



Vulcan Seals Type 20

Technical Data Sheet



Product Description

The Vulcan Seals Type 20 is a resilient, rubber diaphragm mounted parallel spring seal design with self-adjusting head to accommodate minor shaft misalignment and run-out.

The seal drive is provided by the diaphragm bellows tightly gripping the shaft and providing positive drive to the seal head and sealing face. The Vulcan Seals diaphragm seal designs are bi-directional "pusher" seals that minimise shaft fretting as the spring is constantly providing energising force to the shaft contact point and sealing face.

Supplied with a Vulcan Seals Type 20 boot-mounted stationary to suit common metric and imperial UK and European regular length seal chambers.

Why Choose the Vulcan Seals Type 20?

- Proficient diaphragm bellows design with dimensions to suit common UK metric or imperial extended length seal chambers.
- Boot mounted stationary provides maximum elastomer sealing contact to the housing surface.
- The base plate fitted at the spring drive end provides firm contact against a shaft step or circlip that sets the seal operating height. This component can be removed if not required.
- A widely utilised mechanical seal type highly suited to general light to medium duties and capable of long service life.

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	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
Viton™/FKM	-30°C	+180°C
EP	-40°C	+140°C

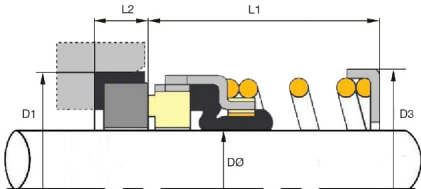
Pressure: Up to 14 bar (203 psi)

Mechanical Seal Replacement Range

Vulcan Seals Type 20 is a dimensional replacement mechanical seal for the following seal ranges:

- AES® | Type N-P02*
 - Burgmann® | Type G50**
 - John Crane® | Type Z**
 - Lidering® | Type 106*
 - Lidering® | Type LRB06*
 - U.S. Seal® | Type VGM-G50**
- Burgmann® | Type MG920*
 - John Crane® | Type N**
 - John Crane® | Type NG**
 - Lidering® | Type LRB01S*
 - Lidering® | Type PFL 50**

*Rotary Face | **Stationary Face



Dimensional Data

DØ (Metr.)	Size Code	D1	D3	L1	L2	DØ (Imp.)	Size Code 2	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	24.60	21.80	25.40	8.74	0.375	0095	24.60	21.80	25.40	25.40
12	0120	27.79	23.50	25.40	8.74	0.500	0127	27.79	23.50	25.40	25.40
13	0130	27.79	23.50	25.40	8.74	0.625	0158	30.95	27.00	25.40	25.40
14	0140	30.95	27.00	25.40	10.32	0.750	0191	34.15	30.70	25.40	25.40
15	0150	30.95	27.00	25.40	10.32	0.875	0222	37.30	33.40	25.40	25.40
16	0160	30.95	27.00	25.40	10.32	1.000	0254	40.50	43.20	25.40	25.40
18	0180	34.15	30.70	25.40	10.32	1.125	0286	47.63	46.60	33.34	33.34
19	0190	34.15	30.70	25.40	10.32	1.250	0317	50.80	47.40	33.34	33.34
20	0200	35.70	33.40	25.40	10.32	1.375	0349	53.98	52.00	33.34	33.34
22	0220	37.30	33.40	25.40	10.32	1.500	0381	57.15	55.60	33.34	33.34
24	0240	40.50	39.20	25.40	10.32	1.625	0412	60.33	59.20	33.34	33.34
25	0250	40.50	39.20	25.40	10.32	1.750	0444	63.50	65.10	40.48	40.48
28	0280	47.63	45.60	33.34	11.99	1.875	0476	66.68	66.70	40.48	40.48
29	0290	47.63	45.60	33.34	11.99	2.000	0508	69.85	73.30	40.48	40.48
30	0300	50.80	47.40	33.34	11.99	2.125	0539	73.03	73.30	40.48	40.48
32	0320	50.80	47.40	33.34	11.99	2.250	0571	76.20	78.60	40.48	40.48
33	0330	53.98	52.00	33.34	11.99	2.375	0603	79.38	82.10	40.48	40.48
34	0340	53.98	52.00	33.34	11.99	2.500	0635	82.55	84.60	40.48	40.48
35	0350	53.98	52.00	33.34	11.99	2.625	0666	92.08	88.60	49.21	49.21
38	0380	57.15	55.60	33.34	11.99	2.750	0698	95.25	92.00	49.21	49.21
40	0400	60.33	59.20	33.34	11.99	2.875	0730	98.43	95.20	52.39	52.39
41	0410	60.33	59.20	33.34	11.99	3.000	0762	101.60	102.70	52.39	52.39
42	0420	63.50	65.10	40.48	11.99	3.125	0794	111.15	104.00	55.56	55.56
43	0430	63.50	65.10	40.48	11.99	3.250	0825	114.30	104.00	55.56	55.56
44	0440	63.50	65.10	40.48	11.99	3.375	0857	117.48	108.00	55.56	55.56
45	0450	63.50	65.10	40.48	11.99	3.500	0889	120.65	112.00	55.56	55.56
48	0480	66.68	66.70	40.48	11.99	3.625*	0921	123.83	114.00	58.74	58.74
50	0500	69.85	71.00	40.48	13.50	3.750	0953	127.00	119.00	58.74	58.74
53	0530	73.03	73.30	40.48	13.50	3.875*	0984	130.20	121.00	61.91	61.91
55	0550	76.20	78.60	40.48	13.50	4.000	1016	133.35	124.00	61.91	61.91
58	0580	79.38	82.10	40.48	13.50						
60	0600	79.38	82.10	40.48	13.50						
63	0630	82.55	84.60	40.48	13.50						
65	0650	92.08	88.60	49.21	15.88						
70	0700	95.25	90.00	49.21	15.88						
75	0750	101.60	102.70	52.39	15.88						
80	0800	114.30	104.00	55.56	19.88						
85	0850	117.48	108.00	55.56	19.88						
90	0900	123.83	112.00	55.56	19.88						
95	0950	127.00	119.00	58.74	19.88						
100	1000	133.35	124.00	61.91	19.88						

Dimensions in mm
*Non-stock guarantee



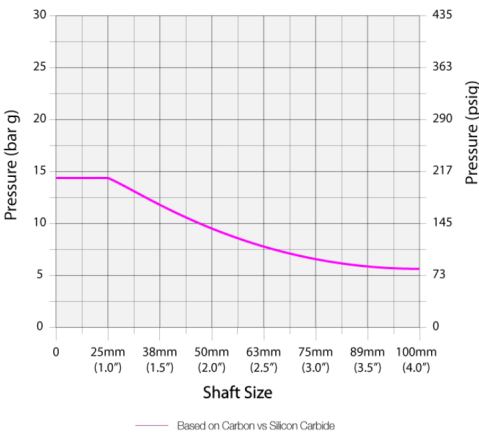
Maximum Operating Pressure

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 20

- A. Shaft size: 38mm therefore pressure is 12 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 20 seal size, the calculation for the approximate guidance maximum operating pressure would be:

A x B x C x D x E
12 bar x 0.85 x 1.00 x 1.00 x 1.00 = 10.20 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.