HOSS compressors

The heavy oilfield super separable compressor for big jobs.

Dresser-Rand (D-R) brings more than 60 years of separable compressor experience to the heavy-duty HOSS compressor line. Dresser-Rand specializes in custom design and manufacturing to suit clients’ requirements.

These rugged compressors are engineered for high 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 HOSS compressor provides a platform for process applications by offering key design features such as water-cooled cylinders and optional cylinder lining. The lower cost and rapid delivery of packaged HOSS compressors can be applied to hydrogen, nitrogen, syngas, and other process requirements.

With more than 25 years of experience in our closed-loop test facility using a variety of field gases, Dresser-Rand assures the integrity of the HOSS compressor design and performance.

Rated to 8,700 hp (6490 kW) and 1,200 rpm with design pressures up to and exceeding 6,600 psig (455.05 bar), HOSS compressors provide long life because of their heavy-duty construction. We offer two-, four- or six-throw configurations and in cylinder sizes ranging from 3.75” (95.3 mm) to 26.5” (673.1 mm). The cast iron compressor frame is heavily ribbed and reinforced, with integrally cast crosshead extensions for heavy rod load carrying capability and rigidity.

CYLINDER CONFIGURATIONS

The HOSS compressor uses the same cylinders of the high-pressure HOS lineup; the only difference between the two is the size of the piston rod which has been increased to 2.875” (73.0 mm) in the HOSS. (For a given bore size, the packing case and piston rod are the only uncommon components between the two.)

A 16” (406.4 mm) distance piece (similar to that of the HOS design) with its through-bolt, heavy load-carrying design, is standard.

A full line-up of higher pressure, forged steel cylinders is available in sizes 3.75” (95.3 mm) to 6.5” (165.1 mm). In addition, the HOSS cylinders include pipeline cylinders for gas pipeline transmission and storage cylinders for gas injection and withdrawal applications.

The HOSS compressor uses 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

HOSS compressors offer cost-effective benefits to gas compressor users, whether acquired as standard or customized. Our compressors are available for outright purchase or under rental agreements through authorized packagers.

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

Our goal at Dresser-Rand is for clients to experience reliability, less maintenance, and greater fuel efficiency with the use of HOSS compressors. D-R and its distributors support the HOSS compressor line with a network of computerized parts warehouses. When you purchase or lease a HOSS compressor, we help you protect your investment by overhauling or revamping your compressor at facilities located throughout the U.S. and Canada.
Rugged design for smooth operation.

HOSS compressors are 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.

Heavily ribbed frame walls and bearing saddles, plus integral crosshead guides ensure added strength and rigidity. The open top frame construction and entrance windows on either side of the crosshead guide provide large access areas for easy maintenance and inspection.

Cylinder performance is optimized because valve sizes can be varied without altering cylinder size. Gas passages are oversized to reduce losses, and depending on the application valves can be sized to optimize efficiency. An optional high-volume, manually operated variable volume clearance pocket, capable of “on-the-fly” adjustment, provides clearance for greater capacity control.

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.

High-strength, nodular iron crossheads feature shim-adjustable aluminum shoes at the top and bottom. Surface-hardened crosshead pins are fixed for optimum reliability.

The heavy-duty forged and balanced and rifle-drilled crankshaft is designed for smooth operation, long life, and efficiency. The heavy-duty forged alloy steel crankshaft is balanced and rifle-drilled for pressure lubrication. The crankshaft is counterweighted with two- and four-throw to reduce horizontal moments.
Rugged design for smooth operation, long life, and efficiency.

Forged steel connecting rods are rifle-drilled for pressure lubrication and feature high-strength forged ferry head capscrews with rolled threads. Connecting rod pin bushings are solid bronze with a micro-babbitt overlay.

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.

Bearings are horizontally split precision-type tri-metal bronze with micro-babbit overlay to ensure better heat dissipation, reliability, and increased life; main bearings are identical to crankpin bearings.

Forged steel connecting rods are rifle-drilled for pressure lubrication and feature high-strength forged ferry head capscrews with rolled threads. Connecting rod pin bushings are solid bronze with a micro-babbitt overlay.

Dresser-Rand PF valve (with ported valve sealing plate).

