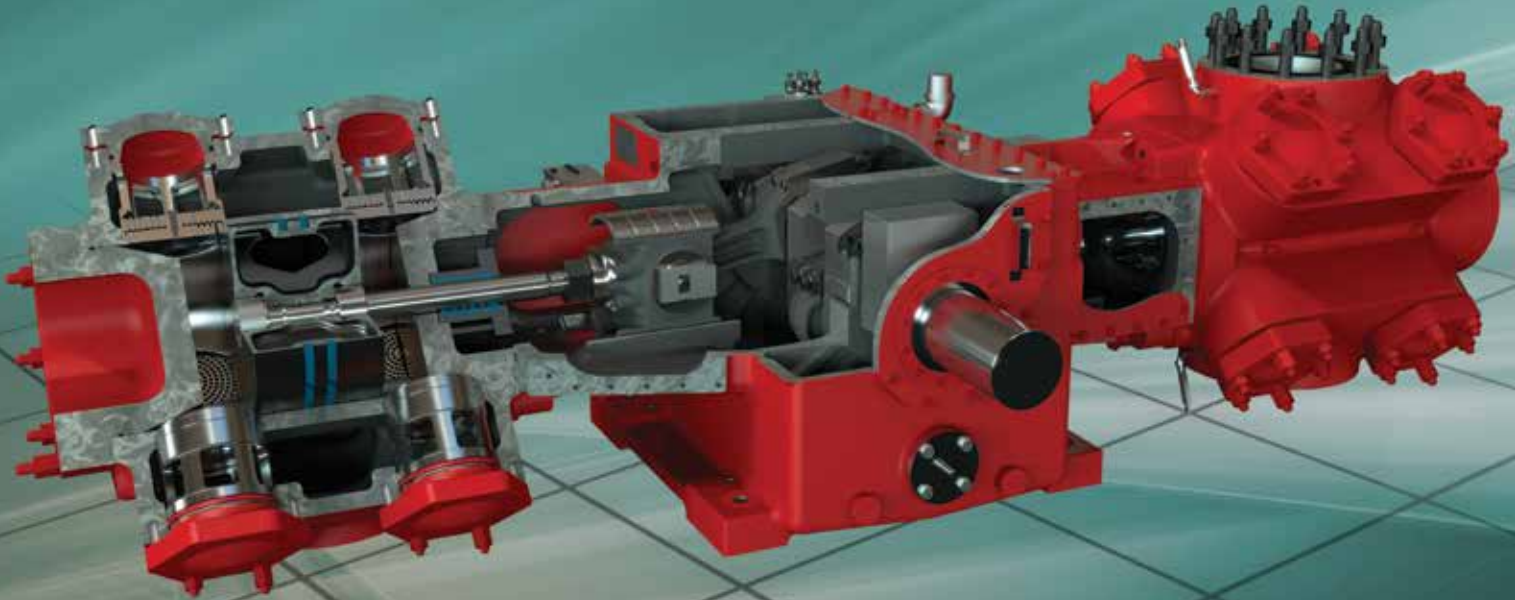


**DRESSER-RAND**<sup>®</sup>

A Siemens Business



HIGH SPEED RECIPROCATING COMPRESSORS

# MOS<sup>™</sup> Compressors

[dresser-rand.com](http://dresser-rand.com)

# MOS™ compressors

Most horsepower and rod load available in its class.

Dresser-Rand business, part of Siemens Power and Gas (PG) Division brings more than 65 years of high speed compressor operating experience to the medium-duty MOS™ compressor line.

These rugged compressors are engineered for high speed and medium horsepower applications, including gas lift, gas gathering, gas processing, injection, enhanced oil recovery (EOR), gas transmission, 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 industry standard-type units, the MOS compressor establishes itself by taking the best of previous Dresser-Rand business designs, competing units and voice of client (VOC) input.

The lower cost, compact design and rapid delivery of packaged MOS compressors make it an ideal choice for gas field applications such as gas gathering, gas processing and typical rental fleet opportunities.

