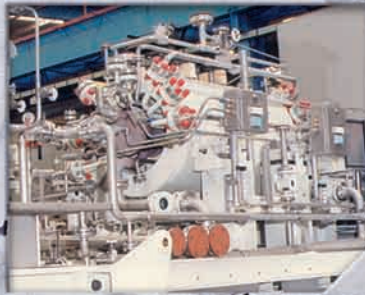


INNOVATIVE SOLUTIONS FROM DRESSER-RAND



DRESSER-RAND[®]



Dresser-Rand plays a critical role in every segment of the energy market – upstream, midstream, and downstream.

GLOBALY POSITIONED TO MEET YOUR NEEDS



As a leading provider of rotating equipment solutions, Dresser-Rand designs, manufactures, sells, and services a wide range of technologically advanced centrifugal and reciprocating compressors, steam and gas turbines, expanders, rotating separators, portable ventilators, and control systems.

Your Dresser-Rand representative will listen carefully to determine your requirements, then work closely with a fully integrated, multidisciplinary team of dedicated professionals who can deliver the most value and best custom-engineered solutions for your specific rotating equipment needs.

In addition to innovative, reliable products and creative answers, there are plenty of other reasons why we should be your rotating equipment solutions company.



Unrivaled experience—Our experience is reflected in our long list of record-breaking accomplishments. We built one of the highest-discharge-pressure centrifugal compressors and the world's largest expander. We conducted the highest-pressure turbocompressor test. And our process reciprocating compressors in hydrogen service comprise more installed horsepower than all of our competitors combined.

Largest installed base—With roots dating back to 1840 Dresser-Rand has more units in the field than anyone else. We built our first compressor more than a century ago, and have more than 94,000 rotating equipment units installed in more than 140 countries. With a global presence of sales and service personnel, we have the resources and commitment to meet your rotating equipment needs quickly and efficiently.

Served markets: upstream, midstream, and downstream—Dresser-Rand equipment is used throughout the world in oil and gas production, high-pressure field injection and oil recovery, gas liquefaction, pipelines, refinery processes, natural gas processing, petrochemical production applications and general industrial markets such as paper, steel, sugar, distributed power and government. Equipment can be custom-engineered for optimum efficiency and reliability.

People make it happen—Well-trained, experienced people, working in safe, healthy environments, make the greatest contributions to D-R's success. Our talented global workforce has the experience and vision to find the best solutions for your rotating equipment needs.

At its world-class test facilities in Olean, New York, USA and Le Havre, France, Dresser-Rand has invested in some of the most advanced testing capabilities in the industry. Both facilities are proficient at performing full mechanical testing and full-load, full-pressure ASME PTC10 Type 1 performance string testing.

Worldwide presence—Dresser-Rand equipment is virtually everywhere, and so are we. With strategically located service centers in 18 countries and a worldwide service network, our dedicated personnel are ready to help maximize the availability of most brands of rotating equipment to help clients add value to their operations.

Our manufacturing capabilities are global, with state-of-the-art facilities located in Burlington, Iowa; Olean, Painted Post and Wellsville, New York; Houston, Texas; Le Havre, France; Peterborough, England; Oberhausen and Bielefeld, Germany; Kongsberg, Norway; Ahmedabad, India; and Shanghai, China. Each facility is equipped to build in the performance and reliability you expect from every Dresser-Rand product.

A technology leader—When it comes to the total cost of ownership, you can count on our technology to deliver optimum performance for your new equipment and product upgrades that extend the life of your installed equipment. We are continually improving our DATUM® line of centrifugal compressors to reduce energy consumption, associated fuel consumption and emissions by the drivers that power this equipment. The DATUM C compressor is a new concept in compression that can be installed indoors or outdoors, greatly reducing infrastructure costs for new installations and retrofits. Our integrated compression system – ICS – combines our proprietary DATUM and centrifugal separation technologies into a compact compression system.

Our steam turbine generators use axial exhausts to minimize installation costs and improve efficiency. And our Magnum® valve for reciprocating compressors sets new benchmarks for reliability, efficiency, and affordability and can be configured for a wide range of operating conditions and virtually any gas.

