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Machine Monitoring & Control with OEE+DNC Enables Flexibility for Manufacturing Productivity

Burlington, Ontario, Canada; Thursday, March 26, 2009 – For the first time, integrated machine monitoring and adaptive control with OEE+DNC has been demonstrated using a robot to aid loading a CNC machine, offering automation for manufacturing flexibility and productivity that can increase profitability.

A showcase, hosted by the Canadian Tooling & Machining Association at the New Age Robotics site, demonstrated an ABB robot loading and unloading various materials integrated with a CNC machine to manufacture several discrete parts. The two machines were controlled by one Memex Ax9150 Universal Machine Interface (UMI) board. The Memex ProductionACE OEE+DNC (Overall Equipment Effectiveness + Digital Numerical Control) server software was connected to the UMI board, which in turn was connected to the robot and the CNC machine. OEE software monitored the machines in real-time and determined production status linked to the scheduled work orders. When the CNC machine was ready, the command was given to the robot to begin the load sequence for the material defined in the work order. The CNC machine was then given the specific DNC part program to be loaded, also referenced in the work order, and the command to begin machining. The mixed production material was loaded by the robot and the different parts were dynamically machined by the CNC. It was a masterful demonstration of flexible manufacturing, with all the benefits of an expensive FMS system done on a budget.

Manufacturing today demands both the adoption of new practices and new technology. “In order to improve productivity, including unmanned production shifts, machines on the shop floor need to be analyzed continuously and adapted to real-time conditions. If you can measure it, then you can manage it. This plug-and-play technology reduces the cost of integration.” said Memex CEO Dave McPhail. The Ax9150 UMI offers CNC machines real-time OEE machine monitoring and DNC control. As a co-processor installed next to the CNC control, the Ax9150 UMI provides local memory, onboard DNC and embedded OEE, and effectively “listens” to the heartbeat of the machines, reporting and logging what is happening inside. Because it has both data inputs and outputs, the Ax9150 UMI can pre-process machine instructions (G-Code) and then post-process real-time machining data in order to adapt to changing conditions at the machine. In short, Memex has succeeded in implementing adaptive control on existing CNC machines – a low cost upgrade that offers significant productivity improvements.



About Memex Automation Inc.

Memex Automation Inc., a unit of Astrix Networks Inc., was created to leverage the research and development of Memex Electronics, which was founded in 1992. Memex continues its tradition of serving the discrete manufacturing sector, supplying component hardware, memory upgrades, and visionary shop floor communication technology. Memex products allow a manufacturer to “Automate the Automation”™ to increase productivity and decrease costs. Memex Automation focusses on delivering value with “Real-Time Machine Monitoring & Control”, which utilizes OEE+DNC solutions that boost efficiency by up to 20 percent with minimal capital investment. Memex is based in Burlington, Ontario, Canada. www.memex.ca.

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