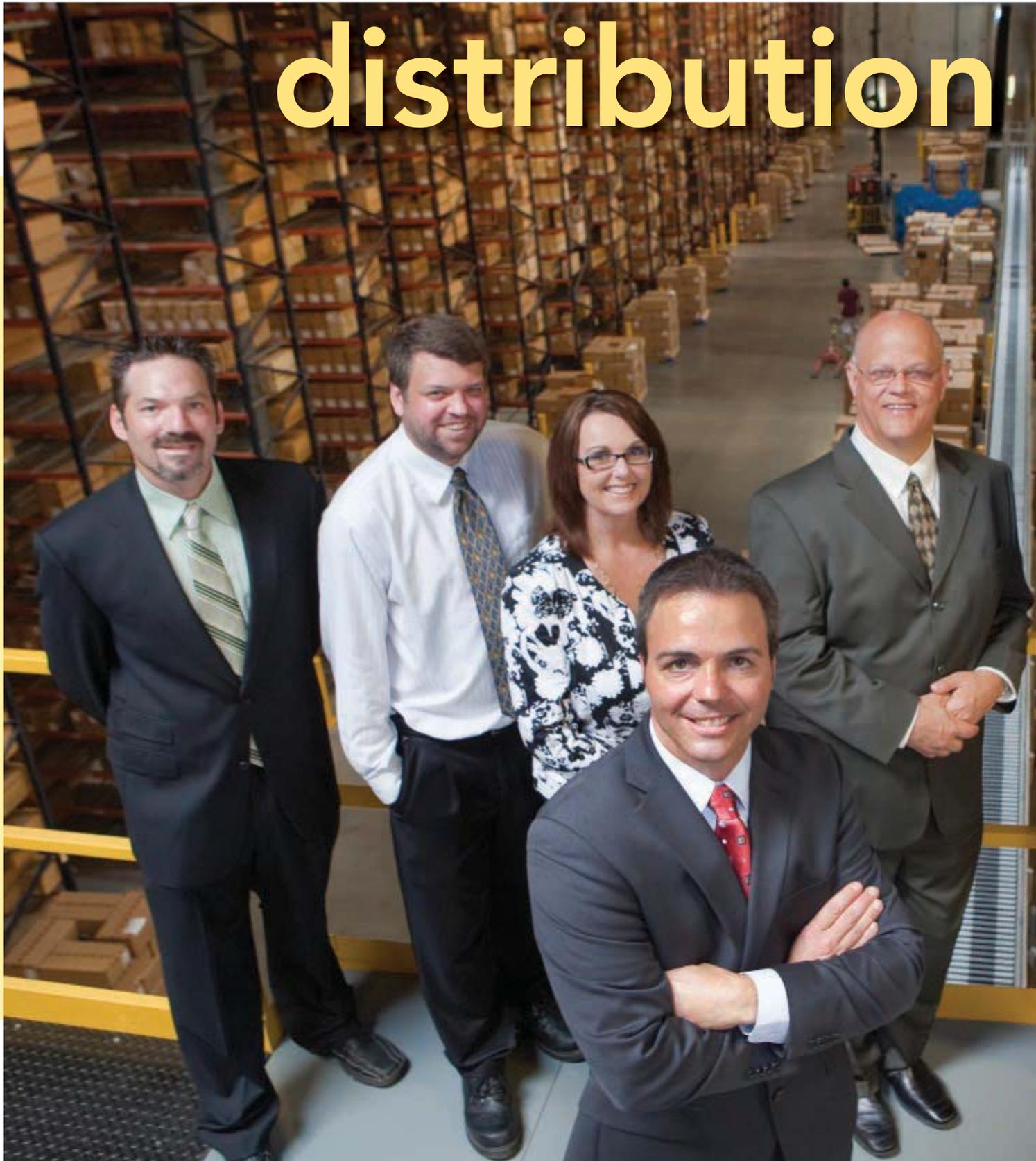


Dressed for

distribution



At the Apparel Group's new Texas distribution center, the company reduced handling costs and increased the speed of product to market—two items that are always in style.

