



# Vulcan Conical Spring 'O'-Ring Mounted Type Seals

3



**Section 3**



## Introduction

The Conical Spring 'O'-Ring Mounted Type Seals offered by Vulcan are extremely popular Seals. These robust, technically proficient Seals are designed to suit DIN and common, standard housing dimensions.

## Applications

The proven efficient design and wide choice of 'O'-Ring and face materials enable these Seals to be utilised in a large variety of applications. Suited for Pumps, mixers, agitators, compressors and other rotary shaft equipment.

## Standard Vulcan® Conical Spring Types

### Type 8, 8DIN, 8DINS, 82 and 126

Inserted rotary faced, 'O'-Ring mounted, conical spring shaft Seals, to suit standard European or DIN fitting dimensions. The Type 82 is a stepped shaft balanced version of Type 8DIN. Type 126 is a Type 8DINS Seal and seat assembly modified to DIN24960 (EN12756) L1K working length that is also available with Monolithic Stainless Steel head, see below.

### Type 8B and 126

'O'-Ring mounted, conical spring Seals Seal of similar design to the standard Type 8, but with a Monolithic Stainless Steel head and Carbon stationary. Type 126 is to full DIN24960 (EN12756) dimension compatibility, L1K working length.

### Type 9

Conical spring, 'O'-Ring mounted Seal, with a Monolithic Seal head and Type 8.STD stationary

### Type 12 and Type 12DIN

'O'-Ring mounted, conical spring Seals, available with a Monolithic stainless head as standard, or an inserted SiC / T.C. ring face. Suitable for standard or DIN housings.

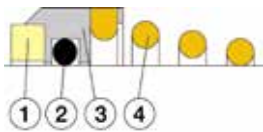
### Type 13 and Type 13DIN

'O'-Ring mounted, conical spring Seals with pressed in, 'O'-Ring mounted, rotary face, enabling face material interchange ability, to suit common European or DIN dimensions.

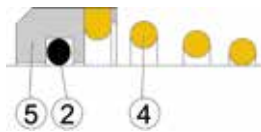
### Type 7D

'O'-Ring mounted, conical spring Seal with pressed in, 'O'-Ring mounted, rotary face, with a machined head retainer. Supplied as standard with Type 7D stationary to suit DIN housings.

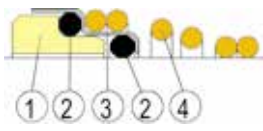
## Standard Components



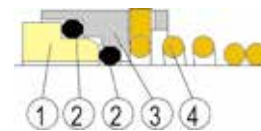
Types 8/8DIN And 126 (Inserted Face)



Types 8B, 9, 12/12DIN And 126 (Mono Face)



Types 13/13DIN



Type 7D

No	Description	3	Retainer
1	Face Ring	4	Coil
2	'O'-Ring	5	Monolithic Face

## Vulcan® Design Advantages

### Positive Drive

Seal is shaft driven, via the coil, providing a positive drive at its base and eliminating common drive pin failures.

Standard springs are right hand wound for clockwise shafts. Please specify left hand coils for anti-clockwise shaft or left hand side of "back to back" combinations. The spring coil end is turned upwards to protect the shaft from scoring.

### Materials

Suitable for a large variety of applications, through a wide choice of 'O'-Ring and face materials. Stock Guaranteed materials are shown on each Type page.

### Design

Single conical spring, Stainless Steel, head retainer provides a strong and effective Seal, suitable for many duties, including clogging media and hygienic applications.

### Self-Aligning

The combination of a resilient 'O'-Ring and single spring design results in a technically efficient and versatile design, that accommodates both misalignment and vibrations.

### 'O'-Ring Housing

The 'O'-Ring is held within a completely recessed groove providing performance benefits, compared to competitor designs that use a separate drive ring.

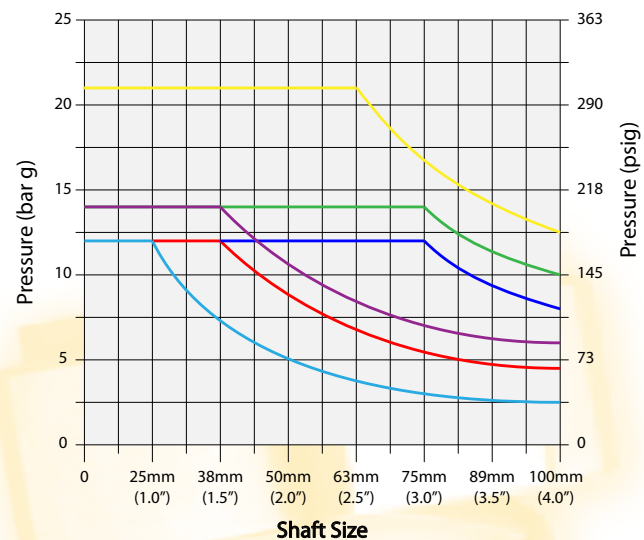
### Customisable

Can be specially produced to any working length and seat housing dimensions.

