

Lionpak[®]

2101

Pure dry PTFE packing
with low friction capabilities

Lionpak[®] 2101 is an interlocked braided packing made of pure dry PTFE fibre yarn.

It is non-toxic, and contains no lubricants or additives.

Prime features

- Very low coefficient of friction.
- Minimal wear on shafts and sleeves.
- Long service-free life, with virtually no volume loss due to chemical action.
- Very little gland adjustment needed after initial installation.

Typical applications

Valves, pumps, mixers, reactors, agitators and extruders, in applications where the low friction characteristics of pure PTFE are required. Recommended for duties in compressed air systems.

Chemical properties

Inert to chemicals within the range pH 0-14, excluding molten alkali metals, fluorine compounds and aqua regia.

How supplied

All popular square sections from 4 mm to 50 mm ($\frac{5}{32}$ " to 2") in boxes containing 8 m (26' 3"), or in coil form by the metre/foot or kilogram/pound. Also supplied as split preformed rings and sets.



VALVE STEM DUTIES

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum System Pressure:

25 MPa/250 bar (3626 psi)



CENTRIFUGAL PUMPS AND ROTARY EQUIPMENT

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Shaft Speed:

4 m/s (787 fpm)

Maximum System Pressure:

1 MPa/10 bar (145 psi)



RECIPROCATING PUMPS AND RAMS

Maximum Operating Temperature:

+250°C (+482°F)

Minimum Operating Temperature:

-100°C (-148°F)

Maximum Rod Speed:

0.5 m/s (98 fpm)

Maximum System Pressure:

5 MPa/50 bar (725 psi)

James Walker Distributor

Sweden and Denmark

G A Lindberg Sealtech AB

**Raseborgsgatan 9
164 06 Kista
Sweden**

T: +46 (0)8 703 02 00

E: sealinfo@galindberg.se

Health warning: If PTFE products are heated to elevated temperatures, fumes will be produced which may give unpleasant effects, if inhaled. Whilst some fumes are emitted below 300°C (572°F) from PTFE, the effect at these temperatures is negligible. Care should be taken to avoid contaminating tobacco with particles of PTFE or PTFE dispersion, which may remain on hands or clothing. Safety Data Sheets (SDS) are available on request.

Information given in this publication is given in good faith and represents the results of specific individual tests carried out by James Walker or third parties in accordance with the methodologies described in this publication, performed in a laboratory. No representation or warranty is given in relation to such information. Values and/or operating limits given in this publication are not an indication that these values and/or operating limits can be applied simultaneously. While such results may comprise useful additional information and are industry standard tests, they are no substitute for conducting (or procuring from James Walker) your own tests and engineering analysis and satisfying yourself as to the suitability of the product you select. Please also note that a product tested in accordance with the published methodology may not perform to such values in application and/or under different test conditions or methodologies for a variety of reasons, including but not limited to the environment in which it is used/tested or which passes through it or otherwise affects the product, or due to the handling, storage or installation, or due to the effect of housing or other parts. Our personnel will be happy to discuss any historical examples we have of a product having been previously used in a particular application.

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

Names bearing the ® symbol are registered trademarks of James Walker Group or associated companies

James Walker Sealing Products & Services Ltd

Registered Office: Lion House, Oriental Road,
Woking, Surrey GU22 8AP, United Kingdom.

