VULCAN SEALS

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Vulcan Seals Type 40J

Technical Data Sheet

Product Description

The Vulcan Seals Type 40J is a robust, narrow-profile, 'O'-ring mounted "non-pusher" seal design with multiple springs and hydraulically balanced inserted rotary face. The drive from the shaft and the seal working length are by set-screws tightened using the supplied Allen key. The set-screws provide bi-directional rotation capability.

The multi-spring array and rotary face profile provide even closing forces and hydraulic balancing giving improved pV capability, higher sealing performance and longer seal life in challenging industrial applications when compared to single spring seal designs.

The Vulcan Seals Type 40J complete seal is supplied with the Type 31 'O'-ring mounted stationary with anti-rotation provision, to provide optimal performance in high-torque fluids such as viscous and high-solids medias.

Why Choose the Vulcan Seals Type 40J?

- Advanced compact design with narrow radial profile in imperial shaft sizes to suit USA ANSI B73-1974 imperial seal chambers with anti-rotation provision.
- Highly suitable for high-solids applications due to smooth outer profile and springs protected from exposure to the media.
- The Vulcan Seals Type 40 rotary features differential face designs for carbon and harder silicon or tungsten carbides to ensure optimal performance.
- Multiple springs for even face loading, isolated from the product, prevents clogging. Hastelloy® C-springs are fitted as standard for maximum corrosion resistance and life.
- Larger diameter static 'O'-ring seal will not fret or damage the shaft sleeve and can be seal on shaft sleeves previously slightly worn by other seals or gland packing.

Standard Face Material Combinations

Rotary Face | Material	Stationary Face | Material	Complete Material Code
VCD1 Carbon	VAW1 Ceramic	DB
VCD1 Carbon	VSR1 Silicon Carbide	DS
VSS1 Silicon Carbide	VSS1 Silicon Carbide	R
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	+180°C
FEPM/AFLAS®	-10°C	+180°C
FFKM	-50°C	+180°C

Pressure: Up to 25 bar (362 psi)

Compliance & Certificates

The Vulcan Seals mechanical seal range can be supplied with material combinations designed to meet the compliance standards and certifications listed above. Additional compliance or regulatory requirements can also be considered upon request. Please enquire to discuss your specific application.

Mechanical Seal Replacement Range

Vulcan Seals Type 40H is a dimensional replacement mechanical seal for the following seal ranges:
-
**Rotary Face* | ***Stationary Face*

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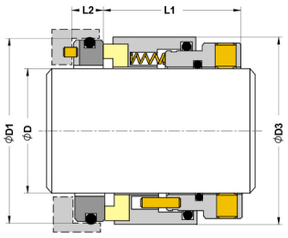

Dimensional Data

DØ (Imperial)	Seal Size Code	D1 (in)	D1 (mm)	D3 (in)	D3 (mm)	L1 (in)	L1 (mm)	L2 (in)	L2 (mm)
0.750	0191	1.375	34.93	1.319	33.50	1.181	30.00	0.405	10.28
0.875	0222	1.500	38.10	1.437	36.50	1.181	30.00	0.406	10.32
1.000	0254	1.625	41.28	1.559	39.60	1.181	30.00	0.437	11.10
1.125	0286	1.750	44.44	1.689	42.90	1.280	32.50	0.437	11.10
1.250	0317	1.875	47.63	1.815	46.10	1.280	32.50	0.437	11.10
1.375	0349	2.000	50.80	1.941	49.30	1.280	32.50	0.437	11.10
1.500	0381	2.125	53.98	2.079	52.80	1.339	34.00	0.437	11.10
1.625	0412	2.375	60.33	2.205	56.00	1.339	34.00	0.500	12.70
1.750	0444	2.500	63.50	2.330	59.20	1.339	34.00	0.500	12.70
1.875	0476	2.625	66.68	2.457	62.40	1.339	34.00	0.500	12.70
2.000	0508	2.750	69.85	2.583	65.60	1.358	34.50	0.500	12.70
2.125	0539	3.000	76.20	2.709	68.80	1.358	34.50	0.562	14.28
2.250	0571	3.125	79.38	2.831	71.90	1.358	34.50	0.562	14.28
2.375	0603	3.250	82.55	2.961	75.20	1.358	34.50	0.562	14.28
2.500	0635	3.375	85.73	3.083	78.30	1.358	34.50	0.562	14.28
2.625	0666	3.375	85.73	3.315	84.20	1.417	36.00	0.625	15.88
2.750	0698	3.500	88.90	3.441	87.40	1.417	36.00	0.625	15.88
2.875	0730	3.750	95.25	3.567	90.60	1.417	36.00	0.625	15.88
3.000	0762	3.875	98.43	3.689	93.70	1.417	36.00	0.625	15.88
3.125*	0794	4.000	101.60	3.818	97.00	1.417	36.00	0.783	19.88
3.250*	0825	4.125	104.78	3.937	100.00	1.417	36.00	0.783	19.88
3.375*	0857	4.250	107.95	4.066	103.30	1.417	36.00	0.783	19.88
3.500*	0889	4.375	111.13	4.188	106.40	1.417	36.00	0.783	19.88
3.625*	0921	4.500	114.30	4.314	109.60	1.417	36.00	0.783	19.88
3.750*	0953	4.625	117.48	4.440	112.80	1.437	36.50	0.783	19.88
3.875*	0984	4.750	120.65	4.566	116.00	1.437	36.50	0.783	19.88
4.000*	1016	4.875	123.83	4.692	119.20	1.437	36.50	0.783	19.88
4.500*	1143	5.500	139.70	5.189	131.80	1.437	36.500	0.783	19.88

DØ = Imperial size shaft
Dimensions in mm and inches
*Non-stock guarantee

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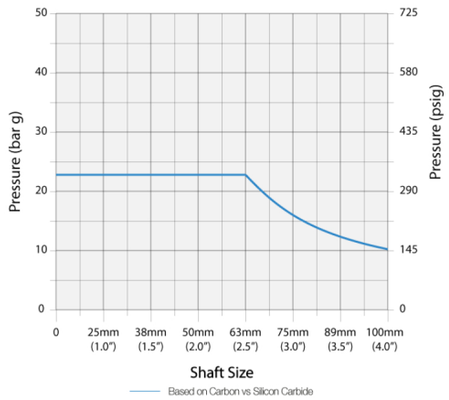
Maximum Operating Pressure

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

Example Calculation for Vulcan Seals Type 40J

A. Shaft size: 38mm therefore pressure is 13 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 40J seal size, the calculation for the approximate guidance maximum operating pressure would be:

A x B x C x D x E
13 bar x 0.85 x 1.00 x 1.00 x 1.00 = 11.05 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.