



VERTICAL RECIPROCATING COMPRESSOR APPLICATION FIELDS

WE WORK
TO MAKE
ENERGY
**A TAILOR MADE
SOLUTION**



A SIME COMPANY

WWW.GIE.IT



**WE TRANSFORM
ENERGY** FOR
PEOPLE AND
ENVIRONMENT
SAFEGUARD

WE DEVELOP **PACKAGED SOLUTIONS** FOR
RECIPROCATING COMPRESSORS AND
AUXILIARY SKIDS TO PROVIDE COMPETITIVE
AND FLEXIBLE CONFIGURATIONS.

VERTICAL RECIPROCATING COMPRESSOR APPLICATION FIELDS

GI&E is able to provide full packaged solution “plug & play”, already set up with the accessories or auxiliary components necessary for operation. Both Standard Solutions and Customized Approach can be adopted.



OIL & GAS



TECHNICAL GAS



NATURAL GAS

OIL & GAS

In the Oil&Gas field, GI&E compressor packages are used in Upstream, Midstream and Downstream Process Applications, including Hydrogen services.

GI&E strengths are:

- Engineering Competence to develop customized solutions:
- Process Design & Analysis and Machinery Design/Selection
- Customized Design based on Final Client's Specifications, Standards and Project needs
- Design API 618 Compliant or ISO13361
- Oil-Free Configuration
- Materials suitable for any type of gas including NACE applications

GI&E compressors' main Application Field are:

- Fuel Gas Boosting / Compression
- Dry Gas Seal (DGS) Boosting
- Gas Flaring Down: Vent Recovery, Gas Pipeline Recovery Unit (GPRU) and more.

In addition, GI&E compressors are also suitable for Gas Gathering, Gas Underground Storage and other services.

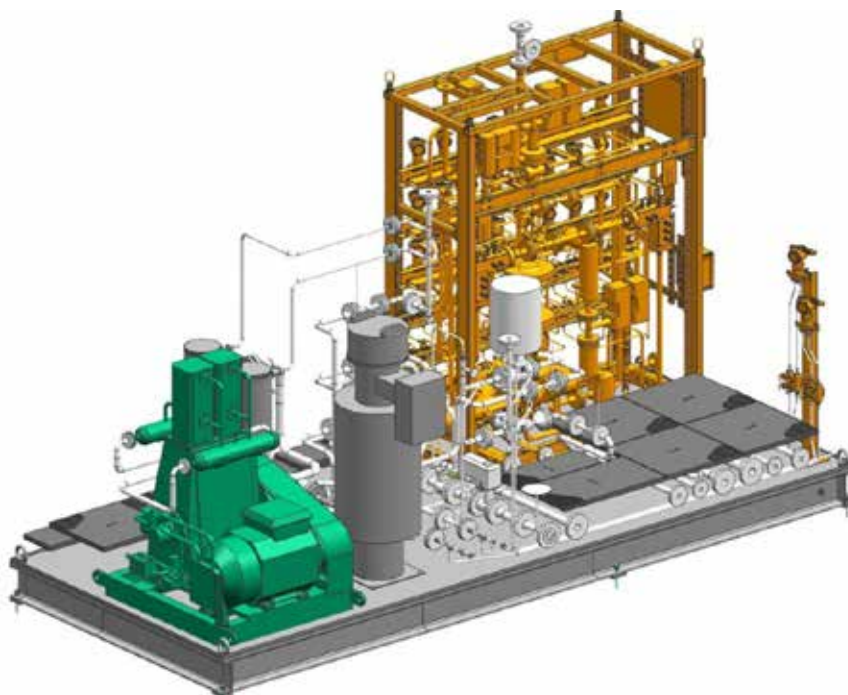
FUEL GAS BOOSTING

CAPABILITIES	GI&E is able to provide full packaged solutions for fuel gas boosting either using its own produced compressors line (or using other brands) to cover a wide range of applications
PACKAGE	Plug and Play emission free skid, designed and manufactured for Single Lift. Complete manufactured, assembled, packaged and full load tested at GI&E facilities
OPTIONS	Fully Enclosed / Sheltered; API compliant / ISO; Gas Treatment
MAIN ITEMS	Compressor and its Auxiliaries (Lube Oil and Water-Cooling), Driver, Coolers, Filters, Separators, Control / Safety Valves, Instrumentation, Control Panel
USUAL APPLICATION RANGE	• up to 40 bar • up to 10000 kg/hr



DSG BOOSTING

CAPABILITIES	GI&E is able to provide Compressor Booster to feed Dry Gas Seal during pressurized Centrifugal Compressor Stop, in order to avoid contamination from solid and liquids due to the lack of auto-buffer. GI&E Booster Compressor meets all API 692 requirements
PACKAGE	Stand-alone Compressor or Compact Skid including Frame, Electric Motor, Pulsation Dampeners and Lube Oil system. Designed and manufactured for single lift
OPTIONS	Stand Alone / Compact Skid
MAIN ITEMS	Compressor and its Auxiliaries
USUAL APPLICATION RANGE	- Valid for all O&G applications with suction pressure from 5 bar to 350 bar - Volume Flow Rate: from 5 to 40 m³/h. About 5 bar of DeltaP or more (upon request) - Process Gas: from Hydrogen to Propane, and the most common natural gas



