

James Walker®

Sealing Products & Services



High Performance Sealing Technology



Global expertise for industry



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
Engineering & technical support	12
Custom products in plastics or metal	13
Caring for the environment	14
General information	15
Contact addresses	16

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, installation and maintenance.

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.

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 standards and industry bodies such as API. In addition, our standards are regularly assessed and approved by a broad spectrum of corporations, utilities and government organisations from around the world.

Global expertise for industry

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, improving safety and making 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, semiconductors and electronics, and water and waste.

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
- Plastic 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: innovative On-Site Joining technique to minimise downtime
- Walkersele® Ultraglidle: low coefficient of friction and abrasion resistant for extended sealing life.
- 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 elastomer compounds
- 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
- 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
- Range of virgin, filled and expanded PTFE materials
- Supagraf® expanded graphite and Nebar® cork-elastomers.

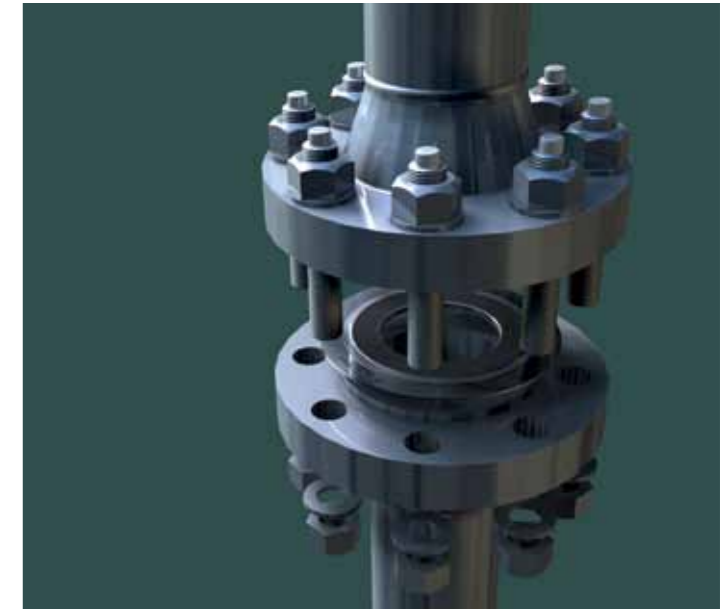


Maintaining the integrity and reliability of bolted joints and process equipment.

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.

Bolted joint integrity



Flange management 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, joint compression and correct gasket specification.

Gland packings & cartridge seals



Expansion joints & vibration attenuation



Rotary, reciprocating and static sealing expertise.

Packings for VOC fugitive emission control on valves

- Supagraf® Control can reduce VOC emissions to well below 50ppm on control valves
- Supagraf® Premier achieved an average emission level of just 10.5ppmV in API 622 testing.
- Both used in valves certified to TA Luft demonstrating Best Available Technique under the IPPC Directive
- Wide range of other stem packings is available in material grades to suit virtually every application.

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.

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.

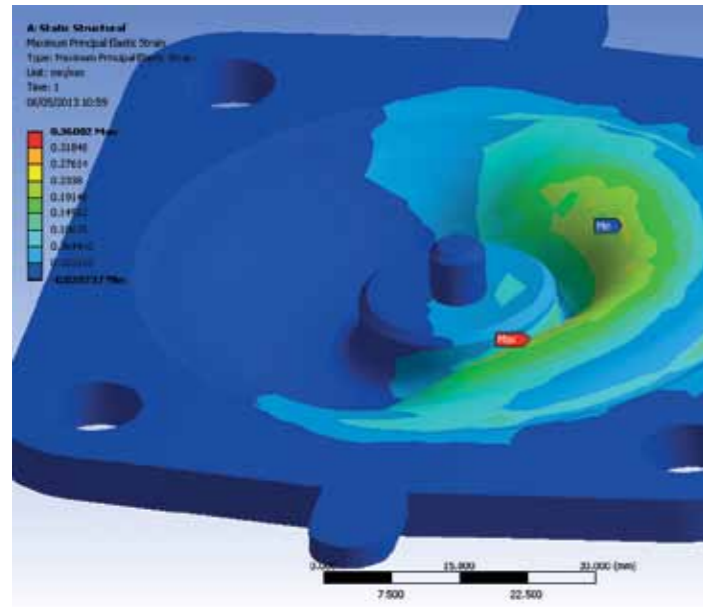
Pipework supports

- 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.

Engineering & technical support



Custom products in plastics or metal



Design, testing and engineering support.

