



Spec Sheet 601-001

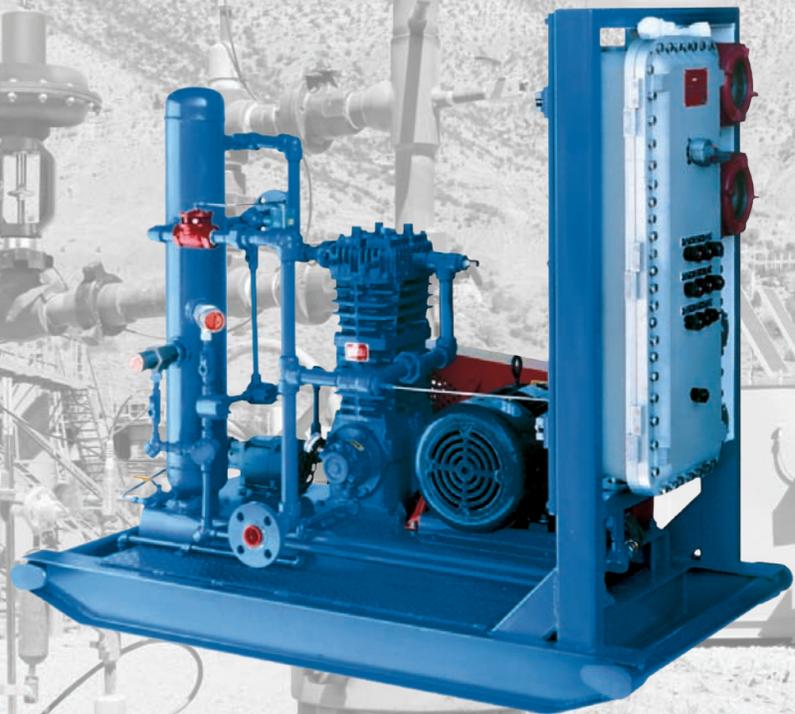
Section: 601

Effective: February 2017

Replaces: June 2015



NG/NGS/NGH Compressors for Wellhead Oil Production Enhancement & Vapor Recovery





Wherever wellhead gases need to be cost-effectively extracted and efficiently managed, Blackmer® compressors are on the job.



Blackmer's deep oil and gas industry experience has led to its solid reputation for product innovation, quality, and most critical to Wellhead Operators – reliability – especially in rugged and remote unmanned locations. These professionals rely on Blackmer compressors to perform without fail at the wellhead and storage tank batteries for an array of critical applications.

Annulus Reduction

Blackmer compressors reduce wellhead gas pressure improving oil flow into underground formations for more efficient oil production enhancement.

Vapor Control

The wellhead and tank batteries are the two major sources of fugitive methane emissions. Common air compressors lack critical seals to prevent gas leakage and crankcase oil dilution. Condensate can form in the compressor, which will contaminate crankcase oil. Condensate will break down the oil acting like a solvent, stripping bearings of critical lubrication. The result is damaging heat, friction, and equipment damage or breakdown. Blackmer compressors are specially designed to capture and control wellhead gases. The design prevents gas leakage and oil contamination.



Vapor Recovery

Increasingly stringent state and federal clean air rules are promoting the reduction and elimination of gas venting and flaring of fugitive gas emissions. Blackmer compressors are unsurpassed in reducing emissions and the recovery of saleable wellhead gas, thus protecting the environment, supporting regulatory compliance and improving the bottom line.



Product Transfer

Blackmer compressors move wellhead and tank battery vapors into low to medium pressure pipelines where it can be further processed downstream at a gas processing station.

Wellhead operators attest to the importance of equipment reliability and uptime performance, and understand the risks and downtime costs of relying upon less capable, less durable air compressors. They avoid the unnecessary expense of daily and weekly oil changes, and the frequent replacement of these less durable compressors. They recognize the Blackmer product outlasts and outperforms, requiring only routine maintenance. Its ability to remain on 24/7/365 continuous duty for the long haul is testimony to Blackmer reliability and bottom line results.



