

James Walker®

Sealing Products & Services



High Performance Sealing Technology





Contents

Global expertise for industry.....	3
Quality – the prime consideration.....	3
Leading with technology.....	4
Your global partner in sealing success.....	5
E-business to meet your objectives.....	5
Elastomer engineering.....	6
Elastomeric sealing products	7
Gaskets & jointings	8
Bolted joint integrity	9
Gland packings & cartridge seals	10
Expansion joints & vibration attenuation	11
Support services for industry.....	12
Custom products in plastics or metal.....	13
Caring for the environment.....	14
General information	15
Contact addresses.....	16

Global expertise for industry



James Walker

James Walker is a dynamic global manufacturer and distributor that supplies a vast range of standard and specialised products and services to virtually every industrial sector.

Our world-leading expertise and capability in high performance fluid sealing and bolting technology, led by design and materials technology, embraces the complete industrial cycle from research, development and manufacture, to product application, maintenance and equipment refurbishment.

These activities help keep global industry running safely, efficiently and with improved environmental performance, year-in and year-out.

We serve customers in over 100 countries through our extensive production, engineering, distribution, technical support and customer support facilities – backed by IT networks, e-commerce systems and logistics operations.

In addition, James Walker's Rail Systems & Products business provides highly developed trackbed systems for every sector of the global rail industry, from high-speed lines and heavy freight routes to metros and light rail. The full service covers system development, manufacture, engineering and installation.

Quality – the prime consideration

Quality design, quality manufacture and quality service are paramount throughout our worldwide operations. We start with the best raw materials and use advanced manufacturing techniques with strict quality control. This culture is reinforced by top-level technical support, our logistics network and a multitude of customised services.

Our quality standards are third party registered to BS EN ISO 9001:2008. Industry bodies such as API, as well as corporations, utilities and government organisations, regularly assess and approve our standards.

Leading with technology

By operating at the leading edge of technology, we ensure that our products and services match the ever-growing complexity of industrial plant – both for today and into the future.

Fluid sealing is not a stand-alone technology: it is based on materials development, innovative design and skilled application. It depends greatly on constant advances in elastomers, engineering plastics, metallurgy and manufacturing techniques, as well as chemistry, tribology and fastener technology.

We make best use of these capabilities to help industry improve its safety, environmental and revenue protection. Many of our products efficiently control fugitive emissions of volatile organic compounds to TA Luft and other standards. We also provide specialised knowledge and products to companies that must meet environmental legislation, such as the European Union's wide-ranging Integrated Pollution Prevention and Control (IPPC) directive 96/61/EC.

Examples of our research and development successes include:

- **RotaBolt®**: the world's first safety bolt to give a clear indication of loss of tension across a bolted joint. It uniquely improves safety regimes and makes significant savings in maintenance costs.
- **Rapid gas decompression (RGD) resistant elastomers** for seals used in oil and gas exploration and production – where extremes of pressure, temperature and chemical attack are commonplace, and rapid pressure drops can destroy seals made from normal elastomers. Major oil companies have approved our 'flagship' compounds for their RGD duties, and several grades hold the stringent Norsok M-710 qualification.



- **Walkersele® OSJ**: our patented technique for On-Site Joining a seal around a shaft without stripping down the housing. This saves plant operators days of maintenance time and plant shutdown, without loss of sealing integrity or operational life.
- **HydroSele®**: our highly developed cartridge seal for water turbine shafts in hydropower systems. With its well-proven long working life and swift on-site refurbishment, it keeps turbines running efficiently, profitably and with minimal maintenance downtime.

Industry focus

We have top technical specialists dedicated to specific industry sectors where they advise on the application of fluid sealing and associated technologies.

The industries we serve in this way include: chemical and petrochemical, defence and aerospace, engineering and manufacturing, food processing, marine, metallurgical, mineral extraction, nuclear, oil and gas, pharmaceutical and biotechnology, power generation and supply, renewable energy, rail, semiconductors and electronics, and water and waste.

