The Plastics Distributor and Fabricator - Your Industry Magazine

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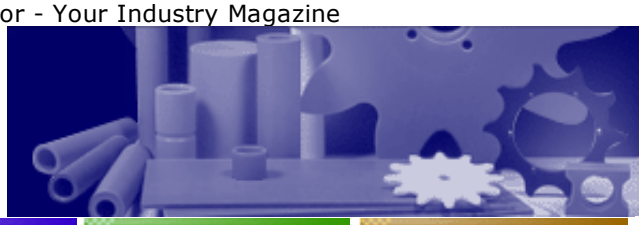
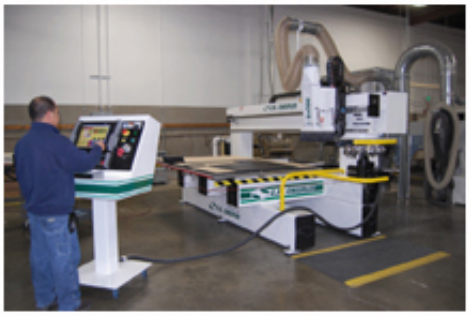


It's in the Control



Production Manager, Rey Manalang programming TAP's C.R. Onsrud 98C18

When Russ Miller, Store Manager of Tap Plastics Inc. San Leandro, California, was packing for his 3+ week, 8 western state summer vacation a couple years back, his boss asked him if he wanted to add the AWFS®Fair in Las Vegas to his itinerary. When he asked why, his boss suggested he looked into buying "that CNC router" that Russ had been bugging him about. Russ said sure and packed his bags for a side trip to kick the tires on a variety of CNC routers.

Tap Plastics is a full service distributor with 20 locations, all of which have a saw and limited fabrication capability. Their San Leandro location is their main fabrication facility and performs a wide variety of fabrication. Their equipment includes a CNC saw and a couple of LASER Dynamic LTD. 1000-watt lasers that they use to cut up to 3/4" acrylic. The lasers were fast but Miller was looking for a flat, glueable cut in acrylic and smooth easily polished edges on thicker acrylic. What Miller wanted was a rigid, easy-to-use router for cutting thick HDPE, ABS and polycarbonates that the laser could not cut.

10 Series CNC, Drives & Motor Family

Miller spent 2 full days walking the Fair and comparing machines first hand. One thing that he noticed while comparing machine specifications from different manufacturers was that several of the routers had an OSAI control on them. Miller ended up selecting a C.R. Onsrud Model 98C18 with a 5'x 8' Twin Table bed and controlled by an OSAI 10/510i with WinMedia Operator panel and Alphacam software.

Miller is very happy with his choice. The router has proven easy-to-use and set-up. It is also easy to run, in large part due to the solid OSAI control. Miller noted that the ability to program in the office and make changes easily at the machine via the control panel provides the flexibility they needed.

C.R. Onsrud, like many other OEM's, has chosen the OSAI 10/510i Light as their standard control because, like all CNC's in the 10/Series Family, it includes standard ISO programming, multiple

kinds of a sophisticated real-time operating system allows for many powerful features including linear, circular, helical and electronic cam Interpolation. Up to 32 axes in various axes geometry configurations such as, gantry (split) axes, master/slave axes, 5 axis heads with Tool Center Point programming (TCP) and high speed cutting algorithms using a polynomial interpolation approach.


C.R. Onsrud customized screen

Standard ISO programming with configurable multiblock look ahead, jerk control, complete 3D plane rotation, mirror, scaling are just a few of the standard features available. Multiple CNC process management (up to 20 processes), multitasking integrated-PLC execution and volumetric compensation, are just a few of the tools available to OEM's giving them virtually unlimited machine capability out of one control system.

The PLC programming environment, WinPLUS, is an IEC 61131-3 compliant tool, to develop and debug machine logic in the Windows environment, and the execution in real-time on the CNC CPU. The OEM can customize the real-time environment of the CNC with developing executable code in C-Language which can be executed onboard and interfacing all system routines.

The Operator Interface is run in a Windows™ environment (on 10/510 Light), thanks to the Provideo environment of the WinNBI software, which also allows the fully graphical screen layouts, with animations, to be customized, or by developing Visual-C code via a complete set of DLLs.

WinNBI software also integrates graphical Windows-environment tools for all development activities, commissioning and maintenance, through multi-CNC network connectivity.

Using the WinMedia Panel combined with the WinNBI (Windows Network Based Interface), the OSAI's new Windows™ network based interface, it is possible to use a "user friendly" graphical interface, customizable through the mouse with "Point & Click" and "Drag & Drop" techniques without needing Windows™ programming knowledge.


WinMedia HMI

WinNBI allows the creation of customizable process screens. Different screens can be built, starting with the insertion of basic objects like axes positions, Feed, Speed, G, M, T functions, progressing through to modifiable fonts and colors. Each of these screens can be matched to one or more processes according to the requirements of the specific application. As WinNBI is based on COM/DCOM technology aimed at distributed architectures, it can interface with different CNCs located in different places of the factory.

There are many advantages of the O.D.M. (OSAI Device Manager). The auto-tuning of the connected motor, thanks to the Windows software configuration tool, simplifies tuning operations. The configuration tool displays the motor's data and analyzes the drive's status with many different diagnostics. The introduction of digital filters allows compensation for mechanical resonance. A configurable oscilloscope is available to analyze the details of the machine behavior.

The OSAI CNC is networked via the OS-Wire communication bus,


ODM (OSAI Device Manager)

enabling a very high performance connection between the CNC, servo drives, jog consoles, digital and analog modules. The outstanding performance allows the exchange of a large amount of data in real-time, enhancing the control of the machine with a huge advantage in accuracy and speed. The digital command to the motion controller avoids the inaccuracies of traditional analog control caused by the analog component drift and the effect of noise on signals. A unique cabling system for axes and I/O reduces wiring costs and minimizes installation and maintenance.

The CNC allows automatic identification of devices, parameter changes, and firmware downloaded via communication bus as well as a fast backup/restore of all the parameters.

Miller has had fun learning how to run his new tool and wishes he had more time to play with it. One thing he learned early on was to add rubber mats in key areas around the machine and to locate tooling storage nearby. These simple steps virtually eliminated broken tools due to dropping them during set-ups and change-overs. He knows his CNC can do much more and looks forward to the challenges new jobs offer.

Tap Plastics has been providing customers with unique fiberglass, plastic and related products since 1952. They specialize in fiberglass resins and fabrics for fiberglass repair, cut-to-size plastic sheet, and custom fabrication. Tap has 20 west coast locations with their San Leandro, California location offering full service fabrication. You can reach them at 800-246-5055 or visit www.tapplastics.com. OSAI USA is headquartered in Chicopee, Massachusetts. They can be reached at 413-592-4805 or visit www.osai-usa.com, or email sales@osai-usa.com.

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