



# Vulcan Stock Food, Beverage And Dairy Seals

Vulcan offer a comprehensive range of direct replacement seals to suit all common and widely utilised pumps in the global food process, beverage and dairy industries. All seals are manufactured to our exacting highest standards, utilising the highest quality materials and can be retrofitted, as direct design replacements, to the original O.E.M. Pumps without modification.

The Range illustrated in this section is guaranteed available from stock but represents only part of the complete design and stock profile available. Within this range, Vulcan also manufacture a series of seals specified to be compliant with FDA, 3-A Sanitary standards and European E.C. Food Industry Regulations. Our seal designs and materials are not only compliant, they reduce growths, contamination and provide superior, assured sealing. For more information, please refer to the following pages.



## Section

# 11C



## E.C. FOOD INDUSTRY REGULATIONS AND 3-A SANITARY / FDA REQUIREMENTS: MATERIALLY COMPLIANT SEALS FROM VULCAN

Vulcan offer from stock all common food and dairy seals, specified and specifically manufactured to be complaint with F.D.A. and E.C. Food Industry Regulations.

The principle underlying European Community (E.C) Regulation Number 1935/2004 "On Materials and Articles Intended to Come into Contact with Food" is that any material or article intended to come into contact directly or indirectly with food, must be sufficiently inert to preclude substances from being transferred to food, in quantities large enough to endanger human health, or to bring about an unacceptable change in the composition of the food, or a deterioration in its organoleptic properties.

Understanding the implications of these regulations is increasingly leading to food industry manufacturers stipulating that all materials, including mechanical seals, that come into contact with food should be made from F.D.A. compliant materials, which comply with the above E.C. Regulations and have full traceability of said materials.

In order to comply with these regulations where specified and as an integral part of Vulcan's standard policy to only offer superior designs and materials, we have made available from stock, all of our market leading range of food industry seals, specified to be manufactured from certified compliant materials to meet U.S. and European Food Industry Regulations.

The materials, production and surface finish of Vulcan's Food Industry Compliant Seals have been carefully specified to meet all of the EHEDG recommendations and F.D.A. or 3-A Sanitary Standard criteria. Full details are available in the materials guideline section of Vulcan's information pack on these seals; please enquire upon our Commercial Technical Department.

This range of Vulcan seals offer superior performance, reliability and life. They are specified to be compliant to the existing known regulations applicable in Europe and North America.

### MATERIAL GUIDELINES

These materials are specified to comply firstly with Part 177 of Title 21 of the Food and Drug Administration Regulations for safe use as articles or components of articles for producing, manufacturing, processing, preparing, treating, packing, transporting or holding food, in accordance with FDA Regulation 21. CFR.177.1550. and 177.2600. Secondly, The Sub Group Mechanical Seals of the European Hygienic Engineering & Design Group (EHEDG), Specification of August 2002, stipulates requirements for component materials of mechanical seals, which come into contact with food.

#### Carbon-Graphite

Vulcan Specification: M825 grade of Carbon, with approval certification available from Vulcan's selected Carbon manufacturer. This Carbon grade is resin impregnated both prior to and subsequent to machining to minimise porosity.

#### Ceramics and Silicon Carbide

Vulcan Specification: Silicon Carbide Faces are considered to be G.R.A.S. (Generally Regarded As Safe). We solely specify our pure sintered Silicon Carbide, C.N.C. ground on all surfaces. Reaction Bonded SiC is not utilised, as the free Silicon is readily attacked by the Caustics in C.I.P. Systems. Vulcan's Ceramic Grade is 99.5% pure, providing better integrity and performance, than the 95/96% pure Ceramics utilised as standard elsewhere.

#### Elastomer Material

Vulcan Specification: Our Elastomer Components and 'O' Rings are moulded from FDA Compliant Material Compounds and manufactured in accordance with Title 21. Code of Federal Regulations – paragraph 177.2600. and 177.1550.

#### Hard Metal

Vulcan Specification: Nickel Bound Tungsten Carbide which is CNC ground on all surfaces to comply.

### Metallurgy

Vulcan Specification: All our metal parts and springs are specified compliant AISI Type 316 austenite Stainless Steel (as specified by EHEDG) and are manufactured on our ILDEMEISTER® and HAAS® machining centres to produce seal part surface finishes of within 0.8 Ra µm. This standard is required to inhibit micro bacterial growth on seal surfaces.

### W.R.A.S.® APPROVED ELASTOMERS AND SEAL FACES

The elastomers and face materials utilised are generally suitable for use in contact with potable water and food processing. The following materials are UK Water Regulation Advisory Scheme Approved: it is necessary for you to specify your requirements upon order and obtain our confirmation.

MATERIAL	VULCAN GRADE	APPROVAL NUMBER	NOTES
SINTERED SILICON CARBIDE	WNV2	1404509	W.R.A.S.® APPROVED SINTERED SILICON CARBIDE.
REACTION BONDED SILICON CARBIDE	VES2	1207529	W.R.A.S.® APPROVED REACTION BONDED SILICON CARBIDE
ALUMINA CERAMIC	V99.CER	1003531	W.R.A.S.® APPROVED CERAMIC.
CARBON	M825	1404508	W.R.A.S.® APPROVED CARBON.
VITON®	V3F. FE2602	1003530	MOULDED COMPONENTS
NITRILE	ME0995	1204551	AVAILABLE FOR 'O'-RINGS ONLY, NOT MOULDED PARTS. PLEASE ASK FOR OTHER NITRILE / E.P. COMPONENTS
E.P.	VEP.MAR.4045	1210518	
PLEASE ASK FOR APPROVAL DETAILS ON OTHER SEAL MATERIALS AND ELASTOMERS.			

Many other countries have their own standards and there are far too many to include all compliances. If you have a specific requirement, please refer to our Commercial Technical Department.

### GUARANTEED STOCK MATERIALS KEY

The guaranteed stock materials for the seals shown in these Sections 11a and 11b are shown utilising a key system. All letters used are Vulcan standard elastomer and face combination codes, please refer to Pages 18 / 19 for more information.

KEY ICON	DESCRIPTION
	Circular icons indicate which elastomers are guaranteed in stock, i.e. "V" for Viton, "N" for Nitrile and "E" for E.P.
	If more than one elastomer is guaranteed, the relevant code letters are shown.
	Hexagonal icons indicate the rotary and stationary face combination codes which are guaranteed in stock. i.e. "C" for Carbon vs Ceramic.
	Seals with multiple guaranteed stock face materials are shown with two or more hexagonal icons.
	Rectangular grey icons indicates the metallurgy utilised within the guaranteed stock seals.
	Rectangular blue icons indicates all seals materials and surface finishes are compliant to F.D.A. / E.C Food Regulations as described and outlined on this page.

The materials codes shown, on each page in this Section 11c following, are solely for our equivalents to the most popular known O.E.M. original seal specifications. Other materials are usually, also in stock or, are readily available.



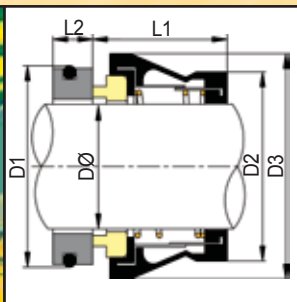


# VULCAN® SEALS FOR ALFA LAVAL® PUMPS

Vulcan make a wide range of seal parts for Alfa Laval® equipment, please contact us with the O.E.M. details for cross-reference and identification.

## TYPE 17B TO SUIT LKR SERIES AGITATORS E D 304

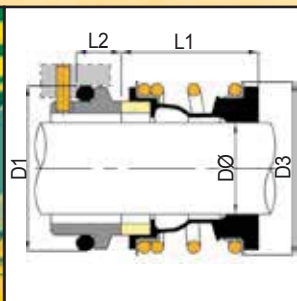
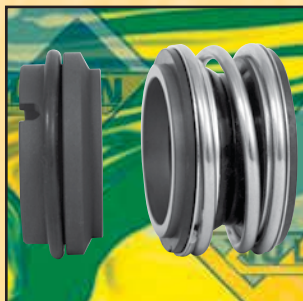
Vulcan manufacture and stock 30mm and 35mm rubber-encased Type 17B seals to suit Alfa Laval® LKR- series agitators.



SHAFT SIZE D0	SIZE CODE	D1	D2	D3	L1	L2
30.00	0300	50.80	45.80	53.00	26.90	11.99
35.00	0350	53.98	52.00	62.00	34.90	11.99

## TYPE 19C TO SUIT ALC SERIES PUMPS NEV T 304 FDA

Vulcan manufacture and stock modified Type 19 style seals to suit Alfa Laval® ALC series pumps, commonly utilised in food and dairy processes. For ALC pumps with flush housings, please see Type 90 on following page. Type 19C is available from stock in all three common elastomers, as well as FDA / E.C. Regulation compliant materials.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2
40.00	0400	58.00	60.00	30.00	14.00
53.00	0530	73.00	76.00	33.00	15.00

## VULCAN® SEALS TO SUIT ALFA LAVAL® CONTHERM® SCRAPED-SURFACE HEAT EXCHANGERS

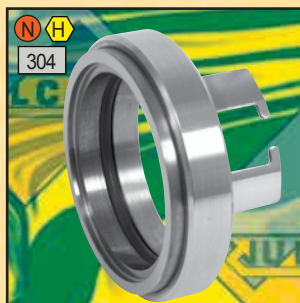
### 1.1/2"FLUSH SINGLE



### 2"NONFLUSH SINGLE



### SHELLEND.TC

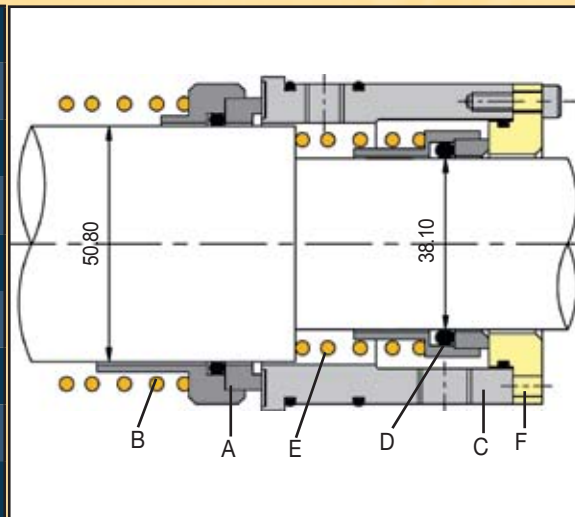


### 2"FLUSH SINGLE.180/90



All components are supplied as standard with Nitrile 'O'-Rings, if any other elastomer is required, please just advise at time of order.

A	SHELLEND.TC	2.000" OUTER SHAFT ROTARY HEAD, WITH TUNGSTEN CARBIDE FACE
A	SHELLEND.CARB	2.000" OUTER SHAFT ROTARY HEAD, WITH CARBON FACE
B	SHELLEND.COIL	COIL TO SUIT 2.000" OUTER SHAFT ROTARY HEAD
C	2"FLUSH SINGLE.90	2.000" OUTER SHAFT FLUSH HOUSING, WITH PORTS AT 90 DEGREES, AND CHROME OXIDE FACE
C	2"FLUSH SINGLE.180	SAME AS ABOVE, BUT WITH FLUSH PORTS AT 180 DEGREES
C	2"NONFLUSH SINGLE	2.000" OUTER SHAFT COLLET, WITH CHROME OXIDE COATED RUNNING FACE.
D	1.1/2".SHELLEND	1.500" INNER SHAFT ROTARY HEAD, WITH CARBON FACE.
E	1.1/2".SHELLEND. COIL	COIL TO SUIT 1.500" INNER SHAFT ROTARY HEAD
F	1.1/2"FLUSH SINGLE	1.500" INNER SHAFT STATIONARY, WITH BOLT HOLES TO ALLOW FIXING TO BASE OF 2.000" FLUSH HOUSING.



Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.



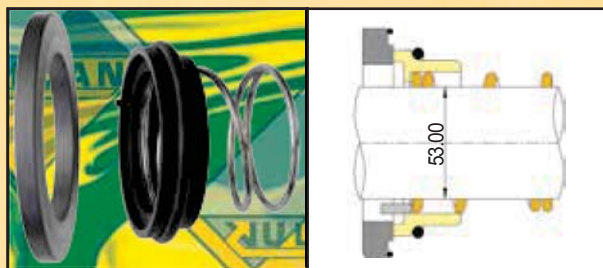


# TYPE 9X RANGE FOR ALFA LAVAL® PUMPS

Vulcan manufacture and stock a wide range of seals to suit the common Alfa Laval® centrifugal pumps, each of which is dealt with below.

