DuDe, Where's my Tool?

➤BY DANIEL MARGOLIS, ASSOCIATE EDITOR

Getting the most out of a modular drawer storage system.

Lista

Lista International supplied a system of stacked modular cabinets to C&D Aerospace, Huntington Beach, Calif., to organize all nonrecurring equipment. Lista's collapsible safety ladder was added for easy access.

There was a time when the tool storage system in an average shop was not so much a "system" as it was a pile of tools tossed haphazardly in a bin or on a shelf. But, in the last decade, manufacturers have become much more organized, especially as lean manufacturing has come into vogue.

With this shift, tool storage systems have become more advanced and efficient. A growing number of shops have invested in high-density, modular drawer storage cabinets. These cabinets are typically all steel and easily customized—both in their overall structure and within the drawers themselves—so that each tool is placed in an appropriate space. These cabinets are often placed right by the machine or work cell or made mobile to maximize efficiency.

The potential benefits of a modular tool storage system include:

- better organization, which saves on labor;
- exponentially better inventory management;
- securing tools from theft or damage;
- increased cleanliness; and
- maximized use of space.

How a shop manages its tool storage system is the key to efficiency gains. The first step, of course, is organizing all the shop's tooling by placing it in the system.

"You're getting a cabinet that's going to store 300 or 400 tools," said Mike Ryan, president and CEO of Stor-Loc, Kankakee, Ill., a manufacturer of modular drawer storage systems. "To load it and label it properly, on average, will take 6.5 man-hours, and that's time well spent."

Labeling every space inside a modular drawer storage system, as well as the outside of the drawers, is an important step. It allows the user to easily "identify what the tool is, the size and the decimal equivalent," said John Huot, president of tool storage system builder Huot Manufacturing Co., St. Paul, Minn.

Bar codes are often printed on the labels, and

scanners are employed to upload a shop's entire tool inventory to a computer. "At one time, customers were afraid that [having] everything hidden [in] a drawer would be a problem because they couldn't find tools, but with [computerized] inventory control giving you a location [of the tools], that's really gone by the boards," said John Mannone, regional sales manager for Lista International Corp., Hollis-ton, Mass., a manufacturer of modular drawer storage cabinets and industrial workbenches.

"You're saving time by [seeing] your inventory at a glance," Huot said. "Let's say you're going for a ¼-20 tap. A cabinet is divided and set up for fractional taps, machine screw taps and metric taps. You go right to that particular drawer."

Theft or Hoarding?

Another problem that tool storage systems are meant to address is theft, or at least tools "wandering" away from where they're supposed to be. To prevent this, Mannone suggested that shops keep cabinets locked, and only one or two people have access to them. "The more cooks you put in there, the more they have the ability to disrupt the organization within the tool cabinet or toolcrib," he said.

Asked if tool theft is a real issue in manufacturing environments, Ryan responded, "In some industrial engineers' minds it is!"

He explained that the problem is more a matter of machinists tending to "hoard" or "squirrel away" tools to improve their individual performance. "Management used to overlook it because they knew [employees] really wanted to do a better job," Ryan said. "What they're [doing] now, with lean systems, is they're pretty much supplying at the machining center all the tools the guy needs to do his job." The idea is that this keeps a machinist from hiding tools because the tools are already right where he needs them.

Morrison Container Handling Solutions, Glenwood, Ill., has a Stor-Loc modular drawer storage system for each of the 10 CNC machines in its shop. The shop purchased the cabinets 10 years ago, upgrading from plastic bins. In recent years, Morrison has paid more attention to its use of storage systems as it has been working on becoming "lean."

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Stacked modular cabinets store tools in protective molded holders.

"There's more training in the objective of storing the tools," said Nick Wilson, company president, who explained that the objective is to reduce wasted time and effort by having tools in the proper location with proper identification, and making sure they always go back to that location.

Toward this end, the shop has all its cabinets mounted on wheels. "It allows you to put them where the operator likes to work with them," Wilson said. "It's convenient for the operator and, as a result, people produce more."

According to Ryan, "the biggest innovation [in tool storage systems] in the last 10 years is that everything's on wheels now."

Waste Not, Want Not

The main rationale for modular drawer storage systems is reducing waste. "What you're really trying to do is get rid of the waste—the obsolete tools," Ryan said. Having only the tools needed for a particular job reduces clutter and helps operators focus on the job, he added.

Modular drawer storage systems also cut down on wasted space. "We reduce a lot of wasted air space that's used up on shelving," Lista's Mannone said. "Many times a customer won't use the full height and depth of a shelf. Basically, we put a 3" item in a 3" drawer and a 5" item in a 5" drawer."

To get maximum efficiency from

The following companies contributed to this report:

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National Oilwell Varco
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Stor-Loc
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a tool storage system, Mannone suggested that shops employ a toolcrib attendant—a full-time employee whose only job is to manage the company's tool inventory.

Jay Funsch is one such employee. He's the toolcrib supervisor at oil drilling equipment manufacturer National Oilwell Varco, Houston. Funsch oversees a staff of eight who meet the tooling needs of the facility's 60 production machines, which includes CNC and manual machines. Funsch said, "I oversee our integrated tool supplier, answer the demands of the machine shop and just try to make sure we have everything we need here when we need it."

