Case Study - Industrial & Manufacturing

Jumbo Vacs for Jumbo Cleaning Needs

When it comes to the cleaning and maintenance of large industrial facilities—such as factories, metal shops, and warehouses—many facility managers still select wet/dry shop vacuums, which they can purchase from a variety of “big-box” retailers. They use these machines to vacuum clean industrial floors and other areas.

However, in most cases, these shop vacuums were designed for household or light industrial cleaning functions. They were never made to tackle the heavy-duty cleaning needs of a factory or an assembly line.

In addition, these shop vacs tend to be expensive to operate in large facilities. Because they are the wrong machine for the task, they break down frequently and are often tossed in the trash after just a few months of service. Therefore, this is a costly piece of cleaning equipment to keep in operation for the long term.

Enter the Jumbo Vac

Industrial vacuum systems, also referred to as jumbo vacs, are a much more reliable, efficient, and powerful option for large industrial facilities. These mighty wet/dry vacuum functions are capable of picking up material as heavy as lead shot or as fine as a mist. Powered by compressed air, these vacuums have waterlift (a measurement in inches of a vacuum’s strength produced by the suction motor) that is substantially beyond that found in traditional smaller wet/dry vacuums. They are also designed for rapid, high-volume recovery of wet and dry debris.

These industrial vacuum systems are becoming a key component in improving the factory/industrial worker’s productivity, health, and safety. Emerging as an integral part of industrial hygiene, they are often used for cleaning floors and workstations as well as removing hazardous waste. In some settings, they are also used to clean tools and factory machinery because they are able to remove bulk fly ash, refractory slag, heavy oils, cooling fluids, metal chips, dust, dirt, grease, oil, and other soils, which can harm factory equipment and result in costly factory downtime.

In addition to increased effectiveness, concern for the health and safety of workers is one of the most important reasons for considering an industrial vacuum system. According to Sofia Modesto, Engineering Manager for Tornado Industries, makers of a variety of hard-floor and carpet cleaning equipment including industrial vacuum systems, “Workers, labor unions, and the Occupational Safety and Health Administration (OSHA) are all taking a closer look at the plant environment.”

For example, in factories that produce tires, auto and industrial belts, and gaskets, a fine powder is used as a pigment, according to Modesto. “If not adequately removed from factory floors and workstations by a powerful vacuum system, this powder can become airborne and a potential health problem,” she says.

Vacuum on a Drum

Industrial vacuums deposit most of the dry and liquid waste they collect into large drums. Modesto advises selecting machines with 55-gallon ribbed steel drums, which tend to be more durable and usually have greater capacity than traditional plastic or stainless steel tanks. He also suggests that the drum have a drain valve for convenient removal of liquids.

“The ribbed design serves an important purpose,” says Modesto. “A lot of negative pressure builds up in the drum. The ribs provide greater strength and durability.”

The vacuum powerhead sits on the drum’s top. The powerhead is an air-compressor system with poly bags attached for recovery and containment of such materials as metal shavings, dust, sand, sawdust, and chips. Some industrial vacuums operate off compressors that produce 15, 25, or 50 horsepower. They can operate at pressures as low as 30 pounds per square inch (psi) up to a maximum of 100 psi, creating minimum airflow of 82 cfm (cubic feet per minute) to a maximum of 258 cfm and waterlift of 200 inches to 242 inches.

Evaluating pickup power can get a bit tricky, says Modesto. Many manufacturers use waterlift as the primary measure of effectiveness and power. In heavy industrial applications, however, some vacs may lack sufficient airflow or cfm.

“A unit’s cfm tells the true story of the machine’s power and capability for bulk recovery,” he says. “The higher the cfm, the faster the recovered material will travel through the hose. Increasing the diameter of the vacuum hose will increase cfm (especially for dry material) with a corresponding decrease in waterlift.”

Some industrial vacuum systems have an assortment of attachments and tools to meet different cleaning needs. Among these accessories are wands, hoses, squeegees, crevice and dusting tools, and attachments made specifically for carpet and hard-surface floor cleaning. In addition, because an industrial vacuum is large and can become heavy as the drum fills, a dolly is necessary. Modesto recommends a four-wheel steel dolly to add portability to the machine.

A Capital Investment

With all the health, safety, and productivity issues associated with industrial hygiene, many often view industrial vacuum systems as a capital investment—and not an expense—that helps keep their facilities functioning at maximum capacity.

And according to Modesto, “The importance of a clean, well-maintained industrial environment cannot be overestimated. Not only is it safer and healthier for workers, but it also helps boost employee morale, an important component in any work environment.”