

VULCAN[®]

Mechanical Seals

VULCAN





VULCAN® MANUFACTURING FACILITIES

VULCAN® MANUFACTURING

- ⦿ Six Production Plants.
- ⦿ Located On Three Continents.
- ⦿ 17,000 Square Metre Main Facility.
- ⦿ Advanced, CNC, Automated Production.
- ⦿ Electronic Inspection/Production Control.
- ⦿ Quality And Reliability Assured.



VULCAN® MECHANICAL SEALS

- ⦿ Industry Leading Designs, Materials, Quality and Technology Up-Grades backed by Superb Service and Pricing.
- ⦿ The superior reliability and performance of our products and service enables our Partner Distributors to further their success in their markets.



VULCAN® MEANS “QUALITY AND RELIABILITY ASSURED”

Clarity In A Complex World.

Surety In An Unreliable World

If It's In This Brochure, It's In Stock

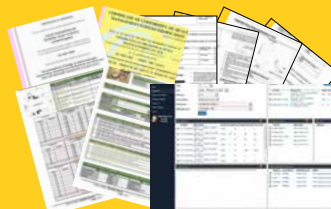
And That's Guaranteed. Unless Asterisked

VULCAN® QUALITY

- Assured excellence in Quality Standards and Reliability founded upon; Total Quality Ethos throughout every part of our business, an ethos that is paramount.
- Reliability through design, automated manufacture, inspection and logistics and constant innovation. We assure that Quality endures long after the initial product cost is forgotten.
- Unique, Distributor Specific Web Portals.
- Unbeatable Stocks, Product, Service And Prices.

THE VULCAN® ENGINEERING GROUP

- Manufacturing and Service Centres located within Asia, UK and America.
- 20%+ p.a. compound growth for over a Quarter of a Century.
- Exceptional growth that results from an Outstanding Industry Leading Product Range, Quality, Electronically Assured Service and Price.
- Vulcan focus, not as suppliers, but Partners to our Distributors, constantly surpassing their expectations with our Total Service “Will Do” Ethos.
- We are the World's leading supplier of Standard Mechanical Seals to Distribution.



VULCAN® : COMMITTED TO EXCELLENCE

GLOBAL SERVICE

- Manufacturing and stock-holding on three continents that span the globe.
- Distributor Partners in over 90 countries provide local service and technical support.
- Integrated, exceptional, electronic logistics and systems that support and assure our unique Ex-stock Supply Guarantee.



ELECTRONIC LOGISTICS

- The Electronic Seal Warehouse: To The Mechanical Seal Trade
- Industry Leading Automated Logistics And Service.
- Unique, Distributor Specific Web Portals.
- Unbeatable Stocks, Product, Service And Prices.

VULCAN®, SHEFFIELD, UK

- Main Technical, Commercial and Service Hub of our Global Business.
- Over one million Stock Combinations available for same day despatch.
- We provide exceptional Distributor Support, through excellence in every aspect, of our Long Term Partnerships.



VULCAN® SEALS INC

- First of three planned Total Service Centres in the North Americas.
- Service facility with extensive stocks.
- Extends Vulcan's Ex-Stock Guarantee to the North American market.

VULCAN® UNIVERSEAL INC

- New manufacturing and service facility in Pennsylvania.
- Initially focused on production of Encapsulated Seals





THE VULCAN® STOCK GUARANTEE

Vulcan offer the widest range of Standard Mechanical Seals available from any company anywhere. Vast stocks are held on three continents, with a comprehensive range of types, sizes, seal face materials and elastomers.

Vulcan guarantee that every Seal Type, Size, Standard Face Material and Elastomer Options shown in this brochure are EX-STOCK (unless asterisked). The specific details, of which sizes and material options are part of the Stock Guarantee, are shown on the individual seal type pages within the brochure, as well as within the header pages in our Price Lists.

In addition, most non-guaranteed sizes / materials are often in stock. If new production is required, of a non-guaranteed stock seal or a completely new design, then lead times and minimum order quantities may apply.

