The DF Series of high flow material conveying vacuum pumps provide a simple, reliable and cost effective method of in-line transfer of bulk materials, complex shapes, individual objects, and selvedge.

**DF Series* — Material Conveying Pumps**

The DF pump's unique capability to create instantaneous vacuum flow and high air velocity, combined with its straight-through, smooth bore design allows material to pass directly through the pump at high speeds without interference or clogging.

Simply regulate the input pressure to adjust and control the transfer speed. For maximum efficiency, the compact design allows close placement to the work area. DF Series material conveying pumps are made of anodized aluminum and available in 11 standard models with inside diameters from 1/8” [6mm] to 4” [100mm].

See Page 10.2

---

**DF 5-6-FD — Liquid Conveying Pumps**

The DF 5-6 FD is a modified DF material conveying pump for field or mobile cleanup of liquid spills. Designed to quickly clean up liquids, the DF 5-6 FD pump threads directly into a standard 55-gallon drum or other container with 3/4-14 NPS threaded ports.

The DF 5-6-FD pump is safe, using no electricity, and includes an overfill prevention device to seal off the pump when the container is filled. The transfer or collection speed can be controlled by simply adjusting the input air pressure.

See Page 10.8

---

**DF 25-12-110-RI — Aggregate Conveying Pump and Replacement Kit**

The DF 25-12-110-RI pump is specially designed for the conveyance or spraying of abrasive materials. When the body of the pump inevitably wears down, it can be replaced, eliminating the need to re-purchase the entire pump. A replacement body, along with o-rings and retaining clips, can be replaced in the field in a matter of minutes. This pump provides a consistent, conical spray of material, making it ideal for the spreading of bridge aggregate, metal filings, and any other abrasive material.

See Page 10.10

---

**NOTE:** As of 1/1/17 the color of the VDF/CDF/DF pumps will transition from clear anodize to black anodize. The change in color does not affect the performance or durability of the pump in any way.
Material Conveying Vacuum Pumps

DF Series

The DF Series of high flow material conveying vacuum pumps provide a simple, reliable and cost effective method of in-line transfer of bulk materials, complex shapes, individual objects, selvedge.

The DF pump’s unique capability to create instantaneous vacuum flow and high air velocity, combined with its straight-through, smooth bore design allows material to pass directly through the pump at high speeds without interference or clogging.

Simply regulate the input pressure to adjust and control the transfer speed. For maximum efficiency, the compact design allows close placement to the work area.

DF Series material conveying pumps are made of anodized aluminum and available in 11 standard models with inside diameters from 1/8” [3mm] to 4” [100mm].

Features/Benefits

• Application versatility
• Efficient – instant on and off, low operating costs
• Fast response – installs close to vacuum point
• Easy to install – simply connect tubing to the vacuum and exhaust ports, and supply compressed air
• Safe operation – no electricity needed at the pump
• Reliable – trouble-free operation:
  ~ Straight-through design, non-clogging
  ~ No moving parts to wear or clog
  ~ No flap valves to stick open
  ~ No maintenance
  ~ No downtime

Pump Options:

• Internal and external threaded exhaust and/or vacuum ports
• G port threads for metric machines – an “I” prefix designates products with metric threads
• Teflon™ or hardcoat anodizing
• Mounting/manifold block – see page 12.28
• For chemical compatibility, heat and environmental requirements, food and medical applications, custom materials, special coatings and modified threads are available.

Applications:

Bulk Materials:
• Granulated Plastics
• Seasonings
• Dry Powders
• Ball Bearings
• Paper Strips
• Wood Chips
• Molded Items
• Game Pieces
• Paper Products
• Pharmaceutical Products
• Chip Removal in Machining Operations
• Caustic or Hazardous Materials

Individual Objects:
• Pens and Pen Caps
• Bottle Caps
• Pills, Tablets
• Electronic Components
• Springs
• Packaged Products
• Spark Plugs
• Needles
• Screwdrivers
• Bearings
• Engine Valves
• Golf Balls

Trim, Selvedge and Fiber Collection:
• Transfer Selvedge from Trimming Operations
• Wind, Unwind, Manage Continuous Strips
• Waste Removal for Manual and Automatic Operations
• Drying
• Assists Central Collection Systems

Vaccon Fun Fact: Our first product developed was a vacuum conveying product, thus our name VACuum CONveying

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

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

Sizing the correct DF material transfer pump is based on the material density, particle size, transfer rate required (kg/min), elevation and length of transfer line. For application assistance, please contact Vaccon Technical Support. In many cases, customers send product to Vaccon to test at our in-house test facility. Ask about our 30-Day Test & Evaluation policy.

