Six-throw HOS compressor installed in China.

HOS compressors
The heavy oilfield separable compressor for big jobs.

Dresser-Rand brings more than 60 years of separable compressor operating experience to the heavy-duty HOS compressor line.

These rugged compressors are engineered for higher horsepower gas field applications, including gas lift, gas gathering, pipeline boosting, gas transmission, underground gas storage (injection and withdrawal), fuel gas boosting, landfill gas recovery, and many other applications. They are suited not only for sweet natural gas services, but can be built to handle sour natural gas, propane, carbon dioxide, air, nitrogen, and most other gases.

As an alternative to more costly other competing units, the HOS compressor provides a platform for process applications, but retains key design features like water-cooled cylinders and force-lubrication. The lower cost and rapid delivery of packaged HOS compressors can be applied to hydrogen, nitrogen, and other process requirements.

With more than 15 years of experience in our closed-loop test facility using a variety of field gases, D-R assures the integrity of the HOS compressor design and performance.

Rated to 7,200 hp (5370 kW) and 1,500 rpm with design pressures up to and exceeding 6,600 psig (455.05 bar), HOS compressors provide long life due to their heavy-duty construction. They are available in two-, four- or six-throw configurations and in cylinder sizes ranging from 3.75” (95.3 mm) to 26.5” (673.1 mm). The rigid, cast iron compressor frame is heavily ribbed and reinforced, with integrally cast crosshead extensions to handle almost any gas field requirement.

AVAILABLE IN GAS OR WATER-COOLLED CONFIGURATIONS

HOS compressor cylinders are gas-cooled for most applications. For special applications, the HOS compressor is available with water-cooled cylinders that provide additional protection in higher temperature services. Each system is designed and engineered to match your operating needs.

Gas-cooled HOS cylinders utilize a solid bore cylinder barrel cast in nodular iron. The 26” (660.4 mm) / 26.5” (673.1 mm) cylinder is a two-piece, valve-in-head type cylinder.

Water-cooled HOS cylinders are of similar construction, but are jacketed for circulating coolant. A full line-up of higher pressure, forged steel cylinders are available in sizes 3.75” (95.3 mm) to 6.5” (165.1 mm).

The line-up also includes a pipeline cylinder for gas pipeline transmission and a storage cylinder for gas injection and withdrawal applications.

The HOS compressor uses either solid or hollow aluminum or cast iron pistons depending on service conditions, balance, and inertia forces. Integral steel pistons and rods may be used in high-pressure applications.

A SINGLE SOURCE FOR ALL YOUR COMPRESSION NEEDS

HOS compressors offer many benefits to gas compressor users, whether used in a standard or customized package, in rental service, or purchased outright.

Dresser-Rand and its distributors can provide single-source responsibility, including engineering, manufacturing, packaging, installation, parts, and service.

With HOS compressors on the job, you can expect less maintenance and less fuel consumption. D-R and its distributors support the HOS compressor line with a network of computerized parts warehouses, and overhaul/revamp facilities located throughout the U.S. and Canada.
Rugged design for smooth operation

Every HOS compressor includes components designed to enhance performance. The compressor frame and cylinders are matched to provide years of smooth, reliable, efficient compression service when operated within OEM recommendations.

The open top frame construction ensures rigidity while providing large access areas for maintenance and inspection.

A full-length distance piece with an oversized door also provides easy access. The unique thru-bolt distance piece is designed for improved load carrying ability. Cylinder performance is optimized because multiple valve sizes can be used with the same size cylinder. Large valve areas improve efficiency, and oversized gas passages reduce valve losses. Optional high-volume, manually operated variable volume clearance pockets provide clearance for greater capacity control.

High-strength, nodular iron crossheads feature shim-adjustable aluminum shoes at the top and bottom. Surface-hardened crosshead pins are full floating for optimum reliability. Crosshead pin bushings are tri-metal bronze with babbitt overlay.
Rugged design for smooth operation, long life, and efficiency.

Forged steel connecting rods are rifle-drilled for pressure lubrication and feature high-strength bolts with rolled threads. Crankpin bearings are tri-metal bronze with a micro-babbitt overlay plate for added start-up protection and corrosion resistance. Connecting rod pin bushings are tri-metal bronze with babbitt overlay.

D-R PF valve (with ported valve sealing plate).

D-R Magnum™ valve (mini-Poppet element).

Both valves use D-R’s exclusive Hi-Temp nonmetallic wear parts material.

Precision aluminum alloy main bearings have micro-babbit overlay and are pressure lubricated. Bronze thrust shoes and two-piece precision tri-metal bronze crankpin bearings ensure better heat dissipation, reliability, and increased life.

Induction-hardened AISI 4142 steel piston rods feature rolled threads for optimum fatigue strength. Each piston rod is wet-magnetic-particle inspected. Every piston rod thread form is inspected using Johnson gauging.

