Vaccon offers a High Vacuum Venturi Pump in a variety of performance ranges. Each HighVac Series Pump is capable of 29.5”Hg [999mbar] at sea level.

**HVP Series — HighVac Pump**

The high vacuum level and compact size of the HVP pump allows you to incorporate smaller and more efficient components in your design. Often used to replace expensive, noisy, heat generating electric pumps, HVP pumps are quiet and maintenance free, ideal for small shops, labs and recharging HVAC systems.

See Page .......................................................... 5.2
High Vacuum Venturi Pump up to 29.5” Hg [999mbar] with Silencer

HighVac Series: HVP-100, 200, 300

Ideal Applications:
• Process control
• Vessel evacuation
• HVAC applications
• Degassing

Features/Benefits:
• High performance — powerful vacuum up to 29.5” Hg [999mbar]
• Fast response time — no delay due to long plumbing lines; mounts in-line and installs close to vacuum point
• Efficient — minimal air consumption
• Compact, lightweight and modular — easy to install
• Safe operation — no electricity needed at the pump
• Reliable, trouble-free operation:
  ~ No moving parts to wear
  ~ No flap valves to stick open
  ~ No maintenance
  ~ No downtime

Standard Pump:
The HighVac Series of air-powered venturi vacuum pumps generate vacuum levels up to 29.5” Hg [999mbar] and offer three vacuum flow rates. The high vacuum level and compact size of the HVP pump allows you to incorporate smaller and more efficient components in your design. Often used to replace expensive, noisy, heat generating electric pumps, HVP pumps are quiet and maintenance free, ideal for small shops, labs and recharging HVAC systems.

Pump Options:
• Factory-installed miniature electronic sensors or switches to provide signal for vacuum achieved, part present. Will interface with PLC’s and computerized control systems.
• Factory-installed vacuum gauge

Principles of Operation:
Vacuum is produced by forcing compressed air through a limiting orifice (nozzle), where after exiting, it expands, increasing to supersonic speed before entering the diffuser. Vacuum is created at the vacuum inlet port, between the nozzle and diffuser. The combined nozzle and diffuser create a venturi vacuum cartridge. In the HVP venturi pump, there are 2 venturi cartridges. The exhaust from the vertical cartridge is directed into the vacuum port of the second horizontal venturi cartridge. The flow from the vertical cartridge in effect “supercharges” the second cartridge producing high vacuum level, up to 29.5” Hg [999mbar].

Eliminate the Guesswork: Contact Us!
Vacuum technology isn’t an exact science. To ensure proper product selection, Vaccon offers free application engineering assistance, a 30 Day Test & Evaluation Program or you can send sample products to our in-house test facility and we will test and size a pump for you.

To download a complete set of drawings in multiple CAD formats, please visit our website at www.vaccon.com

For more information or technical assistance, please call 508-359-7200 or 800-848-8788 or email engineering@vaccon.com
**HVP HighVac Series Configurations and Options:**

Drawing below is representative of all HVP pumps.

---

**Switches/Sensor**
(Factory Installed Option - all w/ Quick Disconnect)

- **VSMN-QD-6** – 6” pigtail & QD
- **VSMP-QD-6** – 6” pigtail & QD
- **VTMV-QD-6** – 6” pigtail & QD

---

**How to Specify:**

<table>
<thead>
<tr>
<th>P/N</th>
<th>Imperial Thread</th>
<th>Metric Thread</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HVP-100</td>
<td>G Port</td>
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<tr>
<td></td>
<td>HVP-200</td>
<td>G Port</td>
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<td>NPT</td>
</tr>
<tr>
<td></td>
<td>HVP-300</td>
<td>NPT</td>
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**Please note:** Vacuum Level = The magnitude of suction created by the vacuum pump. Vacuum level is affected by elevation and barometric pressure. For each 1,000 feet of elevation, the vacuum level that the pump can achieve decreases by approximately 1”Hg [33.9mbar].

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**VG-150-CBM** – Vacuum Gauge
(Factory Installed Option)

**EP** – Extra Port (optional) for Switch/Sensor

**GP** – Gauge Port (optional) for Vacuum Gauge

---

**P/N**

- **Vacuum Gauge**
  - VG-150-CBM Center Back Mount
  - **Note:** Vaccon does not ship gauges attached to pumps to avoid damage during shipping. Gauges are easily screwed into gauge port at the time of installation.

- **Gauge Port**
  - GP – Gauge Port (Optional) for Vacuum Gauge

- **Switch/Sensor**
  - None (Standard)
  - **VSMN-QD-6** Switch – NPN with QD
  - **VSMP-QD-6** Switch – PNP with QD
  - **VTMV-QD-6** Sensor – 1-5VDC Output w/QD

- **Extra Port**
  - EP – Extra Port (Optional) for Switch/Sensor

---

**VACCON**

**VACUUM PRODUCTS**

**www.vaccon.com**

Phone: **1-800-848-8788** or **508-359-7200**  E-Mail: engineering@vaccon.com
HVP HighVac Series Configurations and Options:
Drawing below is representative of all HVP pumps.

