



Vulcan Direct Replacement Seals For Food, Beverage And Dairy Industries

Vulcan offer the widest range of direct replacement seals to suit the most common and widely utilised pumps in the food process, beverage and dairy industries. All seals are manufactured to the highest standards using the highest quality materials and can be fitted to pumps without modification.

Within this range, Vulcan now manufacture a range of seals specified to be compliant with FDA and European Regulations. For more information, please refer to our 'Technical and Material Standards' in Section 2 of this catalogue.



Section 11b

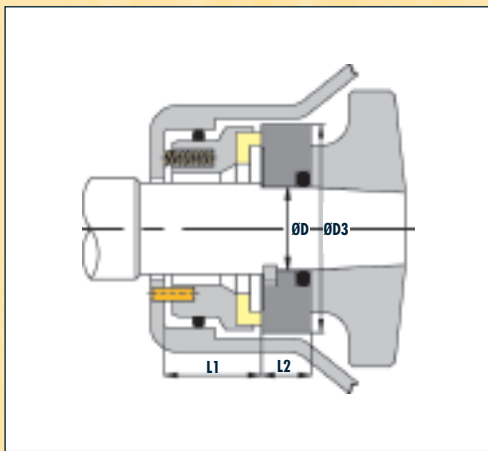
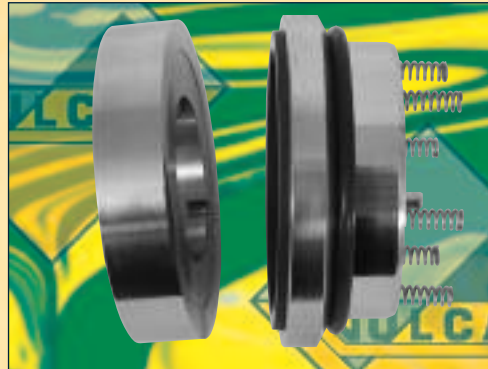
VULCAN TYPE 50/1683 SEALS TO SUIT INOXPA®

PROLAC AND SLR PUMPS

Vulcan offer a range of seals to suit both single and double seal arrangements for Inoxpa Prolac® and SLR® Pumps.

Both single and double types of seal are of a unique design to directly replace the original seals, without any modifications to these pumps.

TYPE 50



A unique design of multi-spring seal, where the sprung component behaves as the stationary. Suits all Inoxpa Prolac® applications where the single, uncooled mechanical seal is required. This seal is also utilised as the internal seal in double, cooled seal arrangements.

VULCAN CODES

All Type 50 and 1683 seals are supplied as standard with Viton® 'O'-rings, if other materials are required please advise at the time of order.

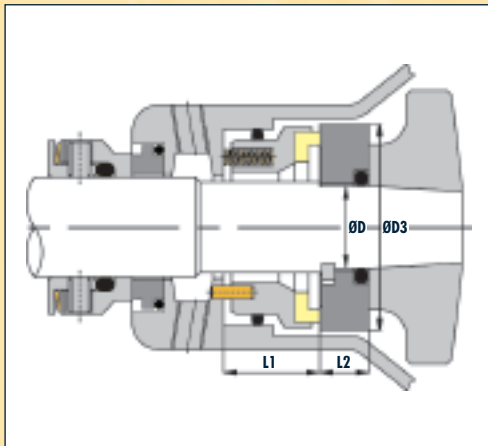
Where xxxx is stated in the code, add the appropriate shaft size. If EP or Nitrile is required, replace the V in the code with an E or N respectively.

xxxx.50.V.P. Type 50, with stainless steel rotary and inserted Carbon faced multi-spring stationary.

xxxx.50.V.S. Type 50, with monolithic Silicon Carbide rotary and inserted Silicon Carbide multi-spring faced stationary.

xxxx.1683.V.P. Type 1683, with stainless-steel rotary and carbon seat.

xxxx.1688.V.P. Type 1688, with stainless-steel rotary and carbon seat.



VULCAN STANDARD SIZES

Inch Shaft Size D	Size Code	L1	L2	D3
0.625	0158	26.00	10.50	44.50
1.000	0254	26.00	10.00	53.50
1.500	0381	31.00	15.50	74.00

Vulcan offer the Type 1683 range of seals to suit the Inoxpa® SLR pump, utilising a stainless-steel wave spring rotary with a unique, double 'O'-Ring mounted carbon stationary. The Type 1683 seal is available in four shaft sizes to suit the common SLR pumps.

Seals to suit Inoxpa Prolac® Pumps.

PUMP MODEL	SEAL TYPE	VULCAN EQUIVALENT
S-15, -20, -26, -28 & -35	5/8" Single-internal	0158.50.V.P.
S-15, -20, -26, -28 & -35	28mm Double-external seal	0280.1688.V.P.
S-38, -70 & -80 with 160kW motor	1.0" Single-internal	0254.50.V.P.
S-38, -70 & -80	35mm Double-external seal	0350.1688.V.P.
S-38, -70 & -80 with 180 or 200kW motor	1.1/2" Single-internal	0381.50.V.P.
S-38, -70 & -80	50mm Double-external seal	0500.1688.V.P.
S-38, -70 & -80, MR200-250 version	1.1/2" Single-internal	0381.50.V.P.
S-38, -70 & -80	65mm External seal	0650.1688.V.P.

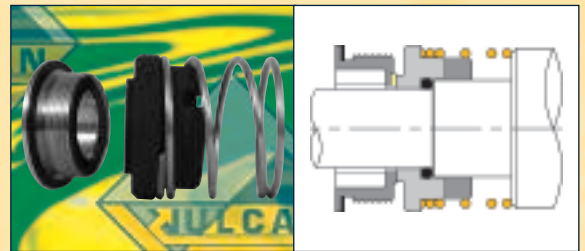


VULCAN TYPE 9x SEALS TO SUIT VARIOUS ALFA LAVAL® PUMPS.

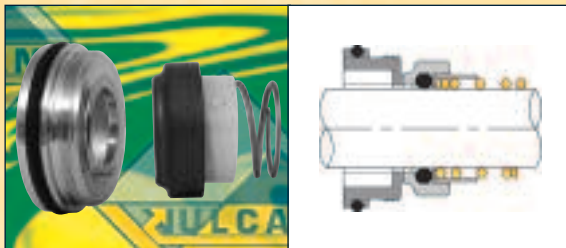
Vulcan manufacture and stock a complete range to suit CMx, EMx, FMx, and GMx series pumps, as well as MR and LKH series pumps. Seals are available from stock with carbon or silicon carbide rotary heads vs. stainless steel or inserted silicon carbide faced left-hand threaded seats. E.P. 'O'-rings are fitted as standard, if another elastomer is required please advise at time of order.



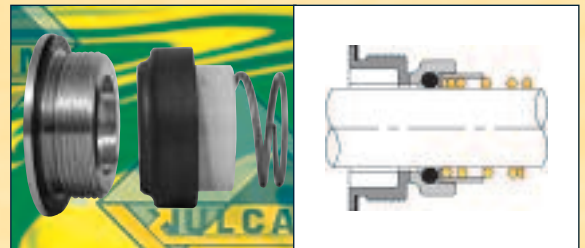
Type 91 22mm complete seal, designed to suit pump models CM1A, CM1B, CM1C, CM1D, EM1C and EM1D.