IDENTIFYING YOUR REQUIREMENT

Vulcan standard seal ranges are sectioned in this catalogue according to design family. See the CONTENTS page opposite, for each Design Section Heading, to direct you to the appropriate section, for easy seal identification.

If, after reviewing the relevant Design Section, you are still unable to identify a suitable replacement for your requirement, then please review sections 11a and 11b, where specific dimension variants of the main seal families are listed in appropriate O.E.M. order. Or search our O.E.M. Equivalent Seal Price Lists, which are filterable by O.E.M. name or use our Seal Competitor X-Reference tables.

If you are still unable to identify a suitable dimensional replacement, please utilise our Web Portals O.E.M. Database Search. Vulcan have built, over the last quarter of a century, a massive database of over 50,000+ O.E.M part and model numbers that have been successfully replaced utilising Vulcan Mechanical Seals. If even then you still are unable to identify the replacement part you need, please do contact the Vulcan Technical Department, who will assist to provide you with a suitable replacement, usually on an ex-stock basis.

Please note, that all "D1", "L1", "L2", and related dimensions listed in this catalogue, are the fitted, operating dimensions the seal is designed to adopt once installed in the equipment, and not the open, or free, dimensions. This must be considered when measuring a sample seal, where allowances need to be made for spring and rubber compression. For accuracy, it is often more appropriate to set the measuring calipers to the appropriate dimensions and then match the sample to the dimension.



CONTENTS



Vulcan Seals are ordered in this brochure by their design features; principally by spring profile, by elastomer component and then into logical sections. Please use the headings below to identify in which section of this brochure your requirement is likely to be.



Introduction To Vulcan Seals

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Technical And Material Standards

P8 - P23

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Vulcan Conical Spring 'O'-Ring Mounted Seals

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SEAL TYPES 8 / 8DIN / 8DINS / 82 / 8B / 7D / 9 / 12 / 12DIN / 126 / 13 & 13DIN



Vulcan Elastomeric Bellows Seals

P36 - P47

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SEAL TYPES 14DIN / 143DIN / 142DIN / 142DINS / 143DINS / 14DINS / 1511 / 1511J / 1520
193 / 192 / 19 / 195 / 192S / 193S / 19L / 193B / 19B / 192B / 1724 / 1724S & 1724L



Vulcan Parallel Spring Diaphragm Seals

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SEAL TYPES 20 / 10 / 20 / 10 / 20H / 11 / 22 / 11J / N11 (U11) / 24 / 24S & 24L



Vulcan Balanced Diaphragm Seals

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SEAL TYPES A1 / A2 / A2H / A4 / A4J / A5J & A5



Vulcan Parallel Spring 'O'-Ring Mounted Seals

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SEAL TYPES 95 / 96 / 97 & 98



Vulcan Multiple Spring Seals

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SEAL TYPES 1609 / 1609B / 1609S / 1609BS / 1645 / 1645B / 1645S
1645BS / 1659 / 1659B / 1659S / 1659BS / 40L / 40S / 40 & 55B



Vulcan Wave Spring Seals

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SEAL TYPES 1677 / 1677M / 1678 & 1688



Vulcan Water Pump Seals

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SEAL TYPES 18 / 70 / 60 / 65 & 75



Vulcan Stock O.E.M. Pump Seals

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A.B.S.® / ALLWEILER® / EBARA® / EUREKA® / I.T.T. FLYGT® / GODWIN® / GRUNDFOS®
HAIGH® / I.M.O.® / HIDROSTAL® / LOWARA® / K.S.B.® / WILO® & COMPRESSORS

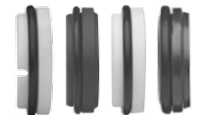


Vulcan Stock Food, Beverage And Dairy Seals

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11 b

ALFA LAVAL® / C.S.F. INOX® / A.P.V.® / FRISTAM® / GRUNDFOS® / HILGE®
INOXPA® / JABSCO® / JOHNSON S.P.X.® & G.E.A. TUCHENHAGEN®



Vulcan Stationary Seat Types, Clamp Rings And Seal Repair

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SEAT TYPES 8DINL, 8DINS, 24DINL, 24DINS, O-RING SEATS, 31, 21, 32, 23, BOOT SEATS, 25 & CLAMP RING



"THE BEST 'STANDARD' MECHANICAL SEAL COMPANY TO DO BUSINESS WITH".