Talk to Your Local Blackmer Distributor

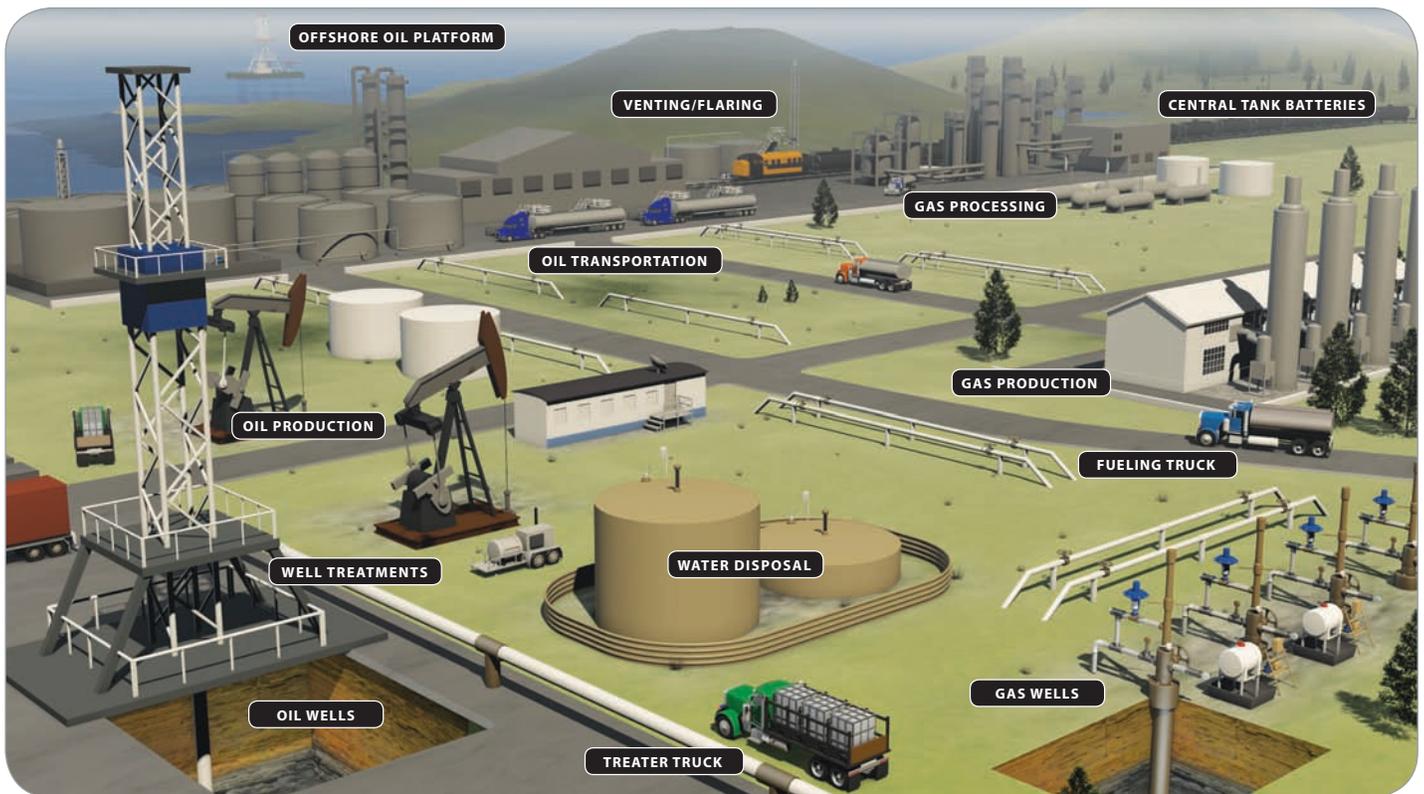
Your distributor will be glad to discuss with you your wellhead and tank battery needs and develop the appropriate compressor configuration to meet your operational requirements. Ask about how your choice of a Blackmer compressor will pay for itself.



Innovative Solutions to the Challenges of Wellhead Oil Extraction, Gas Transfer, Emissions Control and Vapor Recovery

The Upstream Oil & Gas Market is composed of a number of complicated processes, while also being ripe for equipment improvements that can conquer the challenges of quickly growing and constantly changing production and recovery operations. These multiple entry points demand high-quality compressors that can maximize performance, efficiency and production rates.

