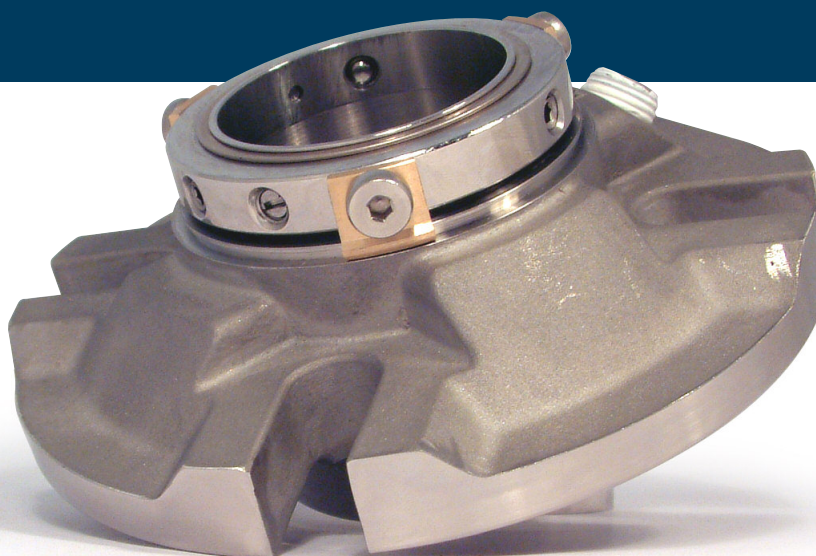




**acme range**

[www.first4seals.com](http://www.first4seals.com)



**single stationary**

environmental  
cartridge mechanical seals

f4s100™ series

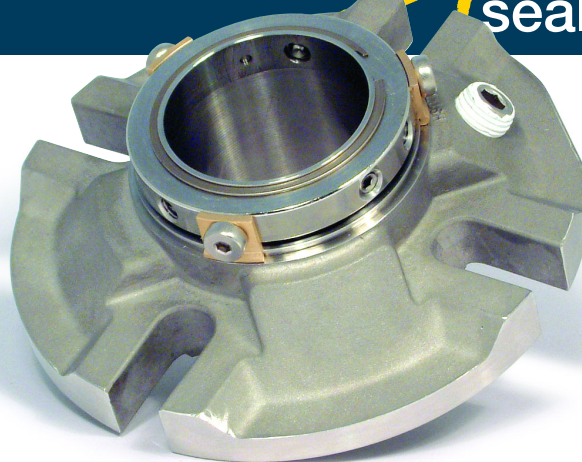
# type f4s100™

single stationary mechanical cartridge seals

first4seals™

## the green issue

f4s100™ cartridge seals can be fully refurbished with most parts being re-used.



## f4s100 series - technical specification

<b>metal parts</b>	316 Stainless Steel as standard, other materials available to order.
<b>springs</b>	Alloy 276
<b>o-rings</b>	Viton® (Fluorocarbon) as standard, other materials available to order.
<b>rotary faces</b>	Silicon Carbide available as standard.

<b>stationary faces</b>	Carbon as standard, with Silicon Carbide available.
<b>temperature limits</b>	-30°C to 260°C (-22°F to 500°F) dependent upon specified elastomer and system configuration.
<b>pressure limits - media</b>	711mm HG Vacuum to 30 Bar (-28" HG - 440 PSI).

As the conditions of use are outside the control of first4seals the information contained within this brochure is given in good faith but without warranty. The above temperature and pressure limits are individual maximum values for SOFT/HARD seal face combinations only. The values are provided for guidance only and are intended for use by suitably qualified application engineers. It is recommended that all users contact the first4seals Technical Department for advice on any new application.

## f4s100™ - design features

### Uptime & Ease of Installation: Self aligning design

Seal face closing is created by springs located behind the stationary face of the seal. This stationary design allows for some misalignment of the shaft and housing hence preventing spring fatigue/failure due to misalignment.

