



Vulcan Seals Type 98

Technical Data Sheet



Product Description

The Vulcan Seals Type 98 seal is a robust, 'O'-ring mounted "pusher" seal design with parallel spring and either monolithic stainless steel or interference-fitted sealing faces. The Vulcan Seals Type 98 has a narrow cross-section seal head and heavy-duty spring and bi-elastomer stationary in a design that is optimised for performance and durability and highly suited to marine pump applications.

The seal drive is provided by the set-screw mounted drive collar that mounts on the equipment shaft to set the seal operating length. Parallel spring 'O'-ring mounted seals are mono-directional and have differential part codes for clockwise or anti-clockwise operation.

The Vulcan Seals Type 98 complete seal is supplied with the Vulcan Seals Type 98 twin 'O'-ring-mounted stationary for mounting into Asian seal chambers.

Why Choose the Vulcan Seals Type 98?

- Robust design optimised for durability.
- Inserted silicon carbide head design provides improved sealing performance compared to monolithic stainless steel in sea water and related applications.
- Optional monolithic stainless steel head design is available for high-temperature and lubricating media applications.
- Narrow section design allows use in equipment with restricted seal chambers.
- Set-screw mounted drive collar allows the rotary to locate and drive from a straight profile equipment shaft.
- Bi-elastomeric 'O'-ring stationary provides anti-rotational security in high-torque applications such as viscous or high-solids medias.

Standard Face Material Combinations

Rotary Face	Stationary Face	Complete Seal Code
304 Stainless Steel	VCP1 Carbon	P
VSR1 Silicon Carbide	VCP1 Carbon	T
VTN2* Tungsten Carbide	VCP1 Carbon	U
VSR1 Silicon Carbide	VSR1* Silicon Carbide	S
VSR1 Silicon Carbide	VTN1* Tungsten Carbide	I
VTN2* Tungsten Carbide	VSR1* Silicon Carbide	J
VTN2* Tungsten Carbide	VTN1* Tungsten Carbide	H

Guaranteed Stock/Material Elastomers: Viton™/FKM, EP, Nitrile and Metallurgy 304SS
Specify right hand clockwise or left hand anti-clockwise coil upon ordering
*Non-stock guarantee

Elastomer Temperature Capabilities

	Minimum	Maximum
Nitrile	-30°C	+120°C
EPDM	-40°C	+140°C
Viton™/FKM	-30°C	+180°C
FEPM/AFLAS®	-10°C	+180°C
FFKM	-50°C	+180°C

Pressure: Up to 14 bar (203 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

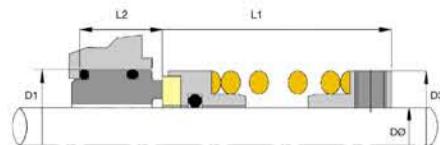
Vulcan Seals Type 98 is a dimensional replacement mechanical seal for the following seal ranges:

- AES® | Type N-P080*

*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 ₀ (Metric)	Seal Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
20	0200	37.00	34.50	38.000	23.00
22	0220	39.00	34.93	38.000	23.00
25	0250	40.00	38.10	38.000	23.00
28	0280	44.00	42.00	40.000	23.00
30	0300	47.00	43.50	40.000	24.00
32	0320	48.00	47.00	40.000	24.00
35	0350	51.00	50.00	40.000	24.00
38	0380	54.00	53.00	45.000	24.00
40	0400	57.00	55.00	45.000	24.00
42	0420	60.50	55.50	50.000	24.00
45	0450	61.00	60.00	50.000	24.00
48	0480	64.00	62.00	55.000	24.00
50	0500	67.00	66.00	55.000	24.00
52	0520	70.00	68.00	58.000	24.00
55	0550	73.00	71.00	58.000	24.00
58	0580	76.00	74.00	58.000	24.00
60	0600	80.00	77.00	60.000	26.00
62	0620	83.00	78.00	60.000	26.00
65	0650	86.00	82.00	62.000	26.00
68	0680	89.00	84.00	62.000	26.00
70	0700	89.00	87.00	65.000	26.00
75*	0750	95.00	91.50	65.000	26.00
80*	0800	99.00	99.50	70.000	26.00
85*	0850	105.00	105.50	70.000	26.00
90*	0900	111.00	110.50	70.000	26.00
95*	0950	114.00	115.50	75.000	26.00
100*	1000	118.00	120.00	75.000	26.00
105*	1050	132.00	128.00	75.000	28.00
110*	1100	137.00	133.00	80.000	28.00
115*	1150	140.00	137.50	80.000	28.00
120*	1200	147.00	144.00	85.000	28.00
125*	0120	150.00	149.00	85.000	28.00
130*	1300	156.00	154.00	85.000	28.00

Dimensions in mm

*Non-stock guarantee



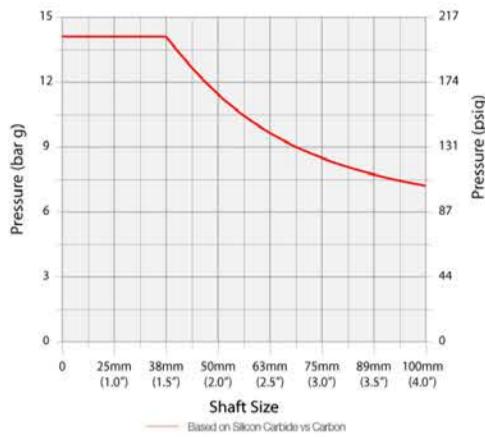
Maximum Operating Pressure

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

Example Calculation for Vulcan Seals Type 98

- A. Shaft size: 38mm therefore pressure is 14 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 98 seal size, the calculation for the approximate guidance maximum operating pressure would be:

$$A \times B \times C \times D \times E \\ 14 \text{ bar} \times 0.85 \times 1.00 \times 1.00 \times 1.00 = 11.90 \text{ bar}$$

Face and Seat Materials

Combination	Multiplier
Stainless Steel vs Carbon	x 0.30
Silicon Carbide vs Carbon	x 1.00
Tungsten Carbide vs Carbon	x 0.90
Silicon Carbide vs Silicon Carbide	x 0.50
Silicon Carbide vs Tungsten Carbide	x 0.45
Tungsten Carbide vs Silicon Carbide	x 0.45
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.