



## Mixer, Agitator & Reactor SEAL RANGE



- SIZE CODE INFORMATION
- MIXER UNIT SEALS
- MIXER CARTRIDGE SEALS
- NON-METALLIC MIXER SEALS
- MIXMASTER™ SEALS
- CASE HISTORIES

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## IMPERIAL SEAL SIZE CODES

-06	0.750"
-07	0.875"
-08	1.000"
-09	1.125"
-10	1.250"
-11	1.375"
-12	1.500"
-13	1.625"
-14	1.750"
-15	1.875"
-16	2.000"
-17	2.125"
-18	2.250"
-19	2.375"
-20	2.500"
-21	2.625"
-22	2.750"
-23	2.875"

-24	3.000"
-25	3.125"
-26	3.250"
-27	3.375"
-28	3.500"
-29	3.625"
-30	3.750"
-31	3.875"
-32	4.000"
-33	4.125"
-34	4.250"
-35	4.375"
-36	4.500"
-37	4.625"
-38	4.750"
-39	4.875"
-40	5.000"

eg. APCS14AO1  
Refers to 1.750" seal



MIXER AGITATOR & REACTOR SEALS

METRIC SEAL SIZE CODES

0024	24mm
0025	25mm
0028	28mm
0030	30mm
0032	32mm
0033	33mm
0035	35mm
0038	38mm
0040	40mm
0043	43mm
0045	45mm
0048	48mm
0050	50mm
0053	53mm
0055	55mm
0058	58mm
0060	60mm

0063	63mm
0065	65mm
0068	68mm
0070	70mm
0075	75mm
0080	80mm
0085	85mm
0090	90mm
0095	95mm
0100	100mm
0105	105mm
0110	110mm
0115	115mm
0120	120mm
0125	125mm

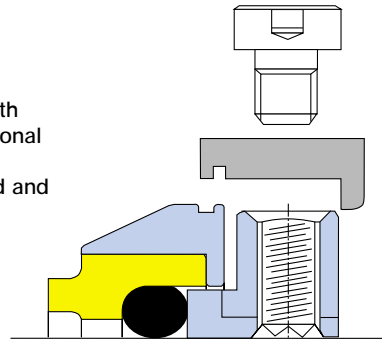
eg. APCS0075AO1  
Refers to 75mm seal



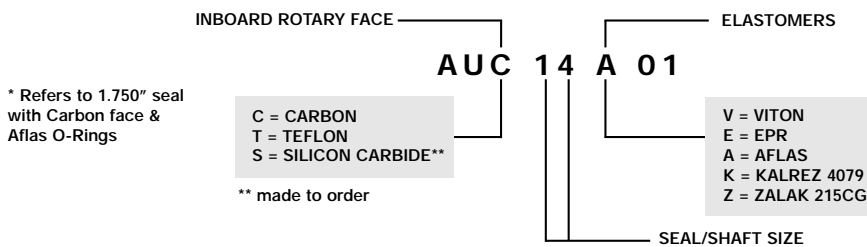
## CS™ BALANCED EXTERNAL SEAL FOR MIXERS



Chemical external component seal with non-metallic wetted parts and an optional Kalrez® or Zalak® perfluoroelastomer. Available with collet clamping for hard and soft shafts.



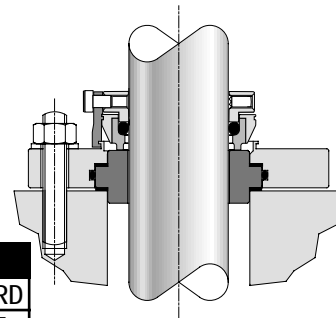
- Available in sizes 0.625" - 4.000" (20mm - 100mm).
- Metallic components offered in 316L S/S. Other materials available upon request.



## THE ESM™ UNIT SEAL RANGE

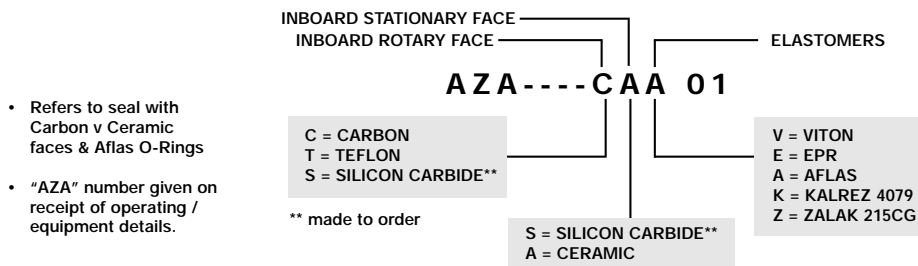


External unit mechanical seal with non-metallic wetted components and an optional Kalrez® or Zalak® wetted elastomer. Available with collet drive for hard and soft shaft applications.

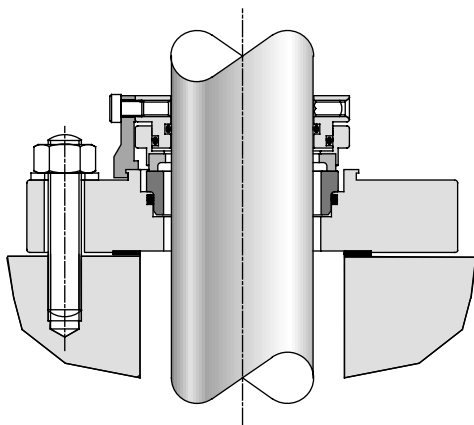


SEAL TYPE	FACE AVAILABILITY	DRIVE
ESM™	CAR - CER	STANDARD
ESCM™	CAR - CER	COLLET
ESTM™	PTFE - CER	STANDARD
ESCTM™	PTFE - CER	COLLET

- Available in sizes 0.625" - 2.625" (20mm - 65mm) as standard.
- Larger sizes available upon request. Gland designed to suit equipment.
- Metallic components are offered in 316L S/S as standard. Other materials available upon request.

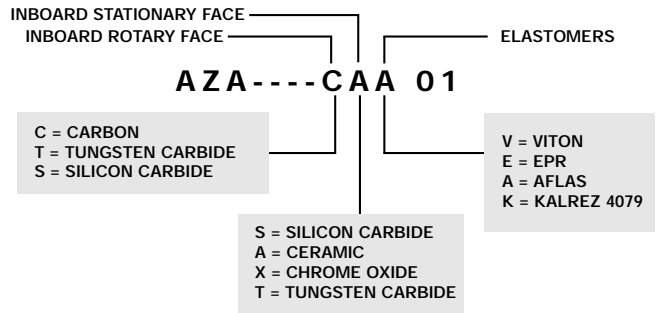


# NCM™ - NON CHEMICAL FOR MIXERS



External unit mechanical seal with an optional Kalrez® or Zalac® wetted elastomer. Available with collet drive for hard and soft shaft applications.

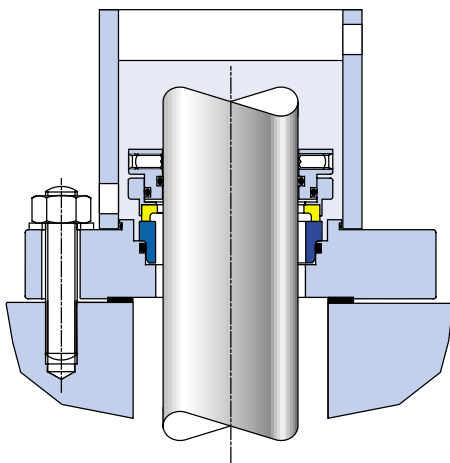
## Seal Coding System



- Refers to seal with Carbon v Ceramic faces & Aflas O-Rings
- "AZA" number given on receipt of operating / equipment details.

- Available in sizes 1.000" - 4.000" (24mm - 100mm) as standard.
- Larger sizes available upon request. Gland designed to suit equipment.

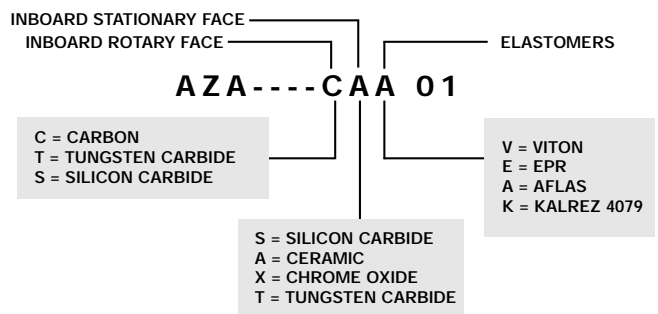
## BUFFER CANISTER OPTION



Optional Buffer Canister™ to lubricate the seal faces in a buffer fluid, to help facilitate seal operation. (Seal shown is an NCM™, with metallic wetted components).

The Buffer Canister option is available on both the ESM™ NCM™ range of unit seals, and is designed to suit equipment.

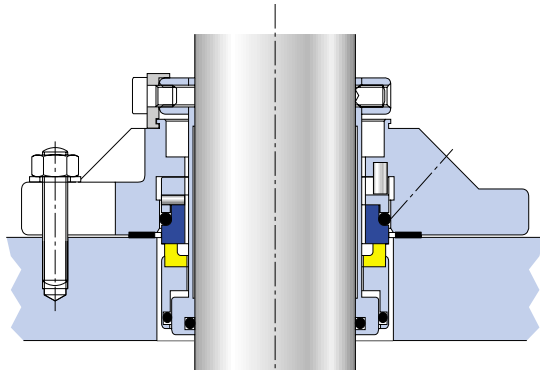
## Seal Coding System



- Refers to seal with Carbon v Ceramic faces & Aflas O-Rings
- "AZA" number given on receipt of operating / equipment details.