The most critical of these oilfield operations can benefit from the use of Blackmer® compressor technology. The illustration below highlights the areas — most notably wellhead extraction and transfer, vapor recovery and artificial lift — where Blackmer compressors can be best utilized.



While oilfield operators in these areas have some specific operational requirements for their pumps, ultimately it's about uptime, meaning that the compressors must be rugged enough to reliably perform under extremely adverse weather and climate conditions 24/7/365. That being said, identifying the compressor that can meet those requirements is often easier said than done.

That's why oilfield operators would be advised to consider the advantages of Blackmer compressor technologies, including:

- **Ductile-iron construction:** Provides greater resistance to thermal and mechanical shock
- **Pressure-lubricated crankcase:** Ensures positive oil distribution for long life and minimal wear
- **Single- or double-distance piece:** Prevents condensate from contaminating crankcase oil
- **High-efficiency PEEK valves:** Improved seating capability helps increase gas-recovery volume
- **Self-lubricating PTFE piston rings:** Provide more wear surface for maximum sealing and extended life



NG/NGS Compressors



NG/NGS Series Natural Gas Compressors

NG Reciprocating Gas Compressors are highly efficient, heavy-duty single and two-stage oil-free compressors. Advanced design technology and materials provide maximum performance with minimum maintenance. The NG Series is specially designed for a wide range of wellhead applications for oil and gas production and storage operations. NGS Sour Gas compressors can handle up to 8% dry H₂S.

Applications

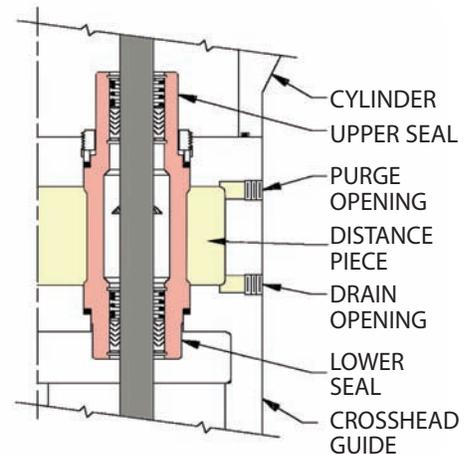
- Wellhead Annulus Gas Pressure Reduction
- Wellhead Vapor Control
- Pressure Boosting
- Tank Battery Vapor Control and Recovery
- Vapor Recovery
- Gas Gathering
- Gas Evacuation
- Gas Blanketing
- Flare Elimination
- Enhanced Recovery

Features & Benefits

- Ductile iron head and cylinder provide toughness and strength unmatched by cast iron
- O-ring head gaskets provide positive sealing under all operating conditions
- Double-seal with full distance piece provides effective leakage control and oil contamination prevention, and protect the environment from fugitive emissions
- Max. BHP: 50 HP (37 kW)
- MAWP to 615 psi (42.4 bara)
- Flow rates to 600 MSCFD
- Two Stage Models available for higher compression ratio requirements

Standard Double Seal

Each NG Compressor is constructed with a single distance piece between two sets of seals on each piston rod. The distance piece provides leakage control and prevents oil contamination of the compressed gas stream. Ports are provided in the distance piece chamber for purging, pressurizing, or venting.





NG/NGS Compressors for Wellhead Oil Production Enhancement & Vapor Recovery

The inside view on why Blackmer compressors are superior in handling wellhead gases and controlling vapor emissions

High efficiency, PEEK valves

Blackmer valves are specifically designed for oil-free gas applications. Standard valve plates are constructed of self-lubricating PEEK (Poly Ether Ketone) material that provides superior sealing characteristics, high efficiency and durability. Optional stainless steel valves are also available. Size 162 and 172 have TNT-12 impregnated steel valves.

Live loaded piston rod seals

Filled PTFE seals are wear compensating and maintain a constant sealing pressure around the piston rods with minimum friction. This special seal design prevents crankcase oil contamination and cylinder blow-by.

Distance piece construction

Distance pieces (isolation chambers), control contamination of the compressed gas from crankcase lubricant. The isolation chamber may be purged, pressurized or vented for maximum containment of toxic or hazardous gases.

