



Vulcan Seals Type 18

Technical Data Sheet



Product Description

Vulcan Seals Type 18 is an axially-compact elastomer bellows design, suitable for a wide variety of water pump applications. The design features a high flexibility to readily accommodate service misalignment and shaft run-out.

The sealing 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 18 boot-mounted stationary, the Vulcan Seals Type 18 is designed to suit very short seal chambers with a wide radial clearance.

Why Choose the Vulcan Seals Type 18?

- The very short rotary operating height allows installation in a wide range of equipment duties.
- A smooth profile to the sealing contact point of the boot provides optimal grip into the stationary recess with a sub-optimal surface finish.
- The wide profile of the rotary face provides optimal sealing performance in slow to medium-speed pump applications.

Standard Face Material Combinations

Rotary Face	Stationary Face	Complete Seal Code
VCP1 Carbon	VAW1 Ceramic	C
VCP1 Carbon	VSR1 Silicon Carbide	D
VSR1 Silicon Carbide	VAW1 Ceramic	G
VSR1 Silicon Carbide	VSR1 Silicon Carbide	S
VTN2* Tungsten Carbide	VTN2* 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
EP	-40°C	+140°C
Viton™/FKM	-30°C	+180°C

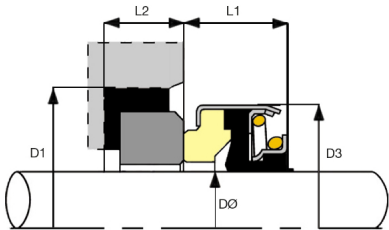
Pressure: Up to 4.8 bar (70 psi)

Mechanical Seal Replacement Range

Vulcan Seals Type 18 is a dimensional replacement mechanical seal for the following seal ranges:

- AES® | Type N-B01*
 - Burgmann® | Type BT-AR*
 - Lidering® | Type AR*
 - Lidering® | Type LRB31*
 - Pac-Seal® | Type 17*
- Burgmann® | Type BT-AR3*
 - Lidering® | Type 301*
 - Lidering® | Type AR 3*
 - M.T.U.® | FA*
 - U.S. Seal® | Type VGMA*

*Rotary Face | **Stationary Face



Dimensional Data

DØ (Metric)	Seal Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
8	0080	26.00	24.00	11.00	8.00
10	0100	26.00	24.00	11.00	8.00
11	0110	26.00	24.00	11.00	8.00
12	0120	26.00	24.00	11.00	8.00
12	0120.B*	26.00	24.00	13.00	8.00
12	0120.C*	35.00	32.00	13.00	8.00
13	0130	26.00	24.00	13.00	8.00
13	0130.C*	26.00	24.00	13.00	5.50
14	0140	35.00	32.00	13.00	8.00
14	0140.B*	29.50	32.00	13.00	7.95
15	0150	38.00	35.00	13.00	8.00
15	0150.B*	29.50	32.00	13.00	7.95
16	0160	38.00	35.00	13.00	8.00
16	0160.B*	42.00	39.00	13.00	8.00
17	0170	42.00	39.00	13.00	8.00
17	0180	42.00	39.00	13.00	8.00
18	0190	42.00	39.00	13.00	8.00
19	0200	42.00	39.00	13.00	8.00
20	0200.A*	35.00	35.00	17.00	7.50
20	0200.B*	45.00	42.00	13.00	10.00
22	0220	45.00	42.00	13.00	10.00
23	0230	50.00	47.00	14.00	10.00
24	0240	50.00	47.00	14.00	10.00
24	0240.B*	42.00	42.00	13.00	9.00
25	0250	50.00	47.00	14.00	10.00
25	0250.A*	50.00	42.00	14.00	10.00
25	0250.B*	39.50	42.00	14.00	8.00
27	0270	50.00	47.00	15.00	10.00
28	0280	57.00	54.00	15.00	10.00
30	0300	57.00	54.00	15.00	10.00
32	0320	57.00	54.00	15.00	10.00
35	0350	63.00	60.00	16.00	10.00
35	0350.C*	57.00	60.00	16.00	6.50
38	0380	68.00	65.00	18.00	12.00
40	0400	68.00	65.00	18.00	12.00
45	0450	73.00	70.00	20.00	12.00
50	0500	88.00	85.00	23.00	15.00
55	0550	88.00	85.00	23.00	15.00
60	0600	110.00	105.00	30.00	15.00
65	0650	110.00	105.00	30.00	15.00
70	0700	110.00	105.00	32.00	15.00

Dimensions in mm
*Non-stock guarantee



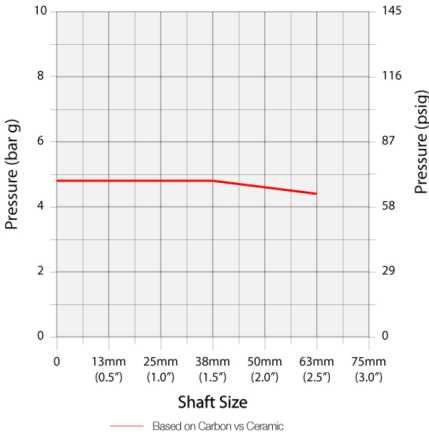
Maximum Operating Pressure

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 Silicon Carbide	x 1.00
Silicon Carbide vs Ceramic	x 0.35
Silicon Carbide vs Silicon Carbide	x 0.50
Tungsten Carbide vs Tungsten Carbide	x 0.50

Example Calculation for Vulcan Seals Type 18

- A. Shaft size: 38mm therefore pressure is 4 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 18 seal size, the calculation for the approximate guidance maximum operating pressure would be:

A x B x C x D x E
4 bar x 0.85 x 1.00 x 1.00 x 1.00 = 3.40 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.