GAS FLARING DOWN

CAPABILITIES	GI&E is able to provide full packaged solution, using its own produced compressors, for Gas Flaring Down application such as: • Vent Recovery • Gas Pipeline Recovery Units (GPRU)
PACKAGE	Plug and Play emission free skid, designed and manufactured for single lift. Complete manufacturing, assembly, packaging and full load test at GI&E facilities
OPTIONS	Fully Enclosed / Sheltered; API compliant / ISO
MAIN ITEMS	Compressor and its Auxiliaries (Lube Oil and Water-Cooling), Driver, Coolers, Filters, Separators, Control / Safety Valves, Instrumentation, Control Panel, Volume Bottle
USUAL APPLICATION RANGE	• Usual Range 30-400 Kg/h • Suction Pressure < 1bar • Discharge pressure 55-80 bar



TECHNICAL GAS

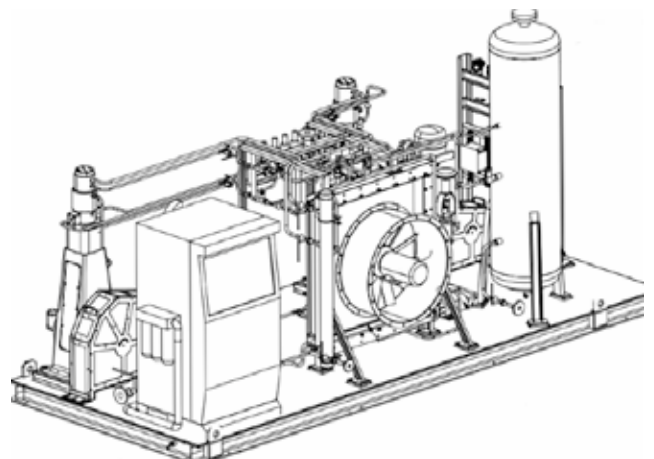
GI&E Compressors can be used for the production and compression of most common Technical Gases for industrial purposes such as:

- **Air**
- **Carbon dioxide (CO₂)**
- **Nitrogen (N₂)**

For these applications, Oil Free Compressors can assure the total absence of oil in the compressed gas. This guarantees the correct functioning of equipment and machinery (clean gas is necessary for this kind of applications).



CAPABILITIES	GI&E is able to provide fully packaged solutions for production and compression of Technical Gases, using its own compressor line to cover a wide range of applications and Plant / Customer needs		
PACKAGE	Plug and Play emission free skid, designed and manufactured for single lift or according to plant requirements. Complete manufacturing, assembly, packaging and full load test at GI&E facilities		
OPTIONS	Fully Enclosed / Sheltered; API compliant / ISO		
MAIN ITEMS	Compressor and its Auxiliaries (Lube Oil and Water-Cooling), Driver, Coolers, Filters, Separators, Control / Safety Valves, Instrumentation, Control Panel, Storage Tank		
USUAL APPLICATION RANGE	AIR • P Suct. 8-10 bar • P Disch. 35-45 bar	CO2 • P Suct. 1-5 bar • P Disch. 10-20 bar	N2 • P Suct. 1-8 bar • P Disch. 10-70 bar • Flow: 30-500 Kg/h



NATURAL GAS

Widely, Natural Gas is used as alternative fuel for the automotive sector.

The use of Natural Gas as fuel has numerous advantages, mostly for the Planet safeguard.

To reach the Distribution Grid from various sources (i.e. Pipeline networks, Bio-Gas production plants, etc.), Natural Gas has to be either:

- **Compressed (CNG)**
- **Liquefied (Micro LNG)**

GI&E has developed its own standardized line of CNG Modules based on the use of its own Reciprocating Vertical Compressors that have fully loaded cylinders specifically designed for CNG refueling.

The innovative design allows an important reduction in vibration improving reliability and reducing Noise Levels even in heavy running conditions (>1000 RPM).

CNG Modules are designed to offer the best solution in terms of Reliability and Performances, allowing both Energy Efficiency (= low operating costs) and Easy Plant Erection (= low cost of building and maintenance).

In Micro LNG plants, Natural Gas is compressed to 15, 20, 30 or 40 bar and liquefied at -160°C through a cryogenic heat exchanger. Product is finally stored in a cryogenic vessel.

GI&E Vertical Compressor can be used to compress Natural Gas inside a refrigeration system that pre-cools a combined flow of gas from the distribution network and refrigerant.



COMPRESSED NATURAL GAS (CNG)

CAPABILITIES	GI&E is able to provide fully STANDARDIZED packaged solutions based on flow requirement: CS, CM and CL Lines
PACKAGE	Plug and Play emission free fully enclosed skid, designed and manufactured for single lift. Complete manufacturing, assembly, packaging and full load test at GI&E facilities
OPTIONS	Not enclosed skid
MAIN ITEMS	Compressor and its Auxiliaries (Lube Oil and Water-Cooling), Driver (VFD), Coolers, Filters, Separators, Control / Safety Valves, Instrumentation, Control Panel, blow down and stock pressure vessels
USUAL APPLICATION RANGE	• 2 to 4 compression stages up to 275 bar • up to 4700 Sm³/h



MICRO LNG

CAPABILITIES	GI&E is able to provide full packaged solution for Micro LNG either from gas distribution network or biogas, using its own produced compressors.
PACKAGE	Plug and Play emission free skid, designed and manufactured for single lift. Complete manufacturing, assembly, packaging and full load test at GI&E facilities
OPTIONS	Fully Enclosed / Sheltered; API compliant / ISO
MAIN ITEMS	Compressor and its Auxiliaries (Lube Oil and Water-Cooling), Driver (VFD), Coolers, Filters, Separators, Control / Safety Valves, Instrumentation, Control Panel, Volume Bottle
USUAL APPLICATION RANGE	• usual Suction Pressure 3-5 bar • each compressor phase handling different mass flows



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