INTRODUCTION

The Vulcan Group, with some way over four hundred staff, in our six production sites and our global distribution centres, are one of the world's leading standard mechanical seal manufacturers.

Founded in 1987, Vulcan continues to rapidly grow through our exceptional investments in material and design development, vertically integrated, advanced, modern factories with primarily automated manufacturing machinery, and electronically controlled extensive stock-holding, logistics and distribution.

Vulcan have established new leading industry standards, with our product range, performance/quality, ex-stock service and pricing.

We continue to be immensely motivated and dedicated to being the World's Best 'Standard' Mechanical Seal Company. The key features of this policy goal and our company are;

- Advanced production facilities, automated wherever possible.
- In-house component and material manufacture and development.
- The very best quality and inspection systems, CMM checked and electronically systematically controlled.
- The widest range and stock of seals, available from any company, that's accessible to our customers, via the internet.
- Well motivated and rewarded staff working in excellent facilities.
- Fully computer controlled, integrated and automated seal ordering, stocking, logistics and supply systems.
- **To be The Electronic Mechanical Seal Warehouse to The Industry.**

VERTICALLY INTEGRATED MANUFACTURE

Vulcan's modern production facilities exceed 22,000 square metres of total floor space. These factories were architecturally designed and built to create world-class facilities. We continue to heavily invest in our production processes, machinery, systems and people. This focus has naturally led to extraordinary annual rates of growth in our factories capacity and employment. Growth needed to meet the growth in our customers demands.

DESIGN, RANGE AND STOCK-HOLDING

All Vulcan seals are manufactured in-house to our own production drawings and designs. We have eliminated the faults common in some original and many copy designs, through close attention to design detail and material improvements.

Vulcan have the widest range of "Standard" Mechanical Seals, available from any manufacturer in the world. We back this very extensive range with a guaranteed ex-stock holding, that is also accessible to our customers to view on the internet.

All seal types, in all sizes and materials, shown in this Mechanical Seal Brochure, are available ex-stock, if previously sold. In total some way over one million stock combination, (with an exceeded 99.95% ex-stock target). We can also manufacture practically any special and will even stock them for you, to agreement, for repeat requirements.

DESIGN, RANGE AND STOCK-HOLDING

Most "Single Spring" Seal Companies buy in product or merely assemble components in-house. Previously no manufacturer made all their own parts and components and most of their own materials.

Vulcan do. We produce all our seals and practically everything for them. For example, all of our eight grades of Tungsten Carbide and Silicon hard-faced materials are made in-house from raw powder. We mould all of our elastomers and even make the moulds for the same.

This vertical integration enables us to absolutely Quality and Cost Control all parts of the Vulcan seal. With our "Will Do" Philosophy, this also enables us to produce many special designs of seals for customers, with quantities, costs and lead times lower than our competitors, because we primarily do it all in-house.

Material quality is vital to the capability, performance and life of a seal. So Vulcan only use 99.5% purity Aluminium Ceramics. M106K+ is our standard Carbon grade. We have heavily invested in even further developing Reaction Bonded and Sintered Silicon and Nickel and Cobalt Tungsten Carbide sintering processes, so that we can exceed previous Single Spring Seals norms. This focus on the best quality face materials is standard throughout the Vulcan seal range.

QUALITY ASSURANCE

All Vulcan Mechanical and Encapsulated Seals are solely produced in our own modern factories. Our manufacturing facilities have been audited and certified to ISO 9001.2008 and our distribution operations are examined and certified to ISO.9001.2008.