With more than 30 years of experience in our closed-loop test facility using a variety of field gases, we ensure the integrity of the MOS compressor design and performance.

Rated to 4,440 hp (3,310 kW) and 1,500 rpm with design pressures up to and exceeding 10,000 psig (690 bar), MOS compressors provide long life because of their heavy-duty construction. They are available in two-, four- or six-throw configurations and in cylinder sizes ranging from 3.50 in. (88.9 mm) to 20.50 in. (520.7 mm). The rigid, cast iron compressor frame is heavily ribbed and reinforced, with integrally cast crosshead extensions to handle almost any gas field requirement.

## A single source for all your compression needs

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

The Dresser-Rand business and its authorized packagers can provide single-source responsibility, including engineering, manufacturing, packaging, installation, parts, and service.

With MOS compressors on the job, you can expect less maintenance and less fuel consumption. The Dresser-Rand business and its authorized resellers support the MOS compressor line with a network of computerized parts warehouses, and overhaul/revamp facilities located throughout the world.



MOS compressor.



MOS compressor frame

# Rugged design for smooth operation

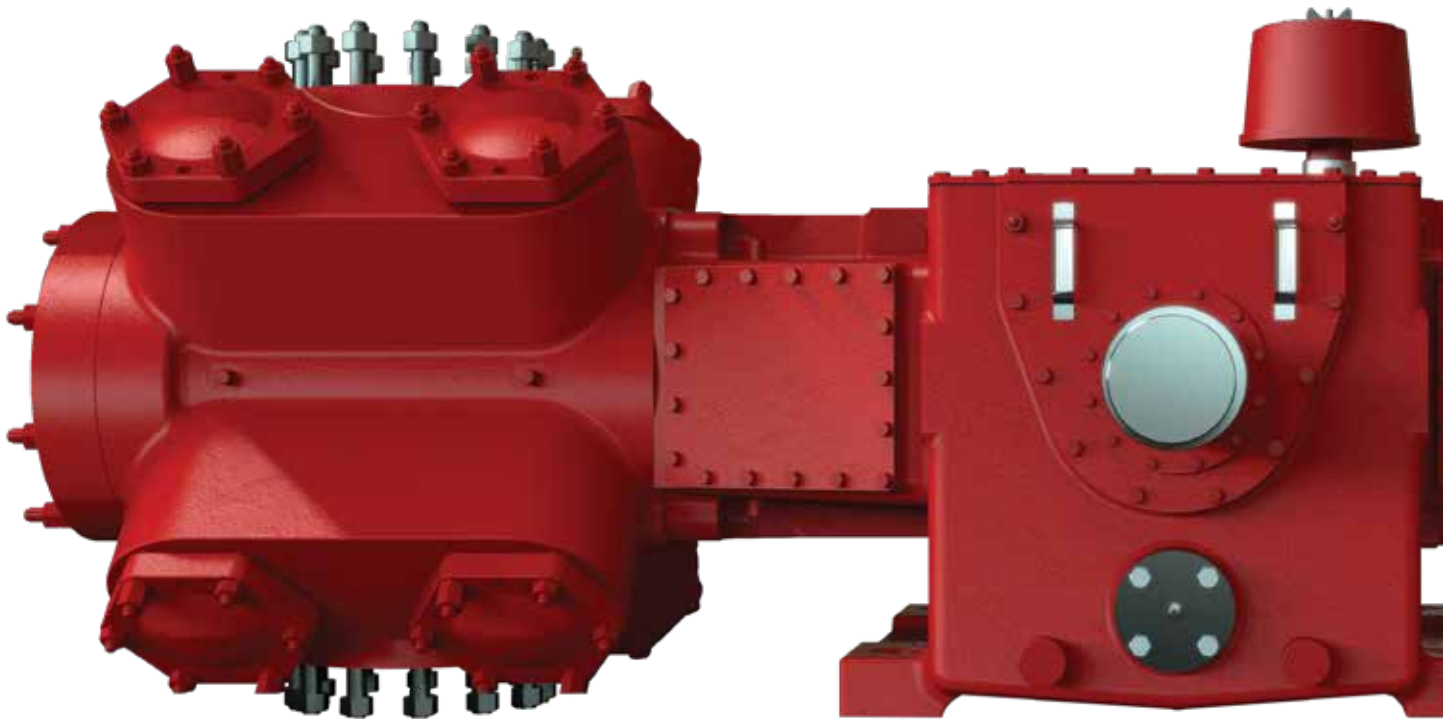
Every MOS compressor includes components designed to enhance performance. The compressor frame and cylinders are matched to provide years of smooth, reliable, efficient compression service when operated within OEM recommendations.

