Hydraulic Sealing Products — Overview

Issue 28.1

- Rod/gland seals
- Piston seals
- Wipers & scrapers
- Bearing strips
- ‘O’ rings
Introduction

From the heaviest forging and extrusion presses, down to small control actuators, we have hydraulic seals designed to work in the most demanding conditions, with:

• Optimum equipment performance.
• Long trouble-free working life.
• Reduced leakage.
• Low friction operation.
• Sizes to national and international standards, plus customised specials.

Our products are also exceptionally well proven in less demanding roles, where their superior quality provides best value benefits in terms of reduced plant downtime and maintenance costs.

James Walker service

When you select one of our many sealing products, you immediately get the full expertise of James Walker on your side — wherever in the world you may be. We endeavour to provide the best levels of:

• Customer service.
• Technical support and expert advice.
• Supply, to meet JIT schedules as well as your urgent, non-scheduled maintenance demands.
• After sales service.

Full technical information

This leaflet gives basic information on our hydraulic sealing products. For full details, please see our Hydraulic Sealing Guide.

Key to materials

- Elastomers
- Polyurethanes
- Thermoplastics
- Rubber-proofed fabric
- PTFE — virgin & filled
- Resin-proofed fabric
- Metals

Twinset

Rod/gland seal
Piston seal

Decades of duty on older plant
Max operating pressure: 34MPa
Max surface speed: 0.5m/s
Max temperature: +100°C
Supplied: Endless

Chevron® (known as Shallex® in some regions)

Rod/gland seal
Piston seal

Universally proven multi-lip packing
Max operating pressure: 42MPa
Max surface speed: 0.5m/s
Temperature range: -20°C to +100/120°C
Supplied: Split & endless

Lionsele® LF

Rod/gland seal
Piston seal

Very low friction: smoothest operation
Max operating pressure: 40MPa
Maximum surface speed: 5.0m/s
Temperature range: -250°C to +260°C
Supplied: Endless

Solosele® G

Rod/gland seal
Piston seal

Robust single element seal
Max operating pressure: 42MPa
Max surface speed: 0.5m/s
Temperature range: -20°C to +120°C
Supplied: Endless (split can be supplied)

Lionsele® U1

Rod/gland seal
Piston seal

Ideal for aggressive environments
Max operating pressure: 42MPa
Maximum surface speed: 0.5m/s
Temperature range: -30°C to +100°C
Supplied: Endless

Hydraulic Sealing Products — Overview

To order or for further details, call your local contact shown on rear cover or listed at www.jameswalker.biz
U-rings

**Rod/gland seals**

**Piston seals**

*Operating capabilities:* Depend on design and materials of construction. Supplied in a variety of elastomers and rubberised fabrics.

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**Lofilm® HD**

**Rod/gland seal**

*For forging & extrusion presses*

- Max operating pressure: 62MPa
- Max surface speed: 0.5m/s
- Temperature range: -20°C to +120°C
- Supplied: Split & endless

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**Lion Expanding Packing**

**Rod/gland seal**

*Double-acting, for spool-type pistons*

- Max operating pressure: 42MPa
- Maximum surface speed: 0.5m/s
- Temperature range: -20°C to +100°C
- Supplied: Endless

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**Lofilm®**

**Rod/gland seal**

*Highly versatile multi-lip seal*

- Max operating pressure: 42MPa
- Max surface speed: 0.5m/s
- Temperature range: -20°C to +120°C
- Supplied: Split & endless

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**Lionsele® G**

**Rod/gland seal**

*High performance, single-acting*

- Max operating pressure: 40MPa
- Max surface speed: 5.0m/s
- Temperature range: -25°C to +120°C
- Supplied: Endless

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**Lion Expanding**

**Piston seal**

*High performance, double-acting seal*

- Max operating pressure: 40MPa
- Max surface speed: 5.0m/s
- Temperature range: -25°C to +120°C
- Supplied: Endless

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**Lionsele U2**

**Rod/gland seal**

*Robust multi-lip packing*

- Max operating pressure: 62MPa
- Max surface speed: 0.5m/s
- Temperature range: -20°C to +100°C
- Supplied: Split & endless

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**Solosele S**

**Piston seal**

*Single-acting seal in polyurethane*

- Max operating pressure: 42MPa
- Maximum surface speed: 0.5m/s
- Temperature range: -30°C to +100°C
- Supplied: Endless

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**Lionsele® SP**

**Piston seal**

*Double-acting, for spool-type pistons*

- Max operating pressure: 42MPa
- Maximum surface speed: 0.5m/s
- Temperature range: -20°C to +100°C
- Supplied: Endless

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**Lionsele® P**

**Piston seal**

*For split-type piston heads*

- Max operating pressure: 42MPa
- Max surface speed: 0.5m/s
- Temperature range: -20°C to +120°C
- Supplied: Endless

