

GE Oil & Gas

Reciprocating Compression

Ajax*

Cooper-Bessemer*

Gemini*

Superior*



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

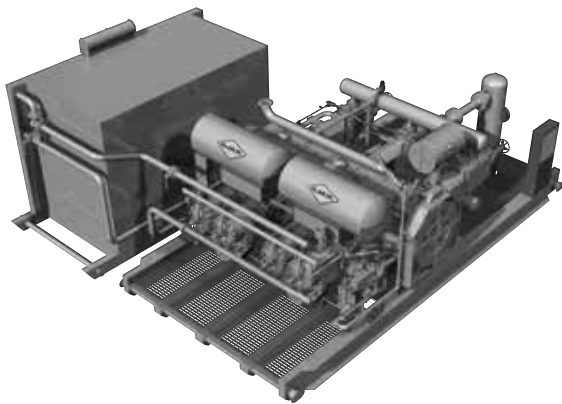
Since 1833, GE has manufactured top-quality products that have become known throughout the industries we serve. Today, our reciprocating compression products are known for their reliability and performance.



Ajax Integral 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 transmission
- Gas storage
- Gas reinjection
- Gas processing
- Helium processing
- Propane processing
- Coalbed methane

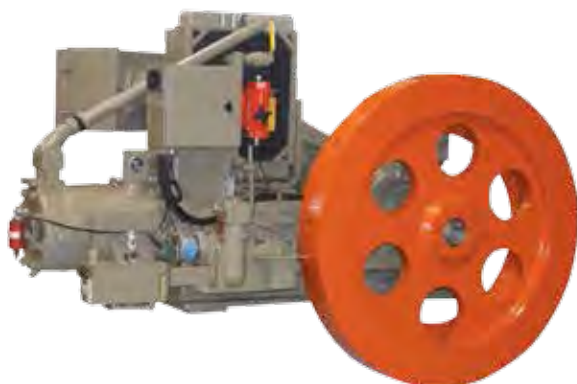


Slow-Speed Separable Compressor

C-302

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

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



40-hp Gas Engine

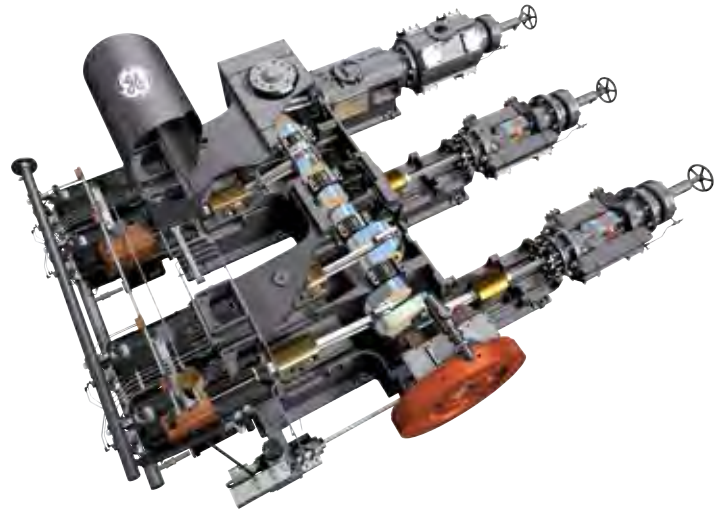
E-565 Gas Engine

40 bhp (29.8 kW) at 525 rpm

- Pump jacks
- Gas gathering
- Single-cylinder, two-stroke engine meets emissions without additional control systems
- Operational on a wide range of field gas

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.



Gemini High-Speed Reciprocating Compressors

Our HSR products range from 60 HP (45 kW) to 800 HP (596 kW), with a variety of piston rod load capacities and frame stroke combinations. Over 15,000 of our compressors can be found around the globe, working in fuel gas boosting, gas lift, CNG fueling, reinjection, gas gathering and vapor recovery applications – operating 24-hours a day, seven days a week.

Economical

GE Oil & Gas compressors are integrated into a package by a global network of authorized packagers. The compressor is matched with a driver, coolers, controls, and piping typically on a single skid. This allows the complete compressor package to be easily moved to a new location. This concept lowers your installation, site construction, and re-application costs.

Our compressors are designed to be directly connected to a variety of reciprocating natural gas engines (720 to 1,800 rpm) and electric motors (750 to 1,800 rpm). A variety of compressor frame strokes allow the compressor to be perfectly matched to the optimum driver.

Flexible

It is the nature of natural gas production that pressures and flows often change. Therefore, greater productivity can be attained if the compressor is easily adaptable to the new operating conditions.

Many GE Oil & Gas high-speed reciprocating compressors feature field-replaceable cylinder liners that allow the cylinder bore to be increased or decreased as operating conditions change. When the cylinder must be changed, several cylinders have identical flange connections, allowing the same piping and bottles to be used. In either case, there is no need to modify the on-skid piping and accessories, further lowering modification costs. If the cylinder bore is ever damaged, it is less expensive and less time consuming to replace a liner than a complete cylinder.