## CSM™ - CARTRIDGE SINGLE FOR MIXERS

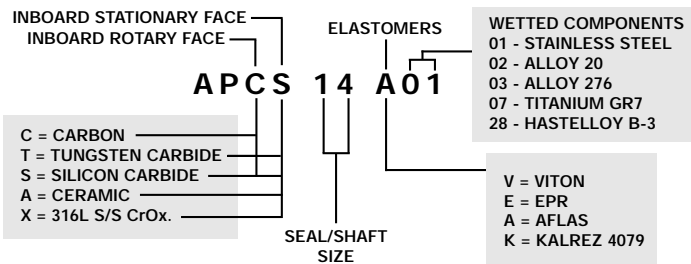


Cartridge Single mechanical seal specifically designed for mixer applications. Can be supplied with Kalrez® wetted elastomers and exotic alloy wetted components.

- Available in sizes 1.000" - 5.000" (24mm - 125mm) as standard.
- Larger sizes available upon request.

\* Refers to 1.750" seal with Carbon v SiC faces & Aflas O-Rings

### Seal Coding System

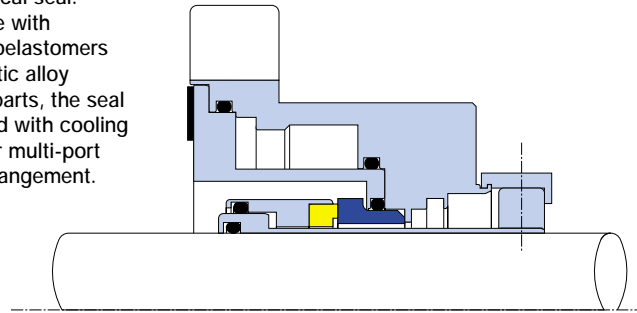


- Exotic Alloy wetted components are inventoried in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

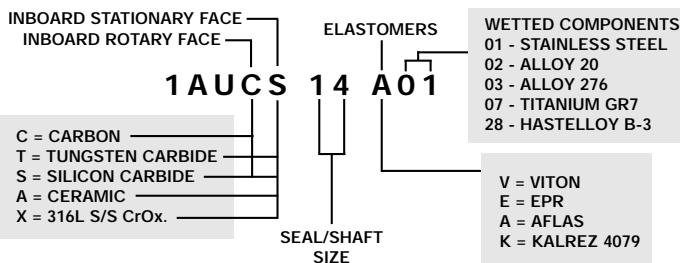
## CCSM™ - CANISTER CARTRIDGE SINGLE FOR MIXERS



Externally mounted cartridge single mechanical seal. Available with perfluoroelastomers and exotic alloy wetted parts, the seal is offered with cooling jacket or multi-port flush arrangement.



### Seal Coding System



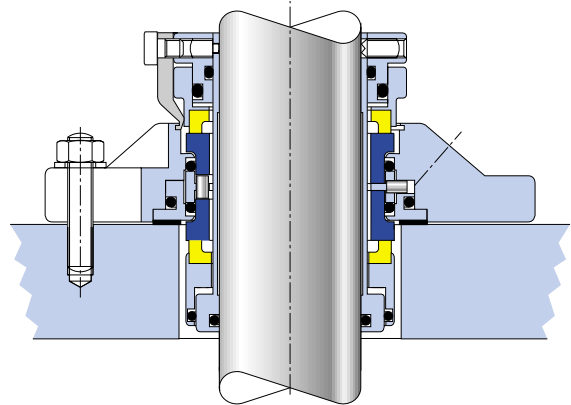
- Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.
- The gland is designed to suit the application.

- Available in sizes 1.000" - 4.000" (24mm - 100mm) as standard.
- Larger sizes available upon request.

\* Refers to 1.750" seal with Carbon v SiC faces & Aflas O-Rings



## CDM™ - CARTRIDGE DOUBLE FOR MIXERS

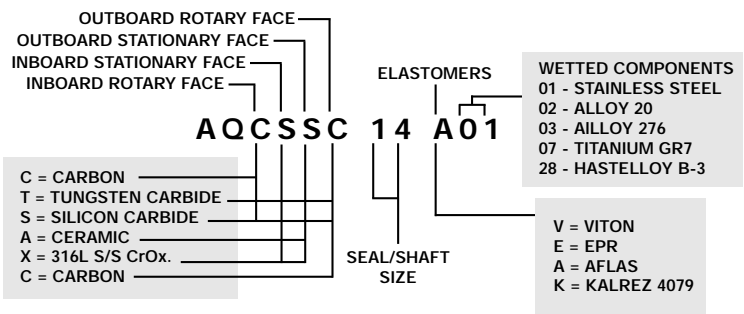


Cartridge double mechanical seal specifically designed for mixer applications. Can be supplied with Kalrez® wetted elastomers and exotic alloy wetted components.

- Available in sizes 1.000" - 5.000" (24mm - 125mm) as standard.
- Larger sizes available upon request.

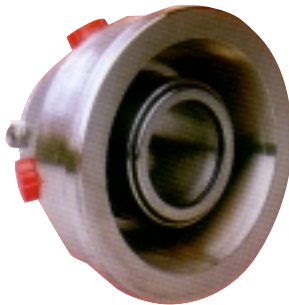
\* Refers to 1.750" seal with Carbon v SIC faces & Aflas O-Rings

### Seal Coding System

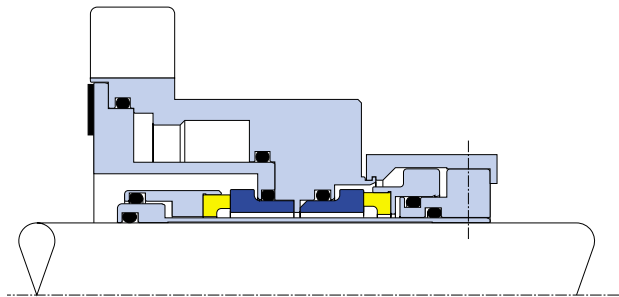


Exotic Alloy wetted components are inventoried in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

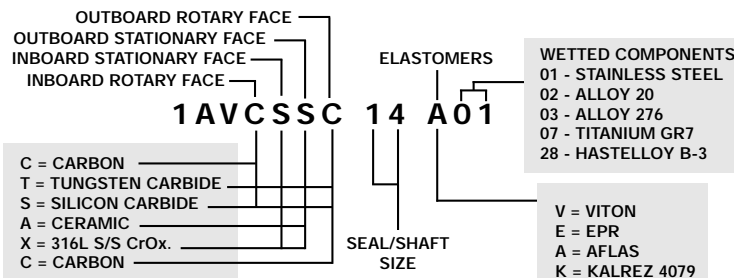
## CCDM™ - CANISTER CARTRIDGE DOUBLE FOR MIXERS



Externally mounted cartridge double mechanical seal. Available with perfluoroelastomers and exotic alloy wetted parts, the seal is offered with cooling jacket or multi-port flush arrangement.



### Seal Coding System



- Available in sizes 1.000" - 4.000" (24mm - 100mm).
- Larger sizes available upon request.

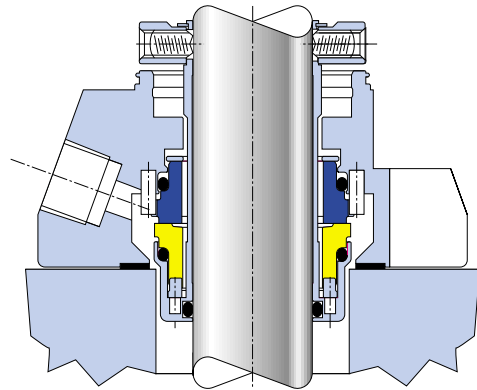
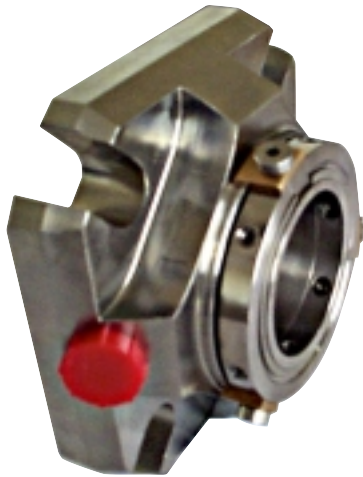
\* Refers to 1.750" seal with Carbon v SiC faces & Aflas O-Rings



- Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.
- The gland is designed to suit the application.



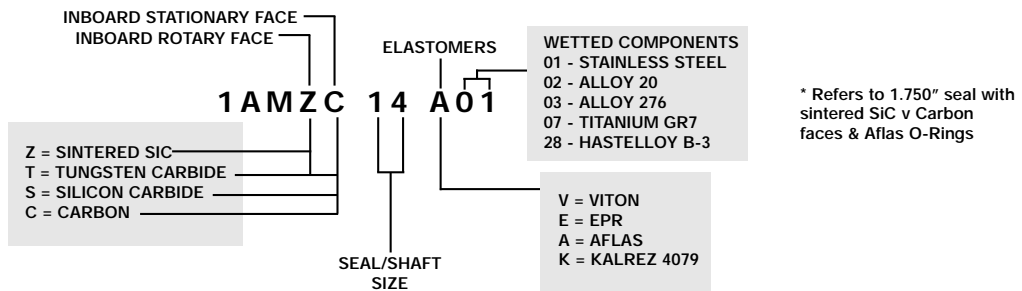
# SMSS™ - SINGLE MONOLITHIC STATIONARY SEAL



Cartridge single mechanical seal with monolithic seal faces. Offered as standard with a tangential flush.