Design engineering

- Seal and component design in elastomer and thermoplastic materials
- 3D CAD plus FEA modelling
- Custom design or re-engineering of housings and component interface
- Award-winning new product development process
- Turnkey solution design.

Product & material testing

- Bespoke test rigs for static, rotary and reciprocating component testing
- World-leading rapid gas decompression (RGD) test facilities
- Fugitive emissions testing
- Environmental chamber
- Laboratory facilities for detailed chemical and mechanical analysis of materials.

On-site services

- Site surveys including thermal imaging
- Root cause analysis of sealing and bolting problems
- Removal and refurbishment or replacement of cartridge seals and expansion joints
- Installation or project supervision
- On-site joining and installation of rotary seals.

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 10mm to over 2500mm 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.

Supagraf Premier has achieved emission levels of just 10.5ppmV in third party API 622 testing and an excellent Class A rating under the ISO 15848 AH CO2 test.

- Metaflex® spiral wound and Metakamm® Kammprofile gaskets are TA Luft certified for VOC fugitive emission control on pressure vessels and pipeline flanges.
- Through our Flange Management 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.



General information

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.

Trademark acknowledgements

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

Trademark	Company
Gore™	WL Gore & Associates
Gylon®	Garlock Sealing Technologies
Kalrez®	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.

Environmental statement: This brochure is manufactured using advanced environmentally friendly technologies and follows the strict environmental standard BS EN ISO 14001. Made from chlorine-free pulp (ECF) with post-consumer recycled fibre obtained from sustainable wood forests, and printed using vegetable-based inks, by Binfield Printers Ltd. For those who wish to reduce further their impact on the environment, this publication is also available as a PDF from: www.jameswalker.biz.



James Walker worldwide support & distribution

James Walker Asia Pacific

Tel: +65 6777 9896
Fax: +65 6777 6102
Email: sales.sg@jameswalker.biz

James Walker Australia

Tel: +61 (0)2 9721 9500
Fax: +61 (0)2 9721 9580
Email: sales.au@jameswalker.biz

James Walker Benelux

(Belgium)
Tel: +32 3 820 7900
Fax: +32 3 828 5484
Email: sales.be@jameswalker.biz
(Netherlands)
Tel: +31 (0)186 633111
Fax: +31 (0)186 633110
Email: sales.nl@jameswalker.biz

James Walker Brasil

Tel: +55 11 4392 7360
Fax: +55 11 4392 5976
Email: sales.br@jameswalker.biz

James Walker China

Tel: +86 21 6876 9351
Fax: +86 21 6876 9352
Email: sales.cn@jameswalker.biz

James Walker Deutschland

Tel: +49 (0)40 386 0810
Fax: +49 (0)40 389 3230
Email: sales.de@jameswalker.biz

James Walker France

Tel: +33 (0)437 497 480
Fax: +33 (0)437 497 483
Email: sales.fr@jameswalker.biz

James Walker Iberica

Tel: +34 94 447 0099
Fax: +34 94 447 1077
Email: sales.es@jameswalker.biz

James Walker Inmarco (India)

Tel: +91 (0)22 4080 8080
Fax: +91 (0)22 2859 6220
Email: info@jwinmarco.com

James Walker Ireland

Tel: +353 (0)21 432 3626
Fax: +353 (0)21 432 3623
Email: sales.ie@jameswalker.biz

James Walker Italiana

Tel: +39 02 257 8308
Fax: +39 02 263 00487
Email: sales.it@jameswalker.biz

James Walker Mfg (USA)

Tel: +1 708 754 4020
Fax: +1 708 754 4058
Email: sales.jwvmfg.us@jameswalker.biz

James Walker New Zealand

Tel: +64 (0)9 272 1599
Fax: +64 (0)9 272 3061
Email: sales.nz@jameswalker.biz

James Walker Norge

Tel: +47 22 706800
Fax: +47 22 706801
Email: sales.no@jameswalker.biz

James Walker Oil & Gas (USA)

Tel: +1 281 875 0002
Fax: +1 281 875 0188
Email: oilandgas@jameswalker.biz

James Walker South Africa

Tel: +27 (0)31 304 0770
Fax: +27 (0)31 304 0791
Email: sales.za@jameswalker.biz

James Walker UK

Tel: +44 (0)1270 536000
Fax: +44 (0)1270 536100
Email: sales.uk@jameswalker.biz

www.jameswalker.biz

Registered Office: James Walker Sealing Products & Services Ltd, Lion House, Oriental Road, Woking, Surrey GU22 8AP, United Kingdom. Reg No. 00264191 England

BP4381 0114/1m
ML 010002

© James Walker 2014