

PROCESS SYSTEMS

# Global Excellence in Process Refrigeration and Gas Compression Systems



 **YORK**<sup>®</sup>

BY JOHNSON CONTROLS

PROCESS SYSTEMS



exceptional



## Exceptional demands

Designing and manufacturing industrial refrigeration and gas compression systems for today's energy, oil and gas, and industrial markets are highly specialized endeavors. They present technical, commercial and project management challenges that only a company possessing truly competent application capability can meet. The York® Process Systems group of Johnson Controls is such a company, providing in-depth specialist experience, high-performance equipment and modern manufacturing techniques to successfully meet the challenges in many types of applications.

### Critical processes

The various and advanced industrial processes of today include many critical applications requiring stringent safety and environmental standards, in addition to demanding operational, reliability and efficiency criteria. As a result, industrial refrigeration and gas compression systems involve extensive and detailed specifications and standards. These projects also include exhaustive documentation and material requirements that must be met to ensure the quality and performance of the completed system. Substantial capability is essential in order to meet these demanding requirements and to ensure delivery of high-performance, safe and reliable systems

### Meeting the challenge

York® Process Systems meets these demands with a well-proven track record of major installations worldwide, numbering more than 10,000 customized refrigeration and gas compression systems currently in operation. Every installation has been designed to meet rigorous customer specifications and application needs, with many exceeding 30 years of continuous reliable service. York® equipment is durable and complies with all the world's major recognized codes, including ASME, API, TEMA, ANSI, European Pressure Equipment Directive (PED), DIN, and electrical regulations that include DIN, EN, NEMA, IEC and ATEX.



PROCESS SYSTEMS



experience



## When your business is on the line ... so is ours

### Reliability matters

We understand that critical process applications such as yours demand operational reliability and have high efficiency criteria. You cannot afford unplanned outages and downtime. For that reason, we are dedicated to unparalleled product technology and product support, resulting in years of worry-free operation.

Our customers are global leaders in some of the most demanding industries. They require another global leader, like us, to meet stringent safety, environmental and engineering standards.

