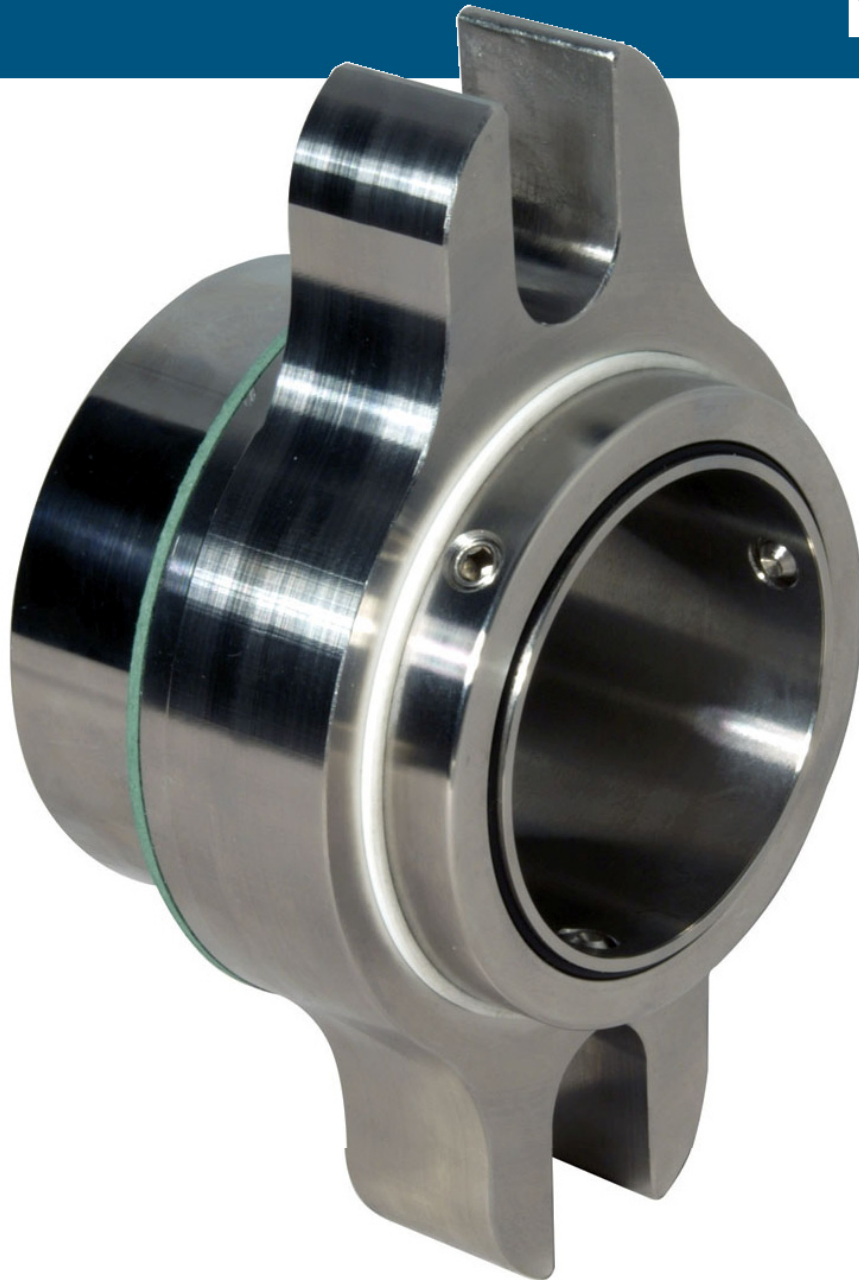




[www.first4seals.com](http://www.first4seals.com)

**mv range**



**compact**

**environmental  
cartridge mechanical seals**

mv™ series

General industry requires sealing solutions that are reliable, simple and affordable. The mv™ seal uses proven F4S design and high quality parts, making it an ideal solution for upgrading packed, single spring or component seal pumps.

