



# Reciprocating Engines and Gas Compressors

Ajax  
Superior  
Cooper-Bessemer



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## Imagination at work

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GEA31391 08/2014



# We fuel the future. We push the boundaries of technology to bring energy to the world.

## Technology Leadership

GE is there – in all the key plays in which you are working – with the field-proven components, systems and services you have relied on for nearly 200 years. From drilling to processing to industrial markets, GE is there with a broad range of products and services to address your needs.

As one of the leading worldwide providers of reciprocating compression equipment for oil and gas production, transmission, processing and independent power industries, you can count on GE for quality and reliability. We understand your need for flexible solutions that provide a lower life cycle cost and punctual delivery.

## Exemplary Engineering

GE employs experienced engineers who use the latest tools and techniques to work out solutions for complex problems and bring new ideas to market.

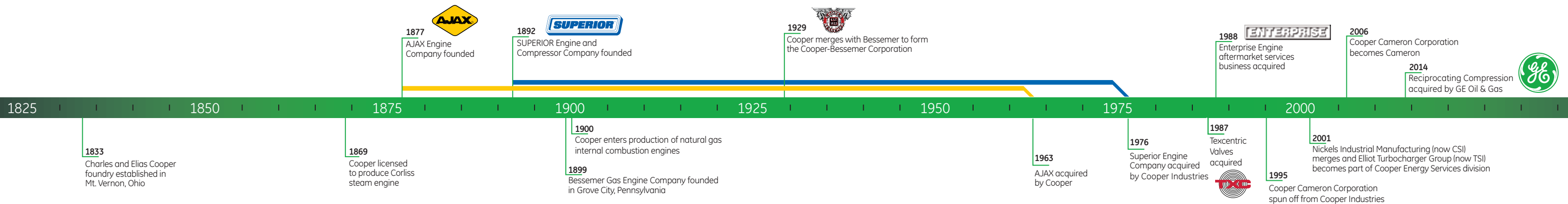
**Application Engineering** – Teams of engineers develop custom solutions for specific applications, finding just the right combination of equipment and technology to meet stringent demands, including fully packaged compressors.

**Rapid Prototyping and Virtual Testing** – Using sophisticated 3D modeling software, advanced simulation software and 3D printing techniques, our engineers can perform thermal, stress, combustion and emissions analysis on parts and assemblies before a single prototype is built.

In the constant pursuit of improvement, we explore new technologies, test new designs and experiment with new ideas.

	AJAX	SUPERIOR	COOPER-BESSEMER	SERVICES
FPSO		●		●
Lift	●	●		●
Injection	●	●		●
Gathering	●	●		●
Boosting	●	●		●
Storage	●	●	●	●
Transmission	●	●	●	●
Fuel Gas Boosting	●	●		●
Unconventional	●	●		●
Processing	●	●		●
NGV		●		●

Since 1833, GE has manufactured top-quality products that have become known throughout the industries we serve. Today, our reciprocating compression products are known for their reliability and performance.





# Ajax Slow-speed, Integral Gas Engine-compressors

For more than 50 years, Ajax integral engine-compressors have earned a reputation for being as reliable as any compressor product, through efficient and long-lasting service. Our product line – from 147 to 845 hp (110 to 630 kW), with a cylinder lineup capable of handling a wide range of pressures – offers up to six

ratios of capability and a lower brake horsepower (BHP) per million flows for a wider range of applications.

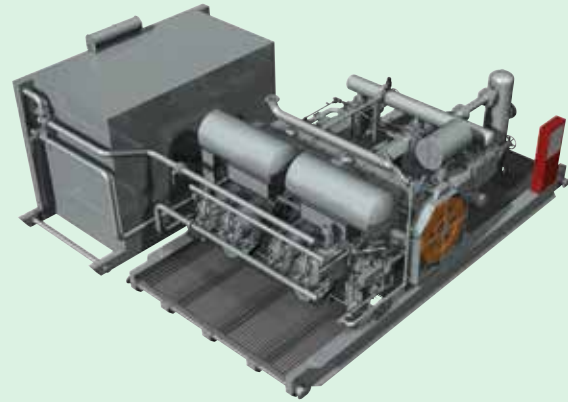
AJAX integral technology provides lower overall operating costs and maintenance expenses. Improvements over the years have added to the strength and simplicity of the original design.

