www.ACIServicesInc.com 740.435.0240

ACI Services, Inc.

Reciprocating Compressor Experts

- Custom Compressor Cylinders
- Performance Control Devices
- Engineered Solutions
- Performance Modeling
- Compressor Parts
- Reapplication and Refurbishment
- Compressor Valves
- Used Equipment

Celebrating 50 YEARS 1960 - 2010

ACI Services, Inc.

125 Steubenville Ave. Cambridge, Ohio 43725 740.435.0240

ACI Services, Inc. started in 1960 as Yorde Machine Products. Since then, ACI has grown and maintained its reputation for excellence in compressor performance and cylinder design. Today, ACI has developed a vast network of alliance partners and a comprehensive portfolio of compressor problem solutions. This empowers ACI with additional excellence and even greater abilities to create total integrated solutions, while maintaining very competitive pricing.

Celebrating 50 YEARS 1960 - 2010

We are the Reciprocating Compressor Experts!

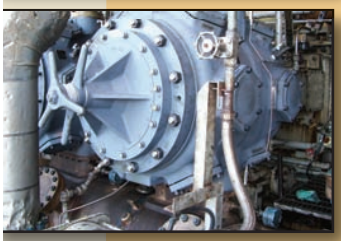
Custom Compressor Cylinder Designs

Changing cylinders on existing reciprocating compressors is frequently necessary and justifiable. One of ACI's core businesses is designing and manufacturing custom-engineered cylinders. ACI leads the industry in designing and manufacturing reciprocating compressor cylinders.

Engineered to customer specifications

- Lined or Unlined cylinder bodies
- Manufactured from application specific materials
- Air or Water cooled cylinder designs
- Sour Gas Trim available
- Maintenance friendly piston and rod assembly designs
- Wide range of performance control options

Engineered to minimize installation cost



• ACI often designs cylinders around existing compressor packages. New cylinders maintain the same centerline dimensions as existing cylinders allowing the existing bottles to be reused and thus minimizing capital costs.

Engineered to solve a problem

• ACI designs functional equivalent cylinder bodies to solve operational concerns such as poor efficiency, structural weakness, leakage, corrosion, or poor maintainability.

• New cylinder bodies often utilize existing valves, pistons and rod assemblies, packing cases, etc.

Performance Control Devices

ACI is the industry leader for designing and manufacturing performance control devices. We offer an unmatched line of volume and end deactivation unloading devices for each and every compressor used in every industry. We supply performance control devices to many of the compressor OEMs and direct to end users.

ACI devices allow the operator to efficiently control performance. With our eRCM™ compressor modeling technology, we can quickly select single devices or combinations of devices to meet your compression requirements.

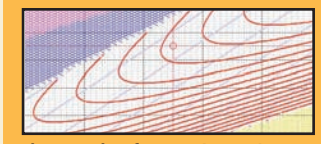
- Front-head Fixed Volume Clearance Pockets
- MultiPocket™ (Multiple Front-head Clearance Pockets)
- Over-valve Fixed Volume Clearance Pockets
- Pneumatic Actuators
- Front-head Bypass (SimPlex™/DuPlex™ Unloading Devices)
- Plug-type End Deactivators
- GAS™ Radial Valve End Deactivators
- Rotavator ™ Valve End Deactivators
- VariPocket™ (Hydraulically Actuated Variable Volume Pockets)
- AutoPocket™ (Pneumatically Actuated Variable Volume Pockets)

Compressor Components

ACI provides the most comprehensive compressor component design engineering and manufacturing capability in the market. We provide compressor components and complete assemblies to replace, refurbish, and/or upgrade your existing compression equipment. ACI component designs implement the latest and best technology and design practices, no matter if we are designing a replacement valve cap to eliminate the jack-bolt design or a complete multi-piece piston and rod assembly to improve maintenance and reliability. ACI supplies an array of compressor components, including valves, pistons, pressure packing, piston rods, pistons, cylinders and liners. We are a valuable resource for addressing your compressor component issues from the crosshead out.

