VULCAN SEALS

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# Vulcan Seals Type 19B

Technical Data Sheet

## Product Description

Vulcan Seals Type 19B is a robust elastomer bellows "non-pusher" design, with wide radial profile and high flexibility to readily accommodate service misalignment and provide extended resilience and durability in service..

The seal drive is provided by the elastomer bellows tightly gripping the shaft from a contact point under the coil end, providing bi-directional "non-pusher" performance that minimises shaft fretting.

Supplied with a Vulcan Seals Type 19B boot-mounted stationary to suit DIN24960/EN12756 seal chamber housings with shorter than L1K length.

## Why Choose the Vulcan Seals Type 19B?

- Robust, highly resilient elastomer bellows design provides high performance in an easy to handle and install unit.
- Boot mounted stationary provides optimal elastomer sealing contact after installation.
- Ideal for applications with variable pressures and axial movement due to the fast adjusting non-pusher design.
- Robust, non-clogging, self adjusting and durable giving highly effective performance in medias with particulates.
- Larger than DIN24960/EN12756 radial profile gives greater strength and resilience compared to fully compliant seal designs, such as the Vulcan Seals Type 142DINS.
- Suitable for medium to heavy duty applications.

## Standard Face Material Combinations

| Rotary Face | Stationary Face | Complete Seal Code |
|---|---|---|
| VCP1 Carbon | VAW1 Ceramic | C |
| VCP1 Carbon | VSR1 Silicon Carbide | D |
| VSS1 Silicon Carbide | VSR1 Silicon Carbide | SS |
| VTN2* Tungsten Carbide | VTN1* Tungsten Carbide | H |

Guaranteed Stock/Material Elastomers: Viton™/FKM, EP, Nitrile and Metallurgy 304SS
*Non-stock guarantee

## Elastomer Temperature Capabilities

| | Minimum | Maximum |
|---|---|---|
| Nitrile | -30°C | +120°C |
| EPDM | -40°C | +140°C |
| Viton™/FKM | -30°C | +230°C |
| FEPM/AFLAS® | -10°C | +250°C |
| FFKM | -50°C | +315°C |

Pressure: Up to 16 bar (232 psi)

## Compliance & Certificates

Also available with built materials that adhere to the above compliance standards and certificates. Please enquire about your requirements.

## Mechanical Seal Replacement Range

Vulcan Seals Type 19B is a dimensional replacement mechanical seal for the following seal ranges:

- AES® | Type N-B02*
- Burgmann® | Type G60**
- Flexaseal® | Type BA G60**
- M.T.U.® | TIPO 1**
- U.S. Seal® | Type VGM-G60**
- AES® | Type N-S040**
- John Crane® | Type M**
- Lidering® | Type PFL 60**
- Pac-Seal® | Type B9**

*Rotary Face | **Stationary Face*

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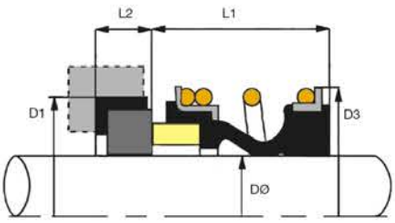


## Dimensional Data

| DØ (Metric) | Seal Size Code | D1 (mm) | D3 (mm) | L1 (mm) | L2 (mm) |
|---|---|---|---|---|---|
| 10 | 0100 | 21.00 | 20.00 | 14.50 | 6.60 |
| 12 | 0120 | 23.00 | 24.30 | 15.00 | 6.60 |
| 14 | 0140 | 25.00 | 28.50 | 17.00 | 6.60 |
| 15 | 0150 | 27.00 | 28.50 | 17.00 | 6.60 |
| 16 | 0160 | 27.00 | 28.50 | 17.00 | 6.60 |
| 17 | 0170 | 33.00 | 31.00 | 19.50 | 7.50 |
| 18 | 0180 | 33.00 | 31.00 | 19.50 | 7.50 |
| 20 | 0200 | 35.00 | 36.50 | 21.50 | 7.50 |
| 22 | 0220 | 37.00 | 36.50 | 21.50 | 7.50 |
| 24 | 0240 | 39.00 | 41.10 | 22.50 | 7.50 |
| 25 | 0250 | 40.00 | 41.10 | 23.00 | 7.50 |
| 28 | 0280 | 43.00 | 47.60 | 26.50 | 7.50 |
| 30 | 0300 | 45.00 | 47.60 | 26.50 | 7.50 |
| 32 | 0320 | 48.00 | 51.00 | 27.50 | 7.50 |
| 33 | 0330 | 48.00 | 51.00 | 27.50 | 7.50 |
| 35 | 0350 | 50.00 | 54.50 | 28.50 | 7.50 |
| 38 | 0380 | 56.00 | 57.90 | 30.00 | 9.00 |
| 40 | 0400 | 58.00 | 60.00 | 30.00 | 9.00 |
| 43 | 0430 | 61.00 | 63.80 | 30.00 | 9.00 |
| 45 | 0450 | 63.00 | 65.70 | 30.00 | 9.00 |
| 48 | 0480 | 66.00 | 69.30 | 30.50 | 9.00 |
| 50 | 0500 | 70.00 | 71.80 | 30.50 | 9.50 |
| 53 | 0530 | 73.00 | 76.00 | 33.00 | 11.00 |
| 55 | 0550 | 75.00 | 78.30 | 35.00 | 11.00 |
| 58* | 0580 | 78.00 | 82.50 | 37.00 | 11.00 |
| 60 | 0600 | 80.00 | 85.50 | 38.00 | 11.00 |
| 65* | 0650 | 85.00 | 90.30 | 40.00 | 11.00 |
| 68* | 0680 | 90.00 | 94.00 | 40.00 | 11.30 |
| 70* | 0700 | 92.00 | 97.00 | 40.00 | 11.30 |
| 75* | 0750 | 97.00 | 102.00 | 40.00 | 11.30 |
| 80* | 0800 | 105.00 | 109.50 | 40.00 | 12.00 |
| 85* | 0850 | 110.00 | 116.70 | 41.00 | 14.00 |
| 90* | 0900 | 115.00 | 122.30 | 45.00 | 14.00 |
| 95* | 0950 | 120.00 | 127.60 | 46.00 | 14.00 |
| 100* | 1000 | 125.00 | 132.00 | 47.00 | 14.00 |

Dimensions in mm
*Non-stock guarantee

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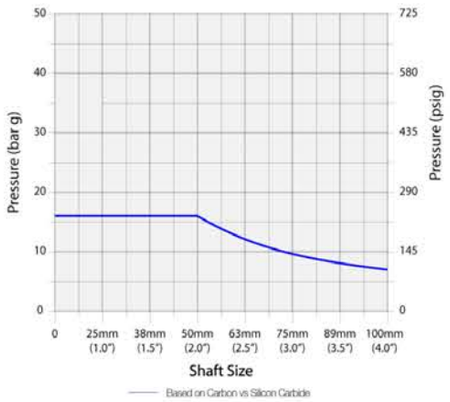
## Maximum Operating Pressure

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 to347°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 RB Silicon Carbide | x 1.00 |
| SiSiC vs RB Silicon Carbide | x 0.41 |
| Tungsten Carbide vs Tungsten Carbide | x 0.50 |

## Example Calculation for Vulcan Seals Type 19B

A. Shaft size: 38mm therefore pressure is 16 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 19B seal size, the calculation for the approximate guidance maximum operating pressure would be:

A x B x C x D x E
16 bar x 0.85 x 1.00 x 1.00 x 1.00 = 13.60 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.



** 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.