Commitment to value—We are committed to bringing you the most value through our unique business processes, advanced technology, and ability to support a worldwide installed base. With the support of our Corporate Product Configurator, our business processes enable faster cycle times for all phases of projects. Combine our innovation, technology, and business processes with our total life-cycle support and it's easy to see why Dresser-Rand provides the value you need for that competitive edge.



**RECIPROCATING
COMPRESSORS**

The result of more than a century of design and manufacturing expertise, our reciprocating compressors have established an outstanding record for performance, efficiency, reliability, and low maintenance in the most demanding upstream, midstream, and downstream applications. We have approximately 23,000 operating reciprocating units—including reciprocating compressors, gas engines and gas field compressors/separable products. Each Dresser-Rand compressor is manufactured to stringent specifications—including ISO 9001—in state-of-the-art facilities.



Dresser-Rand 8,000 hp, 4-throw HHE-VL process reciprocating compressors (often used in refinery, chemical, and petrochemical applications).

**PERFORMING FOR DECADES IN THE
TOUGHEST ENVIRONMENTS.**

**Process Reciprocating
Compressors**

- Designed and built to meet API-618 and ISO 13707 specifications
- Power capability up to 38,000 hp (over 28 MW)
- Maximum rod load ratings from 10,200 lbs (4,627 kg) to 270,000 lbs (122,472 kg)
- Cylinder diameters from 1.652" (41.96 mm) to 40.5" (1,028.7 mm)
- Cylinder rated discharge pressures to 60,000 psig (4,138 bar)
- Compressor strokes from 7" (177.8 mm) to 16" (406.4 mm)
- Speeds to 720 rpm
- Operate in many types of process applications including severe and corrosive gases

**Gas Field Compressors/
Separable Products**

- Designed and built to meet client requirements (including API-11P and/or ISO 13631)
- Power capability up to 11,250 hp (over 8 MW)
- Maximum rod load ratings from 15,400 lbs (6,985 kg) to 90,000 lbs (40,824 kg)
- Cylinder diameters from 3.5" (88.9 mm) to 32" (812.8 mm)
- Cylinder maximum allowable working pressures from 130 psig (8.96 bar) to 8,800 psig (606.74 bar)
- Compressor strokes from 3.5" (88.9 mm) to 8.5" (215.9 mm)
- Speeds to 1,800 rpm
- Operate in natural gas and process gas applications
- Custom pipeline and storage applications



Chemicals such as ethylene, propylene, and ammonia are used for manufacturing end-use products such as plastics, paint, fertilizer, asphalt, adhesives, soap, and detergent. Thousands of products, ranging from plastic to shampoo, are created by the compression of various gaseous mixtures in many different chemical processes.



HOS™ reciprocating compressor installed in China.

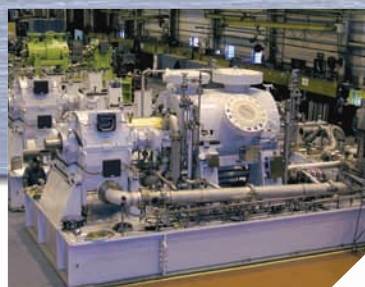
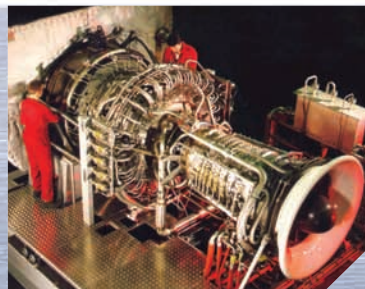


TURBOMACHINERY

Approximately 9,000 turbomachinery units in operation add up to experience no other company can match, plus innovation that has led to such products as our highly efficient, reduced-emissions DATUM centrifugal compressors.

Dresser-Rand seeks to provide lowest total cost of ownership solutions for your oil and gas production, gas processing, refining, and petrochemical applications.

VECTRA[®] gas turbine package.



DATUM Model D14 centrifugal compressors.

TIME TESTED. FIELD PROVEN.