Success

By Bob Trebilcock, Executive Editor

When The Apparel Group Ltd. (TAG) sat down to design a new distribution center, it had two goals in mind.

One was to create an automated materials handling system that would get the job done with the least number of touches and the lowest possible handling cost. Another was to build strategically by locating the facility in an area that would complement TAG's West Coast cross-docking operations, allow its sales people to better serve its customers across the country and improve its customer service levels, especially the speed to market.

The 158,000-square-foot DC at the company's U.S. headquarters in Lewisville, Texas, near Dallas, is a fashion success on both counts, says Kirk Longo, vice president of supply chain for the manufacturer, which also distributes men's and women's private label and branded clothing to retailers like Dillards, Kohl's, Nordstroms and Lord & Taylor.

"This was a brand new facility that allowed us to build to suit our needs," says Longo. "We were able to design a fulfillment center that meets our customers' demand for smaller orders across the broad spectrum of SKUs we provide, maintain a high accuracy rate and do it with a lower cost per item of handling than at our previous facility in Kentucky. This was a team

The team at The Apparel Group worked together to create an automated and strategic facility. Members include: (l-r) Danny Terry, Jeremy Blevins, Kimberly Massie, John Hrubo, Suzanne Khoury and Jerry Huang. Front is Kirk Longo.

PHOTOGRAPHY BY ED LALLO

effort that required the skill of operations, engineering and information technology.”

Working with a systems integrator (Worldsource, 630-795-1100, www.world-source.com), TAG implemented the first phase of the materials handling system in 2008, featuring:

- high-speed conveyor and sortation system,
- garment-on-hanger handling system and
- RF- and pick-to-light picking technologies.

This year, TAG expanded the system with a tilt tray sortation system to bring additional efficiencies to its picking operations. In all, the materials handling system manages more than 16,000 stock keeping units (SKUs) and distributes 6 million items per year with just 50 associates.

After a year and a half of operation in this new facility, TAG is not only providing better customer service to its retail customers, the company is using its capabilities to create another business, The Apparel Logistics Group.

“The strategy is to leverage our expertise in importing, distribution, accounting, customer service and merchandising along with our materials handling capabilities for other apparel manufacturers,” says Longo. “Many of them are already distributing to the same customers we service. They can focus on what they do best as manufacturers and let us handle the logistics for them.”

Bursting at the seams

Many of the retail distribution projects that are in the works today are driven by mergers, acquisitions and consolidation in the industry. Modern’s cover story last month about Bon-Ton Stores is a prime example. As Bon-Ton doubled in size—twice—and expanded its footprint by acquiring other regional retailers, it consolidated and improved distribution activities.

As a supplier to retailers, The Apparel Group has a supporting role in



After receiving (top photo), product is staged for putaway in racks. In the pick-to-light area (bottom photo), order selectors pick items that might be spread across multiple orders.



that story as it plays out. The privately held company does not reveal annual revenues, but it is one of the world’s largest apparel providers, specializing in the design, sourcing, merchandising and fulfillment of fashion merchandise. With a strategic alliance with Hong Kong-based TAL Group, the company’s North American customer list includes most of the major national and regional retailers and department store chains as well as more than 1,100 specialty retail stores.

How big? “One in six men’s dress shirts is made by TAL Group,” says Longo. “We provide an immense selection of men’s and women’s apparel.”

The six million units shipped from Texas are only half of TAG’s distribution story. It also cross-docks an estimated six million units annually from a West Coast distribution center direct to retailers.

