

The following article was published in the April 2006 issue of Services Magazine

A Larger View of Vacuum Cleaners

Palmer House Hilton is one of Chicago's most historically significant hotels. Built more than 135 years ago, the hotel has more than 1,600 rooms and employs about 1,000 people—350 of which are housekeepers, who are solely responsible for keeping the facility clean and shiny.



“[Maintaining] hotels is very labor intensive,” says Ken Maier, Director of Human Resources at the Palmer House. Because of this, Maier, as well as the heads of most major housekeeping departments and facility managers of large facilities, keep their eyes open for new, innovative products and equipment that are less labor intensive, improve productivity, and, in so doing, cut costs.

One piece of cleaning equipment often reevaluated and tested to help streamline cleaning and maintenance operations is the workhorse of our industry, the vacuum cleaner. The latest vacuum cleaner models—upright, backpack, and now, because of increased popularity in the United States, canisters—can in fact improve productivity. These machines work well in traditional cleaning situations, such as vacuuming a hotel guest room, office, or classroom.

However, as facility managers and hotel housekeepers know, not all cleaning situations are typical. Equipment needs to be changed when the area to be cleaned is a 30,000-square-foot ballroom or a carpeted walkway 20 feet wide and a block long, for instance. Using conventional vacuum cleaners for such tasks would simply be too slow and labor-intensive to consider.

An upright vacuum cleaner with a 14-inch base can vacuum approximately 3,000 square feet per hour. This means it would take one cleaning technician at least 10 hours to vacuum a 30,000-square-foot ballroom.

For maintaining large carpeted areas, commonly found in malls, airports, or convention centers, a wide-area vacuum cleaner is a must. In sizable, open areas, a wide-area vacuum cleaner can produce excellent cleaning results and provide a substantial increase in worker productivity.

Such a vacuum cleaner can comfortably clean more than 10,000 square feet per hour. At that pace, it would cut the job of cleaning 30,000 square feet to three hours or less. That's because wide-area vacs have cleaning heads as much as 24 to 36 inches wide, allowing them to pick up carpet soils faster than a conventional vacuum cleaner.

Using a wide-area vacuum cleaner with its larger head does not necessarily guarantee that an area can be cleaned two, three, or more times faster; but if it is used by a skilled operator, it is all but assured to greatly increase productivity—decreasing time and labor costs. Additionally, these vacuum cleaners tend to have much more powerful motors than conventional models. Therefore, wide-area vacuums can deep-clean and lift the carpet's pile, which is often subject to crushing and matting in heavily trafficked areas.

Features to Look For

“There are a wide range of traditional and conventional vacuum cleaners available today,” says David Stanislaw, an engineer with Tornado Industries, makers of professional carpet and floor care equipment. “This requires facility managers to take their time and do their homework in order to determine which machine is best for them and their needs.”

According to Stanislaw, large facilities will often ask a distributor or manufacturer to allow them to “test-drive” a machine for 30 to 90

days. This permits them to really get a feel for how well the machine performs and its capabilities, and it gives them time to accumulate feedback from several users.

However, there are some other variables to consider that seem to be applicable to most facilities and situations. Some of these include:

Storage. This is something many facility managers think of—after it's too late. Wide-area vacuums can quickly fill a janitorial closet, often standing more than 20 inches high, 30 inches wide, and 40 inches deep. Some machines have folding handles and can rest on one end of the machine. This makes storage much more efficient and requires considerably less space, according to Stanislaw.

Vacuum motors. While some of the latest standard upright vacuum cleaners have just one motor and can outperform machines with two motors, many wide-area machines have two motors. One motor is dedicated to producing the suction, while the other drives the brush or beater bar. And some more advanced models even have three motors: two vac motors plus one that powers the brush.

These machines generate as much as 224 cubic feet per minute (cfm) of suction, compared to 100 cfm or less on standard uprights. And, instead of a brush, some wide-area vacs have a chevron bristle design, which help draw dirt directly into the vacuum intake. The added motors and advanced technology make a wide-area vacuum cleaner much more effective because it can cut cleaning time by removing more soil and debris in a single pass.

Cleaning width. According to Stanislaw, facility managers must be realistic when determining how large a machine they need. Too large may not warrant the expense, but too small may not produce the results—cutting cleaning times and costs and improving productivity. “While some manufacturers will label a vacuum cleaner ‘wide-area’ even if it has just a 16-inch base, for many facilities this is simply not large enough to warrant the designation,” says Stanislaw. “For most situations, a true wide-area vacuum cleaner is more than 24 inches wide.”

