

# MSBO/MSBW

## Balanced Pusher Seals

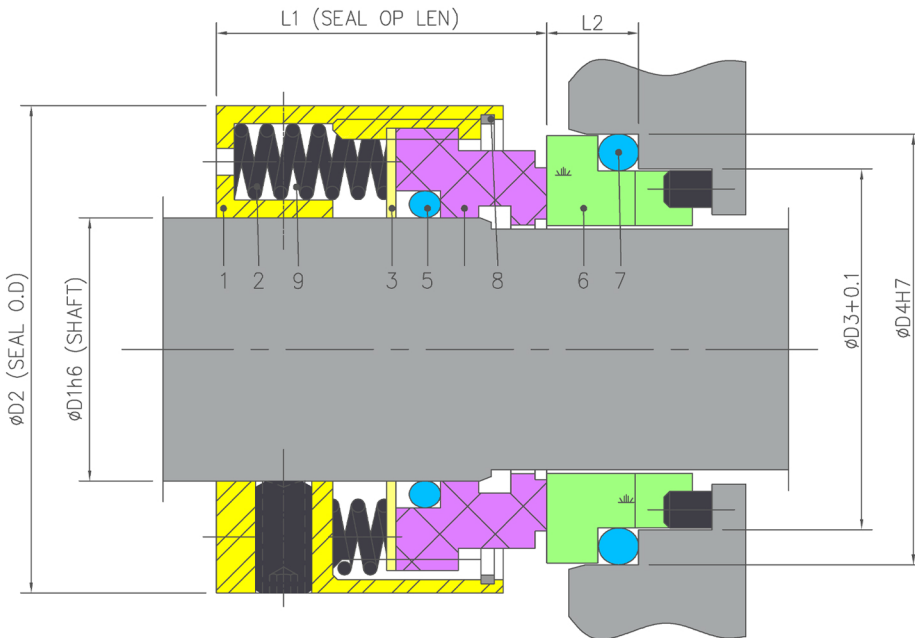


### Product Description

1. Single seal configuration.
2. Multi spring rotating.
3. Inside mounted.
4. Balanced.
5. Independent of Direction of Rotation

### Technical Features

1. Economical seal solution for universal application
2. Suitable for all types of centrifugal pumps.
3. Easy Installation



| Item | Description   |
|------|---------------|
| 1    | Cup           |
| 2    | Spring        |
| 3    | Thrust washer |
| 4    | Seal ring     |
| 5    | O ring        |
| 6    | Mating ring   |

| Item | Description |
|------|-------------|
| 7    | O Ring      |
| 8    | Snap ring   |
| 9    | Set Screw   |

### Industrial Application

Petro-Chemical Industry  
 Petroleum Refinery Industries  
 Light Hydrocarbons.  
 General chemicals and Clear liquids

### Material Of Construction

**Seal Face:** Carbon Graphite Antimony Impregnated/Carbon Graphite Resin Impregnated/Silicon - Carbide/Tungsten - Carbide  
**Seat :** Carbon Graphite Antimony Impregnated/Carbon Graphite Resin Impregnated/Silicon - Carbide/Tungsten - Carbide  
**Elastomer:** Viton / Aflas / TTV / EPDM / Kalrez  
**Metal Parts:** SS.316 / Hast'C /

Note : Other MOC Combinations On Request

### Available Sizes

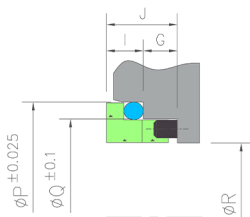
25mm to 200mm ( 1.000" to 8.000")

Note : Other Sizes On Request

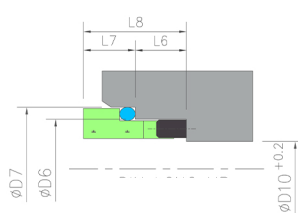
### Operating Limits

**Pressure** = 40kgs/cm<sup>2</sup> (Max)  
**Temperature** = -23°C to + 200°C  
**Speed** = 21m/s  
**Permissible Axial Movement** = ±1.0mm