Global expertise for industry



Your global partner in sealing success

Our role as a global supplier demands an international manufacturing base, plus highly efficient sales and distribution operations. We have a worldwide family of companies with over 50 production, engineering, distribution and customer support sites spread across Europe, Australasia, Asia Pacific, Africa and the Americas.

At the local level, a close-knit network of James Walker companies and official distributors supplies our products and services to well over 100 countries. Our IT systems and logistics operations give customers the surety of supply they need.

We work in close partnership with customers at all levels. The long-term contracts we forge with multinational corporations cover the requirements of their plants across many continents. Major players in the metallurgical, power generation, chemical and petrochemical processing sectors rely on sole-supply deals with James Walker companies and the technical support we provide.

E-business to meet your objectives

At the heart of our major partnering contracts is an e-procurement system for transacting business by electronic means on a global basis. This fast, flexible service improves supply chain efficiency and reduces stockholding costs for customers.

Catalogue content is the key to e-procurement success. We create catalogues in many languages, listing all our products and services needed by the customer. Orders can be tracked, stock levels checked, prices verified, and shipping status and delivery dates confirmed. Supply accuracy and security are unparalleled, and paper trails eliminated.

Elastomer engineering



World-class materials and products from a world leader in elastomer technology.

High performance elastomers

- Over 300 grades formulated and compounded in-house
- Elastomers developed to meet optimum requirements
- State-of-the-art facilities for precision compounding
- Rigorous testing and control with full traceability.

Elastomer manufacturing

- High precision injection moulding, compression moulding and moulding under vacuum
- From complex miniature components to giant seals
- Plastics or metal inserts securely moulded in place
- Extrusion of simple or complex profiles
- Bonding to metals and plastics, plus production of special composites.

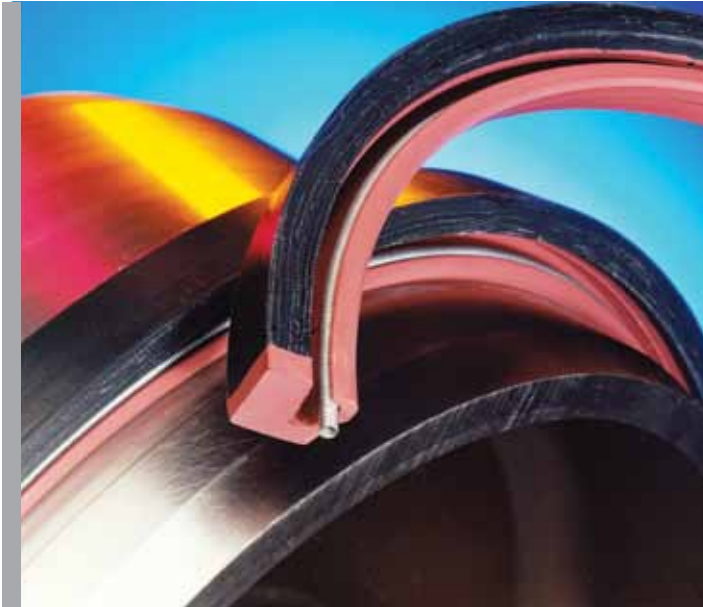
Elastomers for the Oil & Gas industry

- World leader in rapid gas decompression (RGD) resistant elastomers, with several grades qualified to the stringent Norsok M-710 standard
- Compounds to resist extremes of temperature, pressure and chemical attack
- Proven seals for down-hole, wellhead and upstream duties
- Springsele®, Teesele®, FS Casing & Tubing seal, 'O' rings, P-Seals, packers...

Custom design & manufacture

- Development of precision elastomeric components
- Prototyping, testing and full-scale manufacture
- In-house tool design and CAD/CAM machining.

Elastomeric sealing products



High-performance fluid sealing technology at its very best.

