Cross Manufacturing Company (1938) Limited
Aerospace, Automotive and Power Generation Applications

Cross is a world leading manufacturer of aerospace seals, aircraft piston rings and custom seal rings for aircraft engines, steam turbines, vehicle turbochargers, control valves and many other industrial environments. Since the 1920’s Cross has specialised in the design and manufacture of heat resisting wrought alloy sealing rings and associated products to world-class quality and precision. This dedication to quality and excellence is recognised by our customers serving the aerospace, automotive, power generation and associated industries throughout the world.

A complete package is offered for design and manufacture of large diameter seals for use in hot, challenging environments. Diameters approaching 2000mm are in regular production, operating at temperatures up to 1000°C.

Cross is the world’s leading supplier of turbocharger sealing and retaining rings for internal combustion engines, with annual production in the tens of millions. Materials and manufacturing techniques have been developed to provide high performance, cost effective sealing in all areas of the turbo system.

Brush seals were first supplied by Cross into the Aerospace industry in the 1970’s. We successfully transferred this technology to Power Generation Gas and Steam Turbines in the 1990’s. Patented designs from the original innovations...
Rolled Sections

Cross is a world-leading specialist in the production of rolled section components made from alloy steels and super alloys for high temperature and corrosive applications. The technique has been developed to enable it to be applied to more difficult materials such as nickel and cobalt alloys, including Inconel 625 and Haynes 25 (L605).

Manufactured from wire or rod using an innovative forging process that produces high strength, high integrity and rugged products. The environmentally friendly process minimises waste and facilitates the production of components of the highest quality. Both circular and non-circular cross-sections can be produced in a wide range of applications up to temperatures of 1000°C.

Designs include in-springing and out-springing, (with or without cockle springs), ring packs, triangular sections and boomerang sections. A complete package for design and manufacture can be provided, including the detailed design of customised grooves and housings.

Piston, Sealing and Retaining Rings

Cross are a proven technology in the aerospace and power generation industries, delivering superior efficiency and performance over traditional sealing systems. Cross is a leading innovator and manufacturer of piston seals for new equipment and for performance enhancing projects on existing equipment. Piston seals have been in field service applications for centuries, thousands of hours, delivering sustained performance improvements.

Round, segmented, straight and inside out seals are all in production. Flexible manufacturing allows a wide range of cross sections and wire sizes to be used.

Spiralock® Wire Thread Inserts

Spiralock® wire thread inserts feature a unique thread form that maintains bolt tension under extreme vibration conditions. They are used in applications where high load capacity is essential. Examples include helicopter gearboxes and rotor hubs, high pressure lightweight compressors, oil industry drill bits and underground track gearings.

Spiralock® Wire

Brush Seals for Gas and Steam Turbines

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Cross have extensive research and development facilities where products are tested and developed to meet the requirements of our customers. Research, development and test projects to achieve increased performance and greater efficiency at the leading edge of thermal and metallurgical technologies.

Research, Development and Testing

Facilities include a high temperature fretting rig, transverse vibration rig, high speed dynamic seal rig, ambient high speed dynamic seal rig and many static leakage rigs. Testing facilities are located across all three sites.

Turbocharger Main Shaft Seals

Cross is the leading manufacturer of specialist sealing rings and retaining rings for virtually all of the world’s passenger car and truck turbocharger OEMs. Since starting supply to the industry in its early days, we have produced in excess of 750 million high precision parts. Our manufacturing techniques have been developed to provide high performance, cost effective sealing using a range of high performance materials.

Cross shaft sealing rings are used worldwide, and offer efficient sealing solutions for new and developing applications.

Cross have maximum ring diameters from 6mm up to 200mm in regular production, in both in-springing and out-springing designs.

Turbocharger Variable Geometry and Actuator Shaft Seals

Cross specialises in rings made from wrought materials, applying our processes to deliver optimum performance and low cost solutions to specialist requirements. Custom designed production equipment and sophisticated process control techniques ensure superior sealing performance and consistent high quality.

We provide sealing solutions in a range of applications, including actuators and turbocharger variable geometry systems. Cross can manufacture sealing rings from low to high speed and stainless steels to nickel and Cobalt alloys. We deliver lasting performance under arduous conditions. Ring diameters from 6mm to 200mm in are regular production, in both in-springing and out-springing designs.

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Turbocharger Variable

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