**It's what we do best in these industries:**



**Chemical & Petrochemical**



**Climate Test Chambers**



**Oil & Gas Processing**



**Industrial Gases**



**Pharmaceutical**



**Power Generation**

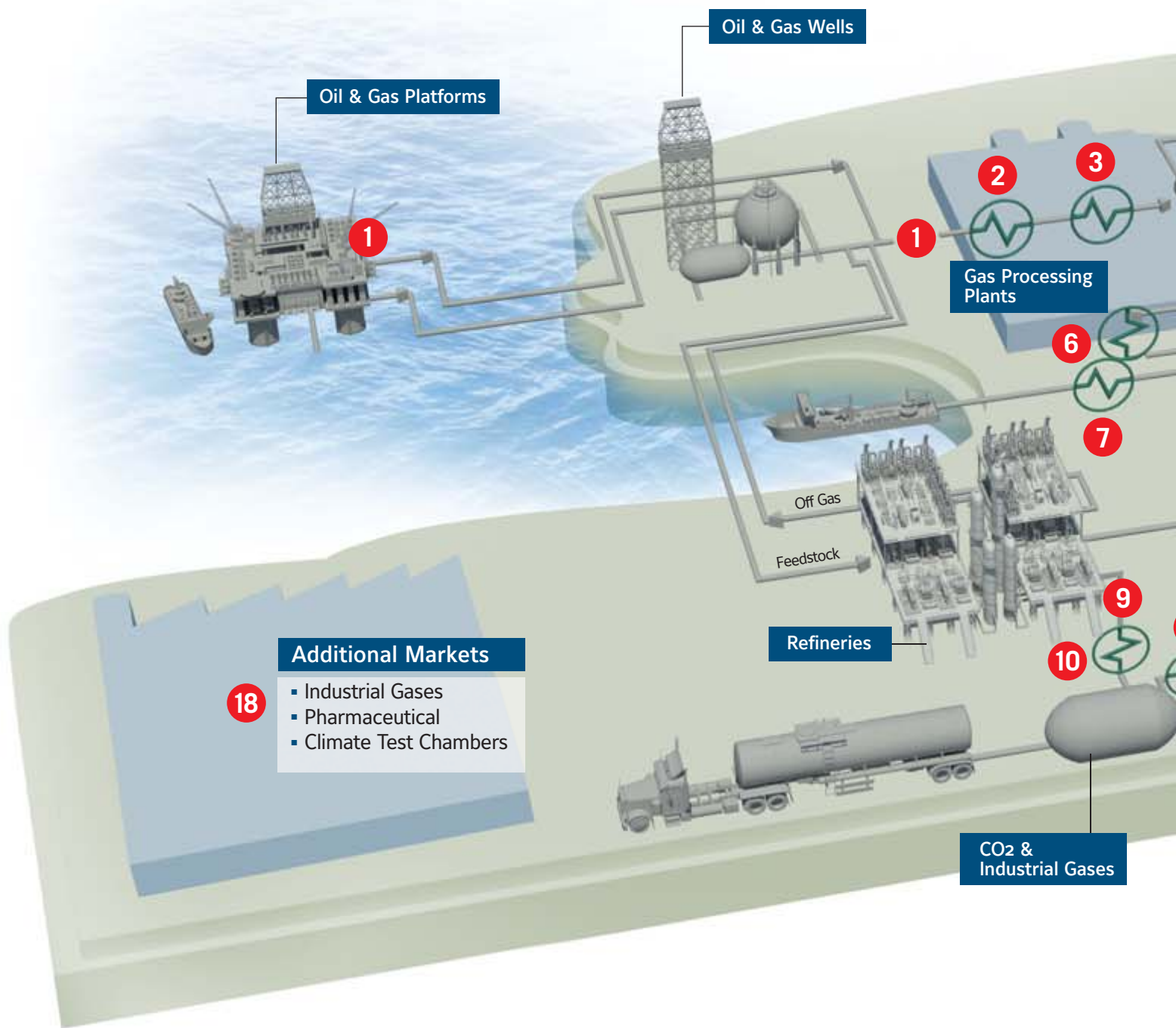


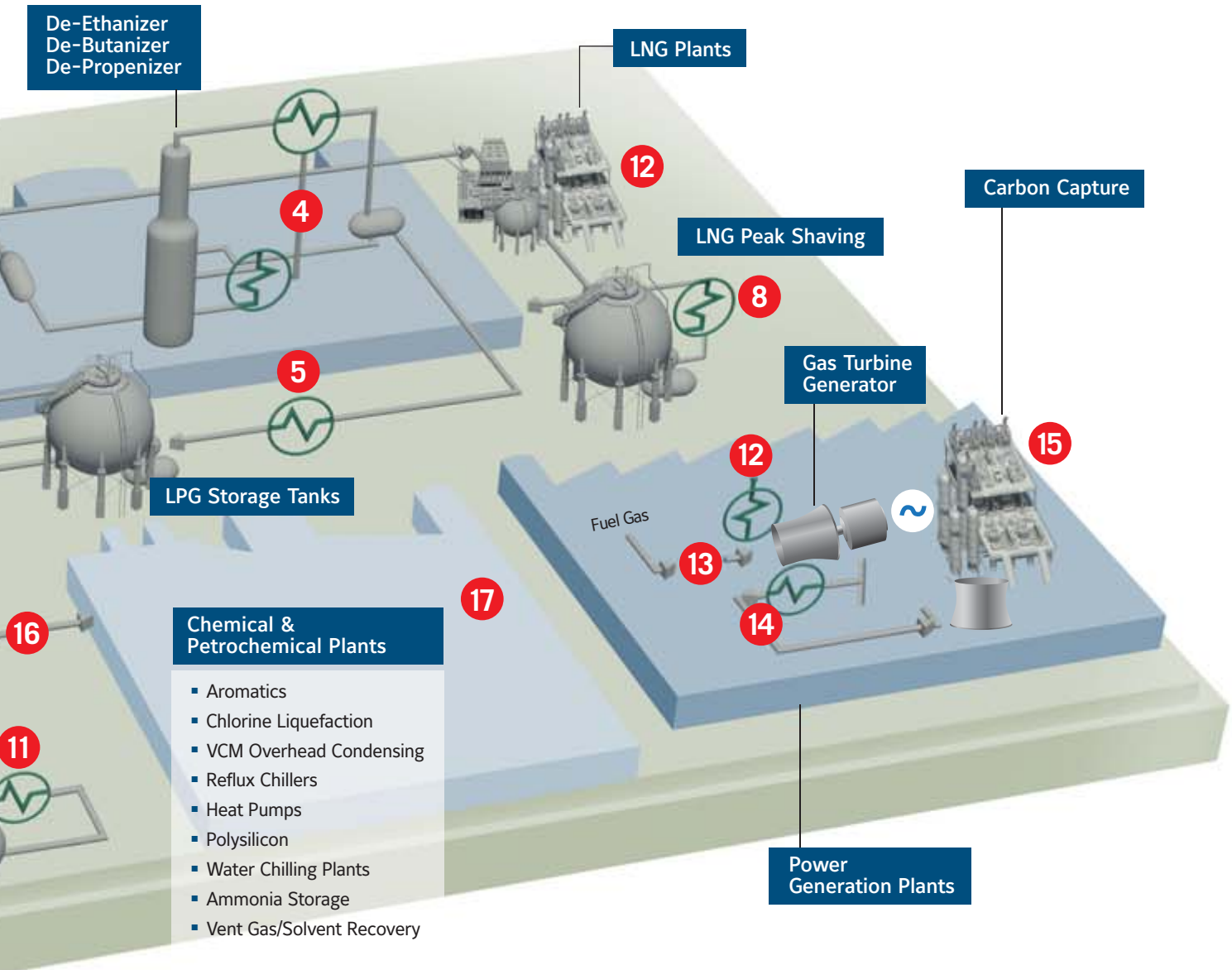
**Energy-Carbon Capture  
& Sequestration**