Rotary seals for all applications

- Walkersele® rotary lip seals in 10,000 type/size combinations
- Walkersele® OSJ: patented On-Site Joining technique to minimise downtime
- Walkersele® Ultraglide: up to six times longer life in hot and abrasive environments
- Cartridge assemblies: HydroSele® and custom sealing units – designed, manufactured, installed and maintained
- V-rings and metal-cased lip seals.

‘O’ rings

- Precision moulded in over 100 elastomers
- Including rapid gas decompression (RGD) resistant grades
- Vast stocks for immediate delivery – non-stocked rings on short lead times
- All national and international standards and sizes
- Commercial grade rings and kits for less critical duties
- Also Kalrez® authorised distributor in UK, Ireland and France.

Hydraulic sealing products

- Well-proven seals for all hydraulic applications
- From small actuators to giant forging presses
- Optimum performance and long trouble-free life
- Low friction with reduced leakage
- Plus wipers, scrapers, bearing strips...

Gaskets & jointings



Products, materials and services for all configurations of bolted flange joints.

Semi-metallic & metallic gaskets

- Metaflex® spiral wound and Metakamm® Kammprofile gaskets
- Available with TA Luft VOC fugitive emission certification, and to nuclear industry specifications
- Resist high temperatures, pressures, thermal cycling and vibration
- Many designs of solid and metal-jacketed gaskets.

Metal ring joint gaskets

- World-leading Moorside® machined products
- Approved to API and ASME standards
- Exacting performance under extreme conditions
- All materials, profiles and sizes.

Cut gaskets & sheet jointings

- Precision cut gaskets from any sheet materials
- Using waterjet and abrasive waterjet CAD/CAM machines
- Full ranges of non-asbestos fibre jointings
- PTFE materials including Fluolion®, Gylon® and Gore™
- Supagraf® expanded graphite and Nebar® cork-elastomers.

Bolted joint integrity



Maintaining the integrity and reliability of bolted joints and process equipment.

RotaBolt® tension control systems

- Award winning fasteners with tactile, visual and remote tension-measuring systems
- Plus the Integrity bolted joint tension control system, that automatically senses when correct tension is achieved
- These increase ratings on OEM equipment and reduce production/assembly costs
- Reduce in-service maintenance costs and component consumption
- Speed up bolt installation times, with assured safety and reliability, and no vibration loosening
- RotaBolt® is also compatible with all common tightening methods.

Joint integrity programme

- Delivers long-term engineered solutions for pressure vessels, heat exchangers, pipework, bolted joints, and valves
- Maximises plant up-time
- Reduces the risk of leakage
- Minimises product loss
- Improves Health & Safety and plant environmental performance.

All this is achieved by

- Controlling and monitoring the key reliability parameters of installed bolt tension and joint compression
- Undertaking on-site leak detection and repair (LDAR), data management and reporting, and plant refurbishment.

Gland packings & cartridge seals



Rotary, reciprocating and static sealing expertise.

Packings for VOC fugitive emission control on valves

- Supagraf® Control can reduce VOC emissions to 50ppm on control valves
- Supagraf® Premier can reduce VOC emissions from on-off valves to below 100ppm
- Both used in valves certified to TA Luft demonstrating Best Available Technique under the IPPC Directive
- Over 30 other valve stem packings – including grades for food processing, pharmaceutical and biotechnology, potable water and liquid/gaseous oxygen duties.

Packings for rotary & reciprocating pumps

- Choice of PTFE, graphite, synthetic fibre or natural yarn construction
- Rotary duties to 25m/s or 2.5MPa, reciprocating to 25MPa or 1.5m/s
- Temperature ranges from cryogenic to 650°C
- Grades for chemically aggressive and abrasive environments, and poor mechanical conditions.

Tank lid packings & static sealing

- Tank lid and hatch seals for marine duties and tank containers
- Tankatite® packing for hatches covering bulk liquid cargoes in all IMO classes
- Halo manlid seals and other special products for tank containers
- Very high temperature packings for furnace doors at 1000°C.

