API 618 Reciprocating Gas Compressor Solutions

HIGH RELIABILITY  LOW MAINTENANCE  HIGH AVAILABILITY

“Our unique consultative approach is based upon 100 years of process gas compression experience and specialist application engineering, from which we are proud to give you more expertise, more support, more value.”

ENGINEERED & DESIGNED IN THE UK
Proud to give you more.
Peter Brotherhood API 618 Reciprocating Gas Compressor Solutions.

Delivering performance-critical solutions for corrosive, explosive and dangerous gas mixtures in the gas processing, fuel gas booster, refining and petrochemical industries

We provide a complete service from initial concept development to installation and commissioning, as well as after sales support and on-site maintenance

Understand
- The importance of project specifications
- Customers’ requirements
- How to optimise the package design
- How to interface with your site control systems

Evaluate
- Site conditions
- Safety regulations
- HAZOP and SIL requirements
- Gas compositions

Solution
- Generated in conjunction with the customer
- To meet the specific project requirements
- Engineered for maximum reliability and availability
- Designed, manufactured and tested prior to delivery

Deliver
- On time (globally)
- On budget
- Right first time and in full
- Ready for installation and commissioning

Design & Technical expertise
We are not an ‘off-the-shelf’ supplier that engineers a solution to fit around our products. At Peter Brotherhood, each compressor is individually designed to match the customer’s specification.
Our design engineers are some of the finest in the world when designing for difficult applications such as remote locations or including corrosive and hazardous gases.
Our mechanical and electromechanical skills are complemented by expertise in sophisticated control systems and software to ensure the optimum product performance.
We use a modular form of construction to enable standardisation of service-proven components. All our cylinder designs are customised to the client’s exacting standards and process requirements. We can help at every stage of development, from initial concept design through to production of detailed manufacturing drawings.
The service is totally flexible, enabling our skills to be utilised wherever appropriate. Designs can be produced to conform to any international, national or industry standard required.

Reputation for Reliability
Peter Brotherhood has a “right first time” culture that has given us a global reputation for delivering practical and economic engineered solutions. Our world-class engineers are highly experienced in designing products and systems for many different industries, producing efficient machines for your application, wherever they operate.
From design through to commissioning, we work to the highest quality assurance standards, including ISO 9001:2000, ISO 14001:2004 Environmental Management Standard and OHSAS 18001:2007 Health & Safety management.

We support our customers throughout the entire life cycle of a reciprocating gas compressor, regardless of the brand

100 YEARS
SUPPLeyING TO
THE GLOBAL GAS
COMPRESSOR MARKET

20 YEARS
DESIGNED FOR MAXIMUM
RELIABILITY WITH A MINIMUM
SERVICE LIFE OF 20 YEARS

95% AVAILABILITY
OUR GAS COMPRESSORS
EXCEED 95% AVAILABILITY
OVER IT’S SERVICE LIFE

3 YEARS
UNITERRUPTED OPERATION
BETWEEN OVERHAULS, PROVIDING
MAXIMUM RELIABILITY
Significant cost savings can be obtained when revamping a compressor by putting in place measures to reduce machine capacity, rather than relying on the bypass valve; in some instances the payback for this engineering solution can be less than one year.

We support the full product life cycle of our own and other OEM equipment, and subsequently offer engineered solutions to resolve the root cause of unplanned compressor shutdowns to improve reliability and subsequently reduce maintenance/operating costs.