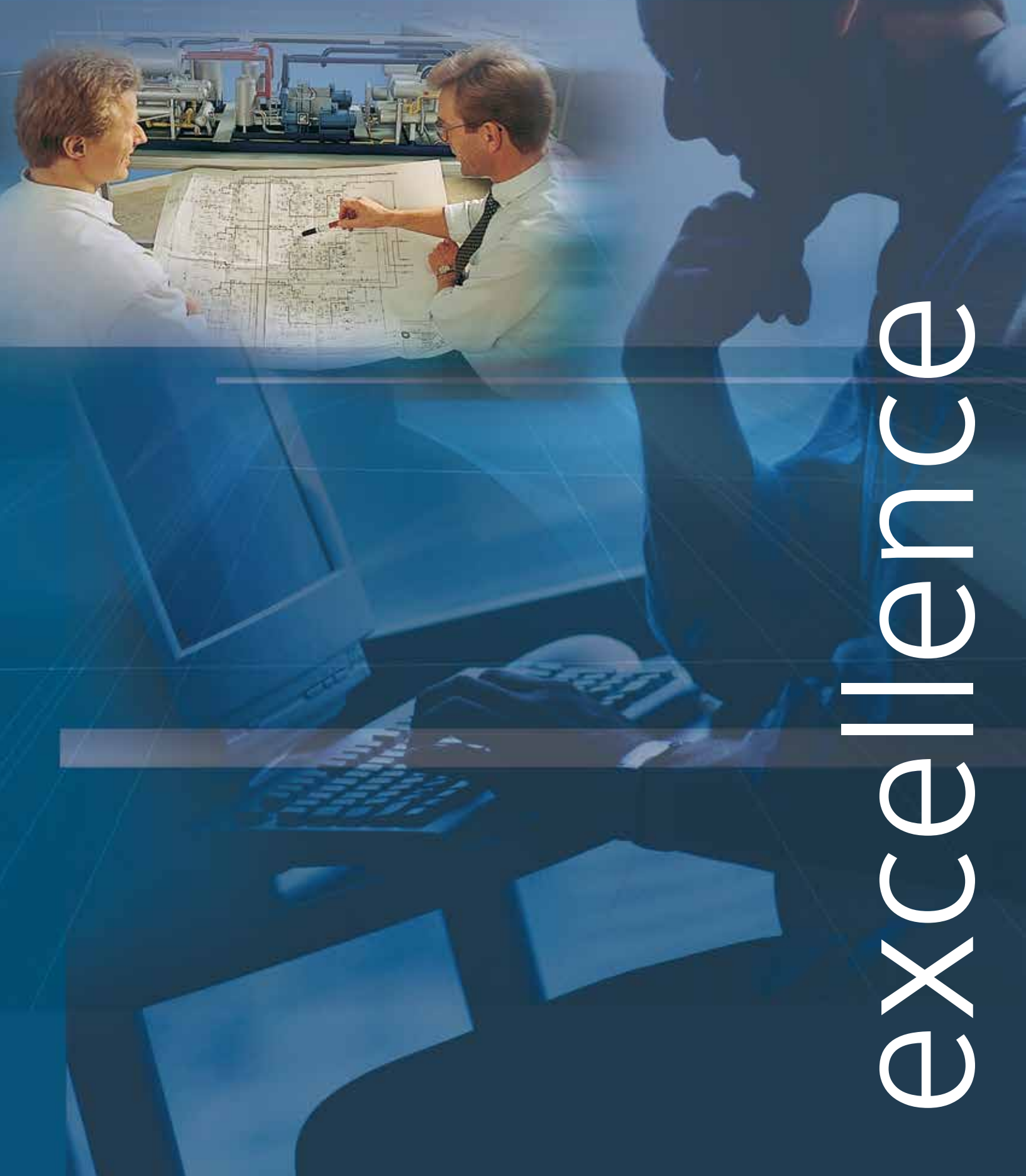
**Oil & Gas Transportation  
& Storage**