A variety of capacity-control devices are also available, including our standard variable-volume clearance pockets, featuring generous clearance volumes. These provide greater flexibility for changing operating conditions.

The modular design of our high-speed reciprocating compressors allows frames and cylinders to be easily reconfigured, offering maximum flexibility with minimal cost.

Reliable

GE Oil & Gas API 11P high-speed reciprocating compressors are balanced opposed to minimize vibration by equalizing the opposing reciprocating forces on the crankshaft. Heavy, ribbed frames distribute reciprocating stresses evenly for greater strength and longer life. Many compressor cylinders are water jacketed to lower operating temperatures, provide thermal stability, and improve valve life.

Power up to 800 HP

Pressure up to 6500 psig ... meet most applications

Stages up to 4... flexible

Gases ... natural gas and oilfield applications

Driver compatibility ... engines and electric motors

Applications

CNG for NGV

Fuel Gas Boosting

Vapor Recovery

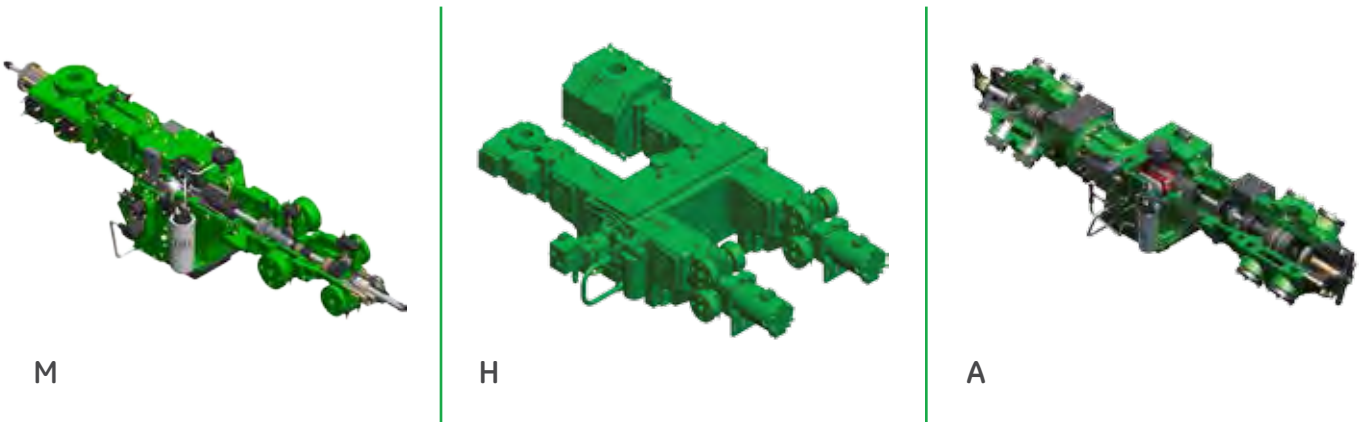
Gas Lift

Reinjection

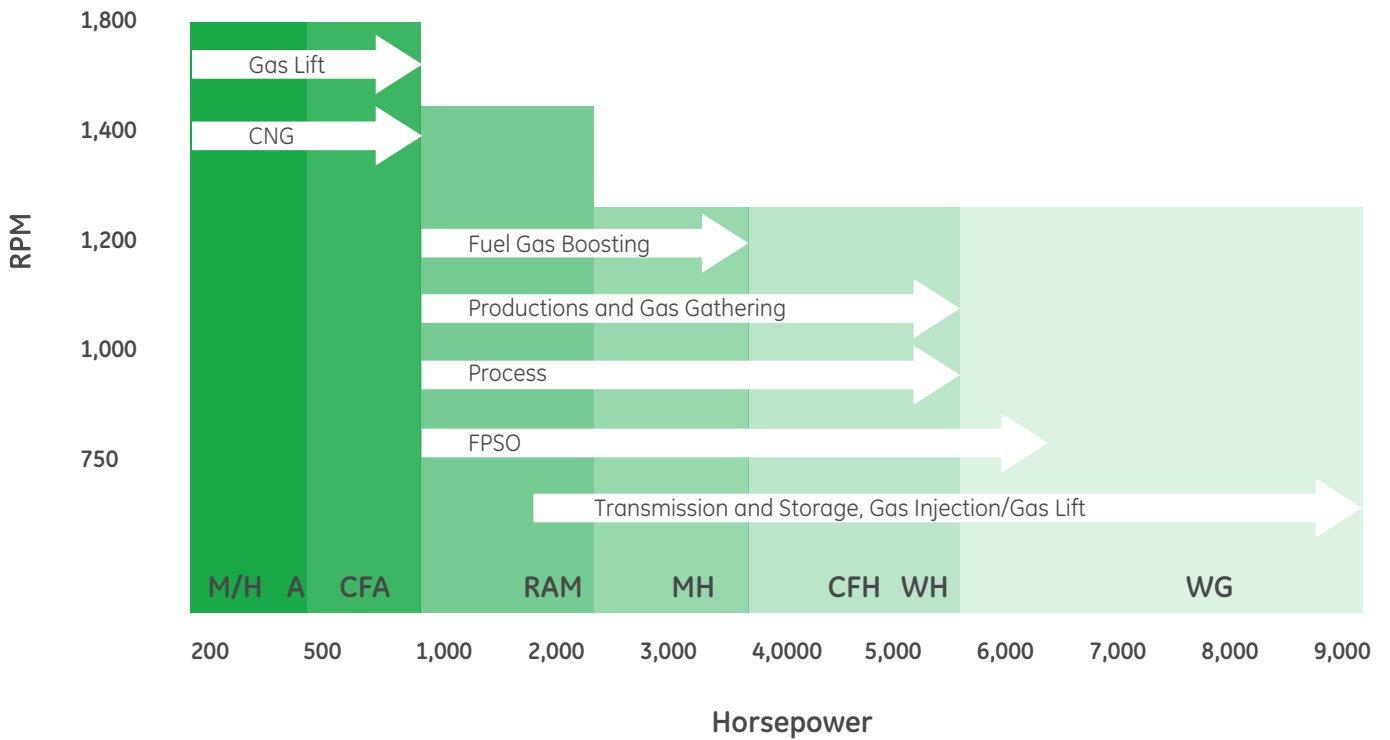
LNG

Gemini Portfolio

Frame Offering								
Model	Max HP	Hp/Throw	No. of Throws	Stroke (in)	RPM	Piston Rod Diameter	Total Rod Load (lbs.)	No. of Stages
M	120	60	1,2	3	1800	1.125	12,000	1 to 4
H	400	100	1,2,4	3	1800	1.125	20,000	1 to 4
A	800	200	1,2,4	3.5	1800	1.375	27,000	1 to 4



Reciprocating Compression Product Line



Superior High-speed Separable Reciprocating Compressors and Engines

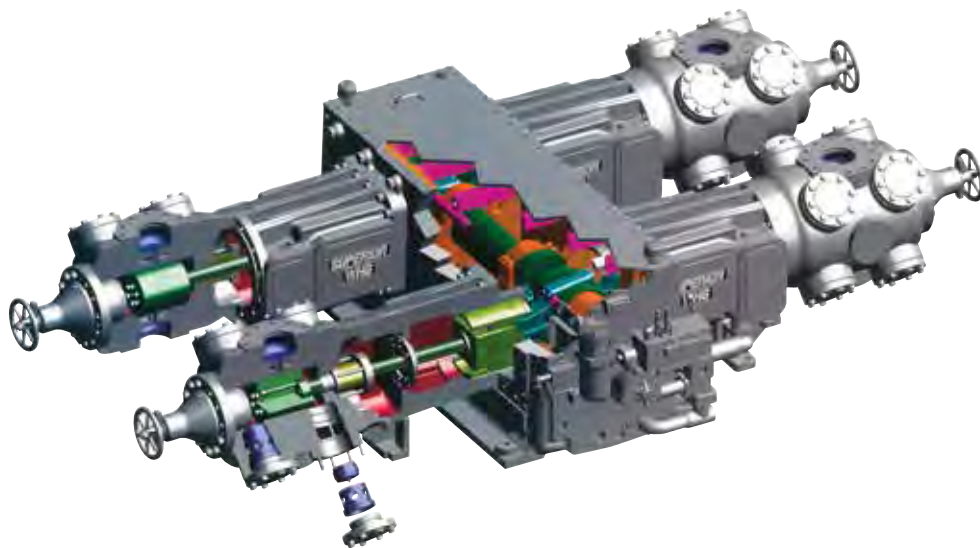