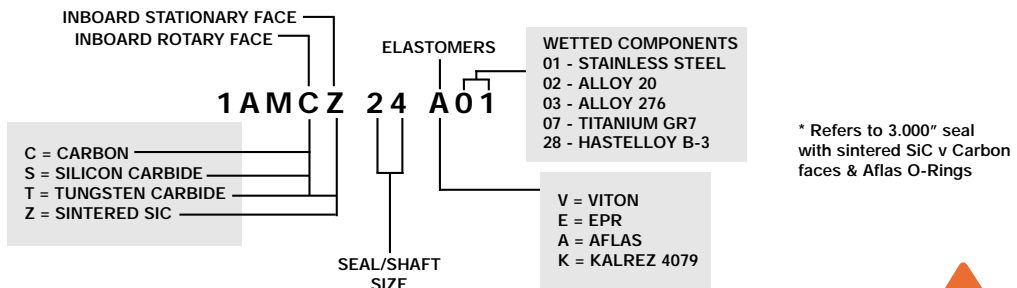
- Available in sizes 1.000" - 2.750" (24mm - 70mm).

## Seal Coding System

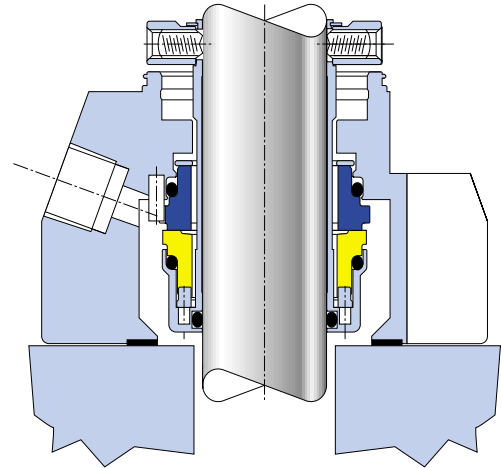


- Available in sizes 2.875" - 4.000" (75mm - 100mm).
- Larger sizes available upon request.

## Seal Coding System



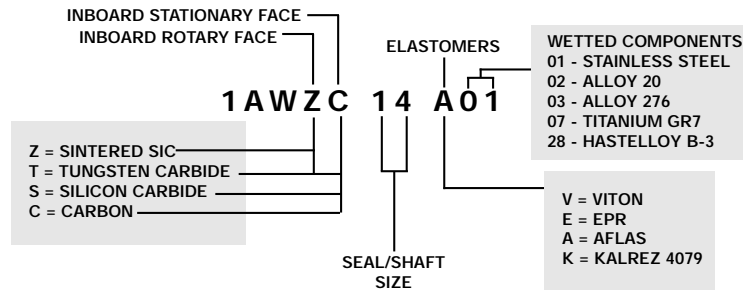
# CSMSS™ - CANISTER SINGLE MONOLITHIC STATIONARY SEAL



- Available in sizes 1.000" - 2.750" (24mm - 70mm)

Externally mounted cartridge single mechanical seal with monolithic seal faces. Offered as standard with a tangential flush.

## Seal Coding System

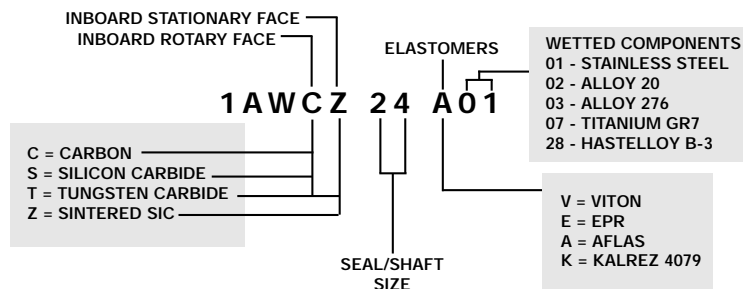


Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

\* Refers to 1.750" seal with sintered SiC v Carbon faces & Aflas O-Rings

- Available in sizes 2.875" - 4.000" (75mm - 100mm)
- Larger sizes available upon request.

## Seal Coding System

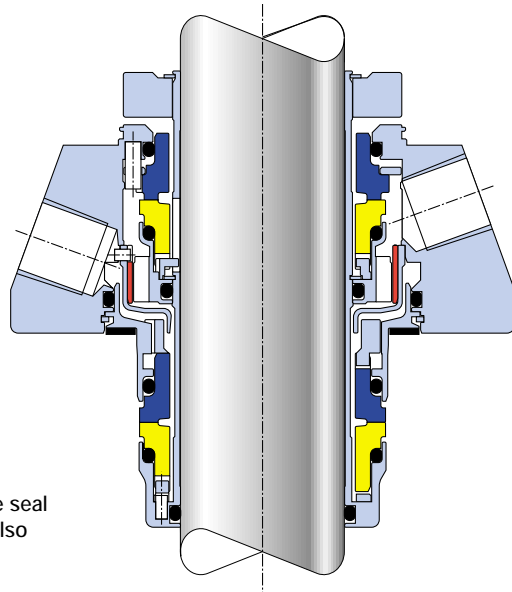
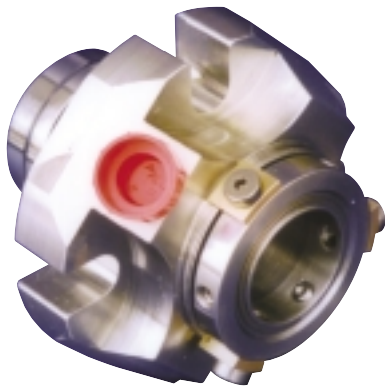


Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

\* Refers to 3.000" seal with sintered SiC v Carbon faces & Aflas O-Rings



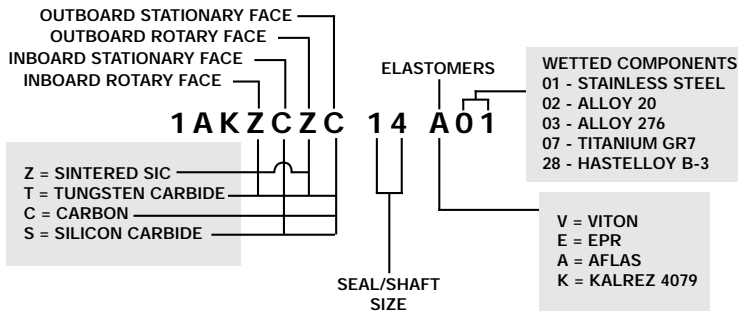
# DMSF™ - DOUBLE MONOLITHIC STATIONARY FLOW



Cartridge double mechanical seal with monolithic seal faces. The seal incorporates a highly efficient pumping scroll (patent pending). Also available with perfluoroelastomers and exotic alloy wetted parts.

- Available in sizes 1.000" - 2.750" (24mm - 70mm).

## Seal Coding System

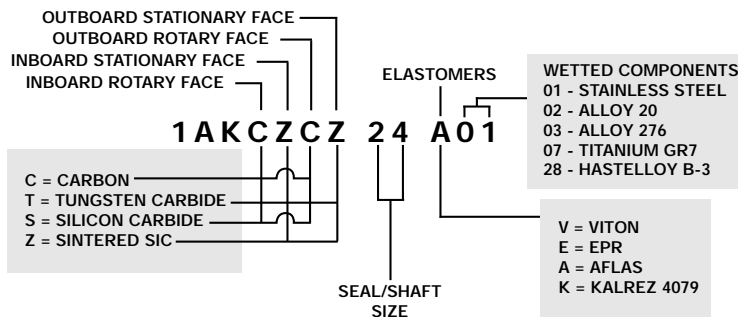


Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

\* Refers to 1.750" seal with sintered SiC v Carbon faces & Aflas O-Rings

- Available in sizes 2.875" - 4.000" (75mm - 100mm).
- Larger sizes available upon request.

## Seal Coding System



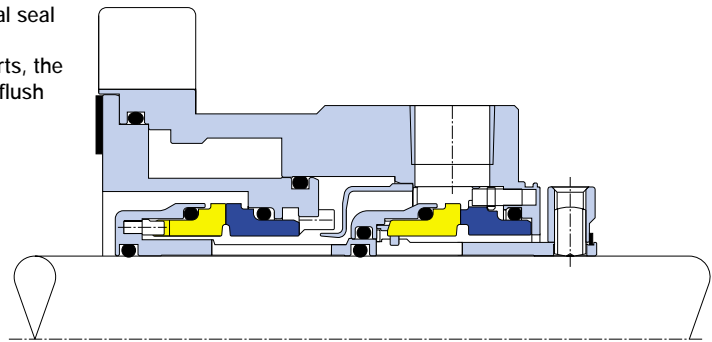
Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

\* Refers to 3.000" seal with sintered SiC v Carbon faces & Aflas O-Rings



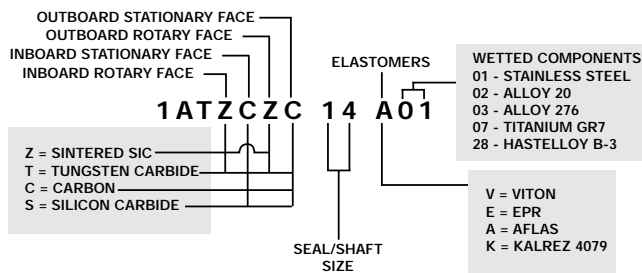
# CDMSC™ - CANISTER DOUBLE MONOLITHIC STATIONARY CONVECTION

Externally mounted cartridge double mechanical seal with monolithic seal faces. Available with perfluoroelastomers and exotic alloy wetted parts, the seal is offered with cooling jacket or multi-port flush arrangement.



