



WORLDWIDE SEALING  
TECHNOLOGY SDN BHD

# MECHANICAL SEALS



Engineered for performance!

# WORLDWIDE SEALING TECHNOLOGY SDN BHD

There is a growing need in industrial plants over the world for better sealing solutions. Worldwide's mission is to address this need.

The need exists not only in terms of higher speed, pressure and temperature applications, but also in terms of rugged design, easier installation/servicing and lower emissions.

In these times of heightened environmental concerns, the latter is particularly important. Only seals designed with the best available analytical tools, manufactured to the strictest quality standards and made from select and proven materials will meet this need.

Worldwide's state-of-the-art facility was built to meet, and exceed customer expectations. Worldwide engineers apply advanced — information technology, proven analytical methods, superior materials, as well as decades of experience in sealing turbomachinery and other fluid-handling equipment. All this combined is engineered into every pump, compressor, turbine and agitator.

Worldwide is a small business unit, but as such, it is more responsive and better able to provide innovative products and services to meet the needs of its customers. In addition, it strives to continuously improve on both its products and services.

Worldwide's uniqueness includes a high level of personalised customer service. Rather than being passed down to a junior person, our customers deal directly with the principals.

Worldwide expects you, the customer, to define performance and quality standards to our products.

## HIGH PERFORMANCE ELASTOMER SEALS

### AERO 1-0 BALANCED SEAL

The Aero 1-0 is an 'O' Ring elastomer seal suitable for high pressure applications which boasts features not commonly found in other mechanical seals. These include:

1. An ear and slot drive which creates a positive drive making the seal long lasting and particularly good for viscous application
2. A unique ventilated spring encasement which reduces clogging and seal hangup and
3. Narrow face width design resulting in lower power absorption and heat generation.

#### OPERATING LIMITS

Temperatures : -40 to 260 °C  
                  : -40 to 500 °F  
Pressure      : Up to 138 kg/cm<sup>2</sup>

### APPLICATIONS

Suitable for a wide range of services which include chemical processing, hydrocarbon processing industry, pulp and paper, marine wastewater treatment, power generation and pharmaceutical.



**Option of single or multiple springs.**

### AERO 1-9 UNBALANCED

The Aero 1-9 is the unbalanced version of the Aero 1-0. It is an 'O' Ring elastomer seal suitable for low pressure applications and has the same features as the Aero 1-0. These include :

1. An ear and slot drive which creates a positive drive making the seal long lasting and particularly good for viscous application
2. A unique ventilated spring encasement which reduces clogging and seal hangup and
3. Narrow face width design resulting in lower power absorption and heat generation.

#### OPERATING LIMITS

Temperatures : -40 to 260 °C  
                  : -40 to 500 °F  
Pressure      : Up to 15 kg/cm<sup>2</sup>  
Shaft Speed   : 30 M/s

# GENERAL MECHANICAL

## AERO 2 SERIES - RUBBER BELLOWS SEALS

Worldwide's rubber bellows seals are suitable for all rotary equipment including mixers, agitators, pumps and compressors. The single coil spring for non-clogging operation is excellent in slurry service and liquids that are likely to solidify during the standby of equipment.

The range of rubber bellows seals comes in both full or half convolute versions. The non-pusher design prevents shaft fretting and allows large end play and shaft tilts.



**AERO 2-1**



**AERO 2-3**



**AERO 2-5**



**AERO 2-81**



**AERO 2-82**



**AERO 2-192**



**AERO 2-84**



**AERO 2502**

# METAL BELLOWS SEALS

## AERO 3

The Aero 3 metal bellows seal is designed for high pressure and temperature applications.

### APPLICATION

Petrochemical, hydrocarbon and gas processing industries.

### OPERATING LIMITS

|              |                          |
|--------------|--------------------------|
| Temperatures | : 204 °C                 |
|              | : 316 °C with<br>Kalrez* |
| Pressure     | : 30 kg/cm <sup>2</sup>  |
| Shaft Speed  | : 30 M/s                 |

## AERO 3-0

The Aero 3-0 utilises an 'O' Ring for its secondary sealing.



## AERO 3-9

The Aero 3-9 utilises a grafoil ring for its secondary sealing. This extends the temperature limits of the seal.



