Vector Technologies has developed a line of trailer-mounted Catalyst vacuums for the unloading of petrochemical reactors and vessels under inert conditions. VecLoader Catalyst Vacuums are self-contained, closed-loop vacuum systems specifically configured for catalyst handling. Each model will vacuum and directly discharge catalyst product into a tote, truck, dumpster or other collection device. VecLoaders feature ease of set-up and minimal maintenance. VecLoaders Catalyst vacuum remain on the job full time without the dumping, hoisting, and other multiple handling steps required with vac trucks or other vacuum systems. All while providing the utmost in control and safety with an investment significantly below that for a vacuum truck or alternative system.

Vector Catalyst vacuums are completely self-contained, closed loop vacuum conveyance systems. Inert gas is used in lieu of ambient air to convey the recovered product and pulse the baghouse filter bags. Product is vacuumed from the containment vessel into the baghouse/receiver under controlled conditions. The inert gas and the recovered materials are then cyclonically separated within the baghouse/receiver, allowing catalyst-handling jobs to be performed with safety and operating efficiency. The collected material is discharged from the baghouse/receiver through an optional continuous double dump valve or standard gravity dump system. Transport air passes through the filter section and is drawn through the vacuum pump with the filtered inert gas being returned the containment vessel via a return hose. The Vector Catalyst vacuum can also be operated using ambient air in a by-pass mode for jobs where controlled conditions are not required.

VecLoaders feature Roots style positive displacement blowers to 28” Hg, complimented by excellent filtration. Each model shares the common attributes of being simple to use without complicated set-up and easily maintained. VecLoader’s direct discharge allows the vacuum to be on the job full-time; eliminating the shoveling, hoisting, dumping, and other multiple handling steps associated with alternative systems. Material discharge can be into drums or (subject to atmospheric controls) directly loaded directly into trucks, dumpsters, or other collection devices. VecLoaders vacuum are a preferred alternative to vacuum trucks at less than ½ the price.

**Toll Free 1(800) 832 4010**

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Web Site: www.vector-vacuums.com/ E-Mail: sales@vector-vacuums.com

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Model 624 can be towed with a “One-Ton” Standard Military Hitch Trailer

Hopper in Partially Raised Position with Optional Gooseneck Trailer

Side View of Catalyst Nitrogen Vacuum Standard Military Hitch Trailer

**US SPECIFICATIONS- SELECT DIESEL MODELS WITH OTHERS AVAILABLE SIMILARLY POWERED UNITS ARE AVAILABLE WITH ELECTRIC MOTORS**

<table>
<thead>
<tr>
<th>Models</th>
<th>Mini-VecLoader 100</th>
<th>VecLoader Titan 616 HP</th>
<th>VecLoader 624</th>
<th>VecLoader Titan 721</th>
<th>VecLoader Titan 6100HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum CFM/Hg</td>
<td>1,340/28&quot;</td>
<td>2,367/28&quot;</td>
<td>3,510/16&quot;</td>
<td>3,510/16&quot;</td>
<td>6,150/28&quot;</td>
</tr>
<tr>
<td>Diesel Horsepower</td>
<td>99</td>
<td>170</td>
<td>155</td>
<td>225</td>
<td>350</td>
</tr>
<tr>
<td>Primary Filtration</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
</tr>
<tr>
<td>Secondary Filtration</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
</tr>
<tr>
<td>Maximum Hose Diameter</td>
<td>4&quot;</td>
<td>5&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>8&quot;</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>16' 1&quot;, 7' 2&quot;, 10' 0&quot;</td>
<td>17' 5&quot;, 8' .5&quot;, 11' 2.5&quot;</td>
<td>17' 5&quot;, 8' .5&quot;, 11' 2.5&quot;</td>
<td>21'0&quot;, 8' 2.5&quot;, 11' 4&quot;</td>
<td>24' 10&quot;, 8' 4.0&quot;, 11' 4</td>
</tr>
<tr>
<td>Empty Weight</td>
<td>8,100#</td>
<td>10,500#</td>
<td>10,500#</td>
<td>13,950#</td>
<td>22,350#</td>
</tr>
<tr>
<td>Number of Axles</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Maximum Conveying</td>
<td>1,200'</td>
<td>1,200'</td>
<td>600'</td>
<td>1,200'</td>
<td>1,200'</td>
</tr>
<tr>
<td>Maximum Performance/Bulk*</td>
<td>5-7 tons/hr.</td>
<td>10-12 tons/hr.</td>
<td>12-15 tons/hr.</td>
<td>15-18 tons/hr.</td>
<td>23-27 tons/hr.</td>
</tr>
<tr>
<td>Maximum Performance/Liquid*</td>
<td>115 gallons/min.</td>
<td>300 gallons/min.</td>
<td>325 gallons/min.</td>
<td>425 gallons/min.</td>
<td>550 gallons/min.</td>
</tr>
</tbody>
</table>