### Low Maintenance: No fretting of the pump shaft

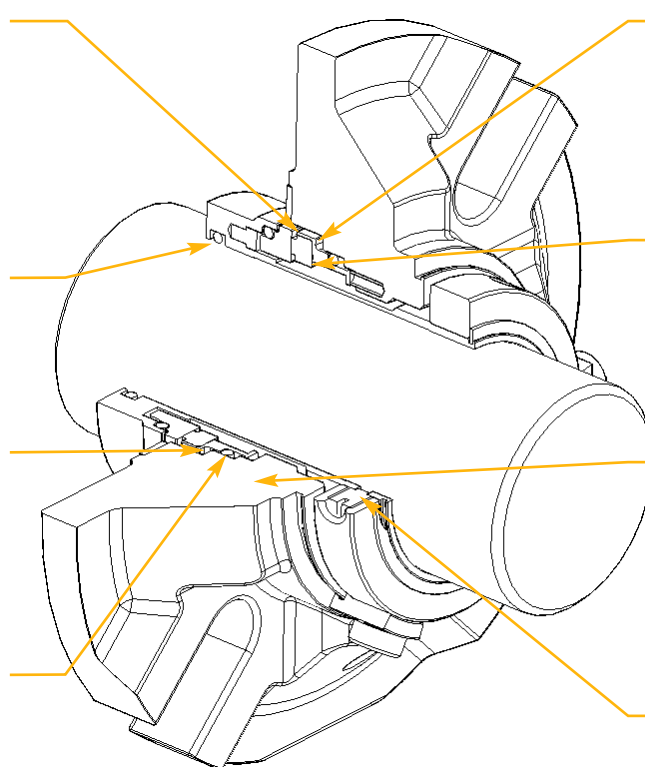
The secondary (sleeve) seal o-ring is static on the shaft and is guaranteed never to fret the pump shaft or sleeve.

### Uptime & Low maintenance: Anti clog

The dynamic o-ring moves onto a clean area as the seal faces wear. Components remain free for longer seal life.

### Uptime & Low maintenance: Isolated springs

The Alloy 276 springs are not in the process fluid where they could corrode and clog, so they remain effective for the whole of the seal life.



### Uptime: Balanced shrink fit stationary

Shrink fitted faces for optimum metal to metal drive and balanced loading design for stability at high temperatures.

### Uptime: Pressure balanced seal faces

The seal is balanced to achieve optimum face loading for high pressure capability and provide cooler running for longer seal life.

### Uptime: Flush connection

Connection provided for environmental control at the seal faces which will extend seal life.

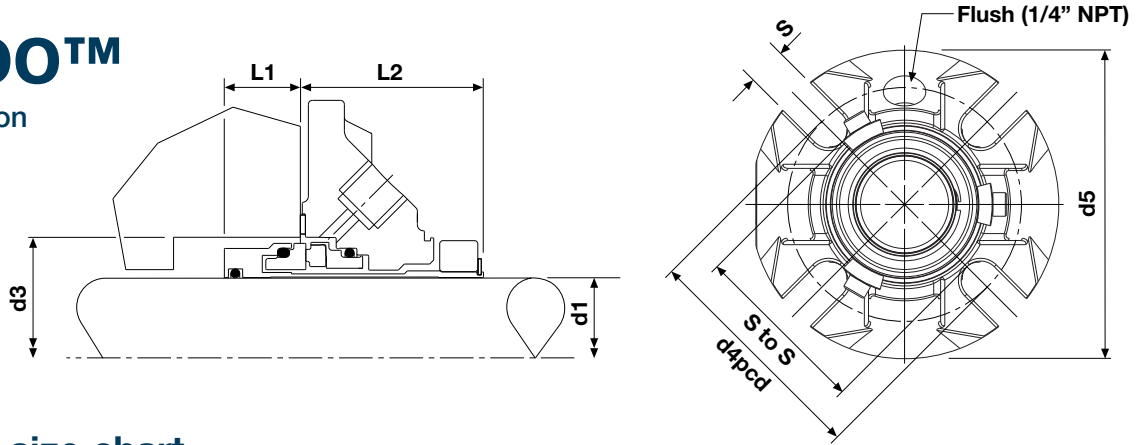
### Easy Maintenance: External clamping

Pump efficiency adjustments can be made without dismantling the pump.

# type f4s100™

## dimensional information

Supplied with Flush.