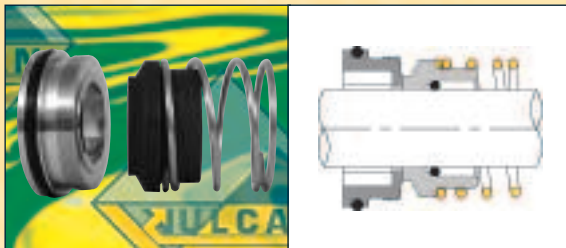
Type 91B 22mm complete seal, designed to suit pump models FM0, FM0S, FM1A, FM1AE, FM2A, FM3A and FM4A.



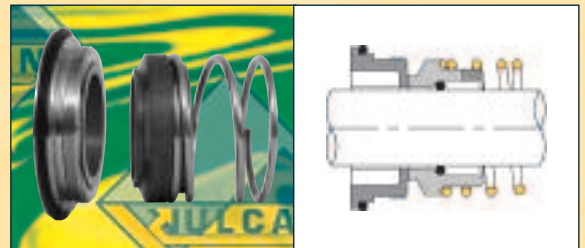
Type 93 22mm complete seal, designed to suit pump models MR166A, MR166B and MR166E.



Type 93B 22mm complete seal, designed to suit pump model ME155AE, GM1, GM1A, GM2 and GM2A.



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



Type 92 32mm complete seal, designed to suit pump models LKH5 through to LKH60 with single or flushed seals fitted.

Type 92D 32mm complete double seal also available.

Type 92 42mm complete seal, designed to suit pump models LKH70 through to LKH80 with single seals fitted.

VULCAN CODING

If Nitrile or Viton® is required, replace the E character in the code with an N or V.

Where yyyy is stated in code, insert relevant shaft size, where xx is stated in code, insert relevant seal type

yyyy.xx.E.Q.	Complete seals, with carbon rotary head and stainless steel seat.
yyyy.xx.E.D.	Complete seals, with carbon rotary head and inserted silicon carbide seat.
yyyy.xx.E.S.	Complete seals, with silicon carbide head and inserted silicon carbide seat.
0320.92D.E.YC.	Complete double seals, carbon vs. inserted silicon carbide seat inboard and outboard.
yyyy.xx.E.C.SEAL	Rotary unit only, with carbon head.
yyyy.xx.E.S.SEAL	Rotary unit only, with silicon carbide head.
yyyy.xx.E.Q.STAT	Threaded seat unit, in solid stainless steel.
yyyy.xx.E.S.STAT	Threaded seat unit, in stainless steel with inserted silicon carbide face.

Vulcan also produce seals to suit other Alfa Laval® MR series pumps, models MR260A to MR300A, as well seals to suit Alfa Laval® Tri-Clover® pumps and face kits for LKH multi-stage pump models. Please ask for details.

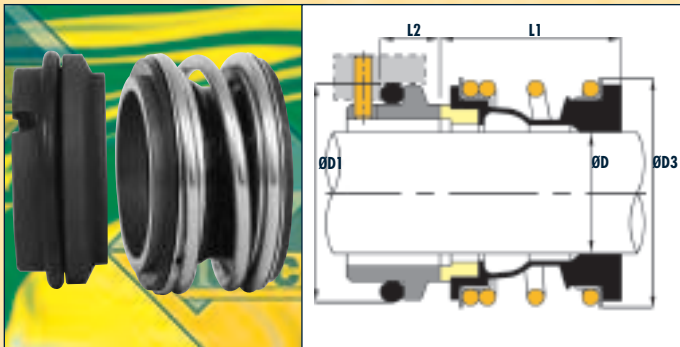
Vulcan can supply these seals in FDA compliant materials, please refer to Section 2 - 'Technical and Material Standards' for further details.



VULCAN SEALS TO SUIT ALFA LAVAL® EQUIPMENT

Vulcan manufacture seals to suit the Alfa Laval® ALC, ALP and other Alfa Laval® pump and equipment ranges.

TYPE 19C

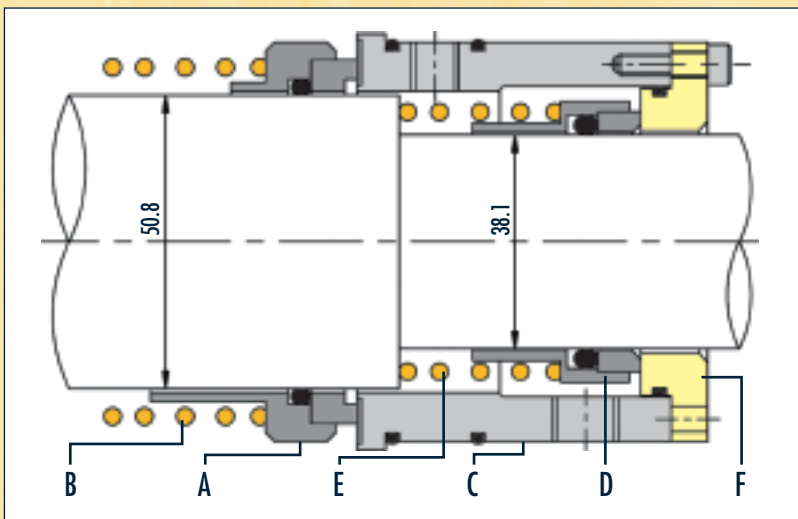


Vulcan produce a special Type 19 seal to suit Alfa Laval ALC® series pumps, motor sizes from 1.5kW to 22kW. Available from stock with silicon carbide vs. carbon seat as standard, in all common elastomers.

VULCAN STANDARD SIZES

Metric Shaft Size D	Size Code	D1	D3	L1	L2
40	0400	58.00	60.00	30.00	14.00
53	0530	73.00	76.00	33.00	15.00
60	0600	80.00	85.00	38.00	15.00

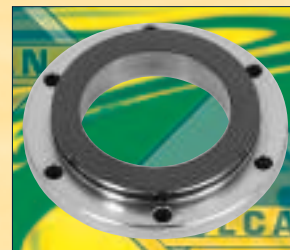
VULCAN SEALS TO SUIT ALFA LAVAL CONTHERM® DRYER SEAL SYSTEM



SHELLEND



2" FLUSH SINGLE



1.1/2" FLUSH SINGLE



2" NONFLUSH SINGLE

VULCAN CODING.

All components are supplied as standard with Nitrile 'O'-rings, if other materials are required please advise at time of order.

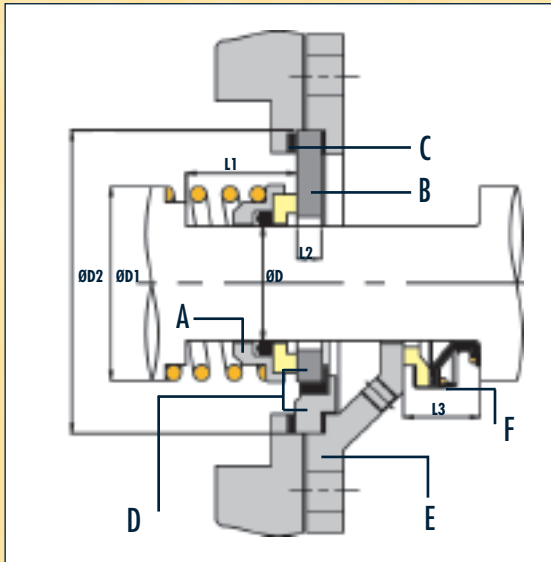
- A SHELLEND 2.000" Outer shaft rotary head, with inserted tungsten carbide face.
- SHELLEND.CARB 2.000" Outer shaft rotary head, with inserted carbon face.
- B SHELLEND.COIL Spring to suit 2.000" outer shaft rotary head.
- C 2" FLUSH SINGLE 2.000" Outer shaft collet, with chrome dioxide coated running face.
- D 1.1/2".SHELLEND 1.1/2" Inner shaft rotary head, with inserted carbon face.
- E 1.1/2".SHELLEND.COIL Spring to suit 1.1/2" inner shaft rotary head.
- F 1.1/2" FLUSH SINGLE 1.1/2" Inner shaft bush, with chrome dioxide coated running face.