### Reliable

Robust, non-clogging, self-adjusting and durable giving highly effective performance.

## Vulcan Conical Spring 'O'-Ring Seals PV Chart

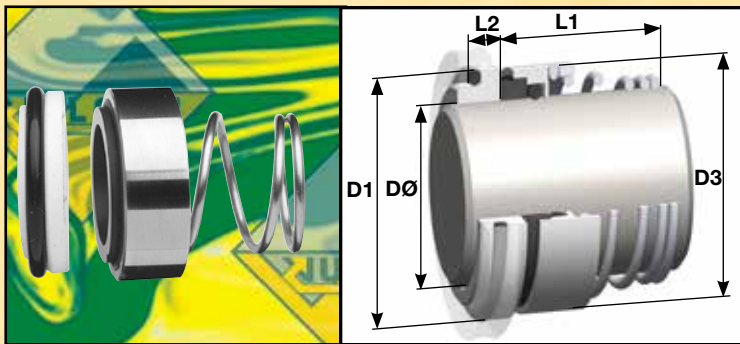


### Chart based upon Material Combinations below

82 - Carbon/SiC	7D,8,8DIN- Carbon/SiC
8B,12,12DIN - Carbon/SS	7D,8,8DIN- Carbon/Cer
9,9L,12,12DIN,13,13DIN- Carbon/SiC	9,9L,12,12DIN,13,13DIN- Carbon/Ceramic



## Type 8



Conical spring, 'O'-Ring mounted, shaft directional dependent Seal with inserted Seal face. Very similar to the Type 8DINS, shown opposite, but with a stationary to suit common European non-din housings.

Suitable for a wide variety of general, or even medium and heavy duty applications, through a choice of Seal and seat face materials. Type 8 is supplied with a Type 8 STD stationary as standard or maybe ordered as a Seal only to fit a variety of Stationaries.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	19.20	19.00	15.50	6.60
12	0120	21.60	21.00	15.50	5.60
14	0140	24.60	23.00	15.50	5.60
15	0150	24.60	24.00	15.50	6.60
16	0160	28.00	26.00	17.50	7.50
18	0180	30.00	29.00	18.50	8.00
19	0190	31.00	31.00	20.00	7.50
20	0200	35.00	31.00	20.00	7.50
22	0220	35.00	33.00	21.50	7.50
24	0240	38.00	35.00	23.00	7.50
25	0250	38.00	36.00	24.50	7.50
26	0260	40.00	37.00	24.50	8.00
28	0280	42.00	40.00	24.50	9.00
30	0300	45.00	43.00	24.50	10.50
32	0320	48.00	46.00	28.00	10.50
33	0330	50.00	46.00	28.00	11.00
35	0350	52.00	50.00	28.00	11.00
38	0380	55.00	53.00	31.00	10.30
40	0400	58.00	56.00	34.00	10.80
42	0420	62.00	59.00	35.00	12.00
43	0430	62.00	59.00	35.00	12.00
45	0450	64.00	61.00	36.50	11.60
48	0480	68.40	64.00	42.00	11.60
50	0500	69.30	66.00	43.00	11.60
55	0550	75.40	71.00	47.00	13.30
58	0580	78.40	76.00	50.00	13.30
60	0600	80.40	78.00	51.00	13.30
65	0650	85.40	84.00	52.00	13.00
70	0700	92.00	90.00	54.00	13.00
75	0750	99.00	98.00	55.00	14.00
80	0800	104.00	100.00	58.00	15.00

All Types, sizes and materials shown are part of Vulcan's Guaranteed Ex-Stock Range, unless marked with an asterisk\*.

However, the asterisked Seal and / or seat face materials are stocked in many, but not all, sizes.

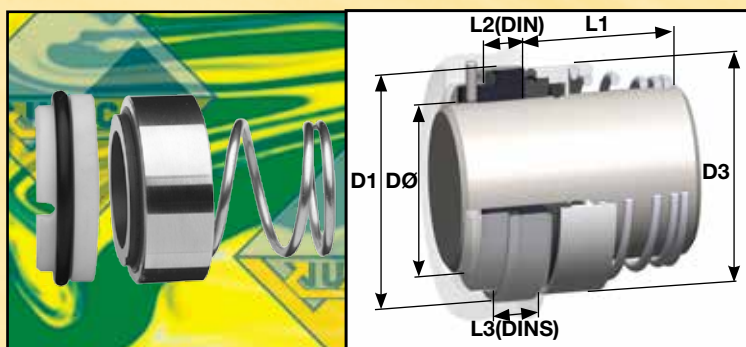
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	C	M106K Carbon	C	99% Ceramic	A
Soft vs Hard	D	M106K Carbon	C	VES2 RB SIC	S
Hard vs Soft	T	VES2 RB SIC	S	M106K Carbon*	P
Hard	S	VES2 RB SIC	S	VES2 RB SIC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		

### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.



