



Meeting the Challenge -

Reciprocating Compression Solutions for Cryogenic Applications





Technology to Support Your Cryogenic Application

At GE Oil & Gas we're leaning on our legacy of innovation to provide sustainable solutions to help our customers address their most pressing challenges. Operational efficiency, improved throughput, reliability and reduced downtime are essential requirements for our industry today.

We are continuing to invest in research and innovative technologies that allow our customers to operate more efficiently and profitably, while complying with regulatory mandates.

The latest development in our high speed reciprocating compression product line delivers a reliable solution to meet the specific challenges of vapor recovery applications such as

| Applications | Boiling Temperature |
|------------------|---------------------|
| LNG | -162°C/- 260°F |
| Ammonia (NH3) | -33°C/-28°F |
| Ethylene (C2H4) | -104°C/-155°F |
| Propylene (C3H6) | -48°C/-54°F |
| Propane (C3H8) | -42°C/- 44°F |

The dramatic temperature changes when handling boil off gases pose a significant threat to the integrity of your operation. Operating temperatures may drop under -162°C/-260°F and so a safe and reliable compression solution is essential to managing efficient operations.

Our reciprocating compression solution for cryogenic applications includes specially designed cylinders using special materials to withstand harsh conditions and perform in a low temperature environment.

Our Experience

GE Oil & Gas brings trusted experience in reciprocating compression with over 15,000 compressors installed around the globe—working in fuel gas boosting, gas lift, CNG fueling, reinjection, gas gathering and vapor recovery applications - all operating 24-hours a day, seven days a week.

Our heritage with Cooper Bessemer and Nuovo Pignone means we have over 90 units installed in cryogenic applications across North America, Europe, Australia, Middle East and India.

Our services team delivers total aftermarket support for reciprocating compression and power equipment - from parts to machine shops, engineering to field support, for any make or model. This dedicated services team exists to help customers keep their reciprocating and power equipment running efficiently, reliably, and profitably, throughout its entire life cycle. Our goal is to give you a competitive edge by delivering compression and power products, services and technical support through a single, efficient source.

Specification

| Frame Model | MH/WH/WG |
|---|-----------------------------|
| Stroke | 6 inches |
| Maximum Rotating Speed | 750 rpm |
| Maximum Average Piston Speed | 750 ft/min |
| Rated Gas Rod Load | Up to 75000 lbs |
| Total Gas Rod Load | Up to 150000 lbs |
| Service | Non lube |
| Cylinder Bore | up to 28.5 inches bore size |
| Maximum Allowable Working Pressure | 100 psig |
| Minimum Operating Temperature | -200°C/-328°F |
| Valve Type | Plate or Poppet |
| Packing Type | Non lube/purged |
| Variable Volume Clearance Pocket (VVCP) | Manual or pneumatic |
| Valve Unloader Type | Finger |

Materials Used

Cylinder: ductile Ni - Resist grade D2M (ASTM A571)

- Specially developed for cryogenic applications
- Large amount of nickel (22-24%). Low thermal expansion coefficient and maintains ductility even to -200°C/-328°F. Excellent strength at cryogenic temperatures and strong impact resistance
- Better castability than stainless steel. Relatively good machinability

Piston: Two-piece arrangement, Aluminum Piston

- Piston rings, rider bands made of speciality polymers
- Seals made of Teflon based proprietary materials

Pressure packing case: Purged and vented, 304SS

Valves: Plates or Poppet

- Special proprietary materials for extreme cryogenic applications





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