We also produce and stock an alternative component C, with a reduced length and no flush ports.

- C 2" NONFLUSH SINGLE 2.000" Outer shaft collet, with chrome dioxide coated running face.



VULCAN TYPE 26 SEALS TO SUIT APV PUMA® PUMPS



Vulcan have been successfully supplying the dairy and beverage industries with seals to suit APV Puma® pumps for over 15 years. Vulcan produce and stock all the seals and associated components commonly used on the 1.000" and 1.500" shaft Puma® pumps.

Every seal, seat and gasket component, used on the range of these pumps, is available ex-stock, in all common face and elastomer materials.

VULCAN STANDARD SIZES

Shaft Size D	Size Code	D1	D2	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 code, add 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 stainless adaptor.
- XXXX.26.N.S.SEAT Type 26 boot mounted silicon carbide seat, inserted in stainless adaptor.
- XXXX.26.N.C.GASK Gasket set, with flat and L-shaped gasket, for above plate seat.

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

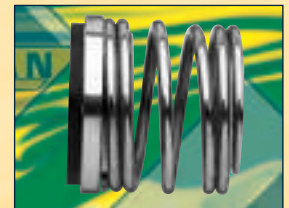
- XXXX.26.S.S.PLAT Type 26 stainless steel backing plate with flush connection holes.
- XXXX.18.N.C.SEAL Type 18 inboard rotary, Nitrile bellows and carbon face.

ANCILLARY INFORMATION.

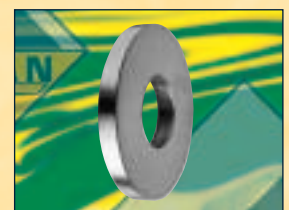
All parts are fitted with Nitrile elastomers as standard. If E.P. or Viton® are required, please specify this at the time of order.

Vulcan also manufacture and stock 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" ID
- P.9"BODYSEAL Square section Nitrile gasket, with 9.0" ID
- P.11"BODYSEAL Square section Nitrile gasket, with 11.0" ID



XXXX.26.N.C.SEAL



XXXX.26.S.S.(D)



XXXX.26.GASK

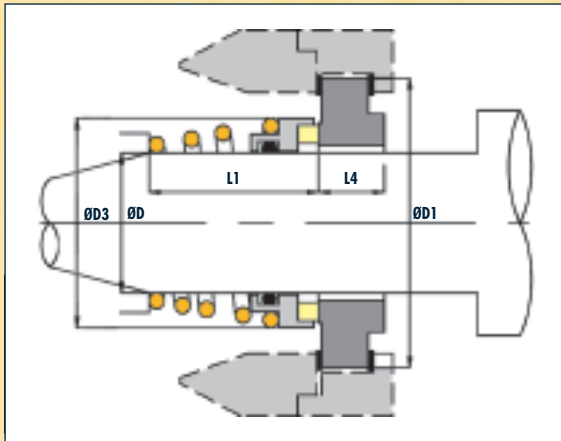


XXXX.26.S.S.PLAT

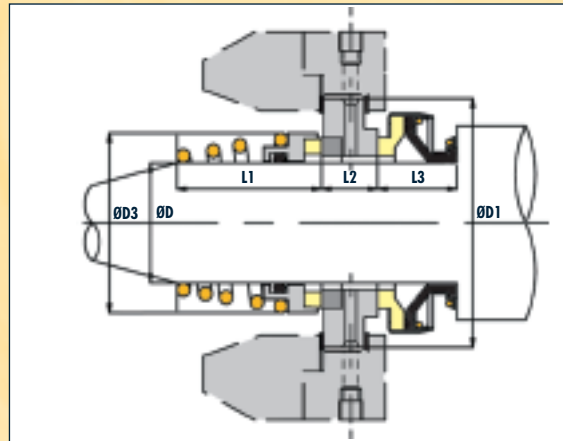
VULCAN TYPE 16 SEALS TO SUIT APV W® AND APV W+® PUMPS

The APV W® and APV W+® pumps have been introduced to replace the APV Puma® pumps. Vulcan manufacture and stock a complete range of mechanical seals designed to suit APV W® and APV W+® pumps, in single and double configuration.

VULCAN SINGLE SEAL ARRANGEMENT AND STANDARD DIMENSIONS



VULCAN DOUBLE SEAL ARRANGEMENT AND STANDARD DIMENSIONS



VULCAN STANDARD SIZES

Metric Shaft Size D	Size Code	D1	D3	L1	L2	L3	L4
25	0250	52.00	38.20	25.40	17.00	14.00	16.00
35	0350	62.50	49.50	33.30	20.00	16.00	16.00

VULCAN STOCK CODES.

Where XXXX is stated in the code, add 0250 or 0350 for 25mm or 35mm shaft size as appropriate. If E.P. is required, replace the N character in the code with an E.

SINGLE SEAL ARRANGEMENTS

- XXXX.16.N.D. Type 16 with carbon rotary face and monolithic silicon carbide seat
- XXXX.16.N.S. Type 16 with silicon carbide rotary face and monolithic SIC seat
- XXXX.16.N.H. Type 16 with tungsten carbide rotary face and monolithic TC seat
- XXXX.16.N.C.GASK Two-part gasket set for the Type 16 stationary

DOUBLE SEAL ARRANGEMENTS

- XXXX.16.DOUB.N.W. Carbon vs silicon carbide inboard, stainless vs carbon outboard
- XXXX.16.DOUB.N.Y. Carbon vs silicon carbide inboard, silicon carbide vs carbon outboard
- XXXX.16.DOUB.N.WS. Silicon carbide vs silicon carbide inboard, stainless vs carbon outboard
- XXXX.16.DOUB.N.Z. Silicon carbide vs silicon carbide inboard, silicon vs carbon outboard
- XXXX.16.DOUB.N.ZS. Silicon carbide vs silicon carbide inboard, silicon vs silicon outboard
- XXXX.16.DOUB.N.ZH. Tungsten carbide vs tungsten inboard, tungsten vs tungsten outboard
- XXXX.16.D.NWSTATMON Central seat only, monolithic silicon carbide

ANCILLARY INFORMATION.

Vulcan manufacture and stock replacement face kits for APV W+® pumps, available in carbon vs silicon carbide, or silicon carbide vs silicon carbide, with E.P., Nitrile or Viton® 'O'-rings. The kits include rotary and stationary faces, with two 'O'-rings to suit, and a replacement face pin.