Centrifugal Compressors

DATUM (Oil, Gas & Process Applications)

- Discharge pressures over 10,500 psig (725 bar)
- Flow rates to 500,000 acfm (850,000 m³/hr)
- Power exceeding 120,000 bhp (90 MW)

DATUM P (Natural Gas Applications)

- Discharge pressures to 3,000 psig (207 bar)
- Flow rates to 53,000 acfm (96,000 m³/hr)
- Power over 40,000 bhp (greater than 30 MW)
- One to six stages

DATUM C (Compact Compressor)

- Integrated high-speed electric induction motor
- Magnetic bearings
- Hermetically sealed
- Emission-free design

DATUM I (Integrated Compression System)

- Integrated high-speed electric motor
- Integrated liquid separator
- Integrated process gas intercoolers
- Compact footprint

PDI (Natural Gas Applications)

- Discharge pressures to 1,500 psig (104 bar)
- Flow rates to 60,000 acfm (102,000 m³/hr)
- Power over 40,000 bhp (greater than 30 MW)
- Demonstrated efficiency over 90%

M-LINE, B-LINE, CBF, CVM

Axial Compressors (Air)

- Inlet flow up to 350,000 acfm (600,000 m³/hr)
- Discharge pressure up to 100 psig (7 bar)
- Carbon steel casing construction
- Continuously adjustable stator vanes

Gas Turbine Products (Onshore and Offshore Applications)

- Gas turbine generator packages (1.53 MW to 2.25 MW) include Dresser-Rand's proprietary KG2 gas turbine
- Larger gas turbine packages from 18 MW to 44 MW
- Large packages incorporating Dresser-Rand's proprietary VECTRA[®] modular power turbine
- VECTRA models
 - 40G (LM2500+ gas generator)
 - 30G (LM2500 gas generator, also available for retrofits)
 - 40G4 (LM2500+G4 gas generator)
- Generator, compressor, and pump drive

Expanders (Power Recovery)

- More than 130 units in operation
- Inlet temperatures up to 1,400°F (760°C)
- Inlet pressure up to 160 psig (11 bar)
- Inlet flow up to 1,600,000 lbs/hr (730,000 kg/hr)
- Power up to 60,000 bhp (45 MW)



GENUINE KNOWLEDGE

..... This Dresser-Rand 110 MW compressed-air energy storage turbomachinery train is one of the longest in the world at 140 feet. It is the first U.S. installation of its kind at Power South and has performed reliably for more than a decade to boost power capabilities during peak daytime periods.

STEAM TURBINES

With a century of experience and approximately 62,000 steam turbines in operation in more than 140 countries, our turbine knowledge is unrivaled. Our heritage, along with our constantly evolving approach to turbine design, meticulous attention to detail, and world-class manufacturing, allows us to deliver custom-engineered steam turbines for electric and mechanical drives with unparalleled reliability. Choose from one of the most comprehensive lines in the industry, for your oil and gas, food processing, paper, steel, sugar, HVAC, distributed power, marine, palm oil, and power generation applications.

BUILDING ON A HERITAGE OF INNOVATION.

Single-Stage Turbines

- From 1 hp (.746 kW) to 4,000 hp (3 MW)
- Pressures to 2,000 psig (138 bar)
- Temperatures to 1,000°F (524°C)
- Drive pumps, fans, mills, compressors, and generators

Multi-Stage Mechanical Drive Turbines

- Hundreds of models from 670 hp (500 kW) to 94,000 hp (70 MW)
- Pressures to 2,000 psig (138 bar)
- Temperatures to 1,050°F (551°C)
- Condensing and noncondensing to 800 psig (55 bar)
- Drive compressors, chillers, pumps, fans, and mills

Turbine Generator Sets

- Single-stage and custom-engineered to suit exact client conditions from 0.5 MW to 100 MW
- Pressures to 2,000 psig (138 bar)
- Temperatures to 1,050°F (551°C)
- Geared and direct connected, 60/50 Hz
- Condensing, noncondensing, single and double automatic extraction
- Up, down, side, and axial exhaust capabilities

DRESSER-RAND

RLA single-stage steam turbine pump drive installed in medical center power plant in the U.S.



15 MW steam turbine generator set.



9 MW turbine generator set installed at a university in the midwestern United States.



Dresser-Rand steam turbine generators are used as back-up power for universities, hospitals, and municipalities.

.....The extensive full-load/pressure testing program applied to the Dresser-Rand centrifugal equipment for this platform located off the coast of Newfoundland resulted in advanced aero-mechanical designs for all Dresser-Rand compressors to endure the forces acting upon them in high-pressure natural gas reinjection applications.