The company’s model is to do more than just sell apparel merchandise to its customers. The Long Beach facility

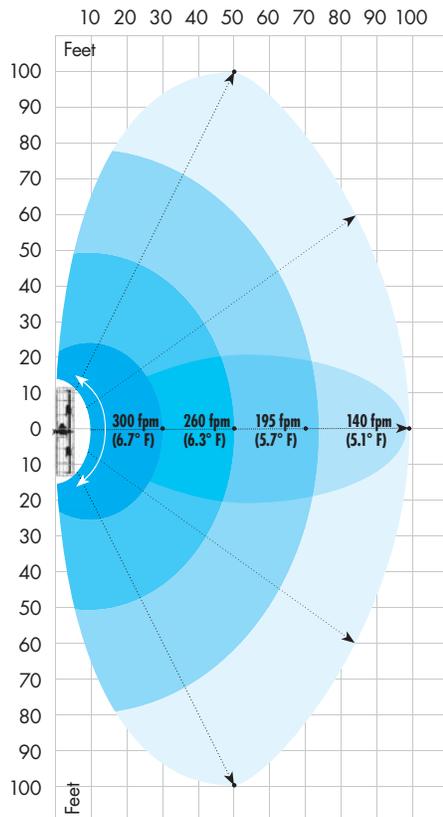
cross-docks merchandise directly from the ports to a retailer’s DC or directly to the stores to quickly stock shelves at the beginning of a selling season. Once the initial roll out is complete, TAG receives point of sale data from its customers as part of a vendor managed inventory (VMI) and quick response replenishment (QR) program that keeps the merchandise selling at the store level on the shelves.

“Our customers want to maintain a broad spectrum of SKUs, but they also want to receive smaller orders with a greater frequency,” says Longo. “They buy merchandise from us, then their point of sale (POS) system sends an order to us for a QR program, or we generate the order under the VMI program on behalf of the customer, both of which we fulfill in a quick response.”

In addition, TAG offers value added services—such as display packaging, price ticketing and garments on hangers in poly bags—that minimize handling in the store. Value added services

Oscillation Sensation

Coverage Area



fpm = Feet per minute

- Air speeds are the average velocity for each zone
- Air speeds were measured 43" from the floor
- Perceived cooling (parentheses) based on ASHRAE Thermal Comfort Tool (air temp 85°F, relative humidity 50%, clo 0.5)

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The Apparel Group's new DC brought together several materials handling automation technologies, including roller and spiral conveyor, tilt tray sortation, pick-to-light and RF picking technologies and a garment-on-hanger rail system.

are typically performed at the point of manufacture.

Back in 2006, TAG realized that with more customers focusing on VMI and quick response, they were processing twice the number of orders to maintain the same volume of business. "In this recession, the average carton size has dropped from 15 pieces per carton to 8 pieces or less per carton, with more frequent orders," says Longo. "That meant we were doing a lot more picking and handling to process our orders."

Then, replenishment operations were handled in a leased facility in Louisville, Ky. That DC was smaller than the new facility and lacked automation. "Manual picking in Louisville had become labor intensive and expensive, especially as we had to do smaller and more frequent orders," says Longo.

Manual picking can be a major source of errors. This can be an impediment to the success of vendor-managed inventory and quick response programs that are built on a foundation of accu-

rate inventory management and timely order fulfillment.

And while Kentucky was conveniently located to replenish stores and service customers in the eastern U.S., TAG has customers like Nordstroms that are headquartered in Seattle. "We wanted to position the location of the company in an area where our distribution center and our sales force could serve customers in New York and the West Coast without losing any time," Longo says.

In other words, they wanted a location to lower handling costs and speed up the time to market.

Distribution success and style

The facility and materials handling system TAG built outside Dallas accomplishes both of those objectives.