- XXXX.16.PLUS.N.D. Type 16 PLUS face kit, silicon long face, carbon short face
- XXXX.16.PLUS.N.T. Type 16 PLUS face kit, with carbon long face, silicon carbide short face
- XXXX.16.PLUS.N.S. Type 16 PLUS face kit, with silicon carbide long face, silicon carbide short face



XXXX.16.DOUB.V.X



XXXX.16.N.X



XXXX.16.D.XX.STATMON



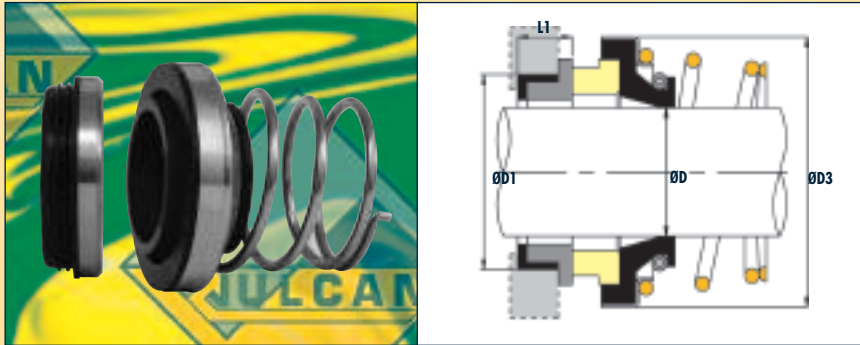
XXXX.16.PLUS.N.X



VULCAN TYPE 29 SERIES SEALS TO SUIT APV® PUMPS

Vulcan produce and stock a wide range of mechanical seals designed to directly replace all other common APV® pump seals. We are continually extending this range, if what you require is not shown in this brochure, then please ask.

TYPE 29



Vulcan Type 29, suitable for APV® ZMA, ZMB, ZMD, ZMS, ZMH & ZMK "Rosista®" and "Pasilac®" pumps. Available with carbon rotary face vs. stainless boot mounted seat as standard, or with hard silicon carbide faces, in all standard elastomers.

VULCAN STANDARD SIZES

Metric Shaft Size D	Size Code	D1	D3	L1	Pump Type
20	0200	30.00	40.60	9.80	ZMA, ZMB, ZMH-1, ZMH-2, ZMK-1 & ZMK-2
25	0250	35.00	45.40	9.80	ZMS-3 & ZMS-4
30	0300	42.00	57.00	13.00	ZMH-4, ZMK-3 & ZMD

VULCAN CODING.

Where XXXX is stated in the code, add 0200, 0250 or 0300 for 20, 25 or 30mm as required.

If E.P. or Viton® is required, replace the N character in the code with an E or V respectively.

XXXX.29.N.Q. Type 29 with carbon rotary face and monolithic stainless steel seat

XXXX.29.N.S. Type 29 with silicon carbide rotary face and monolithic silicon seat.

VULCAN TYPE 295

Wave-spring seal available in two sizes, 48mm for APV® ZMS-5 and 54mm for APV® ZMS-6 pumps. Rotary unit has a carbon inserted face, with a monolithic stainless steel pinned-seat. Inserted carbide faces are also available.

Where XXXX is stated in the code, add 0480 or 0540 for required shaft size.

If Nitrile or Viton® is required, replace the E character in the code with an N or V respectively.

VULCAN CODING.

XXXX.295.E.Q. Type 295 carbon rotary face vs. stainless steel seat, E.P. 'O'-rings

XXXX.295.E.H. Type 295 Tungsten Carbide rotary face vs. Tungsten Carbide seat, E.P. 'O'-rings.



0480.295.V.Q

VULCAN TYPE 292

Bearing face kits, for 1.1/8" shaft size, suitable for APV, Osborne Craig® mixers.

The bearing seat is monolithic carbon, with the bearing being monolithic ceramic.

VULCAN CODING.

0286.292.X.C. 1.1/8" Type 292 complete bearing; ceramic bearing vs. carbon seat

FURTHER VULCAN TYPES FOR APV® PUMPS.

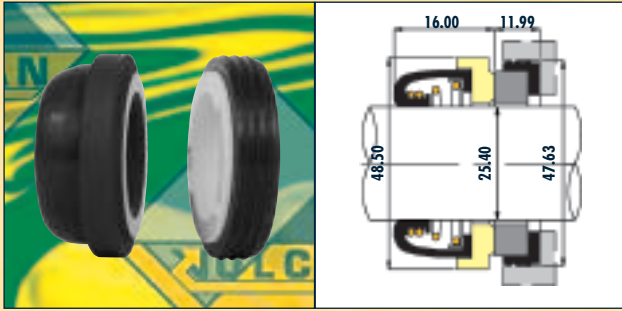
Vulcan also produce mechanical seals to suit APV®, ZMS410 and ZM8-610 pumps. Vulcan Type 294 repair kits for APV Howard® Cleanline R900® wave-spring seals, in single or double arrangement, consisting of rotary face with 'O'-Ring, stationary face with elastomer boot, and a wave-spring, are available usually from stock.



0286.292.X.C



VULCAN TYPE 66 RUBBER-ENCASED SEAL.



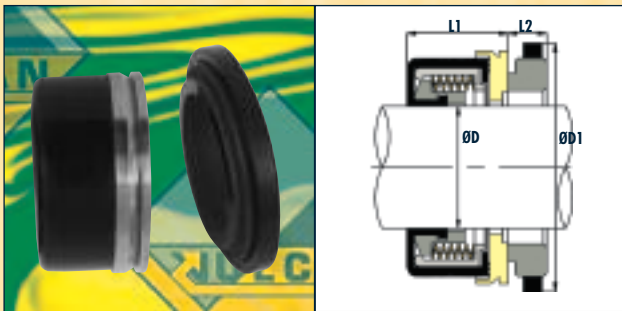
Vulcan produce a simple, 1.0" shaft size rubber encased, single-spring seal for use in several common food and dairy equipment applications.

VULCAN CODING.

Available in Nitrile as standard, if E.P. is required, replace the N character in the code with an E.

- 0254.66.N.C. Type 66 seal, with carbon face rotary vs. ceramic boot mounted seat.
- 0254.66.N.C.SEAL Type 66, carbon-faced, rotary unit only.

VULCAN TYPE 1644 RUBBER-ENCASED SEAL.



Vulcan Type 1644 rubber-encased multi-spring seal, for use in the food, beverage and dairy industries applications.

Available with Ni-Resist seal face and carbon seat-ring, Nitrile elastomers, other material combinations available to special order.

VULCAN CODING.

Where XXXX is stated in the code, replace with 0381 or 0444 for 1.1/2" or 1.3/4" shaft sizes.

- XXXX.1644.N.K. Type 1644 seal, with Ni-Resist seal face vs. carbon seat, Nitrile elastomers

Shaft Size D	Size Code	D1	L1	L2
1.500	0381	75.70	33.00	16.00
1.750	0444	82.05	33.00	16.00

VULCAN TYPE 1655 WAVE-SPRING SEALS TO SUIT IBEX® MOG PUMPS



Vulcan manufacture and stock a range of face repair kits and barrels to suit MOG® and ALP® pumps.

Available with inserted carbon or silicon carbide faced rotary heads, and monolithic stainless steel, or inserted silicon carbide pinned seats as standard, with inserted tungsten carbide faces available to order. Repair kits comprise of rotary head with 'O'-Ring and wave-spring, with seat and 'O'-Ring. The barrels to complete the rotary unit are available as separate items. Other shaft sizes are available to suit APV® Howard CL® pumps.