GLOBAL AFTERMARKET SUPPORT

With tens of thousands of Dresser-Rand products in operation throughout the world, we are ready to deliver service quickly, efficiently, and safely. With a comprehensive range of services and solutions, our service personnel are available to help maximize the reliability, production revenue, and profitability of your rotating equipment assets. Our Web-based, interactive Client Interface and Response System (CIRS) allows clients to raise issues or make technical inquiries about specific pieces of equipment.

Remanufacture of a large reciprocating compressor at the D-R service center in Houston, Texas.



RESPONSIVE SUPPORT, WHENEVER AND WHEREVER IT'S NEEDED.

Parts

- OEM design integrity for optimum performance, reliability, and safety
- Advanced manufacturing, inspection processes, and technology

Upgrades

- Improve reliability, availability, and efficiency
- Reduce maintenance costs
- Latest design and manufacturing improvements

Revamps, Reapplications, Rerates and Remanufactured Equipment

- Meet new or changing compression requirements with existing equipment
- Provides cost-effective alternative to new equipment
- Increases reliability and availability by incorporating latest material and design technology
- Extends equipment life

Service Centers

- Strategically located throughout the world
- Repair and overhaul services
- Conform to OEM design and repair standards
- Comprehensive machining and testing capabilities
- Rotor storage at select locations

Field Services

- Skills-based, hands-on training—factory or client site; and Web-based training courses
- Technical services (field service representatives, field consultants, field crews)
- Project services
- Equipment reliability improvement programs
- Engineering, procurement, and construction projects
- Integrated maintenance programs

Applied Technology

- D-R experience and technology applied to most brands of similar class rotating equipment
- Complete units, major assemblies, and individual parts
- Unique solutions for equipment operation and performance include:
 - Upgrades
 - Revamps
 - Repairs and repair technologies
 - Field service

The legacies of more than a dozen companies and product lines create today's Dresser-Rand—a world leader in energy conversion solutions.



DELIVERING



CONTROL SYSTEMS

Control Systems (Equipment & Plant)

Dresser-Rand Control Systems designs and manufactures high-quality, reliable, state-of-the-art control systems for gas turbine, steam turbine, expander, and motor-driven compressors and generators, reciprocating compressors, as well as control systems for plant, station and process applications, and Emergency Shutdown Systems.

- Advanced control system solutions integrate both control and condition monitoring for all rotating equipment needs
- Control panels, field instrumentation, and control buildings
- Lower cost of ownership through OEM-leveraged knowledge base

Condition Monitoring

- Comprehensive equipment health assessment
- Fast, expert OEM analysis increases availability
- Mechanical and performance optimization of plant assets
- Applicable to many rotating assets
- Can reduce maintenance costs



ADDITIONAL PRODUCTS



Gas Seals—D-R Proprietary Design

- Patented pusher ring design to avoid “hang-up” for wide range of applications
- Pressures to more than 2,900 psig (200 bar)
- Continuous speed up to 32,700 RPM

Gimpel® Valves

- Trip, trip throttle and non-return valves for protection of steam turbine generators, and API 611 and 612 steam turbine drives
- Hydraulic-operated valves; mechanical, latch-type valve trip cylinders; optional servo-valve and LVDT designs are available for precise flow control

D-R Bearings

- Designed for centrifugal compressors; self-aligning pads
- Direct lubricated

Rotating Separator Technology

- IRIS inline rotary separator separates liquids from gas streams
- IRIS units available in 1.5" (38.1 mm), 3" (76.2 mm), and 6" (152.4 mm) sizes
- Bi-phase and tri-phase separator technology



COPPUS® Portable Ventilators

- Industrial air movers to meet virtually any portable ventilation or cooling needs: confined space environmental control, heat stress control, air curing and drying
- Electric, pneumatic or steam-drive options; explosion-proof models



Ingersoll Rand® Energy Systems Microturbines

- 70 and 250 kW power generation units with high-efficiency CHP provide hot water for process
- Replace high maintenance, low efficiency, low-load turbines, gas engines, or diesel generators
- Convert flare gas to power; meet stringent emissions regulations



DRESSER-RAND®

For a complete list of products and services, visit:
www.dresser-rand.com
or contact the following:

Dresser-Rand

Corporate Headquarters

West8 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

West8 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 +33) 2-35-25-5366/5367

Asia-Pacific

Dresser-Rand Asia Pacific Sdn Bhd
Unit 8-1, 8th 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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