

# Coro-Fuel<sup>®</sup> CNG Module

## Specifications

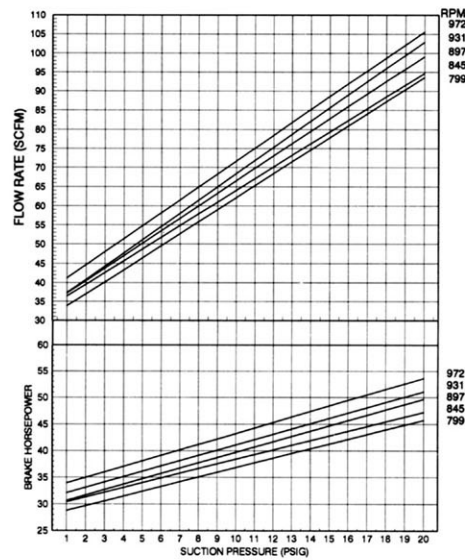
FRAME DATA	U.S.	METRIC
• Stroke	3 in.	76 mm
• Maximum rod load	7,500 lb	3,402 kg
• Maximum frame horsepower	75 hp	56 kw
• Maximum speed	1,000 rpm	1,000 rpm

PERFORMANCE DATA	U.S.	METRIC
Maximum inlet pressure	1,500 psig	105 kg/cm <sup>2</sup> G
Maximum discharge pressure	4,500 psig	316 kg/cm <sup>2</sup> G
Capacity with inlet pressure of 5 psig (0.35 kg/cm <sup>2</sup> G)	55 scfm*	37.5 Nm <sup>3</sup> /hr.
Capacity with inlet pressure of 100 psig (7.03 kg/cm <sup>2</sup> G)	118 scfm*	74.9 Nm <sup>3</sup> /hr.

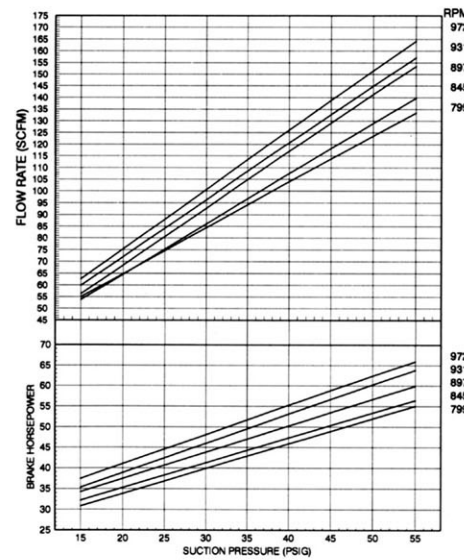
\*Based on discharge pressure of 3,600 psig.

## CF 604 Performance Curves

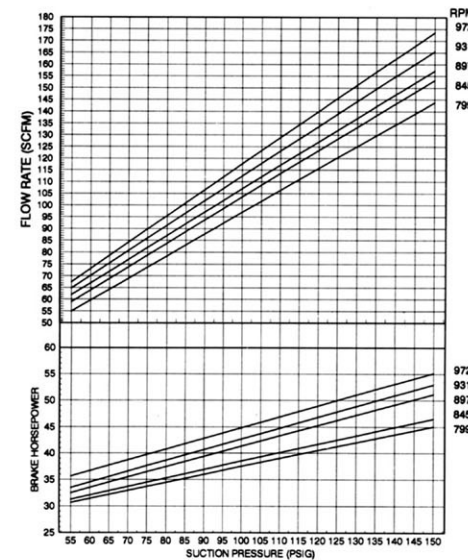
### LOW SUCTION PRESSURE RANGE



### MID SUCTION PRESSURE RANGE



### HIGH SUCTION PRESSURE RANGE



NOTE: DUPLEX AND TRIPLEX SYSTEMS ARE AVAILABLE FOR HIGHER CAPACITIES.

