

*Eco  
Friendly*



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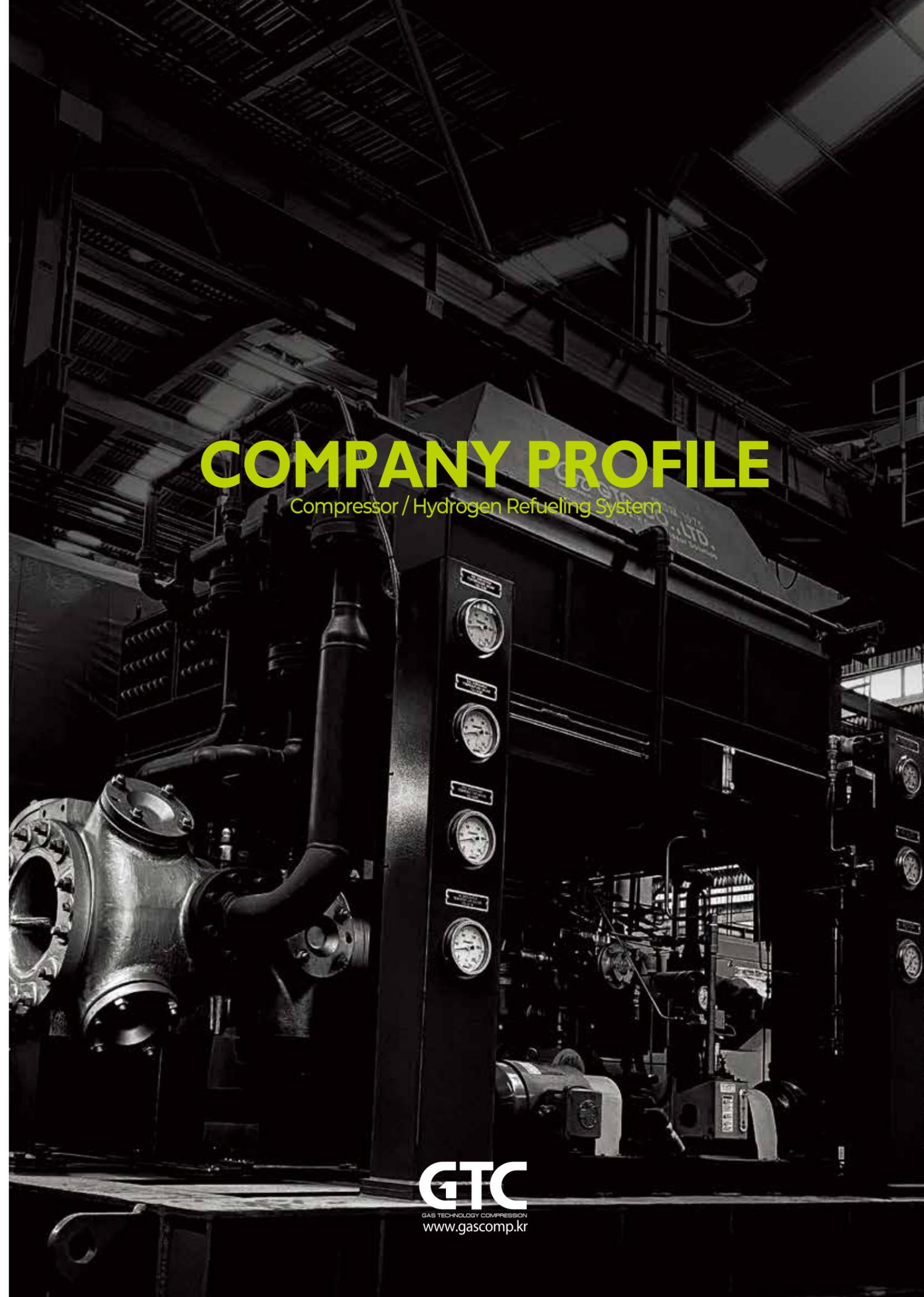
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# COMPANY PROFILE

Compressor / Hydrogen Refueling System



We will  
move forward with the goal  
of companies that breathe  
with the world in **the field of  
Compressor and Hydrogen  
Refueling System.**

## CONTENTS

05	GTC history
07	GTC Overview
09	Gas Compressor
11	Hydraulic H2 Compressor
15	Air Compressor
17	CNG Compressor
18	Hydrogen Refueling System
19	Localized Service System

We build  
a reputation and  
trust through  
the past.