## Cylinder basics

MOS compressor cylinders are non-jacketed for most applications. For special applications, the MOS compressor is available with jacketed cylinders for forced water cooling that provide additional protection in higher temperature and higher pressure services. Each system is designed and engineered to match your operating needs.

Non-jacketed MOS cylinders use a solid bore cylinder barrel cast in nodular iron. Jacketed MOS cylinders are HOS cylinders adapted to the MOS frame and are capable of circulating coolant.

A full line-up of higher pressure, forged steel cylinders are available in sizes 3.50 in. (88.9 mm) to 7.0 in. (177.8 mm). The line-up also includes a pipeline cylinder for gas transmission and a storage cylinder for gas injection and withdrawal applications.



## Frame basics

The open top frame construction ensures rigidity while providing easy access to major running gear components from the top. Multiple covers and large access areas are provided for easy maintenance and inspection. As an option, a full-length distance piece with oversized access doors are available. The unique thru-bolt distance piece is designed for improved load carrying ability.

High-strength, nodular iron crossheads feature a Babbitt running surface for enhanced lubrication. Surface-hardened crosshead pins are full floating for optimum reliability, and there are no crosshead pin bushings to contend with.



# ation, long life and efficiency.



Cylinder performance is optimized through the use of two types of valves which are available on the MOS compressor: the PF valve (ported plate-type) and the D-R Magnum® HammerHead™ valve (mini-Poppet element). Both valves use exclusive Dresser-Rand business Hi-Temp nonmetallic wear parts material. Each valve offers different advantages and is sized to optimize performance and reliability for a given application or client preference.

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

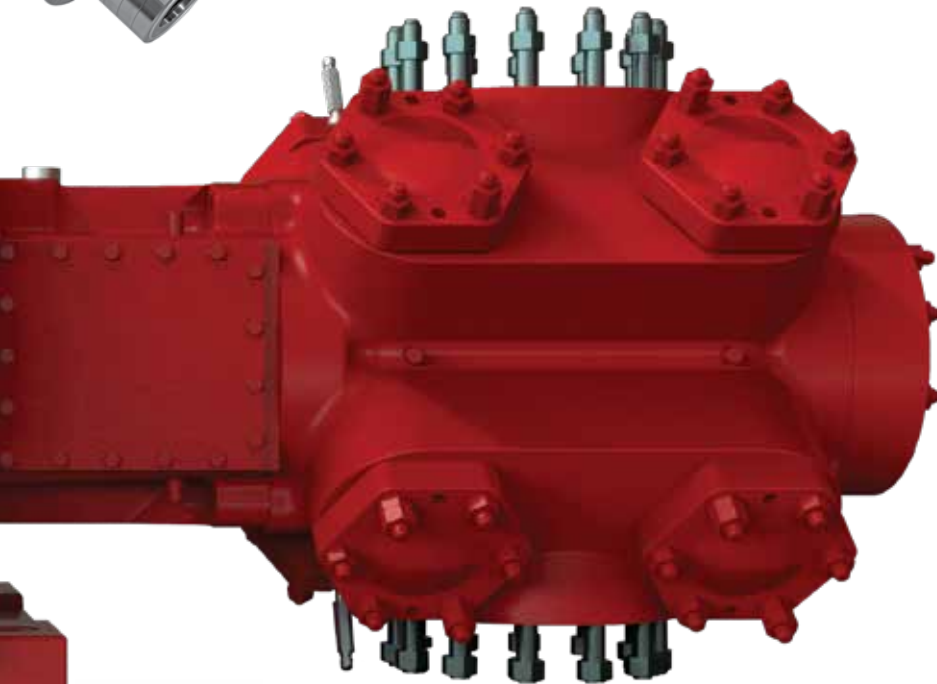
Each piston rod is made from a high-strength alloy steel and is wet-magnetic-particle inspected. Every piston rod thread form is inspected using Johnson gauging. Piston rods for a given stroke are identical, regardless of cylinder size.