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# Coro-Fuel<sup>®</sup> CNG Module

## The CORO-FUEL<sup>®</sup> CNG Module delivers system flexibility with operating efficiency.

The CORO-FUEL gas compression module refuels vehicles with compressed natural gas (CNG), and does it automatically with low-maintenance and high operating efficiency. This electric-powered compressor system is completely self-contained, compressing natural gas from low to high pressures at a delivery rate of 30 to 200 scfm per compressor. It's designed for dependable performance, simple operation and low upkeep.

### More than just a compressor. . .

The CORO-FUEL CNG Module is a complete gas compression system, designed for easy integration into CNG slow and fast fill refueling stations. The module consists of six subsystems:

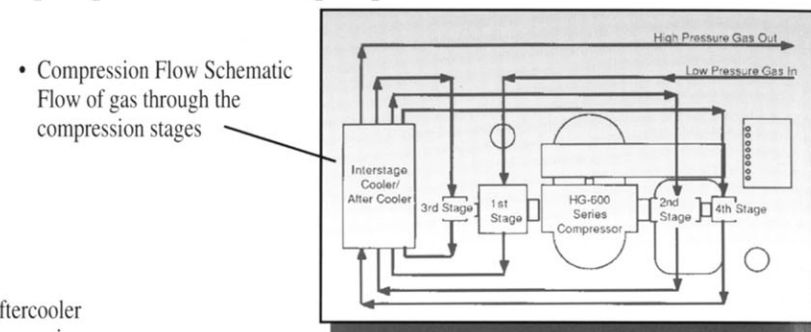
1. HG-600 series horizontal compressor
2. unloading gas recovery system
3. interstage/aftercooler system
4. module depressurization system
5. weatherproof acoustic enclosure
6. compressor control/safety system

### The HG-600 series horizontal compressor offers superior performance.

Applying over 45 years of manufacturing and application expertise, Corken developed the HG-600 series horizontal compressor for the CORO-FUEL CNG Module. It is a multistage, reciprocating, horizontal, balanced opposed gas compressor—a design offering long-life advantages over vertical type compressors. The compressor frame is of a rugged construction proven by years of successful service in oil field, process gas and liquified petroleum gas applications.

### Automatic gas recovery system minimizes emissions to the atmosphere.

A key advantage of the CORO-FUEL CNG Module is its automatic unloading gas recovery system. During the unloading process, the system relieves the compressor of high gas pressure loads. Instead of venting gas to the atmosphere, the module automatically stores the residual gas in a gas recovery tank. The recovered gas is then recycled during the next operating cycle. This system also lets the electric motor restart without a cylinder load and allows the crankcase lubrication system time to build oil pressure, assuring optimum lubrication of bearing surfaces.



• Compression Flow Schematic  
Flow of gas through the compression stages

• Interstage/aftercooler assures low operating temperatures and long service life for compressor components.