## Types 8DIN / 8DINS



Conical spring, 'O'-Ring mounted, shaft directional dependent Seal with inserted Seal face and stationary to suit DIN housings. Type 8DIN has a 8DIN LONG stationary with anti-rotation provision, Type 8DINS has an 8 DIN SHORT stationary.

A widely specified Seal type, highly suitable for general and even heavy duty applications, through a combination of a proficient design with a choice of face materials.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	8 DIN Seat L2 (mm)	8 DINS Seat L3 (mm)	8 DIN Slot Width (mm)	8 DIN Slot Depth (mm)
10	0100	21.00	19.00	15.50	10.00	6.60	4.00	5.00
12	0120	23.00	21.00	16.00	10.00	6.60	4.00	5.00
14	0140	25.00	23.00	16.50	10.00	6.60	4.00	5.00
16	0160	27.00	26.00	18.00	10.00	6.60	4.00	5.00
18	0180	33.00	29.00	19.50	11.50	7.50	4.00	5.50
20	0200	35.00	31.00	22.00	11.50	7.50	4.00	5.50
22	0220	37.00	33.00	21.50	11.50	7.50	4.00	5.50
24	0240	39.00	35.00	23.50	11.50	7.50	4.00	5.50
25	0250	40.00	36.00	26.50	11.50	7.50	4.00	5.50
28	0280	43.00	40.00	26.50	11.50	7.50	4.00	5.50
30	0300	45.00	43.00	26.50	11.50	7.50	4.00	5.50
32	0320	48.00	46.00	28.50	11.50	7.50	4.00	5.50
33	0330	48.00	46.00	28.50	11.50	7.50	4.00	5.50
35	0350	50.00	50.00	28.50	11.50	7.50	4.00	5.50
38	0380	56.00	53.00	33.50	14.00	9.00	5.00	5.50
40	0400	58.00	56.00	36.00	14.00	9.00	5.00	5.50
43	0430	61.00	59.00	38.50	14.00	9.00	5.00	5.50
45	0450	63.00	61.00	39.50	14.00	9.00	5.00	5.50
48	0480	66.00	64.00	46.00	14.00	9.00	5.00	5.50
50	0500	70.00	66.00	45.00	15.00	9.50	5.00	5.50
53	0530	73.00	69.00	47.00	15.00	11.00	5.00	5.50
55	0550	75.00	71.00	49.00	15.00	11.00	5.00	5.50
58	0580	78.00	76.00	55.00	15.00	11.00	5.00	5.50
60	0600	80.00	78.00	55.00	15.00	11.00	5.00	5.50
63	0630	83.00	81.00	55.00	15.00	11.00	5.00	5.50
65	0650	85.00	84.00	55.00	15.00	11.00	5.00	5.50
68	0680	90.00	88.00	55.00	18.00	11.30	5.00	5.50
70	0700	92.00	90.00	57.00	18.00	11.30	5.00	5.50
75	0750	97.00	98.00	62.00	18.00	11.30	5.00	5.50
80	0800	105.00	100.00	61.80	18.20	12.00	5.00	5.50

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However, the asterisked Seal and / or seat face materials are stocked in many, but not all, sizes.

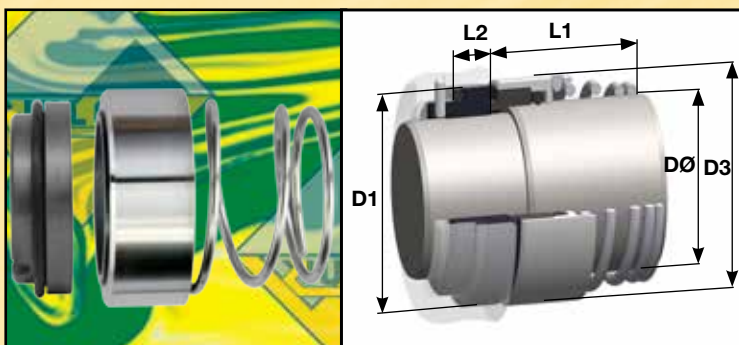
### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.

Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	C	M106K Carbon	C	99% Ceramic	A
Soft vs Hard	D	M106K Carbon	C	VES2 RB SiC	S
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon*	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		



## Type 82



Conical spring, 'O'-Ring mounted, stepped-shaft, balanced, shaft directional dependent Seal. Supplied as standard with Type 8 DIN LONG stationary with anti-rotation provision. The standard seat size for each Seal size is shown in the table below.