Heavy-duty precision ground crankshaft

The ductile iron crankshaft features roller bearings and integral counterweights for smooth, quiet operation. Rifle drilling ensures positive oil distribution to the wrist pin and connecting rod bearings.

Two-part epoxy paint

ANSI flanges

Many models are available with ANSI flanges for compatibility with CPI and refinery industry standards.

Ductile iron construction

All pressure parts are ductile iron for greater resistance to both thermal and mechanical shock.

O-ring seals

The head and cylinder are sealed with O-rings to ensure positive sealing under severe operating conditions. NG models use Buna-N while NGS models feature FKM O-rings.

One piece piston

Heavy-duty steel pistons are connected to the rod with a single positive locking nut, which eliminates potential problems associated with multiple piece designs.

Self-lubricating piston rings

Self-lubricating filled PTFE piston rings provide maximum sealing and extended life.

S3R Seal (600/900 Series)

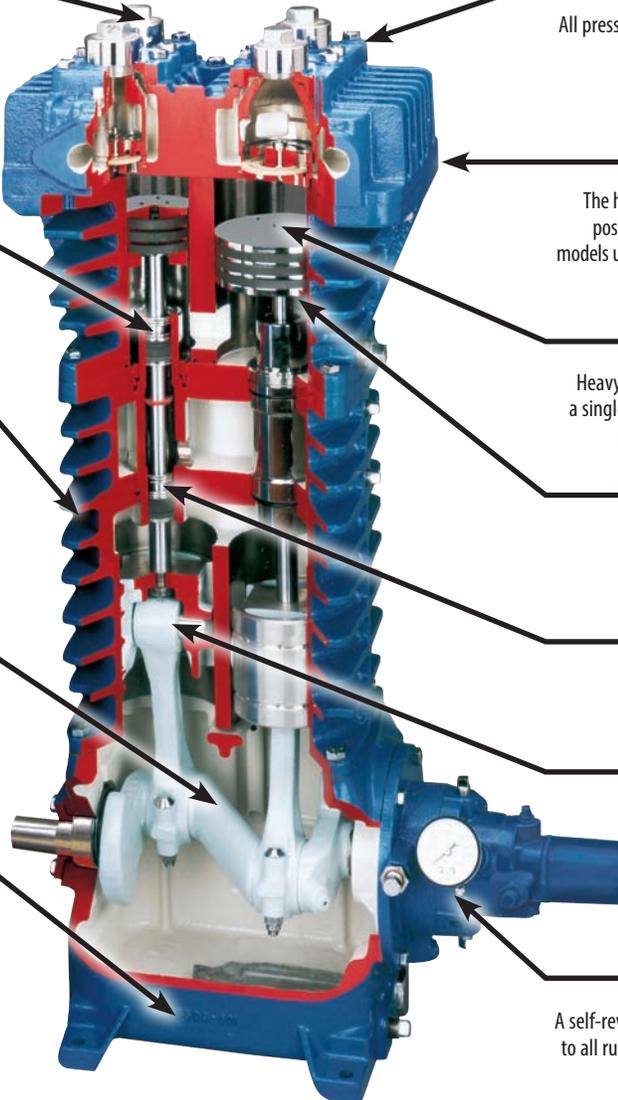
Enhanced oil control providing even greater leakage control.

Wrist pin needle bearings

Roller needle bearings provide longer life under high rod load applications. Superior wrist pin lubrication is assured under all load conditions. NG/NGS compressors are free of yellow metals.