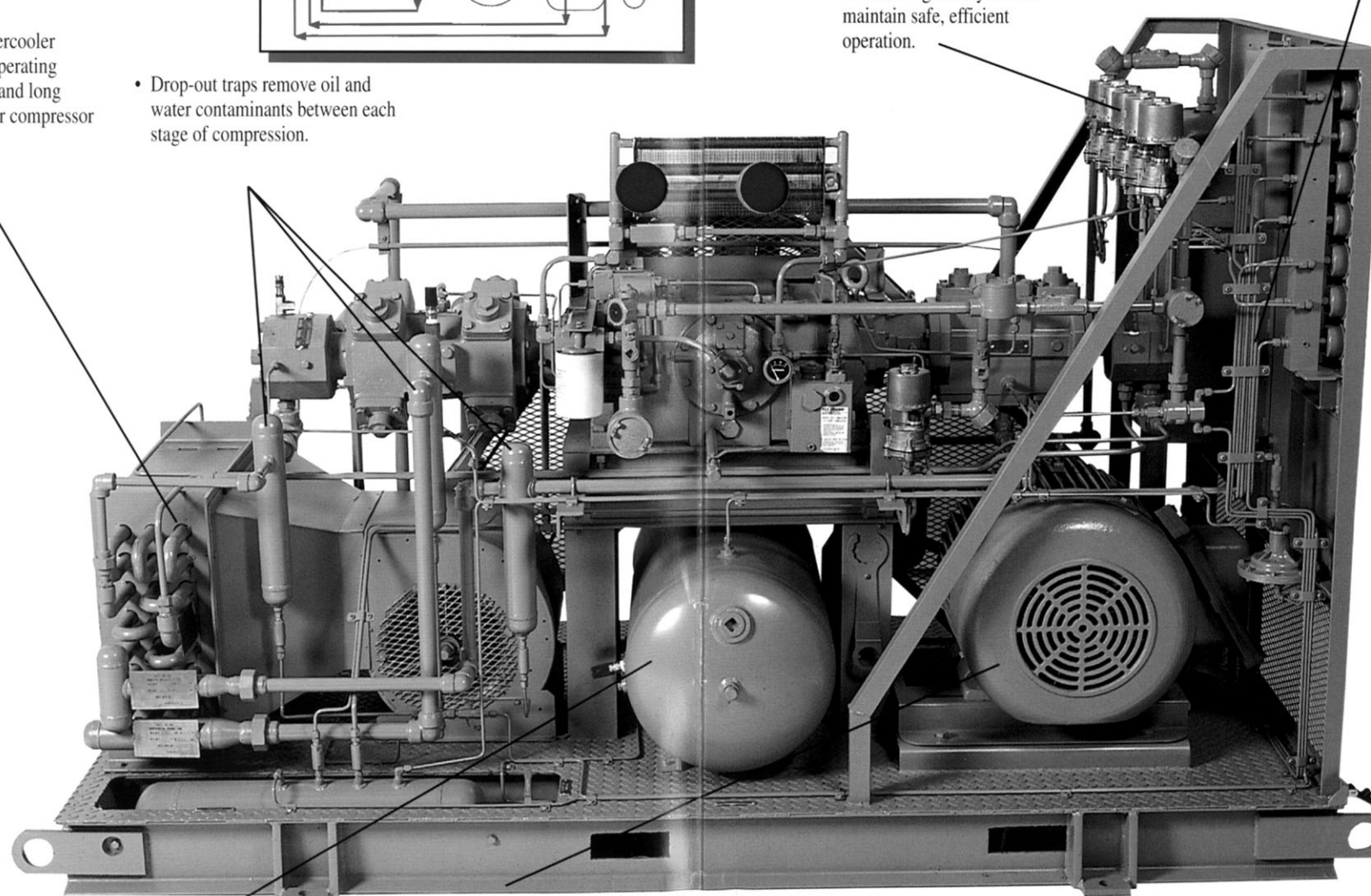
• Drop-out traps remove oil and water contaminants between each stage of compression.

### Interstage/aftercooler system increases compressor efficiency.

The CORO-FUEL CNG Module has a self-contained cooling system. After each stage of compression the gas is cooled to temperatures well below the limitations of the piston rings and packing materials. This reduces wear and extends the service life of compressor components, with the added bonus of increasing compression efficiency. Heat reduction is achieved by an external blower forcing air over the specially-designed cooling fins. The fan is belt-driven by the compressor.

• Steel interconnecting tubing offers long-life dependability.

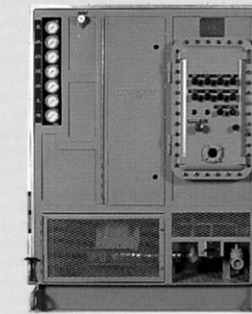
• Reliable logic/relay circuits maintain safe, efficient operation.



• The gas recovery system lets you unload the compressor to a gas recovery tank and recover the gas at the next operating cycle.

• Explosion-proof electric motor provides maximum operating efficiency.