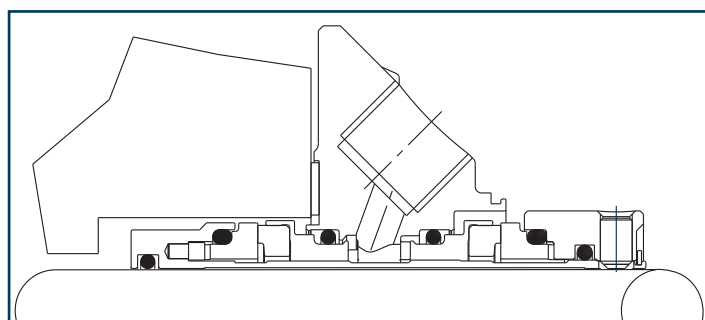
## f4s100™ series - size chart

d1	d3	d4*pcd		d5	L1	L2	S to S	S	
Imperial	S/B I.D. Min	S/B I.D. Max	Min	Max	Gland O.D.	Inboard	Outboard	Slot to Slot	Slot Width
1.000	1.625	1.875	2.750	3.562	4.034	0.875	1.750	2.146	0.551
1.125	1.750	2.062	2.875	3.687	4.113	0.875	1.750	2.264	0.551
1.250	1.875	2.187	3.000	3.812	4.349	0.875	1.750	2.402	0.551
1.375	2.000	2.250	3.125	3.812	4.389	0.875	1.750	2.500	0.551
1.500	2.250	2.375	3.437	4.437	5.000	0.750	1.800	2.835	0.551
1.625	2.375	2.500	3.437	4.437	5.000	0.750	1.800	2.835	0.551
1.750	2.500	2.750	3.750	4.937	5.500	0.750	1.800	3.189	0.551
1.875	2.625	2.875	3.750	4.937	5.500	0.750	1.800	3.189	0.551
2.000	2.750	3.000	4.125	5.437	6.000	0.750	1.800	3.563	0.551
2.125	2.875	3.125	4.125	5.437	6.000	0.750	1.800	3.563	0.551
2.250	3.000	3.250	4.500	5.812	6.500	0.750	1.800	3.813	0.551
2.375	3.125	3.375	4.500	5.812	6.500	0.750	1.800	3.813	0.551
2.500	3.250	3.625	5.000	6.312	7.000	0.625	2.000	4.311	0.689
2.625	3.375	3.750	5.000	6.312	7.000	0.625	2.000	4.311	0.689
2.750	3.500	3.875	5.000	6.312	7.000	0.625	2.000	4.311	0.689
2.875	3.750	4.125	5.625	6.812	7.500	0.830	2.031	4.941	0.689
3.000	3.875	4.250	5.625	6.812	7.500	0.830	2.031	4.941	0.689
3.125	4.000	4.375	5.625	6.812	7.500	0.830	2.031	4.941	0.689
3.250	4.125	4.500	6.187	7.187	8.000	0.830	2.031	5.335	0.827
3.375	4.250	4.625	6.187	7.187	8.000	0.830	2.031	5.335	0.827

Metric	S/B I.D. Min	S/B I.D. Max	Min	Max	Gland O.D.	Inboard	Outboard	Slot to Slot	Slot Width
24.0	41.0	48.0	68.5	90.5	102.5	22.0	44.6	54.5	14.0
25.0	41.0	48.0	68.5	90.5	102.5	22.0	44.6	54.5	14.0
28.0	44.0	52.0	71.5	93.5	104.5	22.0	44.6	57.5	14.0
30.0	46.0	55.0	75.0	97.0	110.5	22.0	44.6	61.0	14.0
32.0	48.0	55.0	75.0	97.0	110.5	22.0	44.6	61.0	14.0
33.0	49.0	55.0	75.0	97.0	110.5	22.0	44.6	61.0	14.0
33K	49.0	55.0	75.0	90.0	101.6	22.0	44.6	61.0	14.0
35.0	51.0	57.0	77.5	97.0	111.5	22.0	44.6	63.5	14.0
38.0	57.0	60.0	86.0	114.5	127.0	19.0	45.8	72.0	14.0
40.0	60.0	63.5	86.0	114.5	127.0	19.0	45.8	72.0	14.0
43.0	63.0	70.0	95.0	127.0	139.7	19.0	45.8	81.0	14.0
43K	63.0	70.0	95.0	105.0	119.6	19.0	45.8	81.0	14.0
45.0	64.0	70.0	95.0	127.0	139.7	19.0	45.8	81.0	14.0
48.0	67.0	73.0	95.0	127.0	139.7	19.0	45.8	81.0	14.0
50.0	70.0	76.0	104.5	139.5	152.4	19.0	45.8	90.5	14.0
53.0	73.0	79.5	104.5	139.5	152.4	19.0	45.8	90.5	14.0
55.0	74.0	82.5	114.4	149.0	165.1	19.0	45.8	96.9	17.5
58.0	77.0	82.5	114.4	149.0	165.1	19.0	45.8	96.9	17.5
60.0	79.0	85.5	114.4	149.0	165.1	19.0	45.8	96.9	17.5
63.0	83.0	92.0	127.0	160.5	177.8	16.0	51.0	109.5	17.5
65.0	85.0	95.0	127.0	160.5	177.8	16.0	51.0	109.5	17.5
70.0	90.0	98.0	127.0	160.5	177.8	16.0	51.0	109.5	17.5
75.0	99.0	108.0	143.0	173.0	190.5	21.0	51.6	125.5	17.5
80.0	102.0	111.0	143.0	173.0	190.5	21.0	51.6	125.5	17.5
85.0	108.0	117.0	156.5	182.5	203.2	21.0	51.6	135.5	21.0