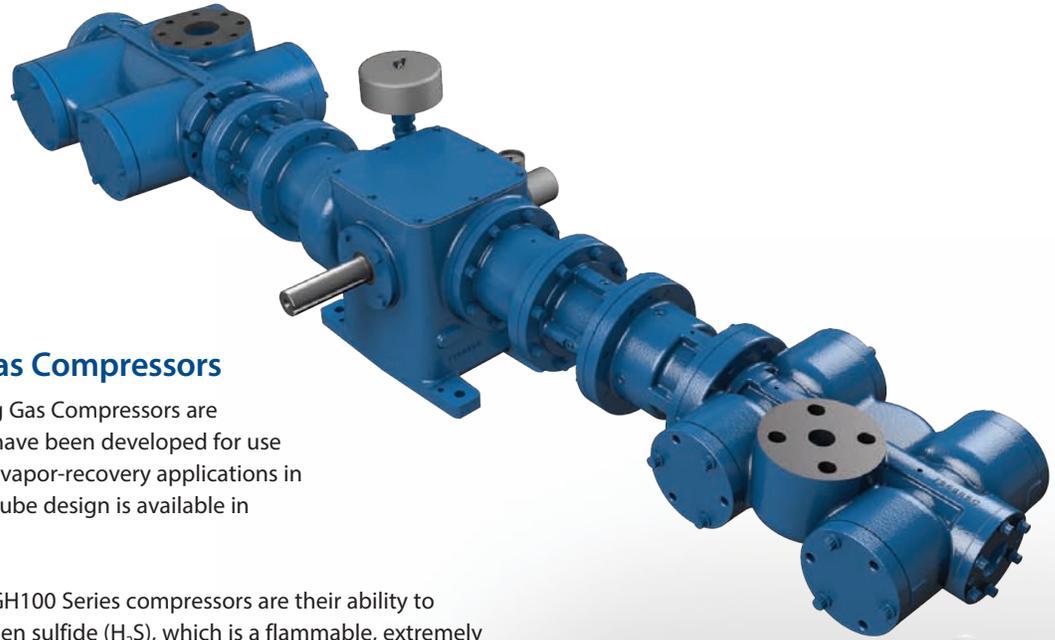
Pressure lubricated crankcase

A self-reversing oil pump provides positive oil distribution to all running gear components for long life and minimal wear. A full-flow spin-on oil filter is standard.





NGH100 Series Horizontal Compressors



NGH100 Series Natural Gas Compressors

NGH100 Series Oil-Free Reciprocating Gas Compressors are highly efficient horizontal units that have been developed for use in wellhead-transfer, artificial-lift and vapor-recovery applications in the oilfield. The NGH100 Series' non-lube design is available in single- and two-stage configurations.

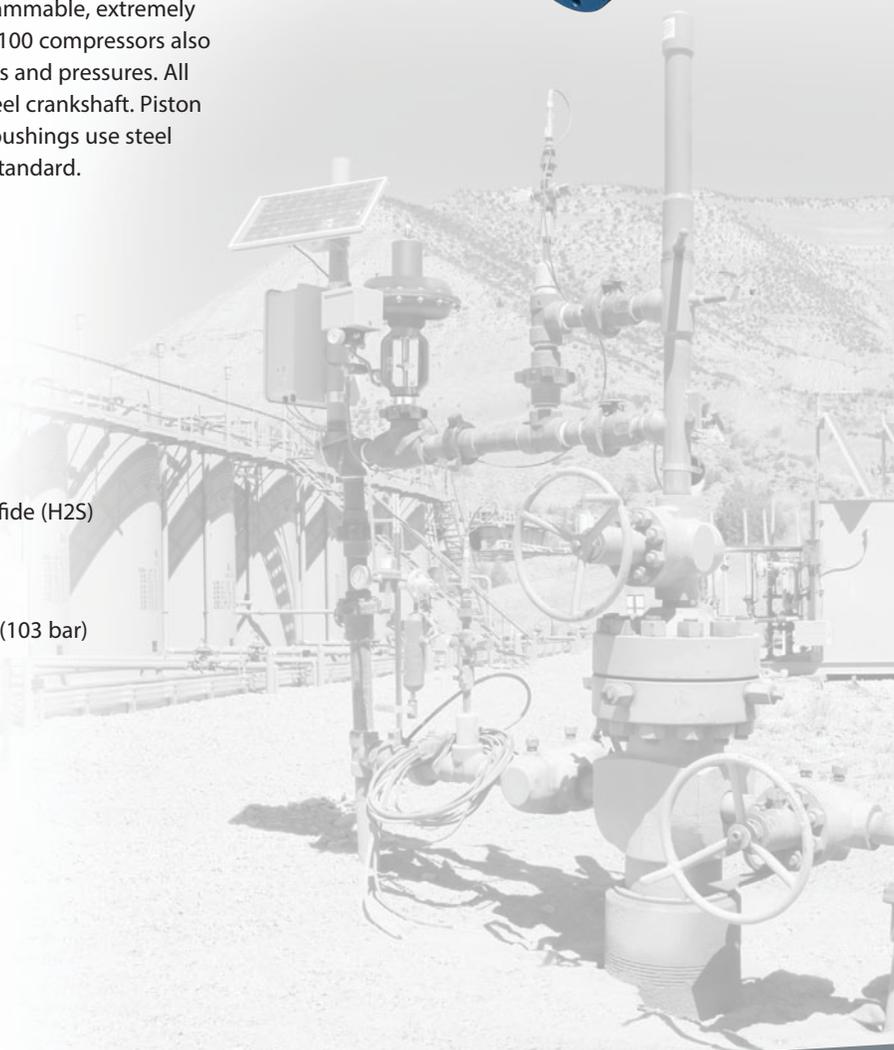
A key operational characteristic of NGH100 Series compressors are their ability to handle sour gas that contains hydrogen sulfide (H_2S), which is a flammable, extremely hazardous byproduct of recovered crude oil and natural gas. NGH100 compressors also have flexible cylinder sizes for compatibility with varying flow rates and pressures. All castings are constructed of ductile iron with a balanced forged-steel crankshaft. Piston rings and rider bands come in PTFE/PEEK materials and wrist pin bushings use steel needle bearings for additional durability. Multi-packing seals are standard.