- Available in sizes 1.000" - 2.750" (24mm - 70mm)

## Seal Coding System

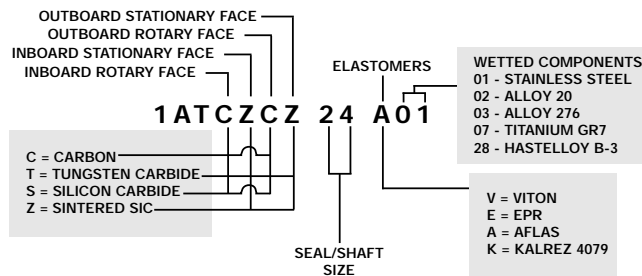


\* Refers to 1.750" seal with sintered SiC v Carbon faces & Aflas O-Rings

Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

- Available in sizes 2.875" - 4.000" (75mm - 100mm).
- Larger sizes available upon request.

## Seal Coding System



\* Refers to 3.000" seal with sintered SiC v Carbon faces & Aflas O-Rings

Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

### Standard CDMSC

Shaft Size	Axial	Radial
Upto 2.625" (65.00mm)	±0.040" (±1.00mm)	±0.010" (±0.25mm)
Above 2.750" (70.00mm)	±0.060" (±1.50mm)	±0.030" (±0.75mm)

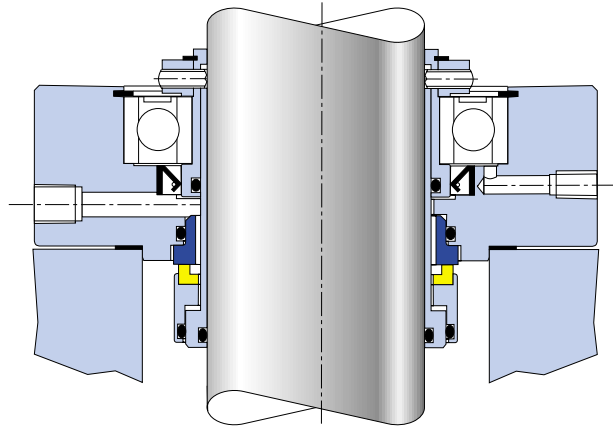
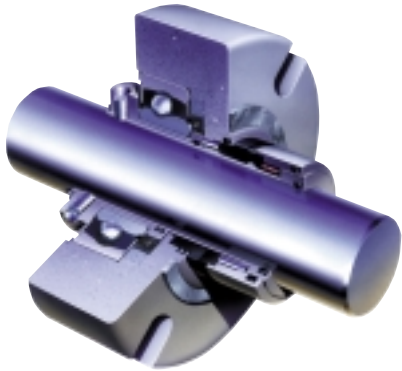
### Special Radial Motion CDMSC\*

Shaft Size	Axial	Radial
Upto 2.625" (65.00mm)	±0.040" (±1.00mm)	±0.040" (±1.00mm)
Above 2.750" (70.00mm)	±0.060" (±1.50mm)	±0.080" (±1.00mm)

\* Extended lead time - ask for availability.



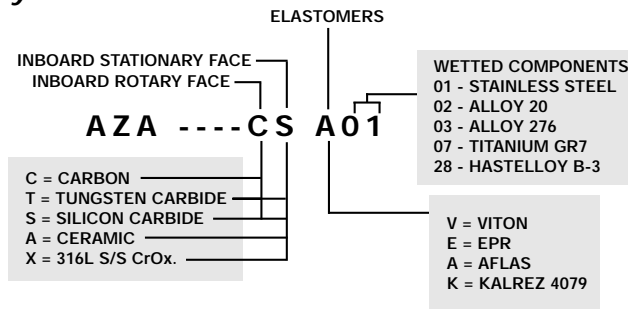
# Mixmaster I™ (CSWIB™) - Cartridge Seal with Integral Bearing



Cartridge single mechanical seal with integral bearing and optional Kalrez® wetted elastomers. Available with Flush, Quench and Drain, together with exotic alloy wetted components.

- Available in sizes 1.000" - 4.000" (24mm - 100mm).
- Larger sizes available upon request.

## Seal Coding System



Exotic Alloy wetted components are available in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

### OPTIONS

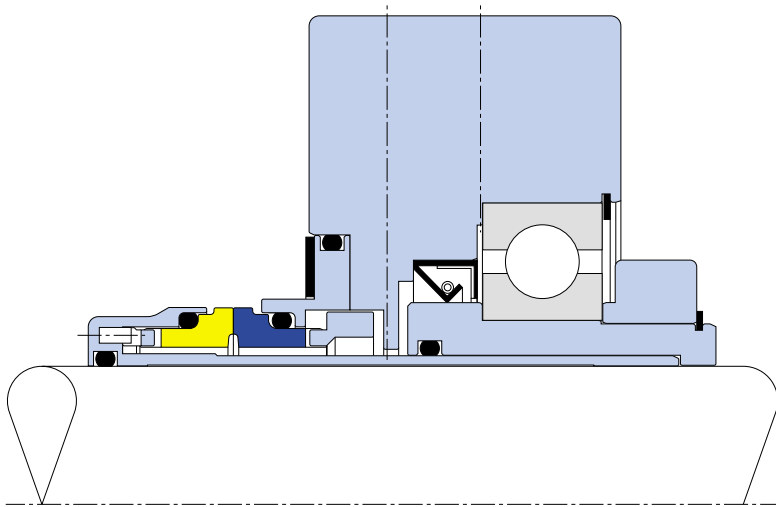
Type B = Standard  
Type C = with Flush  
Type D = Exotic Alloy wetted parts.  
(Flush not available).

### Notes

- Gland designed to suit equipment.
- "AZA" number given on receipt of operating / equipment details.
- When ordering please specify "Type" of Mixmaster I™ required, ie:- B,C, or D.



## MIXMASTER IM™ (CSWIB-M™) - SINGLE MONOLITHIC CARTRIDGE SEAL WITH INTEGRAL BEARING



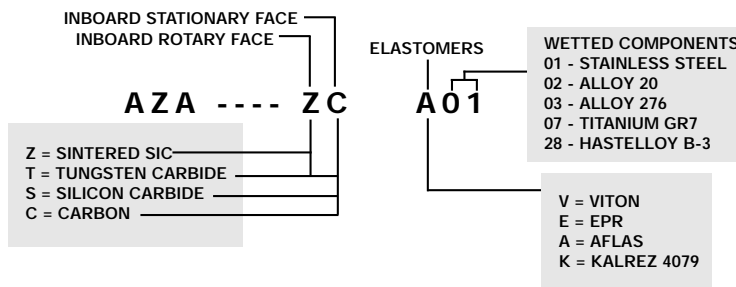
Cartridge single mechanical seal with monolithic faces, integral bearing and optional Kalrez® wetted parts. Available with Flush, Quench and Drain, together with exotic alloy wetted components.

### OPTIONS

- Type B = Standard
- Type C = with Flush
- Type D = Exotic Alloy wetted parts. (Flush not available).

- Available in sizes 1.000" - 2.750" (24mm - 70mm).

### Seal Coding System

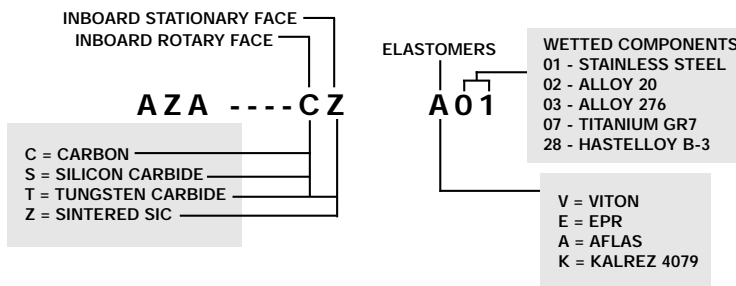


\* Refers to 1.750" seal with sintered SiC v Carbon faces & Aflas O-Rings

Exotic Alloy wetted components are inventoried in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

- Available in sizes 2.875" - 4.000" (75mm - 100mm).
- Larger sizes available upon request.

