

Standardized Processing—Achieving a Quality Finish

Match your product mix/volume with the right combination of finishing equipment to maximize productivity

By Gary Ostrum



A flatwork finishing system, including a spreader/feeder, ironer and folder/stacker

The process of finishing flatwork is typically the most labor-intensive element in laundry operations. Finishing technologies provide a great opportunity to reduce labor, while maintaining consistent end-product quality and improving operational efficiency for large or small pieces. The sizing and selection of spreaders or feeders, flatwork ironers, folder/cross folders, small-piece folders, material-handling systems and specialty products are critically important when trying to maximize performance and product quality.

Spreader/Feeders

When selecting a feeder, the overall objective is to find a machine that can lay down a centered item and achieve a consistent straight leading and trailing edge. Quality control systems can help enhance the process by monitoring feeding gaps and centering as well as screening out stained or torn items.

Since a spreader/feeder works to meet the demand and capability of the ironer, the feeder must be sized to that capability. While manufacturers offer single- and 2-lane capabilities, increased automation doesn't necessarily result in higher production. Effectiveness depends on the operation's classification mix and item sizing. It's

important for operators to review what fits their operation best to determine if their load requires an additional lane, or if it will be underutilized and, therefore, not worth the investment.

Dynamic feeding solutions as opposed to one-dimensional equipment choices allow laundry facilities to better utilize labor and energy.

Flatwork Ironers

Once the goods are spread, processing quality and throughput efficiency depend on the chest ironer and the system's heating process. Regardless of the medium selected—steam or thermal fluid—the resulting temperature and performance remain the same. However, thermal heaters are often associated with lower costs and higher efficiency levels compared to steam boilers. Steam boilers typically require engineers to monitor the steam as a safety measure due to high pressure levels in the vessel.

With ironers, a larger-roll circumference allows for increased surface area coverage. The ironer should be modular in construction, allowing for effective capacity expansion in line with business growth. The size is determined by processing specifications. It's notable that self-contained thermal ironers have made significant inroads to the market. These systems are good for those facilities

that have limited space and cannot support a boiler, or remote thermal heating system. However, these systems aren't as efficient as standard thermal units because the heat transfer process is limited by the size of the unit's self-contained heating chamber. Additionally, these units do present other maintenance and facility HVAC requirements.

The roll pressure equalization process is a key component of a flatwork ironer since the pressure of the roll often ranges from 1,500 to 1,700 lbs. This pressure is lowered onto the chest and rolls freely by gravity. As the chest remains mostly stationary, friction builds from the weight of the roll. This process provides equal quantities of cool and warm air, which enhances drying with even heat distri-

since the goal is to encapsulate ironers so heat can only radiate from the chest and onto the roll.

One often-overlooked item is the critical need to run ironers at consistent speeds. Ironers run by pulling items between the roll and chest. When the goods leave the roll, there's a gap before they get to the next roll. Guide tapes are used to pull the goods to the next roll. Therefore, increased distance between the gap pieces makes tape maintenance critical. The ideal measurement is two tapes per item on small pieces. If gaps are too far apart it can create issues for smaller pieces.

Operators can identify the gap-piece distance by looking at a deep-chest ironer for small-piece processing. It's also essential to



This Delta Ironer features a deep chest and 1-4 large-diameter rolls for a quality finish. It can be heated with steam or thermal fluid.

bution and diminishes pad wear. Roll-weight equalization in deep-chest ironers compares with the steam traps utilized on a chest-heated ironer. The inverted bucket trap allows for increased energy efficiency, or lower steam or thermal-fluid usage in an industrial operation.

Since the ironer rolls are hollow and perforated, a vacuum is able to draw heat from the chest and through the roll to keep the padding dry and the roll hot to enhance the ironing process. Without the vacuum, the rolls and the padding would get progressively damper and cooler. This would lead to decreased ironer efficiency. Instead, the vacuum wicks heat from the chest to the roll, which helps keep the chest dry and the roll hot, thus allowing the operator to heat from above and below as the roll continues to wick water away from the linen.