### NEMA 7 control panel



- motor starter
- inlet gas shut-off solenoid valve
- crankcase heater controls
- emergency shutdown switch
- manual shutdown switch
- hour meter
- power-on and compressor stand-by indicator lights
- safety control switches for:
  - low suction pressure
  - high suction pressure
  - low oil pressure
  - discharge control pressure
  - high discharge pressure
  - high discharge temperature

### A depressurization system adds an extra measure of safety.

The CORO-FUEL CNG Module has a 3-way directional valve conveniently located at the front of the unit. When performing routine maintenance, this valve lets you completely depressurize the CORO-FUEL CNG Module, providing a safe working environment. In the ON position, the unit operates normally. The OFF position closes the valve so that no gas exits the module. And in the VENT position, you can completely depressurize the system, venting the gas through the containment manifold to the vent stack.

### A weatherproof acoustic enclosure shields and quiets.

All the subsystems of the CORO-FUEL CNG Module are housed within a weatherproof acoustical enclosure. The insulated enclosure reduces noise and makes the CORO-FUEL CNG Module suitable for virtually every operating environment. Four panels of the enclosure are easily removed for convenient maintenance access.

### Enjoy safe, automatic module control.

A series of control logic relays, timers and switches provides complete automatic control within preset limits that are desired. The control system is explosion proof, conforming to NEMA Class 1, Division 1, Group D for Hazardous Areas. Five safety relief valves protect against over-pressurization, and an easily accessible Emergency Shutdown Switch completely shuts off power and module operation.

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# The heart of the CORO-FUEL CNG Module:

## The HG-600 Series Compressor.

The CORO-FUEL CNG Module is designed around the HG-600 series horizontal compressor. Based upon 45 years of experience in compressor design, the HG-600 series is built specifically for CNG compression in either a 1-, 2-, 3-, or 4-stage design. The horizontal compressor is air-cooled and manufactured with the best materials available for gas compression.

## Your investment is backed by one of the strongest warranties in the industry.

The CORO-FUEL CNG Module is supported with a two-year limited warranty.

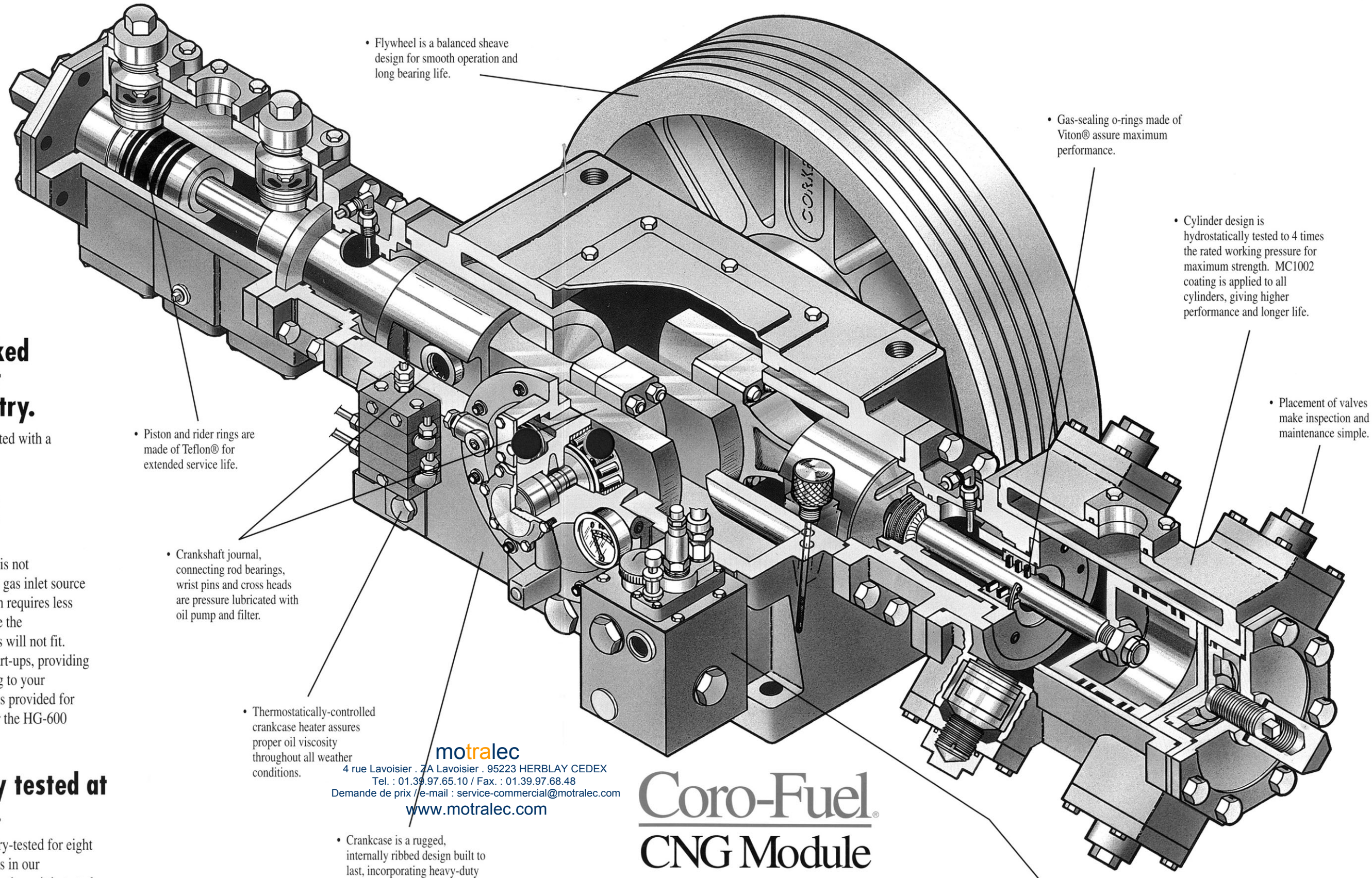
## You get expert training and support.