# Typical refrigeration and gas compression applications





- |  |                                       |                                   |
|--|---------------------------------------|-----------------------------------|
| 1 Gas Gathering and Transportation     | 7 LPG Export Subcooling Refrigeration | 13 Fuel Gas Compressor            |
| 2 Dew Point Control Refrigeration      | 8 LNG Peak Shaving                    | 14 Steam-Driven Chiller           |
| 3 Hydrocarbon Precooling Refrigeration | 9 CO <sub>2</sub> Compression         | 15 Carbon Capture Process Cooling |
| 4 Reflux/Reboiler Heat Pump            | 10 CO <sub>2</sub> Liquefaction       | 16 Mixed Gases                    |
| 5 LPG Rundown Refrigeration            | 11 CO <sub>2</sub> Storage            | 17 Chemical & Petrochemical       |
| 6 Boil-Off Refrigeration               | 12 Gas Turbine Inlet Air Cooling      | 18 Additional Markets             |



# excellence





## Centers of excellence

York® Process Systems maintains centers of excellence fully staffed with experienced specialists dedicated to the markets we serve. Each is strategically placed globally to provide an expert response to inquiries arising from projects worldwide. We invest the time to understand your business and its unique requirements. This allows our specialists to help you, using their experience in all aspects of system design, including:

- Refrigeration and mechanical engineering
- Heat transfer and chemical engineering
- Electrical and software engineering
- Project management and quality control
- Documentation and certification
- Research and development
- Service and maintenance

We naturally are proud of the equipment and systems we have supplied to customers throughout the world for more than 130 years. We are committed to maintaining our customers' beneficial use from their investment in Johnson Controls-York® products and services.