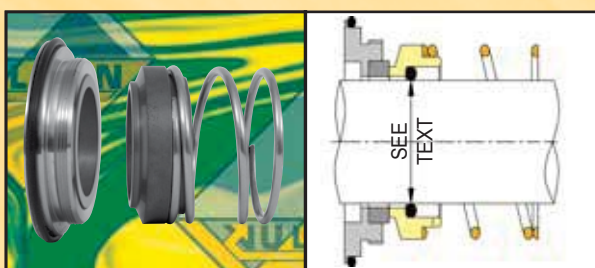
## TYPE 90 (53MM) E D 304

Type 90-53mm complete seals, designed to suit all sizes of ALC pump, with the larger flush-housings fitted. For non-flushed ALC series pumps, the Type 19C seal is utilised, see previous page.



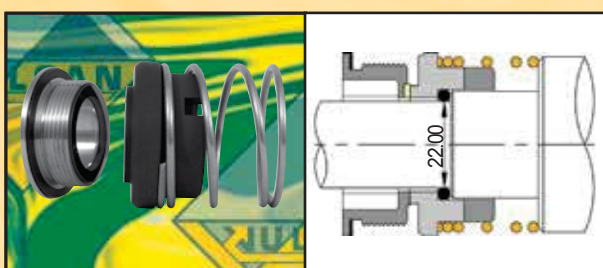
## TYPE 92 (32MM AND 42MM) E D S 304 FDA

Type 92-32mm and 42mm complete seals, designed to suit LKH series pumps with standard seal chamber. For pumps with flushed seal chambers, please see Types 92C and 92D.



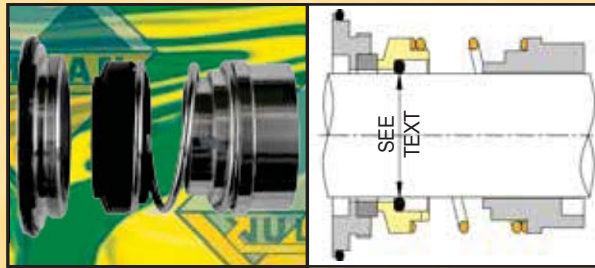
## TYPE 91B (22MM) E D S Q 304 FDA

Type 91B-22mm complete seal, designed to suit pump models FM0, FM0S, FM1A, FM2A, FM3A and FM4A



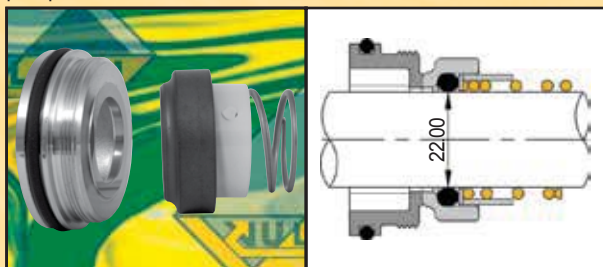
## TYPE 92B (32MM AND 42MM) E D S 304 FDA

Type 92B-32mm and 42mm complete seals, designed to suit LKH series pumps.



## TYPE 93 (22MM) E Q 304 FDA

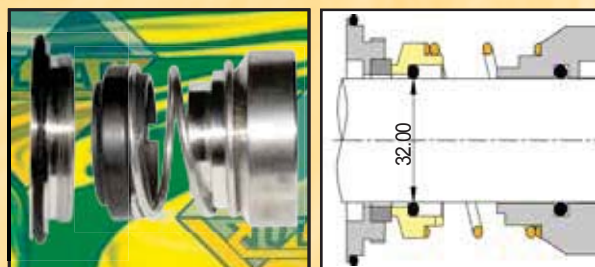
Type 93-22mm complete seal for MR166A, MR166B and MR166E pumps.



## TYPE 92C (32MM)

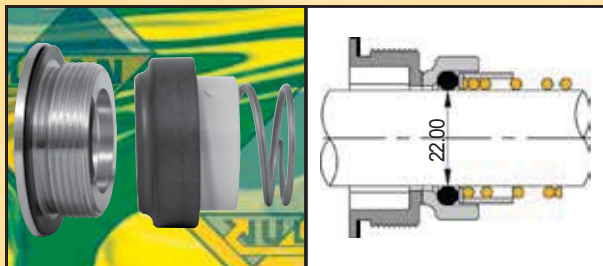
E D S 304 FDA

Type 92C features a base-plate designed to seal inside a metal-encased P.T.F.E. lip seal. Designed to suit pumps with a flushed seal chamber.



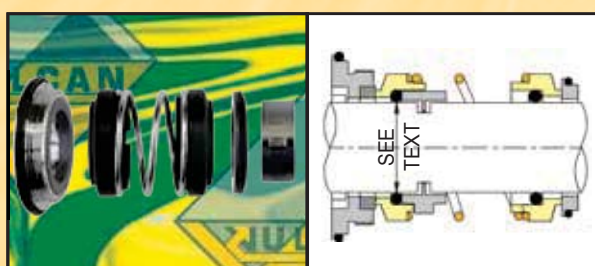
## TYPE 93B (22MM) E D Q 304

Type 93B-22mm complete seal, designed to suit pump models ME155AE, GM1, GM1A, GM2 and GM2A MR166E



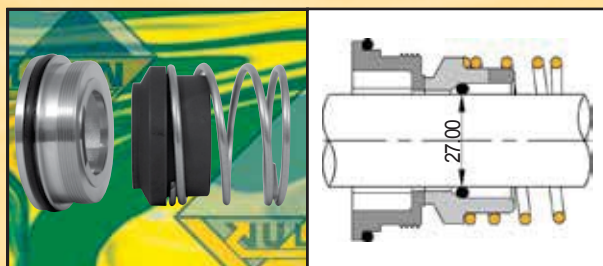
## TYPE 92D (32MM AND 42MM) E YC ZS 304 FDA

Type 92D-32mm & 42mm complete double seals, designed to suit LKH series pumps with a flushed seal chamber and double seals.



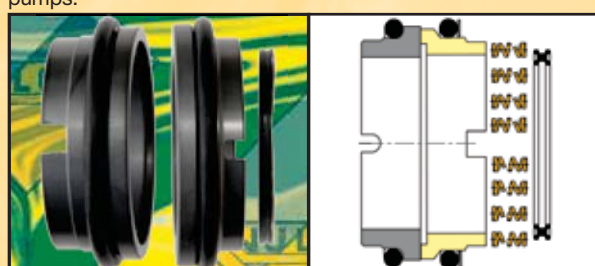
## TYPE 92 (27MM) E D Q 304 FDA

Type 92-27mm complete seal, designed to suit pump models MR185A and MR200A



## TYPE 912 (32MM AND 42MM) E S AD 304 FDA

Type 912-32mm and 42mm multi-spring seal kits, designed to suit LKHI, LKHPI, LKHSP and LKH 100 series multi-stage series pumps.



Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

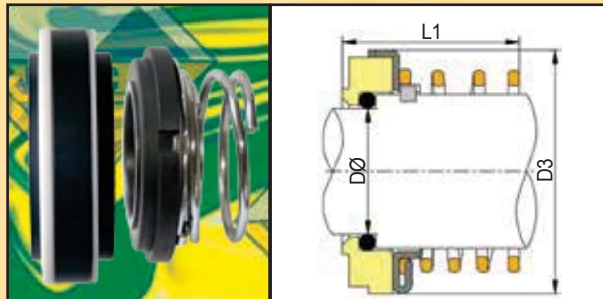




# VULCAN® SEALS FOR ALFA LAVAL® PUMPS

## TYPE 293 TO SUIT ALFA LAVAL® TRI-CLOVER® PUMPS E G 304

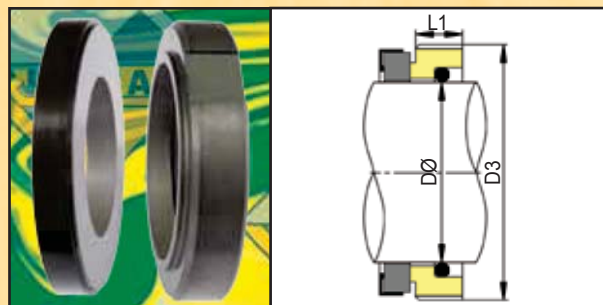
Vulcan manufacture direct replacement rotary parts to replace the O.E.M. 'O'-Ring mounted, hydraulically-balanced "Type-D" seals fitted to Tri-Clover® brand centrifugal pumps. Clamped stationaries with gaskets are also available to work with the Type 293 rotary, to replace the O.E.M. "Type-DG" seals for those pumps with flushed seal chambers. Please contact us with your requirements.



SHAFT SIZE DØ		SIZE CODE	D3		L1		O.E.M. SEAL CODE
IMPERIAL	METRIC		IMPERIAL	METRIC	IMPERIAL	METRIC	
0.750	19.10	0191	1.850	47.00	1.555	39.50	C114
1.125	28.60	0286	2.125	54.00	1.535	39.00	C216
1.500	38.10	0381	2.625	66.60	1.319	33.50	C218, C328

## TYPE 1628 TO SUIT ALFA LAVAL® TRI-CLOVER® PUMPS V S N/A

Vulcan manufacture direct replacement repair parts for O.E.M. 'O'-Ring mounted, multi- spring seals fitted to Tri-Clover® brand "Centrifugal 200" series pumps with the common Imperial 1.750" shaft size. The Vulcan wear parts will interchange with the non-wearing parts, such as the drive ring and multiple springs, to allow rapid seal refurbishment and re-assembly. Seal part codes are as follows;



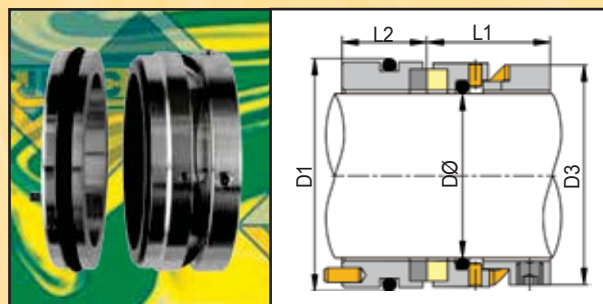
0444.1628.V.S.FACE  
0444.1628.X.S.STAT  
0444.1628.V.X.BOOT

Rotary Face with 'O'-Ring  
Stationary Seat  
Stationary Cup Boot

SHAFT SIZE DØ		SIZE CODE	D3		L1		O.E.M. SEAL CODE
IMPERIAL	METRIC		IMPERIAL	METRIC	IMPERIAL	METRIC	
1.750	44.45	0444	3.125	79.38	0.406	10.32	2045, 2065, 2085, 2105

## TYPE 1655 TO SUIT MOG AND ALP LOBE PUMPS EV Q 316

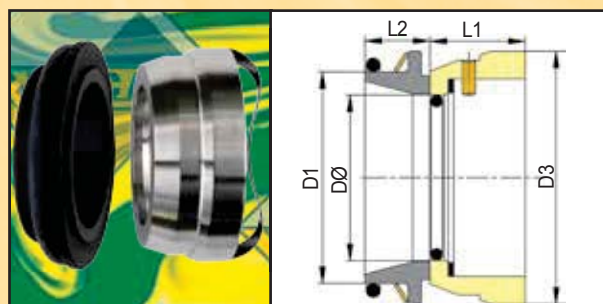
Vulcan manufacture direct replacement wave-spring 'O'-Ring mounted seals to suit Alfa Laval® MOG and ALP series lobe-rotor pumps.



SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
1.187	0300	41.70	41.00	22.20	14.00
1.375	0349	47.60	46.75	20.60	15.80
2.000	0508	66.60	65.40	23.80	12.00
3.000*	0762	95.20	98.60	39.70	12.00

## TYPE 1680 TO SUIT LKPL, NMOG AND SRU LOBE PUMPS E P 316

Vulcan manufacture direct replacement wave-spring 'O'-Ring mounted seals to suit Alfa Laval® new generation lobe rotor pumps, such as LKPL, NMOG and SRU series, fitted with O.E.M. "Hy-clean®" style seals. For older generation pumps, see Type 1682 on facing page. Further sizes are available, please contact us with your requirements.



SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
1.187	0300	36.40	45.00	21.50	14.50
1.375	0350	46.00	55.00	22.00	14.00
1.813	0450	59.40	65.00	25.00	16.00
2.187	0550	69.00	75.00	26.90	17.00

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

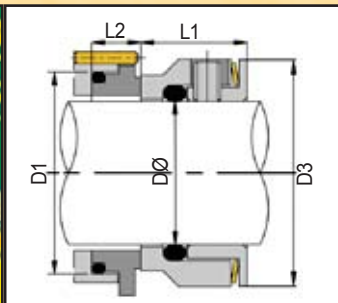
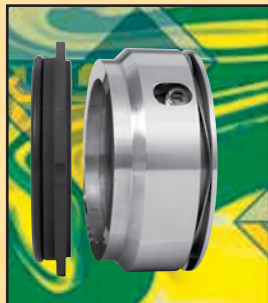
All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.



