Dresser-Rand’s D-VIP compressor uses unique design features of both the HOS and VIP compressors. Like the HOS compressor, the open-frame-top construction of the D-VIP compressor ensures rigidity while providing large access areas for maintenance and inspection. Also featured is the through-bolt distance piece design for improved load-carrying capability. The D-VIP compressor also has some unique unloading features that make it one of the most versatile compressors available today.

Like other VIP cylinders, the outer end suction valve travel is adjustable, so it acts as a variable volume clearance pocket (VVCP). Additionally, the VVCP can be adjusted even further to fully unload the head end of the cylinder. Both these features come standard on the D-VIP compressor.

Flexibility is also available on the cylinder frame end. The frame end suction valve location can be changed during maintenance shutdowns to increase or decrease clearance.

With the D-VIP compressor, you can fine tune your compressor’s flow to match operating pressures to keep your driver optimally loaded — minimizing fuel consumption and maintenance. Best of all, you can do all of this in minutes compared to the hours it takes with conventional compressors.

Heavy-duty, forged steel crankshafts are statically balanced (except for the 6-throw which is inherently balanced) and are counterweighted to reduce horizontal moments. Main bearings are precision-insert type to meet the demands of high-speed operation with the D-VIP compressor.
The unique piston-valve in the VIP compressor provides a large valve area and straight-through gas passage for increased efficiency. Lower fixed clearances result in higher volumetric efficiencies for higher flows. Lower weight allows higher speeds with reduced inertia forces.

There are only four valves in the D-VIP compressor. The exclusive Dresser-Rand PF valves with Hi-Temp™ plates are used to improve flow and efficiency, and to provide longer operating life.

The D-VIP compressor frame has a direct-drive, positive-displacement, gear-type main oil pump with full-flow oil filter and cooler.
High-strength nodular iron crossheads feature shim-adjustable aluminum shoes at top and bottom. Crosshead pins are full-floating. Integral crosshead guide housings assure positive alignment with the frame.

For certain applications, specially designed I-beam crossheads are used that allow higher rotation speeds. They are made of nodular iron to balance the reciprocating weight or opposing throws.

Forged steel connecting rods are rifle-drilled for pressure lubrication and feature high-strength bolts with rolled threads.
### Specifications

**Frame**
- One Piece, Cast Gray Iron, High-strength

**Crankshaft**
- Forged Steel

**Connecting Rod Pins**
- Forged Steel

**Connecting Rod Bolts**
- Hardened Steel

**Crossheads**
- Solid Aluminum Alloy

**Bearings – Crosspins**
- Tr-metall Bronze

**Bushings – Connecting Rod**
- Bronze

**Cylinders**
- Gray and Nodular Iron

**Piston Rods**
- Alloy Steel, Rolled Threads

**Piston Rod Packing Rings**
- Carbon-filled Teflon®

**Oil Pump**
- Positive Displacement Gear-type

**Oil Filter**
- Full-flow, 10-micron

**Oil Cooler**
- Shell-and-tube

### Optional Features

- Carpenter Custom 450® piston rods with D-R TC3 coating
- Annealed 4142 piston rods with D-R TC3 coating
- “Sour gas” distance piece
- Crankcase and lubricator oil heaters
- Crankcase explosion relief devices

### Compressor Cylinder

- Manually operated variable volume clearance pocket
- AISI 4142 steel piston rods
- AISI 4142 steel suction and discharge valves (piston)
- PF-style plate valves complete with Hi-Temp™, non-metallic PEEK plates and chrome silicon springs with Teflon® spring inserts
- Teflon® piston rings and rider bands for bore sizes 4.625” (117.5 mm) to 9.75” (247.7 mm)
- Teflon® piston rings and rider bands for bore sizes 10.5” (266.7 mm) and larger - combination ring type
- Carbon-filled Teflon® piston rod packing rings
- Six sets of parts lists and operating manuals
- One reproducible print of certified outline drawings (or furnished in electronic format)

### RATINGS

<table>
<thead>
<tr>
<th>Model</th>
<th>Stroke in. (mm)</th>
<th>Number of Cylinders</th>
<th>Nominal Rated Power hp (kW)</th>
<th>Max. Allowable Rod Load lbs. (kN)</th>
<th>Rated rpm</th>
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</thead>
<tbody>
<tr>
<td>7D-VIP2</td>
<td>7 (177.8)</td>
<td>2</td>
<td>1800 (1342)</td>
<td>45000 (200)</td>
<td>1000</td>
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<td>7D-VIP4</td>
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<td>3600 (2685)</td>
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<td>4500 (3356)</td>
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<td>1200</td>
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<tr>
<td>5D-VIP2</td>
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<td>1875 (1398)</td>
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### Capacities

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<tr>
<th>Size in. (mm)</th>
<th>MAWP psig (kg/cm²) @ 1000 rpm CFM (m³/hr.)</th>
<th>Piston Displacement @ 1200 rpm CFM (m³/hr.)</th>
<th>Piston Displacement @ 1500 rpm CFM (m³/hr.)</th>
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<tbody>
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<td>4.625 (117.5)</td>
<td>2800 (196.9)</td>
<td>120 (204)</td>
<td>123 (209)</td>
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<td>5 (127.0)</td>
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<td>23 (584.2)</td>
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<td>3350 (5705)</td>
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**Diagram**:  
- Frame Crankshaft  
- Distance Required for Removal of Piston and Rod

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**Drawings**:  
- Compressor Cylinder  
- Main bearing RTDs  
- Foronal studies  
- Flywheel (if required)  
- Dynamic valve analysis  
- Dual oil filter
For more information, on the D-VIP compressor, visit us on the Internet at www.dresser-rand.com/gfc or contact the following:

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