**Transferring Bulk Materials:**

![Diagram of Basic Hopper](attachment:basic_hopper_diagram.png)

Place pump about 1/3 the overall distance from the suction. Allow the compressed air powering the pump to assist in pushing the material to the collection hopper.

![Diagram of Hopper Inlet](attachment:hopper_inlet_diagram.png)

Induced atmospheric air, compressed air and the material being transferred enter the collection hopper, where the material falls by gravity. The air vents out the top of the hopper. To capture lighter-than-air materials, connect a filter or dust collector to the hopper outlet.

![Diagram of Hopper Outlet](attachment:hopper_outlet_diagram.png)

The DF pump creates a vacuum in the collection hopper causing the material to flow up the conveyor tube into the collection hopper. Compressed air doesn’t mix with the material, helping to prevent a cloud from forming when transferring fine, light powders. Material entering the hopper falls to the bottom faster due to the vacuum in the collection hopper. To reduce noise, add an optional silencer to the DF pump exhaust.

![Diagram of Hopper to Hopper Butterfly Extended Distance](attachment:hopper_to_hopper_diagram.png)

Transferring bulk and individual items vertically and horizontally over long distances may require a second conveying pump as a booster pump. To accept the flow generated by the first pump and to add power, add a booster pump that is larger than the first-stage pump. To maintain the proper balance between air intake and material intake use a valve to meter both.

**Caution:** When conveying materials through plastic transfer lines, you must ground the transfer line to dissipate the static charge that develops from the friction of the air and material flowing over the transfer line surface.
To size a DF pump for transferring individual items, choose the pump with an inside diameter just slightly larger than the largest dimension of the object.

Load parts for assembly from a vibratory bowl feeder.

Design Tip: To prevent damage or to match the assembly speed, decrease the transfer speed by introducing a vertical bend into the tube, allowing gravity to work against the direction of travel.

* To reduce transfer speed further, add holes in the tube to allow the air to vent.

Caution: When conveying materials through plastic transfer lines, you must ground the transfer line to dissipate the static charge that develops from the friction of the air and material flowing over the transfer line surface.

Trim, Selvedge and Fiber Collection:

To transfer complex shapes and individual objects, remove non-conforming parts from the conveyor line.

- Remove reject parts/assemblies.
- Design Tip: To prevent damage or to match the assembly speed, decrease the transfer speed by introducing a vertical bend into the tube, allowing gravity to work against the direction of travel.
- * To reduce transfer speed further, add holes in the tube to allow the air to vent.

Caution: When conveying materials through plastic transfer lines, you must ground the transfer line to dissipate the static charge that develops from the friction of the air and material flowing over the transfer line surface.

Trim, Selvedge and Fiber Collection:

- To transfer complex shapes and individual objects, remove non-conforming parts from the conveyor line.
- Design Tip: To prevent damage or to match the assembly speed, decrease the transfer speed by introducing a vertical bend into the tube, allowing gravity to work against the direction of travel.
- * To reduce transfer speed further, add holes in the tube to allow the air to vent.

Caution: When conveying materials through plastic transfer lines, you must ground the transfer line to dissipate the static charge that develops from the friction of the air and material flowing over the transfer line surface.
Installation Options:
For simple applications, place the DF pump in the transfer line, slip the transfer hose over the outside diameter of the pump and secure in place with a hose clamp.

When this type of installation is not desired or appropriate for the application, Vaccon offers the option of adding threads to the O.D. and the I.D. Please see page 10.6 for optional vacuum & exhaust port threads.

Caution: When conveying materials through plastic transfer lines, you must ground the transfer line to dissipate the static charge that develops from the friction of the air and material flowing over the transfer line surface.

Principles of Operation:
Compressed air is fed into an exterior annular ring that has a number of orifices leading into the main tube of a transducer. As the compressed air exits from the orifices, its velocity increases to supersonic speed. The air forced into the center of the tube rotates with a twisting motion similar to a worm screw. This cyclonic flow creates a powerful vacuum capable of drawing materials into and through the transducer. As a vacuum source, the DF Series are capable of rapid evacuation of a large volume of air to a low vacuum level.