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

Both high-efficiency valves use Dresser-Rand’s exclusive Hi-Temp nonmetallic wear parts material.
### Cylinder Specifications and Dimensions

**Frame Specifications and Dimensions**

- **Frame**: One piece, cast gray iron, high-strength
- **Crankshaft**: Forged steel
- **Connecting rods**: Forged steel
- **Connecting rod bolts**: Alloy steel, rolled threads
- **Crossheads**: Nodular iron, shim-adjustable aluminum shoes
- **Bearing - main and crankpin**: Solid bronze, chrome silicon springs
- **Bushing - connecting rod**: Solid bronze
- **Cylinders**: Nodular iron
- **Piston rods**: Alloy steel, rolled threads
- **Piston rods packing rings**: Filled Teflon®
- **Oil filter**: Full-flow, 10 micron

**Compressor Cylinder Components**

- Cast nodular iron solid bore cylinder barrel with integral crank-end head
- Forged steel line cylinder for bores 3.75” through 6.50” high-pressure forged steel cylinders available for bores 3.75” through 6.50”
- Cast gray iron, aluminum, or steel pistons
- Cast gray iron vented distance piece
- Variable volume clearance pockets
- AISI 4142 steel piston rods
- PF-style plate valves complete with Hi-Temp, non-metallic PEEK plates and chrome silicon springs
- Filled Teflon® combination piston rings
- Filled Teflon® piston rod packing rings
- .50 NPT plugged connections for indicator ports on outer end and frame end of all cylinders
- Parts lists and operating manuals in CD format

### Standard Cylinder Offering and Dimensions

<table>
<thead>
<tr>
<th>Cylinder Size</th>
<th>MAWP psig (kPa/cm²)</th>
<th>A in. (mm)</th>
<th>B in. (mm)</th>
<th>C in. (mm)</th>
<th>D in. (mm)</th>
<th>E in. (mm)</th>
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<tr>
<td>26.50 (673.1)</td>
<td>280 (19.7)</td>
<td>68 (1727.2)</td>
<td>22.38 (568.4)</td>
<td>90.38 (2295.6)</td>
<td>112 (2844.8)</td>
<td>34.75 (882.6)</td>
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<tr>
<td>26.00 (660.4)</td>
<td>280 (19.7)</td>
<td>68 (1727.2)</td>
<td>22.38 (568.4)</td>
<td>90.38 (2295.6)</td>
<td>112 (2844.8)</td>
<td>34.75 (882.6)</td>
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<tr>
<td>24.50 (622.3)</td>
<td>280 (19.7)</td>
<td>68.75 (1746.2)</td>
<td>23.62 (600.0)</td>
<td>92.88 (2359.1)</td>
<td>114 (2895.6)</td>
<td>51.75 (1314.4)</td>
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<td>23.00 (584.2)</td>
<td>350 (24.6)</td>
<td>68.75 (1746.2)</td>
<td>23.12 (587.2)</td>
<td>91.88 (2333.7)</td>
<td>113 (2870.2)</td>
<td>50.75 (1289.0)</td>
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<tr>
<td>22.00 (558.8)</td>
<td>350 (24.6)</td>
<td>68.75 (1746.2)</td>
<td>23.12 (587.2)</td>
<td>91.88 (2333.7)</td>
<td>113 (2870.2)</td>
<td>50.75 (1289.0)</td>
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<td>20.50 (520.7)</td>
<td>470 (33.0)</td>
<td>65.75 (1670.0)</td>
<td>20.75 (527.1)</td>
<td>86.50 (2197.1)</td>
<td>108 (2743.2)</td>
<td>43.75 (1112.2)</td>
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<tr>
<td>19.00 (482.6)</td>
<td>470 (33.0)</td>
<td>65.75 (1670.0)</td>
<td>20.75 (527.1)</td>
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<td>108 (2743.2)</td>
<td>43.75 (1112.2)</td>
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<td>17.50 (444.5)</td>
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<td>65.00 (1651.0)</td>
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<tr>
<td>16.00 (402.7)</td>
<td>600 (42.2)</td>
<td>65.00 (1636.7)</td>
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<td>13.00 (330.2)</td>
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<td>19.25 (489.0)</td>
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<td>107 (2717.8)</td>
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<td>64.25 (1631.9)</td>
<td>18 (457.2)</td>
<td>82.25 (2089.1)</td>
<td>104 (2641.6)</td>
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<tr>
<td>6.00 (152.4)</td>
<td>2750 (193.3)</td>
<td>65.86 (1673.3)</td>
<td>20.62 (523.7)</td>
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<td>108 (2743.2)</td>
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<td>3.75 to 7.00</td>
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<td>248 (626)</td>
<td>108 (2743.2)</td>
<td>54.25 (1377.9)</td>
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</tbody>
</table>

**VARY DEPENDING ON PIPING NEEDS**

Lined cylinders are available as well as special purpose cylinders for storage and pipeline applications.
For more information on the HOSS compressor, visit www.dresser-rand.com/gfc or contact us at:

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