D & S Manufacturing *Black River Falls, WI*

TOYODA
Machine Feautes

Installed products: FH1250SX, (2) FA800S, FH630SX, FH450S
Featured machine: FH1250SX

SHOP DOUBLES OUTPUT WITH NEW LAYOUT, HIGH-TECH MODIFICATIONS

Given the fast pace of modern manufacturing, literally every second saved in a cycle means money in the pocket of a shop. D&S Manufacturing in Black River Falls, Wisconsin, takes advantage of this philosophy, utilizing the creativity of its workers to optimize resources and customize equipment in the name of innovation.

When D&S decided to add a Toyoda FH1250SX to its horizontal machine lineup, it knew production would increase. But the machine—combined with the company's advanced shop setup—gave operators the ability to double their output in a given shift. "We were kind of amazed," said Production Control Manager Rob Bucek of the plant's newfound capability.

The shop decided to invest in the new machine last fall, after maximizing the envelope on a smaller horizontal machine. The FH1250SX had the work envelope and pure horizontal capacity D&S needed for the job. But deciding to add the 1250-sized machine to the floor was just part of the process of increasing accessibility at the plant.

One of the D&S's main considerations is the fatigue factor. "*Part of the implementation layout is all about getting information ... and making sure the operators have everything at their fingertips*," Bucek said. By looking at how often operators are leaving the machine to grab products and running up and down stairs, D&S can see where it can eliminate wasted movement. If everything is not organized properly, it could degrade efficiency of the work center, Bucek added.

To maximize the plant's resources, D&S implemented an enterprise resource planning system, or ERP. Machine controls and forklift laptops are connected to the ERP system. To call a forklift to bring unfinished parts to the machine, operators simply flip a switch. The forklift driver receives the request, and collects the products the machine needs. This system gives operators the ability to cut on the FH1250SX continuously, without having to leave the work station to find materials. To maximize efficiency, D&S dedicated plenty of space to the new system.

"*Productivity has surpassed expectation*."
– Rob Bucek, production control manager of D&S

Located in front of the work envelope, D&S added a rail structure for the control panel. Made in-house, the rail allows the computer to slide along the entire length of the machine. This innovation gives more mobility and flexibility to operators — a seemingly minor improvement that has led to increased efficiency and improved ease of use.

One side of the FH1250SX became the fourth wall to a gated application area and tool closet. The application area acts as an office for programmers. All programs for the machine have been prepared in advance to eliminate unnecessary downtime. The other side of the gated area houses any tools the machine may need during cutting. This increased accessibility gives operators essential resources without having to leave the machine.

D&S also added on a deck structure — complete with three hydraulic lift tables with rollers — to the pallet loading area of the FH1250SX. The left and right lifts are for products that will be loaded onto the machine's two pallets. After a product is cut, it returns to the lift table where it originated. The table then spins 360 degrees to put the part back down on the center roller, which is reserved for completed products. When the rollers become filled, the operator uses the machine's

lights to call a forklift to carry the products to their next operation. Not to leave any FH1250SX-dedicated space unfilled, the shop even uses the area under the deck for storage.

Bucek admits that making floor space for the FH1250SX was a challenge. However, after moving older equipment to make room for the new machine and its auxiliary parts, the shop found that it came out with more space and a better overall floor plan in the end.

D&S attributes the success of the new layout to the communication throughout the process, conceptualizing the new layout as a team. The FH1250SX lent well to these changes because of its flexibility; additional components could easily be added onto the unit without disrupting the cutting process. Bucek talked to operators to see what worked well in the past and how to incorporate successful changes into the shop's final layout. One of these suggestions was for the sliding computer station. After understanding how this feature could increase the shop's productivity,

D&S pieced together the necessary parts to build the rail. Bucek said operators now have a sense of ownership in the products they are making. The workstations are set up in a way that operators are confident with and that are also conducive to productivity. As new suggestions come along, Bucek said the shop will make modifications accordingly. He added, "*Everyone's pretty amped up*."

And they have a good reason for that excitement: D&S is looking to make the FH1250SX area a 100 percent digital work center. Using in-house software, the company hopes to eventually be able to have online setup sheets using the sliding computer on the machine's work station. With success, D&S will implement it throughout the shop.

In the meantime, D&S is taking what it has learned from other operations and incorporating those modifications into the FH1250SX area. Bucek adds, "*Productivity has surpassed expectation.*"


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