

# BENCHMARK



## BENCHMARK BRIEFINGS

### SITE

Finning (Canada),  
Edmonton, Alberta

### APPLICATION

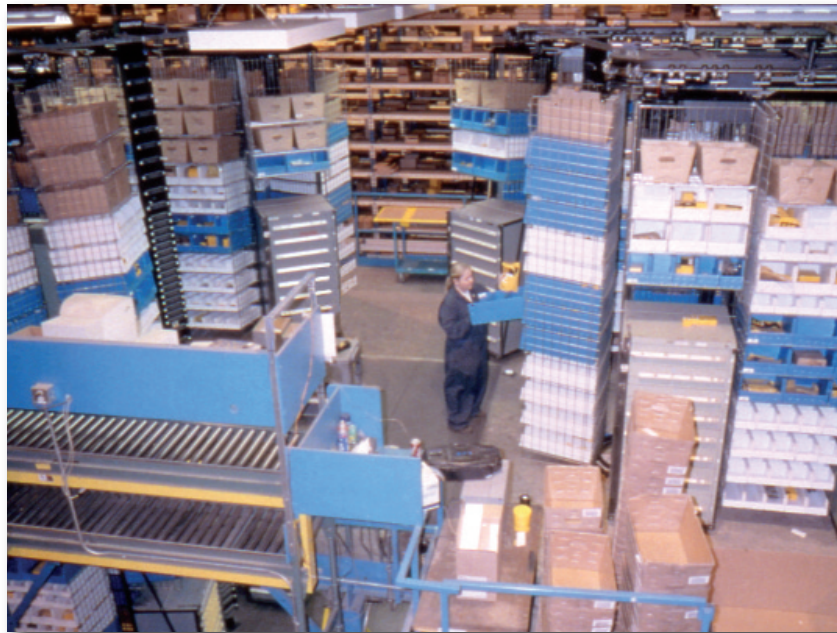
Repair parts distribution for  
phone, e-commerce, and  
walk-in orders.

### EQUIPMENT

Eight horizontal carousels  
dual tiered into two clusters  
using a mezzanine.

### SUMMARY

344% increased efficiencies  
allow business to increase  
by 32.6% with less than  
1% mis-picks and delivery  
while customers wait or  
delivered within 12 hours.



**Horizontal  
Carousel System  
Increases  
Throughput  
By 344%  
In Repair Parts  
Distribution  
Center**

*An AS/RS system and drawer cabinet system were upgraded to horizontal carousels. To speed implementation time, the cabinets full of parts were originally mounted on the lower halves of the carriers since thousands of parts and their locations were already programmed into the software system.*

**F**inning (Canada) sells, rents, finances and provides customer support services for Caterpillar and complementary equipment.

Finning maintains on hand within its single parts distribution center in, some 55,000 line items — tiny nuts and bolts to heavy diesel engines — that typically cover 92% of customer requests off-the-shelf.

The distribution center is comprised of a 96,000 square foot heated warehouse (plus a 12,000 square foot mezzanine), a 12,000 square foot cold storage building, and a yard. Until recently, many small parts were maintained within the heated building on a manned, 8-lane, rail-guided mini-load AS/RS. In order to meet growing sales, Finning turned to Remstar's horizontal carousel system to improve customer service and operating efficiencies.

Lynn Stonehouse, Distribution Center Manager said, "As picking volume increased over the years,

productivity fell because too many man-hours were being wasted waiting to retrieve and replenish parts. Parts also couldn't be picked fast enough at peak times."

### **Carousels Automate the Picking Process**

To boost picking and replenishing speed and efficiency, Finning replaced the AS/RS with eight Remstar horizontal carousels on two tiers. The system utilizes two clusters of four 10-foot high carousels — one cluster on grade, the other cluster on a mezzanine directly above. The upper and lower level carousels are identical, and each level is served by a single workstation.

Carousel part locations are maintained on Finning's portion of Caterpillar's worldwide Dealer Business System (DBS). The software that drives the Remstar carousels accesses the DBS database to locate parts.

### **Most Parts in the Carousels**

Approximately 32,000 line items of the distribution center's 55,000 line items, or 58% are located on the carousels. The remaining 42% are stored primarily in pallet racking and in several aisles of storage rack served by manned wire-guided Caterpillar order pickers and reach trucks.