## Slow-speed Integral Gas Engine-compressors

### DPC-2200 / DPC-2800

147.8 to 845 bhp (110.2 to 630.1 kW) at 440 rpm  
30,000 to 40,000-lb (133 to 178-kN) rod load

- Gas gathering
- Gas processing
- Gas transmission
- Helium processing
- Gas storage
- Propane processing
- Gas reinjection
- Coalbed methane

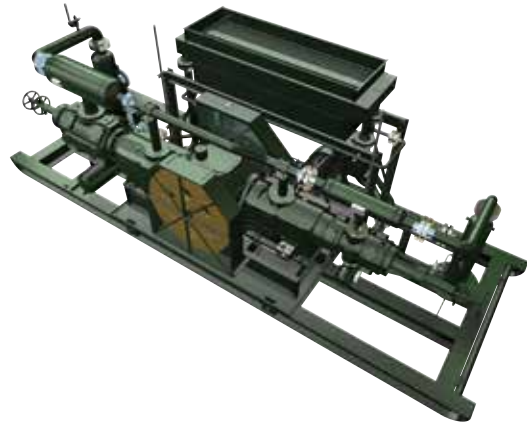


## Slow-speed Separable Compressor

### C-302

Electric motor-driven separable, 200 to 455 rpm  
30,000-lb (133-kN) gas rod load

- Gas gathering
- Gas processing
- Gas transmission
- Helium processing
- Gas storage
- Propane processing
- Gas reinjection
- Coalbed methane

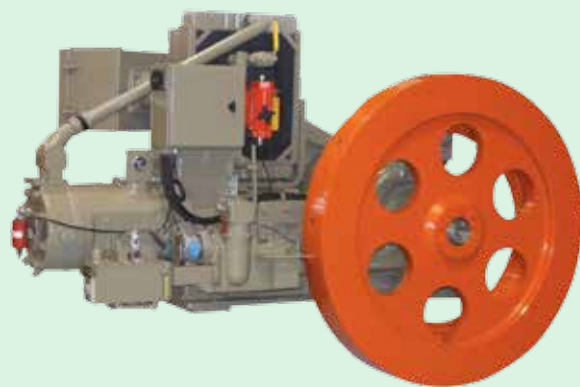


## 40-hp Gas Engine

### E-565 Gas Engine

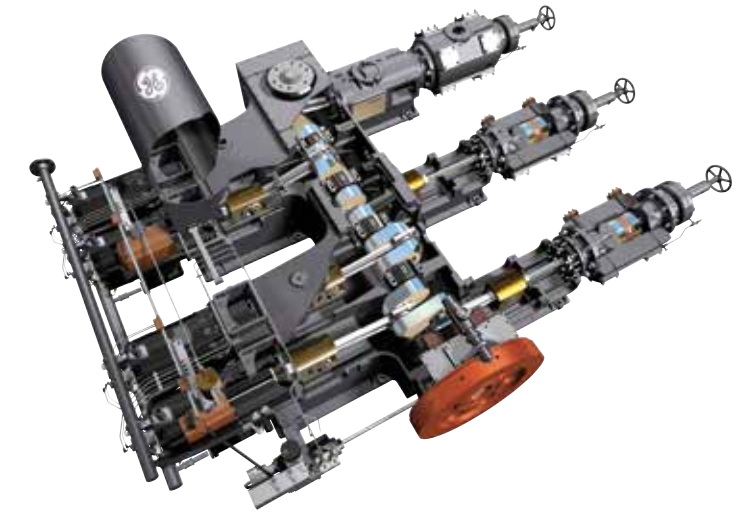
40 bhp (29.8 kW) at 525 rpm

- Pump jacks
- Gas gathering



## Ajax Advantages

- **Reliability** – Proven two-stroke design ensures reliable operation
- **Availability** – 98% or better availability providing increased revenue and production time when properly maintained and operated
- **Operating Efficiency** – Integral net compression efficiency is greater due to low mechanical losses when compared to non-integral technologies
- **Fuel Flexibility** – Ability to operate using a wide variety of fuel gases, including sour gas up to 3.0 mol%
- **Ease of Installation and Mobility** – Plug-and-play flexibility combined with the ability to relocate based on field life
- **Low Total Cost of Ownership** – Lower overall operating costs due to fewer parts, slower speed and proven design



Cutaway of Ajax 2804 LE compressor engine showing crosshead guides, main bearings and crankshaft, with four power pistons and three compression cylinders. Engine runs at 440 rpm and runs on natural gas.