### Seal Coding System



\* Refers to 3.000" seal with sintered SiC v Carbon faces & Aflas O-Rings

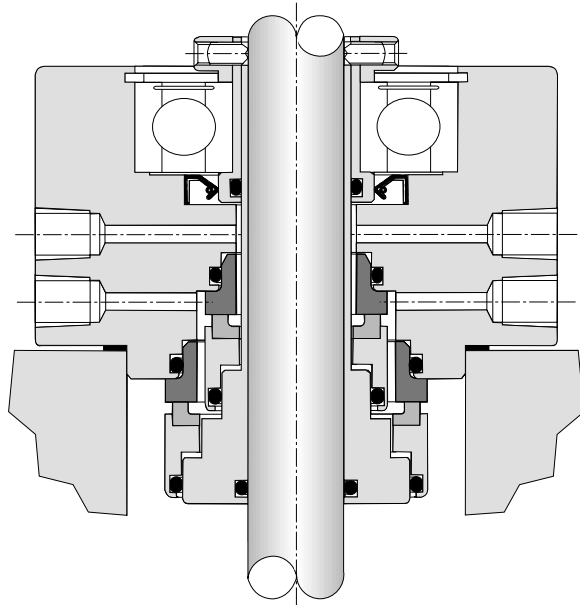
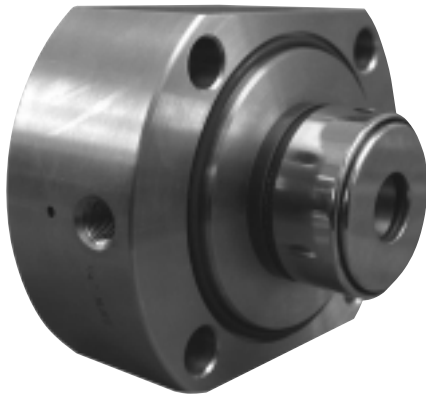
### Notes

- Gland designed to suit equipment.
- "AZA" number given on receipt of operating / equipment details.
- When ordering please specify "Type" of Mixmaster IM™ required, ie:- B,C, or D.

Exotic Alloy wetted components are inventoried in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.



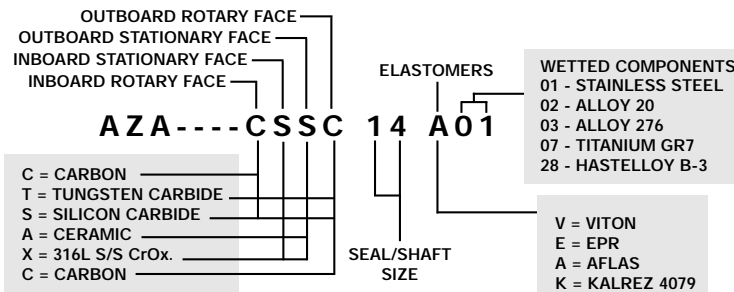
# MIXMASTER IIB™ (DSWIB™) - DOUBLE CARTRIDGE SEAL WITH INTEGRAL BEARING



Cartridge double mechanical seal with integral bearing and optional Kalrez® wetted elastomers. Available with Flush, Quench and Drain, together with exotic alloy wetted components.

- Available in sizes 1.000" - 4.000" (24mm - 100mm).
- Larger sizes available upon request.

## Seal Coding System



Exotic Alloy wetted components are inventoried in Alloy 20, Hastelloy B-3, Alloy 276, Titanium and Monel.

### Notes

- Gland designed to suit equipment.
- "AZA" number given on receipt of operating / equipment details.
- When ordering please specify "Type" of Mixmaster II™ required, ie:- B,C, or D.

### OPTIONS

Type B = Standard  
 Type C = with Flush  
 Type D = Exotic Alloy wetted parts.  
 (Flush not available).



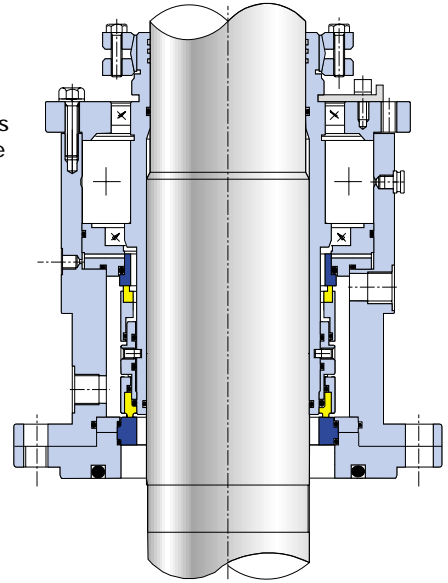


## MIXMASTER IV-II-BS™ STAINLESS STEEL MIXER SEAL

Mixmaster IV™ range of cartridge mechanical seals, have been specifically designed to comply with the international DIN specification.



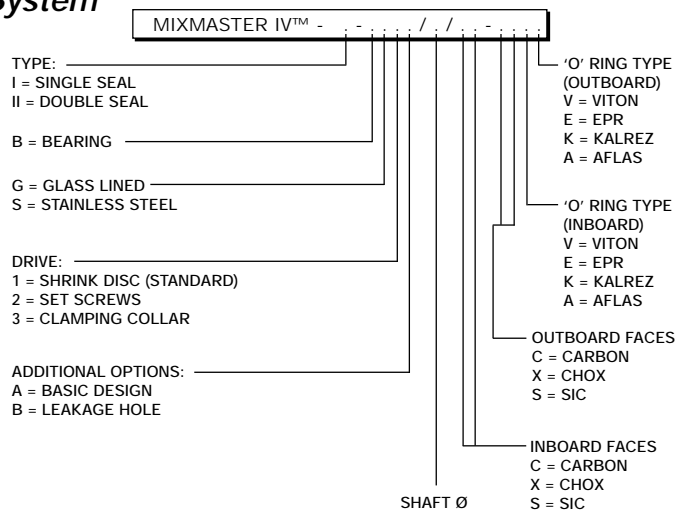
The Mixmaster IV - II - BS™ is a metallic wetted part, double seal design, with an integral (load carrying) bearing and is flange mounted.



Mixmaster IV™ is available in single or double seal arrangements, in Stainless Steel and Glass & FEP lined flange versions, in all metric and imperial sizes from Ø30mm - Ø160mm - (Ø1.125" - Ø6.250"). There is an option of 3 clamping arrangements to suit the customer / application preference.

The range of seals has been originally designed to conform to DIN 28 138 parts 1 & 2, however, because of the modular design and thick sleeve technology, the seals are available to fit ANY SHAFT SIZE.

### Seal Coding System



### SPECIFICATIONS

The range of seals conform to the following specifications:-

DIN	28 138 part 1	Stainless Mixer Seal
DIN	28 138 part 2	Glass Lined
DIN	28 138 part 3	Screwed Connection, Designation and Position
DIN	28 137 part 2	Glass Lined Mounted Flanges
DIN	28 138 part 1	Stainless Steel Mounted Flanges
DIN	28 154 & 159	Shaft dimensions

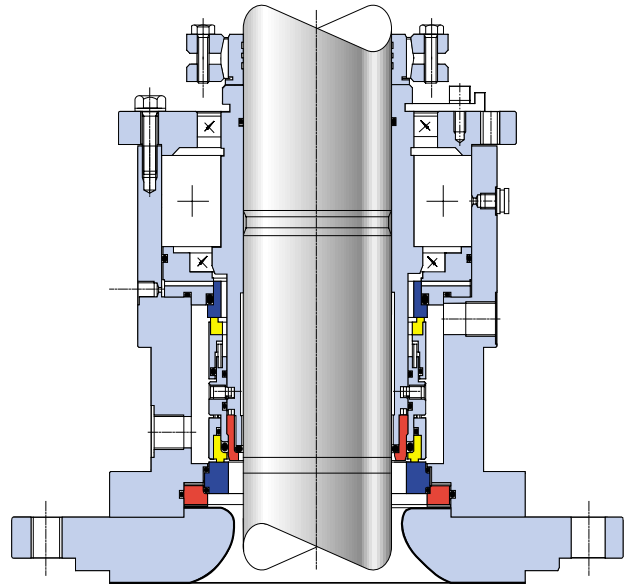




# MIXMASTER IV-II-BG™ GLASS (ENAMEL) LINED

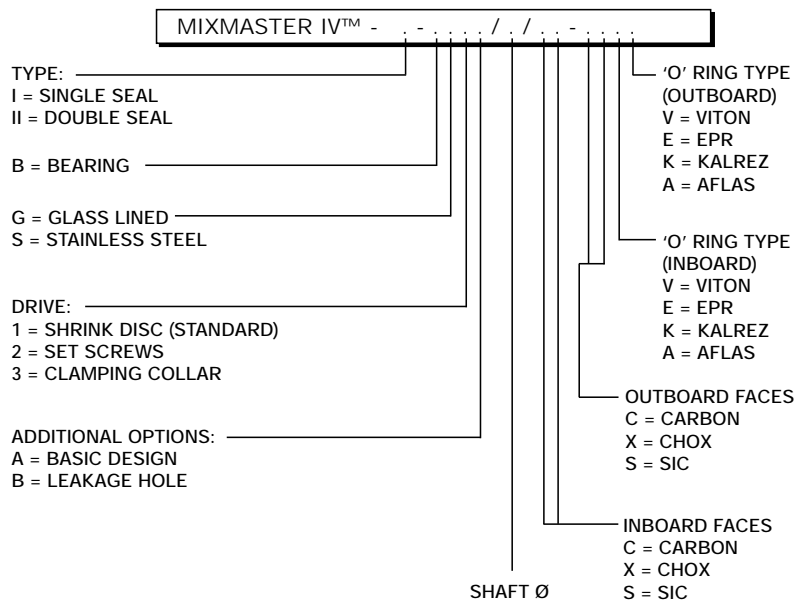
The Mixmaster IV-II-BG™ range is the glass lined version of the stainless steel Mixmaster IV - BS™. All wetted parts are non-metallic.

