

Materials Handling Ergonomics: Minimize the Strain

Ergonomic features in materials handling equipment and software keep workers safe while giving productivity a lift.

By Sara Pearson Specter · June 7, 2017
Modern Materials Handling

In the past decade, the average manual materials handler has gotten older, heavier and harder to hire and retain. Pair that with the rising costs of workers' compensation insurance and global pressures to increase productivity, and manufacturers, warehouses and distribution center managers are taking a much closer look at improving ergonomics in their operations.

“Today, there are about 25 million people over 55 years old in the workplace. By 2025 that number will rise to 32 million people,” says [Jim Galante](#), director of business development at [Southworth International Group](#) and chairman of the [Ergonomic Assist Systems & Equipment \(EASE\) Council](#). “Plus, about 33% of all people in the United States are obese, weighing more than 30 pounds above their body mass index.”

With as many as 65% of worker's compensation claims associated with manual materials handling, insurance companies are raising their rates—or mandating ergonomic improvements for continued coverage, Galante adds.

“I recently spoke with the head of risk management at a major insurer who said that for the first time in company history their payout for these claims exceeded their intake,” Galante says. “He said they could not continue to carry those clients unless they implemented more ergonomic solutions within their workplaces.”

Equipment suppliers are responding to the need, engineering and designing features into their products to help workers minimize the strains associated with lifting, reaching, twisting, pulling and pushing. The beauty of such features, Galante continues, is they often address the demand for increased productivity as well.

“If you have an ergonomic issue in your process, it can be directly associated to a production inefficiency—and for many, enhanced productivity often helps to justify the investment in more ergonomically designed equipment,” he says.

Here, Modern looks at some of the ergonomic benefits to be gained from implementing such equipment to support manual materials handling throughout multiple areas of a facility.

Lift tables optimize access to loads, items

One way to minimize worker fatigue and ease back strain while lifting is to keep the material being handled at a height between 30 inches (the average distance of a person's knuckles to the floor) and 40 inches (the average distance of a person's hands to the floor when the elbows are bent), says Galante.

"There's no one way to do that," he notes. "You can use vacuum lifters, manipulators, balancers lift tables and other systems. Often we'll see a mix of technologies in use depending on the environment and the products being handled."

When it comes to lift tables, they're often used to load pallets because they position the pallet off the floor and keep the cartons being loaded or unloaded within the ideal 30 to 40 inches. But, as it turns out, bending over to pick up or place a box or item actually puts less pressure on the back than reaching for it, Galante says.

"Reaching out puts more pressure on the lower back than bending over and lifting. With back injuries costing up to \$90,000 in workers' compensation claims, we see more companies implementing a turntable top on the lift table to bring the load around to the worker who stays in one place," he explains.

Additionally, with more operations using automated storage and retrieval systems (AS/RS), it has become easier to fill smaller orders, and many companies are using reusable plastic totes to ship items to retail stores for restocking. Lift tables can be equipped with titling platforms—a 30-degree angle allows better ergonomic access to the bottom of these totes.



"Reaching into a tote causes a person to raise their shoulders, which puts a lot of pressure on the upper back and neck; the tilting function enables the contents of the tote to directly align with the operator's eyes and eliminate that upper body strain," he adds.