### OPERATING LIMITS

|              |                          |
|--------------|--------------------------|
| Temperatures | : 204 °C                 |
|              | : 316 °C with<br>Kalrez* |
| Pressure     | : 30 kg/cm <sup>2</sup>  |
| Shaft Speed  | : 30 M/s                 |

\*Kalrez is a registered trademark of Dupont Company

## GENERAL PURPOSE MEDIUM DUTY MECHANICAL SEALS

### AERO 4-1 & 4-5 UNBALANCED SEAL

The Aero 4-1 is an 'O' Ring seal while the 4-5 comes with a teflon wedge.

#### APPLICATION

Chemical processing, hydrocarbon processing industry, pulp and paper, wastewater, power generation and pharmaceutical



#### OPERATING LIMITS

Temperatures : 200 °C  
Pressure : 15 kg/cm<sup>2</sup>  
Shaft Speed : 30 M/s

### AERO 4-2 & 4-6 BALANCED SEALS

The Aero 4-2 is an 'O' Ring seal while the 4-6 comes with a teflon wedge.

#### APPLICATION

Chemical processing, hydrocarbon processing industry, pulp and paper, wastewater, power generation and pharmaceutical

#### OPERATING LIMITS

Temperatures : 200 °C  
Pressure : 83 kg/cm<sup>2</sup>  
Shaft Speed : 30 M/s

## OUTSIDE MOUNTED-WIDE APPLICATION PURPOSE MECHANICAL SEALS

### AERO 5-0 'O' RING SEAL

The Aero 5 series are outside mounted Seals which are particularly suitable for chemically corrosive environments. The 5 series comes in two option, the Aero 5-0 which features Worldwide's ear & slot drive features and its tapered carbon face, and the Aero 5-3 which is a teflon bellows seal.

#### OPERATING LIMITS

Temperatures : 204 °C  
Pressure : 15 kg/cm<sup>2</sup>  
Shaft Speed : 18 M/s



### AERO 5-3 TEFLON BELLOWS SEAL

The Aero 5 series are outside mounted Seals which are particularly suitable for chemically corrosive environments. The 5 series comes in two option, the Aero 5-0 which features Worldwide's ear & slot drive features and its tapered carbon face, and the Aero 5-3 which is a teflon bellows seal.

## GAS & STEAM TURBINE SEALS

### AERO 6 NON-CONTACTING DRY RUNNING SEALS

Worldwide Seals has developed the latest state-of-the-art designs for its non-contacting dry running seals. These seals cater for the most demanding application for gas compressors running at high speeds, and steam turbines which operate at high pressures and temperatures.

Worldwide's steam turbine seal design offers a simplified solution which effectively cuts down the cost of manufacture, making its seals a very cost effective solution for companies wishing to utilise the latest non-contacting seal technology to minimise steam loss.



**AERO 6-1/6-2**

Worldwide's 6-1/6-2 Gas Compressor seals represent leading edge technology and incorporates the following design features :

1. Single or tandem seal arrangements for pressures up to 210 kg/cm<sup>2</sup> (3000 psiG),
2. Positive large C/S 'O' Ring for lower leakage and easy installation,
3. Cartridge mounted and field repairable,
4. Its large pin drive for stationary face allows for better radial movement and
5. Non-stress centering device allows higher operating speeds.

## DIN 24960 STANDARD

### AERO 9-1 DIN 24960 UNBALANCED SEAL

The Aero 9-1 is an unbalanced 'O' Ring seal which is manufactured to DIN 24960. It features :

1. Worldwide's Ear and Slot design for a more positive drive which is particularly suitable for viscous applications,
2. A unique ventilated spring encasement which reduces clogging and seal hangup and
3. Narrow face width design resulting in lower power loss absorption and heat generation.



### AERO 9-0 BALANCED SEAL

The Aero 9-0 is an 'O' Ring Seal which is manufactured to DIN 24960. It features :

1. Worldwide's Ear and Slot design for a more positive drive which is particularly suitable for viscous applications,
2. A unique ventilated spring encasement which reduces clogging and seal hangup and
3. Narrow face width design resulting in lower power loss absorption and heat generation.