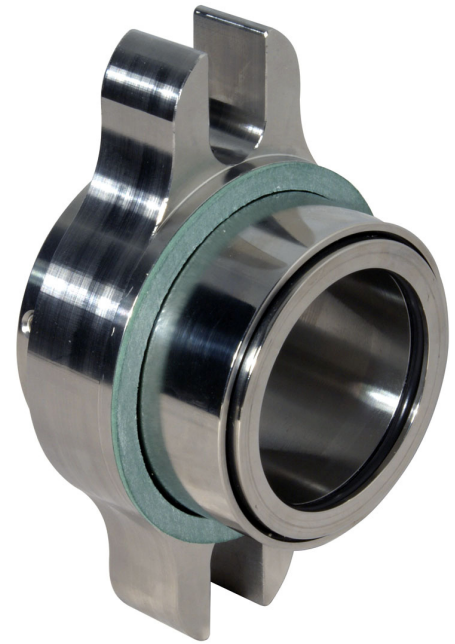
Designed as a compact single cartridge seal to fit most pump installations, the mv™ is an excellent general purpose sealing solution.

Today's environmental issues demand that industry commits to a reduction in energy consumption. The balanced mechanical seal design absorbs less power than both unbalanced seal designs and traditional pump packing.

As leakage is eliminated, corrosion problems to pumps and bearings are substantially reduced, as are costs associated with expensive product loss.

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

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



## mv™ series - technical specification

**metal parts** 316 Stainless Steel

**springs** Alloy 276

**o-rings** Viton® (Fluorocarbon) or Ethylene Propylene (EPR) as standard. Aflas®, Kalrez® and other elastomers available to order.

**rotary faces** Carbon, Silicon Carbide or Tungsten Carbide.

**stationary faces** Silicon Carbide or Tungsten Carbide.

**temperature limits** -30°C to 260°C (-22°F to 500°F) dependent upon specified elastomer and system configuration.

**pressure limits – media** 711mm HG Vacuum to 30 Bar (-28" HG to 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.

## mv™ series - design features: reliable, low maintenance and easy to install

### Anti clog

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

### Isolated springs

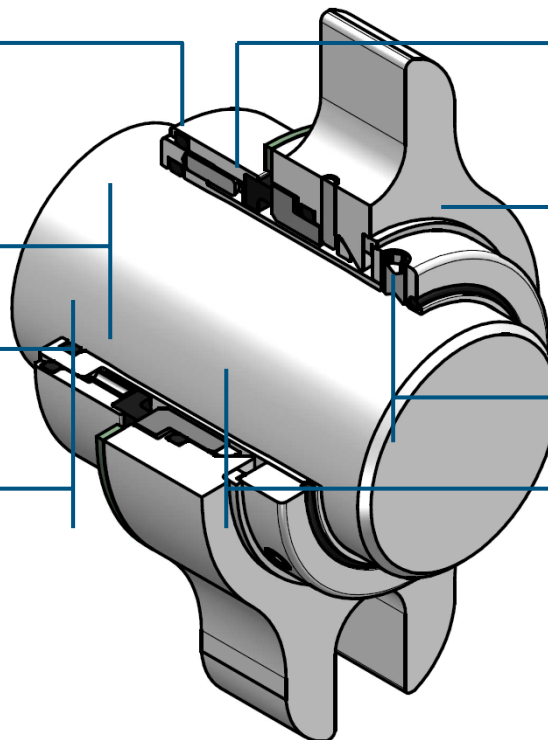
The Alloy 276 springs are not in the process fluid where they could corrode and clog, so they remain effective for the whole of the seal life.

### 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.

### Low turbulence wetted parts

The smooth contours of the wetted surfaces create very little turbulence within the seal cavity for longer lasting seal components in abrasive media use.



### 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.

### Setting and centring ring

Dual purpose. Remains fitted to seal during installation and use. The seal is automatically set to correct working length with the external drive screws. No measuring or clips are required.