VULCAN CODING.

If Nitrile or Viton® is required, replace the E character in the code with an N or V. Where XXXX appears in the code, replace with relevant size code, according to the dimension table.

- XXXX.1655.E.Q. Face repair kit, with inserted carbon rotary face and stainless steel seat
- XXXX.1655.E.S. Face repair kit, with inserted silicon carbide faces to rotary and seat
- XXXX.1655.BARR Replacement rotary barrel, complete with grub screws.

Shaft Size DØ			Seal O.D.		Seat O.D.		Working Length	
Metric	Inch	Size Code	Metric	Inch	Metric	Inch	Metric	Inch
1.188	30.16	0300	40.75	1.604	42.70	1.681	10.00	0.394
1.375	34.90	0349	46.75	1.841	47.60	1.874	15.80	0.622
2.000	50.80	0508	65.40	2.575	66.60	2.622	11.50	0.453
3.000	76.20	0762	98.60	3.882	101.60	4.000	11.50	0.453

Further Vulcan Types for the Food and Dairy Industries

As can be seen from this section of this brochure, Vulcan offer an exceptional range of mechanical seals specifically for the Food and Dairy Industries, and this range is constantly under further expansion. For example, Vulcan have recently developed repair kits to suit Maso-Sine® SPS pumps, consisting of ceramic rotary face with 'O'-Ring, pressure ring and double-wave spring, together with carbon, 'O'-Ring mounted seat. If you require details of these, or any other application not illustrated here, please ask. With our excellent design and production facilities, we are sure to be able to help.



VULCAN MECHANICAL SEALS TO SUIT FRISTAM® PUMP APPLICATIONS

Fristam® seal, seat and collet arrangements are widely utilised in the Dairy and Whey industries. Vulcan offer a complete range of components and collets which can be fitted directly into Fristam® pump applications without any need for amendment to the pump housing. These components are available either as individual components (see below) or as complete collet arrangements (see following pages) to suit your requirements. Only the most common components are shown, therefore If you require anything else, please contact us.



XX08/12

Individual Vulcan Rotary Components;

Inboard Rotaries

Vulcan Coding

Where XX is stated in the code, apply 22, 30 or 35 as appropriate to shaft size required.
 XX08/12
 XX08/12.S.C.
 XX08/12.T.C.

Description

Inboard rotary, with base plate, with inserted carbon face
 Inboard rotary, with base plate, with inserted silicon carbide face
 Inboard rotary, with base plate, with inserted tungsten carbide face
 Note: 35mm has a right hand coil with No base plate



2209/1



XX08/12B

Outboard Rotaries

These do not have a base plate and have left hand springs.

XX08/12B
 XX08/12B.S.C.
 XX08/12B.T.C.

Outboard rotary (no base plate), with inserted carbon face
 Outboard rotary (no base plate), with inserted silicon carbide face
 Outboard rotary (no base plate), with inserted tungsten carbide face



2209/2 & 3009/2

Alternative Rubber Encased Rotaries.

2209/1 22mm Outboard encased rotary, with carbon face
 2209/2 22mm Inboard encased rotary, with carbon face
 2209/3 22mm Outboard encased rotary, with carbon face and garter spring
 3009/1 30mm Outboard encased rotary, with carbon face
 3009/2 30mm Inboard encased rotary, with carbon face
 3009/3 30mm Outboard encased rotary, with carbon face and garter spring



XX06/61

Individual Vulcan Rotary Components;

'O'-Ring Mounted Stationaries.

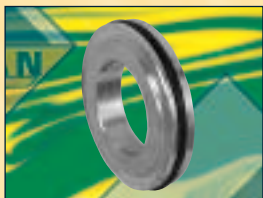
Where XX is stated in the code, apply 22, 30 or 35 as appropriate to shaft size required.

XX06/61
 XX06/61.S.C.
 XX06/61.S.C.MON
 XX06/61.T.C.
 XX06/61.T.C.MON
 3006/8
 XX05/6
 XX05/6.S.C.
 XX05/6.S.C.MON
 XX05/6.T.C.
 XX05/6.T.C.MON
 2207/1

Inboard pinned-seat, monolithic stainless steel
 Inboard pinned-seat, with inserted silicon carbide face
 Inboard pinned-seat, monolithic silicon carbide
 Inboard pinned-seat, with inserted tungsten carbide face
 Inboard pinned-seat, monolithic tungsten carbide
 Inboard double 'O'-Ring seat, monolithic stainless steel, 30mm
 Outboard seat, monolithic stainless steel
 Outboard seat, with inserted silicon carbide face
 Outboard seat, monolithic silicon carbide
 Outboard seat, with inserted tungsten carbide face
 Outboard seat, monolithic tungsten carbide
 Outboard seat, monolithic ceramic (22mm only)



2209/3 & 3009/3



XX05/6



2204/9



2201/1

Individual Vulcan Rotary Components;

Vulcan Coding

2201/1
 2201/2
 2201/3

Description

Outer collet, without internal carbon bush
 Outer collet, with internal carbon bush
 Outer collet, with internal carbon bush and reduced ID dimension at internal flush port.
 Replacement carbon bush for the above collets.
 Collet for single seal arrangement.



XX01/1



2201/2 OR 2201/3

Where XX is stated in the following codes, apply

30 or 35 as appropriate to shaft size required. Not Available in 22mm
 XX01/1 Centre collet, to accept inboard and outboard seats
 XX01/2 Centre seat with lapped faces, monolithic stainless steel
 XX01/2.CER Centre seat with lapped faces, monolithic ceramic
 XX01/2.S.C.MON Centre seat with lapped faces, monolithic silicon carbide



XX01/2



VULCAN MECHANICAL SEALS TO SUIT FRISTAM® PUMP APPLICATIONS



2201/5 & 2201/51

VULCAN ADDITIONAL COLLET COMPONENTS;

For line diagrams please see following pages.

VULCAN CODING DESCRIPTION

- 2201/5 Outer collet, with internal carbon bush
- 2201/51 Outer collet, with internal carbon bush
- 3001/6 Outer collet, with internal carbon bush
- 3501/7 Outer collet, with internal carbon bush and external gland plate.
- 3501/7.GLAN Gland plate for above collet
- 2201/8 Outer collet, with internal carbon bush
- 2201/91 Outer collet, without internal carbon bush



3501/7 with gland fitted



2201/8

- 2204/6 Replacement carbon bush for 2201/5 collet
- 2204/9 Replacement carbon bush for 2201/51 collet
- 3004/6 Replacement carbon bush for 3001/6 collet
- 3004/7 Replacement carbon bush for 3501/7 collet
- 2204/3 Replacement carbon bush for 2201/8 collet

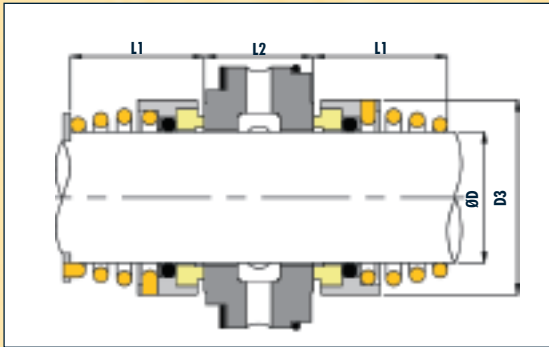


3006/8

VULCAN GASKET-MOUNTED CENTRAL STATIONARY COMPONENTS;

Where XX is started please add relevant size code.