## Company history

- 1975. Established in the name of Shinil machine industry
- 1981. Reciprocating Compressor production
- 1982. Desiccant Dryer production
- 1986. Registered in KEPCO as the approved vendor list
- 1997. Acquired the ISO 9001 Certification
- 1998. Manufactured and supplied the Hydrogen gas compressor
- 2001. Manufactured and supplied the BOG compressor
- 2002. Manufactured and supplied the compressor facility of 800MW power plant to KEPCO
- 2007. Changed Company name to GTC CO, LTD.  
Developed and manufactured the CNG compressor
- 2010. Acquired the ISO 14001 Certification
- 2012. Acquired the ASME U & S stamp certification of authorization
- 2013. Manufactured and supplied the largest capacity Hydrogen gas compressor (1,120 kW)
- 2014. Acquired the OHSAS 18001 Certification
- 2017. Developed and manufactured the Hydraulic compressor for Hydrogen Refueling Station (900 bar)
- 2019. Acquired the New Excellent Technology Certification
- 2021. Chosen as KATECH(Korea Automotive Technology Institute) H<sub>2</sub> Compressor Supplier

With the world's best technology, we prepare for a successful tomorrow with customers.

GTC has supplied the compressors of world's best quality to domestic and oversea customers based on the creative and innovative technology. First started its business as Shinil machine industry along with the production and development of machinery in 1975, started the production of reciprocating oil-free compressor and Dryer in the 1980's.

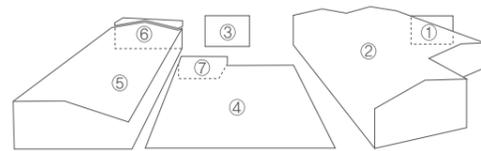
GTC arranged new business opportunity by developing CNG Compressor in 2007 and preparing the second leap with the development and production of various big scaled Gas compressors which are used for the process of petro chemistry.

GTC have acquired various certifications which include ISO9001, 14001, 45001, ASME 'S' and 'U' stamp certification, we are developing as a company which breathes with the world in the field of reciprocating compressor.

GTC has produced and supplied Dryer, Storage Vessel & Compressor wear parts including reciprocating gas compressor with reliability, durability improvement, the best efficiency, easy-to-use design, low noise and low vibration through the optimized machine design by applying API 618 code for the basic design of gas compressor

We are grown up to be a global company through the development of new technology such as CNG compressor, Hydraulic type hydrogen gas compressor of which Korea's first 900 bar. compression is available based on continued R&D investment and innovative thinking and technology for the future.

Thank you.



① Head Office ② 1st Factory ③ 2nd Office ④ 2nd Factory  
⑤ 3rd Factory ⑥ R&D Center ⑦ Hydrogen Refueling System



### Certification



Gas Compressor

# GAS COMPRESSOR

We preoccupy the best position with **optimal compression efficiency based on the best design.**

## GVCNL/V-type Gas Compressor

### Structure & Special Features

- Optimum compression efficiency based on best design
- Apply multi stage cylinders in accordance with required pressure
- Simple repair, maintenance and low maintenance costs
- Economical operation through the adjustment of variable capacity with Auto Unloading System
- Safety device with superior functions adopted
- Suitable for medium of large capacity requirements
- Clean compressed gas with Non-lubricate type
- 'V' type cylinder array to minimize installation space and cost saving
- Application code : API 618(Optional)

### Production Capability

- Pressure : 1 ~ 500 kg/cm<sup>2</sup>
- Capacity : 30 ~ 20,000 Nm<sup>3</sup>/hr
- Electric Power : 22 ~ 500 kW
- Fluid : N<sub>2</sub>, H<sub>2</sub>, CO<sub>2</sub>, O<sub>2</sub>, NH<sub>3</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, VCG, Ar, Natural Gas, etc.