- Double balanced.
- Modular design.
- Available with FEP lined flange



The seal range is available in the following DIN sizes 40mm, 50mm, 60mm, 80mm, 100mm, 125mm, 140mm, 160mm and 161mm, however the internal modular concept employed, allows the seal to be made to suit ANY SHAFT SIZE, within the range. (1.125" - 6.250") 30mm - 160mm)

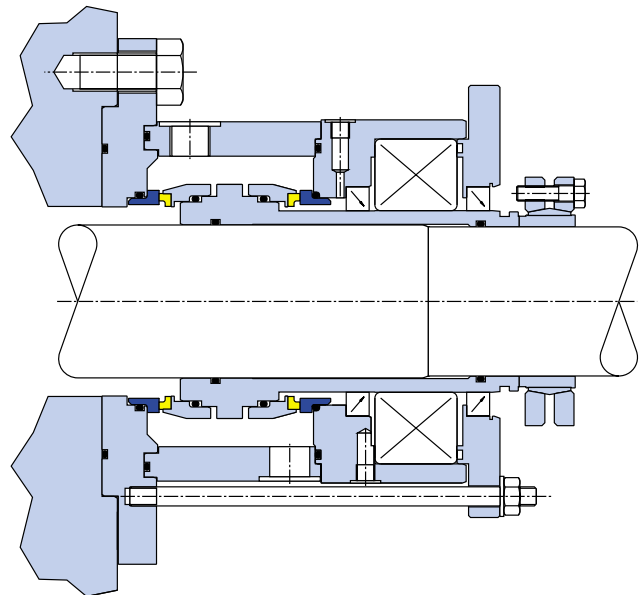
## Seal Coding System



## MIXMASTER V-II-BS™ STAINLESS STEEL MIXER SEAL

Mixmaster V™ range of cartridge mechanical seals, have been specifically designed to comply with the international DIN specification.

The Mixmaster V-II-BS™ is a metallic wetted part, double seal design, with an integral (load carrying) bearing and is flange mounted. The Mixmaster V-II-BS has balanced seal faces for the barrier fluid.

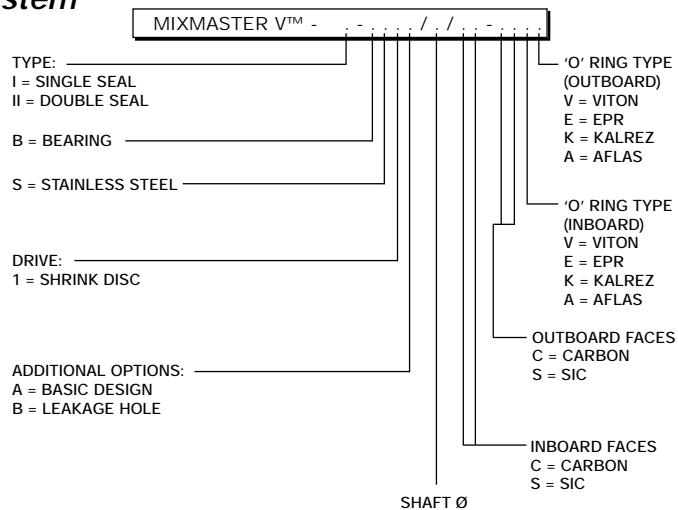


The Mixmaster V™ is available in single or double seal arrangements, with or without a bearing, in Stainless Steel. It is available in all metric and imperial sizes from Ø30mm - Ø160mm - (Ø1.125" - Ø6.250").

The range of seals has been originally designed to conform to DIN 28 138 parts 1 & 2, however, because of the modular design and thick sleeve technology, the seals are available to fit ANY SHAFT SIZE.

The Mixmaster V™ can not be customised in any way. The only modification that can be made to the standard design is a thick sleeve. For any other modifications refer to the Mixmaster IV™ or Mixmaster VI™ designs.

### Seal Coding System



### SPECIFICATIONS

The range of seals conform to the following specifications:-

DIN	28 138 part 1	Stainless Mixer Seal
DIN	28 138 part 3	Screwed Connection, Designation and Position
DIN	28 138 part 1	Stainless Steel Mounted Flanges
DIN	28 154 & 159	Shaft dimensions

Internal use only:-

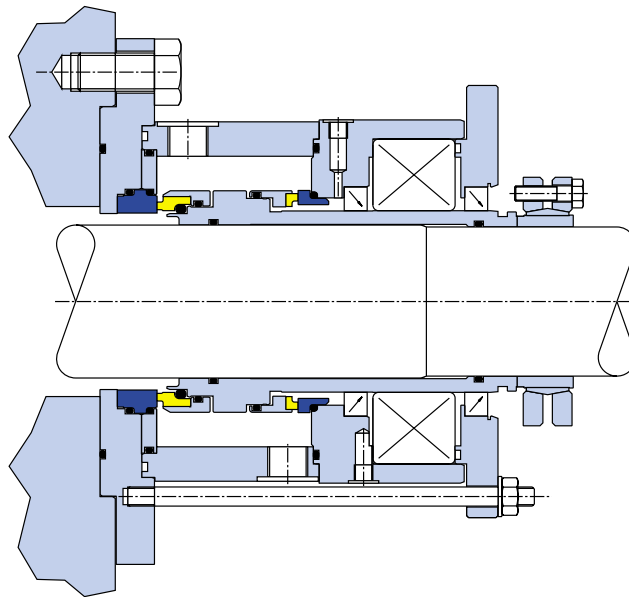
\* Stock code for MIXMASTER V= 2AW \_\_\_\_\_



# MIXMASTER VI-II-BS™ STAINLESS STEEL MIXER SEAL

Mixmaster VI™ range of cartridge mechanical seals, have been specifically designed to comply with the international DIN specification.

The Mixmaster VI-II-BS™ is a metallic wetted part, double seal design, with an integral (load carrying) bearing and is flange mounted. The Mixmaster VI has double balanced inboard seal faces.

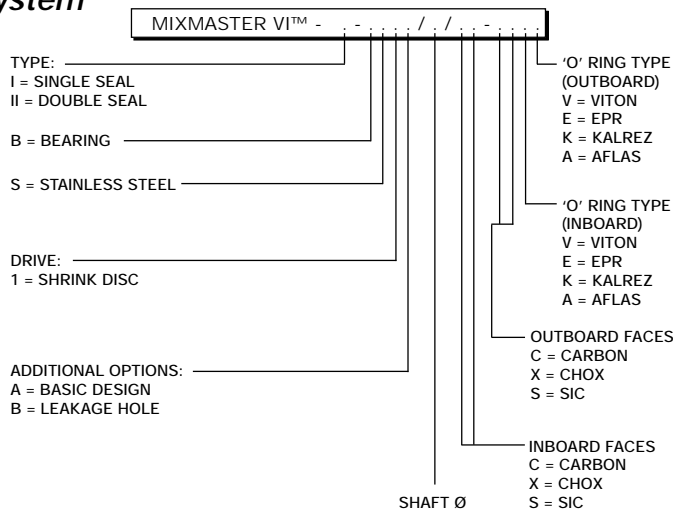


The Mixmaster VI™ is available in single or double seal arrangements, with or without a bearing in Stainless Steel. It is available in all metric and imperial sizes from Ø30mm - Ø160mm - (Ø1.125" - Ø6.250").

The range of seals has been originally designed to conform to DIN 28 138 parts 1 & 2, however, because of the modular design and thick sleeve technology, the seals are available to fit ANY SHAFT SIZE.

The Mixmaster VI™ can only be customised in 3 ways. 1 - thick sleeve, 2 - flange modification, 3 - exotic alloy wetted components. For any other modifications, including non-metallic options, refer to the Mixmaster IV™ design.

## Seal Coding System



## SPECIFICATIONS

The range of seals conform to the following specifications:-

DIN	28 138 part 1	Stainless Mixer Seal
DIN	28 138 part 3	Screwed Connection, Designation and Position
DIN	28 138 part 1	Stainless Steel Mounted Flanges
DIN	28 154 & 159	Shaft dimensions

Internal use only:-

\* Stock code for MIXMASTER V = 2AV\_\_\_\_\_



## Index of Specific Applications

Seal Type	Case History No.
Back to Back	840H, 841H, 842H
CDMSC™	1021I, 1022I, 1024I, 1026I
CSWIB™ Type B	834H, 835H, 836H, 837H, 838H, 839H
CSWIB™ Type C	1023I
DSWIB™ Type B	830H, 831H
DSWIB™ Type D	832H, 833H
Mixmaster IV-II-BG™	1017I
Mixmaster IV-II-BS™	823H, 824H, 825H, 826H, 827H, 828H, 1018I, 1019I, 1025I

Equipment Type	
Ahesion Mixer	836H
Ballestra Mixer	842H
Chemineer Mixer	827H, 828H, 1019I
De Dietrich Agitator	840H
Ekato Agitator	824H, 829H, 1024H
Joshua Greeves Reactor	832H
Lightnin Mixer	823H, 837H, 838H, 839H, 1023I, 1025I
Lump Agitator	1018I
Oakes Mixer	835H
Pfaudler Balfour	1017I, 1022I
Philadelphia Agitator	1026I
Plenty Agitator	831H
Ross Retention Mixer	834H
Shinko Mixer	1022I
Silverson Mixer	841H
Tycon Reactor	826H
Viz Slurry Vessel	833H