This balanced Seal arrangement is suitable for a wide variety of general and heavy duty applications, where the shaft sealing area has been designed to accommodate a stepped shaft Seal.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Seal Size Code	Seat Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)	Slot Width (mm)	Slot Depth (mm)
16	0160	0120	23.00	26.00	26.50	10.00	4.00	5.00
18	0180	0140	25.00	29.00	29.50	10.00	4.00	5.00
20	0200	0160	27.00	31.00	31.00	10.00	4.00	5.00
22	0220	0180	33.00	33.00	32.50	11.50	4.00	5.50
24*	0240	0200	35.00	35.00	32.50	11.50	4.00	5.50
28	0280	0240	39.00	40.00	32.50	11.50	4.00	5.50
30	0300	0250	40.00	43.00	33.50	11.50	4.00	5.50
33	0330	0280	43.00	46.00	35.50	11.50	4.00	5.50
35	0350	0300	45.00	49.00	35.50	11.50	4.00	5.50
38	0380	0330	48.00	53.00	39.50	11.50	5.00	5.50
40	0400	0350	50.00	56.00	43.50	11.50	5.00	5.50
43	0430	0380	56.00	59.00	46.00	14.00	5.00	5.50
45	0450	0400	58.00	61.00	48.00	14.00	5.00	5.50
50	0500	0450	63.00	66.00	55.00	14.00	5.00	5.50
53	0530	0480	66.00	69.00	55.00	14.00	5.00	5.50
55	0550	0500	70.00	71.00	58.00	15.00	5.00	5.50
60	0600	0550	75.00	78.00	60.00	15.00	5.00	5.50
63	0630	0580	78.00	81.00	60.00	15.00	5.00	5.50
65	0650	0600	80.00	84.00	60.00	15.00	5.00	5.50
70*	0700	0650	85.00	90.00	61.00	15.00	5.00	5.50
75*	0750	0700	92.00	98.00	63.00	18.00	5.00	5.50
80*	0800	0750	97.00	100.00	68.00	18.00	5.00	5.50
85*	0850	0800	105.00	107.50	68.00	18.00	5.00	5.50

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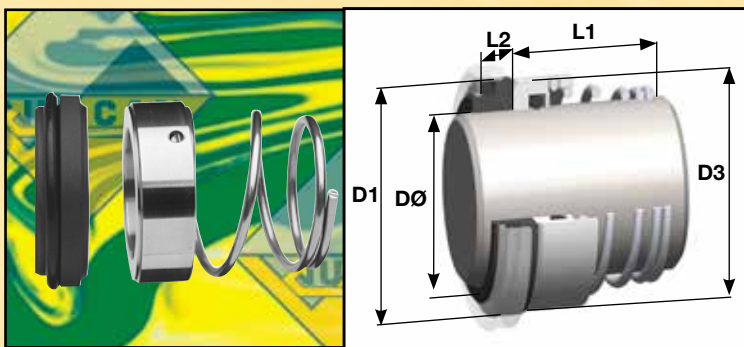
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	C	M106K Carbon	C	99% Ceramic	A
Soft vs Hard	D	M106K Carbon	C	VES2 RB SiC	S
Hard vs Soft	G	VES2 RB SiC	S	99% Ceramic	A
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		

### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.



## Type 8B



Conical spring, 'O'-Ring mounted, shaft directional dependent Seal and stationary of similar design to the Type 8, but with a solid stainless steel head and 'O'-Ring mounted carbon stationary. Type 8B Seal is supplied with a Type 8B seat as standard.

A highly proficient, economical Seal for general duties. For more demanding duties, you may specify a Type 8 Seal, with a choice of inserted faces.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	19.20	19.00	15.50	7.10
12	0120	21.60	21.00	15.50	7.60
14	0140	24.60	23.00	15.50	7.60
15	0150	24.60	24.00	15.50	8.60
16	0160	28.00	26.00	17.50	9.00
18	0180	30.00	29.00	18.50	10.00
19	0190	31.00	31.00	20.00	9.00
20	0200	35.00	31.00	20.00	9.50
22	0220	35.00	33.00	21.50	9.50
24	0240	38.00	35.00	23.00	9.50
25	0250	38.00	36.00	24.50	9.50
26	0260	40.00	37.00	24.50	10.00
28	0280	42.00	40.00	24.50	11.00
30	0300	45.00	43.00	24.50	11.00
32	0320	48.00	46.00	28.00	11.00
35	0350	52.00	49.00	28.00	11.50
38	0380	55.00	53.00	31.00	11.50
40	0400	58.00	56.00	34.00	11.50
42	0420	62.00	59.00	35.00	14.30
43	0430	62.00	59.00	35.00	14.30
45	0450	64.00	61.00	36.50	14.30
48	0480	68.40	64.00	42.00	14.30
50	0500	69.30	66.00	43.00	14.30
55	0550	75.40	72.00	47.00	15.30
60	0600	80.40	78.00	51.00	15.30
65	0650	85.40	84.00	52.00	15.30
68	0680	91.50	88.00	53.00	16.00
70	0700	92.00	90.00	54.00	15.30
75	0750	99.00	98.00	55.00	15.30
80	0800	104.00	100.00	58.00	16.30

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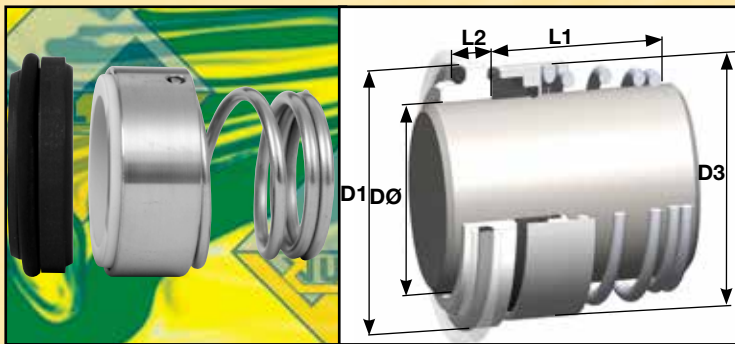
### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.

Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	P	304 Stainless Steel	P	M106K Carbon	P
Soft vs Hard	PS	304 Stainless Steel	P	VES2 RB SIC*	S
Hard vs Soft	X	Non-standard: Please use alternative shown here or enquire			
Hard	S	VES2 RB SIC*	S	VES2 RB SIC*	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		



## Type 7D



Resilient, conical spring, 'O'-Ring mounted, shaft directional dependent Seal with a stationary to suit DIN housings.

The 'O'-Ring mounted Seal face offers enhanced versatility and performance.

Type 7D is supplied with a Type 7D stationary as shown, as standard.

Also available as Type 7, from stock in common sizes, with increased "L1" working length and Type 12 stationary. Details and data-sheet are available upon request.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
12	0120	23.00	21.00	18.00	7.00
14	0140	25.00	23.00	22.00	7.00
16	0160	27.00	26.00	23.00	7.00
18	0180	33.00	29.00	24.00	10.00
20	0200	35.00	31.00	25.00	10.00
22	0220	37.00	33.00	25.00	10.00
24	0240	39.00	35.00	27.00	10.00
25	0250	40.00	36.00	27.00	10.00
28	0280	43.00	40.00	29.00	10.00
30	0300	45.00	43.00	30.00	10.00
32	0320	48.00	46.00	30.00	10.00
33	0330	48.00	46.00	39.00	10.00
35	0350	50.00	49.00	39.00	10.00
38	0380	56.00	53.00	42.00	13.00
40	0400	58.00	56.00	42.00	13.00
43	0430	61.00	59.00	47.00	13.00
45	0450	63.00	61.00	47.00	13.00
50	0500	70.00	66.00	46.00	14.00
55	0550	75.00	71.00	56.00	14.00
58*	0580	78.00	76.00	56.00	14.00
60*	0600	80.00	78.00	56.00	14.00
63*	0630	83.00	81.00	56.00	14.00
65*	0650	85.00	84.00	66.00	14.00
68*	0680	90.00	88.00	64.00	16.00
70*	0700	92.00	89.60	64.00	16.00
75*	0750	97.00	98.00	64.00	16.00
80*	0800	105.00	100.00	72.00	18.00
85*	0850	110.00	107.50	72.00	18.00
90*	0900	115.00	111.00	72.00	18.00
95*	0950	120.00	119.00	72.00	18.00
100*	1000	125.00	123.80	72.00	18.00

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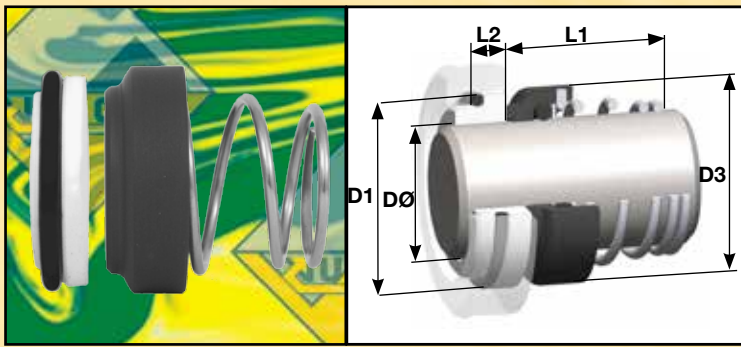
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	B	99% Ceramic	B	M106K Carbon	P
Soft vs Hard	X	Non-standard: Please use alternative shown here or enquire			
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton <sup>®</sup> , E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		

### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.



## Type 9



Conical spring, 'O'-Ring mounted, shaft directional dependent Seal, with a monolithic rotary head. Supplied as standard with Type 8 STD stationary to suit European non-din housing sizes.

Simple but effective, economical design makes this Seal suitable for a wide variety of lighter and general duty applications. The monolithic Seal head provides enhanced heat dissipation away from the Seal faces.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	19.20	20.00	15.90	6.60
12	0120	21.60	22.00	16.00	5.60
14	0140	24.60	25.00	16.00	5.60
15	0150	24.60	27.00	17.40	6.60
16	0160	28.00	27.00	19.00	7.50
18	0180	30.00	30.00	20.50	8.00
20	0200	35.00	32.00	22.00	7.50
22	0220	35.00	35.00	23.50	7.50
24	0240	38.00	38.00	25.00	7.50
25	0250	38.00	40.00	26.50	7.50
28	0280	42.00	43.00	26.50	9.00
30	0300	45.00	45.00	25.00	10.50
32	0320	48.00	47.00	28.50	10.50
35	0350	52.00	50.00	28.50	11.00
38	0380	55.00	56.00	32.00	10.30

All Types, sizes and materials shown are part of Vulcan's Guaranteed Ex-Stock Range, unless marked with an asterisk\*.