# Superior High-speed Separable Reciprocating Compressors and Engines

GE's Superior product line is a leading provider of reciprocating compression equipment, parts and services for oil and gas production, gas transmission, gas processing and independent power industries. Built to work long and hard in any gas application, the Superior product line includes a full line of air-cooled and water-cooled, lubricated and non-lubricated, lined and unlined cylinders.

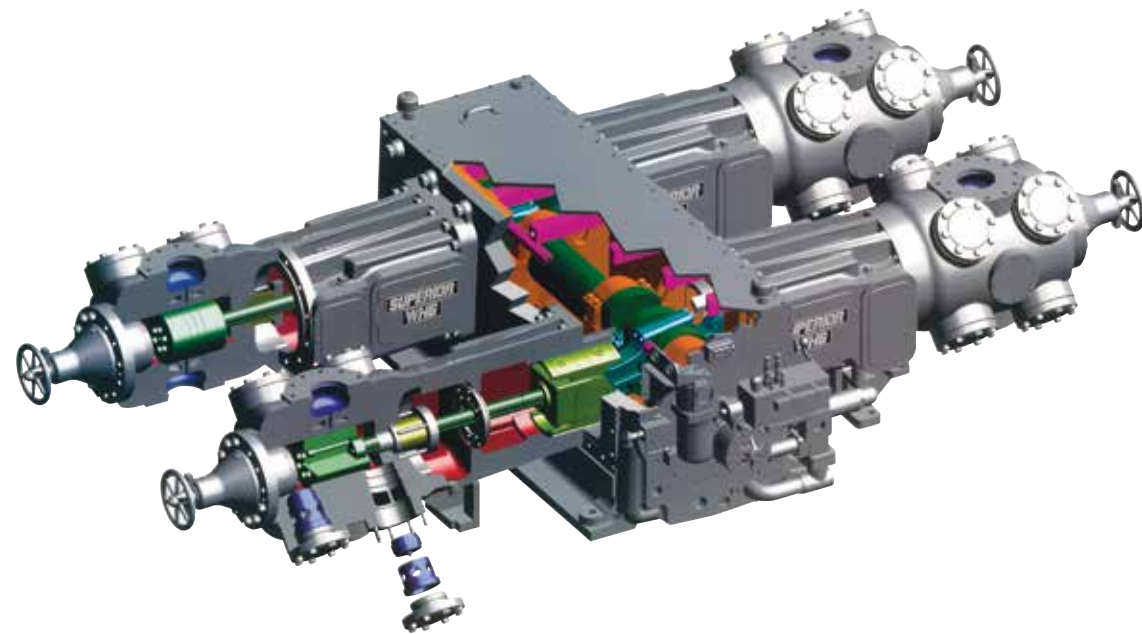
**Experience** – With more than 130 years of compression experience, you can count on the quality and reliability of Superior products. You also can count on GE to understand your need for solutions that provide a lower life cycle cost. With installations in more than 70 countries, representing a diverse set of customers and applications, the Superior brand is recognized as a proven performer for reciprocating compression.

**Flexibility** – Superior engines and compressors are designed to provide the flexibility needed to fit your application. This flexibility

is offered through an extensive line of cylinders and a variety of frames designed to cross a broad range of horsepower and speed. Our frames extend to 9000 hp with our WG model and 1800 rpm with our high-speed CFA.

As field conditions change over time, your Superior compressor frame can be reconfigured with our flexible line of cylinders to easily realign your equipment to production needs. This ability to utilize existing modular equipment for the life of your field, over purchasing new equipment, reduces overall downtime and increases total equipment availability.

**Support** – Before, during and after the sale, we listen and deliver. To provide you with the best possible service, GE Oil & Gas offers a dedicated team of parts support and field service personnel. We provide comprehensive inventory availability because we understand your cost of downtime.



GE offers a versatile Superior cylinder selection for your specific application, from lined to non-lined, air- or water-cooled, high-pressure or integral tandems.