# VULCAN® SEALS TO SUIT ALFA LAVAL® & C.S.F. INOX® PUMPS

## TYPE 1682 TO SUIT LKPL, NMOG AND SRU LOBE PUMPS EV P H 304

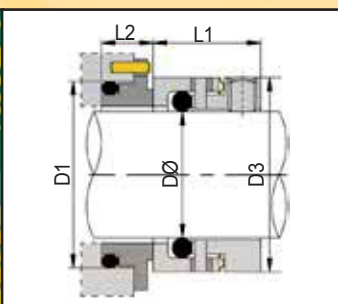
Vulcan manufacture direct replacement wave-spring 'O'-Ring mounted seals to suit Alfa Laval® older generation lobe rotor LKPL, NMOG and SRU series, fitted with O.E.M. "R90" style seals. For pumps with flush and double seals installed, see Type 1694 detailed below.



SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
20.00	0200	30.00	32.40	20.00	10.50
30.00	0300	41.30	44.00	21.40	11.10
35.00	0350	46.95	50.80	22.00	12.00
45.00	0450	58.26	62.40	22.90	12.60
55.00	0550	69.55	76.00	29.30	13.20
75.00	0750	92.15	99.20	31.10	14.40

## TYPE 1688W TO SUIT ALFA LAVAL® SR LOBE ROTOR PUMPS E P H 304

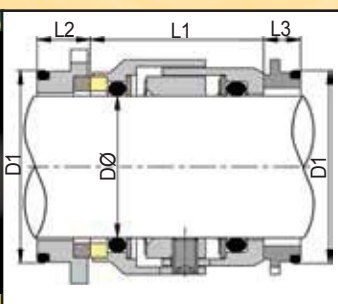
Vulcan manufacture Type 1688W 'O'-Ring mounted wave-spring seals to suit former "S.S.P.®" brand SR- series A-&G-series lobe rotor pumps. Further sizes are available, please contact us with your requirements.



SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
20.00	0200	30.00	31.00	19.10	10.70
30.00	0300	41.30	41.00	19.10	10.90
35.00	0350	46.95	45.50	19.10	12.20
45.00	0450	58.26	58.20	21.10	11.60
55.00	0550	69.55	72.00	22.10	13.00
75.00	0750	92.15	96.00	25.80	14.50

## TYPE 1694 TO SUIT ALFA LAVAL® SR LOBE ROTOR PUMPS E ZH 316

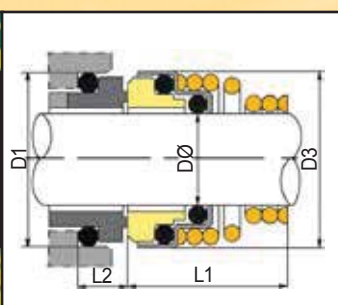
Vulcan manufacture Type 1694 'O'-Ring mounted wave-spring double seals to suit former "S.S.P.®" brand SR- series lobe rotor pumps, designed for and fitted with flushed seal chambers and double seals.



SHAFT SIZE DØ	SIZE CODE	D1	L1	L2	L3
30.00	0300	41.30	34.20	10.50	11.10
45.00	0450	58.26	37.70	11.30	11.30
55.00	0550	69.55	46.20	12.50	11.50

## TYPE 13M TO SUIT C.S.F. INOX® PUMPS E SC 316

Vulcan manufacture 28mm Type 13M 'O'-Ring mounted conical spring seals, to suit C.S.F. Inox® AS- and CS- centrifugal pump ranges. Vulcan also offers other seals to suit C.S.F. Inox® pumps, including the Type 1605 hygienic single-spring seals to replace the O.E.M. "U" or "Y" type externally mounted seals.



SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
28.00	0280	43.00	45.50	29.00	9.50

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

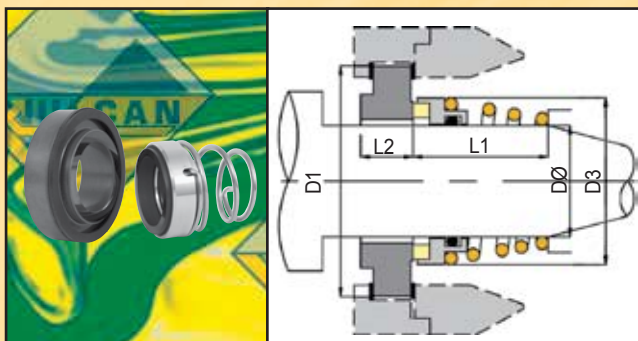




# TYPE 16 SERIES FOR A.P.V.® WORLD® PUMPS

The A.P.V. W® and W+® pump series have been introduced to replace the A.P.V. Puma® pumps. Vulcan manufacture and stock a comprehensive range of mechanical seals designed to suit these popular pumps, in single and double seal configurations.

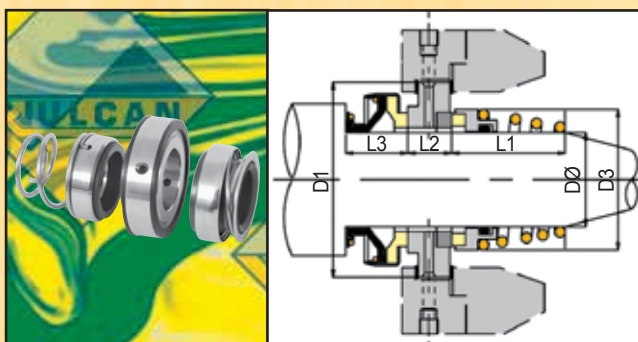
## TYPE 16 SINGLE SEALS TO SUIT APV® W PUMPS (NE) (D) (S) 304 FDA



Vulcan manufacture 25mm and 35mm seals to suit A.P.V. World® series pumps, with standard single seals. For pumps with flushed seal chambers and double seals, please see the Type 16 DOUB below.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
25.00	0250	52.00	38.20	25.40	16.00
35.00	0350	62.50	49.50	33.30	16.00

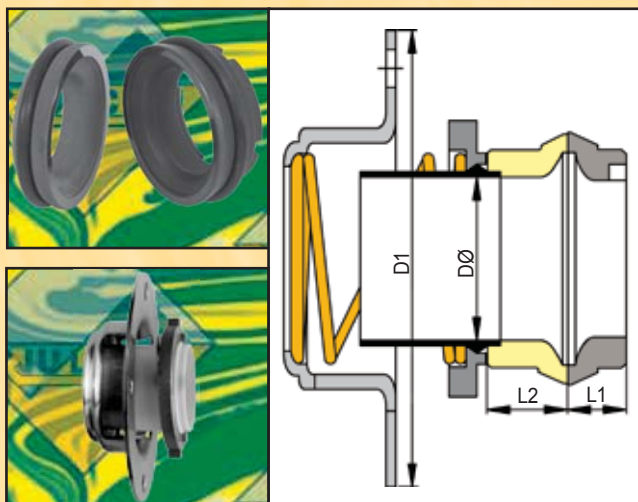
## TYPE 16.DOUB DOUBLE SEALS TO SUIT APV® W PUMPS (E) (Y) (Z) 304 FDA



Vulcan manufacture 25mm and 35mm double seals to suit A.P.V. World® series pumps, with flushed seal chambers and double seals installed. You can contact us with the O.E.M. details for cross-reference and identification, should you require.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2	L3
25.00	0250	52.00	38.20	25.40	17.00	13.00
35.00	0350	62.50	49.50	33.30	20.00	16.00

## TYPE 16.PLUS TO SUIT APV® W+ PUMPS (E) (CS) (S) (D) 304 FDA



Vulcan manufacture 25mm and 35mm face sets and face-holding kits to suit A.P.V. W+® series pumps.

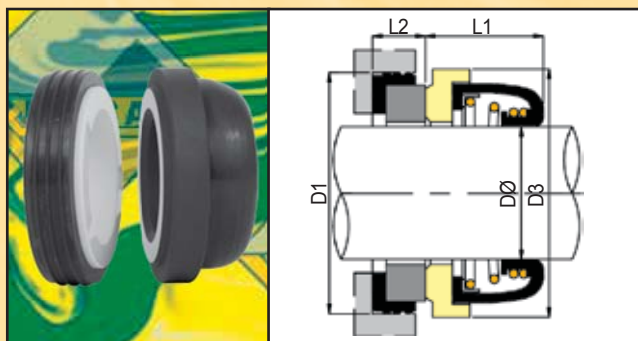
The Type 16.PLUS face sets include a Silicon Carbide "short" rotary face, a Carbon or Silicon Carbide "long" stationary (with four drive slots), two 'O'-Rings and one drive pin, to drive the rotary face.

The static coil unit, with P.T.F.E. sleeve, is available as a separate part.

Vulcan Type 16.PLUS.KIT, in both 25mm and 35mm sizes, is also available in FDA grade materials as standard.

SHAFT SIZE DØ	SIZE CODE	D1	L1	L2
25.00	0250	84.00	11.50	17.50
35.00	0350	88.00	11.50	17.50

## TYPE 66 TO SUIT APV® AGITATORS (NE) (C) 304 FDA



Vulcan manufacture a 1.000" Type 66 rubber-encased seal to suit A.P.V.® agitators, available as rotary part only, or as a complete seal with a Type 20 stationary. For further sizes, please contact us with your requirements.

Rotary part only uses code 0254.66.E.C.SEAL for E.P. or N.C.SEAL for Nitrile.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
1.000	0254	47.63	48.50	15.85	11.99

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

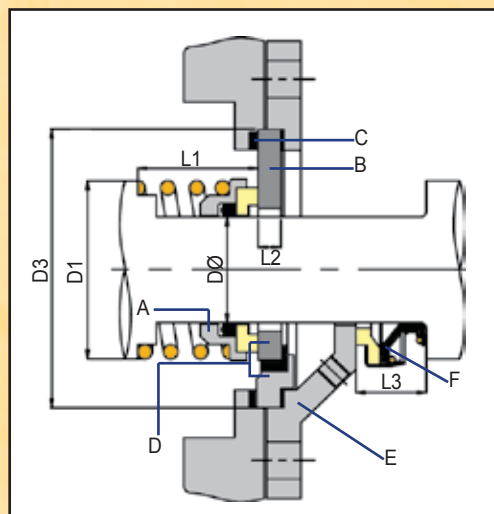
All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.





# TYPE 26 SERIES FOR A.P.V.® PUMA® PUMPS

Vulcan produce the entire range of seals and associated components commonly found on the 1.000" and 1.500" shaft A.P.V.® Puma® pumps, in single or double seal configurations.



SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2	L3
1.000	0254	41.20	68.20	25.40	7.80	14.00
1.500	0381	55.70	80.10	33.30	9.00	17.00

## VULCAN STOCK CODES.

Where XXXX is stated in the codes below, utilise 0254 for 1.000" or 0381 for 1.500" shaft size as required. If E.P. or Viton® is required, replace the N with an E or V respectively.

### INTERNAL SEAL = A

XXXX.26.N.C.SEAL Type 26 'O'-Ring mounted rotary with inserted Carbon face.

XXXX.26.N.S.SEAL Type 26 'O'-Ring mounted rotary with inserted Silicon Carbide face.

XXXX.26.N.H.SEAL Type 26 'O'-Ring mounted rotary with inserted Tungsten Carbide face.

### SEAT ARRANGEMENT ONE = B and C

XXXX.26.S.S. Type 26 Monolithic Stainless Steel stationary plate, lapped one side.

XXXX.26.S.S.D. Type 26 Monolithic Stainless Steel stationary plate, lapped both sides.

XXXX.26.C.C.D. Type 26 Monolithic Ceramic stationary plate, lapped both sides.

XXXX.26.N.C.GASK Gasket set, with flat and L-shaped gasket, for above plate seat.

### SEAT ARRANGEMENT TWO = D and C

XXXX.26.N.C.SEAT Type 26 boot mounted Ceramic seat, inserted in a stainless steel adaptor.

XXXX.26.N.S.SEAT Type 26 boot mounted Silicon Carbide seat, inserted in a stainless adaptor.

XXXX.26.N.C.GASK Gasket set, with a flat and L-shaped gasket, for above plate seat.

### ADDITIONAL DOUBLE SEAL COMPONENTS, FOR WATER JACKETED PUMPS, WITH EXTERNAL SEAL = E and F

XXXX.26.S.S.PLAT Type 26 Stainless Steel backing plate with flush connection holes.

XXXX.18.N.C.SEAL Type 18 inboard rotary, with Nitrile bellows and Carbon face.

### ANCILLARY INFORMATION.

All parts are fitted with Nitrile elastomers as standard. If E.P. or Viton® are required, please specify this, by replacing 'N' in the code with 'E' or 'V'.  
A 'Y' Pre-fix to the code, denotes F.D.A. / E.C. Regulation compliant.