DF Series Material Conveying Pumps Standard Specifications:
- **Body Material:** Anodized Aluminum Standard
- **Medium:** Filtered (50 Micron) unlubricated, non-corrosive, dry gases
- **Operating Temperature:** -100° to ~ 400° F [-73° to ~204°C]
- **Operating Pressure:** Input pressure of 40 PSI or less is sufficient to move most bulk materials and individual objects
- **Supply Pressure:** Regulate the supply pressure to develop the necessary transfer speed for your application

**NOTE:** Some of the D"X"-3 models are no longer stocked items as the same performance can be achieved with the “-6” models by regulating the air pressure down to 40 PSI. Example: DF 5-3 @ 80 PSI = DF 5-6 @ 40 PSI
DF Series Configurations and Options:

All Vaccon pumps offer a variety of options and accessories to meet your specific requirements. Please configure your pump from the options listed below.

Optional Threaded Ports:
Optional internal or external threaded vacuum and/or exhaust ports.

How to Specify:

### Standard (Non-Threaded) DF Series

<table>
<thead>
<tr>
<th>P/N</th>
<th>P/N</th>
<th>G Port</th>
<th>Air Supply Line</th>
<th>Transfer Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF 1-3</td>
<td>I-DF 1-3</td>
<td>1/4</td>
<td>1/2&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 2-3</td>
<td>I-DF 2-3</td>
<td>1/4</td>
<td>3/4&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 3-6*</td>
<td>I-DF 3-6*</td>
<td>3/8</td>
<td>3/4&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 5-6*</td>
<td>I-DF 5-6*</td>
<td>3/8</td>
<td>1&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 7-6*</td>
<td>I-DF 7-6*</td>
<td>1/2</td>
<td>1 1/4&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 10-6*</td>
<td>I-DF 10-6*</td>
<td>1/2</td>
<td>1 1/2&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 12-6*</td>
<td>I-DF 12-6*</td>
<td>1/2</td>
<td>1 3/4&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 15-6*</td>
<td>I-DF 15-6*</td>
<td>1/2</td>
<td>2&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 20-6*</td>
<td>I-DF 20-6*</td>
<td>1/2</td>
<td>2 1/2&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 30-6</td>
<td>I-DF 30-6</td>
<td>3/4</td>
<td>3 1/2&quot; I.D.</td>
<td></td>
</tr>
<tr>
<td>DF 40-12</td>
<td>I-DF 40-12</td>
<td>3/4</td>
<td>5&quot; I.D.</td>
<td></td>
</tr>
</tbody>
</table>

### Optional Threaded Ends

- **Internal Vacuum Port**
- **Internal Exhaust Port**
- **External Vacuum Port**
- **External Exhaust Port**

<table>
<thead>
<tr>
<th>P/N</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV18</td>
<td>TE18</td>
</tr>
<tr>
<td>TV25</td>
<td>TE25</td>
</tr>
<tr>
<td>TV50</td>
<td>TE50</td>
</tr>
<tr>
<td>TV75</td>
<td>TE75</td>
</tr>
<tr>
<td>TV100</td>
<td>TE100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT18</td>
<td>MTE18</td>
</tr>
<tr>
<td>MV38</td>
<td>MTE38</td>
</tr>
<tr>
<td>MVT50</td>
<td>MTE50</td>
</tr>
<tr>
<td>MVT75</td>
<td>MTE75</td>
</tr>
<tr>
<td>MTV100</td>
<td>MTE100</td>
</tr>
</tbody>
</table>

**P/N Material**
- Anodized Aluminum (Std.)
- 303* Stainless Steel
- 304 Stainless Steel
- 316 Stainless Steel
- 316L Low Carbon Stainless
- PVC
- PEEK
- Teflon®
- Delrin®

- *303 Stainless Steel only available for DF 1-3, 2-3, 3-3, and 3-6. Not available in larger size pumps.

**For complete Performance Data, see pages 10.13-14**

---

*Please note: Male and female threads can be ordered on different ends of the same pump, i.e. DF 5-6-TV50/MTE50

*Please note: Custom materials are not stock items. Consult factory for availability.