Reg no: 00264191 England

Quick reference chart

| Product | Valve | Rotary | | Reciprocating | | Static |
|------------------------------|--------------------|-----------------------|--------------------|---------------------|------------------------|--------------------|
| | Pressure MPa (psi) | Shaft Speed m/s (fpm) | Pressure MPa (psi) | Rod Speed m/s (fpm) | Pressure MPa (psi) | Pressure MPa (psi) |
| PTFE-based | | | | | | |
| Lionpak® 2100 | 25 (3626) | 4 (787) | 1 (145) | 0.5 (98) | 5 (725) | n/a |
| Lionpak® 2101 | 25 (3626) | 4 (787) | 1 (145) | 0.5 (98) | 5 (725) | n/a |
| Lionpak® 2102 | 25 (3626) | 5 (984) | 2 (290) | 0.5 (98) | 15 (2175) | n/a |
| Lionpak® 2200 | 15 (2175) | 10 (1969) | 2.5 (363) | 1 (197) | 10 (1450) | n/a |
| Lionpak® 2201 | 15 (2175) | 10 (1969) | 2.5 (363) | 1 (197) | 10 (1450) | n/a |
| Lionpak® 2202 | 15 (2175) | 12 (2362) | 2.5 (363) | 1 (197) | 15 (2175) | n/a |
| Lionpak® 2300 | 8 (1160) | 22 (4331) | 1 (145) | 1 (197) | 8 (1160) | n/a |
| Lionpak® 2302 | 8 (1160) | 22 (4331) | 1 (145) | 1 (197) | 8 (1160) | n/a |
| Lionpak® 2303 | 12 (1740) | 17.5 (3445) | 2 (290) | 2 (394) | 8 (1160) | n/a |
| Lionpak® 2500 | 25 (3626) | 20 (3937) | 2 (290) | 2 (394) | 10 (1450) | n/a |
| Lionpak® 2501 | 25 (3626) | 20 (3937) | 2 (290) | 2 (394) | 10 (1450) | n/a |
| Lionpak® 2502 | 25 (3626) | 20 (3937) | 2 (290) | 2 (394) | 20 (2900) [‡] | n/a |
| Lionpak® 2503 | 25 (3626) | 20 (3937) | 2 (290) | 2 (394) | 10 (1450) | n/a |
| Lionpak® 2504 | 25 (3626) | 20 (3937) | 2 (290) | 2 (394) | 10 (1450) | n/a |
| Lionpak® 2505 | 30 (4351) | n/a | n/a | n/a | n/a | n/a |
| Lionpak® 2506 | 25 (3626) | 22 (4331) | 2 (290) | 2 (394) | 10 (1450) | n/a |
| Aramid-based | | | | | | |
| Lionpak® 3200 | 15 (2175) | 20 (3937) | 2.5 (363) | 1.5 (295) | 15 (2175) | n/a |
| Lionpak® 3301 | 15 (2175) | 20 (3937) | 2.5 (363) | 1.5 (295) | 15 (2175) | n/a |
| Lionpak® 3302 | 15 (2175) | 20 (3937) | 2.5 (363) | 1.5 (295) | 10 (1450) | n/a |
| Graphite/Carbon-based | | | | | | |
| Lionpak® 5100 | 25 (3626) | 25 (4921) | 2.5 (363) | n/a | n/a | n/a |
| Lionpak® 5101 | 10 (1450) | 20 (3937) | 3.5 (508) | n/a | n/a | n/a |
| Lionpak® 5200 | 30 (4351) | n/a | n/a | n/a | n/a | n/a |
| Lionpak® 5201 | 30 (4351) | n/a | n/a | n/a | n/a | n/a |
| Lionpak® 5202 | 30 (4351) | n/a | n/a | n/a | n/a | n/a |
| Lionpak® 5300 | 15 (2175) | n/a | n/a | n/a | n/a | n/a |
| Lionpak® 5301 | 20 (2900) | 20 (3937) | 2 (290) | 2 (394) | 15 (2175) [‡] | n/a |
| Lionpak® 5302 | 25 (3626) | 20 (3937) | 2 (290) | 2 (394) | 10 (1450) | n/a |
| Lionpak® 5303 | 20 (2900) | 20 (3937) | 2 (290) | 2 (394) | 15 (2175) [‡] | n/a |
| Lionpak® 5304 | 20 (2900) | 20 (3937) | 2 (290) | 2 (394) | 15 (2175) [‡] | n/a |
| Lionpak® 5501 | 25 (3626) | Consult | Consult | n/a | n/a | n/a |
| Lionpak® 5503 | 25 (3626) | Consult | Consult | n/a | n/a | n/a |
| Lionpak® 5504 | 25 (3626) | Consult | Consult | n/a | n/a | n/a |
| Lionpak® 5505 | 25 (3626) | n/a | n/a | n/a | n/a | n/a |

