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Euro Fabricators Use Hands-Off Approach

By Bob Olree, Publisher
Modern Applications News

Faced with distinct economic and business challenges, European manufacturers and fabricators are focusing production efforts more and more on automation to survive and compete.

During a recent tour of European manufacturing plants in several countries, the commitment to automated processes, especially for fabricating operations, was very clear. European fabricators face similar challenges as U.S. operations when dealing with winning in the global economy. These are similar challenges, but not exactly the same.

Although the U.S. economy may not seem the best when viewed from the shop floor, many of the European economies are in far more precarious positions. Also, as employers, these fabricators must deal with many labor practices which put a more acute strain on their profitability than those in the U.S. Month-long mandated vacations and significant pension liabilities are but two differences that may make the European rush to automation appear faster than here.

A line of turret punch presses is fed by a Night Train FMS (background). ➤

An automated fabrication operation using a flexible manufacturing system features the Finn-Power Night Train unit (on left) to both act as an intelligent material handling system and a production buffer to maximize fabricating machine time. ▼



One thrust of European automation is to expand production capability without expanding physical plants or payroll.

In many countries, plant expansion is terribly involved and costly. An example is a German toolmaker that considered blasting away a part of a mountain to get enough level ground for a building expansion. Adding production people simply compounds the vacation/pension-type hurdles.

Cellular Processing

Another trend in European fabrication is the streamlining of processes to bundle several operations into cells or systems to avoid the added costs of shuttling in-process parts from one machine or plant area to another. Cellular processing certainly is not a new concept, however, many European facilities have focused on this almost to the extreme.

How extreme? Many have the goal of, and others have accomplished, genuinely "hands-off" complete component

manufacturing. The only actual human handling is the initial loading of the material into the system and its unloading from machine to a truck.

As a guest of Finn-Power, a leading supplier of automated systems and stand-alone fabrication equipment, I saw many of these systems in operation.

The key component of these most automated systems

is the Finn-Power Night Train flexible manufacturing system, which provides not only raw and in-process material handling and manipulating, but also serves as an intelligent production buffer. Used as a production buffer, the Night Train permits a variety of fabrication machines in a system to operate both unattended and at their peak production capacities.

For several fabricators, using this system aims at producing complete product by automating a series of operations that may include material handling, punching, bending, shearing, and laser cutting. Obviously, by producing a com-



A computer-controlled material handling device is common in highly productive European fabricating operations. These vacuum-operated devices move material from storage or production buffer to machine stations and remove skeletons.

plete product rather than a variety of components, human handling is eliminated and the resulting piece is more rigid and in-spec.

It is also produced at the lowest per part cost.

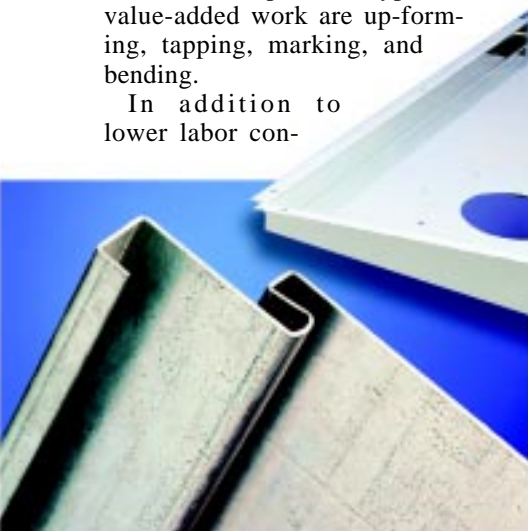
An objective for these European plants is to produce what they refer to as intelligent parts – parts with varying degrees of value-added work incorporated into the part before it leaves the machine. Operations typical of this value-added work are up-forming, tapping, marking, and bending.

In addition to lower labor con-

smaller shops employ the system to maximize their production time and gain flexibility.

To gain the benefits of the fabrication machines, complete automation, such as using an FMS, is not essential.

In Italy, for example, a small, four-man shop integrated a variety of Finn-Power forming and fabricating machines, including a laser, an Express bender, and two stand-alone press



Surprisingly complex bends can be formed automatically on unattended, CNC controlled forming equipment.

Typical of an intelligent part, this component was formed with all bends, punches, and cuts as a single unit without being touched while in-process. All of these value-added forming operations are intended to produce the lowest cost part.

tent and assemblies with fewer parts, the system provides contract and job shop fabricators with the flexibility to compete for a wider variety of jobs. Adding to the flexibility are standard CNC controls for rapid programming.

Completely automating product fabrication may seem to be a goal achievable for only very large shops or OEMs. This was not the case. Many

brakes for very small parts.

Although *Modern Applications*

News tightly focuses its editorial coverage on U.S. manufacturing shops, this opportunity to see what is actually practiced in European shops opened many visitors' eyes and left them considering that we may not be as advanced or ahead of the global manufacturing pack as we would like to think. *Finn-Power International, Inc.*

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