# Replacing Vacuum Trucks with Triton Vacuum Systems

*Triton® White Paper*

Vacuum trucks have been established for years in industrial settings, but they have drawbacks. They are 18-wheelers that have to be carefully situated near the job; they require a CDL driver who is also a trained operator of the vacuum equipment; they are loud; the logistics have to be scheduled both in/out of the facility as well as at the actual jobsite. The job better be ready when the truck gets there, because the meter is ticking…and in many cases, product is vacuumed into the truck at one location of the facility, and then discharged at a second location of the same facility….sometimes with only a small quantity of product transported.

What if there was an alternative that had a much smaller footprint and weight and so was easily portable; didn't require a certified operator; didn't require the close scheduling of the job to avoid the hourly rates from piling up; and the cost was ~40% less? That alternative exists….as Triton Vacuum Systems.

The Triton concept is to provide an easy-to-operate, robust system that can be run by unskilled labor at the jobsite, and can be transported with just a forklift or pickup truck. Rental rates are a fraction of vacuum truck rates.

Triton Vacuum Systems come in several sizes and configurations. Triton systems all can put up 27" Hg of vacuum, and can produce airflow of 250, 500, 1500, 2000, or 2500 cubic feet per minute (cfm). They can be skid- or trailer-based, and the trailer can be a bumper pull or a gooseneck. Triton systems can be powered by a 480V, 3-phase electric motor, or by a diesel engine. Two basic technologies are offered on the pump itself – rotary vane and liquid ring. The smallest Triton systems use the rotary vane pump, while the larger systems use the liquid (water) ring to create the vacuum. The smaller systems generally come with a collection tank to contain product, while the larger systems require a separate container to collect the product, such as a vacuum box.

A vacuum box is a heavy-duty, vacuum-tight container that enables solid or liquid waste to be collected by suction and transported with a roll-on, roll-off truck for disposition. These vacuum roll-off storage containers offer a cost effective way to store and transport liquids and sludges for disposal. The heavy duty construction, positive seal hatch, and gasketed door provide secure containment of materials. Two 8" flanged inlets enable efficient loading and unloading, and a manway on top allows for inspection. The roll off design allows for easy transportation using standard roll off trailers, where the product can be dumped through a rear door. Industry standards are 20 yard and 25 yard capacity (approx 4000 and 5000 gals, respectively). Vacuum box liners are available.

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A typical installation might have a Triton liquid ring system, such as the diesel-powered Triton 2500 bumper pull trailer, to pump tank bottoms. An F250-equivalent pickup truck could situate the trailer on the job site. Two vacuum boxes (rented from a 3rd party supplier, typically for <$40/day each) would be sited nearby. The vacuum unit would be operated by a laborer after minimal training. The operator would man the end of a 4" hose, pulling product into the vacuum box with the Triton system. (The product is collected into the box, while the airflow continues on to the vacuum unit, so that no product actually sees the Triton system.) When the box is full, the hoses are switched to the second vacuum box, and the first box is transported for disposition of the product.

Another installation might use the diesel-powered Triton 500 bumper pull trailer to vacuum waste oil. Again, an F-250 equivalent pickup truck would situate the trailer, but in this case, the 500 gallon tank on the trailer would be used for collection of product. Once the operator pulled product into the tank, the unit would be transported for disposition. At the end of the job, the hatch on top of the unit would be opened and product cleaned out, perhaps with a pressure washer, and the unit returned to Triton.

A third application might use the skid-mounted Triton 1500 system to recover solid product, such as grain from a barge clean-out. In this case, the Triton unit would be wired into 480V, 3-phase power, and a stand-alone Collection Tank and Baghouse would be used (both available from Triton – see the Triton White Paper on the Solids Recovery Package). Product would be vacuumed, perhaps using Triton Vacuum Wand duckbill attachments on the end of a 4" hose. The product would fall out into the Collection Tank, the airflow would continue through the Baghouse to clean up any dust, and then through the vacuum pump to exhaust. At the end of the job, the vacuum unit would be disconnected, the consumable filter bags removed from the baghouse and disposed, and the collection tank and baghouse rinsed out. A forklift would be used to load the empty equipment onto a flatbed trailer for return to Triton.

According to Bob Buckley, retired tank maintenance process coordinator at ExxonMobil's Baton Rouge refinery, "Tank cleaning costs at the Baton Rouge Refinery have been significantly reduced by 40%-50% vs conventional (mechanical) cleaning methods. Use of Triton Portable Vacuum Systems were key part of the savings. In addition, cleaning durations have been cut in half".

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