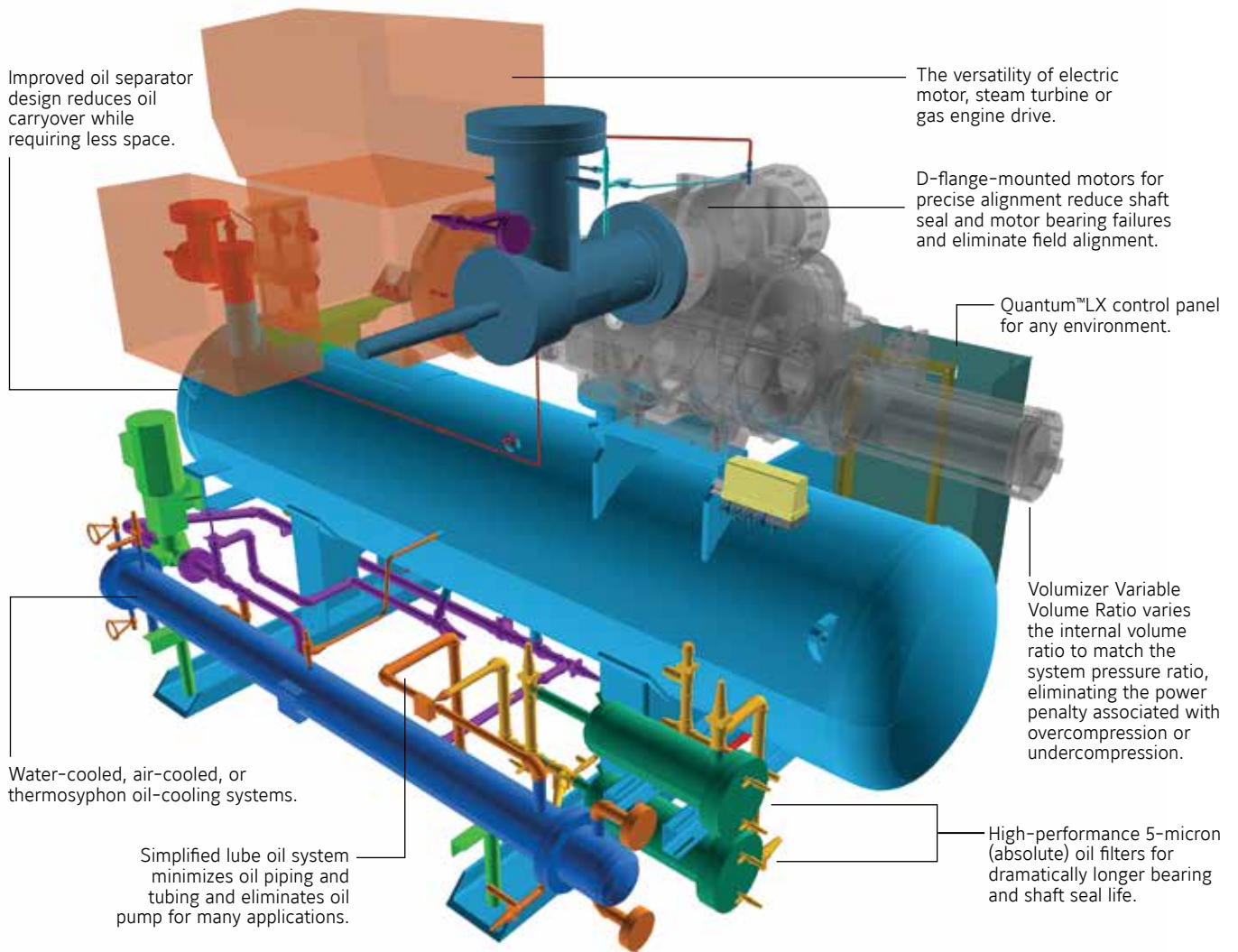
# ISO 9001

# Our design and manufacturing centers deliver technology and innovation that are simply unbeatable

Our design facilities utilize state-of-the-art computer-aided modeling, including: AutoCAD®, Bentley 3D modeling, HTRI and HYSYS®, working in concert with in-house-generated system design software programs.

## 3D modeling and advanced manufacturing

Bentley AutoPLANT® 3D modeling is incorporated into our engineering design and manufacturing processes. The 3D modeling process facilitates all aspects of the project, and reduces costs to the customer. The software and associated systems allow us to better plan for all aspects of design and manufacturing, including Smart P&IDs, advanced manufacturing control and planning, automated bills of materials and material control, and advanced fabrication and assembly. They also allow for improved maintenance clearance for easier service. A particular customer benefit is improved visualization of clearances and service access. We recently received the Bentley BE Award of Excellence for use of these product visualization programs.





# Design and manufacturing innovation and automation throughout the entire process

## Smart P&IDs

- Linked with equipment database
- Interactive with 3D model



## Advanced Fabrication

- High-quality production and welding
- Pipe bending up to 6"
- Reliable weld mapping and quality control