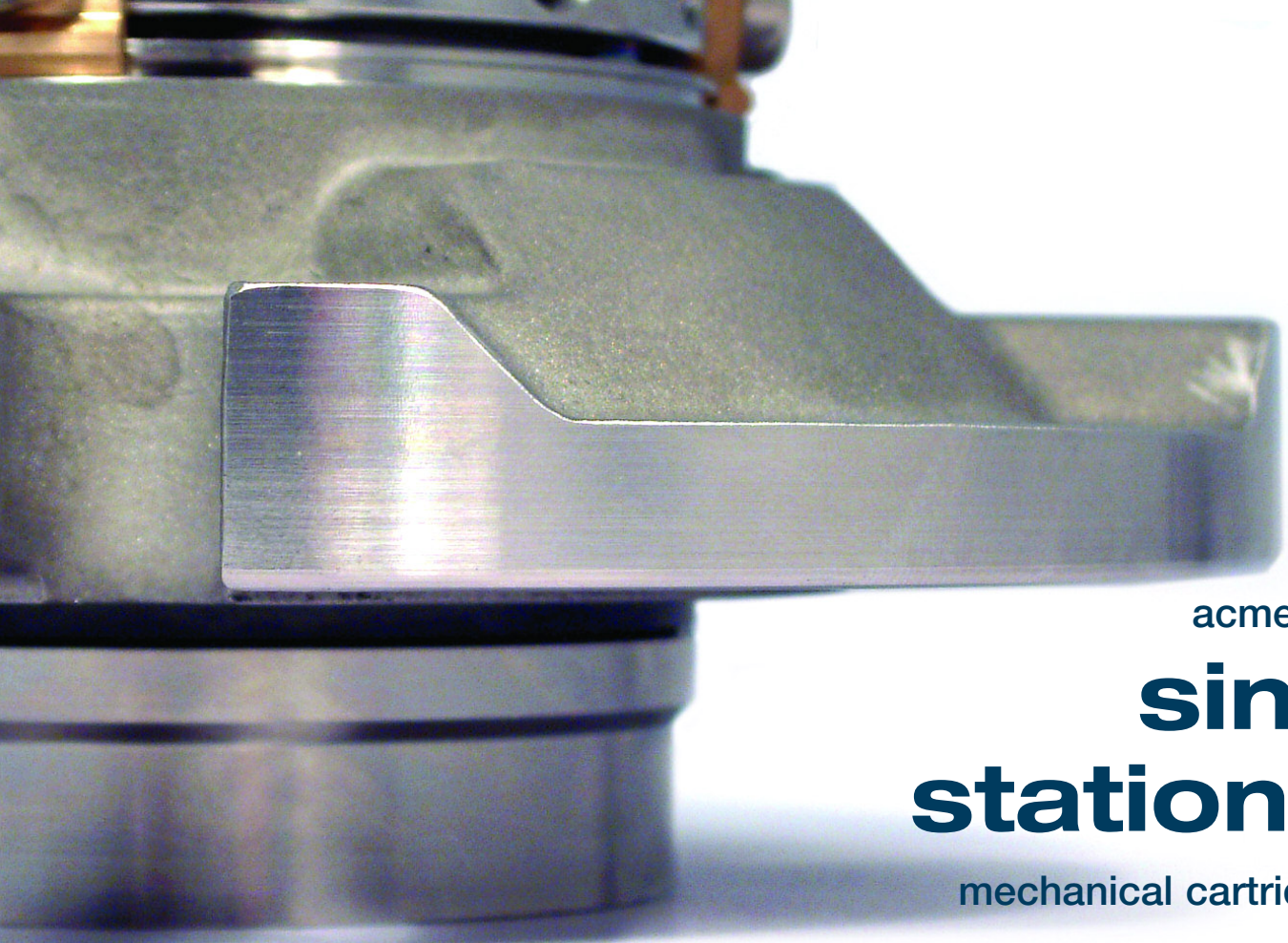
\* Based on the largest bolt diameter (specials can be produced).



## double stationary cartridge seals

### f4s200™

Double stationary seals available to suit all application needs. See f4s200™ series literature for further details.



acme range of  
**single  
stationary**  
mechanical cartridge seals

**first**  **environment**

The balanced cartridge seal design uses less power and therefore less fossil fuels to drive it than standard unbalanced seals and only 20% of the power requirement of pump packing.

As leakage is eliminated, corrosion problems to pump, bearing and pump room are all greatly reduced.

All packing must leak to survive, whereas seals should be leak free. This reduces environmental contaminants and disposal costs.

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