Vulcan also manufacture the following square-section replacement gaskets to suit the body of the APV Puma® pump;

P.7"BODYSEAL Square section Nitrile gasket, with 7.0" I.D.  
P.9"BODYSEAL Square section Nitrile gasket, with 9.0" I.D.  
P.11"BODYSEAL Square section Nitrile gasket, with 11.0" I.D.

XXXX.26.N.C.SEAL (NEV) (C) 304



XXXX.26.N.C.SEAT (NEV) (C) 304



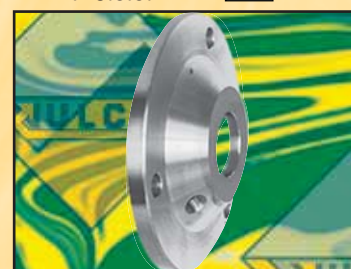
XXXX.26.S.S.D 304



XXXX.26.N.C.GASK (NE) (FDA)



XXXX.26.S.S.PLAT 304



XXXX.18.N.C.SEAL (NEV) (C) 304



Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

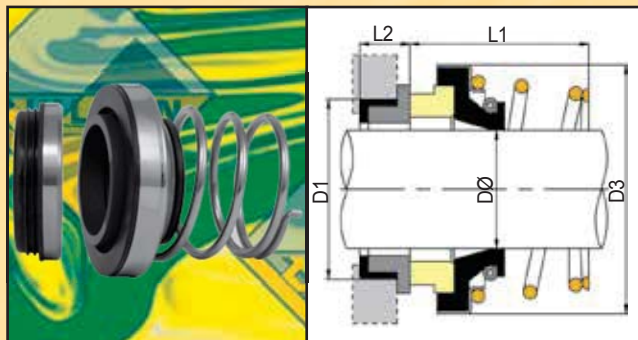




# TYPE 29 SERIES FOR A.P.V.® PUMPS

## TYPE 29 TO SUIT ZM-® SERIES PUMPS NE Q S 304 FDA

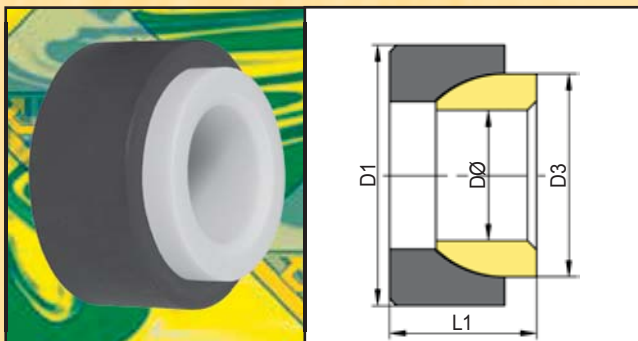
Vulcan manufacture the Type 29 to suit former "Pasilac Rosista"® brand ZM® series pumps. The Type 29 design features the enhanced sealing benefits of a boot mounted seat, to the same dimensions as the O.E.M. metal to metal design.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2	O.E.M. PUMP MODEL
20.00	0200	30.00	40.60	30.00	9.80	ZMA, ZMB, ZMH1 & 2, ZMK1 & 2
25.00	0250	35.00	45.40	31.00	9.80	ZMS3, ZMS4
30.00	0300	42.00	57.00	40.00	13.00	ZMH4, ZMK3, ZMD

## TYPE 292 TO SUIT A.P.V.® AGITATORS X C NA

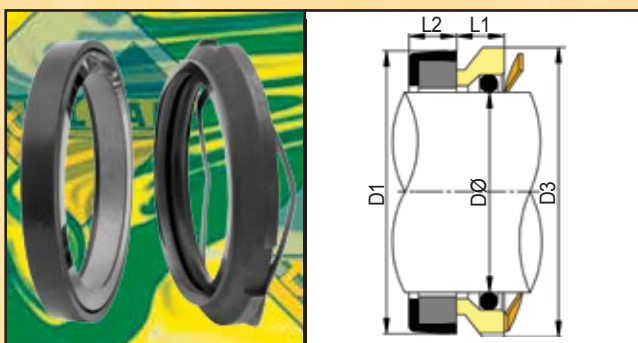
Vulcan manufacture our Type 292 bearing set to suit former "Osborne Craig"® brand agitators. Type 292 features a ceramic self-aligning face set in a Carbon cup bearing.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1
1.125	0286	57.00	44.44	32.50

## TYPE 294 TO SUIT A.P.V.® CLEANLINE® PUMPS E D S 304

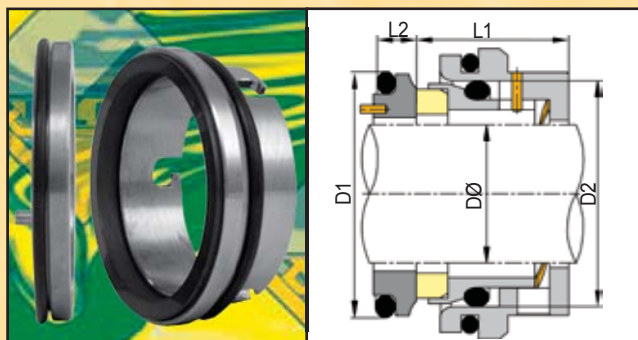
Vulcan manufacture our Type 294 face kits to suit APV® Cleanline® series pumps. The Vulcan parts are designed to directly replace the wear parts of the O.E.M. seals, it is rarely necessary to replace the seal sleeve and housing as these are non-wearing parts. The kits are supplied with the wave-spring as standard. If the size you require is not shown here, please contact us.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2	O.E.M. PUMP MODEL
1.125	0286	41.20	42.00	7.70	7.70	CL 0, CL 1
1.875	0476	63.50	66.00	9.00	8.30	CL 2
2.125*	0539	73.03	74.00	12.30	9.30	CL 3

## TYPE 295 TO SUIT ZM-® SERIES PUMPS NE Q 304 FDA

Vulcan manufacture our Type 295 'O'-Ring mounted wave-spring seal to suit former "Pasilac Rosista"® brand ZM® series pumps.



SHAFT SIZE D0	SIZE CODE	D1	D2	L1	L2	O.E.M. PUMP MODEL
1.875	0480	63.50	63.50	23.00	7.90	ZMS 5
2.125	0540	73.00	73.00	26.40	7.90	ZMS 6

Note: Due to the clearance between shaft and seal faces, Vulcan's size code may not reflect the actual shaft sizes.

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

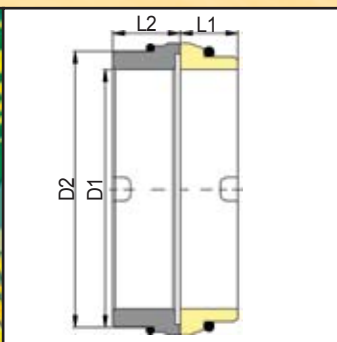
All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.



# TYPE 29 SERIES FOR A.P.V.® PUMPS

## TYPE 297 TO SUIT A.P.V.® DW® LOBE ROTOR PUMPS E S N/A

Vulcan manufacture replacement seal face kits, complete with 'O'-Rings, to suit A.P.V.® DW® series lobe rotor pumps. Available with Silicon Carbide rotary face (short face) and Silicon Carbide stationary face (long face). For further sizes or for double seal arrangements, please contact us.

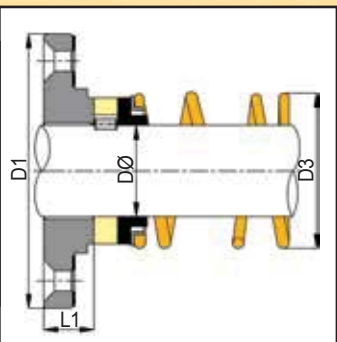


NOMINAL SHAFT SIZE	SIZE CODE	D1	D2	L1	L2	O.E.M. PUMP MODEL
28.00	0280	32.00	40.00	8.50	13.50	DW 1
38.00	0380	41.00	50.00	8.50	13.50	DW 2
48.00	0480	50.00	59.00	9.00	14.50	DW 3
58.00	0580	59.00	68.00	9.00	14.50	DW 4

Note: Due to the clearance between shaft and seal faces, Vulcan's size code may not reflect the actual shaft sizes.

## TYPE 272 TO SUIT A.P.V.® FORMER D.D.M.M.® PUMPS N Q 316

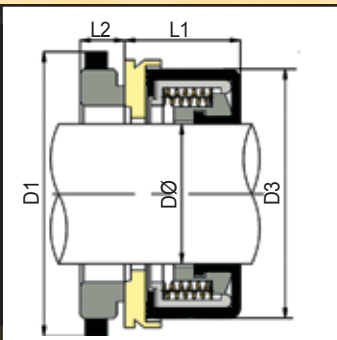
Vulcan manufacture direct replacement seals for former D.D.M.M. Kolding® or Pasilac® centrifugal pumps, commonly utilised in dairies.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1
20.00	0200	75.00	38.00	14.00
25.00	0250	75.00	40.00	14.00

## TYPE 1644 TO SUIT COMMON POSITIVE DISPLACEMENT PUMPS N P 316

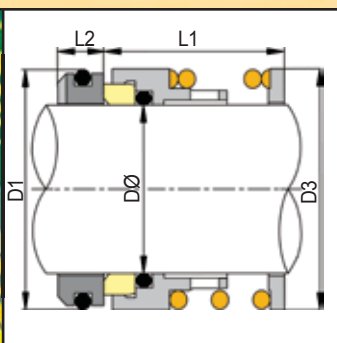
Vulcan manufacture a 1.500" Type 1644 rubber-encased multi- spring seal, for use in positive displacement pumps, frequently found in food processing.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2
1.500	0381	75.70	65.00	33.33	14.00

## VULCAN® TYPE 962 TO SUIT WILD® INDAG® MIXER PUMPS V DB 316 FDA

Vulcan manufacture direct replacement seals for Wild® Indag® in-line mixer pumps, commonly utilised in dairy, especially yoghurt, production. The seal size code 0270 has the stationary 'O'-Ring mounted into the housing with a push fit block stationary ring, the larger size seals have more conventional stationaries with a central 'O'-Ring groove. Type 962 are supplied in FDA complaint materials as standard.



SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2
1.187	0270	41.20	39.00	25.40	11.30
1.500	0381	49.21	49.00	36.50	8.00
1.875	0476	60.30	60.00	38.10	7.70

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.



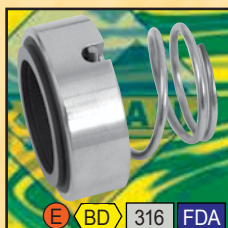


# VULCAN® MECHANICAL SEALS TO SUIT FRISTAM® PUMPS

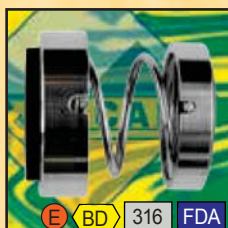
Fristam® centrifugal and lobe-rotor pumps are widely utilised in the dairy, beverage and pharmaceutical industries. Vulcan offer a wide range of components and complete seal sets to directly replace the O.E.M. seal components, without any modification to the seal housings or the pump seal chamber. Vulcan supply from stock individual seal components and complete seal sets, if you require anything not illustrated on the following pages, please contact us.



W-XX08/12



W-XX08/12B



Y-XX08/2



W-XX06/61



W-XX05/6



W-XX07/1

## INDIVIDUAL VULCAN® ROTARY COMPONENTS; INBOARD ROTARIES

Vulcan's Stock Code Description

Where XX is stated in the code, apply 22, 30 or 35 as appropriate to shaft size required.

W-XX08/12	Inboard rotary, with base, with inserted Carbon face.
W-XX08/12.S.C.	Inboard rotary, with base, with inserted Silicon Carbide face.
W-XX08/12.T.C.	Inboard rotary, with base, with inserted Tungsten Carbide face.
Y-XX08/2	Inboard rotary, with tappit base, with inserted Carbon.
Y-3508/3	Inboard rotary, with flat tappit base, with inserted Carbon.
Y-3508/4	Inboard rotary, with extended tappit base, with inserted carbon.
Y-XX08/2.R.	Inboard rotary, with tappit base, with inserted SiCSiC.
W-2209/2	22mm Inboard rotary, rubber encased, with base, with Carbon face.
W-3009/2	30mm Inboard rotary, rubber encased, with base, with Carbon face.

## OUTBOARD ROTARIES

Vulcan's Stock Code Description

W-XX08/12B	Outboard rotary (no base), with inserted Carbon face.
W-XX08/12B.S.C.	Outboard rotary (no base), with inserted Silicon Carbide face.
W-XX08/12B.T.C.	Outboard rotary (no base), with inserted Tungsten Carbide face.
W-XX09/1	Outboard rotary, rubber encased, Carbon face.
W-XX09/3	Outboard rotary, rubber encased, Carbon face, with garter spring.