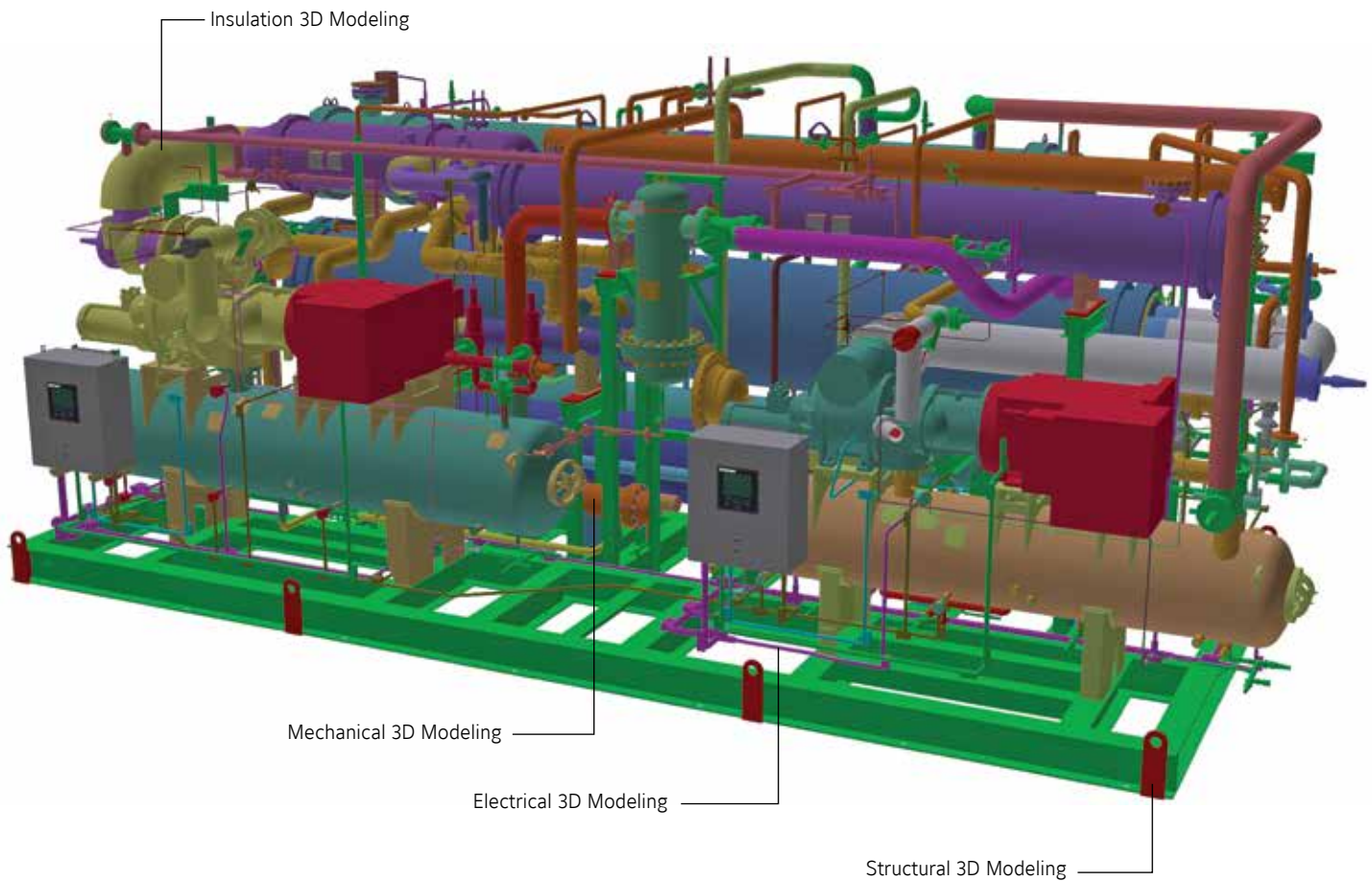
## Automated Bills of Material and Material Control

- Part number management
- Purchasing and supply chain control

BILL OF MATERIALS	
ITEM NO.	DESCRIPTION
1	ASSEMBLY
2	COMPONENT
3	RAW MATERIAL
4	WELDING MATERIAL
5	PIPE
6	VALVE
7	FLANGE
8	ELBOW
9	TEE
10	REDUCER
11	END FLANGE
12	ANCHOR BOLT
13	WELDING ROD
14	WELDING GUN
15	WELDING MASK
16	WELDING GLOVES
17	WELDING TORCH
18	WELDING TABLE
19	WELDING WIRE
20	WELDING WHEEL

## Advanced Manufacturing Control and Planning

- Interference checks
- Labor analysis software
- Line list management
- Reduces shop floor time up to 25%



PROCESS SYSTEMS



engineering



## The benefits of experience

We are the world's largest independent manufacturer of industrial refrigeration products and systems. Johnson Controls-York® systems are available in over 100 countries. As a global player with local representation, we have the international resources to achieve the best solutions.

York® Process Systems' capabilities include manufacturing, package assembly and installation, professional project management, and operation within ISO 9001 procedures. Our attention to detail ensures accountability and guarantees the quality of your finished system.

We coordinate multinational projects with an awareness of the need for good communication to ensure that the right solutions are sourced and delivered on time.