#### OPERATING LIMITS

Temperatures : 260 °C  
 Pressure : 138 kg/cm<sup>2</sup>  
 Shaft Speed : 30 M/s

#### APPLICATIONS

Chemical processing, hydrocarbon processing industry, pulp and paper, wastewater, power generation and pharmaceutical

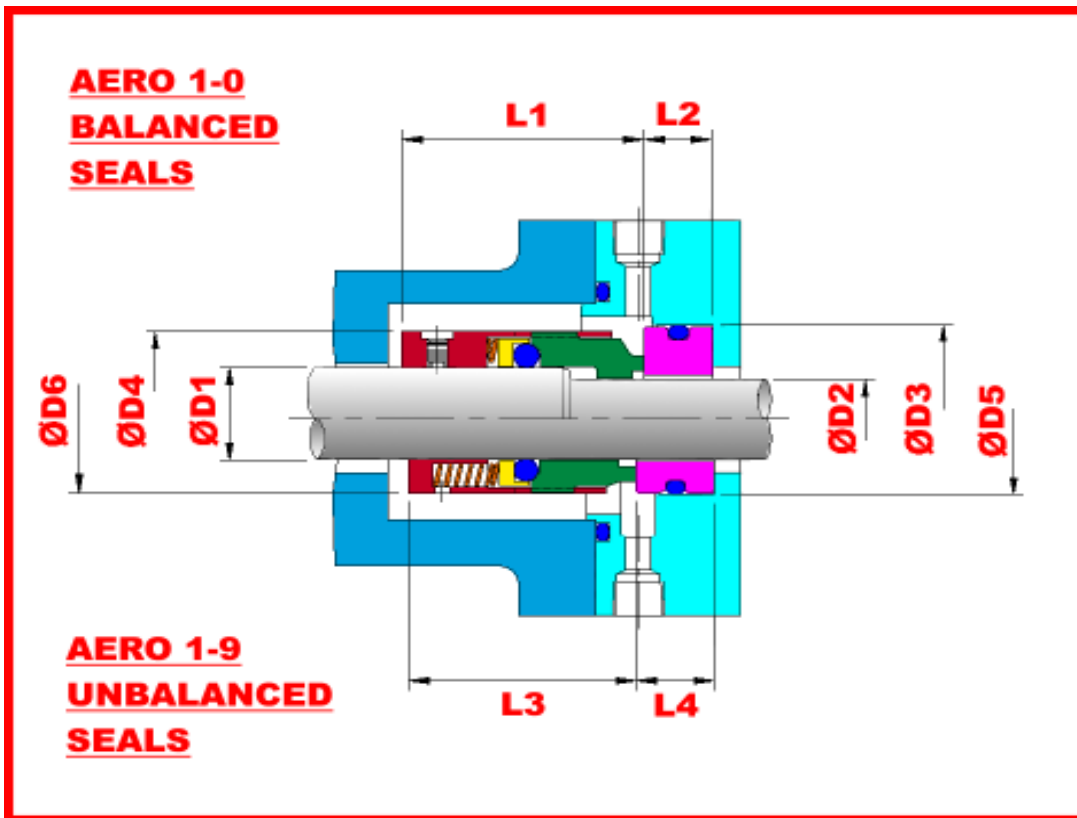
#### OPERATING LIMITS

Temperatures : 260 °C  
 Pressure : 15 kg/cm<sup>2</sup>  
 Shaft Speed : 30 M/s

# SEALING PRODUCTS

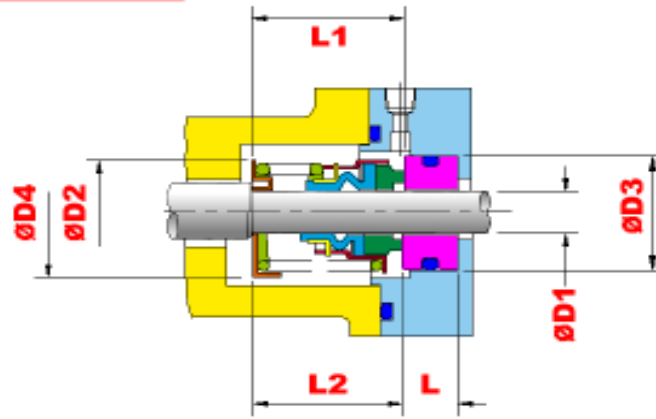


- |                               |                              |
|-------------------------------|------------------------------|
| 1. Gland Packing              | 6. Dressor Coupling Packings |
| 2. Tank Lid Packing           | 7. Ball Valves               |
| 3. Spiral Wound Gaskets       | 8. Tank Hatch Packings       |
| 4. Butterfly Valve Seat Rings | 9. Hatch Cover Packings      |
| 5. RTJ Gaskets                | 10. Jointing Sheets          |