Installing the CORO-FUEL CNG Module is not complicated. All that's needed is electricity, a gas inlet source and a gas discharge outlet. Its compact design requires less space than competitive units, so you can place the CORO-FUEL CNG Module where other units will not fit.

Corken personnel are present for initial start-ups, providing expert advice to project engineers and training to your operating personnel. An Operations Manual is provided for the CORO-FUEL CNG Module as well as for the HG-600 series compressor.

## Every unit is thoroughly tested at the factory and on site.

All CORO-FUEL CNG Modules are factory-tested for eight hours at the customer's operating requirements in our state-of-the-art testing facilities. What's more, the unit is tested and checked on site once it's installed to assure proper operation.



• Flywheel is a balanced sheave design for smooth operation and long bearing life.

• Gas-sealing o-rings made of Viton® assure maximum performance.

• Cylinder design is hydrostatically tested to 4 times the rated working pressure for maximum strength. MC1002 coating is applied to all cylinders, giving higher performance and longer life.

• Placement of valves make inspection and maintenance simple.

• Piston and rider rings are made of Teflon® for extended service life.

• Crankshaft journal, connecting rod bearings, wrist pins and cross heads are pressure lubricated with oil pump and filter.

• Thermostatically-controlled crankcase heater assures proper oil viscosity throughout all weather conditions.

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• Crankcase is a rugged, internally ribbed design built to last, incorporating heavy-duty main bearings.

• Force feed lubricator assures proper lubrication of cylinders and packing.

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# CORO-FUEL® CNG Module Applications



## Public fill station in Florida

This independently-owned Shell station provides CNG to its customers through a state-of-the-art dispenser incorporating dual hoses capable of handling two vehicles simultaneously. The unit is fast fill only, with two ASME storage spheres providing storage up to 4,000 psig.



## Truck fleet and public access in Florida

This CORO-FUEL CNG Module, owned by Peoples Gas in Florida, services a fleet of trucks with slow and fast fill capabilities. A NEMA 4 remote control system was used on this installation. The fast fill service is open to the public.