2205/1 & XX05/2 Arrangement



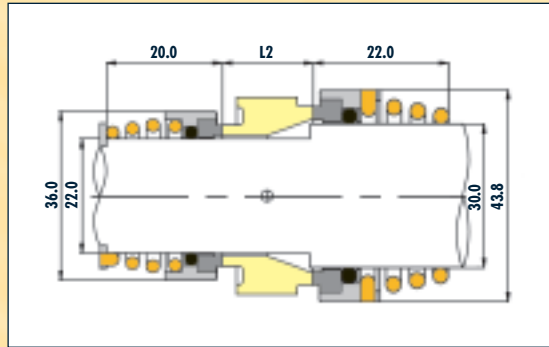
XX08/12

INBOARD
ROTARY

XX08/12B

OUTBOARD
ROTARY

2205/3 Arrangement



2208/12

INBOARD
ROTARY

3008/12B

OUTBOARD
ROTARY



2205/1 & XX05/2

Metric Shaft Size D	D1	D3	L1	L2
22	50.0	36.0	20.0	22.5
22	44.7	36.0	20.0	31.0
30	60.0	43.8	22.0	28.0
35	64.0	48.9	26.0	30.0
22/30	45.0	See Above Diagram		29.7



2205/2.CARB

VULCAN CODING DESCRIPTION

- 2205/1 Central Gasket Seat in Stainless Steel
- 2205/2 Central Gasket Seat in Stainless Steel
- 2205/2.CARB Central Gasket Seat in Carbon

VULCAN CODING DESCRIPTION

- 3005/2 Central Gasket Seat in Stainless Steel
- 3505/2 Central Gasket Seat in Stainless Steel
- 2205/3.CARB Central Gasket Seat for Stepped Shaft, in Carbon

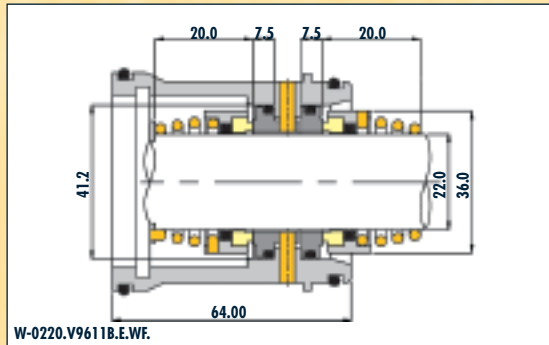


VULCAN EQUIVALENTS TO REPLACE FRISTAM® COLLET ARRANGMENTS

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® original collet assembly while giving the benefits of Vulcan quality and reliability.

The following illustrations only show the most common arrangements for each collet style, please ask for alternatives, we have a huge range of variations available to suit your requirements.

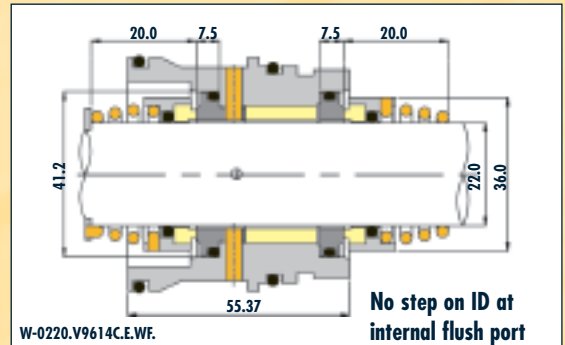
2201/1 Collet Arrangement



W-0220.V9611B.E.WF.

- 2208/12
INBOARD
ROTARY
- 2206/61
INBOARD
STAT
- 2205/6
OUTBOARD
STAT
- XX08/12B
OUTBOARD
ROTARY

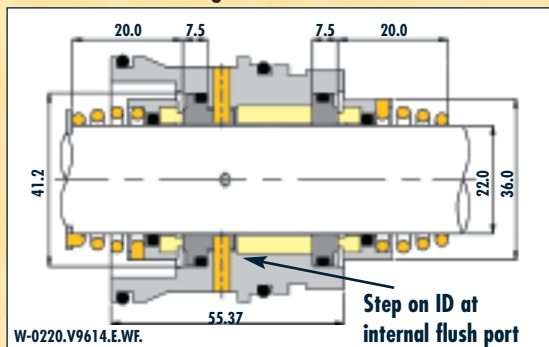
2201/2 Collet Arrangement



W-0220.V9614C.E.WF.

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

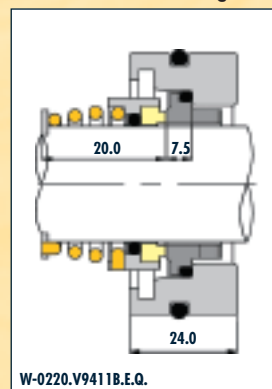
2201/3 Collet Arrangement



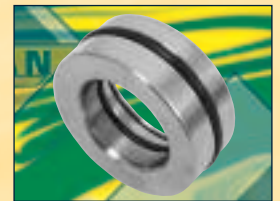
W-0220.V9614.E.WF.

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

2201/4 Collet Arrangement

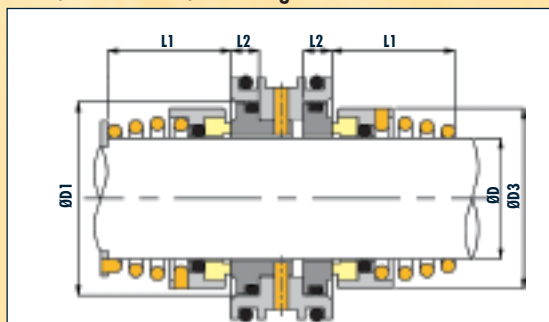


W-0220.V9411B.E.Q.



2201/4

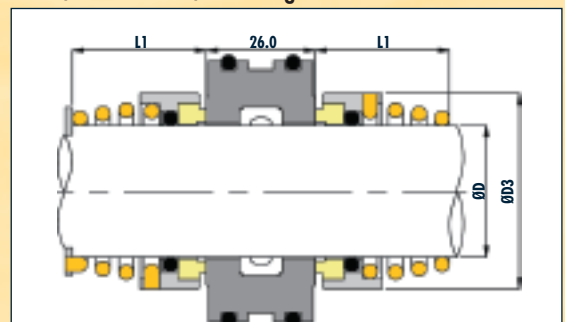
3001/1 and 3501/1 Arrangement



W-0300.V9701C.E.WF.

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

3001/2 and 3501/2 Arrangement



W-0300.V9701F.E.WF.

W-0350.V9704.E.WF.

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

30/35mm Collet Assembly Dimensions	Metric Shaft Size D	Size Code	D1	D3	L1	L2
	30	0300	48.0	43.8	22.0	7.6
	35	0350	55.5	48.9	26.0	8.6

Vulcan can supply these seals in FDA compliant materials, please refer to Section 2 - 'Technical and Material Standards' for further details.