GE's Superior product line is a leading provider of reciprocating compression equipment, parts and services for oil and gas production, gas transmission, gas processing and independent power industries. Built to work long and hard in any gas application, the Superior product line includes a full line 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 as well as providing 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

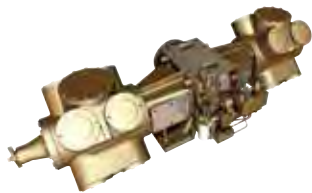
CFA



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
- CO₂
- 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
- CO₂
- 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
- CO₂

Specialized Services



COMPRESSION SPECIALTIES

Large-bore engine and compressor parts, repairs and service

GE is one of the leading U.S. manufacturers of parts for large, industrial engines and compression equipment including reputable brands such as Caterpillar™, Waukesha¹, 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.



SUPERIOR PACKAGES

Any Superior Compressor

- Complete packages¹
- Application flexibility
- Optimized engineering
- Gas or motor driver
- Skid mounted
- Control panels
- Instrumentation
- Other ancillary equipment

¹Fulfillment in the United States is through authorized independent packagers.

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 or 1.713.354.1296.



GE Oil & Gas moves natural gas to fuel the future for a cleaner energy world.

GE works with our global customers and partners to deliver reciprocating compression innovation and technology that optimizes the production and distribution of natural gas. We put our expertise to work—through our R&D, engineering, financing, global infrastructure, and 24/7 service. GE delivers reliability and availability for end-users everywhere, every day.

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