Vulcan have extremely extensive and intensive Quality, Inspection and Work Documentation Systems. In-depth, electronically integrated, process documents and assessment systems govern all aspects of manufacture, assembly, inspection and supply.

We do not buy seals nor component assemblies from anyone else. Every Vulcan component and seal is produced and processed via our Global Inspection System. This system incorporates all of the above controls cumulating in CNC Co-ordinate Measuring Inspection Machine batch sampling verification, prior to despatch from our factories and then again, upon receipt at our World Wide Distribution Centre.

Thus a Vulcan Seal Means Quality and Reliability Assured.

ELECTRONIC INVESTMENT

Vulcan are firmly focused on the future. Our philosophy is to heavily invest in IT, automation, technology and our people, in order to be the world leaders in "Standard" Mechanical Seals.

Our over-riding ethos is Quality and Efficiency through electronic automation of our entire company processes and operations. Manufacturing is primarily automated and supported by computer-controlled inspection machines and systems.

Vulcan create individual Web Portals, for each of our customers, to access a vast database of information on our company, products and all commercial or technical detail. This can also be utilised to initiate a complete electronic supply chain, of barcoded product, moving through all of our processes, from electronic receipt of Portal Enquiry/Order to supply, from our ranks of eight computer integrated and controlled carousel stock machines.

SUPPLY PHILOSOPHY

Our ethos is to do extraordinary well, whatever the customer reasonably requires. We have more than a "Can Do" mentality, our "Will Do" determination results in truly exceptional customer service.

Vulcan's commercial policy is to focus on our products, manufacture, stock holding and supply to the seal trade. It is not our intention to be diverted into becoming an end-user sales organisation.

Our strengths lie in our unrivalled product range, quality, service and prices. Vulcan will maintain its strong distributor and trade sale focus. Our vision is to be The Electronic Seal Warehouse to the trade and to continue to provide increasing levels of service, product and information to our partners in, already, over ninety countries. We enable companies, who wish to sell our products, to market the same, under our Vulcan or their own brand, as they wish.

CONCLUSION

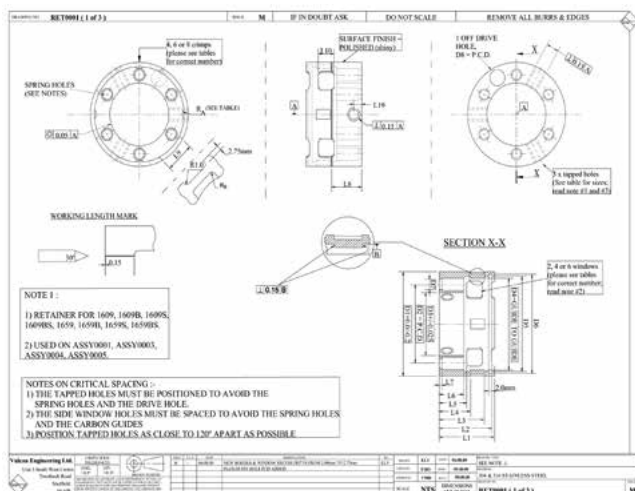
People (customers and staff) are our premier concern. In order to see our commitment, facilities and processes in full, please visit us and experience the Vulcan difference.



UNBEATABLE DESIGNS

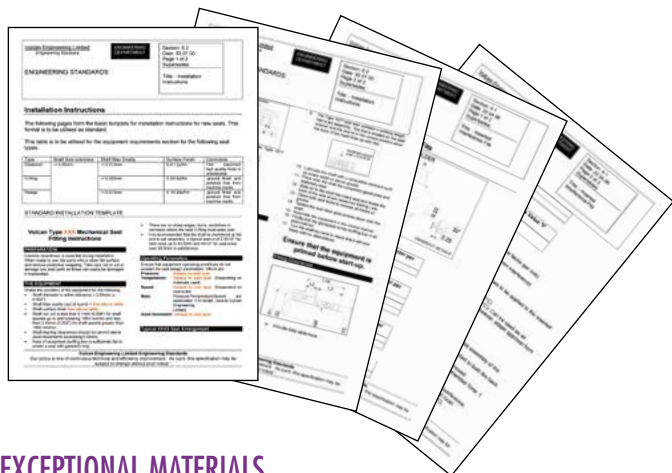
All Vulcan Mechanical Seals are manufactured to our own designs and drawings. Three Vulcan design departments, at Vulcan Sheffield, NB Vulcan Manufacturing and in New Zealand, are utilised to produce the most advanced designs and carefully controlled engineering detail possible.