Cartridge & mechanical seals

- All types and sizes supplied for all industries – including designs for mixers and slurry pumps
- HydroSele® for water turbine shafts and KlickFix® for pumps in pulp and paper industry
- Manufactured from high quality materials sourced from reputable suppliers
- Specials custom designed and manufactured for specific applications
- Trouble shooting and problem solving service
- All makes refurbished to good-as-new condition.

Expansion joints & vibration attenuation



Products to absorb movement on ducts, pipes, plant and machinery.

Expansion joints

- Complete range of Complex® multi-layered fabric expansion joints
- For demanding applications such as gas turbine exhausts and inlets
- High temperature and fire resistant materials unique to James Walker
- Turnkey installations or on-site supervision provided worldwide
- Thermo-graphic surveys available.

Bellows

- Fabric-reinforced Complex® rubber bellows to all shapes and sizes
- Hand built rubber expansion joints to 2500NB, stock sizes to 400NB
- PTFE lined rubber bellows
- Metallic expansion joints with no size limitations
- Exotic alloy convolutions for the most demanding duties.

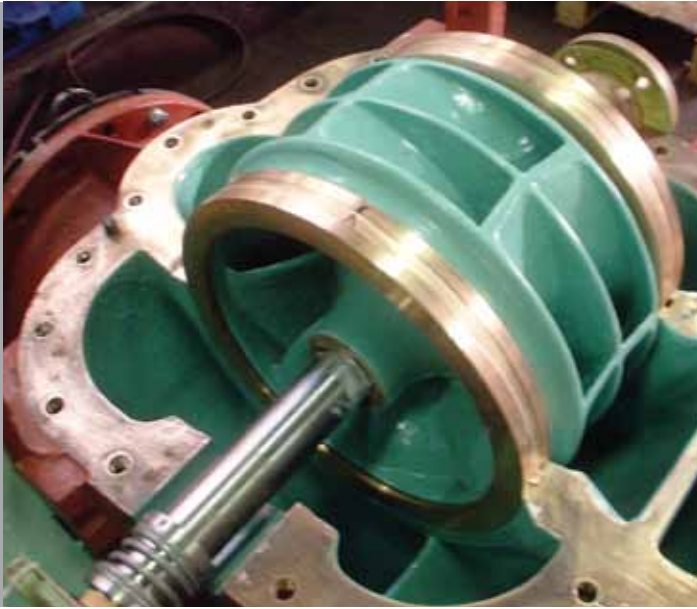
Pipework supports

- Fully engineered Tico® Pipe Grips and guides
- For stainless steel and Cu/Ni pipes
- Prevent wear, accept vibration and thermal movement
- Tico® Clip Strips isolate shock and vibration at up to 300°C
- Approved for onshore, offshore and marine duties.

Anti-vibration pads & machinery mounts

- Scientific attenuation of noise and vibration
- Pads for all loads and frequencies
- Made from blends of rubber, cork and other materials
- Mounts for machinery bases, pit installations, etc
- Eliminate bolting for plant layout flexibility.

Support services for industry



Plant maintenance and refurbishment.

Plant refurbishment

- Performed on site or in our machine shops
- Valves of all types and sizes
- Mechanical seals of every make and type
- Rotary and reciprocating pumps
- Plant tested and certified before re-installation.

Leak detection & repair (LDAR)

- Combats VOC fugitive emissions at oil, gas and chemical sites
- Stems product loss, enhances Health & Safety, improves environmental performance
- Site monitoring to EPA Method 21, with VOC emissions recorded and tracked
- Repair and refurbishment of leaking equipment
- Regular site audits to keep emissions levels under control.

General on-site works

- Installation of expansion joints and bellows
- Scheduled and emergency work undertaken.

Custom products in plastics or metal



Moulding, casting, machining and assembly capabilities.