## GBCNL/B-type Gas Compressor

### Structure & Special Features

- Suitable for large capacity with direct motor-crankshaft connection by coupling, no power loss and simple power transmission
- Minimal vibration and silent operation for even a large capacity with opposed cylinders
- Easy operation, repairs and adjustment by cylinders in low structure
- Safe operation under low speed and overload with a forced oil circulation system
- Excellent safety guaranteed by an auto control system
- Clean compressed gas with Non-lubricate type
- Application code : API 618(Optional)

### Production Capability

- Pressure : 1 ~ 500 kg/cm<sup>2</sup>
- Capacity : 30 ~ 20,000 Nm<sup>3</sup>/hr
- Electric Power : 150 ~ 500 kW
- Fluid : N<sub>2</sub>, H<sub>2</sub>, CO<sub>2</sub>, O<sub>2</sub>, NH<sub>3</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, VCG, Ar, Natural Gas, etc.



## GICNL/I-type Gas Compressor

### Structure & Special Features

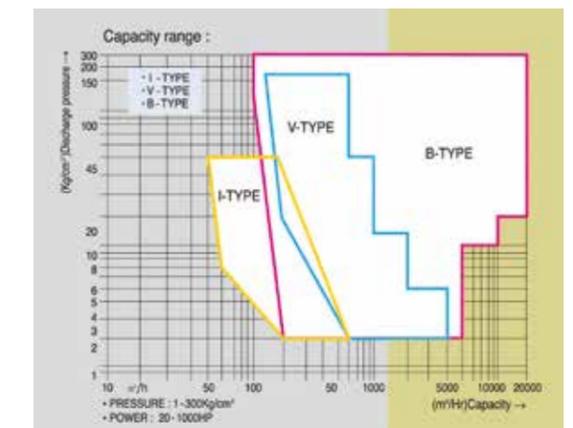
- Simple stand type structure-Easy operation, repairs and maintenance
- Apply 1 or 2 stage cylinders in accordance with required pressure
- Minimum installation space required
- Suitable for small capacity required
- Clean compressed gas with Non-lubricate type
- Application code : API 618(Optional)

### Production Capability

- Pressure : 1 ~ 300 kg/cm<sup>2</sup>
- Capacity : 30 ~ 15,000 Nm<sup>3</sup>/hr
- Electric Power : 7.5 ~ 500 kW
- Fluid : N<sub>2</sub>, H<sub>2</sub>, CO<sub>2</sub>, O<sub>2</sub>, NH<sub>3</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, VCG, Ar, Natural Gas, etc.



## Capacity Range of GTC Gas Compressor



### How to select Gas Compressors

01. Purpose to use
02. Gas Handle(In case of mixed gas, be mindful of composition ratio)
03. Distinction between lubricate type and non-lubricate type
04. Suction conditions(Pressure, Temperature and Humidity)
05. Discharge conditions(Pressure and Temperature)
06. Discharge volume
07. Coolant conditions(Temperature and Water quality)
08. Drive type(Electric motor driven, Engine driven, etc.)
09. Power source(Voltage, Frequency, Starting system, etc.)
10. Environmental conditions of installation point
11. Delivery date and conditions
12. Other special matters

# H<sub>2</sub> HYDRAULIC COMPRESSOR



## Hydraulic H<sub>2</sub> Compressor

- The most popular compressor for hydrogen gas application
- Can be used in multistage shape connected in series
- Compressor are available as single or two-stage models to meet the inlet requirements of the application
- Standard operating ranges for this model are:
  - Suction Pressure Range : 5 ~ 50 MPa
  - Discharge Pressures Range : ~ 93 MPa

### Structure & Special Features

- Completely block the inflow of lubricating oil into the hydraulic drive and cylinder
- Minimize power loss with low noise and vibration
- Extended component life with very slow & smooth piston speed and low abrasion loss
- low speed round-trip, gas tightness at Ultra-high pressure, Material development advantageous for high temperature and high pressure.
- High cooling efficiency by applying water cooling method
- Easy application of structural design to maintenance



### Application Field

- Hydrogen Fueling Station
- Gas transfer from tube-trailer
- Gas cylinder filling
- Many other applications that require clean gas