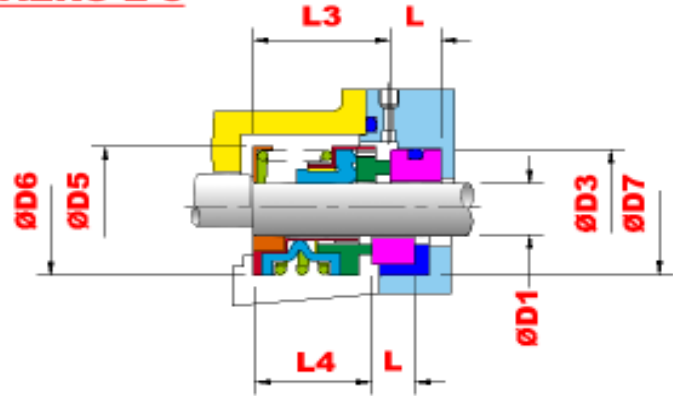
| AERO 1 Series |        |        |        |        |        |        |        |       |       |       |       |
|---------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| SEAL SIZE     |        |        |        |        |        |        |        |       |       |       |       |
| INCH          | METRIC | D1     | D2     | D3     | D4     | D5     | D6     | L1    | L2    | L3    | L4    |
| 1.000         | 25.40  | 25.40  | 22.22  | 38.10  | 36.50  | 41.27  | 36.50  | 33.00 | 10.31 | 25.40 | 11.10 |
| 1.125         | 28.57  | 28.57  | 25.40  | 41.27  | 40.30  | 44.45  | 39.67  | 35.00 | 11.10 | 25.40 | 11.10 |
| 1.250         | 31.75  | 31.75  | 28.57  | 44.45  | 43.00  | 47.62  | 42.85  | 35.00 | 11.10 | 25.40 | 11.10 |
| 1.375         | 34.92  | 34.92  | 28.57  | 44.45  | 49.20  | 50.80  | 50.20  | 35.00 | 11.10 | 28.57 | 11.10 |
| 1.500         | 38.10  | 38.10  | 31.75  | 47.62  | 50.20  | 53.97  | 50.20  | 35.00 | 11.10 | 28.57 | 11.10 |
| 1.625         | 41.27  | 41.27  | 34.92  | 50.80  | 57.15  | 60.32  | 57.15  | 35.00 | 11.10 | 28.57 | 12.70 |
| 1.750         | 44.45  | 44.45  | 38.10  | 53.97  | 59.00  | 63.50  | 59.00  | 44.45 | 11.10 | 34.92 | 12.70 |
| 1.875         | 47.62  | 47.62  | 41.27  | 60.32  | 63.50  | 66.67  | 63.50  | 44.45 | 12.70 | 34.92 | 12.70 |
| 2.000         | 50.80  | 50.80  | 44.45  | 63.50  | 66.67  | 69.85  | 66.67  | 44.45 | 12.70 | 34.92 | 12.70 |
| 2.125         | 53.97  | 53.97  | 47.62  | 66.67  | 71.42  | 76.20  | 71.42  | 44.45 | 12.70 | 34.92 | 14.28 |
| 2.250         | 57.15  | 57.15  | 50.80  | 69.85  | 72.21  | 79.37  | 72.21  | 44.45 | 12.70 | 34.92 | 14.28 |
| 2.375         | 60.32  | 60.32  | 53.97  | 76.20  | 76.20  | 82.55  | 76.20  | 44.45 | 14.27 | 34.92 | 14.28 |
| 2.500         | 63.50  | 63.50  | 57.15  | 79.37  | 79.37  | 85.72  | 79.37  | 44.45 | 14.27 | 34.92 | 14.28 |