Plastics engineering

- Devlon® grades of tough and hardwearing thermoplastics
- For high-strength components, both offshore and onshore
- Custom-design and manufacture of thermoplastic components, to replace much heavier metal items
- Monomer casting and machining of polyamides, and hot casting of polyurethanes
- Injection moulding of virtually all thermoplastics
- Components from 2mm to 3000mm diameter
- Production runs from single items to millions
- Potable water and food quality materials.

Custom machining for industry

- CNC machining of metals and engineering plastics
- Manufacture of new or obsolescent components
- Special thin-wall tube machining capability
- Plant re-engineering and assembly.

Profile cutting services

- Precision profile cutting of **any** sheet material
- From titanium sheet and 100mm thick stainless steel, to aluminium foil and thin plastics
- Using abrasive waterjet or laser cutters working directly from customers' CAD files, or scanned-in samples or templates.

Caring for the environment

Helping industry to improve its environmental performance

At James Walker we are deeply committed to environmental excellence. Many of the products we supply worldwide are expressly developed to help industry meet ever more stringent environmental targets by reducing fugitive emissions from plant and improving energy efficiency.

Fugitive emission control

- Our world-beating Supagraf® Control and Supagraf® Premier compression packings are used in hydrocarbon processing plant on valves that are TA Luft certified to demonstrate Best Available Technique under the IPPC directive.
- Metaflex® spiral wound and Metakamm® Kammprofile gaskets are TA Luft certified for VOC fugitive emission control on pressure vessels and pipeline flanges.
- Through our Joint Integrity Programme, we provide expertly engineered solutions to industry that reduce leaks, minimise product loss and improve operational efficiency.
- Our world-leading ranges of rapid gas decompression (RGD) resistant elastomers and seals help reduce the potential severity of leakages at oil and gas wellheads and pipelines.



Energy efficiency

- Industry's energy efficiency is enhanced by the use of lower friction sealing products, such as our Walkersele® Ultraglide rotary lip seals, Supagraf® expanded-graphite and PTFE-based gland packings, and high efficiency hydraulic seals with instant response to pressure variations.
- Long-term energy efficiency also derives from reduced leakage created by improvements in sealing technology – energy-expensive processed products are no longer lost so readily as fugitive emissions or spills.
- On the energy generation front, our sealing products are widely used for long-term sealing duties on wind turbines and hydroelectric plant, where inaccessibility makes unscheduled maintenance very costly in terms of lost generating capacity and manpower.
- In the nuclear industry, our radiation resistant elastomers and shielding products are used for critical sealing applications on generating plant, reprocessing plant and fuel transportation flasks.

General information



Trademark acknowledgements

James Walker acknowledges the following trademark as mentioned in this publication. All other names bearing the ® symbol are registered trademarks of James Walker.

Trademark

Gore™
Gylon®
Kalrez®

Company

WL Gore & Associates
Garlock Sealing Technologies
DuPont Performance
Elastomers

Health warning: If PTFE or fluoroelastomer (eg, FKM, FFKM, FEPM) products are heated to elevated temperatures, fumes will be produced which may give unpleasant effects, if inhaled. Whilst some fumes are emitted below 250°C from fluoroelastomers or below 300°C from PTFE, the effect at these temperatures is negligible. Care should be taken to avoid contaminating tobacco with particles of PTFE or fluoroelastomer, or with PTFE dispersion, which may remain on hands or clothing. Material Safety Data Sheets (MSDS) are available on request.

Information in this publication and otherwise supplied to users is based on our general experience and is given in good faith, but because of factors which are outside our knowledge and control and affect the use of products, no warranty is given or is to be implied with respect to such information. Unless governed by type approval or contract, specifications are subject to change without notice. Statements of operating limits quoted in this publication are not an indication that these values can be applied simultaneously.

To ensure you are working with the very latest product specifications, please consult the relevant section of the James Walker website: www.jameswalker.biz

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