Product	
Acetic Acid	828H, 831H
Benzoquinone	833H
Butadiene	840H
C.P.A.	832H
Calcium Carbonate Slurry	841H
Cosmetic	825H
Dodecylphenal	829H
Ether Aldehyde	829H
Ethonal	826H
Ethylene Glycol	1024I
Food Colorants	825H
Formaldehyde	829H
Hexane	1022I
Hydrogen Sulphide	824H
Hydroxide	840H
Isopropnel	826H
KE2 Tilcom	829H
Methanol	826H, 829H
Paraformaldehyde	829H
Pearl Starch	836H
Polystyrene Nitrogen	1023I
Potassium	840H
Pyridine	829H
Sodium Salt	842H
Soyabean Oil	834H
Sponge Cake Batter	835H
Steam	840H
Styrene	840H
Sulphuric Acid	24H
Teraphthalic	831H, 1024I
Toluene	829H
Vegetable Oil	823H
Yeast	838H

Temperature	Case History No.
260°C (500°F)	830H
230°C (446°F)	823H, 829H
204°C (400°F)	1025I
200°C (393°F)	1024I, 1026I
176°C (350°F)	827H, 1019I
150°C (302°F)	832H
149°C (300°F)	834H
131°C (267°F)	831H
121°C (250°F)	824H
110°C (230°F)	1017I
104°C (219°F)	840H
100°C (212°F)	826H
95°C (203°F)	825H
80°C (176°F)	839H, 1021I
65°C (150°F)	1023I
60°C (140°F)	828H, 1018I
43°C (110°F)	836H
40°C (104°F)	841H, 842H
10°C (50°F)	1022H
1°C (34°F)	838H



**CASE No. 823H**

In January 1997, in a plant in Germany, two off 50mm (1.968") Mixmaster IV™ IIBS double mixer seals were fitted to Lightnin mixers. The duty was vegetable oil and Catalyst operating at 230 degrees C (446°F), with product pressure of 4 bar (58psi) and shaft speed of 67 rpm.

The seal faces were SIC/Car//Car/SIC with Kalrez® elastomers inboard and Viton elastomers outboard.

See Z3316 and AESSEAL® Drawing 6456770 for further details.

**CASE No. 824H**

In October 1998, in a plant in Edmonton, Canada, a 100mm (3.937") Mixmaster IV™ IIB double mixer seal was fitted to an Ekato Agitator. The duty was HYDROGEN SULPHIDE/SULPHURIC ACID operating at 121 degrees C (250°F), with a shaft speed of 100 rpm.

The seal faces were SIC/Car//Car/SIC with Viton® elastomers inboard and outboard.

See Z4772 and AESSEAL® Drawing 6464074 for further details.

**CASE No. 825H**

In August 1997, in a Drier plant in the UK, a 125mm (4.921") Mixmaster IV™ IIB double mixer seal was fitted to a mixer. The duty was Food Colorants/Cosmetic operating up to 95 degrees C (203°F), with a shaft speed of 45 rpm.

The seal faces were C/SIC/SIC/C with Viton® elastomers inboard and outboard.

The customer was previously using a Double Latty Bottom Entry Seal, with seal faces SIC/SIC//SIC/SIC with Viton® elastomers.

See Z4348 and AESSEAL® Drawing 6461772 for further details.

**CASE No. 826H**

In October 1997, in a Pharmaceutical plant in Cork, a 80mm (3.149") Mixmaster IV™ double mixer seal was fitted to a Tycon Reactor. The product was ETHONAL, METHANOL, ISOPROPNEL at 100 degrees C (212°F), with a shaft speed of 20/120 rpm.

The seal faces were SIC/Car//Car/SIC with Kalrez® elastomers inboard and Viton® elastomers outboard.

See Z4244 and AESSEAL® Drawing 6461210 for further details.

**CASE No. 827H**

In September 1998, in a Chemical plant in Tennessee, USA, a 5.000" (127mm) Mixmaster IV™ double mixer seal with Titanium Grade 7 wetted components was fitted to a Chemineer Mixer. The duty was various chemicals operating at 350 degrees F (176°C), with a shaft speed of 100 rpm.

The seal faces were SIC/Car//Car/SIC with Kalrez® elastomers.

The customer was previously using a competition Double seal. The seal faces were C/SIC//C/SIC with Kalrez® elastomer inboard and outboard.

See Z4731 and AESSEAL® Drawing 6463642 for further details

**CASE No. 828H**

In May 1998, in a Chemical plant in Tennessee, USA, two 2.500" (63.5mm) Mixmaster IV™ double mixer seals were fitted to a Chemineer Mixer. The duty was Acetic Acid Dope operating at 140 degrees F (60°C), with product pressure at 14 bar (203 psi) with a shaft speed of 130 rpm.

The seal faces were SIC/SIC//Car/SiC with Kalrez® elastomers.

See Z4732 and AESSEAL® Drawing 6463626 for further details.



**CASE No. 829H**

In April 1998, in a Chemical plant in Ireland, a 100mm (3.937") Ekato Short Working Length Mixer seal was fitted to a Reactor.

The duties were various, Formaldehyde, Toluene, Dodecylphenal, Pyridine, Paraformaldehyde, Titanium Catalyst, KE2 Tilcom, Methanol and Ether Aldehyde operating at 230 degrees C (446°F), with product pressure at 0 - 20 bar (290 psi) with a shaft speed of 100 rpm.

The seal faces were C/TC/TC/C with Kalrez® 31018 inboard elastomers and Viton outboard elastomers.

See Z4685 and AESSEAL® Drawing 6463553 for further details.

**CASE No. 830H**

In July 1998, in a plant in the UK, a 65mm (2.559") DSWIB™-B seal was fitted to a Reactor. The duty was various chemicals operating at 260°C (500°F), with a production pressure of 5 psi (0.3 bar), with a shaft speed of 156 rpm.

The seal faces were SIC/SIC//CAR/SIC with Kalrez® elastomer inboard and Viton elastomer outboard.

The customer was previously using a CDM™, with seal faces SIC/SIC//CAR/SIC with Kalrez elastomer inboard and Viton® elastomer outboard.

See Z4875 and AESSEAL® Drawing 6464346 for further details.

**CASE No. 831H**

In October 1996, in a Pilot plant in the UK, a 1.250" (31.7mm) DSWIB™ seal was fitted to a Plenty Mixer Agitator, model number PMG 55. The duty was 60% ACETIC ACID/35% TERAPHTHALIC operating at 131°C (267.8mm), with a production pressure of 2 bar (29 psi), with a shaft speed of 190 rpm.

The seal faces were C/TC//C/CRO2 with EPR elastomer inboard and outboard.

See Z3695 and AESSEAL® Drawing 6459078 for further details.

**CASE No. 832H**

In August 1996, in a Agriculture plant in the UK, a 85mm (3.346") DSWIB™ Type D (Exotic) seal was fitted to a Joshua Greeves Reactor. The duty was C.P.A. operating at 150°C (302°F).

The seal faces were TC/SIC//CAR/CHROX with Kalrez® elastomer inboard and Viton® elastomer outboard, with Alloy 276 wetted parts.

See Z3609 and AESSEAL® Drawing 6458560 for further details.

**CASE No. 833H**

In December 1994, in a plant in the UK, a 80MM (3.150") DSWIB™-D seal was fitted to a Viz Slurry Vessel. The duty was Benzoquinone.

See Z2147 and AESSEAL® Drawing 6453819 for further details.

**CASE No. 834H**

In June 1998, in a Oil Seed Refinery plant in the UK, a 1.625" (41.28mm) CSWIB™ type B seal was fitted to a Ross Retention Mixer, model number SF-302-01. The duty was Soyabean Oil operating at 300°F (149°C), with product pressure of 200 psi (13.8 bar), and a shaft speed of 600 rpm.

See Z4796 and AESSEAL® Drawing 6464046 for further details.

**CASE No. 835H**

In September 1997, in a plant in the UK, a 40mm (1.575") CSWIB™ seal was fitted to a Oakes Mixer. The duty was Sponge Cake Batter operating at ambient temperature, with a shaft speed of 218 rpm.

The seal faces were TC/TC with Viton® elastomer inboard.

See Z4376 and AESSEAL® Drawing 6461830 for further details.



**CASE No. 836H**

In March 1997, in a plant in the USA, a 1.500" (38.1mm) CSWIB™ seal was fitted to a Adhesion Mixer. The duty was Pearl Starch operating at 110°F (43°C), with a shaft speed of 990 rpm.

The seal faces were TC/TC with EPR elastomer inboard.

See Z3968 and AESSEAL® Drawing 6460193 for further details.

**CASE No. 837H**

In January 1997, in a plant in the UK, a 40mm (1.575") CSWIB™ seal was fitted to a Lightnin Mixer.

The seal faces were TC/SIC with Viton® elastomer inboard.

See Z3868 and AESSEAL® Drawing 6459873 for further details.

**CASE No. 838H**

In October 1997, in a plant in the UK, a 40mm (1.575") CSWIB™ seal was fitted to a Lightnin Mixer. The duty was Yeast operating at 1°C (34°F), with a product pressure of 15 psi (1bar).

The seal faces were CAR/SIC with EPR elastomer inboard.

See Z4392 and AESSEAL® Drawing 6461909 for further details.

**CASE No. 839H**

In July 1996, in a plant in Ireland a 40mm (1.575") CSWIB™ type B seal was fitted to a Lightnin Top Entry Agitator, model number H5110NX-1. The duty was Buffer Solutions operating at 80°C (176°F), with a product pressure of 16 psi (1 bar) and shaft speed of 290 - 1450 rpm.

The seal faces were C/SIC with Aflas® elastomer inboard.

See Z3572 and AESSEAL® Drawing 6458273 for further details.