Ergonomic design. Ergonomically designed equipment fits the machine to the user and not vice versa. Even though these are large machines, Stanislaw says selecting the lightest machine possible will ensure that it is easier to use and much more ergonomic. In addition, “easy-access controls and accessories as well as easy-to-maneuver and cushioned grips and safety handles make using the machine much more comfortable and less fatiguing,” he says.

Brush height adjustment. According to Stanislaw, in a commercial setting, such as a hotel, a facility may have a variety of carpet styles with varying pile heights. Because of this, selecting a machine that allows for adjustable pile height settings will improve the machine’s and user’s vacuuming effectiveness. “Some machines will have a foot control to allow the settings to be changed,” he adds. “This is really an ergonomic feature as well because the user does not have to stretch, bend, or even sit on the floor to make the adjustment.”

Air filtration. No discussion of today's vacuum cleaners is complete without touching on air filtration. Stanislaw says that the wide-area machine selected should have a high-filtration system to protect indoor air quality. "Some machines have multiple-stage filtration systems," he says. "For instance, one unit has a bag-in-bag design with the paper filter bag enclosed inside a more durable, reusable cloth filter bag to improve overall filtration. The vac motors should also be fitted with their own intake filters, and a high-performance exhaust filter should be installed to ensure clean-air performance."

Body design. According to Stanislaw, the machine's body and design are extremely important, for they are factors that affect the overall weight of the machine, its ease of use, and its durability. "You want a machine that will hold up to the rigors and demands of cleaning large facilities, but not one that's too hard to work with or mars walls and furniture," he says. "Select machines that are constructed of rotationally molded plastic. These wide-area vacuum cleaners are extremely durable and lightweight and are less likely to damage wall and furniture surfaces."

Service friendliness. Because these are large vacuum cleaners, the easier they are to service in-house or at a service center, the less downtime will occur and the lower repair costs will be. According to Stanislaw, many of today's wide-area machines are hearty units that can provide years of service. And obviously, selecting units that are easy to service and repair helps extend the machine's life cycle.

Gazing into the Future

Although it is hard to predict the future, tomorrow's offerings of wide-area vacuums will feature even more enhanced benefits. Stanislaw says his company, as well as other manufacturers, is testing and developing new features and designs that may make significant improvements in the effectiveness, efficiency, and productivity of wide-area vacuum cleaners. In fact, some remote-controlled, robotic units are already available for use in a variety of settings and facilities.

Making these units battery powered is also an option. Freeing the user from electric wall sockets and eliminating cords can improve productivity and improve safety. And, some wide-area vacuums currently under development are all-purpose carpet care units with the ability to deep-clean carpets as well as maintain their top surface.

"Even though wide-area vacuums are specialized machines," says Stanislaw, "a lot of engineering and testing is going into them. It's because they can help improve worker productivity so much, which is the name of the game in the cleaning industry today."

Times have changed, and so too have cleaning situations. Workers have more areas to clean and need equipment that is not labor-intensive but is effective enough to complete the task. Luckily, technology featured in advanced equipment, such as in wide-area vacuum cleaners, and trained professionals are elevating standards and increasing worker productivity.

SIDEBAR:

Test, Certify, Select

While walking out of an office building, I noticed one of the custodians vacuuming the mats at the entrance. The closer I got, the louder the machine, and as I walked even closer, I could smell the dust and debris escaping through the machine's cloth bag. Worse, the mats being vacuumed really did not seem like they were getting cleaned all that well.

I asked the man why his company selected that vacuum cleaner. He told me it was a brand-new machine and that it was selected because it was "cheap."

Although finances are a concern for every business, selecting any piece of equipment—especially one that is used as much as a vacuum cleaner—based purely on cost is probably "penny wise and pound foolish."

There are scores of companies making professional vacuum cleaners, and some are very high quality that perform quietly, have advanced exhaust systems so that dust and dirt go into the filter bag and not the air, and have excellent performance. The best way to select these machines is to see if they bear the Carpet and Rug Institute's "Green Label" or are designated "Approved Equipment" by Tandus, a leading manufacturer of commercial floor coverings based in Dalton, GA.

Both organizations put vacuum cleaners through a variety of tests and then rate their performance. According to James Hlavin, Director of Business Development for Tornado Industries, the Tandus testing program may even be the most stringent in the industry.

“A tested and certified vacuum cleaner is proven to be more efficient in removing soils,” says Hlavin. “Because of advanced filtration systems, it helps protect the health of the cleaning worker and building occupants, and it even extends the life of carpets.”