However, the asterisked Seal and / or seat face materials are stocked in many, but not all, sizes.

### Suggested Operating Limits

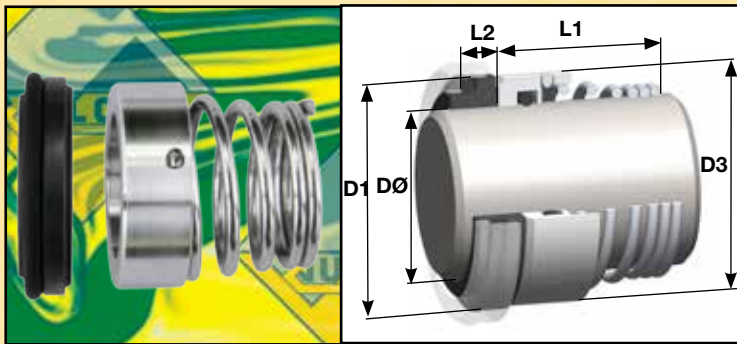
Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.

Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	C	M106K Carbon	C	99% Ceramic	A
Soft vs Hard	D	M106K Carbon	C	VES2 RB SIC	S
Hard vs Soft	X	Non-standard: Please use alternative shown here or enquire			
Hard	S	VES2 RB SIC*	S	VES2 RB SIC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		





## Type 12



A range of highly proficient, widely utilised, 'O'-Ring mounted, shaft directional dependent, conical spring Seals, supplied routinely with a solid stainless steel head and a carbon Type 12 stationary, to suit non-din, originally Italian, housing dimensions.

Efficient, popular designs for a wide choice of general duties or available with inserted Carbide ring faces for more demanding applications. For image and diagram, please see Type 12DIN on facing page.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	18.10	19.00	15.00	5.50
12	0120	20.60	21.00	18.00	5.50
13	0130	23.10	23.00	22.00	6.00
14	0140	23.10	23.00	22.00	6.00
15	0150	26.90	24.00	22.00	7.00
16	0160	26.90	26.00	23.00	7.00
17	0170	26.90	26.00	23.00	7.00
18	0180	30.90	29.00	24.00	8.00
19	0190	30.90	31.00	25.00	8.00
20	0200	30.90	31.00	25.00	8.00
22	0220	35.40	33.00	25.00	8.00
24	0240	35.40	35.00	27.00	8.00
25	0250	38.20	36.00	27.00	8.50
26	0260	38.20	36.00	27.00	8.50
28	0280	43.30	40.00	29.00	9.00
30	0300	43.30	43.00	30.00	9.00
32	0320	43.30	46.00	30.00	9.00
33	0330	53.50	46.00	39.00	11.50
34	0340	53.50	49.00	39.00	11.50
35	0350	53.50	49.00	39.00	11.50
38	0380	60.50	53.00	39.00	11.50
39	0390	60.50	56.00	39.00	11.50
40	0400	60.50	56.00	39.00	11.50
42	0420	60.50	59.00	39.00	11.50
43	0430	60.50	59.00	39.00	11.50
44	0440	65.50	61.00	41.00	11.50
45	0450	65.50	61.00	41.00	11.50
48	0480	65.50	64.00	41.00	11.50
50	0500	72.50	66.00	45.00	11.50
55	0550	72.50	71.00	47.00	11.50
60	0600	79.30	78.00	49.00	11.50
65	0650	84.50	84.00	51.00	11.50
70	0700	89.50	89.60	51.00	11.50
75	0750	94.50	98.00	57.00	11.50
80	0800	99.50	100.00	59.00	11.50
85	0850	105.50	107.50	59.00	13.50
90	0900	111.50	111.00	62.00	13.50
95	0950	116.50	119.00	62.00	13.50
100	1000	119.50	123.80	75.00	13.50

All Types, sizes and materials shown are part of Vulcan's Guaranteed Ex-Stock Range, unless marked with an asterisk\*. However, the asterisked Seal and / or seat face materials are stocked in many, but not all, sizes.

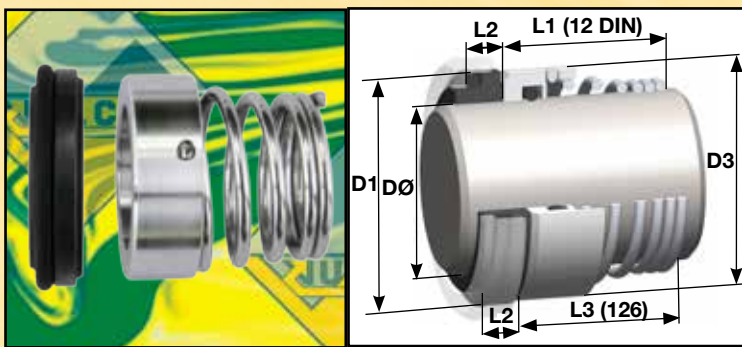
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	P	304 Stainless Steel	P	M106K Carbon	P
Soft vs Hard	PS	304 Stainless Steel	P	VES2 RB SiC	S
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		

### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.



