

# CNG Fueling System



## CNG Fueling Stations

Medium Size Package  
for NGV Fueling Stations

### Dispenser

#### Outline

A small unit for compressed natural gas filling facility  
Built-in mass flow, 1Line Buffer or 3Line Cascade,  
Single Hose or Dual Hose selection can be made.

#### Approval and design standards

Design Code	KGS, NZS5425, NFPA 52
Operating Pressure	25.0 Mpa

#### Performance and Features

Mass Flow Meter	Compac KG80-Corrioils Mass Flow
Pressure Gauge	Range: 0~6000 psig
Hose	1/2"+1/4" twin hose, 5000psig
Nozzle	NGV Type 1, HRN 11-Havayar
Break Away	Main Breakaway, Vent Breakaway
Display	Amount and Mass: 7-digit number, Unit price: 5-digit Up to 64 can be viewed



Other options, according to customer's request.



Havayar factory Karaj - Iran



**Havayar** company has started it's activity since July 1998 in order to manufacture industrial compressors and supplementary air equipments in Iran. It's reached to remarkable improvement in a short time and achieved the high quality of It's equipments by the help of internal and external counselor. **Havayar** company according to it's educational and practical capabilities is manufacturing industrial compressor (Screw) under licence of **Atlas copco** and CNG compressors with the cooperation of **Kwangshin** company.

The major and important targets of **Havayar** company are as blow:

- 1-Customer -satisfaction
- 2-Continuos quality improvement
- 3-The expansion of after sale service.

**Havayar** company is succeed to receive **ISO 9001-2000** certificate from **TUV NORD** company in order to apply aforementioned objects.



**HAVAYAR**  
industrial group

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**HAVAYAR**  
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### Storage Tank

#### Outline

3 containers for storing compressed natural gas with 80 liters capacity are installed in minimum space, and used for stable vehicle charging.  
CNG is charged with the pressure difference Hi, Mid, Low Bank and Cascade way configuration.

#### TECHNICAL DATA

Design Code	ISO9809-1
Capacity	3 × 80 Liter (Included in package and can be increased according to customer's request)

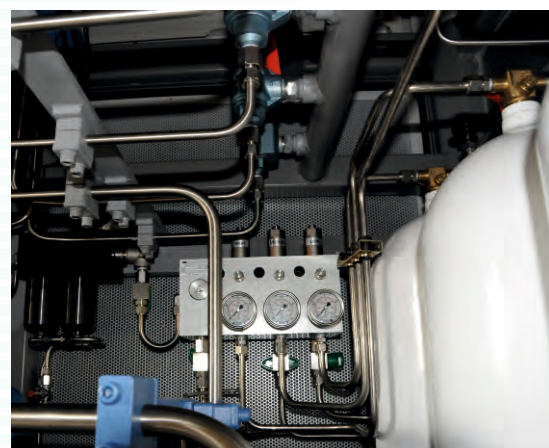
### Priority Fill Panel

#### Outline

Priority panel is three-line type to consider in the scope for fast fill operation. If filling pressure in dispenser decrease, priority panel allow gas to flow directly to dispenser. Storage container is divided into High, Medium and Low Bank. Compressed gas stored as this method: Hi-> Mid-> Low Bank in order to save priority for control.

#### Approval and design standards

Design Code	KGS, NZS5425, NFPA 52
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# Technology for future station

# CNG Fueling System

## What You Need To Know

Compressed Natural Gas (CNG) is readily available alternative to gasoline that's made by compressing natural gas to less than 1% of its volume at standard atmospheric pressure. Consisting mostly of methane, CNG is odorless, colorless and tasteless. It's drawn from domestically drilled gas wells or in conjunction with crude oil production.

It is essentially the same as natural gas that is delivered to most homes to use for cooking, heating water, and forced air heat. To use in vehicles, the natural gas is compressed to 3000 or 3600 psi and pumped into the vehicle fuel tank for consumption.

CNG is so clean fuel that if you look into the exhaust pipe of CNG vehicles it is extremely clean with little or no residue, unlike diesel which would pump the black smoke into the air.

Our compact, lubricated, horizontally opposed, multistage, reciprocating compressors use interchangeable components between compressor models wherever possible. Our engineering team of experts have used modular design principles to maximize the availability of parts and minimize your CNG refueling operation's downtime.

## CONCEPT

Compressor unit, Storage, Priority panel, Dispenser, Control cabinet as all units are allocated in a one enclosure which requires total4.42m². Compact a complete CNG refueling station requires only to be connected with CNG pipeline and with the power cables.

- Compact design can be installed at small area.
- Easy to installation and friendly control system.
- Low noise and low vibration design.
- Low cost of total package.