## INDIVIDUAL VULCAN® STATIONARY COMPONENTS; INBOARD STATIONARIES

Vulcan's Stock Code Description

Where XX is stated in the code, apply 22, 30 or 35 as appropriate to shaft size required.

W-XX06/61	Inboard pinned-seat, Monolithic Stainless Steel
W-XX06/61.S.C.	Inboard pinned-seat, inserted Silicon Carbide face
W-XX06/61.T.C.	Inboard pinned-seat, inserted Tungsten Carbide face
W-3006/8	Inboard bi-elastomer seat, Monolithic Stainless Steel
W-3006/8.CER	Inboard bi-elastomer seat, Monolithic Ceramic

## OUTBOARD STATIONARIES

Vulcan's Stock Code Description

W-XX05/6	Outboard seat, Monolithic Stainless Steel
W-XX05/6.S.C.	Outboard seat, inserted Silicon Carbide face
W-XX05/6.T.C.	Outboard seat, inserted Tungsten Carbide face
W-XX05/6.S.C.MON	Outboard seat, Monolithic Silicon Carbide
W-2207/1	Outboard seat, Monolithic Ceramic

## FLUSH STATIONARIES

Vulcan's Stock Code Description

W-2205/1	22mm Flush Seat, 50mm O.D. x 22.5mm Thick, Monolithic Stainless Steel
W-2205/2	22mm Flush Seat, 45mm O.D. x 31.0mm Thick, Monolithic Stainless Steel
W-3005/2	30mm Flush Seat, 60mm O.D. x 28.0mm Thick, Monolithic Stainless Steel
W-3502/2	35mm Flush Seat, 64mm O.D. x 30.0mm Thick, Monolithic Stainless Steel



W-XX09/1



W-2209/2 - W-3009/2



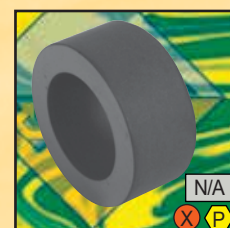
W-XX09/3



W-XX06/8



W-3005/2



W-XX04/9

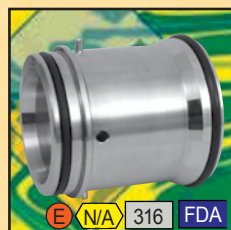
All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.





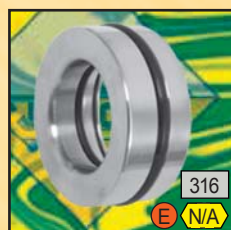
# VULCAN® MECHANICAL SEALS TO SUIT FRISTAM® PUMPS



W-2201/1



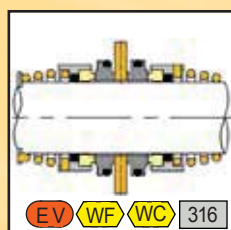
W-2201/2 and /3



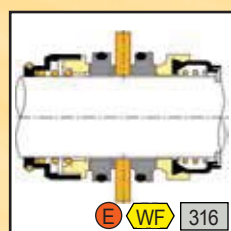
W-2201/4



W-2201/8



Type V9000



Type V9002

## INDIVIDUAL VULCAN® COLLET AND HOUSING COMPONENTS;

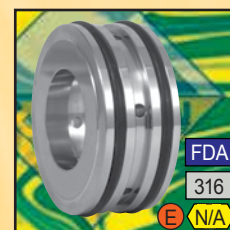
Vulcan's Stock Code

W-2201/1  
W-3001/1  
W-3501/1  
W-2201/2  
W-3001/2  
W-3001/2.CER  
W-3501/2  
W-3501/2.CER  
W-2201/3

Description  
Flush collet for double seal, without bush  
Flush collet for single or double seal  
Flush collet for single or double seal  
Flush collet for double seal, with bush  
Flush housing with integral seal faces, Stainless Steel  
Flush housing with integral seal faces, Ceramic  
Flush housing with integral seal faces, Stainless Steel  
Flush housing with integral seal faces, Ceramic  
Flush collet for double seal, with bush and internal retaining lip for the Carbon bush  
Single seal stationary housing, without flush  
Single seal stationary housing, without flush  
Flush collet for double seal, with extended bushing  
Flush collet for double seal, standard bush  
Flush collet for single seal, with extended bushing  
Flush collet for double seals, without bush  
Flush collet for double seals, without bush  
Flush collet for double seal, with gland plate  
Flush collet for single seal, with extended bushing  
Flush collet for double seal, without bush  
Flush collet for double seal, without bush, without internal groove



W-3001/1



W-3501/2



W-2201/51

## INDIVIDUAL VULCAN® ADDITIONAL COMPONENTS;

Vulcan's Stock Code

W-2204/1  
W-2204/3  
W-2204/6  
W-2204/9

Description  
Spacer ring for single seals without flush  
Extended Carbon bush for W-2201/8 Collet  
Extended Carbon bush for W-2201/5 Collet  
Carbon bush for W-2201/2, /3 and /51 Collets



Y-2201/91 and 92

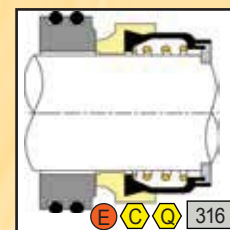
## VULCAN® REPAIR SETS (WITHOUT COLLET OR HOUSING COMPONENTS);

Vulcan's Stock Code

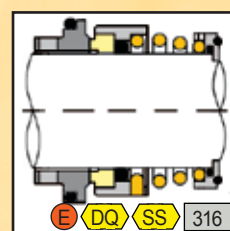
Type V9000  
Type V9000A  
Type V9001  
Type V9002  
Type V9005

Type V9006  
Type V9007  
Type V9008  
Type V9010  
Type V9011  
Type V9012  
Type V9016  
Type V9017  
Type V9020  
Type V9021  
Type V9023  
Type V9030  
Type V9040

Description  
Internal and external open-spring seals  
As above, plus W-2204/9 Carbon bush  
Internal open spring seal, rubber encased external seal  
Internal and external rubber encased seals  
Internal and external open-spring seals, both with short external type seat  
Internal open-spring seal, external rubber encased seal, both with short external type seat  
Internal tappit-base seal, with external open spring seal  
Internal tappit-base seal, with external rubber-encased seal  
Internal open-spring seal only  
Internal rubber-encased seal only  
Internal open-spring seal only, with short external seat.  
W-3009/1 rubber encased rotary with bi-elastomer seat.  
W-3009/2 rubber encased rotary with bi-elastomer seat.  
External open-spring seal only  
External rubber-encased seal only  
30mm Internal open-spring rotary with bi-elastomer seat  
Internal tappit-base seal only  
Internal tappit-base rotary, with short external seat.



Type V9017



Type V9030

All the above repair seal sets are supplied with appropriate 'O'-Rings and locating pins for the collet flush housing. For other repair set combinations, please refer to the O.E.M. database

and /or our O.E.M. Price List or contact us with your requirements.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.



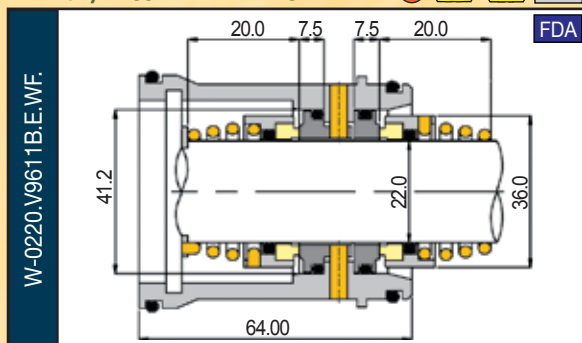


# VULCAN® COMPLETE COLLET SEAL SETS TO SUIT FRISTAM® PUMPS

Vulcan supply from stock complete seal units for Fristam® pumps, based on the extensive range of Vulcan components. These complete seal units directly replace the Fristam® O.E.M. assembly, while offering the benefits of Vulcan quality and reliability. The following illustrations only show the most common arrangements for each flush collet or housing type, please ask for alternatives, we have a huge range of variations available to suit your requirements.

## W-2201/1 COLLET ARRANGEMENT

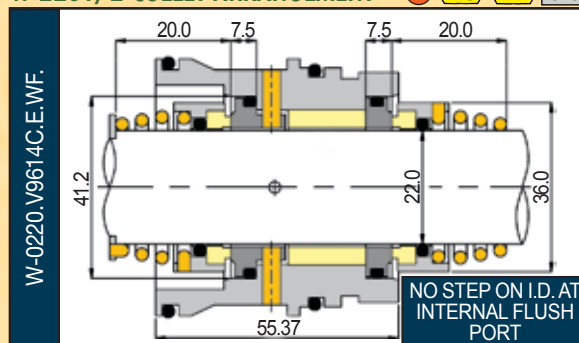
(E) (WC) (WF) 316 FDA



W-2208/12	W-2206/61	W-2205/6	W-2208/12B
INBOARD ROTARY	INBOARD SEAT	OUTBOARD SEAT	OUTBOARD ROTARY

## W-2201/2 COLLET ARRANGEMENT

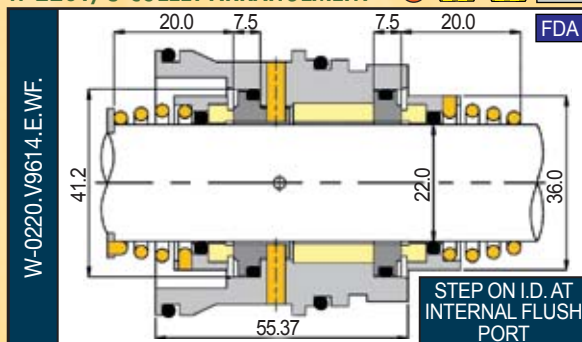
(E) (WC) (WF) 316



W-2208/12	W-2206/61	W-2204/9	W-2205/6	W-2208/12B
INBOARD ROTARY	INBOARD SEAT	CARBON BUSH	OUTBOARD SEAT	OUTBOARD ROTARY

## W-2201/3 COLLET ARRANGEMENT

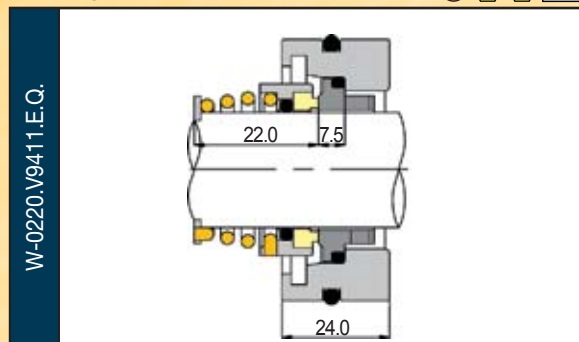
(E) (WC) (WF) 316 FDA



W-2208/12	W-2206/61	W-2204/9	W-2205/6	W-2208/12B
INBOARD ROTARY	INBOARD SEAT	CARBON BUSH	OUTBOARD SEAT	OUTBOARD ROTARY

## W-2201/4 COLLET ARRANGEMENT

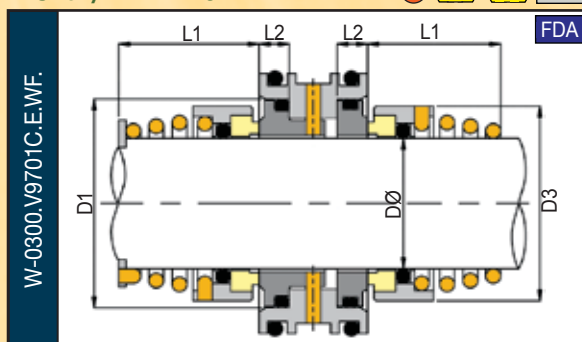
(E) (Q) (S) 316



W-2208/12	W-2206/61	W-2201/4
INBOARD ROTARY	INBOARD SEAT	SEAT HOUSING

## W-3X01/1 ARRANGEMENT

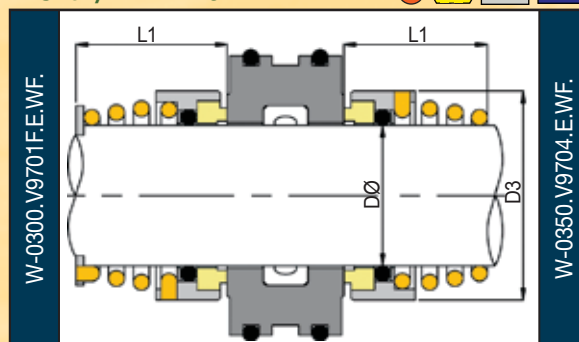
(E) (WC) (WF) 316 FDA



W-XX08/12	W-XX06/61	W-XX05/6	W-XX08/12B
INBOARD ROTARY	INBOARD SEAT	OUTBOARD SEAT	OUTBOARD ROTARY

## W-3X01/2 ARRANGEMENT

(E) (WF) 316 FDA



W-XX08/12	W-XX08/12B
INBOARD ROTARY	OUTBOARD ROTARY

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
30.00	0300	48.00	43.80	22.00	7.60
35.00	0350	55.50	48.90	26.00	8.60