Competitor seals are studied and tested and improvements have been incorporated into our designs. Technical advice is readily available to combat application problems and extend seal reliability and life.



COMPREHENSIVE ENGINEERING STANDARDS

Vulcan's Engineering Department produces and documents, in our Engineering Standards Electronic System and Library, extensive and comprehensive detail on all the key technical features of our Mechanical Seal Design, Manufacture, Fitting, Assembly, Inspection and ultimate Seal Installation. Please refer to the Technical and Materials Standards Section following, your Web Portal or request details on any aspect.



EXCEPTIONAL MATERIALS

We are one of the world's highest volume manufacturers of standard mechanical seals and associated products.

Vulcan's policy is to produce superior designs of and stock the widest range of, all common standard mechanical seals, manufactured extremely well and specified to contain high quality materials, especially on the critical faces.

We primarily manufacture these materials ourselves and details of the principal grades utilised / made are documented on the following pages. For a full listing of the grade of every material in each seal, please refer to the Material Specification Table on Page 12 of this brochure or contact our Technical Department.

VULCAN® WEB PORTAL

Vulcan have created and collated a vast array of seal identification information, all of which is contained on our Web Portals, which we establish for each of our partner customers.

The first half of the portal contains an entire on-line product enquiry, order and supply processing site. This sleek, easy to use, facility enables you to check stock and production due dates, on all Vulcan products, immediately see your nett quantity related prices, contact us with enquiries and place orders. Orders are received electronically, automatically into Vulcan's system and this initiates an integrated, automated, electronic supply chain, of bar-coded product, moving through all of our processes to despatch. Customers can monitor their account and track all orders live on screen.

The second half of the Portal has been designed as a complete Technical and Commercial Data-Base of all information on Vulcan, and its products. Our aim, in building this over many years, has been to provide our customers with instant answers or detail, on all common, possible commercial or technical questions.

The principal sections are;

- Commercial and Vulcan Information Section
- Mechanical Seals Product Section
- Encapsulated 'O'-Rings Product Section
- Gland Packing Product Section
- Tefcan Expanded P.T.F.E. Product Section
- New and Up-Dated Advice Section
- Help and Instructions Section

The Mechanical Seal Section has been developed to provide comprehensive information and support on all aspects of our seals and contains the following sections:-

- Introduction to Vulcan Seals
- Vulcan Seal Electronic Presentations
- Mechanical Seal Technical Suite
- Seal Material Compatibility Charts
- Seal and Seat Identification Data-Bases

Ready seal identification is vital for our customers and recognising this, Vulcan have focused heavily on creating the best suite of tools available, to assist. This Data-Base section thus contains;

- In depth, seal / seat cross-reference charts to other manufacturers
- Comprehensive code cracker information on our main competitors
- A Vast Pump Model / Seal Search Engine
- A Unique Seal Identification Suite

This seal identification suite facility has been designed to enable rapid identification and specification of any common Standard Mechanical Seal. The process allows you to visually recognise any common seal / seat and then prompts you with advice, to check / stipulate what are the main critical dimensions or application details

The suite is simply and logically laid out, in sections by seal design type, with photographs for easy recognition. Behind each photograph, there is extensive clear advice showing;

- What are the Main Types
- Material Recommendations
- Tables of Dimensions
- Most Common Applications
- What Dimensions are Crucial
- Features / Benefits
- Our Codes and Competitor Codes
- Vulcan Stock Enquiry Link