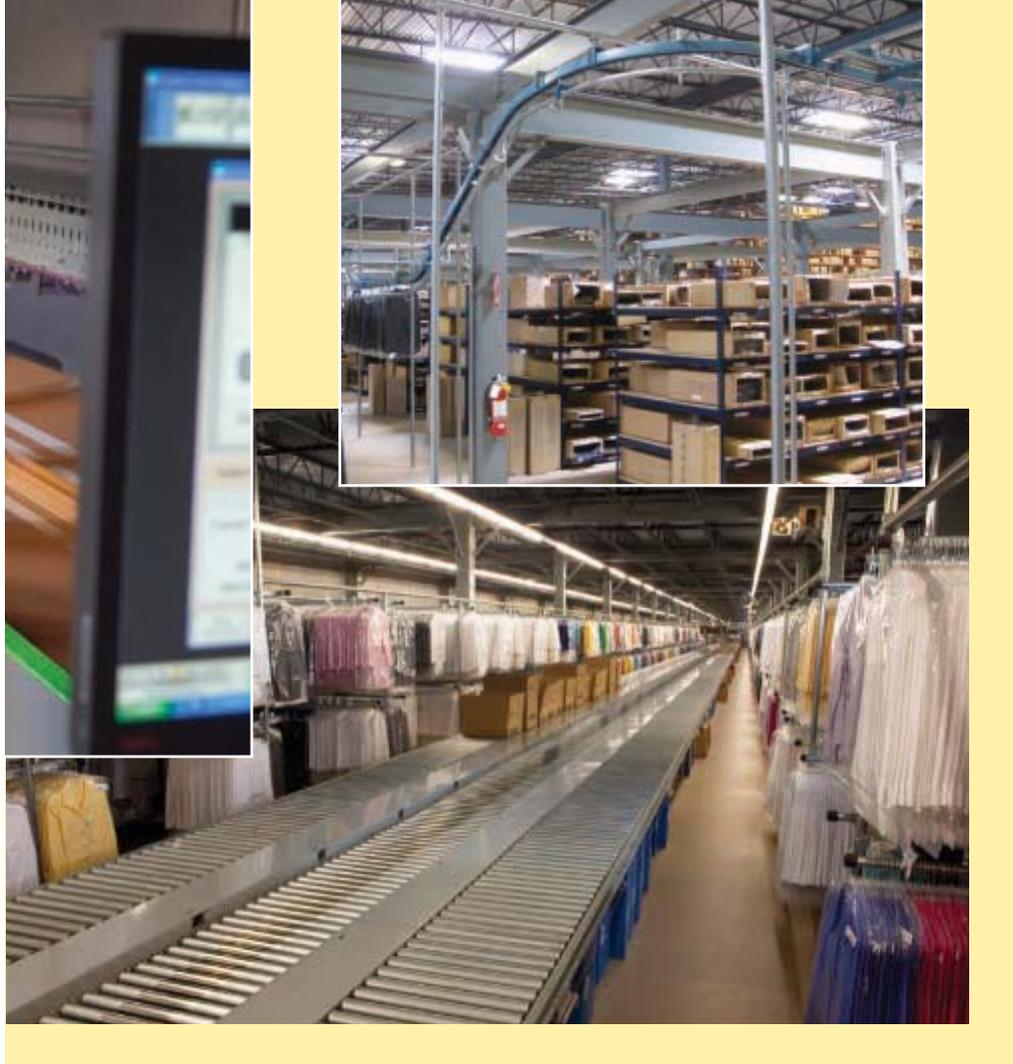
From Dallas, TAG can easily deliver to either part of the country. That has translated into shorter lead times and will lead to increased market share. In addition, the facility is near the

Dallas-Ft. Worth airport, important to TAG's goal of having a presence in a foreign trade zone.

The new facility is also much closer to the cross-dock facility in Long Beach. That allows TAG to more easily make changes about warehousing and distribution if the status of an order changes. For example, TAG attempts to do as many value-added services as it can at the point of manufacture. However, sometimes customer requirements change after the product is in transit and value added services will need to be done stateside.

"We can easily reroute product to the distribution center," says Longo. "Or, if we're shipping to a West Coast customer, we can route the product to a 3PL we work with on the West Coast."

In addition, TAG and its systems integrator designed a materials handling system to lower the cost per unit of handling cartons, even in an environment that increasingly clamors for smaller and more frequent orders.



light zone may be spread across multiple orders that will be aggregated at the packing station. The pick-to-light system includes functionality that allows supervisors, or associates, to adjust the size of the zone they are working in according to demand.

If specific bays in a zone are getting heavier demand than other bays, associates performing the work can expand their zone to help out by simply scanning into the area that needs help. “Our associates are the first responders,” says Longo. “If they see a bottleneck developing, they can adjust the zone to assist one another and keep the process moving.”