This can be difficult. Given the range of products Varco produces, it might not run a part for 2 years and then will suddenly need a certain obscure tool, such as a unique threaded tap. This can make things "a little bit hectic at times," as Funsch put it, and, in fact, while being interviewed he fielded a request for a boring bar. The crib is open all but 12 hours a week.

With a great deal of tooling coming and going constantly, organization and inventory control is paramount. The crib contains 12 Lista cabinets in the crib, Big Bear shelving units at the machines and 14 vending machines throughout the facility (see sidebar on this page).

Machinists at Varco are not supposed to store cutting tools in the units at the machines. "They probably do and don't tell me about it, because I like to keep those in the crib," Funsch said. "But that's just my little beef. It happens."

Funsch feels that the modular drawer storage cabinets enable great organization. "Everything's nicely separated and labeled. We bar-code everything," he said. "Some of the stuff is obviously very heavy, and these cabinets are very sturdy." He laughed that he'd like to have one in his garage at home.

Funsch admitted that tool storage systems, as functional as they are, are not foolproof. His major challenge is addressing the potential for human error. "To be honest, the biggest problem I have is the guys being lazy about scanning the product that they hand out and throwing off our inventory," he said. "Things can just disappear if they don't do their job; then suddenly our inventory is off and next week I might get beat up by a manager because I don't have something that 'walked away.'"

Quantification

The benefits of modular drawer storage systems seem clear. But are they worth it, considering what you spend on a cabinet? After all, a modular drawer storage cabinet can cost from $300 to $3,000, with the average cost from $1,200 to $1,500, according to Stor-Loc's Ryan.

"They're kind of 'spendy'," said Steve Adams, a development engineer and instructor at Oregon State Univer-

Vending machines for tools

The cutting edge in tool storage systems is automated vending machines that dispense tools by computerized request. But such systems are really not for everyone. Almost every manufacturer CUTTING TOOL ENGINEERING spoke with in reference to this article said that tool vending machines are too far out of their area of expertise or too expensive for their customers, and one manufacturer derisively dismissed them as being merely "bells and whistles." Small shops typically cannot justify purchasing a vending machine or don't have enough tooling to use one.

Tom Jameson, president and CEO of ShelfPlus Automated Storage Products, Lexington, Ky., developer of the CompuCrib inventory management system vending machine, admits that the machine is for larger companies. He places his target market as facilities that employ 250 people or more or have $2.5 million worth of tooling in inventory.

One of the system's advantages is automated tool replenishment. In many cases, integrated suppliers stock the machines and the company using them is not charged until the tool is dispensed. "Reordering is done automatically," Jameson said. "When you reach the reorder point, then the order is placed with the industrial supplier and they'll come in and put tooling in the machine."

One criticism of vending machines is that their storage density is not adequate. "[They] have some limitations," said John Mannone, regional sales manager for Lista International Corp., who placed the size of what a vending machine can process at "the size of a candy bar or a soda."

But, according to Jameson, the capacities of vending machines have changed. "When we first introduced this system, our capacity was 200 lbs. per shelf," Jameson said. "Now we're 1,200 lbs. per shelf." *—D. Margolis*

This tool vending machine can save 16 to 20 hours per employee per week and cut inventory by 10 to 25 percent, according to ShelfPlus.

sity. Students in OSU's engineering program go through a series of classes on machining, welding and CNC. These hands-on classes are taught in a full shop, run by Adams, filled with mills, lathes and drill presses.

Adams purchased two Huot cabinets for $600 total. "For a company, that's not a whole lot of money, but I work on a pretty tight budget, so [I have to] justify spending $600 just to store something," Adams said.

But Adams' shop definitely needed a storage system of some kind. Before purchasing the cabinets, it was randomly storing all its tooling in bins. He's justified the purchase by the time he and his employees and students save searching for tools.

Tool chest from Stor-Loc.

Time saved is not the only way to justify such a purchase. Ryan stated that a modular drawer system will reduce a shop's inventory requirements by 20 percent. "For instance, if you're buying $100,000 worth of tools, by using this product your savings will be $20,000," Ryan said, "because you're not going to have missing tools or duplication of inventory."

Ryan also stated that a shop without a modular drawer storage system is going to spend, on average, 3 to 5 man-hours per employee, per week, looking for tools. "Say you have a shop with 10 guys," Ryan said. "If you add up that indirect labor, you're looking at 30 to 50 hours per week. If you're paying a machinist [a shop rate of] $40 an hour, that could equate to $1,200 to $2,000 per week." According to Ryan, if a modular drawer storage system is well used, it can quickly pay for itself.

Dan Springhorn, president of Diebold Goldring Tooling USA, Sharon, Wis., a manufacturer of toolholders and tool management equipment, pointed out that the monetary benefits of a tool storage system can be quantified in terms of tool safety as well. "Take, for instance, an HSK 63A heat-shrink toolholder, 0.5" in diameter," Springhorn said. "[It costs] an average of $200 for that toolholder. The first time another holder bumps into it on the bench, it's scrap. Just multiply that by how many times a day something bumps into something else in your shop and there's the money you save." △