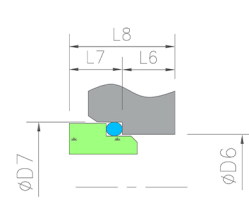
### Stationary Seats



CS MR



DIN LONG MR



DIN SHORT MR

## Dimensional Data

| D1    |      |       |       |       |      |      |
|-------|------|-------|-------|-------|------|------|
| INCH  | MM   | D2    | D3    | D4    | L1   | L2   |
| 0.750 | 19.1 | -     | -     | -     | -    | -    |
| 0.875 | 22.2 | -     | -     | -     | -    | -    |
| 1.000 | 25.4 | 36.5  | 35.2  | 41.3  | 33.5 | 6.6  |
| 1.125 | 28.6 | 39.7  | 38.3  | 44.5  | 35.0 | 6.6  |
| 1.250 | 31.8 | 42.9  | 41.5  | 47.6  | 35.0 | 6.6  |
| 1.375 | 34.9 | 49.2  | 44.7  | 50.8  | 36.5 | 6.6  |
| 1.500 | 38.1 | 52.4  | 47.9  | 54.0  | 36.5 | 6.6  |
| 1.625 | 41.3 | 55.6  | 54.2  | 60.3  | 37.3 | 8.0  |
| 1.750 | 44.5 | 58.7  | 57.4  | 63.5  | 38.1 | 8.0  |
| 1.875 | 47.6 | 63.5  | 60.7  | 66.7  | 38.1 | 8.0  |
| 2.000 | 50.8 | 66.7  | 63.7  | 69.9  | 38.1 | 8.0  |
| 2.125 | 54.0 | 71.4  | 70.1  | 76.2  | 44.5 | 8.8  |
| 2.250 | 57.2 | 72.2  | 73.3  | 79.4  | 44.5 | 8.8  |
| 2.375 | 60.3 | 76.2  | 76.4  | 82.6  | 44.5 | 8.8  |
| 2.500 | 63.5 | 79.4  | 79.6  | 85.7  | 46.8 | 8.8  |
| 2.625 | 66.7 | 82.6  | 79.6  | 85.7  | 46.8 | 9.6  |
| 2.750 | 69.9 | 85.7  | 82.8  | 88.9  | 46.8 | 9.6  |
| 2.875 | 73.0 | 93.7  | 85.8  | 95.3  | 46.8 | 11.4 |
| 3.000 | 76.2 | 96.8  | 89.0  | 98.4  | 46.8 | 11.4 |
| 3.125 | 79.4 | 101.6 | 92.2  | 101.6 | 46.8 | 11.4 |
| 3.250 | 82.6 | 104.8 | 95.3  | 104.8 | 46.8 | 11.4 |
| 3.375 | 85.7 | 108.0 | 98.5  | 108.0 | 46.8 | 11.4 |
| 3.500 | 88.9 | 111.1 | 101.7 | 111.1 | 46.8 | 11.4 |
| 3.625 | 92.1 | 114.3 | 104.9 | 114.3 | 46.8 | 12.5 |
| 3.750 | 95.3 | 117.5 | 108.1 | 117.5 | 46.8 | 12.5 |

| D1    |       |       |       |       |      |      |
|-------|-------|-------|-------|-------|------|------|
| INCH  | MM    | D2    | D3    | D4    | L1   | L2   |
| 3.875 | 98.4  | 120.7 | 111.2 | 120.7 | 46.8 | 12.5 |
| 4.000 | 101.6 | 123.8 | 114.4 | 123.8 | 46.8 | 12.5 |
| 4.125 | 104.8 | 128.0 | 117.5 | 127.0 | 47.0 | 12.5 |
| 4.250 | 108.0 | 131.0 | 120.7 | 130.2 | 47.0 | 12.5 |
| 4.375 | 111.1 | 133.4 | 123.9 | 133.4 | 50.0 | 12.5 |
| 4.500 | 114.3 | 137.5 | 127.1 | 136.5 | 50.0 | 12.5 |
| 4.625 | 117.5 | 142.7 | 130.2 | 139.7 | 50.0 | 12.5 |
| 4.750 | 120.7 | 146.0 | 33.4  | 142.9 | 50.0 | 12.5 |
| 4.875 | 123.8 | 146.0 | 136.6 | 146.1 | 50.0 | 12.5 |
| 5.000 | 127.0 | 153.4 | 142.9 | 152.4 | 50.0 | 12.5 |
| 5.125 | 130.2 | 156.5 | 146.1 | 155.6 | 50.0 | 12.5 |
| 5.250 | 133.4 | 159.8 | 149.3 | 158.8 | 50.0 | 12.5 |
| 5.375 | 136.5 | 163.0 | 152.4 | 161.9 | 50.0 | 12.5 |
| 5.500 | 139.7 | 169.0 | 155.6 | 165.2 | 50.0 | 12.5 |
| 5.625 | 142.9 | 176.0 | 158.8 | 168.3 | 40.6 | 12.5 |
| 5.750 | 146.1 | 172.4 | 162.0 | 171.6 | 50.0 | 12.5 |
| 5.875 | 149.2 | 179.0 | 165.1 | 174.6 | 41.9 | 12.5 |
| 6.000 | 152.4 | 182.0 | 168.3 | 177.8 | 41.3 | 12.5 |
| 6.125 | 155.6 | 190.0 | 171.5 | 181.0 | 42.9 | 12.5 |
| 6.250 | 158.8 | 188.5 | 174.6 | 184.1 | 42.9 | 12.5 |
| 6.375 | 161.9 | 189.0 | 177.9 | 187.3 | 50.0 | 12.5 |
| 6.500 | 165.1 | 194.7 | 181.0 | 190.6 | 52.1 | 12.5 |
| 6.625 | 168.3 | 195.5 | 184.1 | 193.7 | 56.3 | 12.5 |
| 6.750 | 171.5 | 203.6 | 187.4 | 197.0 | 50.0 | 12.5 |
| 6.875 | 174.6 | 205.0 | 190.6 | 200.0 | 50.0 | 12.5 |
| 7.000 | 177.8 | 210.0 | 193.7 | 203.3 | 50.0 | 12.5 |

Note: Additional technical & dimensional information will be provided on request