# Types 12DIN / 126



A range of highly proficient, 'O'-Ring mounted, shaft directional dependent, conical spring Seals. Available as Type 12DIN with Stationaries to suit DIN housings, or as Type 126 to full DIN24960 (EN12756) L1K dimensions.

Both Types have monolithic stainless steel heads and Type 12DIN carbon Stationaries as standard, with inserted carbide heads and monolithic Stationaries available for more demanding applications.



## Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	Type 12DIN L1 (mm)	Type 126 L3 (mm)	L2 (mm)
10*	0100	21.00	19.00	15.00	25.50	7.00
12	0120	23.00	21.00	18.00	25.50	7.00
14	0140	25.00	23.00	22.00	28.00	7.00
16	0160	27.00	26.00	23.00	28.00	7.00
18	0180	33.00	29.00	24.00	27.50	10.00
20	0200	35.00	31.00	25.00	27.50	10.00
22	0220	37.00	33.00	25.00	27.50	10.00
24	0240	39.00	35.00	27.00	30.00	10.00
25	0250	40.00	36.00	27.00	30.00	10.00
28	0280	43.00	40.00	29.00	32.50	10.00
30	0300	45.00	43.00	30.00	32.50	10.00
32	0320	48.00	46.00	30.00	32.50	10.00
33	0330	48.00	46.00	39.00	32.50	10.00
35	0350	50.00	49.00	39.00	32.50	10.00
38	0380	56.00	53.00	42.00	32.00	13.00
40	0400	58.00	56.00	42.00	32.00	13.00
43	0430	61.00	59.00	47.00	32.00	13.00
45	0450	63.00	61.00	47.00	32.00	13.00
48	0480	66.00	64.00	47.00	32.00	13.00
50	0500	70.00	66.00	46.00	33.50	14.00
53	0530	73.00	69.00	56.00	33.50	14.00
55	0550	75.00	71.00	56.00	33.50	14.00
58	0580	78.00	76.00	56.00	38.50	14.00
60	0600	80.00	78.00	56.00	38.50	14.00
63	0630	83.00	81.00	56.00	N/A	14.00
65	0650	85.00	84.00	66.00	38.50	14.00
68	0680	90.00	88.00	64.00	N/A	16.00
70	0700	92.00	89.60	64.00	44.00	16.00
75	0750	97.00	98.00	64.00	44.00	16.00
80	0800	105.00	100.00	72.00	42.00	18.00
85	0850	110.00	107.50	72.00	42.00	18.00
90	0900	115.00	111.00	72.00	47.00	18.00
95	0950	120.00	119.00	72.00	47.00	18.00
100	1000	125.00	123.80	72.00	47.00	18.00

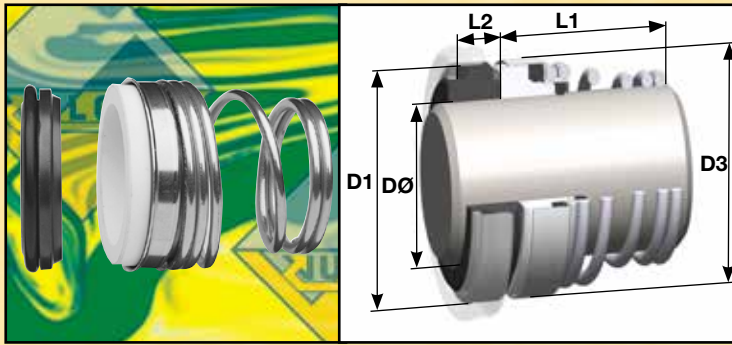
Please note: Type 12DIN is guaranteed ex-stock in every right hand shaft size shown to 100mm and in all guaranteed materials. Type 126 is guaranteed ex-stock in all right hand sizes and materials shown, unless the size is asterisked\*. However, most Asterisked 126 sizes are stocked in some, but not all, materials. And the asterisked T.C. Material in many sizes.

Type 12DIN					
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	P	304 Stainless Steel	P	M106K Carbon	P
Soft vs Hard	PS	304 Stainless Steel	P	VES2 RB SiC	S
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		

Type 126					
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	P	316 Stainless Steel	P	M106K Carbon	P
Soft vs Hard	PS	316 Stainless Steel	P	VES2 RB SiC	S
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 316SS		



## Type 13



'O'-Ring mounted, conical spring, shaft directional dependent Seal, with pressed stainless steel head retainer and 'O'-Ring mounted Seal and stationary faces.

Seal and stationary faces can be readily changed and replaced. Supplied with a Type 13 stationary to suit non-din common, originally Italian housing dimensions.

