piston and rider rings
piston and rider rings

The comprehensive CPI range of piston rings, rider rings and rider bands fulfil the varied sealing and piston support requirements for the vast majority of reciprocating compressors, using a range of CPI Special Polymer Alloys, standard and special materials.

Many successful field applications, using the unique range of CPI materials, have transformed both oil-free and lubricated compressor reliability, resulting in better sealing, less wear and longer running life.

Piston rings, rider rings and bands are manufactured in various designs ranging from conventional one-piece or segmental straight, angle or step cut design to the more complex configurations such as the unique Twin Ring™ design. CPI also custom designs rings and has developed specific combinations for particularly problematic and demanding applications. This has also included numerous successful conversions from lubricated to non-lubricated operation.

Pressure balanced rings are available, when deemed appropriate for high pressure applications and piston/rider ring combinations are also available for more specific applications. Large diameter piston rings up to 47" (1200mm) are also custom manufactured for special requirements.

A range of metallic piston and rider rings are also manufactured, using selected grades of bronze or cast iron, where operational requirements dictate.

CPI materials technology

CPI is at the leading edge of materials development and has a reputation for innovative and pioneering materials. For instance, the introduction of CPI Special Polymer Alloys revolutionized piston and packing ring performance, most notably in oil-free reciprocating compressors, enhancing their operation and reliability.

The exacting process of producing CPI materials for specialized applications and gases begins after extensive research and testing of various combinations of raw powdered and fibrous polymers and fillers that will make up the final material blend. Testing of materials takes various forms, which includes physical and mechanical properties as well as wear behaviour in selected gas environments, and in contact with various counter-surface materials.

Once the formulated blend for a CPI material has been finalized the materials are produced at one of CPI’s specialized moulding facilities located in the USA, Canada and Europe.

The moulded materials are produced as bushings or blanks for the machining of components such as piston rings, rider rings, packing rings, at the various CPI manufacturing facilities located worldwide.
design
CPI's capabilities in design innovation are firmly established and we are recognized as an industry leader in compressor sealing components technology.

CPI design engineers are proactive in the design and development of new and specific solutions for compressors and their components. CPI designs solutions and components, selected to perform at the optimum levels of efficiency. We have the ability to analyse the performance of a compressor from valves through to pistons, with extensive and sophisticated computer designed solutions, 3D modeling, full FEA stress analysis capability and valve dynamics programs.

quality manufacturing
CPI's commitment to the manufacture of quality components is vitally important. Each facility adheres to meticulous and stringent procedures to maintain quality assurance to ISO 9001 standards. The CPI manufacturing process benefits from total control and traceability of materials, with in-house blending and moulding facilities through to the manufacturing and distribution of our precision engineered and quality components.

All CPI's manufacturing facilities are equipped with cutting edge production technologies of precision, automated and CNC machinery, operated by a highly skilled, experienced and dedicated work force.
CPI is responsive to the ever changing needs of an industry that is focused on compressor availability and optimum performance. With such depth and diversity CPI is at the forefront of manufacture and supply of critical components for compressors. CPI is renowned for pioneering materials technology, and supports operators with proven problem solving solutions.

CPI's strategic global network for the manufacture and distribution of quality, precision engineered components, lubrication systems and field support services, provides operators with compressor components and services that will deliver efficient, reliable, performance that they can depend on.

Further information about CPI's specialized products, general product range and services can be accessed via our website at: www.c-p-i.com