Heavy-duty forged alloy steel crankshaft is rifle-drilled for pressure lubrication and the shaft is counterweighted to reduce horizontal moments. Main bearings are micro-babbit overlay.
### Piston Rods

- Alloy steel, rolled threads

### Crankshaft

- Forged steel

### Crosshead Pin Bushings

- Tri-metal bronze

### Connecting Rods

- Forged steel

### Oil Pump

- Gear-type, direct drive

### Oil Filter

- Full-flow, 10 micron

### Crossheads

- Nodular iron, shim-adjustable aluminum shoes

### Oil Cooler

- Shell-and-tube

### Frame Specifications and Dimensions

<table>
<thead>
<tr>
<th>Frame</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One piece, cast iron, high-strength</td>
</tr>
<tr>
<td></td>
<td>Alloy steel, hardened, super-finished</td>
</tr>
<tr>
<td>Crosshead pins</td>
<td>Alloy steel, rolled threads</td>
</tr>
<tr>
<td>Crosshead pin bushings</td>
<td>Tri-metal bronze</td>
</tr>
<tr>
<td>Crankshaft</td>
<td>Forged steel</td>
</tr>
<tr>
<td>Piston rods</td>
<td>Alloy steel, rolled threads</td>
</tr>
<tr>
<td>Crankpin bearings</td>
<td>Tri-metal bronze</td>
</tr>
<tr>
<td>Connecting rods</td>
<td>Forged steel</td>
</tr>
<tr>
<td>Oil pump</td>
<td>Gear-type, direct drive</td>
</tr>
<tr>
<td>Connecting rod bolts</td>
<td>Alloy steel, rolled threads</td>
</tr>
<tr>
<td>Oil filter</td>
<td>Full-flow, 10 micron</td>
</tr>
<tr>
<td>Connecting rod bushings</td>
<td>Tri-metal bronze</td>
</tr>
<tr>
<td>Oil cooler</td>
<td>Shell-and-tube</td>
</tr>
<tr>
<td>Crossheads</td>
<td>Nodular iron, shim-adjustable aluminum shoes</td>
</tr>
<tr>
<td>Lubricator</td>
<td>Flange mounted, direct drive</td>
</tr>
</tbody>
</table>

### Standard Cylinder Offering and Dimensions

<table>
<thead>
<tr>
<th>Cylinder Size (in. (mm))</th>
<th>MAWP psig (kg/cm²) Jacketed</th>
<th>MAWP psig (kg/cm²) No Jacket</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.50 (620.0)</td>
<td>220 (5698.8)</td>
<td>220 (5698.8)</td>
</tr>
<tr>
<td>26.00 (660.4)</td>
<td>280 (7112.8)</td>
<td>280 (7112.8)</td>
</tr>
<tr>
<td>24.50 (620.3)</td>
<td>280 (7112.8)</td>
<td>280 (7112.8)</td>
</tr>
<tr>
<td>23.00 (584.2)</td>
<td>350 (8900.0)</td>
<td>350 (8900.0)</td>
</tr>
<tr>
<td>22.50 (565.8)</td>
<td>350 (8900.0)</td>
<td>350 (8900.0)</td>
</tr>
<tr>
<td>20.50 (520.7)</td>
<td>470 (1242.7)</td>
<td>470 (1242.7)</td>
</tr>
<tr>
<td>19.00 (482.6)</td>
<td>470 (1242.7)</td>
<td>470 (1242.7)</td>
</tr>
<tr>
<td>17.50 (444.5)</td>
<td>545 (1384.6)</td>
<td>545 (1384.6)</td>
</tr>
<tr>
<td>16.25 (412.7)</td>
<td>600 (1524.0)</td>
<td>600 (1524.0)</td>
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<tr>
<td>15.00 (381.0)</td>
<td>745 (1914.5)</td>
<td>495 (1257.1)</td>
</tr>
<tr>
<td>14.00 (355.6)</td>
<td>750 (1905.5)</td>
<td>750 (1905.5)</td>
</tr>
<tr>
<td>13.00 (330.2)</td>
<td>855 (2177.5)</td>
<td>644 (1638.3)</td>
</tr>
<tr>
<td>12.25 (311.1)</td>
<td>1050 (2667.8)</td>
<td>1050 (2667.8)</td>
</tr>
<tr>
<td>11.50 (292.1)</td>
<td>1265 (3261.2)</td>
<td>1265 (3261.2)</td>
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<tr>
<td>10.50 (266.7)</td>
<td>1650 (4194.4)</td>
<td>1650 (4194.4)</td>
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<tr>
<td>9.50 (241.3)</td>
<td>1925 (4939.0)</td>
<td>1925 (4939.0)</td>
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<tr>
<td>8.00 (203.2)</td>
<td>2200 (5554.4)</td>
<td>2200 (5554.4)</td>
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<tr>
<td>7.00 (177.8)</td>
<td>2750 (6992.1)</td>
<td>2750 (6992.1)</td>
</tr>
<tr>
<td>6.00 (152.4)</td>
<td>2750 (6992.1)</td>
<td>2750 (6992.1)</td>
</tr>
<tr>
<td>4.75 (120.7)</td>
<td>2750 (6992.1)</td>
<td>2750 (6992.1)</td>
</tr>
</tbody>
</table>

### Lined Cylinders

- Available as well as special purpose cylinders for storage and pipeline applications.