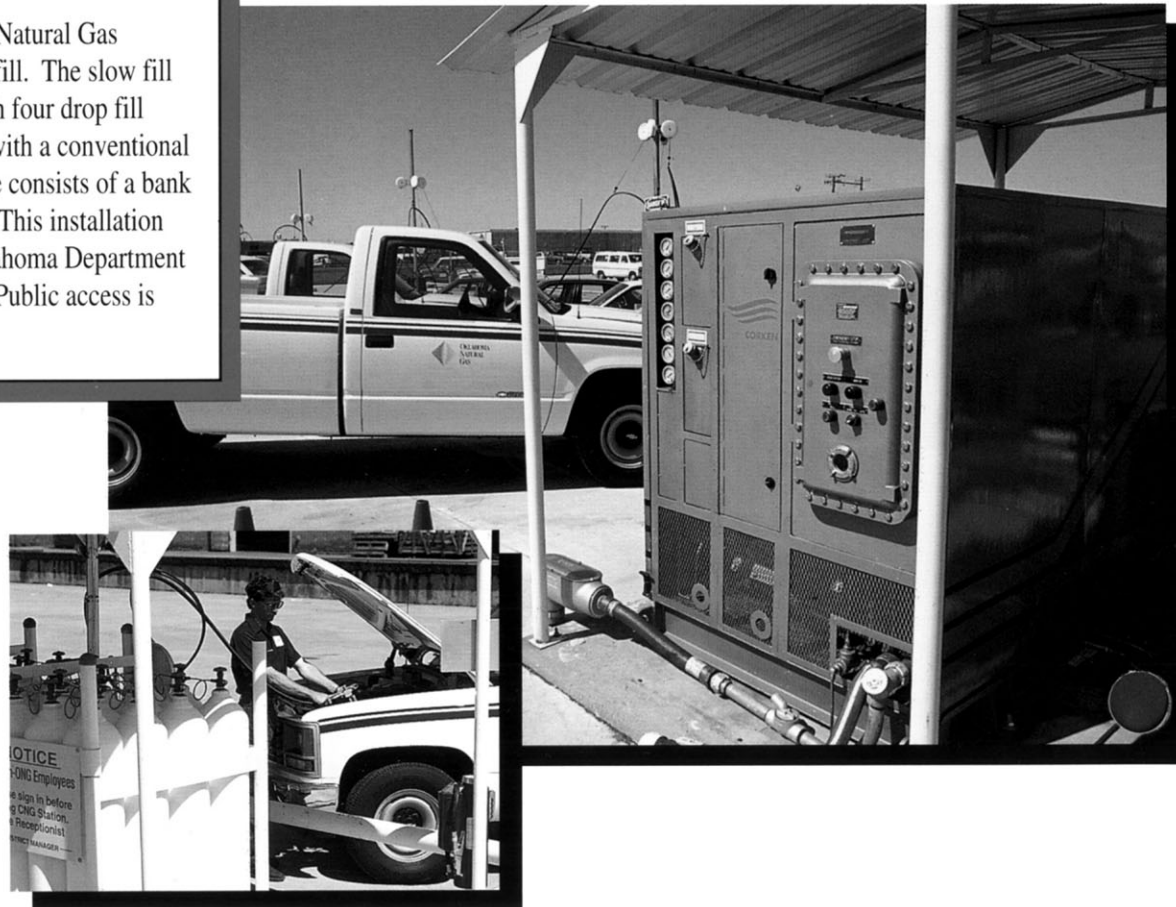


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## Gas utility in Oklahoma

With this installation, Oklahoma Natural Gas (ONG) offers both slow and fast fill. The slow fill system has seven risers, each with four drop fill hoses. Fast fill is accomplished with a conventional CNG fuel dispenser. Fuel storage consists of a bank of DOT high pressure cylinders. This installation services primarily ONG and Oklahoma Department of Transportation fleet vehicles. Public access is available by application only.



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## Municipal fleet in Pennsylvania

Designed for the Pennsylvania Department of Transportation in conjunction with UGI, this unit provides fast fill for a fleet of 100 vehicles. The storage system consists of three ASME horizontal pressure vessels. The fast fill dispenser is located remotely from the CORO-FUEL CNG Module.

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