One packing case design is used, regardless of cylinder size or stroke. Packing cases use the emission control ring design to minimize leakage.



Crankpin and main bearings are two-piece precision tri-metal bronze and are identical, which reduces spare parts stocking. They are provided with a micro-babbitt overlay plate for added start-up protection and corrosion resistance.



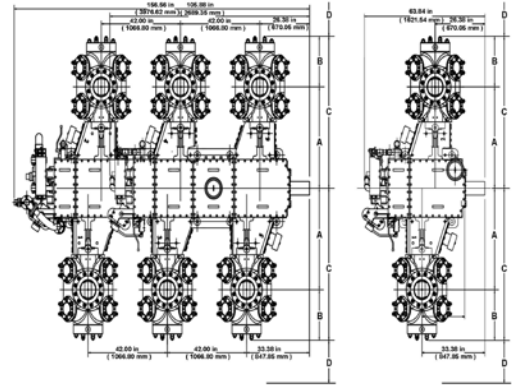
Forged steel connecting rods are rifle-drilled for pressure lubrication of crossheads and feature high-strength bolts with rolled threads. Connecting rod pin bushings are centrifugally cast bronze with nickel plate barrier and topped with lead tin copper overlay on bore for reliable break-in.



The heavy-duty forged alloy crankshaft is rifle drill-balanced for connecting rod lubrication. The crankshaft is equipped with integral counterweights on the two- and four-throw units to reduce horizontal moments.

## Ratings

Model	Stroke in. (mm)	Number of cylinders	Nominal Rated Power hp (kW)	Max. Allowable Operating Rod Load lbs. (kN)	Rated rpm
5MOS2	5 (127)	2	1,950 (1,454)	45,000 (200)	1,500
5MOS4	5 (127)	4	3,900 (2,908)	45,000 (200)	1,500
5MOS6	5 (127)	6	4,200 (3,132)	45,000 (200)	1,500
6MOS2	6 (152.4)	2	1,800 (1,342)	45,000 (200)	1,200
6MOS4	6 (152.4)	4	3,600 (2,685)	45,000 (200)	1,200
6MOS6	6 (152.4)	6	4,320 (3,221)	45,000 (200)	1,200
7MOS2	7 (177.8)	2	1,700 (1,268)	45,000 (200)	1,000
7MOS4	7 (177.8)	4	3,400 (2,535)	45,000 (200)	1,000
7MOS6	7 (177.8)	6	4,440 (3,311)	45,000 (200)	1,000



"D" is the required clearance to remove/install the piston and rod assembly

### Standard Features

- Rigid cast gray iron frame, heavily ribbed and reinforced with integrally cast crosshead extensions; open top frame construction with steel tie rods, cast iron spacers, and an individual cover over each section
- Forged alloy steel crankshaft with passages for pressure lubrication, counterweighted to reduce horizontal moments
- Forged alloy steel connecting rods, rifle-drilled for pressure lubrication
- Nodular iron crossheads, pressure-lubricated, with babbitted running surface
- Horizontally-split, precision-type, tri-metal bronze main and crankpin bearings
- Solid bronze connecting rod bushings
- Bronze thrust bearings
- Crankcase filter-breather
- Metallic oil wiper rings
- Main lube oil pump chain driven from crankshaft, complete with relief valve
- Ten-micron, full-flow oil filter with cartridge-type cleanable elements and differential pressure gauge
- Shell-and-tube oil cooler
- Bulls-eye oil level gauge
- Chain driven force-fed cylinder lubrication system
- Set of special tools consisting of crosshead nut wrench, piston rod entering sleeve and chain tensioner wrench; one set provided per frame

