

Lionpak[®]

2505

PTFE/carbon yarn packing for frequently operated control valves

Lionpak[®] 2505 is a state-of-the-art gland packing especially developed for hard-working control valves.

This packing operates efficiently under arduous operating conditions where high resilience, high mechanical strength and high tensile strength are required.

The core of the packing is high strength carbon yarn, heavily lubricated with a special fluoropolymer dispersion and also treated with an inorganic passive corrosion inhibitor. The outer jacket is braided from pure PTFE yarn, lubricated with a PTFE suspensoid.

Prime features

- Construction provides optimum leakage control in hard-working control valves.
- Mechanically and thermally stable.
- Very high recovery factor.
- PTFE suspensoid acts as a blocking agent.
- Dissipates heat without chemical hardening.
- Easy to install, with smooth removal at shutdown.

Typical applications

Control valves and plug valves - especially those that are frequently operated.

Suitable for use with hydrocarbons, petrochemicals, superheated steam, saturated steam, organic/inorganic chemicals, acids and alkalis, solvents, amides, fuel oil, lubricating oil, dyestuffs, paints, and synthetic resins.

Chemical properties

Compatible with media in the range pH 0-14, excluding strong oxidising agents.

How supplied

All popular square sections from 6.5 mm to 50 mm (1/4" 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.



SPECIALISED PACKING



VALVE STEM DUTIES

Maximum Operating Temperature:

+260°C (+500°F)

Minimum Temperature:

-200°C (-328°F)

Maximum System Pressure:

30 MPa/300 bar (4351 psi)

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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.

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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