Compressor Performance Software

ACI software provides unparalleled performance prediction and modeling for engineers, operators, Gas Control/Dispatch, new unit bidding, and automation. eRCM™ provides more information in a few minutes than what other programs would take hours, days and weeks to do.

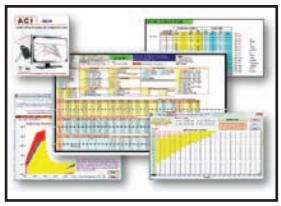


eRCM ™ allows the user to create models from unit geometry, add gas thermodynamics, review complete operating ranges, tune unit performance to measured data, generate dynamic compressor performance curves, render 3D graphs, compare unit abilities at thousands of operating points, review millions of potential conditions for possible problems to prevent issues during automation implementation, and so much more.

With eRCM, you'll know more about your compressor than the packager/OEM!

· eRCM™ - Create robust models of reciprocating compressors.
· eRCM Viewer™ - View wide range of compressor performance.
· eRCM MultiServices™ - Handle multiple services on a single unit.
· eRCM ActiveX™ - Put the power of eCurves® technology into your software.
· eRCM Unit Staging™ - Model stations with multiple units in series or parallel.
· eRCM DataTuner™ - Tune models to real-world data from analyzers.
· eRCM Evaluator™/eRCM PointsReport™ - Compare units and configurations.

Compressor Performance Algorithms and PLC Support



When a PLC does not properly model the unit it is controlling, then unit optimization is rarely achieved, issues with safety occur, and reduced operating maps are likely.

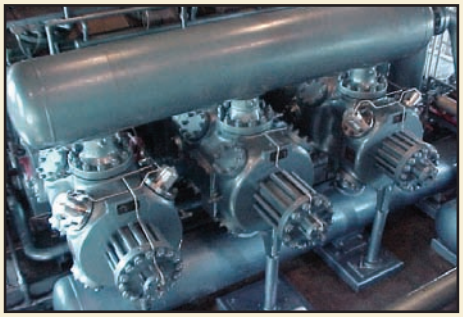
ACI not only provides dynamic compressor performance curves to operators, but the same level of performance prediction can be provided to Automation Controls so that unit is properly modeled in the PLC.

Robust Algorithms Provide:

- Load Predictions
- Flow Predictions
- Fuel Predictions
- Pressure Drop Considerations
- Proper Rod Load Considerations
- Crosshead Pin Reversal Considerations
- Low Volumetric Efficiencies
- Discharge Temperatures
- Safe Startup Maps
- OEM Modeling Methodologies

Also Included:

- Load step sequencing chart with load indication for automation purposes
- Alerts for any known areas of concern during compressor operation
- Fast-executing code for Gas Compressibilities and Interstage Pressure Balancing routines
- Automation Methodologies
- Comparisons between PLC-based prediction routines against those from eRCM, or other OEM software
- Available in CompresXpress™ Control Panels



Cylinder Reapplication and Refurbishment

Significant cost-savings can be achieved when reapplying existing compressor cylinders versus buying new ones. With over 300 cumulative years of reciprocating compressor experience, ACI is simply the best source for reapplication, revamping or upgrading existing compressor equipment. Efficient and proven design philosophies are incorporated into each reapplication, whether using new or refurbished equipment.

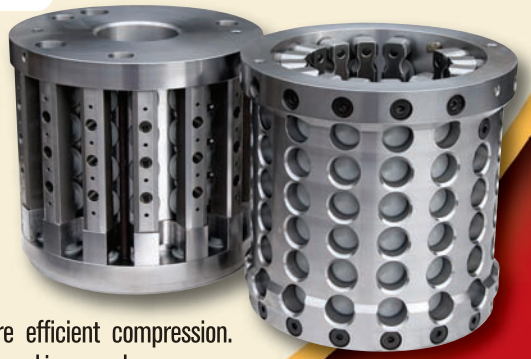
To take it one step further, ACI has solved another challenging industry problem: connecting buyers and sellers of used compression equipment via the Internet.