| 2.625         | 66.67  | 66.67  | 60.32  | 82.55  | 82.55  | 85.72  | 82.55  | 52.37 | 14.27 | 42.86 | 15.87 |
| 2.750         | 69.85  | 69.85  | 63.50  | 85.72  | 85.72  | 88.90  | 85.72  | 52.37 | 14.27 | 42.86 | 15.87 |
| 2.875         | 73.02  | 73.02  | 66.67  | 85.72  | 88.90  | 95.25  | 88.90  | 52.37 | 15.87 | 42.86 | 15.87 |
| 3.000         | 76.20  | 76.20  | 69.85  | 88.90  | 92.07  | 98.42  | 92.07  | 52.37 | 15.87 | 42.86 | 15.87 |
| 3.125         | 79.37  | 79.37  | 73.02  | 95.25  | 95.25  | 101.60 | 95.25  | 52.37 | 15.87 | 42.86 | 19.84 |
| 3.250         | 82.55  | 82.55  | 76.20  | 98.42  | 98.42  | 104.77 | 98.42  | 52.37 | 15.87 | 42.86 | 19.84 |
| 3.375         | 85.72  | 85.72  | 79.37  | 101.60 | 101.60 | 107.95 | 101.60 | 52.37 | 19.84 | 42.86 | 19.84 |
| 3.500         | 88.90  | 88.90  | 82.55  | 104.77 | 104.77 | 111.12 | 104.77 | 52.37 | 19.84 | 42.86 | 19.84 |
| 3.625         | 92.07  | 92.07  | 85.72  | 107.95 | 107.95 | 114.30 | 107.95 | 52.37 | 19.84 | 42.86 | 19.84 |
| 3.750         | 95.25  | 95.25  | 88.90  | 111.12 | 111.12 | 117.47 | 111.12 | 52.37 | 19.84 | 42.86 | 19.84 |
| 3.875         | 98.42  | 98.42  | 92.07  | 114.30 | 114.30 | 120.65 | 114.30 | 52.37 | 19.84 | 42.86 | 19.84 |
| 4.000         | 101.60 | 101.60 | 95.25  | 117.47 | 117.47 | 123.82 | 117.48 | 52.37 | 19.84 | 42.86 | 19.84 |
| 4.125         | 104.77 | 104.77 | 98.42  | 120.65 | 127.00 | 127.00 | 127.00 | 52.37 | 19.84 | 42.86 | 19.84 |
| 4.250         | 107.95 | 107.95 | 101.60 | 123.82 | 130.17 | 130.18 | 130.18 | 52.37 | 19.84 | 42.86 | 19.84 |
| 4.375         | 111.12 | 111.12 | 104.77 | 130.18 | 133.35 | 133.35 | 133.35 | 52.37 | 19.84 | 42.86 | 19.84 |
| 4.500         | 114.30 | 114.30 | 107.95 | 133.35 | 136.52 | 136.52 | 136.52 | 52.37 | 19.84 | 42.86 | 19.84 |