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**Solosele® S**

*For forging & extrusion presses*

- Max operating pressure: 62MPa
- Max surface speed: 0.5m/s
- Temperature range: -20°C to +120°C
- Supplied: Split & endless
Hydraulic Sealing Products — Overview

**Solosele® SW**
Piston seal

*Robust double-acting seal*
Max operating pressure: 42MPa
Max surface speed: 0.5m/s
Temperature range: -20°C to +100°C
Supplied: Endless

**Solosele® KB Hydro**
Special duty seals

*Blade root seal for Kaplan turbines*
Cost effective, long-term sealing on slow oscillating duties associated with Kaplan water turbines.
Supplied: Endless & OSJ®
(On-Site Joining)

**Lionsele® W1**
Wiper

*Medium duty wiper for sand & mud*
Temperature range: -30°C to +100°C
Supplied: Endless
High performance polyurethane wiper with excellent wear resistance.

**Lionsele® U3**
Piston seal

*Reduces risk of inter-seal pressure*
Max operating pressure: 42MPa
Maximum surface speed: 0.5m/s
Temperature range: -30°C to +100°C
Supplied: Endless

**Lionsele W2**
Wiper

*For hydrostatic testing*
Maximum operating pressures:
- Polyurethane versions: 100MPa
- Rubberised fabric versions: 69MPa
Supplied: Endless
Used on tube testing machines that seal and release repeatedly.

**Composite seals**
Special duty seals

**Self-aligning Gland Rings**
Special duty — optional feature

**Lionsele® W3**
Wiper

*Recommended for arduous conditions*
For Chevron®, Lion® Expanding Packing, Lofilm® and Lofilm® HD seals when used with heavily worn rams, shafts with large offset, and systems with extrusion gaps.

**Composite seals**
Special duty seals

**Custom-designed & manufactured**
Combine compactness with low break-out and dynamic friction for instant response on customer-specific hydraulic and pneumatic control systems.
Supplied: Endless

**Tube test seals**
Special duty seals

**Recommended for arduous conditions**
For Chevron®, Lion® Expanding Packing, Lofilm® and Lofilm® HD seals when used with heavily worn rams, shafts with large offset, and systems with extrusion gaps.

**Double-acting wiper**
Temperature range: -30°C to +100°C
Supplied: Endless
Polyurethane wiper with chamfered lips designed to prevent dirt ingress and control fluid film build up.
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Wyclip®
Scraper/wiper

**Heavy duty scraper/wiper**
Temperature range: -40°C to +100°C
Supplied: Endless
A simple design of clip-in wiper that is widely used on hydraulic actuators.

Lionsele® B2
Bearing strip

**For heavy duty applications**
Max bearing stress (static; RT): 400MPa
Max bearing stress (dynamic; RT): 90MPa
Max relative speed: 1.0m/s.
Temperature range: -60°C to +100°C
Supplied: Strip form or machined bearing.

‘O’ rings
Highly versatile seals

Many thousands of types and sizes
BS ISO 3601-1 (metric & inch).
BS 1806 (inch: now superseded by BS ISO 3601-1 Class A).
SAE AS 586 (inch).
BS 4518 (metric).

Stocked material grades include:
- Nitrile rubber (NBR).
- Elast-O-Lion® hydrogenated nitrile (HNBR) including RGD resistant.
- Ethylene-propylene (EPM).
- Silicone rubber (VMQ).
- Fluoroelastomer (FKM), including RGD resistant.

Comflex® Bellows
Ram protectors

**Robust, heavy-duty protection**
Fabric-reinforced elastomeric bellows of fully vulcanised construction. Protect rams working in aggressive environments on forging presses, pulverising mills, etc.

Lionsele® B1
Bearing strip

**Bronze-loaded PTFE for low friction**
Max bearing stress (static; RT): 25MPa
Max bearing stress (dynamic; RT): 12MPa
Max relative speed: 5.0m/s
Temperature range: -60°C to +150°C
Supplied: Strip form or machined bearing.

General information

**Health warning:** If PTFE or fluoroelastomer (e.g., 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.
James Walker companies worldwide

James Walker & Co
Tel: +44 (0)1270 536000
Fax: +44 (0)1270 536100
Email: csc@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
(Bitgium)
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 21 2220 2152
Fax: +55 21 2531 1704
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 Ireland
Tel: +353 (0)21 432 3626
Fax: +353 (0)21 432 3623
Email: sales.ie@jameswalker.biz

James Walker Italy
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.jwmfg.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 Singapore
Tel: +65 6777 9896
Fax: +65 6777 6102
Email: sales.sg@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 companies worldwide

James Walker & Co
Customer Support Centre
1 Millennium Gate, Westmere Drive
Crewe, Cheshire CW1 6AY, UK
Tel: +44 (0)1270 536000
Fax: +44 (0)1270 536100
Email: csc@jameswalker.biz

www.jameswalker.biz