Picking activity throughout the Parts Distribution Center (PDC) presently averages 4200 line items per day, with peaks as high as 5000. Of line items picked, some 47% (or about 2800 a day) are retrieved from the carousel system at an average rate of about 200 lines an hour over an entire working day. This is a 444% increase over the AS/RS's average picking rate of 45 lines an hour.

During peak times of the day when orders are heaviest, picking rates can reach 300 lines an hour. During less active times, the rate can fall to as low as 80 per hour. Many of the orders are also bagged and labeled

[www.Remstar.com](http://www.Remstar.com)

**Repair parts distribution system increased throughput by 344% for phone, e-commerce, and walk-in orders.**

(tagged), consuming additional operator time. The carousel's daily 2800 line item picks reflect some 1200 orders with almost half as "rush orders.

To speed carousel picking and enhance worker ergonomics, the highest volume parts are slotted in the "golden zone" (from knee-to-shoulder heights) to minimize operator stooping and ladder climbing.

The carousel system fits comfortably under the warehouse's 25-foot high roof beams to maximize the vertical cube, and the carousels take less floor space and hold more parts than the AS/RS.



*Orders via phone, e-commerce, and walk-ins are accommodated with significantly less than 1% mis-picks and extended cut-off times.*

At startup, drawer cabinets were mounted on the lower halves of a number of carriers. By initially placing cabinets that were already filled with parts on carriers, Finning could bring the carousel system on line faster. Thousands of cabinet inventory locations were already programmed into the DBS. The cabinets were later removed and their contents placed in the carriers.

**Seeing Higher Productivity**

"Only two pickers man the carousels, one up and one down," the Distribution Center Manager said.

"The line items per day has increased by 32.6%, and the staff required to pick, pack, and ship the parts has increased by only 6.2%."

"The carousel system's picking rate is high compared to the AS/RS because parts are brought to the picker rather than the picker traveling to the parts," Stonehouse commented. "The four software-driven carousels serving each workstation stay several picks ahead of the operator. The carriers are automatically pre-positioned and presented for picking via the shortest path. The picker never needs to wait for a part."

A Pick Light Tower tells the operator which carrier to pick from, the exact location and the desired quantity. Up to 14 orders are simultaneously batch-picked and placed in corrugated totes at the workstation. Put lights direct the operator to place the correct quantity of parts into each tote. Computerized picking has cut picking errors to well below 1%, which is lower than the previous AS/RS system.

Identification tags are printed at the carousel system's work stations.

When a batch of totes is complete, they are transported via conveyors to an order consolidation area and then on to Packing and Shipping.

**Carousels Support Ordering Peaks and Options**

Incoming orders are typically heaviest in late morning and late afternoon, Manpower is maximized at these peak times. Parts are usually delivered to branches within 12 hours after order placement.

Finning has added e-commerce ordering through the Finning web site. This option permits a branch order to be conveyed electronically all the way down to the carousel picking system without human intervention.

"The carousels have greatly facilitated the handling of rush orders as well," Stonehouse asserted. "A flashing red screen on the picking station computer monitors tells an operator that a rush order has arrived. He can suspend regular picking, key the system to retrieve the rush item, scan it into a tote, and place the tote onto



*The carousel system is dual tiered on mezzanine to minimize floor space requirements and maximize vertical storage cube.*

the takeaway conveyor. The elapsed time is only a minute or so.

"Rush picks are more frequent than might be expected because of 'counter picks,' where branches and customers in the Edmonton area drive to the PDC, order a part, and wait while it's picked," the manager added. "Finning has thousands of accounts within an hour or two of Edmonton, and more than 100 of them walk in each day. Additionally, another 400 or so phone daily for parts on will-call. Rush picks reduce the carousels' average pick rate somewhat because they interrupt ongoing, fully automated batch picking operations."

The system has had virtually no unplanned downtime. The PM (preventive maintenance), has been scheduled so the eight carousels are shut down and inspected one at a time for a brief period to maximize the longevity and productivity of the system.

The logo for Remstar International Inc. features a stylized 'IC' inside a blue diamond shape. Below the logo, the company name 'REMSTAR' is written in large, bold, blue capital letters. Underneath, 'Remstar International Inc.' is written in a smaller font. The contact information includes the address '41 Eisenhower Drive, Westbrook, ME 04092', the phone number '800-639-5805', and the website 'www.Remstar.com' along with the email 'info@remstar.com'. The entire block is set against a light yellow background.