www.siemens.com/sinumerik](http://www.siemens.com/sinumerik)  
[john.meyer@siemens.com](mailto:john.meyer@siemens.com)



ePS condition monitoring allows Siemens Tech Support instant access to the error log, machine tool data, CNC status and PLC trace to quickly determine cause and resolve a problem