Compressor Connection™ is a vast resource of used and surplus compression equipment – everything from cylinders and frames to crankshafts and engines – complete compressor packages too.

ACI has the experience and the engineering know-how to reapply and refurbish used equipment – to help you replace unreliable or inefficient compressor cylinders with re-engineered compressor cylinders.

Go to www.CompressorConnection.com to take advantage of this vast resource of existing compression assets.

Compressor Valves



Efficient reliable operation of any compressor is directly related to the compressor valve. Our GAS Products™ division is the industry leader in poppet and radial valve technology. We are committed to all aspects of valve design detail, reliability, efficiency, ease of installation and maintenance.

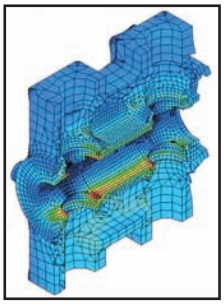
While valves come in many variations, only Gas Products has the ultra-efficient radial valve.

Fundamentally, radial valves provide significantly more flow area when compared to other valve designs and in many cases may offer less added fixed clearance.

The additional flow areas resulting from the radial valve's innovative design leads to more efficient compression. Lowering your valve-related losses can lead to lower fuel consumption, lower emissions, higher flow rates, and increased revenues.

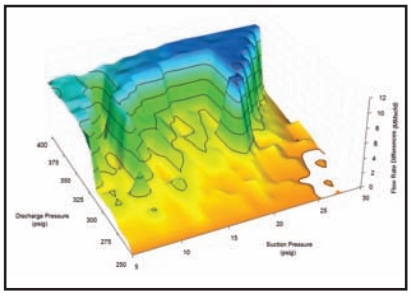
Look to GAS Products™ to equip your compressors with the next generation of valves.

Reciprocating Compressor Design



Designing reliability and operational solutions for reciprocating compressors is our main focus at ACI. Our history extends over 50 years in the design and innovation of reciprocating compressor components, cylinders, and performance control devices.

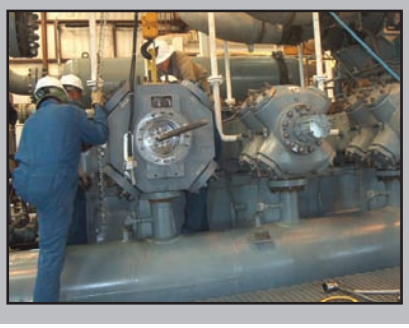
We develop and analyze compressor performance with extensive and state of the art computer design solutions, 3D modeling, FEA, and performance software.



Research and Development

ACI's R&D team pushes boundaries with proactive approaches to identifying new reciprocating compressor performance control solutions, compressor station performance evaluations, plus many other leading edge technologies. Our design solutions have revolutionized how compressor operators evaluate compressor performance and compressor systems.

Mechanical Field Services



ACI's involvement goes beyond just supplying reciprocating components. We are a solutions provider and have developed an alliance network that allows us to provide solutions using industry experts. Our team approach allows us to provide the mechanical field services and project management services from simple piston modernization projects to complex compressor rerate projects. Our expertise encompasses not only our products but also a complete understanding of compressors, auxiliary systems, and the processes in which they are operating.

Spare Parts Resources

ACI is a proud OEM parts distributor for Ariel and GE compressors. We are committed to providing OEM replacement parts for overhauls, maintenance, and repairs.

In addition, ACI is capable of providing functional equivalent spare parts for: Cooper Bessemer, Clark, Dresser-Rand, Superior and others. ACI has a vast range of products allowing us to provide a quick response and support to operators when time matters.

Reconditioning Services

ACI provides expert, quality, precision reconditioning services for all types of compressor components to restore them to original specifications - with our specialty being valves, unloaders, actuators, and cylinder assemblies. All components are thoroughly inspected, tested, and/or replaced to bring the assembly back to as-new condition. During this evaluation, ACI can identify any design or operational problems and offer redesigning or upgrading solutions.

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