**AERO 2-1**



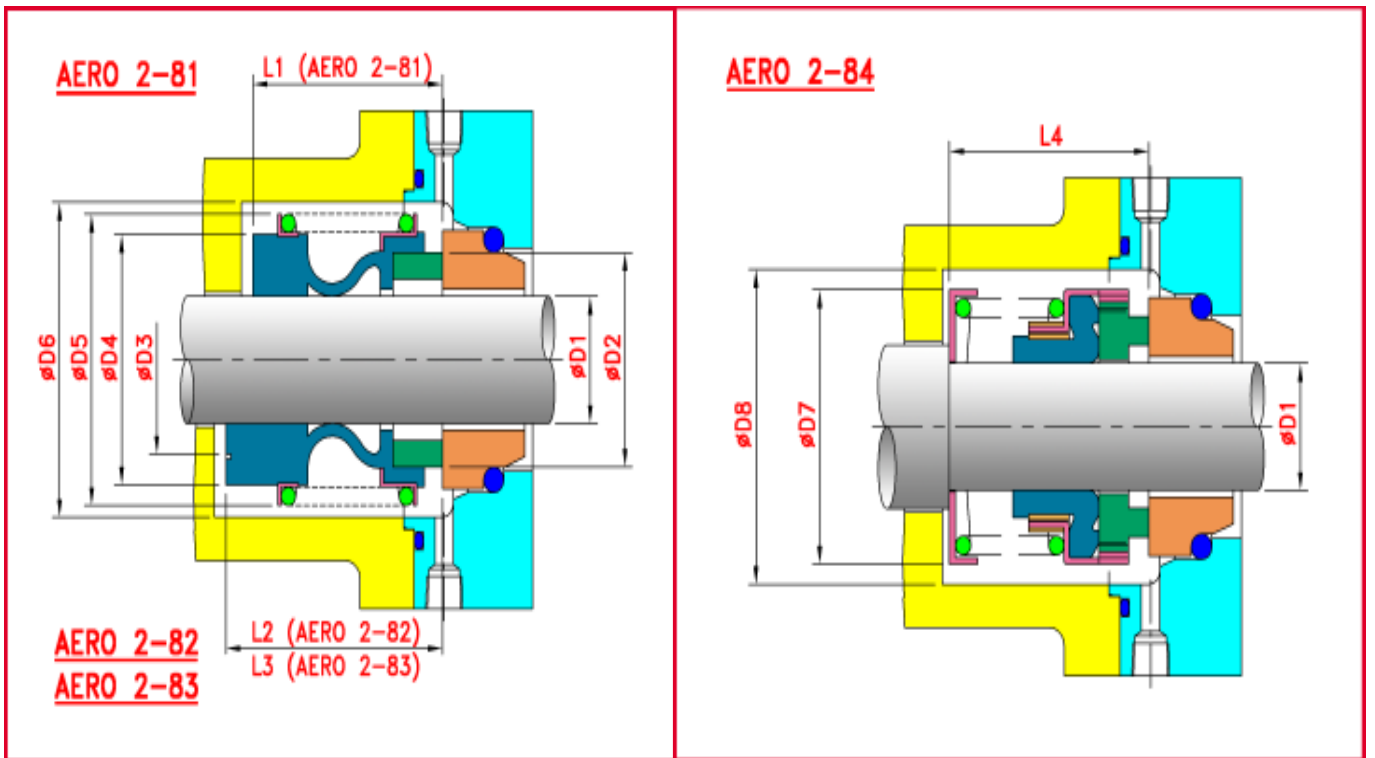
**AERO 2-3**

**AERO 2-5**



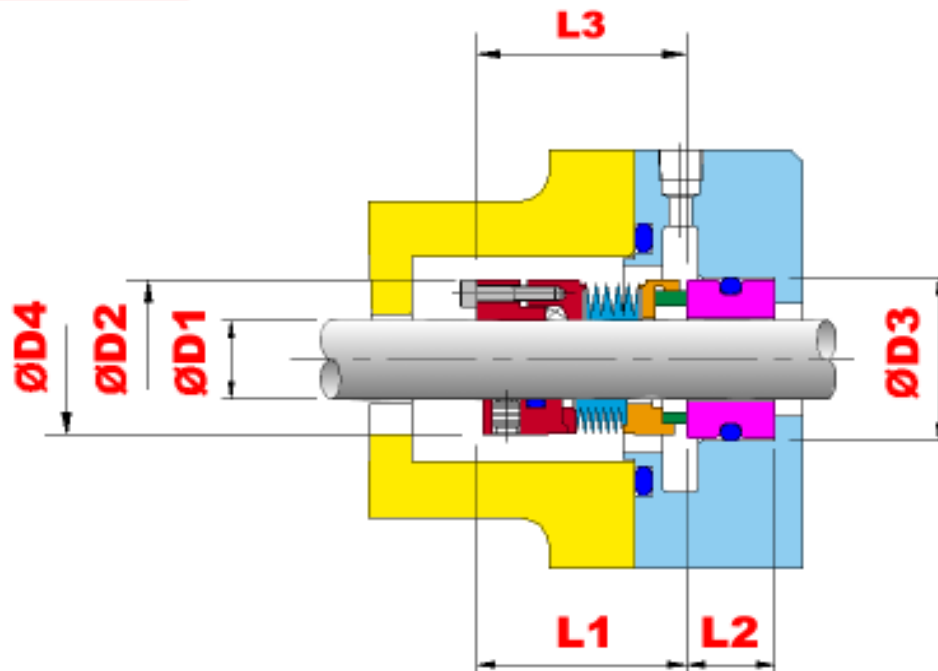
**AERO 2-6**

| AERO 2 Series |        |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SEAL SIZE     |        |       |       |       |       |       |       |       |       |       |       |       |       |
| INCH          | METRIC | D1    | D2    | D3    | D4    | D5    | D6    | D7    | L     | L1    | L2    | L3    | L4    |
| 0.375         | 9.52   | 9.52  | 20.62 | 22.22 | 26.19 | 20.64 | 26.97 | 25.40 | 7.92  | 30.15 | 20.62 | 20.64 | 16.67 |
| 0.437         | -      | 11.10 | -     | -     | -     | -     | 26.97 | 25.40 | 7.92  | -     | -     | -     | 16.67 |
| 0.500         | 12.70  | 12.70 | 23.80 | 25.40 | 30.15 | 23.81 | 26.97 | 25.40 | 7.92  | 30.15 | 20.62 | 20.64 | 16.67 |
| 0.562         | -      | 14.27 | -     | -     | -     | -     | 30.95 | 31.75 | 10.31 | -     | -     | -     | 18.24 |
| 0.625         | 15.87  | 15.87 | 27.76 | 31.75 | 34.92 | 26.98 | 30.95 | 31.75 | 10.31 | 33.32 | 22.22 | 22.22 | 18.24 |
| 0.687         | -      | 17.45 | -     | -     | -     | -     | 34.11 | 34.92 | 10.31 | -     | -     | -     | 18.24 |
| 0.750         | 19.05  | 19.05 | 30.94 | 34.92 | 38.10 | 29.16 | 34.11 | 34.92 | 10.31 | 33.32 | 22.22 | 22.22 | 18.24 |
