

TorrLid®

162B

Vacuum seal for aluminium crucible lids

This specialised product has been developed specifically as a lid seal to hold a vacuum within crucibles of molten aluminium.

It features a resilient hollow-centred core of ethylene-propylene elastomer, over-braided with a jacket of filament glass yarns. The exterior surface is coated with a layer of red-coloured silicone rubber.

Prime features

- Developed specifically as a vacuum seal for aluminium crucible lids.
- Readily withstands the temperatures and compressive forces involved.
- Tough silicone rubber coating provides abrasion resistance.
- Withstands repeated opening/closing cycles.

Typical applications

This exceptionally well-proven product is used worldwide as a vacuum lid seal for crucibles containing molten aluminium. It has also proved a great success on new plant using the latest AP35 technology.

How supplied

Manufactured to order, in a wide variety of sections and lengths, to meet customers' specific requirements.

Notes:

*Please consult James Walker.

Product also available in wire reinforced version - TorrLid 162C



STATIC DUTIES WITH CRUCIBLE LIDS

Maximum Working Temperature:

Suitable for holding a vacuum over molten aluminium in crucibles.*

Pressure Range:

From partial vacuum up to 0.9 MPa/9 bar (131 psi)

TorrLid®

297

Crucible lid seal for higher temperatures

This highly specialised product features a resilient, hollow-centred elastomeric core that resists higher temperatures than the ethylene-propylene used in TorrLid® 162B.

The core is over-braided with a jacket of filament glass yarns, and the exterior surface is then coated with a proprietary graphite dispersion.

Prime features

- Developed as a higher temperature vacuum seal for the lids of crucibles as used in specific aluminium smelting plants.
- Readily withstands the temperatures and compressive forces involved.
- Withstands repeated opening/closing cycles.

Typical applications

This well-proven product is used as a vacuum lid seal for crucibles containing molten aluminium. It is particularly popular with aluminium plants in the southern hemisphere.

How supplied

Manufactured to order, in a wide variety of sections and lengths, to meet customers' specific requirements.

Notes:

*Please consult James Walker.



STATIC DUTIES WITH CRUCIBLE LIDS

Maximum Working Temperature:

Suitable for holding a vacuum over molten aluminium in crucibles.*

Pressure Range:

From partial vacuum up to 0.9 MPa/9 bar (131 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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G A LINDBERG
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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