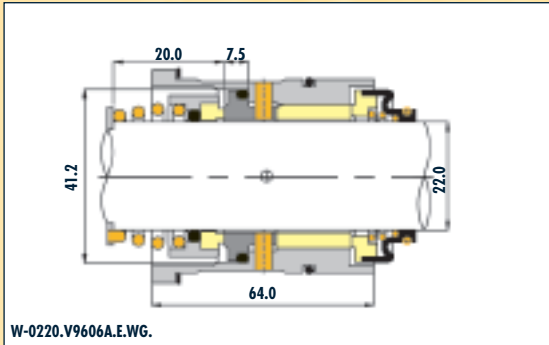


VULCAN EQUIVALENTS TO REPLACE FRISTAM® COLLET ARRANGMENTS

To aid the identification of the correct seat unit, the Vulcan code is derived from the original seal code, with a "W-V" prefix, and a standard Vulcan material code suffix. For example, a Vulcan seal to replace code "9.611b" would be W-V9611B.E.WF., where the E denotes E.P. elastomers, and WF denotes a double seal, with carbon vs 316 stainless steel running faces inboard and outboard.

The following illustrations only show the most common arrangements for each collet style, please ask for alternatives, we have a huge range of variations available to suit your requirements.

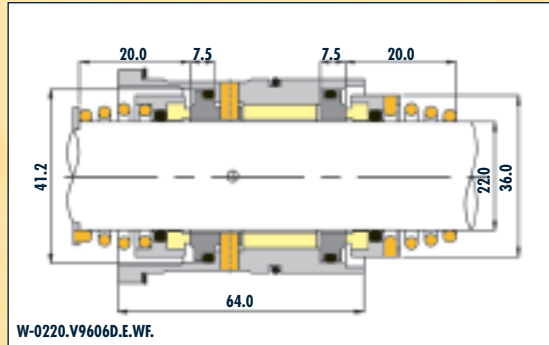
2201/5 Collet Arrangement



W-0220.V9606A.E.WG.

- | | | | |
|------------------------------|----------------------------|--------------------------|------------------------------|
| 2208/12
INBOARD
ROTARY | 2206/61
INBOARD
STAT | 2204/6
CARBON
BUSH | 2209/3
OUTBOARD
ROTARY |
|------------------------------|----------------------------|--------------------------|------------------------------|

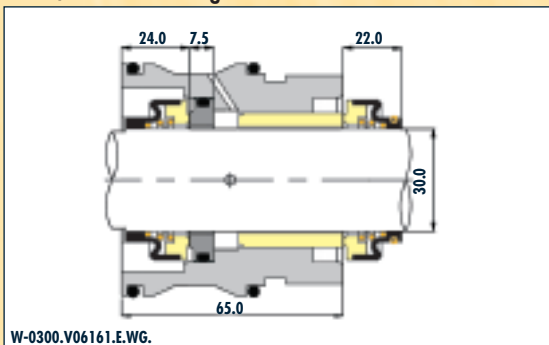
2201/51 Collet Arrangement



W-0220.V9606D.E.WF.

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

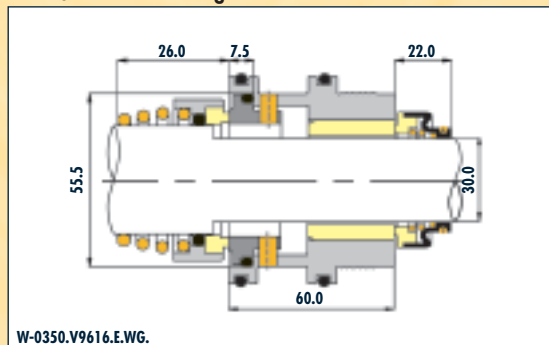
3001/6 Collet Arrangement



W-0300.V06161.E.WG.

- | | | | |
|-----------------------------|---------------------------|--------------------------|------------------------------|
| 3009/2
INBOARD
ROTARY | 3005/6
INBOARD
STAT | 3004/6
CARBON
BUSH | 3009/3
OUTBOARD
ROTARY |
|-----------------------------|---------------------------|--------------------------|------------------------------|

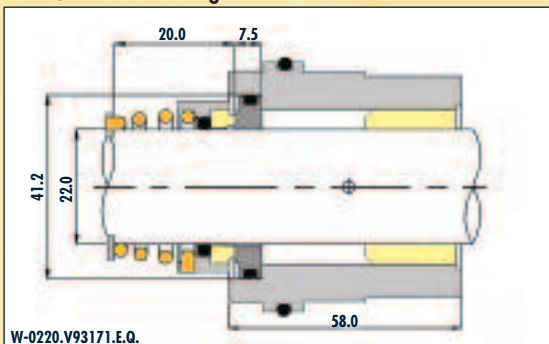
3501/7 Collet Arrangement



W-0350.V9616.E.WG.

- | | | | |
|------------------------------|----------------------------|--------------------------|------------------------------|
| 3508/12
INBOARD
ROTARY | 3506/61
INBOARD
STAT | 3004/7
CARBON
BUSH | 3009/3
OUTBOARD
ROTARY |
|------------------------------|----------------------------|--------------------------|------------------------------|

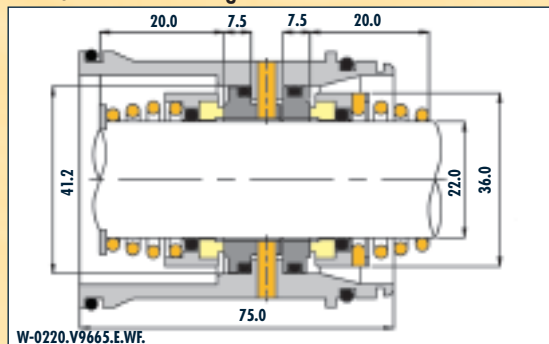
2201/8 Collet Arrangement



W-0220.V93171.E.Q.

- | | | |
|------------------------------|---------------------------|--------------------------|
| 2208/12
INBOARD
ROTARY | 2205/6
INBOARD
STAT | 2204/3
CARBON
BUSH |
|------------------------------|---------------------------|--------------------------|

2201/91 Collet Arrangement



W-0220.V9665.E.WF.

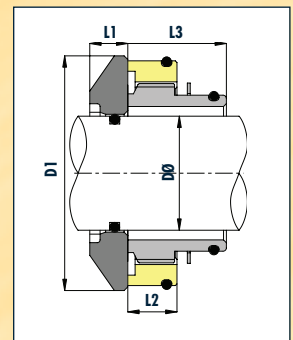
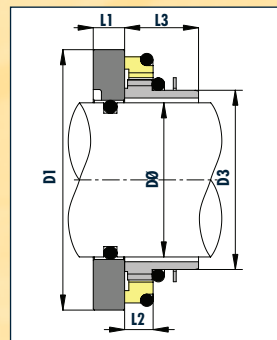
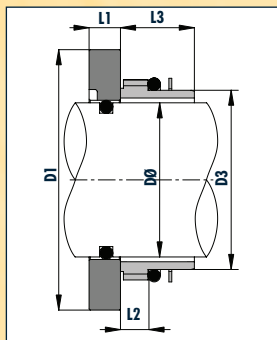
- | | | | |
|------------------------------|----------------------------|----------------------------|--------------------------------|
| 2208/12
INBOARD
ROTARY | 2206/61
INBOARD
STAT | 2205/6
OUTBOARD
STAT | 2208/12B
OUTBOARD
ROTARY |
|------------------------------|----------------------------|----------------------------|--------------------------------|



VULCAN MECHANICAL SEALS TO SUIT WAUKESHA® UNIVERSAL SERIES PUMPS

Vulcan can now offer replacement seals for the common models of Waukesha® Universal-series pumps. These seals comprise complete seals with rotary and inner and outer static faces, 'O'-rings and wave-springs as required. The Vulcan Type 87 is designed for the Universal I®-series of pumps, Type 88 is designed for Universal II®-series of pumps. Rotary with inner face is Type 87 or 88. Rotary with inner and outer statics is Type 87A or 88A. The profile of the reverse of the rotary face can be flat or sloped depending on shaft size. Details are included in the data table below.