## H<sub>2</sub> Bus Fueling Station Compressor

- Bulk capacity compressor for charging hydrogen bus
- Can be used in multistage shape connected in series
- Compressor are available as single or two-stage models to meet the inlet requirements of the application
- Standard operating ranges for this model are:
  - Suction Pressure Range : 5 ~ 50 MPa
  - Discharge Pressures Range : ~ 93 MPa

### Structure & Special Features

- Completely block the inflow of lubricating oil into the hydraulic drive and cylinder
- Minimize power loss with low noise and vibration
- Extended component life with very slow & smooth piston speed and low abrasion loss
- low speed round-trip, gas tightness at Ultra-high pressure, Material development advantageous for high temperature and high pressure.
- High cooling efficiency by applying water cooling method
- Easy application of structural design to maintenance



### Application Field

- Hydrogen Fueling Station
- Gas transfer from tube-trailer
- Gas cylinder filling
- Many other applications that require clean gas

# H<sub>2</sub> HYDRAULIC COMPRESSOR



## Vertical Type Compressor

- Multiple compressor cylinders can be controlled simultaneously with one HPU
- Applicable to bulk capacity
- Extend piston seal life by equalizing the load on the compression piston
- Standard operating ranges for this model are:
  - Suction Pressure Range : 3~50 MPa
  - Discharge Pressure Range : ~93 MPa
- Compressor are available as single or two-stage models to meet the inlet requirements of the application

### Structure & Special Features

- Completely block the inflow of lubricating oil into the hydraulic drive and cylinder
- Compact and optimized design, it takes up less space and easy to maintain and repair Minimize power loss with low noise and vibration.
- Extended component life with very slow & smooth piston speed and low abrasion loss
- High cooling efficiency by applying water cooling method

### Application Field

- Hydrogen Fueling Station
- Gas transfer from tube-trailer
- Gas cylinder filling
- Many other applications that require clean gas



## Mobile Station Type Compressor

- Apply to mobile hydrogen refueling station\*
- Optimal piping design to minimize leakage caused by vibration
- Package for space utilization
- Standard operating ranges for this model are:
  - Suction pressure range : 5 ~ 50 MPa
  - Discharge pressures range : ~ 93 MPa
- Compressor are available as two-stage models
- \*The mobile hydrogen refueling station comprises four components : the tank container, Compressor, Chiller and Dispenser

### Structure & Special Features

- Produces clean compressed gas without injecting lubricant in the cylinder
- Compact and optimized design, it takes up less space and easy to maintain and repair
- Minimize power loss with low noise and vibration.
- Extended component life with very slow & smooth piston speed and low abrasion loss
- High cooling efficiency by applying water cooling method

### Application Field

- Hydrogen Fueling Station
- Gas transfer from tube-trailer
- Gas cylinder filling
- Many other applications that require clean gas

## GHC- 25 / 50 / 100

- Can be compressed up to 1,200 Bar
- Produces clean compressed gas without injecting lubricant in the cylinder
- Compact and optimized design, it takes up less space and easy to maintain and repair
- Minimal vibration and noise, no foundation
- Extended component life with very slow&smooth piston speed and low abrasion loss
- High cooling efficiency by applying water cooling method

### Application Fields

- Hydrogen Fueling Station
- CNG Fueling Station
- Chemical and Petrochemical industries



# AIR COMPRESSOR

GTC's goal is **customer satisfaction.**



## GVCNL/V-type Compressor

### Structure & Special Features

- Optimal compression effect based on the best design
- Apply multi stage cylinders in accordance with required pressure
- Simple repair, maintenance and low maintenance costs
- Economical operation through the adjustment of variable capacity with Auto Unloading System
- Safety device with superior functions adopted
- Suitable for medium of large capacity requirements
- Clean compressed air with Non-lubricate type
- 'V' type cylinder array to minimize installation space and cost saving Structure

### Production Capability

- Pressure : 1 ~ 500 kg/cm<sup>2</sup>
- Capacity : 30 ~ 20,000 Nm<sup>3</sup>/hr
- Electric Power : 22 ~ 500 kW