*Performance figures are averages based on easily conveyed products at shorter distances. Many factors will affect vacuum productivity.

**Options and Alternative Designs:**
- **Power**: Diesel, electric, explosion resistant.
- **Mounting**: Road legal trailer, all terrain, skid, truck, and crane.
- **Unloader valves**: Double dump, gravity, rotary airlock, and specialty valves.
- **Filtration**: HEPA, nuclear, carbon, product specific.
- **Accessories**: Cyclones, drum fillers, intermediate hoppers and separators, bagging stations, vacuum hose, specialty nozzles, and engineered solutions.

VecLoaders are extremely powerful and compact vacuum systems, incorporating innovative technology to solve a wide range of industrial vacuuming and conveyance needs. They move coal, ash, dirt, blast media, sand, stone, water, slurry and other flowable bulk materials utilizing either four, five or six inch diameter hose or multiple smaller diameter hoses. Modular in design, VecLoaders can be easily matched to a broad assortment of customer specified cyclone separators, filter-receivers, collections systems, classifiers, self-dumping hoppers and intermediate collection devices. Specifications subject to change without notice so that improvements are made as quickly as possible.

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**Unloader valves:** Double dump, gravity, rotary airlock, and specialty valves.  **Filtration:** HEPA, nuclear, carbon, product specific.

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**METRIC SPECIFICATIONS FOR SELECT DIESEL MODELS (OTHER MODELS AVAILABLE)**

**SIMILARLY POWERED UNITS ARE ALSO AVAILABLE WITH 3ø ELECTRIC MOTORS**

<table>
<thead>
<tr>
<th>Models</th>
<th>Mini 100</th>
<th>Titan 616 HP</th>
<th>624</th>
<th>Titan 721</th>
<th>Titan 6100HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max: M³/mmHg</td>
<td>2,212/712</td>
<td>4,022/712</td>
<td>5,964/406</td>
<td>6,216/712</td>
<td>10,500/712</td>
</tr>
<tr>
<td>Diesel Kw</td>
<td>75</td>
<td>128</td>
<td>116</td>
<td>172</td>
<td>242</td>
</tr>
<tr>
<td>Baghouse Filtration</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
<td>Coated bags pulse air cleaned</td>
</tr>
<tr>
<td>Secondary Filtration</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
<td>Pleated cartridge</td>
</tr>
<tr>
<td>Maximum Hose Diameter (cm)</td>
<td>10.16</td>
<td>12.70</td>
<td>15.24</td>
<td>15.24</td>
<td>20.32</td>
</tr>
<tr>
<td>Dimensions (L, W, H)</td>
<td>400, 234, 274 cm</td>
<td>532, 250, 350 cm</td>
<td>532, 250, 350 cm</td>
<td>532, 250, 350 cm</td>
<td>760, 250, 350 cm</td>
</tr>
<tr>
<td>Empty Weight</td>
<td>3,200 Kg</td>
<td>5,550 Kg</td>
<td>5,550 Kg</td>
<td>6,340 Kg</td>
<td>10,900 Kg</td>
</tr>
<tr>
<td>Maximum Conveying Distance</td>
<td>300 M</td>
<td>300 M</td>
<td>185 M</td>
<td>300 M</td>
<td>300 M</td>
</tr>
<tr>
<td>Maximum Performance/Bulk*</td>
<td>5-6 Tonnes/hr.</td>
<td>9-11 Tonnes/hr.</td>
<td>11-14 Tonnes/hr.</td>
<td>14-16 Tonnes/hr.</td>
<td>23-27 Tonnes/hr.</td>
</tr>
<tr>
<td>Maximum Performance/Liquid*</td>
<td>430 L/min.</td>
<td>1,100 L/min.</td>
<td>1,230 L/min.</td>
<td>1,600 L/min.</td>
<td>2,000 L/min.</td>
</tr>
</tbody>
</table>