| Key | |
|-----|---|
| 1 | +450°C (+930°F) oxidising conditions, +550°C (+1202°F) steam, +850°C (+1562°F) non-oxidising |
| 2 | +450°C (+842°F) oxidising conditions, +550°C (+1022°F) steam |
| 3 | +500°C (+930°F) oxidising conditions, +650°C (+1202°F) steam, +1000°C (+1832°F) non-oxidising |
| 4 | +1000°C (+1832°F) constant, +1100°C (+2012°F) intermittent |
| 5 | +450°C (+930°F) oxidising conditions, +650°C (+1202°F) steam, +1000°C (+1832°F) non-oxidising |

| Temperatures | | pH | Media | | | | | | | | | |
|------------------------------|--------------------------|----------|-------|-------|---------------|---------------|--------------|-----------------|------|----------|--------|------|
| Min °C (°F) | Max °C (°F) | pH Range | Steam | Gases | Process Water | Potable Water | Strong Acids | Caustic Alkalis | Oils | Solvents | Oxygen | Food |
| PTFE-based | | | | | | | | | | | | |
| -100 (-148) | +250 (+482) | 0-14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +250 (+482) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +280 (+536) | 0-14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ |
| -100 (-148) | +250 (+482) | 0-14 | X | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +250 (+482) | 0-14 | X | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +280 (+536) | 0-14 | X | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | ✓ |
| -100 (-148) | +260 (+500) | 0-14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +250 (+482) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +260 (+500) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -50 (-58) | +260 (+500) | 2-13 | ✓ | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | X | X |
| -50 (-58) | +250 (+482) | 1-13 | ✓ | ✓ | ✓ | X | X | X | ✓ | ✓ | X | X |
| -50 (-58) | +250 (+482) | 1-13 | ✓ | ✓ | ✓ | X | X | X | ✓ | ✓ | X | X |
| -50 (-58) | +250 (+482) | 1-13 | ✓ | ✓ | ✓ | X | X | X | ✓ | ✓ | X | X |
| -100 (-148) | +250 (+482) | 3-14 | X | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +260 (+500) | 0-14 | X | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +260 (+500) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| Aramid-based | | | | | | | | | | | | |
| -50 (-58) | +250 (+482) | 2-13 | ✓ | ✓ | ✓ | ✓ | X | X | ✓ | ✓ | X | X |
| -50 (-58) | +250 (+482) | 1-13 | ✓ | ✓ | ✓ | X | X | X | ✓ | ✓ | X | X |
| -50 (-58) | +285 (+545) | 0-13 | ✓ | ✓ | ✓ | X | X | X | ✓ | ✓ | X | X |
| Graphite/Carbon-based | | | | | | | | | | | | |
| -200 (-328) | +450 (+842) ¹ | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +450 (+842) ² | 1-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +450 (+842) ⁵ | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +450 (+842) ² | 1-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +450 (+842) ² | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -50 (-58) | +550 (+1022) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -50 (-58) | +450 (+842) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -50 (-58) | +450 (+842) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -50 (-58) | +350 (+662) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -100 (-148) | +260 (+500) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +500 (+932) ³ | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +500 (+932) ³ | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +500 (+932) ³ | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |
| -200 (-328) | +350 (+662) | 0-14 | ✓ | ✓ | ✓ | X | ✓ | ✓ | ✓ | ✓ | X | X |

| Key | |
|---------|---|
| ‡ | May be suitable for higher pressures on certain reciprocating duties: please consult James Walker |
| Consult | Dependent on application; consult James Walker |
| n/a | Not applicable |
| ✓ | Suitable for application |
| X | Not suitable for application |

Operating limits quoted in this publication are not an indication that these values can be applied simultaneously, particularly when operating near to the extreme limits. Please contact James Walker if you need further guidance on the suitability of any product for your specific application.

This brochure is supported by further detailed product data sheets and product fitting instructions which are available to download from the James Walker website at www.jameswalker.biz