Ductile Iron



Forged Steel



Pipeline

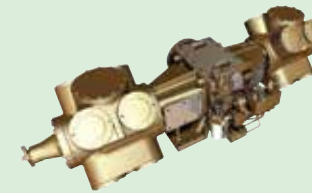
## CFA



290 to 580 hp (216 to 432 kW) at 1800 rpm  
13,000-lb (58-kN) gas rod load

- CNG
- Gathering
- Boosting
- Processing
- Offshore platforms
- Air
- FPSO

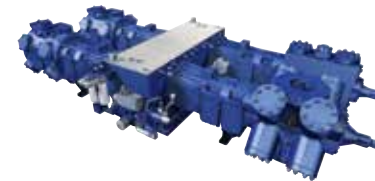
## RAM



950 to 1900 hp (708 to 1417 kW) at 1400 rpm  
40,000-lb (179-kN) gas rod load

- Fuel gas boosting
- Gathering
- Boosting
- Processing
- FPSO

## MH/WH



1700 to 5400 hp (1268 to 4027 kW) at up to 1200 rpm  
Up to 65,000-lb (291-kN) gas rod load

- Fuel gas boosting
- Gathering
- Boosting
- Processing
- Transmission
- Storage
- CO<sub>2</sub>
- FPSO

## WG



2500 to 9000 hp (1065 to 6714 kW) at up to 1200 rpm  
75,000-lb (336-kN) gas rod load

- Gathering
- Boosting
- Processing
- Transmission
- Storage
- Injection
- CO<sub>2</sub>
- FPSO

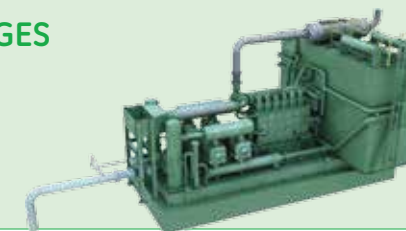
## 825 ENGINE



12 or 16 cylinders  
2000 to 2650 hp (1490 to 1975 kW) at 900 rpm

- Fuel gas boosting
- Gathering
- Boosting
- Processing
- Transmission
- Storage
- Injection
- CO<sub>2</sub>

## SUPERIOR PACKAGES



Any Superior Compressor

- Complete packages\*
- Application flexibility
- Optimized engineering
- Gas or motor driver
- Skid mounted
- Control panels
- Instrumentation
- Other ancillary equipment

\*Fulfillment linked to high speed reciprocating compression for consumption in the United States is through authorized independent packagers.



# GE Services – Partnering to maintain your reciprocating compression and power equipment

Whether you need replacement parts, machine shop repairs, or even field service of remanufactured engines and compressors, experienced GE Oil & Gas service personnel provide you convenient and attentive support anywhere in the world. Our dedicated team will work with you to determine the most appropriate solution to keep your equipment operating efficiently, reliably and, above all, profitably – giving you a competitive edge.

## Parts and Exchange

Locate replacement parts for both GE and non-GE engines, compressors and power generation equipment.

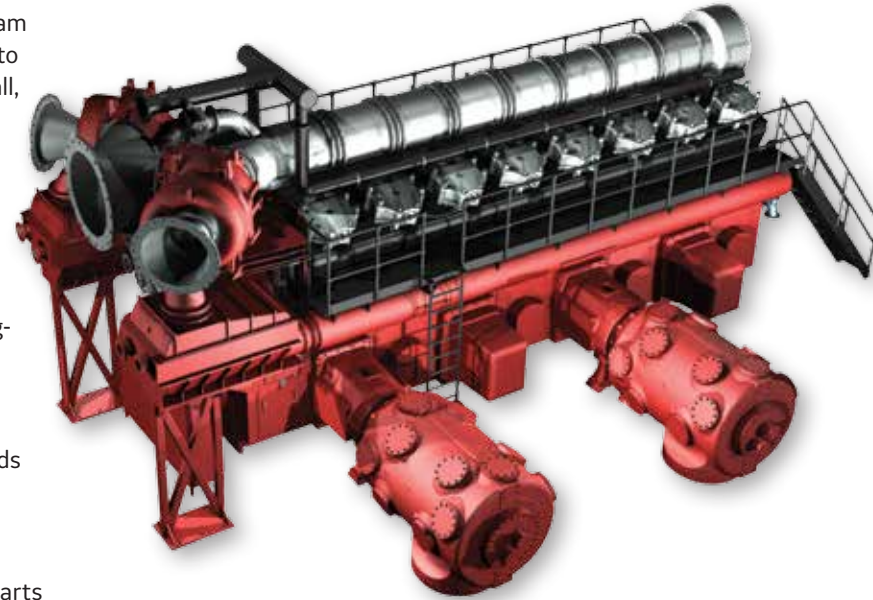
All replacement parts are manufactured to OEM or customer specifications to ensure reliability, lower maintenance and long-term savings.