*Please note: Special anodizing available. i.e. Teflon™ hardcoat, hard anodize, etc. Consult factory.

*Please note: DF X”-3” versions are no longer stock items except for DF 1 and DF 2 sizes. Consult factory for availability.

*For performance closer to “-3” versions, regulate pressure down to 40 PSI.

*Note: As of 1/1/17 Vaccon is transitioning its VDF/CDF/DF pumps from clear anodize to black anodize. The change in color does not affect the performance or durability of the pump in any way.
### DF Series – Imperial Dimensions (in.)

<table>
<thead>
<tr>
<th>Model #</th>
<th>A</th>
<th>Optional Male Vacuum Thread</th>
<th>B</th>
<th>Optional Male Exhaust Thread</th>
<th>C</th>
<th>Optional Female Vacuum Thread</th>
<th>D</th>
<th>Minimum Bore</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF 1-3</td>
<td>1/8 NPT F</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>1/8” NPT</td>
<td>0.15</td>
<td>0.48</td>
<td>1.00</td>
<td>0.50</td>
<td>1.50</td>
<td>3.00</td>
<td>0.49</td>
<td>0.99</td>
<td>1.5oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 2-3</td>
<td>1/8 NPT F</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>0.25</td>
<td>0.73</td>
<td>1.25</td>
<td>0.75</td>
<td>1.75</td>
<td>3.50</td>
<td>0.74</td>
<td>1.24</td>
<td>3.2 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 3-6</td>
<td>1/8 NPT F</td>
<td>3/8” NPT</td>
<td>3/8” NPT</td>
<td>1/4” NPT</td>
<td>1/4” NPT</td>
<td>0.38</td>
<td>0.73</td>
<td>1.25</td>
<td>0.75</td>
<td>1.75</td>
<td>3.50</td>
<td>0.74</td>
<td>1.24</td>
<td>2.8 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 5-6</td>
<td>1/4 NPT F</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>1/2” NPT</td>
<td>0.50</td>
<td>0.99</td>
<td>1.62</td>
<td>1.00</td>
<td>2.25</td>
<td>5.50</td>
<td>1.00</td>
<td>1.48</td>
<td>6.2 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 7-6</td>
<td>3/8 NPT F</td>
<td>3/4” NPT</td>
<td>3/4” NPT</td>
<td>3/4” NPT</td>
<td>3/4” NPT</td>
<td>0.75</td>
<td>1.24</td>
<td>2.50</td>
<td>1.50</td>
<td>3.50</td>
<td>7.50</td>
<td>1.25</td>
<td>1.98</td>
<td>13.4 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 10-6</td>
<td>3/8 NPT F</td>
<td>1” NPT</td>
<td>1” NPT</td>
<td>1” NPT</td>
<td>1” NPT</td>
<td>1.00</td>
<td>1.46</td>
<td>2.50</td>
<td>1.50</td>
<td>3.50</td>
<td>7.50</td>
<td>1.48</td>
<td>2.23</td>
<td>1 lb 5 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 12-6</td>
<td>3/8 NPT F</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.25</td>
<td>1.71</td>
<td>2.50</td>
<td>1.50</td>
<td>3.50</td>
<td>7.50</td>
<td>1.73</td>
<td>2.47</td>
<td>1 lb 3 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 15-6</td>
<td>3/8 NPT F</td>
<td>1 1/2” NPT</td>
<td>1 1/2” NPT</td>
<td>1 1/4” NPT</td>
<td>1 1/4” NPT</td>
<td>1.50</td>
<td>1.96</td>
<td>2.50</td>
<td>1.50</td>
<td>3.50</td>
<td>7.50</td>
<td>1.98</td>
<td>2.73</td>
<td>1 lb 5 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 20-6</td>
<td>3/8 NPT F</td>
<td>2” NPT</td>
<td>2” NPT</td>
<td>2” NPT</td>
<td>2” NPT</td>
<td>2.00</td>
<td>2.46</td>
<td>2.50</td>
<td>1.50</td>
<td>3.50</td>
<td>7.50</td>
<td>2.48</td>
<td>3.23</td>
<td>1 lb 9 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 30-6</td>
<td>1/2 NPT F</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>3.00</td>
<td>3.46</td>
<td>2.50</td>
<td>1.50</td>
<td>3.50</td>
<td>7.50</td>
<td>3.48</td>
<td>4.47</td>
<td>3 lbs 6 oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 40-12</td>
<td>3/4 NPT F</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>4.00</td>
<td>4.89</td>
<td>3.25</td>
<td>2.00</td>
<td>4.50</td>
<td>9.50</td>
<td>4.95</td>
<td>5.95</td>
<td>6 lbs 11 oz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### DF Series – Metric Dimensions (mm.)

