

LINC Grand Island Case Study

LINC's logistics center in Grand Island, NE provides part inventory storage, value-added services, order fulfillment and line-side delivery into a dedicated manufacturing & assembly plant. The 422,400+ sq. ft. facility warehouses small lot & bulk parts to support multiple production lines and supplies repacking, kitting, sequencing, sub-assembly, part containment and returnable container management services, in addition to fulfilling a variety of orders. LINC introduced proven and customized solutions to satisfy client expectations for elevating operations to a "World Class Manufacturing" standard:

- Several inconsistent and manual ordering methods were transformed into a standard, automated system
- The warehouse layout was restructured to ensure part-specific storage & pick order locations are aligned with their corresponding operating sequences in the assembly plant
- Targeted commodities were converted into electronic kitting (e-Kanban) and just-in-time (JIT) sequence programs
- Studies conducted on critical shipment frequencies resulted in transportation-related adjustments to meet production schedules and address unnecessary ordering methods

These initiatives were accomplished while all segments were fully operational and customer initiatives of transitioning additional business segments to e-Kanban order processing were under development.

LINC Grand Island Case Study *Continued*

LINC inherited a warehouse operation with minimal systems and unacceptable inventory control. In collaboration with the client, LINC designed and developed a warehouse management system (WMS) to support each of these service provisions while interfacing with the customer's MRP system. Each scan transaction corresponding to the receipt, repack, storage location, part processing, shipping and final line-side delivery to the plant usage location is captured in the WMS. Both systems interface real-time data and validate completed transactions to enable ensuing part ordering to be generated automatically in the WMS. Additionally, all transaction histories are stored and used for invoice processing, discrepancy resolution, inventory reconciliation requests and daily, key activity indicator performance measurement.

- Three shift operation that supports production 5+ days a week, depending on production scheduling.
- 14,000+ part numbers – with over 90% of all parts being repacked to customer-specific containers and standards by Linc to provide optimal line-side delivery.
- Linc staff on site at the plant perform line side material management, receiving all direct material (less than 10% of total inbound), receive dedicated trailers from the warehouse, replenish work stations and manage all return to stock material.
- Additional customer manufactured parts are stored at the warehouse then returned for final assembly in a JIT environment.
- Client utilizes approximately 60,000 square ft. within the warehouse for sub-assembly, fabricating and product build stations where LINC is responsible for receiving and storing specified parts and replenishing work stations, while managing these transactions in both WMS and customer systems
- LINC utilizes an on-site industrial engineering team to manage & re-engineer line-stocking and optimize warehouse storage & associated production standards via a PFEP access program, customized specifically for this client.

LINC Grand Island Case Study *Continued*

LINC WMS and Enhanced Scanning Capabilities

- WMS captures all part scan history, from receipt and storage through to line-side delivery, providing this customer with complete visibility to inventory & orders via this web-based program.
- Intensified scanning functionality allows operators to readily create unique labels, receive, repack & kit parts, split & combine parts into single containers when storing, picking and releasing part orders electronically.
- The automated WMS program has enhanced inventory accuracy, standardized part ordering and improved order fulfillment by introducing total systems integrity.
- Delivery scan at plant usage location clocks off parts in customer's system and generates next pick order automatically in WMS and the customer's systems.

Line Stock Management

- Linc on site industrial engineers review stock space, part placement configurations, racking, packaging & container types to maximize line-stocking effectiveness
- A Plan for Every Part (PFEP) program is maintained & uploaded to the WMS for process control and to assure data integrity is up-to-date & complete in a single, centralized electronic location
- Kanban parts re-classified with defined loop sizes to enable electronic ordering (e-Kanban) of next replenishment tote in loop upon scan of emptied tote
- On site staff support plant changeovers and quality initiatives and are responsible for managing the broadcast ordering program while providing troubleshooting services
- Linc provides shuttling between the warehouse and plant with up to 3000 line-side delivery orders each production day

Service Parts, Breakdown Assistance Fulfillment

- Complete pick, pack, and ship services that fills 30-50 orders daily (5,500+ part pieces per day)
- Service parts and emergency shipments are retrieved, assembled, packaged and shipped directly to the customer or dealer.
- Linc manages all corresponding transactions in both WMS and the customer's MRP systems.

LINC Grand Island Case Study *Continued*

Process Improvements

- Inventory Control
 - LINC WMS preserves FIFO by generating unique part labels containing real-time dates for Aisle Auditor inspection and subsequent stock re-positioning where necessary
 - Cycle count hit or miss accuracy increased to >99.5% (100% of all part counts completed)
 - Complete physical inventory resulted in significantly reduced obsolete material and adjusted discrepant quantities of high-value parts, providing substantial cost-savings to the client
 - Required physical inventory frequency reduced from quarterly to yearly by the customer
 - Pick & Ship accuracy improved to 99.99% accuracy on part orders within months of operation

- Line downtime due to material availability reduced from variable hours per day to zero.

- 100% of inventory identified, re-labeled, cycle-counted and processed

- Implemented weekly joint audits with customer and participation in quarterly ISO internal audits.

- Monthly Key Performance and daily Key Activity Indicators have been mutually identified and reported to measure performance and reveal operational trends and ensure continuous improvement.

- Initiated inbound AIAG labeling and ASN supplier compliance and tracking.
 - AIAG labeling conformance by suppliers increased by 60%
 - ASN data conformance by suppliers increased by 40%