

BENCHMARK BRIEFINGS

kardexremstar

SITE

Mazak
Florence, Kentucky

APPLICATION

Parts distribution to end users

EQUIPMENT

Thirteen Shuttle® VLMs grouped in four pick-and-pass workstations integrated with FastPic® Inventory Management Software

SUMMARY

Improved productivity 80% while reduced labor requirements by 44% and increased part numbers by 95%



During the six-month installation period some 19,000 new part numbers were added, doubling their inventory.

Mazak Increased Productivity 80% Using 44% Less Labor

With the trend toward highly productive, multitasking machines; quick response with repair parts and on-site service to keep machine utilization at a high level have taken on a new level of importance. One company that has stepped up to meet this challenge is Mazak, the largest metal cutting builder in the world.

Mazak's customer commitment is clearly evidenced in their newly redesigned North American parts center in Florence, Kentucky. The warehouse's superior efficiency is based on a state-of-the-art parts storage and retrieval system. Designed and built by Kardex Remstar, the system handles 39,000 different part numbers utilizing less labor than before with an unprecedented increase in speed.

The Need for Automation

Until recently, Mazak's stockroom consisted of pallet racks and small vertical lift modules (VLMs) that were manually operated. The orders would print out in the stockroom and workers would use forklifts, skyjacks, ladders and manual VLMs to pick parts. The workers carried the parts to the packing areas where they were packed and shipped.

"Nobody orders parts at 8:00 in the morning," says Steve Trammel, National Parts Manager with Mazak. "Part orders come in the afternoon and then we have to get them out the same day for delivery to our customers. Pushing through 1,000 to 1,200 orders in a 6-hour window was challenging. We were throwing more and more manpower into it."

Newly Automated Parts Center

Mazak stocks 46,000 part numbers at its Florence, Kentucky parts center dedicated to aftermarket parts support. Today the facility is automated, with 13 Shuttle VLMs grouped in four pick and pass workstations operated by FastPic Inventory Management Software. The system incorporates parts identification with bar coding, pick-to-light, inventory management software and computerized order monitoring and tracking.

Once an order is received and processed into Mazak's order processing system, the order is ready for picking. Each order is assigned to a tote with a fixed license plate and is placed on a conveyor in the front end of the system and sent from workstation to workstation collecting parts.

When a tote arrives at a work-station, the operator scans it and then scans a light on the batch station to associate the tote with the corresponding light in the software. The operator can pick eight orders simultaneously.

Within each workstation, the Shuttle VLMs move to deliver the product to the operator and a customer specified barcode part label is printed. The lights light on Shuttle VLMs directing the operator to the location to pick and displaying how many pieces to pick. The operator picks the product, attaches the printed barcode label and turns around to place it into the correct tote or order as directed by the lights on the batch station. The operator then picks the next part presented by the VLM. This is repeated until the order has all parts required from that workstation.



Pick lights light on Shuttle VLMs direct the operator to the exact location, and display the part number and quantity to pick.

When an order is complete the lights direct the operator to push the tote back onto the conveyor, where it either gets routed to packing or into another workstation downstream for further fulfillment. Totes are cycled back to the front of the system, making for a very efficient operation.

Vertical Lift Modules- Old and New

The old vertical lift systems used by Mazak were not computer interfaced. There were 12 units and they were much smaller than the new units. The operator would use a location guide, and manually type in the tray number they wanted into a keypad, there were no lights or software.

With the new units, each tray can hold up to 1,100 pounds. The trays are eight feet wide and 34 inches deep. One of the VLMs is a larger, heavy duty unit, which is designed for bigger and heavier parts. The 13 VLMs are a combined 125-foot length, with a conveyor line running in front of them.

In Mazak's prior system, a worker would have to look at a tray that might have 50 or 60 parts in it and to find a specific part in the tray. The new Kardex Remstar Shuttle VLMs are equipped with pick-to-light technology. The Transaction Information Center (TIC) is a light bar that runs across the front of the unit and directs the operator to the exact location of the part to pick and displays the quantity to pick as well as the part number.

Tracking Parts... & Orders

When a customer calls in an order, it is immediately entered into Mazak's network system which tracks the status of each order as it moves through fulfillment. Tracking the order though the system allows Mazak to make real time changes to the order, such as handling a customer request to add an item to the order. Software from FastPic Systems, acts as a transaction processor, controlling the operation of the VLMs, supplying operator instruction and printing barcode labels. The FastPic Software is integrated with Mazak's

existing enterprise software system, PRMS, to control inventory and provide a graphical display of the active totes in the system at critical processing points, such as pick stations and shipping.

Same Space with More Parts

Mazak kept the same footprint in the parts warehouse, but was able to increase storage capacity within that space by 95 percent, due to the much denser storage capability.

The previous VLMs were handling 20,000 individual part numbers. All of those, plus another 19,000 part numbers for new machine models, for a total of 39,000 parts, are now being handled by the new Shuttle VLMs within the same footprint. Another 7,000 oversized part numbers are stored on racking in the warehouse.

Picking More with Less People

"We saved significant labor," explains Trammel. "Previously, we were using nine workers, each handling 111 orders per day. It was all we could do to get our orders out."

Now parts are brought to operators in workstations. This new system is run with five workers instead of nine, each handling 200 orders per day. Orders picked per person per hour has increased by 80 percent – 13.9 picks per labor hour before, and 25 picks per labor hour now.

By increasing productivity, accuracy has not suffered, it's improved! Picking accuracy has increased from 98 percent to 99.67 percent.

Positioned for a Changing Market

Mazak's newly automated North American parts center in Kentucky, with its streamlined automation capability, is another indicator of the company's desire to provide its broad base of customers with superior support and service.



Tracking the order though the system allows Mazak to make real time changes.