<table>
<thead>
<tr>
<th>Model #</th>
<th>A</th>
<th>Optional Male Vacuum Thread</th>
<th>B</th>
<th>Optional Male Exhaust Thread</th>
<th>C</th>
<th>Optional Female Vacuum Thread</th>
<th>D</th>
<th>Minimum Bore</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-DF 1-3</td>
<td>G 1/8</td>
<td>G 1/8</td>
<td>G 1/8</td>
<td>G 1/8</td>
<td>G 1/8</td>
<td>3.8</td>
<td>12.2</td>
<td>25.4</td>
<td>12.7</td>
<td>38.1</td>
<td>76.2</td>
<td>12.4</td>
<td>25.1</td>
<td>42.5g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 2-3</td>
<td>G 1/8</td>
<td>G 3/8</td>
<td>G 3/8</td>
<td>G 1/4</td>
<td>G 1/4</td>
<td>6.4</td>
<td>18.4</td>
<td>31.8</td>
<td>19.1</td>
<td>44.5</td>
<td>88.9</td>
<td>18.8</td>
<td>31.5</td>
<td>91g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 3-6</td>
<td>G 1/8</td>
<td>G 3/8</td>
<td>G 3/8</td>
<td>G 1/4</td>
<td>G 1/4</td>
<td>9.7</td>
<td>18.4</td>
<td>31.8</td>
<td>19.1</td>
<td>44.5</td>
<td>88.9</td>
<td>18.8</td>
<td>31.5</td>
<td>79g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 5-6</td>
<td>G 1/4</td>
<td>G 1/2</td>
<td>G 1/2</td>
<td>G 1/2</td>
<td>G 1/2</td>
<td>12.7</td>
<td>25.0</td>
<td>41.1</td>
<td>25.4</td>
<td>57.2</td>
<td>139.7</td>
<td>25.4</td>
<td>37.6</td>
<td>176g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 7-6</td>
<td>G 3/8</td>
<td>G 3/4</td>
<td>G 3/4</td>
<td>G 3/4</td>
<td>G 3/4</td>
<td>19.1</td>
<td>31.4</td>
<td>63.5</td>
<td>38.1</td>
<td>88.9</td>
<td>190.5</td>
<td>31.8</td>
<td>50.3</td>
<td>380g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 10-6</td>
<td>G 3/8</td>
<td>G 1</td>
<td>G 1</td>
<td>G 1</td>
<td>G 1</td>
<td>25.4</td>
<td>37.1</td>
<td>63.5</td>
<td>38.1</td>
<td>88.9</td>
<td>190.5</td>
<td>37.6</td>
<td>56.6</td>
<td>468g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 12-6</td>
<td>G 3/8</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>31.8</td>
<td>43.4</td>
<td>63.5</td>
<td>38.1</td>
<td>88.9</td>
<td>190.5</td>
<td>43.9</td>
<td>62.7</td>
<td>541g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 15-6</td>
<td>G 3/8</td>
<td>G 1 1/2</td>
<td>G 1 1/2</td>
<td>G 1 1/4</td>
<td>G 1 1/4</td>
<td>38.1</td>
<td>49.8</td>
<td>63.5</td>
<td>38.1</td>
<td>88.9</td>
<td>190.5</td>
<td>50.3</td>
<td>69.3</td>
<td>607g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 20-6</td>
<td>G 3/8</td>
<td>G 2</td>
<td>G 2</td>
<td>G 2</td>
<td>G 2</td>
<td>50.8</td>
<td>62.5</td>
<td>63.5</td>
<td>38.1</td>
<td>88.9</td>
<td>190.5</td>
<td>63.0</td>
<td>82.0</td>
<td>777g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 30-6</td>
<td>G 1/2</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>76.2</td>
<td>87.9</td>
<td>63.5</td>
<td>38.1</td>
<td>88.9</td>
<td>215.9</td>
<td>88.4</td>
<td>113.5</td>
<td>1.4kgs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-DF 40-12</td>
<td>G 3/4</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>101.6</td>
<td>124.2</td>
<td>82.6</td>
<td>50.8</td>
<td>114.3</td>
<td>241.3</td>
<td>125.7</td>
<td>151.1</td>
<td>3kgs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Consult Factory.*
Liquid Conveying Vacuum Pumps

