



## Vulcan Seals Type 20H

### Technical Data Sheet



#### Product Description

The Vulcan Seals Type 20H 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 21 'O'-ring stationary with anti-rotation provision suitable for common metric and imperial UK and European regular length seal chambers.

#### Why Choose the Vulcan Seals Type 20H?

- Proficient diaphragm bellows design with dimensions to suit common UK metric or imperial regular length seal chambers.
- 'O'-ring stationary with anti-rotation provision provides security in high-torque applications such as viscous or high solids medias.
- 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	304 Stainless Steel	Q
VCP1 Carbon	VIN1 Ni-Resist	F
VCP1 Carbon	VSR1 Silicon Carbide	D
VCP1 Carbon	VTN1* Tungsten Carbide	E
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
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 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

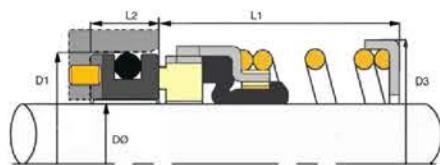
Vulcan Seals Type 20H is a dimensional replacement mechanical seal for the following seal ranges:

- John Crane® | Type 21/W\*
- John Crane® | Type 21/WM\*

\*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](http://www.vulcanseals.com) | [contact@vulcanseals.com](mailto:contact@vulcanseals.com)

**Dimensional Data**

DØ (Imperial)	Seal Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
0.375	0095	24.60	21.80	25.40	8.74
0.500	0127	27.79	23.50	25.40	8.74
0.625	0158	30.95	27.00	25.40	10.32
0.750	0191	34.15	30.70	25.40	10.32
0.875	0222	37.30	33.40	25.40	10.32
1.000	0254	40.50	43.20	25.40	10.32
1.125	0286	47.63	45.60	33.34	11.99
1.250	0317	50.80	48.30	33.34	11.99
1.375	0349	53.98	52.00	33.34	11.99
1.500	0381	57.15	55.60	33.34	11.99
1.625	0412	60.33	59.20	33.34	11.99
1.750	0444	63.50	65.10	40.48	11.99
1.875	0476	66.68	66.70	40.48	11.99
2.000	0508	69.85	73.30	40.48	13.50
2.125	0539	73.03	73.30	40.48	13.50
2.250	0571	76.20	78.60	40.48	13.50
2.375	0603	79.38	82.10	40.48	13.50
2.500	0635	82.55	84.60	40.48	13.50
2.625	0666	92.08	88.60	49.21	15.88
2.750	0698	95.25	90.00	49.21	15.88
2.875	0730	98.43	95.20	52.39	15.88
3.000	0762	101.60	102.70	52.39	15.88
3.125*	0793	111.15	104.00	55.56	19.88
3.250*	0825	114.30	104.00	55.56	19.88
3.375*	0857	117.48	108.00	55.56	19.88
3.500*	0889	120.65	112.00	55.56	19.88
3.625*	0921	123.83	114.00	58.74	19.88
3.750*	0953	127.00	119.00	58.74	19.88
3.875*	0984	130.20	121.00	61.91	19.88
4.000*	1016	133.35	124.00	61.91	19.88

Dimensions in mm

Metric shaft size also available, use size code as a reference

\*Non-stock guarantee



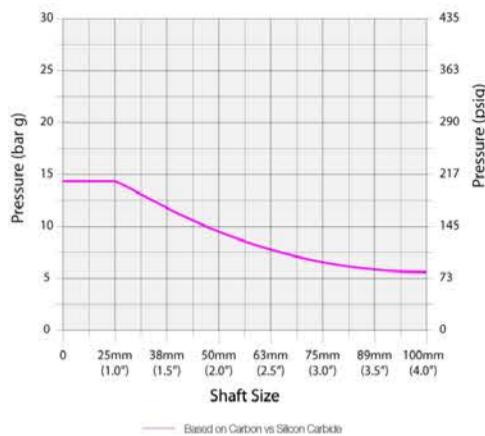
## Maximum Operating Pressure

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 20H

- 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 20H seal size, the calculation for the approximate guidance maximum operating pressure would be:

$$A \times B \times C \times D \times E \\ 12 \text{ bar} \times 0.85 \times 1.00 \times 1.00 \times 1.00 = 10.20 \text{ bar}$$

## Face and Seat Materials

Combination	Multiplier
Carbon vs Ceramic	x 0.50
Carbon vs Stainless Steel	x 0.30
Carbon vs Ni-Resist	x 0.30
Carbon vs Silicon Carbide	x 1.00
Carbon vs Tungsten Carbide	x 0.90
Silicon Carbide vs Silicon Carbide	x 0.50
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.