Older systems typically were unsuccessful in reusing water during the ironing or drying processes, since the machinery had little or no vacuum on the rolls. There also typically was no insulation below the chest or on the side walls. This caused heat to radiate off the chest and into the atmosphere.

In modern ironers, the bottom of the chest and side panels include high-temperature insulation so that heat does not radiate out of the system. This helps the system reach its highest rate of effectiveness

maintain the original equipment manufacturer's (OEM) padding specifications, suggested operating conditions and installation specifications.

Folder/Cross Folders

After flat, dried goods come out of the ironer, they are loaded onto the feed deck to be folded into the required package before they are sent to the end user. Folders must have dynamic processing capabilities that can accommodate different requirements for various-size items. Since cross folders are available in many configurations, operators must review classifications to be processed and the packages needed to obtain the proper folder or cross folder for their needs.

For example, end users may want napkins stacked, while sheets and tablecloths may need to be folded and cross-folded. Folder/cross folders typically include a base machine with add-ons and modifications that can adapt, or be programmed for various configurations.

Processing capabilities such as third-primary-fold capability, enhanced width availability and smart-sorting stackers must be given consideration as well as how many lanes of primary folds with bypasses are needed vs. how many lanes of folding and cross fold-

Managing Flatwork

ing with bypasses are required. In addition, small-piece accumulator add-ons can offer processing flexibility.

To keep the process fluid, speed synchronization must be flexible enough to adjust to the ironer speed in order to prevent stacks from forming or having items prematurely pulled from the ironer.

Flatwork System

The successful integration of the system depends on the capabilities of the feeder, ironer and folder and their ability to match mix demands. During the sourcing due diligence process, the needs of the entire system should be considered along with the potential for business growth.

The system must incorporate quality control systems that monitor the performance of the equipment and personnel. Automatic scans



Sigma Small Piece Folder

charge, size and thickness of items, production parameters and desired packages are identified, the size of the machines, dimensions and processing capability can be determined. The method of discharge and production parameters also must be evaluated. As with folder/cross folders, a dynamic processing environment requires dynamic capabilities.

Material Handling

Material handling is critical in meeting the needs of the system. Operators want to ensure that they are dealing with a process that's simple and efficient from start to finish. The integration of clean rail and conveyor systems along with wrapping, tying and bundling automated solutions provides flexibility, minimizes manual processes and increases productivity without depending on additional



Omega Folder Cross Folder with Stacker

can identify holes in the goods while operators running the feeders are more apt to see rips or stains that otherwise may not be caught. Once damaged goods are identified, the system can be activated to remove the bad item, so that it isn't delivered to the end user. Remote-management information capabilities also are becoming increasingly important.

A standardized control format for synergy in maintenance, training and support can help improve production levels and reduce equipment downtime. Additionally, control components are becoming more standardized across the system. It's easier to train staff and maintain equipment because modern machines have similar parts, including controls and internal electronics.

Specialty Products

In terms of specialty products, vacuum decks often are used for feeding small pieces. They enhance small-piece feeding production and large-piece manual feeding. Variable vacuum speed control provides a great deal of process latitude. Within the decks, filtering systems remove loose lint from the goods. That means operators must develop a maintenance system, or the lint will spread across the plant and hinder equipment performance.

Small-Piece Folding

Small specialty items often travel from washer to dryer without visiting the ironer. For example, towels, blankets and patient gowns may go directly into a small-piece folder. Once the method of dis-

labor. The desired result is a high-quality package, accurate counts for the end user and consistency in the processing environment.

Maximizing Performance

- Understand the system's capability and your ability to track the system's efficiency to meet that capability.
- Track beginning-to-end ratios to measure true efficiency by establishing metrics.
- Standardize, standardize, standardize to simplify your life!
- Ensure that upstream and downstream supply partners contribute to maintaining efficiencies—they are there to support you.
- Understand that a system change is typically required to change capability—not just a component change.
- Production numbers are unique to each organization's distinct business plan. The goal is to know where you are and where you are going.
- The benefits of technology and automation are only realized when you achieve the top grade of your workforce's skills and make a commitment to a structured proactive maintenance program. TR



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