Simple but effective, economical design makes this Seal suitable for a wide variety of lighter and general duty applications.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	18.10	19.50	15.00	5.50
11	0110	20.60	22.00	18.00	5.50
12	0120	20.60	22.00	18.00	5.50
13	0130	23.10	24.00	22.00	6.00
14	0140	23.10	24.00	22.00	6.00
15	0150	26.90	26.00	22.00	7.00
16	0160	26.90	26.00	23.00	7.00
17	0170	26.90	26.00	23.00	7.00
18	0180	30.90	32.00	24.00	8.00
19	0190	30.90	32.70	25.00	8.00
20	0200	30.90	32.70	25.00	8.00
21	0210	35.40	36.00	25.00	8.00
22	0220	35.40	36.00	25.00	8.00
23	0230	35.40	36.00	27.00	8.00
24	0240	35.40	37.40	27.00	8.00
25	0250	38.20	38.00	27.00	8.50
28	0280	43.30	42.00	29.00	9.00
30	0300	43.30	44.00	30.00	9.00
32	0320	43.30	45.50	30.00	9.00
33	0330	53.50	46.50	39.00	11.50
35	0350	53.50	49.00	39.00	11.50
38	0380	60.50	56.00	39.00	11.50
40	0400	60.50	58.00	39.00	11.50

All Types, sizes and materials shown are part of Vulcan's Guaranteed Ex-Stock Range, unless marked with an asterisk\*.

However, the asterisked Seal and / or seat face materials are stocked in many, but not all, sizes.

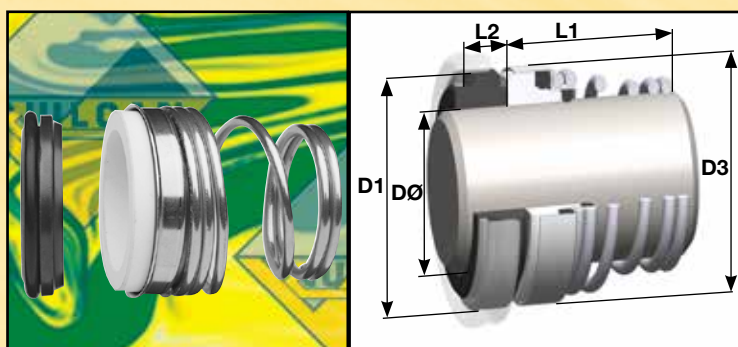
Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	B	99% Ceramic	B	M106K Carbon	P
Soft vs Hard	X	Non-standard: Please use alternative shown here or enquire			
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton <sup>®</sup> , E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		

### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.



## Type 13DIN



'O'-Ring mounted, conical spring, shaft directional dependent Seal, with pressed stainless steel head retainer and 'O'-Ring mounted Seal and stationary faces.

Seal and seat faces can be readily changed and replaced. Supplied with Type 13DIN stationary as standard, to suit DIN housing dimensions.

Simple but effective, economical design makes this Seal suitable for a wide variety of lighter and general duty applications.

### Vulcan Standard Sizes

Metric Shaft Size DØ	Size Code	D1 (mm)	D3 (mm)	L1 (mm)	L2 (mm)
10	0100	21.00	19.50	15.00	7.00
12	0120	23.00	22.00	18.00	7.00
14	0140	25.00	24.00	22.00	7.00
16	0160	27.00	26.00	23.00	7.00
18	0180	33.00	32.00	24.00	10.00
20	0200	35.00	32.70	25.00	10.00
22	0220	37.00	36.00	25.00	10.00
24	0240	39.00	37.40	27.00	10.00
25	0250	40.00	38.00	27.00	10.00
28	0280	43.00	42.00	29.00	10.00
30	0300	45.00	44.00	30.00	10.00
32	0320	48.00	45.50	30.00	10.00
33	0330	48.00	46.50	39.00	10.00
35	0350	50.00	49.00	39.00	10.00
38	0380	56.00	56.00	42.00	13.00
40	0400	58.00	58.00	42.00	13.00

All Types, sizes and materials shown are part of Vulcan's Guaranteed Ex-Stock Range, unless marked with an asterisk\*.

However, the asterisked Seal and / or seat face materials are stocked in many, but not all, sizes.

### Suggested Operating Limits

Maximum Operating Pressure Limits primarily depend upon Face Materials, Shaft Size, Speed and Media. Please refer to the Seal Type Specific PV Chart, found at the front of this Brochure Section, in combination with the Vulcan Multiplying Factors found in Technical and Material Standards Section 2.

Guaranteed Stock Materials and Face Material Code					
Seal And Seat Assembly		Rotary Face		Stationary Face	
Face Reference Term	Code	Material	Code	Material	Code
Soft	B	99% Ceramic	B	M106K Carbon	P
Soft vs Hard	X	Non-standard: Please use alternative shown here or enquire			
Hard vs Soft	T	VES2 RB SiC	S	M106K Carbon	P
Hard	S	VES2 RB SiC	S	VES2 RB SiC	S
Hard 1st alt	H	Tungsten Carbide*	H	Tungsten Carbide*	H
Guaranteed Stock Elastomers: Viton™, E.P. and Nitrile			Guaranteed Stock Metallurgy: 304SS		