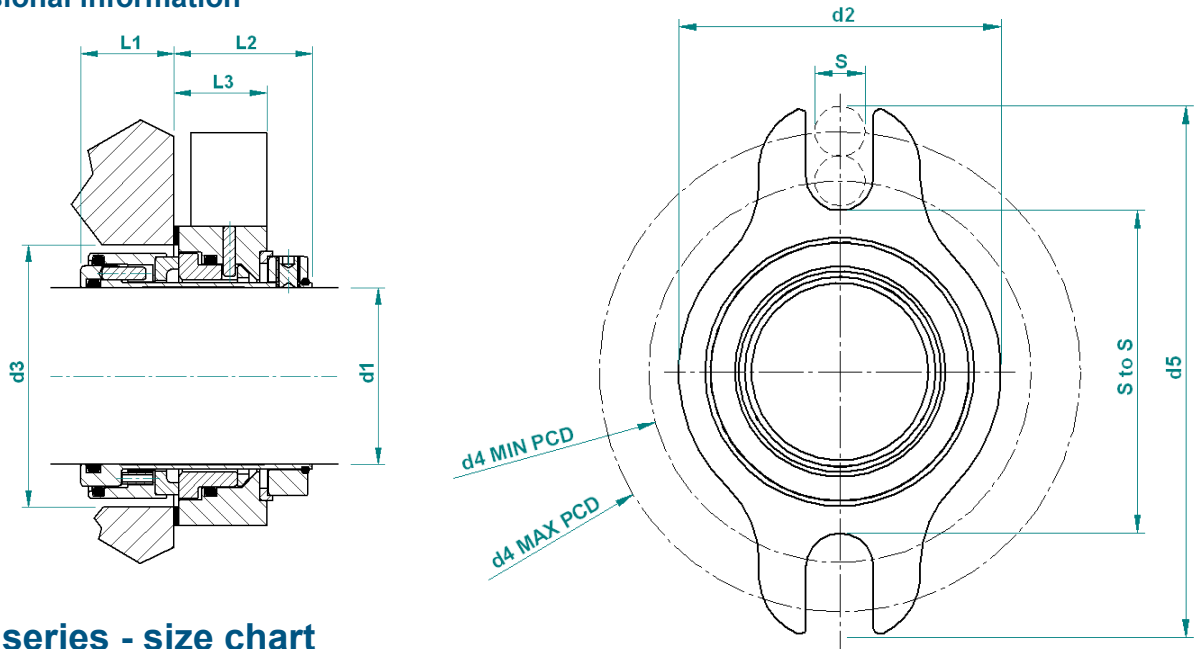
### External clamping

Pump efficiency adjustments can be made without dismantling the pump.

### Self aligning stationary

The patented self aligning stationary eliminates fretting and spring fatigue, ensures good alignment of seal faces and provides a good 'heat sink' for cooler running with heightened face lubricity.

dimensional information



**mv™ series - size chart**

d1	d2	d3		d4*pcd		d5	L1	L2	L3	S to S	S
Imperial Shaft	Gland Width	S/Box I.D. Min	S/Box I.D. Max	Min	Max	Gland O.D.	Inboard Length	Outboard Length	Bolting Surface	Slot to Slot	Max Bolt
1.000	2.125	1.625	1.875	2.704	3.459	3.959	0.929	1.310	0.829	2.125	0.500
1.125	2.250	1.772	2.000	2.829	3.576	4.076	0.929	1.310	0.864	2.250	0.500
1.250	2.375	1.890	2.125	2.954	3.674	4.174	0.929	1.310	0.880	2.375	0.500
1.375	2.563	2.000	2.313	3.142	3.694	4.194	0.929	1.385	0.896	2.563	0.500
1.500	2.750	2.283	2.500	3.329	3.930	4.430	0.929	1.385	0.928	2.750	0.500
1.625	2.875	2.402	2.625	3.454	4.206	4.706	0.929	1.385	0.928	2.875	0.500
1.750	3.000	2.559	2.750	3.579	4.443	4.943	0.929	1.385	0.928	3.000	0.500
1.875	3.125	2.677	2.875	3.704	4.685	5.185	0.929	1.452	0.996	3.125	0.500
2.000	3.250	2.750	3.000	3.954	4.812	5.437	0.929	1.452	0.996	3.250	0.625
2.125	3.375	2.913	3.125	4.079	5.048	5.673	0.929	1.452	0.996	3.375	0.625
2.250	3.625	3.071	3.375	4.454	5.694	6.444	0.929	1.452	0.996	3.625	0.750
2.375	3.625	3.150	3.375	4.454	5.694	6.444	0.929	1.452	0.996	3.625	0.750
2.500	4.250	3.386	4.000	5.079	6.049	6.799	1.057	1.640	0.930	4.250	0.750
2.625	4.250	3.500	4.000	5.079	6.049	6.799	1.057	1.640	0.930	4.250	0.750
2.750	4.250	3.622	4.000	5.079	6.049	6.799	1.057	1.640	0.930	4.250	0.750
2.875	4.875	3.740	4.625	5.704	6.663	7.413	1.057	1.660	1.105	4.875	0.750
3.000	4.875	3.898	4.625	5.704	6.663	7.413	1.057	1.660	1.105	4.875	0.750
3.125	4.875	4.016	4.625	5.704	6.663	7.413	1.017	1.701	1.145	4.875	0.750