DF 5-6 FD-ST8B Series

The DF 5-6 FD is a modified DF material conveying pump for field or mobile cleanup of liquid spills. Designed to quickly clean up liquids, the DF 5-6 FD pump threads directly into a standard 55-gallon drum or other container with 3/4-14 NPS threaded ports. The DF 5-6 FD pump is safe, using no electricity and includes an overfill prevention device to seal off the DF pump when the container is filled. The transfer or collection speed can be controlled by simply adjusting the input air pressure.

The DF 5-6 FD pump is simple to setup and operate. The only items needed to run the DF 5-6 FD pump are a compressed air supply, tubing (with 1/4 NPT male fitting) and a compatible hose to collect the liquid. The standard DF 5-6 FD pump is made of anodized aluminum. Specialty materials are available - consult factory.

Ideal Applications
Cleanup of liquid material spills:
- Water
- Gasoline
- Oil
- Chemicals

Features/Benefits
- Variety of specialty materials to accommodate chemical and environmental requirements
- Field adjustable transfer speed
- Safe operation — no electricity needed at the pump, automatic shutoff
- Easy to install, pump threads directly into containers with 3/4-14 NPS ports
- Efficient with fast response
- Reliable, durable, trouble-free operation:
  - No moving parts to wear out
  - Straight-through design, non-clogging
  - No maintenance, no downtime

Pump Options
- For chemical compatibility, heat and environmental requirements, food and medical applications, custom materials are available: stainless steel, Acetal, PTFE, PVC, and more. Also available with Hardcoat and PTFE coated anodizing. Consult factory.

Principles of Operation:
Compressed air is fed into an exterior annular ring that has a number of orifices leading into the main tube of a transducer. As the compressed air exits from the orifices, its velocity increases to supersonic speed. The air forced into the center of the tube rotates with a twisting motion similar to a worm screw. This cyclonic flow creates a powerful vacuum capable of drawing materials into and through the transducer. As a vacuum source, the DF Series are capable of rapid evacuation of a large volume of air to a low vacuum level.
DF 5-6 FD-ST8B Liquid Conveying Pumps Standard Specifications:

- **Body Material:** Anodized Aluminum Standard
- **Operating Temperature:** -100° to ~ 400° F [-73° to ~204°C]
- **Operating Pressure:** Input pressure of 40 PSI or more is sufficient to move most bulk materials and liquids
- **Supply Pressure:** Regulate the supply pressure to develop the necessary transfer speed for your application

DF 5-6 FD-ST8B Liquid Conveying Pump Configuration:

- **Air Supply Port**
- **NPT Threads**
- **Over-fill Protection Mechanism**

![DF 5-6 FD-ST8B Liquid Conveying Pump Configuration](image)

How to Specify:

<table>
<thead>
<tr>
<th>Model #</th>
<th>DF 5-6 FD-ST8B</th>
<th>DF 5-6 FD-ST8B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P/N</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF 5-6 FD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silencer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>ST8B</td>
<td></td>
</tr>
</tbody>
</table>

For complete Performance Data, see page 10.13.