Specifications:
- **Weight**: 9 oz (255g)
- **Noise Level**: 71 dB

Specifications:
- **Weight**: 1 lb 11 oz (765g)
- **Noise Level**: 74 dB

Specifications:
- **Weight**: 2 lb (907g)
- **Noise Level**: 79 dB

**Imperial Dimensions (in.)**

<table>
<thead>
<tr>
<th>Model #</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>J</th>
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<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
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<tbody>
<tr>
<td>HVP-100</td>
<td>1/4 NPTF</td>
<td>1/8 NPTF</td>
<td>1/4 NPTF</td>
<td>0.12</td>
<td>0.38</td>
<td>0.38</td>
<td>2.28</td>
<td>0.75</td>
<td>0.09</td>
<td>0.67</td>
<td>1.78</td>
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<td>5.06</td>
<td>0.75</td>
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<td>HVP-200</td>
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<td>1/4 NPTF</td>
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<td>0.50</td>
<td>0.75</td>
<td>4.02</td>
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<td>2.13</td>
<td>4.76</td>
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<tr>
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<td>1/2 NPTF</td>
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<td>0.50</td>
<td>0.75</td>
<td>4.02</td>
<td>1.00</td>
<td>0.20</td>
<td>N/A</td>
<td>5.50</td>
<td>9.40</td>
<td>10.16</td>
<td>7.57</td>
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<td>2.13</td>
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**Metric Dimensions (mm)**

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<th>D</th>
<th>E</th>
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<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>P</th>
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<th>S</th>
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<td>G 1/8</td>
<td>G 1/4</td>
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<td>9.7</td>
<td>9.7</td>
<td>57.9</td>
<td>19.1</td>
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<td>45.2</td>
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<td>128.5</td>
<td>19.1</td>
<td>32.5</td>
<td>76.7</td>
<td>50.8</td>
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<tr>
<td>I-HVP-200</td>
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<td>G 1/4</td>
<td>G 1/2</td>
<td>5.3</td>
<td>12.7</td>
<td>19.1</td>
<td>102.1</td>
<td>25.4</td>
<td>5.1</td>
<td>N/A</td>
<td>55.9</td>
<td>94.0</td>
<td>101.6</td>
<td>192.3</td>
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<td>54.1</td>
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<td>50.8</td>
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<tr>
<td>I-HVP-300</td>
<td>G 3/8</td>
<td>G 1/4</td>
<td>G 1/2</td>
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<td>12.7</td>
<td>19.1</td>
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<td>53.8</td>
<td>120.9</td>
<td>50.8</td>
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</table>
### HVP Pump Standard Specifications:

- **Pump Material:** Anodized Aluminum (for silencer material, see Silencer section — see page 13.5)
- **Cartridge Material:** Aluminum, Brass, Buna-N (other materials available, see page 1.6)
- **Medium:** Filtered (50 Micron) unlubricated, noncorrosive dry gases
- **Operating Temperature:** -30° to ~250° F (-34° to ~121°C)
- **Operating Pressure:** 80 PSI [5.5 bar] standard or (HVP-100 only) 60 PSI [4.1 bar] — consult factory for other operating pressures

### HVP Pump Installation Requirements:

- **Vacuum Line & Supply Line — HVP-100/200:** 3/8” O.D. [10mm] tube recommended
- **Vacuum Line Filtration — HVP-100/200:** Typically filters are not required; if desired Vaccon recommends — VF250. See page 13.12
- **Vacuum Line & Supply Line — HVP-300:** 1/2” O.D. [12mm] tube recommended
- **Vacuum Line Filtration — HVP-300:** Typically filters are not required; if desired Vaccon recommends — VF375. See page 13.12
- **Mounting Holes:** HVP-100 = 4-40 [M3], HVP-200/300 = #10-32 [M5] screws

### HVP Series - Performance Data

#### Model # | Air Consumption L/min | Imperial – Vacuum Flow (SCFM) vs. Vacuum Level (”Hg) | Metric – Vacuum Flow (L/min) vs. Vacuum Level (mbar) | Evacuation Time in Seconds based on 1 Cubic Foot Volume/”Hg | Evacuation Time in Seconds based on 1 Liter Volume/mbar

<table>
<thead>
<tr>
<th>Model #</th>
<th>Air Consumption L/min</th>
<th>0”Hg</th>
<th>3”Hg</th>
<th>6”Hg</th>
<th>9”Hg</th>
<th>12”Hg</th>
<th>15”Hg</th>
<th>18”Hg</th>
<th>21”Hg</th>
<th>24”Hg</th>
<th>27”Hg</th>
<th>29.5”Hg</th>
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<tbody>
<tr>
<td>HVP-100</td>
<td>4.90</td>
<td>1.30</td>
<td>1.20</td>
<td>1.10</td>
<td>1.00</td>
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<td>0.90</td>
<td>0.80</td>
<td>0.60</td>
<td>0.30</td>
<td>0.00</td>
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<tr>
<td>HVP-200</td>
<td>8.60</td>
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<td>2.75</td>
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<td>2.05</td>
<td>1.90</td>
<td>1.60</td>
<td>1.30</td>
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<tr>
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<td>3.00</td>
<td>2.60</td>
<td>1.80</td>
<td>0.90</td>
<td>0.00</td>
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</table>

#### Notes:

1. **Note 1:** Standard operating pressure for Vaccon pumps is 80 PSI [5.5 bar]. The HVP-100 can be factory modified to run at other operating pressures i.e. 60 PSI [4.1 bar] etc. The values shown in the performance chart will remain the same for all operating pressures.
2. **Note 2:** Evacuation speed is linear with volume. A 2 cu. ft. volume will take twice as long to evacuate as a 1 cu. ft. volume.

### Performance Charts

- **Performance Charts represent average performance data. For reference only.**

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**Phone:** 1-800-848-8788 or 508-359-7200  
**E-Mail:** engineering@vaccon.com