* Performance figures are averages based on easily conveyed products at shorter distances. Many factors will affect vacuum productivity.

---

Model 624 can be towed with a “One-Ton” Standard Military Hitch Trailer

Hopper in Partially Raised Position with Optional Gooseneck Trailer

Side View of Catalyst Nitrogen Vacuum Standard Military Hitch Trailer
Baghouse Discharge System
Catalyst Vacuum Packages

The gravity discharge system for Vector Catalyst Vacuums is an extension of the Vector’s standard gravity
dump-door design. On a standard VecLoader, the filter-receiver (Baghouse) discharges when a dump cycle is
initiated, opening a butterfly valve, allowing equalization of pressure between the filter-receiver and
atmosphere. During the vacuum cycle, the butterfly is closed and the vacuum holds the counterweighted
discharge door closed. Solid state controls manage the duration of both the dump cycle and vacuum cycle on
adjustable preselected timed basis. The standard dump system on the Catalyst vacuum is enhanced due to
the necessity to be able to keep the pyrophoric collected material from being in contact with atmosphere.

The gravity discharge system on Vector Catalyst Vacuums is comprised of a counterweighted discharge door
mounted on the conical bottom of the filter-receiver, a repeat cycle timer (function described below), and two
pneumatically actuated butterfly valves.

The butterfly valves are always in an opposed state. The valves are plumbed to achieve a diverter assembly
with the vacuum source common to both valves. One valve is then plumbed to the filter receiver outlet and
the other valve is plumbed to a bypass connection that can be either: 1) left open to atmosphere for normal
vacuuming or, 2) plumbed back to the reactor for closed-loop operation. Upon dump timer initiation, the valve
cycles in opposed states. The closed-loop design is shown on a flow diagram, next page.

When the valve connected to the filter-receiver outlet is open, air is drawn out by the positive displacement
blower, creating a vacuum on the filter-receiver that holds the counterweighted discharge door closed. When
the timer changes its state, the valves also change state, and the valve that is connected to the filter-receiver
closes for dumping. This relieves the vacuum on the filter-receiver and allows the gravity door to open and
discharge. The operating cycle is repeated over and over until the timer is turned off. On Catalyst systems,
the discharge door is fitted with a pneumatically operated override, allowing the door to be closed during a
discharge cycle to prevent overfilling of totes or other containers.

In lieu of the aforementioned gravity system, a Continuous Discharge Valve system is offered. The advantage
of a Continuous Discharge Valve is that vacuum continues the vacuuming and discharge process without break.
The standard catalyst gravity dump is a batch processing devise. However, since catalyst is typically very
flowable, the dump cycle with a gravity dump is 3 to 5 seconds, dependent on vacuum model. The vacuum
cycle is generally anticipated to be 3 to 5 minutes in duration. Extending this computation, time lost to batch
processing should be than one or two minutes per hour. So, many users find the simplicity and low
maintenance of the gravity dump system to be the best approach.

A pneumatic butterfly valve is additionally offered as lower cost alternative to the Continuous Discharge Valve.
While not providing continuous discharge, this butterfly dump will provide the benefit of added control over a
standard air-assisted gravity dump.

Alternative Discharge Devises

Pneumatic 10” Butterfly

Standard Air-assisted Valve

Continuous Discharge Valve
Discharge Valves Matched to Specific Customer Needs

Choose from a variety of bulk loading and continuous baghouse unloading options. All valves are flanged for ease of changeover, transport and maintenance.