Metric Shaft	Gland Width	S/Box I.D. Min	S/Box I.D. Max	Min	Max	Gland O.D.	Inboard Length	Outboard Length	Bolting Surface	Slot to Slot	Max Bolt
24	54.0	41.0	47.6	68.0	88.5	100.5	23.6	33.3	21.1	54.0	M12
25	54.0	41.0	47.6	68.0	88.5	100.5	23.6	33.3	21.1	54.0	M12
28	57.2	44.0	50.8	71.2	91.5	103.5	23.6	33.3	21.9	57.2	M12
30	60.3	46.0	54.0	74.3	94.0	106.0	23.6	33.3	22.4	60.3	M12
32	60.3	48.0	54.0	74.3	94.0	106.0	23.6	33.3	22.4	60.3	M12
33	60.3	49.0	54.0	74.3	94.0	106.0	23.6	33.3	22.4	60.3	M12
35	65.1	51.0	58.8	79.1	94.5	106.5	23.6	35.2	22.8	65.1	M12
38	69.9	58.0	63.5	83.9	100.5	112.5	23.6	35.2	23.6	69.9	M12
40	69.9	60.0	63.5	83.9	100.5	112.5	23.6	35.2	23.6	69.9	M12
43	73.0	63.0	66.7	87.0	107.5	119.5	23.6	35.2	23.6	73.0	M12
45	76.2	65.0	69.9	90.2	113.5	125.6	23.6	35.2	23.6	76.2	M12
48	79.4	68.0	73.0	93.4	119.7	131.7	23.6	36.9	23.6	79.4	M12
50	79.4	70.0	73.0	93.4	119.7	131.7	23.6	36.9	23.6	79.4	M12
53	82.6	73.0	76.2	100.6	122.1	138.1	22.6	37.9	26.3	82.6	M16
55	85.7	75.0	79.4	103.8	128.1	144.1	22.6	37.9	26.3	85.7	M16
58	92.1	78.0	85.7	114.1	143.7	163.7	23.6	36.9	25.3	92.1	M20
60	92.1	80.0	85.7	114.1	143.7	163.7	23.6	36.9	25.3	92.1	M20
63	108.0	86.0	101.6	129.9	152.7	172.7	26.8	41.7	23.6	108.0	M20
65	108.0	89.0	101.6	129.9	152.7	172.7	26.8	41.7	23.6	108.0	M20
68	108.0	92.0	101.6	129.9	152.7	172.7	26.8	41.7	23.6	108.0	M20
70	108.0	92.0	101.6	129.9	152.7	172.7	26.8	41.7	23.6	108.0	M20
75	123.8	99.0	117.5	145.8	168.3	188.3	26.8	42.2	28.1	123.8	M20
80	123.8	102.0	117.5	145.8	168.3	188.3	25.8	43.2	29.1	123.8	M20

## Single Spring Seals



## GLE Component Seals



## MV Single Rotary Cartridge Seals



## 301/303 Single Rotary Cartridge Seals



## 302 Double Rotary Cartridge Seals



## F4S100 Single Stationary Cartridge Seals



## F4S200 Double Stationary Cartridge Seals



## Seal Support Systems