Applications

- Wellhead extraction and transfer
- Vapor-recovery units
- Artificial lift of natural gas

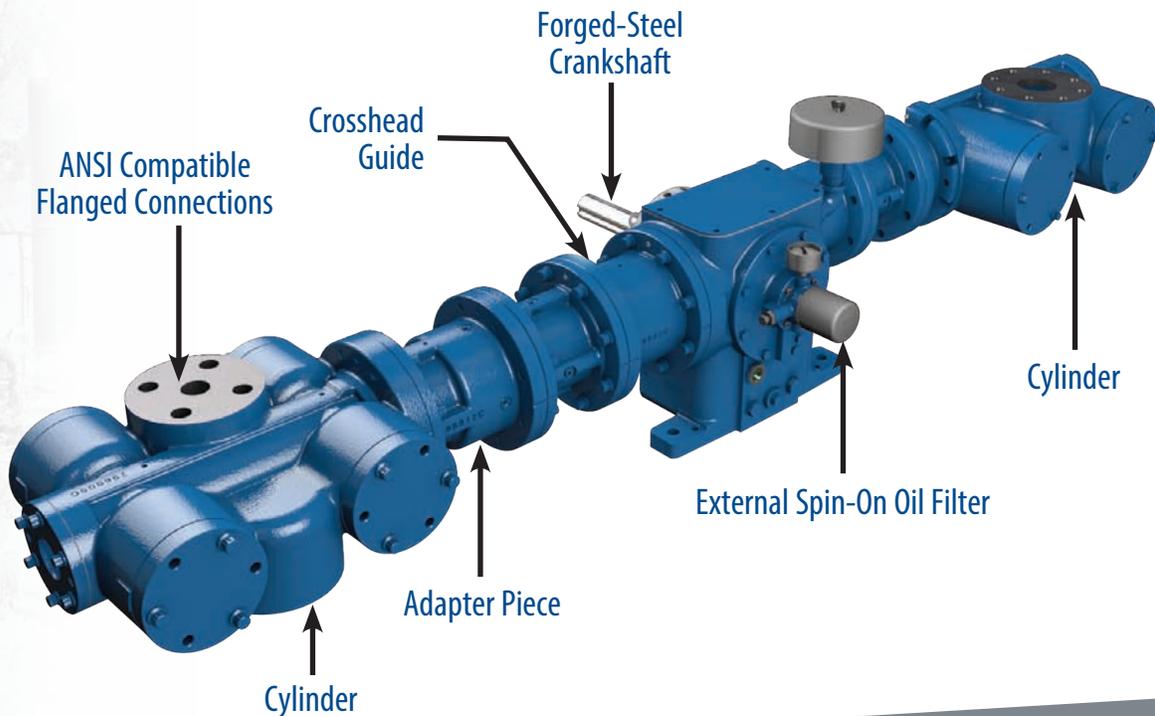
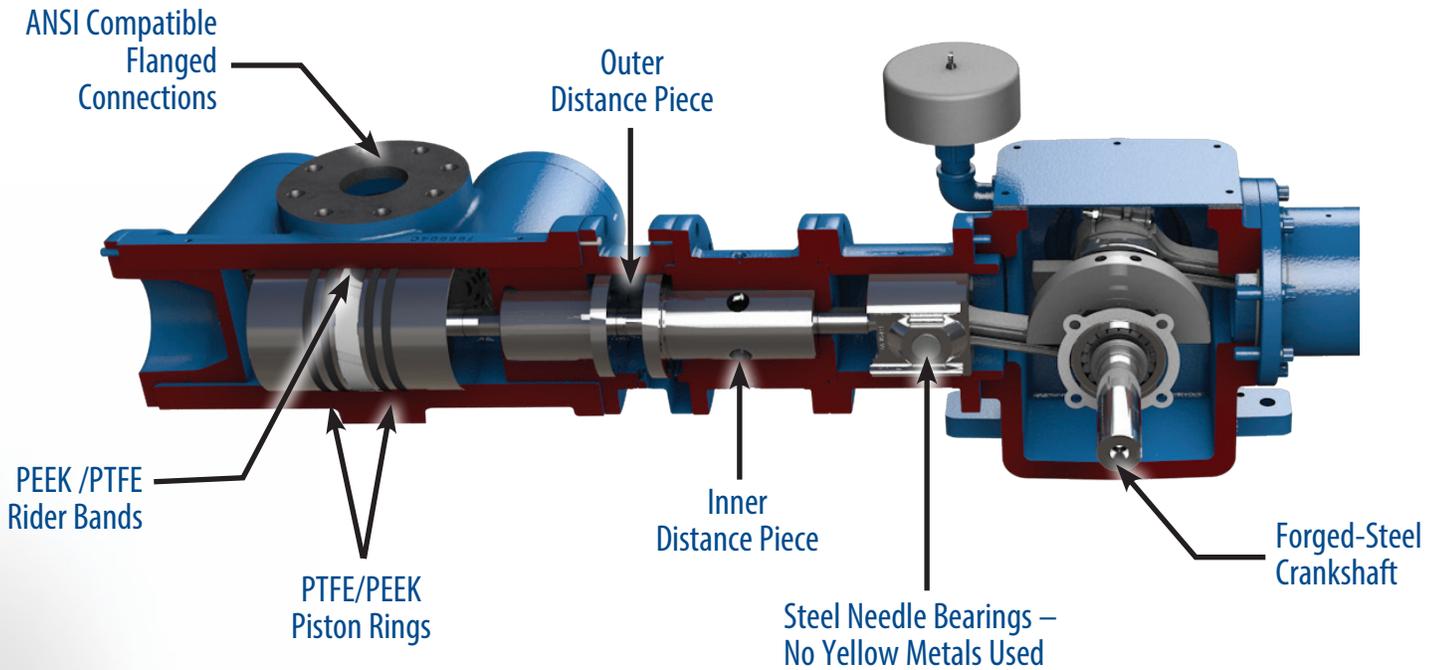
Features & Benefits

- Wet and dry gas-handling capability
- Compatible with sour gas up with up to 8% dry hydrogen sulfide (H_2S)
- Maximum BHP: 100 HP (74.5 kW)
- Motor speeds up to 1,800 rpm
- Maximum Allowable Working Pressure (MAWP) to 1,500 psig (103 bar)
- Flow rates to 3,000 MSCFD
- All casted parts are ductile-iron construction
- Forged steel crankshaft
- Steel needle bearings
- No yellow metal construction
- Triple-seal packing is standard
- Single-stage initial configurations: 6" x 6" and 3.25" x 3.25"
- Two-stage initial configuration: 6" x 3.25"





NGH100 Series Compressors for Wellhead Oil Production Enhancement & Vapor Recovery



Contact your Blackmer Distributor

Our Application Engineers can provide expert assistance in selecting the right compressor, the right options, and the right accessories for your specific application.



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Where Innovation Flows



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