## All-around advantages

We manufacture a broad range of products and offer services to provide customers with:

- The widest possible range of products, including: reciprocating, rotary screw, and multistage centrifugal compressors; heat exchangers and pressure vessels; controls and monitoring systems; and packaged motor, engine or turbine-driven chillers
- The greatest possible degree of flexibility, with the ability to match all process requirements to the most efficient application of equipment
- Documentation and certification capacity, to ensure uniform quality and rapid design approval and implementation
- Staff training on-site and off-site
- A commitment to safety
- Worldwide support service and maintenance facilities
- Technological and environmental upgrades and conversions



INNOVATION AS STANDARD



equipment



## A strong industrial service team to deliver aftermarket services

The design life of equipment supplied by York® Process Systems is generally around 25 years, however, many of our installations exceed that. Experience dictates that customers take a long-term view when selecting service providers, and they expect maximum efficiency from their investment. Even the most reliable systems need to be set up properly during commissioning, and serviced during operation. We ensure that customers get the most out of their investment by offering the following time- and money-saving support services:

- Supervision of installation
- Start-up and commissioning
- Staff training
- Service and maintenance (4,000 technicians in 192 countries, trained on all brands of rotary screw and centrifugal compressors)
- Technological upgrades
- Power-saving improvements
- Process matching
- Replacement parts
- New refrigerant conversions
- Information and advice
- Design studies

These services are available the world over via an integrated network of established Johnson Controls-York® service offices, each connected to the equipment's original design and manufacturing locations. Quality-guaranteed replacement parts for Johnson Controls-York® manufactured equipment, including complete compressors, are held at strategically located centers for use in an emergency.

At the heart of our systems are industry-leading Frick® screw compressors and York® multistage centrifugal compressors. See our Driveline brochure for additional details.



# Global Manufacturing Locations



More Than 300 Service Offices strategically located around the globe.

## Johnson Controls - YORK® Process Systems Global Sales Office Locations

### HEADQUARTERS

Bob Fahey, Director,  
Global IR Process Systems  
100 Cumberland Valley Ave  
Waynesboro, PA 17268 USA  
Tel: +1 717 765-2510  
Mobile: +1 484 467-1954  
E-mail: robert.f.fahey@jci.com

### AUSTRALIA

Terry Presley, Mgr YPS Australia  
Unit 4 / 101 Newmarket Rd  
Windsor, QLD 4030 Australia  
Tel: +61 7 3630-3018  
Mobile: +61 4 0729-6647  
E-mail: terry.presley@jci.com

### INDIA

Haresh Rupchandani,  
Product Portfolio Manager  
501, A Business Plaza  
Pune, MH 411001 India  
Tel: +91 20 6606-7113  
Mobile: +91 99232-00941  
E-mail: haresh.rupchandani@jci.com

### SOUTHEAST ASIA

Kenneth Low, Sales Manager  
6 Changi Business Park Ave  
#06-21/22  
Singapore 486017  
Tel: +65 6517-2832  
Mobile: +65 9154-0053  
E-mail: kenneth.ct.low@jci.com

### AFRICA

Russell Hattingh, Operations Mgr  
42 Electron Ave  
Isando, 1600 South Africa  
Tel: +27 11 921-7129  
Mobile: +27 82 330-3734  
E-mail: russell.hattingh@jci.com

### CHINA

David Huang, GM Region  
Fl 12-13, No. 32 Zhujiangdong Rd  
Guangzhou, 44 510000  
People's Republic of China  
Tel: +86 20 3897-6138  
E-mail: david.wb.huang@jci.com

### LATIN AMERICA

German Salcedo,  
Regional Market Mgr  
10644 West Little York Rd, Suite 200  
Houston, TX 77041 USA  
Tel: +1 713 934-2405  
Mobile: +1 832 914-8822  
E-mail:  
carlos.g.salcedo.garcia@jci.com

### MIDDLE EAST

Sarvesh Baser, Sales Manager  
PO Box 31065  
Suite 1704, 17th Floor  
API World Tower  
Sheikh Zayed Rd, Dubai, UAE  
Tel: +971 4 309-9735  
Mobile: +971 56 683-2514  
E-mail: sarvesh.baser@jci.com

### EUROPE

Ralf Zimmermann,  
Director Markets - Process Systems  
Gottlieb-Daimler-Str 8  
Mannheim, D-68165 Germany  
Tel: +49 621 468-620  
Mobile: +49 160 711-5452  
E-mail: ralf.zimmermann@jci.com

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### JOHNSON CONTROLS

100 CV Avenue  
Waynesboro, PA 17268 USA  
Phone: 717-762-2121 • Fax: 717-762-8624  
www.jci.com/yps