| 0.875         | 22.22  | 22.22 | 35.71 | 38.10 | 41.28 | 33.33 | -     | -     | 10.31 | 34.92 | 23.80 | 23.80 | -     |
| 1.000         | 25.40  | 25.40 | 38.10 | 41.28 | 46.02 | 42.85 | 42.85 | 41.28 | 11.10 | 39.67 | 25.40 | 25.40 | 20.62 |
| 1.125         | 28.57  | 28.57 | 41.28 | 44.45 | 49.20 | 46.04 | -     | -     | 11.10 | 41.28 | 26.97 | 26.98 | -     |
| 1.250         | 31.75  | 31.75 | 46.02 | 47.63 | 52.37 | 49.20 | -     | -     | 11.10 | 41.28 | 26.97 | 26.98 | -     |
| 1.375         | 34.92  | 34.92 | 47.63 | 50.80 | 57.15 | 52.38 | -     | -     | 11.10 | 42.85 | 28.57 | 28.57 | -     |
| 1.500         | 38.10  | 38.10 | 50.80 | 53.97 | 60.32 | 55.56 | -     | -     | 11.10 | 42.85 | 28.57 | 28.57 | -     |
| 1.625         | 41.27  | 41.28 | 57.15 | 60.32 | 69.04 | 63.50 | -     | -     | 12.70 | 50.80 | 34.92 | 34.92 | -     |
| 1.750         | 44.45  | 44.45 | 60.32 | 63.50 | 69.85 | 66.68 | -     | -     | 12.70 | 50.80 | 34.92 | 34.92 | -     |
| 1.875         | 47.62  | 47.63 | 63.50 | 66.68 | 73.02 | 69.85 | -     | -     | 12.70 | 53.98 | 38.10 | 38.10 | -     |
| 2.000         | 50.80  | 50.80 | 66.68 | 69.85 | 76.20 | 73.02 | -     | -     | 12.70 | 53.98 | 38.10 | 38.10 | -     |