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

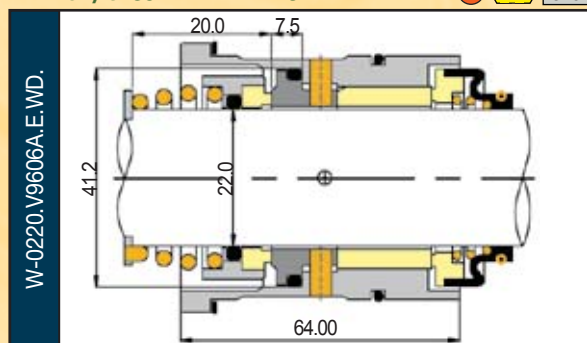


# VULCAN® COMPLETE COLLET SEAL SETS TO SUIT FRISTAM® PUMPS

To aid the identification of the correct seal unit, the Vulcan code is derived from the original O.E.M. seal set code, with both a "W-" for 316 Stainless Steel (or "Y" for "F.D.A.") and a shaft size prefix, and a standard format Vulcan material code suffix. For example, a 316 Stainless Steel Vulcan seal set to replace O.E.M. code "9.611b" would be W-0220.V9611B.E.WF., where the 0220 denotes 22mm shaft size, E denotes EP 'O'-rings, and WF denotes Carbon vs Stainless Steel in a double seal arrangement. The following illustrations only show the most common arrangements for each collet style. We have a huge range of variations available to suit your requirements. Please refer our O.E.M. Price List or Web Portal O.E.M. Data-Base, or enquire.

## W-2201/5 COLLET ARRANGEMENT

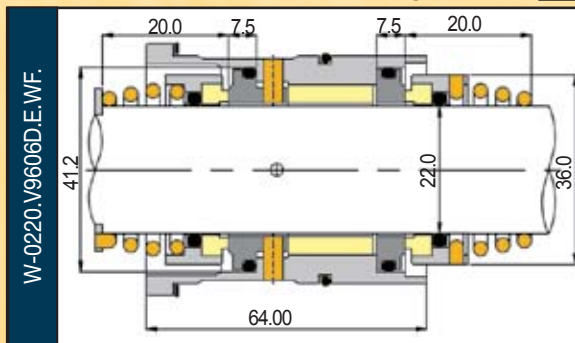
E WD 316



W-2208/12	W-2206/61	W-2204/6	W-2209/3
INBOARD ROTARY	INBOARD SEAT	CARBON BUSH	OUTBOARD ROTARY

## W-2201/51 COLLET ARRANGEMENT

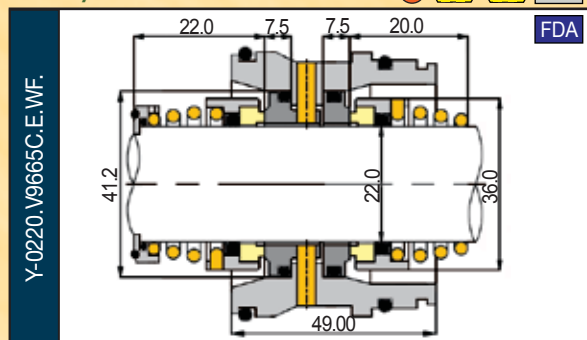
E WC WF 316



W-2208/12	W-2206/61	W-2204/9	W-2205/6	W-2208/12B
INBOARD ROTARY	INBOARD SEAT	CARBON BUSH	OUTBOARD SEAT	OUTBOARD ROTARY

## Y-2201/6 COLLET ARRANGEMENT

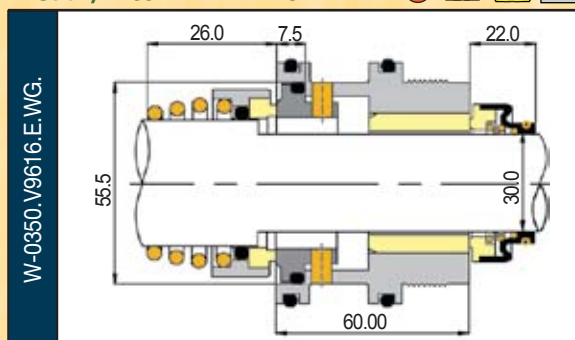
E WC WF 316



Y-2208/2	W-2206/61	W-2205/6	W-2208/12
INBOARD ROTARY	INBOARD SEAT	OUTBOARD SEAT	OUTBOARD ROTARY

## W-3501/7 COLLET ARRANGEMENT

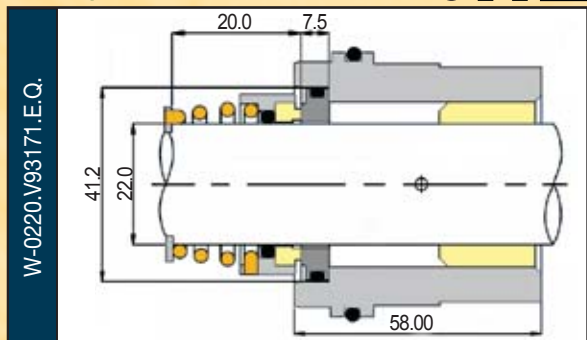
E WC WF 316



W-3508/12	W-3506/61	W-3004/7	W-3009/3
INBOARD ROTARY	INBOARD SEAT	CARBON BUSH	OUTBOARD ROTARY

## W-2201/8 COLLET ARRANGEMENT

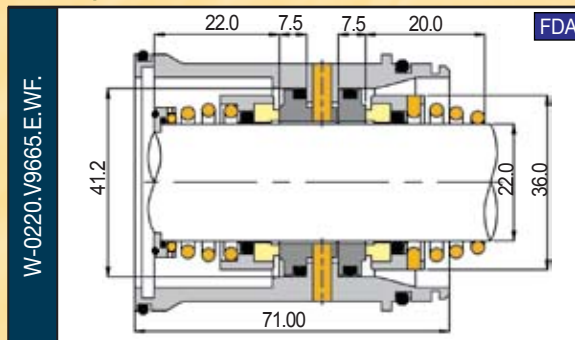
E Q C 316



W-2208/12	W-2205/6	W-2204/3
INBOARD ROTARY	INBOARD SEAT	CARBON BUSH

## W-2201/91 COLLET ARRANGEMENT

E WC WF 316



Y-2208/2	W-2206/61	W-2205/6	W-2208/12
INBOARD ROTARY	INBOARD SEAT	OUTBOARD SEAT	OUTBOARD ROTARY

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

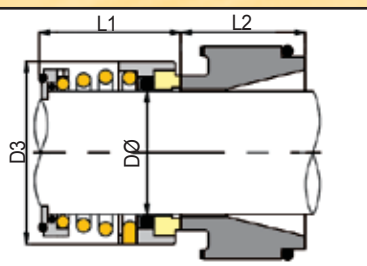
All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.





# VULCAN® FRISTAM® PUMP SEAL SETS

VULCAN® SEALS TO SUIT NON-FLUSH FRISTAM® FPX PUMPS E RD 316 FDA



NON-FLUSH SINGLE SEALS, with Silicon Carbide rotary, Monolithic Carbon stationary, and E.P. elastomers, F.D.A. Compliant.

Vulcan's Stock Code

Y-0220.V9018.E.RD.

Y-0300.V9018.E.RD.

SHAFT SIZE DØ	SIZE CODE	D3	L1	L2
22.00	0220	45.00	22.00	30.00
30.00	0300	60.00	24.00	27.00

FLUSH SINGLE SEALS, with Carbon rotary, Monolithic Silicon Carbide stationary, and E.P. Elastomers, F.D.A. Compliant. Dimension L3 does not apply.

Vulcan's Stock Code

Y-0220.V9019.E.DR.

Y-0300.V9019.E.DR.

Y-0350.V9019.E.DR.

E DR 316 FDA

E DR 316 FDA

E DR 316 FDA

FLUSH DOUBLE SEALS, with Carbon rotaries, Monolithic Silicon Carbide stationary, and E.P. elastomers, F.D.A. Compliant. L3 Applies.

Vulcan's Stock Code

Y-0220.V0633.E.YR.

Y-0300.V0735.E.YR.

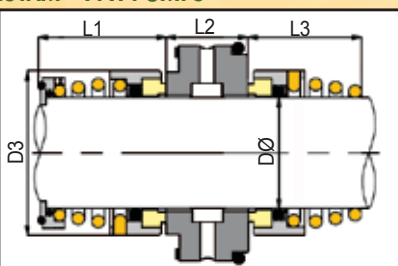
Y-0350.V0736.E.YR.

E YR 316 FDA

E YR 316 FDA

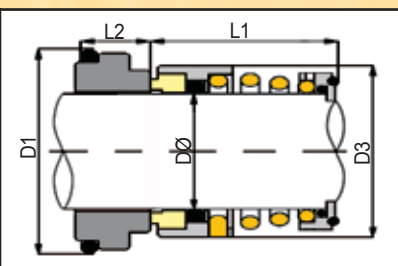
E YR 316 FDA

## VULCAN® SEALS TO SUIT FLUSHED FRISTAM® FPX PUMPS



SHAFT SIZE DØ	SIZE CODE	D3	L1	L2	L3
22.00	0220	45.00	22.00	31.00	20.00
30.00	0300	60.00	24.00	26.00	22.00
35.00	0350	64.00	26.00	30.00	26.00

## TYPE V9200 TO SUIT FRISTAM® FT-® SERIES PUMPS E R 316 FDA

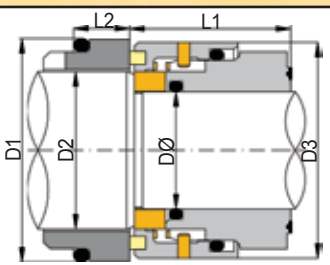


Vulcan manufacture and stock 30mm single seals to suit Fristam® FT200 and FT400 series centrifugal pumps. F.D.A. Compliant.

Vulcan Stock Code = Y-0300.V9200.E.R.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
30.00	0300	54.50	44.00	24.00	12.00

## TYPE 1676 AND 1696 TO SUIT FRISTAM® MULTI-STAGE PUMPS V R 316



Vulcan make multi- spring hydraulically balanced high-performance Type 1676 seals to suit Fristam® FM, FPE, FPH and FPHP series multi-stage centrifugal pumps. Vulcan Stock Code = W-XXXX.1676.V.R.

SHAFT SIZE DØ	SIZE CODE	D1	D2	D3	L1	L2
18.00	0220	37.00	22.00	36.00	32.50	9.00
32.00	0430	61.00	43.00	59.00	40.00	14.00
35.00	0350	61.00	43.00	59.00	30.00	14.00



To complement the Type 1676, Vulcan also supplies the 38mm sleeve and lip seal to seal the flush fluid. For high-performance, we also offer the 38mm Type 1696 external seal, in Carbon vs Ceramic with E.P., as a mechanical seal for the flush position. Vulcan Stock Codes; W-XXXX.1676.V.X.SLEE and W-XXXX.1696.E.C.

SHAFT SIZE DØ	SIZE CODE	D1	L1	L2
22.00	0220	45.00	25.40	8.10
38.00	0380	62.00	23.80	8.10

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

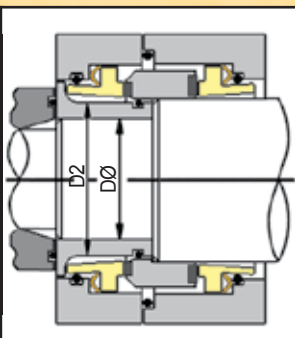




# VULCAN® SEALS TO SUIT FRISTAM® LOBE ROTOR PUMPS

## VULCAN® SEALS TO SUIT FRISTAM® FLII SERIES LOBE ROTOR PUMPS E Z 316

Vulcan manufacture and stock seal sets to directly replace the single and double arrangements in Fristam® FLII Series lobe rotor pumps. Available with Monolithic Silicon Carbide central rotary face and inboard stationary, with Carbon outboard stationary for double seal arrangements.



