How to Store and Retrieve your Heavy Parts Faster and More Accurately

James Anderton posted on February 25, 2015 | Comment | 2288 views

Thousands of cutting tools mean multiple chances of a mis-pick. Modern CNC productivity makes this unscheduled downtime unacceptable.

Many manufacturing industries face a similar problem. They have to inventory a wide variety of parts at the lowest possible cost. Conventional racking imparts a double cost penalty. Floor area is always expensive, but a bigger potential profit killer is the labor time required to accurately stock and pick parts.

This is particularly true for manufacturers who have to stock heavy parts and tooling.

Vertical racking solutions have been used for small parts for decades, but users with heavier parts had no similar solution. Recently, Modula developed a specific heavy capacity solution to address this need, the **OneTon**. The **OneTon** allows manufacturers with heavy parts or tooling (up to 2,200lb. on a tray up to 13ft wide) to go vertical to save space, time and money.

Why go vertical for part storage? Lower storage costs.

Why go vertical? In one word, "cost". Reducing floor space storage and retrieval requirements for small parts is the "low hanging fruit" of warehousing cost control. Vertical storage systems can open the vertical space to injection mold, die casting, fabricating and other metal-heavy industries who must keep molds, jigs, fixtures and tools ready for quick change availability without consuming a warehouse to do it.

The Modula **OneTon** system allows tray widths of up to 13 feet with multiple tray height options. Overall, the system can hold an impressive 70,000 kg (gross weight), with system heights from 10 to 46ft. The system is flexible and highly configurable, and can be integrated with hoists and lift arms for quick and safe loading and unloading.
For heavy parts, loading and unloading is a significant part of the cost of storage. Conventional racking is traditionally configured around the part handling technology, from push carts to fork lift trucks. Conventional forklift handling also means these parts have to be placed on pallets for efficient part handling. The **OneTon** can bring heavy parts to a fully automated external bay and can handle two trays at a time. That means faster and simpler simplified transfer to trucks or lifts.

Advanced vertical storage solutions can help reduce injuries and put safety first

Heavy dies, shoes, bolsters or tooling that weigh up to 990kg can be handled safely by the OneTon

Repetitive strain, back, and other muscle/joint injuries are the most common form of industrial injury, and heavy part handling is a major cause. Wrestling parts on and off pallets or dollies carries a safety risk. To mitigate this risk, many manufacturers require two workers for simple loading and unloading operations.

Vertical solutions can present the parts at a comfortable working height, eliminating bending or reaching, greatly reducing the risk of back and muscular strains. It also eliminates the fall hazard of stairs, ladders and mezzanines. Only authorized operators can access the module, ensuring that only trained personnel can handle parts. The result is a safer, more productive and insurance-friendly plant and warehouse floor.

Vertical storage allows total control over inventory

In the complex working environment that is typical of modern factories, parts and tools flow continuously as production lines change over. Shorter production runs are the norm, and keeping line downtime to a minimum means retrieving and replacing fixtures, dies, molds and associated parts with minimum delay.

To control this process, the Modula **OneTon** can be equipped with a complete inventory management system, accessible through Modula's COPILOT touch screen, as well as through the user's computer systems. The system can track who accesses which part and when. It can also monitor just-in-time processes and stock levels.

Automated stock picking systems increase the time available for picking while reducing non-productive time

Note the lost time due to travel in conventional storage schemes. Combined with up to 90 percent less floor space, vertical storage has multiple cost advantages.

The graph above shows which steps of the process of manually picking parts has the biggest impact on costs. Before an operator can actually move a part, they have to travel to where it is, find it, and then confirm that it is the right part. These steps are shown by the red and yellow bars.

Almost three quarters of overall task time is spent traveling to and finding the part in manual systems. In automated picking, it's the reverse: 76 percent of total time is actually moving the part, the key to productivity.

Major additional savings can be realized for manufacturing facilities that use the storage system as a means of tracking line changeovers through Modula's available software. The ability to know in real time what part or tool is where in the system also allows production personnel to ensure that the right item is on the line and not in the warehouse, a potentially critical time-saver when tracking a Kaizen-driven line stoppage.

Modula's **OneTon** opens the door to multiple efficiency gains in production by bringing the inventory control possibilities enjoyed by small parts users into heavy part manufacturing. OEM's, Tier Ones and Twos, as well as consumer goods producers can all benefit.

Modula OneTon Specifications

Height: 10'9" to 46'3"

Height Increments: 7.9" pitch

Tray Storage Optimization: 1"

Tray Width: 73.2" to 160"

Tray Depth: 25.75" to 33.75"

Unit Capacity: up to 154,000 lbs (gross)

Individual Tray Capacity: 551-2183 lbs

Picking Speed: up to 100 cycles/hour

Interface: touch screen control console

Operator Bays: up to 3, max 2 on the same side

Bay Configuration: internal or external, single or dual

Energy Consumption: 3kW vertical axis motor

Modula has paid a fee to ENGINEERING.com to promote their vertical storage solutions. They have had no editorial input to this post. All opinions are mine. - Jim Anderton