## Availability of New Parts

Strategically-placed inventory is available to address your needs quickly.

## Economical Alternative to New Parts

With our parts exchange program, operators can trade used parts for used or factory-reconditioned components and assemblies.



*Our 24/7 central distribution and call center is located in Houston, Texas, highlighting our commitment to providing a one-source solution for our customers. The call center offers customer service, application engineering and technical support for customers. For immediate assistance, call us at 1.866.754.3562.*

## Machine Shop and Field Services

Our team of experienced technicians and service representatives provide a quick response to your service needs. Machine shop and field services include:

- Installation, commissioning and operator training
- Overhauls, including teardown, inspection and rebuild
- General services, including grout, equipment relocation/reapplication, predictive emissions monitoring and contract maintenance
- Machining in the field to provide a cost-effective alternative to equipment removal
- Repair and unit exchange to maintain your operation during equipment overhaul and to reduce downtime
- Engineering and new product development teams dedicated to developing innovations for GE and non-GE products



GE also maintains a global network of reciprocating compression machine shops, providing:

**Reconditioning** – Any make of reciprocating engine, compressor or turbocharger can be reconditioned or remanufactured, offering an attractive and economical solution based on your particular situation.

**Retrofits** – Retrofit services enhance engine performance and can reduce emission to a specified level.

**Upgrades** – Engine efficiency upgrades improve fuel efficiency, engine performance and reliability. Upgrades include Jet Cell™ conversions, air/fuel ratio improvements, blower/turbocharger and ignition system upgrades and electronic control panels.

**Engineering and New Product Development** – GE's Services team maintains a dedicated engineering, technical support and new product development team that brings legacy equipment up to modern standards using today's best technology. We strive to improve engine and compressor performance, enhance reliability and develop improved hardware and combustion technologies for reduced emissions.





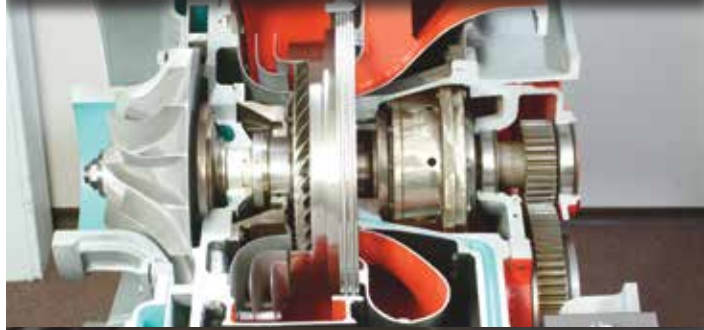
# Specialized Services



## COMPRESSION SPECIALTIES

### *Large-bore engine and compressor parts, repairs and service*

GE is one of the leading US manufacturers of parts for large, industrial engines and compression equipment including reputable brands such as Caterpillar®, Waukesha\*, Clark®, Worthington®, Ingersoll Rand® and others.



## TURBINE SPECIALTIES (TSI)

### *Complete turbocharger manufacturing and repair*

For more than 40 years, our team in Salina, Kansas, has been cultivating expertise in everything to do with turbochargers and has an enviable reputation for quality work. Today, they offer the best in parts, repair, new and remanufactured turbochargers, retrofit packages, testing, upgrade/re-aero services, training and unit exchange.



## TEXCENTRIC

### *New and reconditioned compressor valves*

GE produces TEXCENTRIC valves, assemblies and parts for virtually any type of air, gas or process/petrochemical compressor – including replacement parts, plus in-house engineering and manufacturing of poppet valves, plate valves and plug-type unloaders.



## ENGINE UPGRADES

### *Technologies to improve emissions, efficiency and performance*

Using the best of technology, engineering services and project management, GE Oil & Gas offers comprehensive upgrades for large-bore engines, including Cooper-Bessemer and non-OEM equipment like Clark®, Worthington®, and Ingersoll Rand®. Engine upgrades reduce engine emissions, increase horsepower and improve efficiencies and reliability.

# The Learning Center

Educating customers, operators and maintenance personnel



The Learning Center is GE's dedicated reciprocating engine and compression training resource for your employees. Staff well-trained in equipment operation and maintenance is one of your best tools for improving performance, reducing downtime and overall operating costs and maintaining a safe operation. For more information, contact us at [tlc@ge.com](mailto:tlc@ge.com) or 1.713.354.1296.