



Vulcan Seals Type 19

Technical Data Sheet



Product Description

Vulcan Seals Type 19 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 8.STD 'O'-ring-mounted stationary to suit pre-DIN24960 European short seal chamber housings.

Why Choose the Vulcan Seals Type 19?

- Robust, highly resilient elastomer bellows design provides high performance in an easy to handle and install unit.
- 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 |
| FEP/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

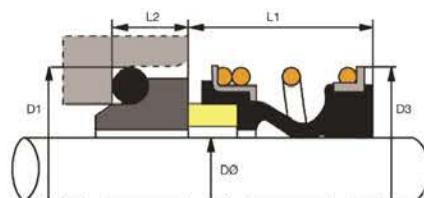
Vulcan Seals Type 19 is a dimensional replacement mechanical seal for the following seal ranges:

- AES® | Type N-B02S*
- Lidering® | Type 107 L4*
- M.T.U.® | FG 1*
- Burgmann® | Type MG1*
- Lidering® | Type LRB17*
- U.S. Seal® | Type VGMC-1*

*Rotary Face | **Stationary Face

Embrace Excellence - Vulcan Service, Quality and Value

Mechanical Seals | FEP/PFA Encapsulated 'O'-rings | Gland Packing | Expanded PTFE Gasketing
UK/World: +44 (0) 114 249 3333 | USA: +1 952 955 8800 | www.vulcanseals.com | contact@vulcanseals.com

**Dimensional Data**

| D \varnothing (Metric) | Seal Size Code | D1 (mm) | D3 (mm) | L1 (mm) | L2 (mm) |
|--------------------------|----------------|---------|---------|---------|---------|
| 10 | 0100 | 19.20 | 20.00 | 14.50 | 6.60 |
| 12 | 0120 | 21.60 | 24.30 | 15.00 | 5.60 |
| 14 | 0140 | 24.60 | 28.50 | 17.00 | 5.60 |
| 15 | 0150 | 24.60 | 28.50 | 17.00 | 6.60 |
| 16 | 0160 | 28.00 | 28.50 | 17.00 | 7.50 |
| 18 | 0180 | 30.00 | 31.00 | 19.50 | 8.00 |
| 19* | 0190 | 35.00 | 36.50 | 21.50 | 7.50 |
| 20 | 0200 | 35.00 | 36.50 | 21.50 | 7.50 |
| 22 | 0220 | 35.00 | 36.50 | 21.50 | 7.50 |
| 24 | 0240 | 38.00 | 41.10 | 22.50 | 7.50 |
| 25 | 0250 | 38.00 | 41.10 | 23.00 | 7.50 |
| 26* | 0260 | 40.00 | 41.10 | 23.00 | 9.00 |
| 28 | 0280 | 42.00 | 47.60 | 26.50 | 9.00 |
| 30 | 0300 | 45.00 | 47.60 | 26.50 | 10.50 |
| 32 | 0320 | 48.00 | 51.00 | 27.50 | 10.50 |
| 33 | 0330 | 50.00 | 51.00 | 27.50 | 11.00 |
| 35 | 0350 | 52.00 | 54.50 | 28.50 | 11.00 |
| 38 | 0380 | 55.00 | 57.90 | 30.00 | 10.30 |
| 40 | 0400 | 58.00 | 60.00 | 30.00 | 10.80 |
| 42* | 0420 | 62.00 | 62.00 | 30.00 | 12.00 |
| 43 | 0430 | 62.00 | 63.80 | 30.00 | 12.00 |
| 45 | 0450 | 64.00 | 65.70 | 30.00 | 11.60 |
| 48 | 0480 | 68.40 | 69.30 | 30.50 | 11.60 |
| 50 | 0500 | 69.30 | 71.80 | 30.50 | 11.60 |
| 53 | 0530 | 72.30 | 76.00 | 33.00 | 12.30 |
| 55 | 0550 | 75.40 | 78.30 | 35.00 | 13.30 |
| 58* | 0580 | 78.40 | 82.50 | 37.00 | 13.30 |
| 60 | 0600 | 80.40 | 85.50 | 38.00 | 13.30 |
| 65* | 0650 | 85.40 | 90.30 | 40.00 | 13.00 |
| 68* | 0680 | 91.50 | 94.00 | 40.00 | 13.70 |
| 70* | 0700 | 92.00 | 97.00 | 40.00 | 13.00 |
| 75* | 0750 | 99.00 | 102.00 | 40.00 | 14.00 |
| 80* | 0800 | 104.00 | 109.50 | 40.00 | 15.00 |
| 85* | 0850 | 109.00 | 116.70 | 41.00 | 14.80 |
| 90* | 0900 | 114.00 | 122.30 | 45.00 | 14.80 |
| 95* | 0950 | 120.30 | 127.60 | 46.00 | 15.80 |
| 100* | 1000 | 123.30 | 132.00 | 47.00 | 15.80 |

Dimensions in mm

*Non-stock guarantee



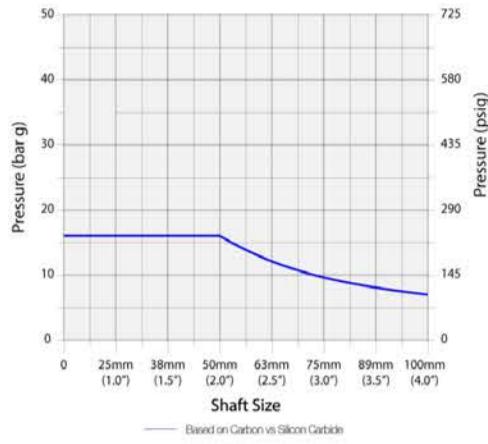
Maximum Operating Pressure

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 |

Example Calculation for Vulcan Seals Type 19

- 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 19 seal size, the calculation for the approximate guidance maximum operating pressure would be:

$$A \times B \times C \times D \times E \\ 16 \text{ bar} \times 0.85 \times 1.00 \times 1.00 \times 1.00 = 13.60 \text{ bar}$$

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 |

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.