Vulcan's Stock Code

W-XX02/1 Single seal in SSiC vs SSiC

E R 316 FDA

W-XX02/1.CAR Single seal in SSiC vs Carbon

E RD 316 FDA

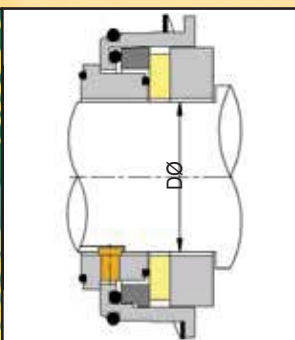
W-XX02/2 Double seal in SSiC vs SSiC vs Carbon

E EZ 316 FDA

SLEEVE O.D. D2	SIZE CODE DØ	O.E.M. PUMP MODEL
28.00	0200	FLII 55
38.00	0300	FLII 75
50.00	0400	FLII 100
62.00	0520	FLII 130

## VULCAN® SEALS TO SUIT FRISTAM® FL, FLF AND FLFN SERIES LOBE ROTOR PUMPS E H 316

Vulcan manufacture and stock complete seals to directly replace the O.E.M. seals in Fristam® FL, FLF and FLFN series lobe rotor pumps. Available with Tungsten Carbide vs. Tungsten Carbide seal faces as standard, to improve seal life in the poor lubrication conditions common in the applications these pumps are utilised for.



Vulcan's Stock Code

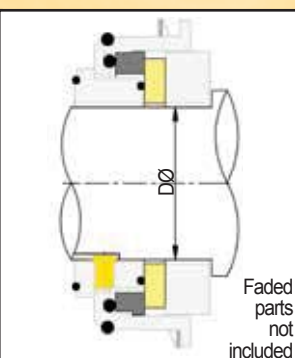
W-XX10/1

Single seal in Tungsten Carbide Vs  
Tungsten Carbide with EP 'O'-Rings.

SHAFT SIZE DØ	SIZE CODE	O.E.M. PUMP MODEL
20.00	0200	FL55 , FLF55
31.00	0300	FL75 , FLF75
38.00	0380	FL100 , FLF100

## VULCAN® SEALS TO SUIT FRISTAM® FK AND FL SERIES SEALS

Vulcan also supply repair sets for the Fristam® FK and FL series seals. These kits will suit either Vulcan or original O.E.M. seals, and contain rotary face, stationary face, lip seals, and necessary 'O'-rings. The kits contain parts to repair two seals, so only one repair kit is required for each pump repair.



Vulcan's Stock Code

W-XX11/2 Repair set in T.C. Vs T.C. with EP 'O'-Rings

E H 316

W-XX11/3 Repair set in Carbon vs Stainless Steel with EP 'O'-Rings.

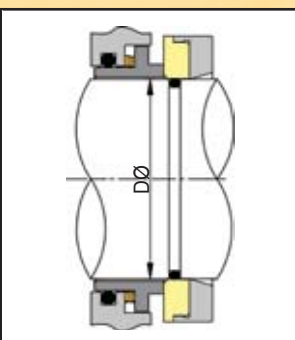
E Q 316

W-XX11/3.VIT Repair set in Carbon vs Stainless Steel with Viton® 'O'-Rings.

V Q 316

SHAFT SIZE DØ	SIZE CODE	O.E.M. PUMP MODEL
20.00	0200	FL55 , FLF55
31.00	0300	FL75 , FLF75
38.00	0380	FL100 , FLF100
52.00	0520	FL130 , FLF130

## VULCAN® SEALS TO SUIT FRISTAM® FKL50 LOBE ROTOR PUMPS EV R 316 FDA



Vulcan manufacture complete single and double seals for the common FKL50 lobe rotor pump. The Vulcan design incorporates an inserted Silicon Carbide rotary, removing the O.E.M. chrome oxide rotary and providing a cleaner solution for food process. For further FKL series seals, please contact us.

Vulcan's Stock Code

W-4820/1 Single seal in SSiC vs SSiC with Viton® 'O'-Rings

W-4820/2 Double with SSiC vs SSiC vs Carbon, Viton® 'O'-Rings.

SHAFT SIZE DØ	SIZE CODE	O.E.M. PUMP MODEL
48.00	0480	FKL50 , FZX 2100, FZX 2150, FZX 2200 , FZX 2250

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 180 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

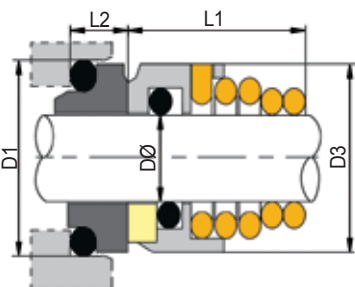




# VULCAN® SEALS TO SUIT GRUNDFOS® HILGE® PUMPS

## CONICAL SPRING SEAL TYPES

Vulcan manufacture and stock a wide range of conical spring seals to suit several Grundfos® Hilge® centrifugal pump ranges, such as Hygia®, Maxana® and Sipla®. To aid identification of these very similar looking seals, please use the table below as your guide, showing the installed dimensions with the Vulcan Type code and the O.E.M. Type code.



### Vulcan's Stock Code Example

Please replace XXXX with the size code and YY with the relevant Vulcan Type code.

W-XXXX.YY.R.E.P.

Type YY, as per Vulcan Type Code shown below, with clockwise coil, Stainless Steel vs Carbon, and E.P. elastomer.

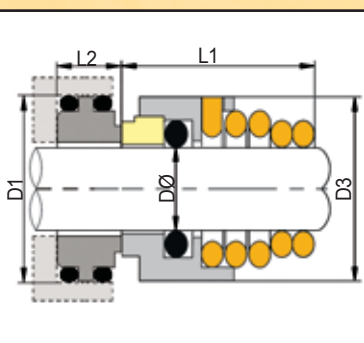
W-XXXX.YY.R.E.S.

Type YY, as per Vulcan Type Code shown below, with clockwise coil, Silicon Carbide seal faces, and E.P. elastomer.

SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2	VULCAN TYPE CODE	O.E.M. SEAL CODE	GUARANTEED STOCK MATERIALS		
19.00	0190	30.90	31.00	25.00	8.00	12	001-19 O3	EV	PS	316 FDA
19.00	0190	30.90	31.00	25.00	8.00	12S	001-19 O5	EV	PS	316
19.00	0190	35.00	31.00	20.00	9.50	8BU	002-19 O3	EV	PS	316
22.00	0220	37.00	33.00	27.50	10.00	126	L1K-22 F3	EV	PS	316 FDA
28.00	0280	43.30	40.00	29.00	9.00	12	001-28 O3	EV	PS	316 FDA
28.00	0280	43.30	40.00	29.00	9.00	12H	001-28 A3	EV	S	316
28.00	0280	43.30	40.00	29.00	9.00	12S	001-28 O5	EV	PS	316
28.00	0280	42.00	40.00	24.60	11.00	8B	002-28 O3	EV	P	316
30.00	0300	45.00	43.00	32.50	10.00	126	L1K-30 F3	EV	PS	316 FDA
30.00	0300	45.00	43.00	32.50	10.00	126L	L1K-30 G3	EV	S	316
30.00	0300	45.00	43.00	40.00	10.00	127	L1N-30 D3	EV	PS	316
38.00	0380	60.50	53.00	39.00	11.50	12	001-38 O3	EV	PS	316 FDA
38.00	0380	55.00	53.00	31.00	11.50	8B	002-38 O3	EV	P	316
40.00	0400	58.00	56.00	32.00	13.00	126	L1K-40 F3	EV	PS	316 FDA
40.00	0400	58.00	56.00	32.00	13.00	126L	L1K-40 G3	EV	S	316
50.00	0500	70.00	66.00	38.00	14.00	126	L1K-50 F3	EV	P	316
50.00	0500	70.00	66.00	38.00	14.00	126L	L1K-50 G3	EV	S	316
50.00*	0500	70.00	66.00	43.00	14.00	8BU	1238-50 O3	EV	P	316

If the final digit of the O.E.M. seal code is "2" then the replacement seal requires an anti-clockwise rotation coil. Please replace the "R" character in the Vulcan code with "L" for anti-clockwise coil. If the O.E.M. code you require is not listed, check the two seal types following or please contact us with your requirements.

**TYPE 128** (E) (P) (R) 316



Vulcan manufacture and stock our Type 128 conical spring seals with bi-elastomeric Stationaries, for pumps with flushed seal chambers.

The Type 128 is frequently installed in tandem with the Type 12 seals listed above, on Grundfos®, Hilge® centrifugal pumps.

SHAFT SIZE D0	SIZE CODE	D1	D3	L1	L2	O.E.M. SEAL CODE
19.00	0190	39.30	31.00	20.00	17.50	0B3-19 B3
28.00	0280	47.30	40.00	26.50	18.00	0B3-28 B3
38.00	0380	59.30	53.00	33.50	16.80	0B3-38 B3

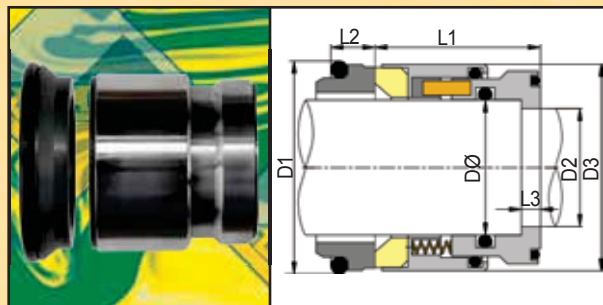
Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

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# VULCAN® SEALS TO SUIT GRUNDFOS® HILGE® INOXPA® AND JABSCO® PUMPS

## HYGIENIC 1662/1663 SEAL TYPES



Vulcan manufacture and stock multi- spring seals to replace the original O.E.M. wave-spring seals, utilised for hygienic applications in Grundfos® Hilge® centrifugal pumps.

The common centrifugal series includes; Hygiana®, Euro Hygia®, Maxana®, Dura®, Sipla®, Contra® and Durietta®. However, the seal codes are universal and you may identify your seal from the codes below.

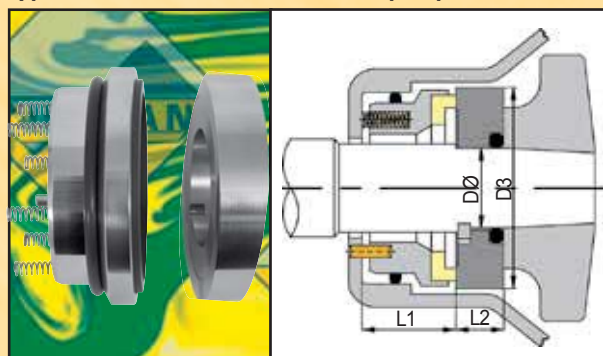
Conversion to the direct replacement Vulcan balanced multiple-spring design avoids the potential for premature single wave-spring failure.

SHAFT SIZE DØ	SIZE CODE	D1	D2	D3	L1	L2	L3	VULCAN TYPE CODE	O.E.M. SEAL CODE	GUARANTEED STOCK MATERIALS			
19.00	0190	30.90	16.00	33.50	29.00	8.00	4.00	1662	001-19 O1	EV	CS	R	316 FDA
28.00	0280	43.30	24.00	43.00	34.50	9.00	4.00	1662	001-28 O1	EV	CS	R	316 FDA
28.00	0280	43.30	24.00	43.00	33.00	9.00	4.00	1662L	001-28 A1	EV		R	316 FDA
28.00	0280	48.00	24.00	43.00	35.00	10.50	0.50	1663	BS2-28 O1	EV	CS	R	316
28.00	0280	48.00	24.00	43.00	38.00	10.50	4.00	1663A	BS3-28 O1	EV	CS	R	316
38.00*	0380	60.50	35.00	52.80	43.00	11.50	4.00	1662	001-38 O1	EV	CS	R	316 FDA
38.00	0380	57.10	35.00	52.80	35.00	10.50	0.50	1663	BS2-38 O1	EV	CS	R	316

## VULCAN® SEALS TO SUIT INOXPA® PUMPS

### Type 50 Seals to suit Prolac® Series pumps

EV P H S 316 FDA

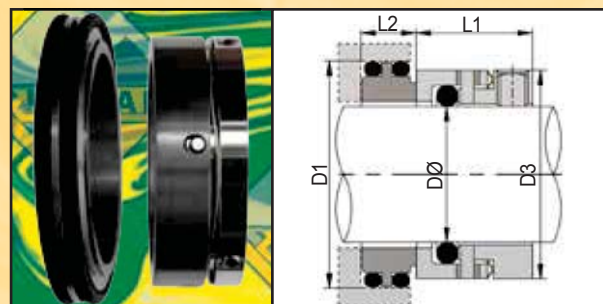


Vulcan manufacture and stock Type 50 stationary multi- spring seals, to suit Inoxpa® Prolac® “S-” series pumps, with single or tandem seal arrangements. With stationary seals like the Type 50, the coils are on the stationary and the rotary is a counter-ring. Pumps with flushed seal chambers use tandem seals, with the Vulcan Type 50 in the impeller position, and a standard Vulcan Type 1688 in the outer flush water position. Dimensions for the Type 1688 can be found in the Wave-Spring Seals section.