### Safety & Efficiency Solutions

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<th>PROBLEM</th>
<th>SOLUTIONS</th>
<th>BENEFITS</th>
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<tr>
<td>Revamp</td>
<td>Change in operating conditions e.g. Pressure and temperature</td>
<td>• Modified or replaced cylinder and internal assemblies&lt;br&gt; • Install fixed or variable clearance pockets&lt;br&gt; • Install variable capacity control systems&lt;br&gt; • Evaluate suitability of dampeners&lt;br&gt; • Assess suitability of drive motor</td>
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<tr>
<td>Revamp</td>
<td>Change in gas composition or additional gas to be considered</td>
<td>Opportunity to upgrade cylinder and/or their associated components to incorporate the latest design features and compliance with current industry and safety standards</td>
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<tr>
<td>Revamp</td>
<td>Change of process flow requirement</td>
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<td>Upgrade</td>
<td>Part’s availability i.e. obsolete cylinder patterns and difficult to machine parts, resulting in long lead times</td>
<td>• Optimised valve cover designs&lt;br&gt; • Upgrade inert buffer control system and gas packing design&lt;br&gt; • Upgrade original components exposed to cyclic stress</td>
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<tr>
<td>Upgrade</td>
<td>Gas leaks</td>
<td>• Performance analysis to ensure valve is sized for current application&lt;br&gt; • Upgrade valves and lubricator control systems&lt;br&gt; • Resolve pulsation effects on cylinder</td>
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<tr>
<td>Upgrade</td>
<td>Downtime due to excessive cylinder gas valve maintenance and/or failures</td>
<td>• Upgrade piston rod to ensure sufficient wear resistance from gas service&lt;br&gt; • Redesign piston to achieve recommended bearing load</td>
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<tr>
<td>Upgrade</td>
<td>Short life cycle on wear parts e.g. Gas packing, piston and bearer rings</td>
<td>• Upgrade to a reliable and continuous lubrication control system&lt;br&gt; • Upgrade to a reliable and continuous lubrication control system&lt;br&gt; • Upgrade piston rod to ensure sufficient wear resistance from gas service&lt;br&gt; • Redesign piston to achieve recommended bearing load</td>
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**Increase the operational lifetime of your legacy equipment.**

**More safety. More efficiency.**

**Performance improvement**

We offer an extensive range of improvements to reciprocating gas compressors. Ranging from upgrading components to extend service life and improve operating efficiency, through to reverse engineered revamps; tailored to suit the end-users change in operational conditions and/or gas composition, by offering a cost effective alternative to replacing existing capital equipment.

**Significant cost savings can be obtained when revamping a compressor by putting in place measures to reduce machine capacity, rather than relying on the bypass valve; in some instances the payback for this engineering solution can be less than one year.**

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**MINOR UPGRADES WE CAN OFFER AS RETROFITS TO RECIPROCATING GAS COMPRESSORS.**

- Comply with current safety and industry practices through the replacement of manually operated valve unloaders and clearance pockets
- Improve reliability and longer life with piston assembly upgrades reducing bearing loads and using the latest advancements in ring materials
- Install condition monitoring equipment to better understand machine health
- Improvements to tempered water systems for better cooling
- Upgraded lubricators for extended piston and bearer ring life
- Upgrade fixings and joint designs to prevent loosening and failures

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**WE CAN HELP YOU WHETHER YOU HAVE:**

- Peter Brotherhood compressor
- New compressor
- Legacy compressors
Supplying complete packages for the global gas processing market since 1917

- Designed to comply with the latest edition of API 618
- High reliability, low maintenance, exceeding 95% availability
- World beating delivery times
- World-class project management
- Stringent compliance to customer specifications
  - meet international standards compliance
  - excellent after sales care
- Global reputation of delivering energy efficient solutions
  for onshore and offshore applications
- Reliable, long service life (20 years)
- Specialist application engineering capabilities

Our Markets
- Offshore / FPSO
- Gas Processing / Gas Fuel Booster
- Refining
- Petrochemical

Standards
- API 618
- ISO 13707
- API 670
- IEC 61508, 61511
- Atex
- NACE - MR 0175 / MR 0103
- NEMA
- NFPA

Need an API 618 Reciprocating Gas Compressor solution to answer your business and environmental challenges?

Contact James Richmond, Business Development Director on +44 (0)1733 292353 or jrichmond@peterbrotherhood.com

Peter Brotherhood. Proud to give you more.