RF and pick-to-light were part of the first phase installed in 2008. Earlier this year, TAG implemented a second phase that includes a tilt tray sortation system for the most labor intensive picks—items that are picked frequently, but in a low number of units per carton.

According to Longo, the result of both projects has helped in lowering costs for picking of smaller orders and gained a significant improvement in throughput. “It used to take us about three hours to fill an order,” says Longo. “We cut that average down to about 75 minutes.”

In addition, by operating the facility

For example, the new facility was designed with 40-foot ceilings, which are higher than the ceilings in Louisville. The high-bay storage, with racks rising 366 inches, allows for more efficient storage at the present time and leaves room for expansion in the future.

TAG not only installed a high speed conveyor and sortation system for handling and shipping, it also installed an automated garment-on-hanger handling system that allows it to efficiently receive, putaway and pick garments that are already on store-ready hangers.

Finally, TAG implemented a WMS and picking methodologies to slot and pick orders based on how fast the product moves through the facility. “All of our orders are handled by the WMS based on an order type that considers the quantity and velocity of an SKU,” says Longo.

RF technology was installed for picking slower moving items and for orders with fewer line items per order. In the RF area, an order selector is assigned to

a zone and picks all of the items in that zone for an order to a shipping carton. RF is also used to do direct picking in the garment-on-hanger area.

Pick-to-light technology was installed

“We wanted to position the location of the company in an area where our distribution center and our sales force could serve customers in New York and the West Coast without losing any time.”

—Kirk Longo, vice president of TAG Supply Chain

in a pick zone for orders that include items that turnover quickly and orders with only a few line items per order. “This is our fastest pick area,” says Longo. “We’re picking from split cases to a container, and we’re generally picking two or more items at a time from a location.”

Picks from a location in the pick-to-

in a foreign trade zone, TAG is generating savings on import fees for its customers that participate in the zone as the importer of record. And, by launching The Apparel Logistics Group, the materials handling system is generating additional revenues from a new source.

Those results never go out of style. □

Lowering handling cost, increasing speed to market

Materials handling automation and picking technologies bring new efficiencies to The Apparel Group.

By Bob Trebilcock, Executive Editor

The Apparel Group Ltd., Lewisville, Texas

Size: 158,000 square feet

Products: Men's and women's shirts, blouses, pants, shorts and sweaters

Throughput: 6 million units per year

Shifts: 5 days, 1 shift

Employees: 50

The Apparel Group implemented conveyors, tilt-tray sortation, pick-to-light and a garment-on-hanger rail system to automate its new facility in Lewisville, Texas. The distribution center complements a West Coast distribution location that cross-docks goods directly to stores from the port.

Receiving: Prior to shipment, The Apparel Group receives an advance ship notification (ASN) from its factories. Receiving (1) is done against the ASN. Inside the shipping containers, associates load garments on hangers onto trollies and flat cartons are placed onto an extendable conveyor (2).

Putaway: On the conveyor, bar

code labels on the cartons are automatically scanned and the cartons are weighed and cubed. After the scan, the materials handling system routes it to an assigned zone for putaway, based on a pre-selected storage location in the reserve storage area (4). Once they arrive in the putaway zone, the cartons are palletized and staged until a lift truck operator picks them up and is directed by the warehouse management system (WMS) to a put-away location. Meanwhile, garments-on-hanger are inducted to a rail system (3). The garments are automatically routed to a mezzanine area (5) that serves as both a storage and picking

location for garments-on-hanger.

Replenishment: Replenishment precedes the actual picking process. Orders drop from the enterprise resource planning (ERP) system into the WMS. That creates pull tasks for the inventory needed to fill the orders. First, the WMS profiles the orders based on the velocity of the stock keeping units (SKUs) required. With that information, the WMS develops a slotting plan and sends tasks to associates on the floor. SKUs coming from the reserve storage area (4), cartons are picked to a pallet that is then placed on a pallet rail and slotted for picking. Cartons going into the piece

