

Ergonomic Lifting Equipment

BY JEAN FEINGOLD



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One of the more common tasks in material handling is people lifting objects. Historically this manual material handling has been done without assistance from lifting or positioning equipment. Unfortunately, encouraging workers to “lift correctly” has provided little measurable benefit in reducing the use of improper lifting procedures.

Improper lifting can result in injuries, accidents and a loss in productivity. In fact, about 60 percent of all workmen’s compensation claims are associated with manual material handling, noted Jim Galante, chairman of MHI’s Ergonomic Assist Systems & Equipment (EASE) Council and director, business development, for MHI member Southworth Products Corp.

The number of claims is growing. What is causing this increase? Galante attributes it to several factors. The workforce is aging rapidly. At least one-third of the U.S. population is now considered obese. Also there is increased pressure on workers to increase efficiency and productivity so firms can be competitive worldwide. The reshoring trend means many of these jobs are returning to the U.S. where there is a shortage of trained workers. All these factors can contribute to improper lifting and injuries.

The importance of ergonomics

“Those factors are all influenced by ergonomics,” Galante said. “If you’re going to have a lean manufacturing plant, you must have good ergonomics because ergonomic problems cause production bottlenecks.”

There is usually more than one way to solve a manual material handling problem, Galante notes. Many solutions involve using ergonomic lifting equipment. Several types are available. They include hoists, lift tables, balancers, manipulators, load levelers, turntables, conveyors and work positioners. If the worker wants to get something off the floor and into the correct lifting zone, which is mid-body, the proper equipment must be chosen. What equipment is best to use depends on the size of the

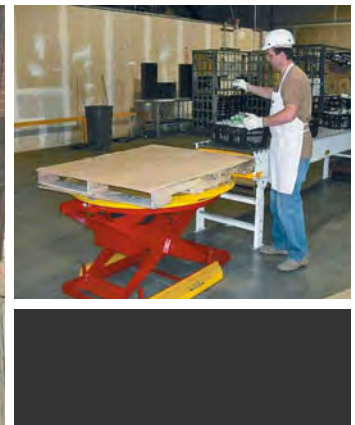
“What equipment is best to use depends on the size of the object, how many times it must be lifted, how much it weighs and how high it must be lifted.”

object, how many times it must be lifted, how much it weighs and how high it must be lifted. A single device will not suit all situations.

“Most ergonomists agree reaching out from the body is actually worse in some respects than bending over,” Galante pointed out. “In lifting an item, you must consider where it is. Is it directly in front? How far away is it? Do I need to turn my body to get it? Twisting or turning the body, bending over and reaching out are all factors that affect the appropriate choice of equipment to reduce manual material handling hazards.”

Sometimes the best ergonomic choice is to eliminate the manual material handling task completely. Often companies with repetitive manual tasks look to automation to do those tasks instead of workers. “But in industry there is still a great deal of manual material handling going on because no machines exist that can do every task,” noted Galante. “Many tasks cannot be effectively automated.”

Galante said approximately 50 percent of workmen’s compensation claims involve the lower back, but back injuries are rarely caused by a single incident. They are typically cumulative trauma disorders resulting from repeatedly



doing the same activity in an unsafe manner. While the worker may only perform the activity for a portion of the workday, that person could be exceeding the Occupational Safety and Health Administration (OSHA) guidelines for safe lifting the whole time.

Adding lifting equipment—or not

“The best ergonomic interventions are used intuitively,” said Galante. “You should not need to explain how to use them to the worker. The device should allow the worker to do the same job but in an improved fashion.”

Consider stacking boxes onto a pallet. If the pallet is on a load leveler at the midpoint of the body, the task is the same, but the ergonomics and the productivity are greatly improved compared to picking the box up from the floor.

A spring balancer could be used to move items to a conveyor by hooking onto them instead of picking them up with the hands. A simple manual turntable can better position a load to reduce reaching out. When moving loads, the type and size of wheels and the choice of bearings on the equipment can make a huge difference in the force required.

Using lifting and positioning devices improves worker safety by eliminating stressors on the body. There will be fewer cumulative trauma disorders by reducing the number of times the worker overreaches, bends or twists

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while doing a manual material handling task. Good ergonomic interventions can substantially reduce the frequency and the severity of workplace injury.

Even knowing this, companies may not always purchase appropriate ergonomic lifting equipment. “A particular piece of equipment could provide the best solution, but it might cost more than the company can justify,” Galante said. “If it can be demonstrated adding ergonomic lifting equipment will improve productivity along with improving ergonomics, a company will be more likely to find justification for buying it.”

While it is known that using ergonomic lifting equipment reduces lost work days due to injury, this is hard to quantify. One study was done of workers lifting cases of goods to load them onto

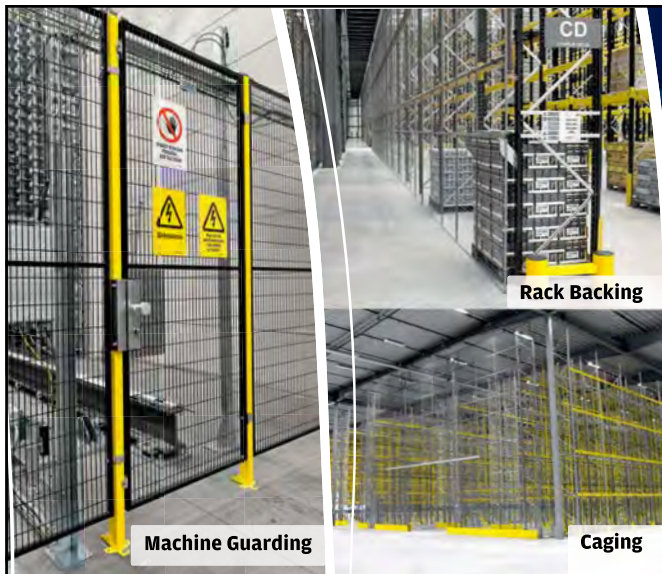
pallets. Although ergonomic stress was reduced by 13 percent after ergonomic lifting equipment was installed, turning that data into a dollar amount of savings is difficult.

Reduction in worker injuries can result in lower workmen’s compensation premiums. This benefit does not occur quickly. These insurance premiums are based on loss runs and underwriters look for a long term pattern of improvement before reducing them.

Ergonomic equipment promotes the general safety and health aspects of work environments for people with or in the vicinity of mechanical equipment. Such equipment includes adjustable worker elevation platforms, balancers, containers tilters, lift tables, manipulators, pallet rotators, stackers, vacuum assist devices, platform trucks, carts, flooring technologies, workstation cranes and intelligent assist devices.

EASE is the resource for trends, information, practices, equipment and organizations that focus on ergonomics and improving the working interface between people and the materials they must move and use to reduce injury, increase productivity while providing a significant return on investment. To learn more about ergonomic solutions, visit mhi.org/ease.

Ergonomic solutions will also be on display at ProMat 2015. Visit ProMatShow.com to view exhibitors displaying these solutions. ●



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