Standard Pump Dimensions: DF 5-6 FD-ST8B Liquid Conveying Pumps

<table>
<thead>
<tr>
<th>Model #</th>
<th>DF 5-6 FD-ST8B</th>
<th>DF 5-6 FD-ST8B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A C D</strong></td>
<td>Minimum Bore</td>
<td></td>
</tr>
<tr>
<td>1/4 NPT F</td>
<td>0.50</td>
<td>0.92</td>
</tr>
<tr>
<td>1/2 NPT F</td>
<td>12.7</td>
<td>22.4</td>
</tr>
<tr>
<td></td>
<td>98.3</td>
<td>145.0</td>
</tr>
<tr>
<td></td>
<td>145.0</td>
<td>180.6</td>
</tr>
<tr>
<td></td>
<td>15.35</td>
<td>15.25</td>
</tr>
<tr>
<td></td>
<td>10.35</td>
<td>15.25</td>
</tr>
<tr>
<td></td>
<td>15.25</td>
<td>15.25</td>
</tr>
<tr>
<td></td>
<td>12.5</td>
<td>4.90</td>
</tr>
<tr>
<td></td>
<td>12.5</td>
<td>4.90</td>
</tr>
<tr>
<td></td>
<td>11.0 oz.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>310.0 g</td>
<td></td>
</tr>
</tbody>
</table>

For more information, contact VACCON at:
- **Phone:** 1-800-848-8788 or 508-359-7200
- **E-Mail:** engineering@vaccon.com

VACCON VACUUM PRODUCTS

www.vaccon.com
Ideal Applications:
- Bulk conveyance of dry, abrasive materials:
  - Stone
  - Aggregate
  - Ceramics
  - Metals
- Spraying
- Coating
- Spreading
- Broadcasting
- Mixing
- Metalizing
- Bridge & deck repair
- Road & Construction surfaces

Features/Benefits:
- Automates manual operation
- Uniform, conical spray
- Controlled output
- Maximum coverage
- Minimizes waste
- Reduces labor costs
- Safer work environment
- Increased production
- Efficient
- Cost effective
- Easy installation
- DIY Replacement Kits available

Standard Pump:
The DF 25-12-110-RI is a material transfer pump that is ideal for spraying dry and abrasive materials i.e. mineral fragments, stone dust, metal filings, ceramics and more.

Originally designed for spreading bridge aggregate, the DF 25 features an angled exhaust that produces a conical spray for consistent high volume output of coarse materials. Fast becoming the choice of bridge and roadway construction workers, the DF 25 pump safely and efficiently conveys aggregate from super sacks or dump trucks directly to the bridge deck or road surface, eliminating the need for hand spreading or bulk dumping.

When the body of the pump inevitably wears out, it can be easily replaced with a new body eliminating the cost to purchase an entirely new pump. A replacement body kit includes a body, o-rings & retaining clips that can be easily swapped out in the field in a matter of minutes – minimizing downtime.

Pump Options:
- Available in NPT or G Port Thread

NOTE: As of 1/1/17 Vaccon is transitioning its VDF/CDF/DF pumps from clear anodize to black anodize. The change in color does not affect the performance or durability in any way.

Principles of Operation:
Compressed air is fed into an exterior annular ring that has a number of orifices leading into the main tube of a transducer. As the compressed air exits from the orifices, its velocity increases to supersonic speed. The air forced into the center of the tube rotates with a twisting motion similar to a worm screw. This cyclonic flow creates a powerful vacuum capable of drawing materials into and through the transducer. As a vacuum source, the DF Series are capable of rapid evacuation of a large volume of air to a low vacuum level.

DF 25-12-110-RI Aggregate Conveying Pump Standard Specifications:

- **Body Material:** Anodized Aluminum Standard
- **Operating Temperature:** -100° to ~ 400° F [-73° to ~204°C]
- **Operating Pressure:** Input pressure of 40 PSI or more is sufficient to move most bulk materials and liquids
- **Supply Pressure:** Regulate the supply pressure to develop the necessary transfer speed for your application

DF 25-12-110-KIT includes body, o-rings and retaining clips for fast replacement of worn parts.
Please go to www.vaccon.com to view step-by-step video instructions.

The DF 25 pump runs on 80 PSI using existing construction site compressors. (Minimum 20HP compressor required.)
For safety purposes, Vaccon strongly recommends the use of special safety fit air hose connections, couplings and fittings.
## DF 25-12-110-RI Aggregate Conveying Pump Configuration:

<table>
<thead>
<tr>
<th>P/N</th>
<th>Imperial</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF 25-12-110-RI</td>
<td>Full Pump (Includes Collar, Body, Retaining Clips &amp; O-Rings)</td>
<td>Full Pump (Includes Collar, Body, Retaining Clips &amp; O-Rings)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P/N</th>
<th>Replacement Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF 25-12-110-KIT</td>
<td>Includes Replacement Body, Retaining Clips &amp; O-Rings</td>
</tr>
</tbody>
</table>

**How to Specify:**

For complete Performance Data, consult factory.