SHAFT SIZE DØ	SIZE CODE	D3	L1	L2
0.625	0158	44.50	26.00	10.50
1.000	0254	53.50	26.00	10.00
1.500	0381	74.00	31.00	15.50

## TYPE 1683 SEALS TO SUIT INOXPA® SLR® SERIES LOBE ROTOR PUMPS

V P 316

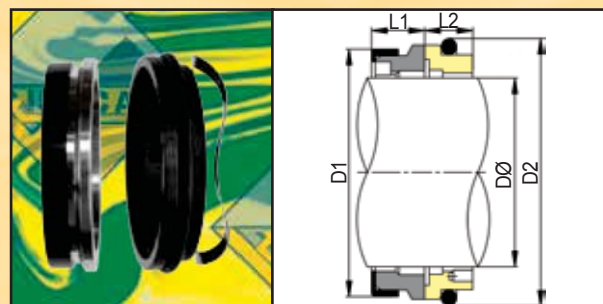


Vulcan manufacture and stock Type 1683 wave-spring ‘O’-Ring mounted seals with bi-elastomeric Stationaries, to suit Inoxpa® SLR® series lobe-rotor pumps. As with the majority of lobe rotor designs, two seals are required for each pump.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2
28.00	0280	45.00	39.00	19.10	12.00
35.00	0350	53.00	45.50	19.10	12.00
50.00	0500	70.00	63.50	23.00	12.00
65.00	0650	90.00	82.30	25.80	14.00

## VULCAN® TYPE 1651 SEALS TO SUIT JABSCO® PUMPS

N P 304 FDA



Vulcan manufacture and stock Type 1651 face sets to suit I.T.T. Jabsco® Hy-line® lobe-rotor pumps. Vulcan also offers other seals to suit common I.T.T. Jabsco® O.E.M. equipment, please contact us for details.

SHAFT SIZE DØ	SIZE CODE	D1	D2	L1	L2	O.E.M. PUMP MODEL
1.000	0254	37.00	38.00	11.10	12.30	LH 32, 34 & 42
1.375	0349	48.00	51.50	11.50	12.50	LH 44 , LH 52
1.875	0476	60.50	64.50	12.70	13.70	LH 62 , LH 64

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 180 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.

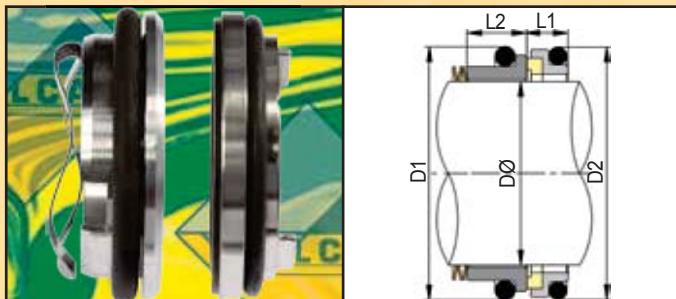




# VULCAN® SEALS FOR JOHNSON® PUMPS

Vulcan manufacture and stock a wide range of standard range seals that are utilised in S.P.X.® Johnson® equipment, such as our Type 24S, Type192B and Type 1677M seal ranges. Vulcan also make and stock several special design / dimension seals, the most common of which are detailed below.

## TYPE 1650 FACE SETS TO SUIT OL® -SERIES LOBE ROTOR PUMPS 304

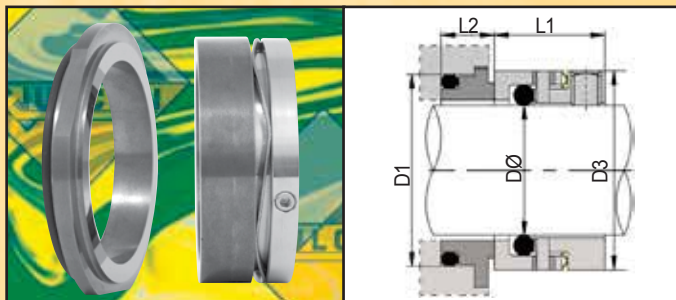


Vulcan manufacture and stock replacement seal face sets, complete with wave-springs and the necessary 'O'-Rings, in shaft sizes 24, 40 and 53mm.

For 75mm and all double seal versions, to suit pumps with flushed chambers, please contact us.

SHAFT SIZE DØ	SIZE CODE	D1	D2	L1	L2	O.E.M. PUMP MODEL
24.00	0240	38.00	37.50	11.00	14.00	OL 1
40.00	0400	58.00	56.00	12.50	15.50	OL 2
53.00	0530	71.00	69.00	11.50	17.50	OL 3

## TYPE 1688Y SEALS TO SUIT IC® AND PD® -SERIES LOBE ROTOR PUMPS 304



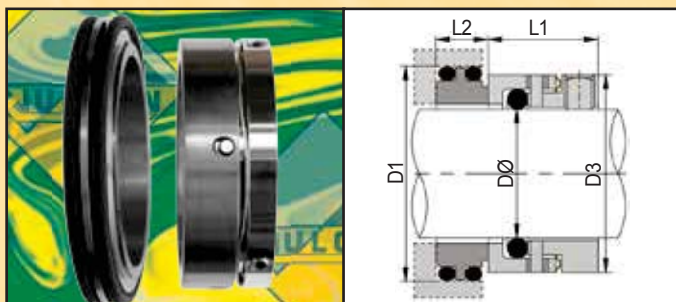
Vulcan manufacture and stock our Type 1688Y 'O'-Ring mounted wave-spring seals, with the very distinctive seat outer profile.

30mm size stationary has a single semi-circular anti-rotation slot, other sizes have three flat anti-rotation "slots".

Vulcan also offer our Type 1682Y in 30mm and 35mm sizes, featuring a standard Type 1682 rotary with the 1688Y stationary, which maybe the preferred option for these shaft sizes.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2	O.E.M. PUMP MODEL
30.00	0300	40.00	41.00	19.10	9.30	IC 10 , PD 10
35.00	0350	44.50	45.50	19.10	9.20	IC 20 , PD 20
50.00	0500	62.00	61.90	21.10	10.40	IC 30 , PD 30
70.00*	0700	85.00	88.90	25.80	14.10	IC 40 , PD 40
80.00*	0800	95.00	101.00	25.80	16.20	IC 50 , PD 50

## TYPE 1688Z SEALS TO SUIT TL® -SERIES LOBE ROTOR PUMPS 316



Vulcan manufacture and stock our Type 1688Z 'O'-Ring mounted wave-spring seals with bi-elastomeric stationaries, to suit "Top Lobe®" series lobe-rotor pumps.

### PLEASE NOTE:

Vulcan offer other specific design seals to suit S.P.X. Johnson pumps, such as our Type 1649 to suit "Top Wing®" and our Type 1698 to suit "SQ®" series pumps. Please contact us with your requirements and for stock availability on these.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2	O.E.M. PUMP MODEL
30.00	0300	48.00	41.00	19.10	10.30	TL 1
35.00	0350	55.00	45.50	19.10	12.00	TL 2
50.00	0500	72.00	61.90	21.10	12.00	TL 3

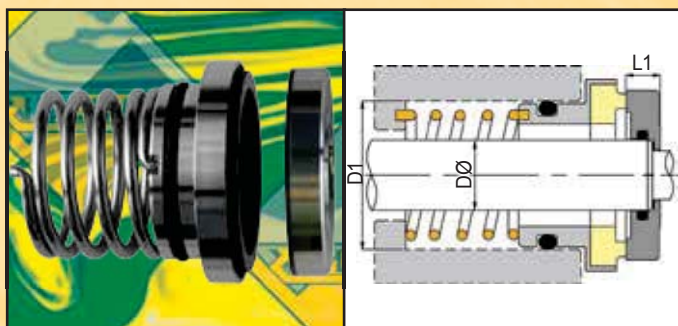
Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 18 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.



# VULCAN® SEALS TO SUIT G.E.A.® TUCHENHAGEN® PUMPS

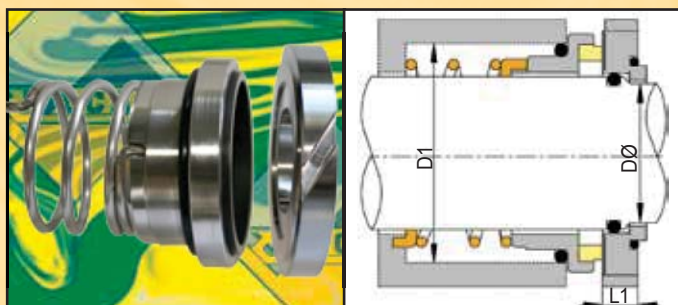
## TYPE 94 STATIONARY SEALS TO SUIT AG, ZG, AR AND ZR SERIES PUMPS 304



Vulcan manufacture and stock a range of single-spring stationary seals, with Silicon Carbide faced counter-ring rotaries, and inserted Carbon sprung-stationaries to replace the chrome-oxide coated rotaries of the O.E.M. seals.

SHAFT SIZE DØ	SIZE CODE	D1	L1
16.00	0120	30.00	7.00
24.00	0180	50.00	11.00
25.00	0210	50.00	11.00
35.00	0280	50.00	11.00

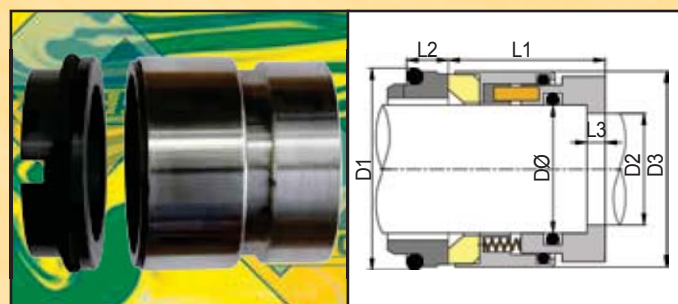
## TYPE B94 STATIONARY SEALS TO SUIT VP SERIES PUMPS 304



Vulcan manufacture and stock a range of single-spring stationary seals, with Stainless Steel counter-ring rotaries with outer turning-vane, and inserted Carbon sprung-stationaries.

SHAFT SIZE DØ	SIZE CODE	D1	L1
18.00	0210	40.00	10.00
22.00	0300	55.00	11.00
30.00	0350	55.00	11.00

## TYPE 1661 HYGIENIC SEALS TO SUIT VARIFLOW® KN PUMPS 316

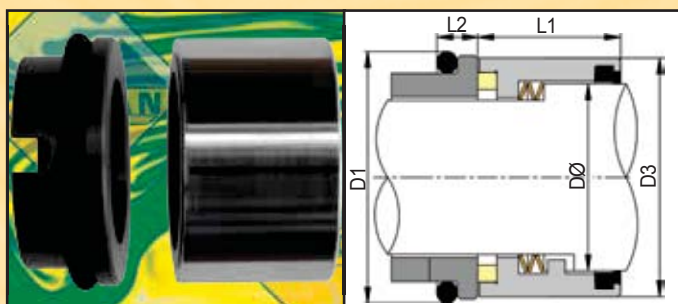


Vulcan manufacture and stock two sizes of hydraulically balanced, multi-spring hygienic seals to suit Variflow® KN-series pumps, directly replacing the original design.

Please contact us if you require the 50mm size or double seals for pumps with flushed seal chambers.

SHAFT SIZE DØ	SIZE CODE	D1	D2	D3	L1	L2	L3	O.E.M. TYPE CODE
30.00	0300	45.00	21.50	44.50	32.50	7.00	4.00	KN 1
35.00	0350	50.00	28.00	49.30	40.50	7.00	4.00	KN 3

## TYPE 1691 HYGIENIC SEALS TO SUIT VARIFLOW® TP PUMPS 316 FDA



Vulcan manufacture and stock two sizes of hydraulically balanced, multi-spring hygienic seals to suit Variflow® TP-series pumps.

The rotary head locates directly onto a specific area of the shaft, removing the need for an inner barrel. The rotary also has a distinctive very low seal face protrusion profile.

SHAFT SIZE DØ	SIZE CODE	D1	D3	L1	L2	O.E.M. PUMP MODEL
30.00	0250	40.00	39.00	24.50	7.00	TP10, TP15, TP20, TP30
35.00	0300	45.00	44.00	25.50	7.00	TP16, TP25, TP50, TP80

Advice on our Material Codes shown above and our standard coding system are on Pages 109 & 180 of this brochure. For ease, please refer to our O.E.M. Price List where you will find a clear list, filterable by either the O.E.M.'s name or Vulcan Seal Type number, showing all common materials and stock codes, pricing and Stock Guarantee.

All seals / sizes / materials detailed above are guaranteed ex-stock, unless asterisked. For any other sizes, or identification by X-reference, please refer to the on-line O.E.M. database, or contact us with your requirements.