## GBCNL/B-type Compressor

### Structure & Special Features

- Suitable for large capacity with direct motor-crankshaft connection by coupling, no power loss and simple power transmission
- Minimal vibration and silent operation for even a large capacity with opposed cylinders
- Easy operation, repairs and adjustment by cylinders in low structure
- Safe operation under low speed and overload with a forced oil circulation system
- Excellent safety guaranteed by an auto control system
- Clean compressed gas with Non-lubricate type

### Production Capability

- Pressure : 1 ~ 500 kg/cm<sup>2</sup>
- Capacity : 30 ~ 20,000 Nm<sup>3</sup>/hr
- Electric Power : 150 ~ 2,250 kW



## GICNL/I-type Compressor

### Structure & Special Features

- Simple stand type structure
- Easy operation, repair and maintenance
- Applying 1 or 2 stage cylinders in accordance with required pressure
- Minimum installation space required
- Suitable for small capacity required
- Clean compressed air with Non-lubricate type

### Production Capability

- Pressure : 1 ~ 300 kg/cm<sup>2</sup>
- Capacity : 30 ~ 15,000 Nm<sup>3</sup>/hr
- Electric Power : 7.5 ~ 500 kW



## Receiver Tank

### Structure & Special Features

- Needed to reduce irregular vibration of compressed air discharged from the compressor
- The specification of the receiver tanks should be selected by considering use, capacity and working pressure of the compressors.
- Both types, horizontal and vertical can be manufactured according to the user's demand
- Safety valve
- Drain valve
- Pressure gauge
- Suction & Discharge flanges



CNG Compressor

# CNG COMPRESSOR

We make products that are **practical and durable for use anywhere.**

## GNG Compressor Technology

### Compressor Assembly

The compressor itself, cabling, terminal boxes and operator panels are all mounted on a single skid. The control systems can either be mounted on the compressor frame or installed in separate, Stand-alone cabinets, depending on the requirements of the customer.

### Compressor Control Systems

Our sophisticated electronic control systems are designed and maintained by a team of high qualified electrical-based programs. More than 60% of all GTC compressors are equipped with such systems, which include programmable logic controls, display panels, annunciators and overall pressure control logic.

### The Heavy Duty Air-Cooled Series

G-CNG-Series are heavy duty air-cooled double or single acting types, final pressure rates from 250 to 350 bar and capacities from 200 to 5,000 Nm<sup>3</sup>/hr under 2 to 5 bar inlet condition.

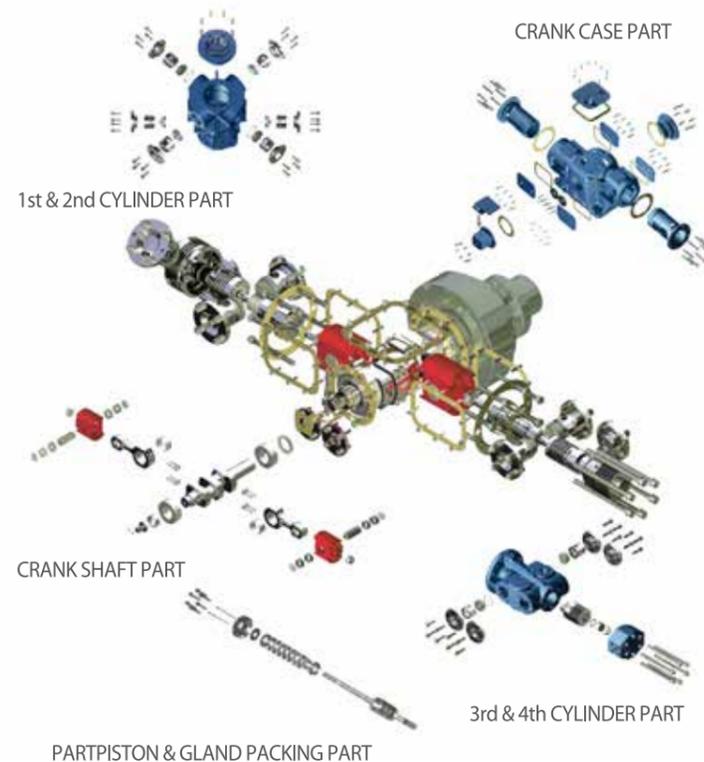
### Manuals & Test Certificates

GTC machines are supplied with test-certificates and operating manuals containing comprehensive part lists. These enable the user to identify and order any spares he may need with accuracy and speed.