**Call:**
- 1-800-848-8788 or 508-359-7200
- Email: engineering@vaccon.com
Standard Pump: DF 25-12-110-RI Aggregate Conveying Pump:

Replacement Kit includes:
- **A** (1) Body
- **B** (2) Retaining Clips
- **C** (2) O-rings

(Pump collar and external retainer ring pliers not included)

To view an instructional video on how to disassemble and reassemble the DF 25-12-110-RI, go to [www.vaccon.com/videos](http://www.vaccon.com/videos)

For safety purposes, Vaccon strongly recommends the use of special safety fit air hose connectors, couplings and fittings. (Vaccon does not supply these items.)

---

<table>
<thead>
<tr>
<th>Model #</th>
<th>Imperial Dimensions (in.)</th>
<th>Metric Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>DF 25-12-110-RI</td>
<td>3/4 NPT</td>
<td>2.50</td>
</tr>
<tr>
<td>I-DF 25-12-110-RI</td>
<td>G 3/4</td>
<td>63.5</td>
</tr>
</tbody>
</table>

---

DF 25-12-110-KIT - Replacement Kit:

To view an instructional video on how to dis-assemble and re-assemble the DF 25-12-110-RI, go to [www.vaccon.com/videos](http://www.vaccon.com/videos)
DF Material Conveying Pumps – Performance Graphs

DF 1-3, DF 2-3, DF 3-6

Operating Note: Above 40 PSI [2.7 bar], the increased energy consumed through rising air consumption is converted into increased vacuum level while vacuum flow stays constant. It is the vacuum flow that provides the motive force for the materials to be transferred. Higher vacuum levels are useful when lifting high molecular weight bulk materials and heavy individual objects long distances vertically.

Note: Performance Charts represent average performance data. For reference only.
### Operating Note
Above 40 PSI (2.7 bar), the increased energy consumed through rising air consumption is converted into increased vacuum level while vacuum flow stays constant. It is the vacuum flow that provides the motive force for the materials to be transferred. Higher vacuum levels are useful when lifting high molecular weight bulk materials and heavy individual objects long distances vertically.

### Note
Performance Charts represent average performance data. For reference only.
Operating Note: Above 40 PSI [2.7 bar], the increased energy consumed through rising air consumption is converted into increased vacuum level while vacuum flow stays constant. It is the vacuum flow that provides the motive force for the materials to be transferred. Higher vacuum levels are useful when lifting high molecular weight bulk materials and heavy individual objects long distances vertically.

Note: Performance Charts represent average performance data. For reference only.
DF Custom End Connections

Barbs grip securely on flexible tubing, no clamps required

Combined turned OD with counter bored ID to match customer design

Slotted: Counter bored to match transfer tube for smooth transition

Optional OD and ID threads. See tables on Page 10.7

Threaded Adapter: Oversized threads available

Slotted with screw clamp for clamping OD of transfer tube
DF Pumps – Custom Shaped

- **DF notched multi-pump** – close centers designed for picking and placing compression springs
- **DFR** – split design surrounds continuous fibers, wires, tubing etc., for drying and cooling

- **Square collar aids in mounting**
- **Extended length with angle for filling stuffed animals**

Phone: 1-800-848-8788 or 508-359-7200  
E-Mail: engineering@vaccon.com
When off the shelf doesn’t work, Vaccon’s engineering expertise and manufacturing capabilities can provide custom solutions to your specifications.

Whether it’s as simple as modifying a standard product, or more complex requiring new products with specific features, or special materials, Vaccon has the solution.

Vaccon customizes more DF pumps than any other product line.

**Custom Materials:**

When transferring highly abrasive, caustic or food grade materials, Vaccon offers the DF Series material conveying pumps in several grades of stainless steel – 303, 304, 316, 316L, Acetal, Teflon™, PVC, PEEK, as well as hardcoat and Teflon™ coated anodizing.

**Custom Shapes and Sizes:**

Custom stainless steel DF with integral Tri-clover® clamp for food industry.

Custom DF for hopper loading application.

Various shapes and sizes of custom DF pumps.

**Custom End Configurations/Connections:**

When size, shape, material and performance matter, it’s Vaccon Vacuum Pumps.