### Performance 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 Operating Rod Load (lbs. (kN))</th>
<th>Rated rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>5HOS2</td>
<td>5 (127)</td>
<td>2</td>
<td>2,400 (1790)</td>
<td>60,000 (267)</td>
<td>1,500</td>
</tr>
<tr>
<td>5HOS4</td>
<td>5 (127)</td>
<td>4</td>
<td>4,800 (3580)</td>
<td>60,000 (267)</td>
<td>1,500</td>
</tr>
<tr>
<td>5HOS6</td>
<td>5 (127)</td>
<td>6</td>
<td>7,200 (5370)</td>
<td>60,000 (267)</td>
<td>1,500</td>
</tr>
<tr>
<td>6HOS2</td>
<td>6 (152.4)</td>
<td>2</td>
<td>2,000 (1429)</td>
<td>60,000 (267)</td>
<td>1,200</td>
</tr>
<tr>
<td>6HOS4</td>
<td>6 (152.4)</td>
<td>4</td>
<td>4,000 (2983)</td>
<td>60,000 (267)</td>
<td>1,200</td>
</tr>
<tr>
<td>6HOS6</td>
<td>6 (152.4)</td>
<td>6</td>
<td>6,000 (4475)</td>
<td>60,000 (267)</td>
<td>1,200</td>
</tr>
<tr>
<td>7HOS2</td>
<td>7 (177.8)</td>
<td>2</td>
<td>2,200 (1641)</td>
<td>60,000 (267)</td>
<td>1,000</td>
</tr>
<tr>
<td>7HOS4</td>
<td>7 (177.8)</td>
<td>4</td>
<td>4,400 (3281)</td>
<td>60,000 (267)</td>
<td>1,000</td>
</tr>
<tr>
<td>7HOS6</td>
<td>7 (177.8)</td>
<td>6</td>
<td>6,000 (4475)</td>
<td>60,000 (267)</td>
<td>1,000</td>
</tr>
</tbody>
</table>

### Optional Features

- Dresser-Rand TC2 (HOF) coated piston rods
- 17-4 PH or Carpenter® custom 450 stainless steel piston rods
- Purged packing and purged wiper case
- Two-compartment distance piece
- Crankcase and lubricator oil heaters
- Crankcase explosion relief devices
- Main bearing RDTS
- Torsional studies
- Flywheel (if required)
- Dynamic valve analysis
- Pump-to-point cylinder lubrication
- Electric drive lubricator
- Dual oil filter
- Automatic unloading devices
- Manual frame pre-lube pump
For more information on the HOS compressor, visit www.dresser-rand.com/gfc or contact us at:

**Dresser-Rand**
**Gas Field Compressors**
1354 South Sheridan Road
Tulsa, Oklahoma 74112-5416 USA
Tel: (Intl' +1) 918-254-4099
Fax: (Intl' +1) 918-252-9055
E-mail: GFC@dresser-rand.com

**Dresser-Rand**
**Reciprocating Operations**
100 Chemung Street
Painted Post, NY 14870 USA
Tel: (Int'l +1) 607-937-2011
Fax: (Int'l +1) 607-937-2905

For a complete list of D-R products and services, visit us on the Internet at www.dresser-rand.com or contact us at the following locations:

**Dresser-Rand**
**Corporate Headquarters**
WestB Tower, Suite 1000
10205 Westheimer Road
Houston, Texas 77042
Tel: (Int'l +1) 713-354-6100
Fax: (Int'l +1) 713-354-6110
E-mail: info@dresser-rand.com

**Regional Headquarters**

**The Americas**
WestB Tower, Suite 1000
10205 Westheimer Road
Houston, Texas 77042
Tel: (Int'l +1) 713-354-6100
Fax: (Int'l +1) 713-354-6110
E-mail: info@dresser-rand.com

**European Served Areas (ESA)**
(Europe, Eurasia, Middle East, Africa)
Dresser-Rand S.A.
31 Boulevard Winston Churchill
Cedex 7013
Le Havre 76080 France
Tel: (Int'l +33) 2-35-25-5225
Fax: (Int'l +1) 2-35-25-5366 / 5367

**Asia-Pacific**
Dresser-Rand Asia Pacific Sdn Bhd
Unit 9-4, 9th Floor
Bangunan Malaysian Re
17 Lorong Dungun
Damansara Heights
50490 Kuala Lumpur, Malaysia
Tel: (Int'l +60) 3-2093-6633
Fax: (Int'l +60) 3-2093-2622

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