## INSTALLTION AND CONNECTION

Suction Line	2" Pipeline
Discharge Line	Dispenser Hose (Dual Hoses)
Vent Connection	1" Line
Instrument	CNG or Air
Control Unit	220V, 50/60Hz, 1phase
Power Unit	Separated Area
Installation	Anchor bolts on the concrete
Working Temp.	-30°C to +55°C
Noise Level	≤65 dB(A) @ 1 meter



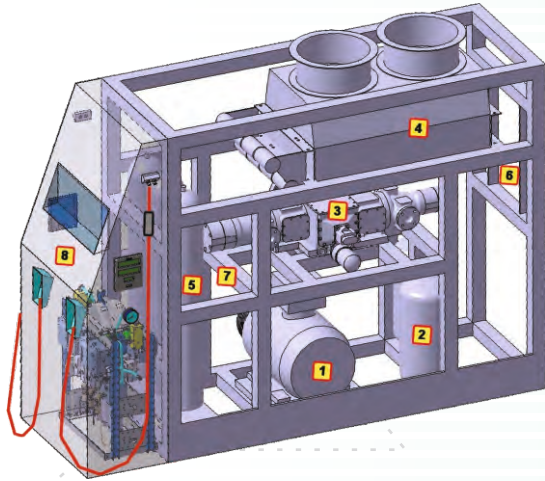
## Main Parts Description

### PACKAGE

- Size : 3400mm(L) x 1300mm(W) x 3300 mm(H)  
Weight : 5000 Kg
1. Oil Heater, Vibration Switch, Proximity Switch
  2. Pressure Transmitter at Each Stage and lubricator Line
  3. Temperature Transmitter at Each Stage and lubricator Line
  4. Safety Valve at Each Stage and Blow-down Tank

### MAIN COMPONENTS

- GEO-M-Compressor with Motor
- Gas Suction Filter
- Storage
- Priority Fill Panel
- Dispenser – Dual Hoses
- Blow Down Vessel
- Heat Exchanger
- Control Gauge Panel and Local Switch Box
- Emergency Stop Button
- Explosion proof lighting (Optional)
- Gas Detector
- Flame Detector
- Other options, according to customer's request.

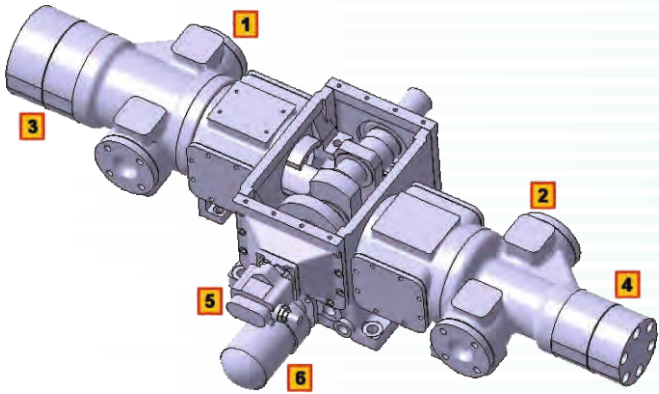


1. Main Motor
2. Blow-down Tanks
3. Compressor
4. Heat Exchanger
5. Storage
6. Gauge Panel
7. Fill Panel
8. Dispenser

## COMPRESSOR

### COMPRESSOR DESIGN

- API 618 standard heavy duty type
- Balanced opposite type design
- Low noise and low vibration
- Easy to maintenance
- Heavy duty design



1. 1<sup>st</sup> Stage
2. 2<sup>nd</sup> Stage
3. 3<sup>rd</sup> Stage
4. 4<sup>th</sup> Stage
5. Oil Pump
6. Oil filter

### TECHNICAL DATA

Driver	Motor Driven
Stages/Type	3~4 stages / Horizontal
Suction Pressure	60 ~ 250 psig
Capacity	115 ~ 570 m³/hr
Discharge Pressure	250 barg
Lubrication	Oil Pump
Cooling	Air cooled Heat Exchanger
Through	Belt Driven, Anti Static



### TECHNICAL FEATURES

MODEL	Suc. Pressure	Flow rate	Motor Power	BHP	Stages
GEO-M-100-4	60 psig	360 Nm³/hr	100HP	72.6 kW	4
GEO-M-100-3	250 psig	570 Nm³/hr	100HP	73.6 kW	3
GEO-M-75-4	60 psig	290 Nm³/hr	75HP	52.6 kW	4
GEO-M-75-3	250 psig	435 Nm³/hr	75HP	53.4 kW	3
GEO-M-50-4	60 psig	195 Nm³/hr	50HP	35.4 kW	4
GEO-M-50-3	250 psig	290 Nm³/hr	50HP	35.6 kW	3
GEO-M-30-4	60 psig	115 Nm³/hr	30HP	20.8 kW	4
GEO-M-30-3	250 psig	170 Nm³/hr	30HP	20.9 kW	3