**CASE No. 840H**

In August 1997, in a plant in the USA, a 3.625" (92mm) BACK TO BACK Canister seal was fitted to a De Dietrich Agitator model number 63010. The duty was various, Styrene, Butadiene, Potassium, Hydroxide and Steam operating at 104°C (219°F) with a product pressure of 90 psi (6.2 bar), with a shaft speed of 84 rpm.

The seal faces were TC/Car//Car/TC with Viton® elastomer inboard and outboard.

The customer was previously using a John Crane 109 double seal.

See Z4382 and AESSEAL® Drawing 6461567 for further details.

**CASE No. 841H**

In March 1998, in a Line plant in Ireland, a 2.250" (57.15mm) BACK TO BACK seal was fitted to a Silverson In Line Mixer. The duty was Calcium Carbonate Slurry operating at 40°C (104°F), with a product pressure of 2 bar (29 psi), and shaft speed of 3000 rpm.

The seal faces were SIC/CAR//SIC/CAR with Aflas® elastomer inboard and Viton elastomer outboard.

The customer was previously using a John Crane T2 BACK TO BACK Double seal with seal faces CAR/CER//CAR/CER with Viton® elastomers. It was unable to keep the faces clean and had a seal life of 6 months.

See Z3008 and AESSEAL® Drawing 6454758 for further details.





**CASE No. 842H**

In August 1998, in a plant in USA, a 60mm (2.362") BACK TO BACK seal was fitted to a Ballestra Mixer/Reactor, model number WD284TD. The duty was Sodium Salt of Alpha Olefin operating at 40°C (104°F), with a shaft speed of 900 rpm.

The seal faces were SIC/C//C/SIC with Viton® elastomer.

See Z4948 and AESSEAL® Drawing 6464821 for further details.

**CASE NO. 1017 I**

In November 1998, in a Chemical plant in the North of England, a 4.000" (101.6mm) MIXMASTER IV™-II-BG (Glass lined Flange), was fitted to a Pfaudler Balfour Reactor as a direct replacement for the existing VS20 seal. The VS20 comprised a two back to back Crane 109 component seals mounted in a Pfaudler Balfour canister.

The duty was a mixture of various chemicals at 110 degrees C (230 degrees F) and pressure of 3 barg (45 psi).

The seal was supplied as a full cartridge with integral bearing, SiC/Car // Car / SiC with Kalrez® 1050LF elastomers throughout. Wetted components were Alloy 276 and the seal mounted to the existing Glass Lined Flange.

See Z4994 and AESSEAL® Drawing 6464936 for further details.

**CASE NO. 1018 I**

In 1999, AESSEAL® supplied and installed a 120mm (4.724") Mixmaster IV™ seal with CAR/SIC faces and Viton 'O' rings for a Lump Agitator mixer, model A2811 in a Chemical Plant in England.

The pump operates at 14 - 45 rpm with a temperature of 60°C (140°F) under dry running conditions.

The seal replaced an AESSEAL® 65mm CURC™ seal, with C/TC faces and Viton elastomers, which ran for 12 months. There was no problem with the seal, it was only changed for a new agitator and new size.

See Z5388 and AESSEAL® Drawing 6467828 for further details.

**CASE NO. 1019 I**

In 1999, AESSEAL® supplied and installed a 2.000" (50.8mm) Mixmaster IV™ seal with CAR/SIC//CAR/SIC faces and Kalrez®/Viton® 'O' rings for a Chemineer mixer, model 1-HTH-2 for a Chemical Plant in the USA.

A Mixture of products were processed at a shaft speed of 200 rpm with a temperature of 350°F (176°C) with a stuffing box pressure of 133 psi (9 bar).

The seal replaced a competition Double seal, with CAR/SIC//CAR/SIC faces and Kalrez® elastomers, which ran for 18 months.

See Z5262 and AESSEAL® Drawing 6467019 for further details.

**CASE NO. 1021 I**

In 1999, AESSEAL® supplied and installed a 65mm (2.559") CDMSC™ seal with TC/TC//TC/CAR faces and Kalrez®/EPR 'O' rings for a CEMO pump, model S710-S5-RH for a Chemical Plant in England. A new stuffing box was machined.

The product being pumped is Dispex / Polyacrylic Acid with a temperature of 80°C (176°F) with a stuffing box pressure of 10 psi (0.7 bar).

See Z5335 and AESSEAL® Drawing 6467458 for further details.

**CASE NO. 1022 I**

In 1999, AESSEAL® supplied and installed a 50mm (1.969") CDMSC™ seal with SIC/SIC//SIC/CAR faces and Viton® 'O' rings for a Shinko – Pfaudler mixer.

The product being processed was Hexane and Catalyst at a shaft speed of 170 rpm with a temperature of 50°F (10°C) with a stuffing box pressure of 28 psi (2 bar).

See Z5466 and AESSEAL® Drawing 6468265 for further details.





**CASE NO. 1023 I**

In 1999, AESSEAL® supplied and installed a 1.937" (49.2mm) CSWIB™ Type C seal with CAR/SIC faces and Viton® 'O' rings for a Lightnin Top Entry Agitator for a plant in Dallas, USA.

The product being processed was Polystyrene Nitrogen at a shaft speed of 100 rpm with a temperature of 150°F (65°C) with a stuffing box pressure of 15 psi (1 bar).

A stub shaft and seal adapter plate was designed to accommodate the seal.

See Z1590 and AESSEAL® Drawing 6453025 for further details.

**CASE No. 1024 I**

In September 1999, AESSEAL® supplied and installed a special 3.375" (85.73mm) CDMSC™ cartridge seal, with an integral inboard Bush and Lip seal / Flush configuration, for a major chemical company in the North of England. The seal was supplied with Ant.Car/SiC // Ant.Car/SiC and Viton® elastomers, with integral bearing for an Ekato bottom entry mixer.

The duty was Terephthalic acid and Ethylene Glycol at +200°C (+393°F), however the seals water cooling jacket and flush arrangement serve to reduce the temperature dramatically.

The seal is currently working with no reported problems.

For further details see AESSEAL® drawing No. 6468376 and Z Ref 5533.

**CASE No. 1025 I**

In August 1999, in a Chemical plant in Holland, a 127mm (5.000") Mixmaster IV™ double mixer seal with Titanium Grade 2 wetted parts was fitted to a Lightnin 97N37 Mixer. The duty was various chemicals operating at 400 degrees F (204°C), at 20 bar (290 psi) with a shaft speed of 100 rpm.

The seal faces were SIC/Car//Car/SIC with Kalrez® elastomers.

The customer was previously using a competition Double seal. The seal faces were C/SIC//C/SIC with Kalrez® elastomer inboard and outboard.

See Z5508 and AESSEAL® Drawing 6468288 for further details

**CASE No. 1026 I**

In June 1999, AESSEAL® supplied several CDMSC's, with Integral cooling jackets for a major new Chemical processing plant to be constructed in the USA.

**Seals were supplied in the following sizes;**

**1.250"** - to suit a Philadelphia Agitator, models AG-3115 and AG-3215.  
See Z Ref 5037, Drg. 6465593.

**2.000"** - to suit a Philadelphia Agitator, models AG-1301, 1410, 1450, 2131, 3120, and 3210.  
See Z Ref 5041, Drg. 6465617.

**2.000"** - to suit a Philadelphia Agitator, model AG-2510.  
See Z Ref 5041, Drg. 6466222.

**2.500"** - to suit a Philadelphia Agitator, model AG-1310.  
See Z Ref 5042, Drg. 6465671.

**3.000"** - to suit a Philadelphia Agitator, model AG-2110.  
See Z Ref 5043, Drg. 6465768.

**4.500"** - to suit a Philadelphia Agitator, model AG-1451.  
See Z Ref 5044, Drg. 6465788.

The seals were supplied with various seal faces and elastomer combinations to suit process applications of up to 200°C (393°F).

**CASE No. 1249J**

In a pharmaceutical plant a 2.000" ESM™ with CAR/SIC faces and EPR 'O' rings was fitted to a Chimineer mixer, model 2-HTNS-2.

The product being pumped is Acetone with a temperature of 60°C (140°F). The pump operates at 25 rpm under dry running conditions.

See Z7094 for further details.

**CASE No. 1273J**

In a PEEK plant where AESSEAL® is the unofficial preferred supplier, a new reaction vessel with a Plenty mixer type 3809-PTM-16.3 was installed in October 1999. The mixer was fitted with a 5" Mixmaster IV™, Z-reference 5315 and AS15-2 system,

See Z5333 for further details.



# ENVIRONMENTAL CONTROL SUPPORT SYSTEMS



SSE10™ SYSTEM



SD SYSTEM™  
(Patent Pending)

ASME VIII SYSTEM

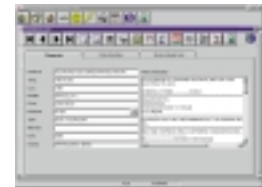
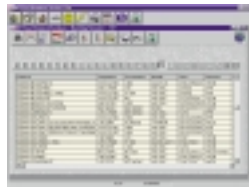


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INVESTOR IN PEOPLE

USE DOUBLE MECHANICAL SEALS  
WITH HAZARDOUS PRODUCTS.  
ALWAYS TAKE SAFETY  
PRECAUTIONS

- GUARD YOUR EQUIPMENT
- WEAR PROTECTIVE CLOTHING



WARNING

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Reference Issue • L - UK/US - MIXRANGE - 04