Rotaries faces are ceramic or monolithic silicon carbide as standard. Inner statics will be carbon or silicon carbide, outer statics are always carbon. 'O'-rings are normally E.P. but Viton® or nitrile can be supplied to order.



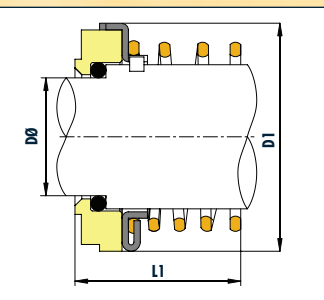
Type 87 Table for the Universal I®-series of pumps

Shaft Size DØ	Size		D1		D3		L1		L2		L3		OEM SEAL CODE	Face Profile
	Inch	Metric	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch		
1.125	28.60	0286	63.90	2.516	37.50	1.476	8.00	0.315	10.50	0.413	19.10	0.752	U6, U14, U15, U18, U24	SLOPE
1.500	38.10	0381	80.50	3.169	43.80	1.724	8.50	0.335	11.50	0.453	17.00	0.669	U30, U34	SLOPE
1.875	47.60	0476	94.20	3.709	56.60	2.228	13.80	0.543	13.50	0.531	32.50	1.280	U60, U64, U130, U134	FLAT
2.750	69.80	0698	114.50	4.508	79.00	3.110	13.80	0.543	13.50	0.531	32.50	1.280	U220, U224	FLAT

Type 88 Table for the Universal II®-series of pumps

Shaft Size DØ	Size		D1		D3		L1		L2		L3		OEM SEAL CODE	Face Profile
	Inch	Metric	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch	Metric	Inch		
1.250	31.70	0317	63.50	2.500	39.20	1.543	10.30	0.406	11.60	0.457	10.60	0.417	006U2, 015U2, 018U2	SLOPE
1.625	41.20	0412	80.10	3.154	50.00	1.969	10.30	0.406	9.00	0.354	18.30	0.720	030U2	SLOPE
2.000	50.80	0508	98.40	3.874	63.20	2.488	13.80	0.543	12.00	0.472	25.40	1.000	045U2, 060U2, 130U2	FLAT
2.750	69.80	0698	116.00	4.567	112.80	4.440	13.80	0.543	12.00	0.472	25.40	1.000	180U2, 220U2	FLAT

VULCAN MECHANICAL SEALS TO SUIT TRI-CLOVER® C-SERIES PUMPS



Vulcan manufacture direct replacement rotary parts for the Common models of Tri-Clover® Tri-Flo® pumps. The Vulcan Type 293 is an 'O'-ring, external mounted, hydraulically-balanced seal to replace the Tri-Clover® "Type-D" seal. Clamped seats with PTFE gaskets are also available to combine with the Type 293 rotary to replace the "Type-DG" seal, details available on request.

Rotary faces are carbon as standard, with silicon carbide available to order.

'O'-ring material is normally E.P. or Viton®.

Shaft Size DØ	Size		D1		L1		OEM SEAL CODE
	Inch	Metric	Metric	Inch	Metric	Inch	
0.750	19.10	0191*	47.00	1.850	39.50	1.555	C114, SP114
1.125	28.60	0286	54.00	2.125	39.00	1.535	C216, SP216
1.250	31.70	0317	54.40	2.141	60.00	2.362	-
1.500	38.10	0381	66.60	2.612	33.50	1.319	C218, C328, SP218, SP328

* Size 0.750" (19.10mm) is supplied complete with set-screw sleeve.



VULCAN SEALS TO SUIT APV® HOWARD & CREPACO PUMPS

Vulcan produce and stock a range of seals to directly replace the two common seals types found fitted to these pumps. The most common seal Types are illustrated. If what you require is not shown in this section, then please ask.

VULCAN TYPE 1655 WAVE-SPRING SEALS.

Vulcan manufacture and stock a range of complete wave-spring seals to suit the common sizes of Howard® and Crepaco® Cleanline (CL) pumps. Available with inserted carbon faced rotaries running with monolithic stainless steel pinned 'O'-ring mounted seats.



VULCAN CODING

Where XXXX is stated in the code, add required shaft size, code.

If Nitrile or Viton® is required, replace the E character in the code with an N or V respectively.

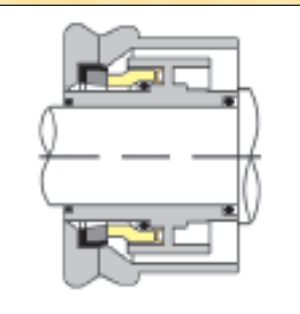
XXXX.1655.E.Q. Type 1655 complete seal, with carbon rotary face vs. stainless steel seat, E.P. 'O'-rings

Shaft Size	Size Code	Suits Pump Models
1.1/8	0286	CL 0S & CL 1
1.7/8	0476	CL 2
2.1/8	0539	CL 3

This table applies to both Type 1655 and Type 294 seals

VULCAN TYPE 294 WAVE-SPRING SEAL KITS.

Vulcan manufacture and stock a range of complete wave-spring seal kits to suit the common sizes of Howard® and Crepaco® Cleanline (CL) pumps fitted with the R900® seal. Available with carbon or silicon carbide rotary faces running with silicon carbide boot-mounted seats. Kits include rotary face with 'O'-ring and wave spring, and stationary ring fitted with boot.



VULCAN CODING

Where XXXX is stated in the code, add required shaft size according to the Type 1655 table above.

If Viton® is required, replace the E character in the code with a V.

XXXX.294.E.D. Type 294 complete seal kit, with carbon rotary face vs. silicon carbide seat, E.P. elastomers.

XXXX.294.E.S. Type 294 complete seal kit, with silicon carbide rotary and stationary faces, E.P. elastomers.

VULCAN TYPE 1650 WAVE-SPRING SEAL KITS.

Vulcan manufacture and stock a range of complete wave-spring seal kits to suit the common sizes of Johnson® OL pumps. Available with inserted carbon or silicon carbide rotary faces running with monolithic stainless steel or inserted silicon carbide stationary faces. Kits include rotary face with 'O'-ring and wave spring, and stationary ring with 'O'-ring.



VULCAN CODING

Where XXXX is stated in the code, add required shaft size, code.

If Viton® is required, replace the E character in the code with a V.

XXXX.1650.E.Q. Type 1650 seal kit, with carbon rotary face vs. stainless steel stationary, E.P. elastomers.

XXXX.1650.E.S. Type 1650 seal kit, with silicon carbide rotary and stationary faces, E.P. elastomers.

XXXX.1650.E.T. Type 1650 seal kit, with silicon carbide rotary and carbon stationary faces, E.P. elastomers.

Size Code	Suits Pump Models
0240	OL1
0400	OL2
0530	OL3
0750	OL4