### Optional Features

- Variable volume clearance pocket (VCP)
- Dresser-Rand TC<sub>3</sub> (HVOF) coated piston rods
- 17-4 PH stainless steel piston rods
- Purged packing and purged wiper case
- Single- or two-compartment distance piece

- Crankcase and lubricator oil heaters
- Crankcase explosion relief devices
- Main bearing RTDs
- 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

### Specifications

Frame.....	One piece, cast iron, high-strength
Crankshaft.....	Forged steel
Connecting rods.....	Forged steel
Connecting rod bolts.....	Alloy steel, rolled threads
Connecting rod bushings.....	Solid bronze
Crossheads.....	Nodular iron, babbitted
Crosshead pins.....	Alloy-steel, hardened, super-finished
Main and crankpin bearings.....	Tri-metal
Oil pump.....	Gear-type, chain-drive
Oil filter.....	Full-flow, 10 micron
Oil cooler.....	Shell-and-tube
Cylinders.....	Nodular iron
Pistons.....	One or two piece; iron, aluminum or steel
Piston rods.....	Alloy steel, rolled threads

## Standard Cylinder Offering and Dimensions

Cylinder Size in. (mm)	MAWP psig (bar)	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)
4.75 (120.7)	2,750 (189.6)	43.5 (1,105)	21 (533)	64 (1,626)	27 (686)
5.75 (146.0)	2,750 (189.6)	43.5 (1,105)	21 (533)	64 (1,626)	27 (686)
6.00 (152.4)	2,750 (189.6)	43.5 (1,105)	21 (533)	64 (1,626)	27 (686)
6.50 (165.1)	2,750 (189.6)	43.5 (1,105)	21 (533)	64 (1,626)	27 (686)
7.00 (177.8)	2,475 (170.6)	43.5 (1,105)	21 (533)	65 (1,651)	26 (660)
7.50 (190.5)	2,475 (170.6)	43.5 (1,105)	21 (533)	65 (1,651)	26 (660)
8.00 (203.2)	1,650 (113.8)	43.5 (1,105)	21 (533)	65 (1,651)	26 (660)
8.50 (215.9)	1,650 (113.8)	43.5 (1,105)	21 (533)	65 (1,651)	26 (660)
9.00 (228.6)	1,265 (87.2)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
9.50 (241.3)	1,265 (87.2)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
10.50 (266.7)	1,100 (75.8)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
11.50 (292.1))	1,100 (75.8)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
12.25 (311.1)	880 (60.7)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
13.00 (330.2)	880 (60.7)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
14.00 (355.6)	660 (45.5)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
15.00 (381.0)	660 (45.5)	43.5 (1,105)	22 (559)	65 (1,651)	26 (660)
16.25 (412.7)	385 (26.5)	43.5 (1,105)	20 (508)	63 (1,600)	26 (660)
17.50 (444.5)	385 (26.5)	43.5 (1,105)	20 (508)	63 (1,600)	26 (660)
19.00 (482.6)	330 (22.8)	43.5 (1,105)	20 (508)	64 (1,626)	26 (660)
20.50 (520.7)	330 (22.8)	43.5 (1,105)	20 (508)	64 (1,626)	26 (660)
3.75 (95.3) to 7.00 (177.8)	6,600 (455.1) or 4,000 (275.8) 10,000 (689.5)**			VARIES DEPENDING ON PIPING NEEDS	

HOS (higher pressure and/or jacketed) cylinders are available for the MOS compressor as well as cylinder liners. Additionally, specialty cylinders for storage or pipeline applications can be applied to the MOS compressor.

\*Flanges are offset from piston rod centerline. \*\*Contact HSRC team for more information. Dimensions are for reference only and are not to be used for package design purposes.

For a complete list of products and services, visit [dresser-rand.com](http://dresser-rand.com) or contact the following:

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