



Vulcan Seals Type  
1677MB  
Technical Data Sheet



Product Description

The Vulcan Seals Type 1677MB is a robust, 'O'-ring mounted sinusoidal wave-spring "pusher" seal design, to suit pre-DIN24960/En12756 dimension seal chambers.

The drive from the shaft and set of working lengths is by set screws to the shaft, providing bi-directional rotation capability. The sinusoidal wave-spring provides even closing force to the sealing faces ensuring higher sealing performance compared to a single spring seal design.

The Vulcan Seals Type 1677MB features a monolithic steelhead, optimised for chemical resistance and high-temperature applications.

Vulcan Seals Type 1677MB complete seal is supplied with the Vulcan Seals Type 1677MB stationary to suit pre-DIN24960/En12756 housings without anti-rotation provision.

Why Choose the Vulcan Seals Type 1677MB?

- The design of the Vulcan Seals Type 1677M head ensures the 'O'-ring is positively energised against the shaft at all times, providing superior performance and preventing shaft fretting.
- The positive energising of the secondard seal allows high shore-A 'O'-ring materials with high chemical resistance to be used.
- The crest-to-crest wave spring technology utilised in the Vulcan Seals Type 1677MB offers excellent axial movement capabilities.
- The one-piece sinusoidal wave spring provides superior strength and reliability compared to welded multi-part wave springs, which are prone to breakage at the weld points.
- The high performance and interchangeability of the 'O'-ring secondary seals provides a wide range of material capabilities for chemical process industries.

Standard Face Material Combinations

Rotary Face	Stationary Face	Complete Seal Code
VCD1 Carbon	VAW1 Ceramic	DB
VCD1 Carbon	VSS1 Silicon Carbide	DR
VSS1 Silicon Carbide	VCD1 Carbon	RD
VSS1 Silicon Carbide	VSS1 Silicon Carbide	R
VTN2* Tungsten Carbide	VTN1* Tungsten Carbide	H

Guaranteed Stock/Material Elastomers: Viton™/FKM, EP, Nitrile and Metallurgy 316SS  
\*Non-stock guarantee

Elastomer Temperature Capabilities

	Minimum	Maximum
Nitrile	-30°C	+120°C
Viton™/FKM	-30°C	+180°C
EP	-40°C	+140°C

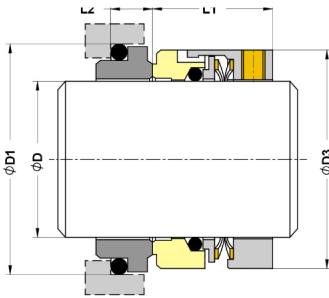
Pressure: Up to 22 bar (320 psi)

Mechanical Seal Replacement Range

Vulcan Seals Type 1677MB is a dimensional replacement mechanical seal for the following seal ranges:

- Burgmann® | Type M7/G13\*
- John Crane® | Type 58B / BP seat\*

\*Rotary Face | \*\*Stationary Face



Dimensional Data

DØ (Metric)	Seal Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
16	0160	28.00	26.00	25.00	9.00
18	0180	30.00	32.00	26.00	10.00
20	0200	35.00	34.00	26.00	9.50
22	0220	35.00	36.00	26.00	9.50
24	0240	38.00	38.00	28.50	9.50
25	0250	38.00	39.00	28.50	9.50
28	0280	42.00	42.00	31.00	11.00
30	0300	45.00	44.00	31.00	11.00
32	0320	48.00	46.00	31.00	11.00
35	0350	52.00	49.00	31.00	11.50
38	0380	55.00	54.00	31.00	11.50
40	0400	58.00	56.00	31.00	11.50
43	0430	62.00	59.00	31.00	14.30
45	0450	64.00	61.00	31.00	14.30
48	0480	68.40	64.00	31.00	14.30
50	0500	69.30	66.00	32.50	14.30
55	0550	75.40	71.00	32.50	15.30
58	0580	78.40	78.00	37.50	15.30
60	0600	80.40	80.00	37.50	15.30
65	0650	85.40	85.00	37.50	15.30
68	0680	91.50	88.00	34.50	16.00
70	0700	92.00	89.00	42.00	15.30
75	0750	99.00	96.00	42.00	15.30
80	0800	104.00	104.00	41.80	16.30

Dimensions in mm  
\\\*Non-stock guarantee



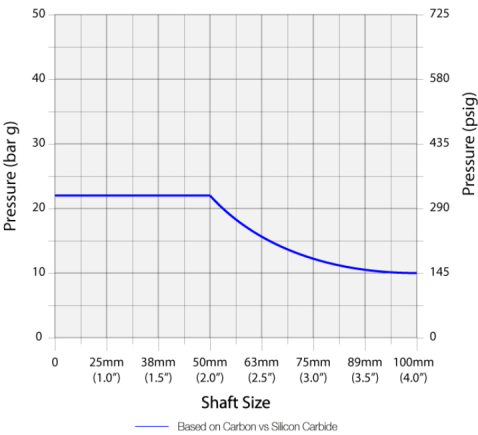
Maximum Operating Pressure

The PV Chart shows the maximum operating pressures of this Vulcan Seals type, based on the seal face materials used. Different lines on the chart indicate different material combinations, as shown underneath.

It also assumes stable operation in a clean, cool, lubricating and nonvolatile fluid with an adequate flush rate.

For more in-depth pressure rating calculations based on specific material combinations and application conditions, please consult us.

PV Chart



Application Conditions

	Criteria	Multiplier
Product Fluid	Lubricating fluids	X 1.00
	Aqueous solutions / Water	X 0.85
Temperature	Below 70°C (158°F)	X 1.00
	71°C to 120°C (160°F to 248°F)	X 0.85
	121°C to 175°C (250°F to 347°F)	X 0.75
	Over 176°C (349°F)	X 0.60
Speed	Up to 1750 rpm	X 1.00
	1750 to 3600 rpm	X 0.80

Face and Seat Materials

Combination	Multiplier
Carbon vs Ceramic	x 0.50
Carbon vs SiSiC	x 0.85
SiSiC vs Carbon	x 0.85
SiSiC vs SiSiC	x 0.41
Tungsten Carbide vs Tungsten Carbide	x 0.50

Example Calculation for Vulcan Seals Type 1677MB

- A. Shaft size: 38mm therefore pressure is 22 bar (from PV Chart)
- B. Media: Water (multiplier = 0.85)
- C. Temperature: 50°C (multiplier = 1.00)
- D. Speed: 1450 rpm (multiplier = 1.00)
- E. Face combination: Carbon vs Silicon Carbide (multiplier = 1.00)

For this particular Vulcan Seals Type 1677MB seal size, the calculation for the approximate guidance maximum operating pressure would be:

A x B x C x D x E  
22 bar x 0.85 x 1.00 x 1.00 x 1.00 = 18.70 bar

Guidance Only

Please note that due to the many operational and application variables that affect seal performance, the information given on this page is for guidance only.

We therefore strongly recommend careful individual testing and monitoring of all seals and related equipment for any proposed application.

Our policy is one of continuous technical and efficiency improvement. As such, all specifications may be subject to change without prior notice.

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\*\* Important: These limits are the theoretical elastomer or design limitations. For maximum theoretical operating pressure for your specific size and application please refer to calculation example within this data sheet. All performance information given is for guidance only and is dependent on material, operating and application factors that affect seal performance.