### Complete CNG Fueling Systems

Fully integrated CNG fueling systems are designed, manufactured, tested and packaged by GTC's in-house engineering and production department, using standard models as well as custom equipment designs. GTC compressors are available with electric-motor or gas-engine drive systems, making them practical to use any where.

## Assemble of Each Part



## Specification

### Standard Specification

MODEL	GBCNG-100HG	GBCNG-200HG	GBCNG-300HG	GBCNG-400HG
DISCHARGE PRESSURE	250 ~ 350 bar			
CAPACITY	200 ~ 700 Nm <sup>3</sup> /hr	600 ~ 1,200 Nm <sup>3</sup> /hr	1,100 ~ 1,800 Nm <sup>3</sup> /hr	1,700 ~ 5,000 Nm <sup>3</sup> /hr
MOTOR POWER	50 ~ 125 HP	150 ~ 250 HP	300 ~ 400 HP	450 ~ 600 HP
RPM	1,180 ~ 1,800			
NO. OF STAGES	2 ~ 4 STAGES			
DRIVING SYSTEM	ELECTRIC MOTOR or ENGINE DRIVEN			
HEAT EXCHANGER TYPE	AIR or WATER COOLED TYPE HEAT EXCHANGER			
OPERATING SYSTEM	PNEUMATIC or GAS CONTROLLED BLOW DOWN SYSTEM			
PACKAGE TYPE	HORIZONTAL / VERTICAL			
OPTIONAL ITEM	ACOUSTIC ENCLOSURE			

### Dispenser

DESCRIPTION	SPECIFICATION
RANGE OF FLOW RATE	1 ~ 80 kg/min
FILL PRESSURE	250 bar
MAXIMUM WORKING PRESSURE	275 bar (350 bar Optional)
TEMPERATURE RATING	-55°C to 80°C
HOSE TYPE	SINGLE HOSE or DUAL HOSE
SEQUENCING	SINGLE LINE or THREE LINE
CONTROL POWER	AC220V, 110V / 1Ph / 50Hz, 60Hz

### Dryer

DESCRIPTION	SPECIFICATION
TYPE	NON PURGE
FLUID	COMPRESSED NATURAL GAS
CAPACITY	200 ~ 5,000 Nm <sup>3</sup> /hr
MAXIMUM WORKING PRESSURE	20 bar
DRYER CYCLE	4 hr (per tower)
MAIN POWER	AC380V / 3Ph / 50Hz, 60Hz
CONTROL POWER	AC220V, 110V / 1Ph / 50Hz, 60Hz
ACCESSORIES	HEATER, SEPARATOR

### Storage Tank

DESCRIPTION	SPECIFICATION
APPLICATION CODE	ASME Sec. VIII Div. 1, ISO 9809-1
WATER CAPACITY	40 ℓ ~ 10,000 ℓ
WORKING PRESSURE	248 bar
HYDRAULIC TEST PRESSURE	359 bar
TYPE	CASCADE or BUFFER
ACCESSORIES	SAFETY VALVE, MANUAL VALVE

### 3 Bank Priority Panel

GTC Priority Panels are designed around our own extremely reliable and robust Priority Valve.

All components used in our panels are manufactured from high quality stainless steel ensuring maximum corrosion resistance and a long service life.

# HYDROGEN REFUELING SYSTEM

We're stepping up our **eco-friendly policies.**



## Hydrogen Compressors Ambient

### Structure & Special Features

- Maximize existing compression and volumetric efficiency
- Hydraulic/flow control precision of hydraulic pumps
- Efficient design of cooling systems
- Establishing automatic and safety control technology for hydrogen compressors

# LOCALIZED SERVICE SYSTEM

GTC understands the importance of **quality service.** Where ever you are, **we will be there.**

## After Sales Service

After-sales services is considered with utmost importance and priority. Immediate attention is therefore given to all requests for service and spares. Spare parts are delivered in the shortest possible time to any destination required and service engineers are sent out on request to operating sites around the world, We're able to respond within 24 hours anywhere in the world, every day of the year.