| AERO 2-81, 2-82, 2-83 & 2-84 |     |       |     |       |       |     |     |     |      |      |      |      |
|------------------------------|-----|-------|-----|-------|-------|-----|-----|-----|------|------|------|------|
| SEAL SIZE                    | D1  | D2    | D3  | D4    | D5    | D6  | D7  | D8  | L1   | L2   | L3   | L4   |
| (MM)                         |     |       |     |       |       |     |     |     |      |      |      |      |
| 10                           | 10  | 15.7  | 18  | 20.5  | 22.5  | 24  | -   | -   | 14.5 | 25.9 | 33.4 | -    |
| 12                           | 12  | 18.2  | 20  | 22.5  | 25.0  | 26  | -   | -   | 15.0 | 25.9 | 33.4 | -    |
| 14                           | 14  | 20.8  | 22  | 26.5  | 28.5  | 30  | 24  | 26  | 17.0 | 28.4 | 33.4 | 23.0 |
| 15                           | 15  | 20.8  | 22  | 26.5  | 28.5  | 30  | 26  | 28  | 17.0 | 28.4 | 33.4 | 23.0 |
| 16                           | 16  | 21.0  | 22  | 26.5  | 28.5  | 30  | 32  | 34  | 17.0 | 28.4 | 33.4 | 24.0 |
| 18                           | 18  | 23.7  | 26  | 29.0  | 32.0  | 33  | 34  | 36  | 19.5 | 30.0 | 37.5 | 20.0 |
| 20                           | 20  | 26.7  | 28  | 33.0  | 37.0  | 38  | 36  | 38  | 21.5 | 30.0 | 37.5 | 24.0 |
| 22                           | 22  | 27.7  | 28  | 33.0  | 37.0  | 38  | 38  | 40  | 21.5 | 30.0 | 37.5 | 26.7 |
| 24                           | 24  | 31.2  | 32  | 38.0  | 42.5  | 44  | 39  | 41  | 22.5 | 32.5 | 42.5 | 27.0 |
| 25                           | 25  | 31.2  | 32  | 38.0  | 42.5  | 44  | 42  | 44  | 23.0 | 32.5 | 42.5 | 30.0 |
| 28                           | 28  | 35.0  | 37  | 44.0  | 49.0  | 50  | 44  | 46  | 26.5 | 35.0 | 42.5 | 30.5 |
| 30                           | 30  | 37.0  | 37  | 44.0  | 49.0  | 50  | 46  | 48  | 26.5 | 35.0 | 42.5 | 30.5 |
| 32                           | 32  | 40.2  | 41  | 46.0  | 53.5  | 55  | 47  | 49  | 27.5 | 35.0 | 47.5 | 30.5 |
| 33                           | 33  | 40.2  | 41  | 46.0  | 53.5  | 55  | 49  | 51  | 27.5 | 35.0 | 47.5 | 30.5 |
| 35                           | 35  | 43.2  | 44  | 50.0  | 57.0  | 59  | 54  | 58  | 28.5 | 35.0 | 47.5 | 32.0 |
| 38                           | 38  | 46.2  | 47  | 53.0  | 59.0  | 61  | 56  | 60  | 30.0 | 36.0 | 46.0 | 32.0 |
| 40                           | 40  | 48.8  | 49  | 55.0  | 62.0  | 64  | 59  | 63  | 30.0 | 36.0 | 46.0 | 32.0 |
| 43                           | 43  | 51.8  | 53  | 58.0  | 65.5  | 67  | 61  | 65  | 30.0 | 36.0 | 51.0 | 32.0 |
| 45                           | 45  | 53.8  | 55  | 60.0  | 68.0  | 70  | 64  | 68  | 30.0 | 36.0 | 51.0 | 32.0 |
| 48                           | 48  | 56.8  | 58  | 63.0  | 70.5  | 74  | 66  | 70  | 30.5 | 36.0 | 51.0 | 34.0 |
| 50                           | 50  | 58.8  | 60  | 65.0  | 74.0  | 77  | 69  | 73  | 30.5 | 38.0 | 50.5 | 34.0 |
| 53                           | 53  | 62.2  | 63  | 70.0  | 78.5  | 81  | 71  | 75  | 33.0 | 36.5 | 59.0 | 34.0 |
| 55                           | 55  | 64.2  | 65  | 72.0  | 81.0  | 83  | 78  | 83  | 35.0 | 36.5 | 59.0 | 39.0 |
| 58                           | 58  | 67.2  | 68  | 75.0  | 85.5  | 88  | 80  | 85  | 37.0 | 41.5 | 59.0 | 39.0 |
| 60                           | 60  | 70.0  | 70  | 79.0  | 88.5  | 91  | 83  | 88  | 38.0 | 41.5 | 59.0 | 39.0 |
| 65                           | 65  | 75.0  | 77  | 84.0  | 93.5  | 96  | 85  | 90  | 40.0 | 41.5 | 69.0 | 39.0 |
| 68                           | 68  | 78.0  | 80  | 88.0  | 96.5  | 100 | 88  | 93  | 40.0 | 41.2 | 68.7 | 39.0 |
| 70                           | 70  | 80.0  | 82  | 90.0  | 99.5  | 103 | 89  | 95  | 40.0 | 48.7 | 68.7 | 45.5 |
| 75                           | 75  | 85.5  | 87  | 95.0  | 107.0 | 110 | 96  | 104 | 40.0 | 48.7 | 68.7 | 45.5 |
| 80                           | 80  | 90.5  | 92  | 100.0 | 112.0 | 116 | 104 | 109 | 40.0 | 48.0 | 78.0 | 45.0 |
| 85                           | 85  | 96.0  | 97  | 107.0 | 120.0 | 124 | 108 | 114 | 41.0 | 46.0 | 76.0 | 45.0 |
| 90                           | 90  | 102.0 | 104 | 114.0 | 127.0 | 131 | 114 | 119 | 45.0 | 51.0 | 76.0 | 50.0 |
| 95                           | 95  | 107.0 | 109 | 119.0 | 132.0 | 136 | 118 | 124 | 46.0 | 51.0 | 76.0 | 50.0 |
| 100                          | 100 | 112.0 | 114 | 124.0 | 137.0 | 140 | 124 | 129 | 47.0 | 51.0 | 76.0 | 50.0 |

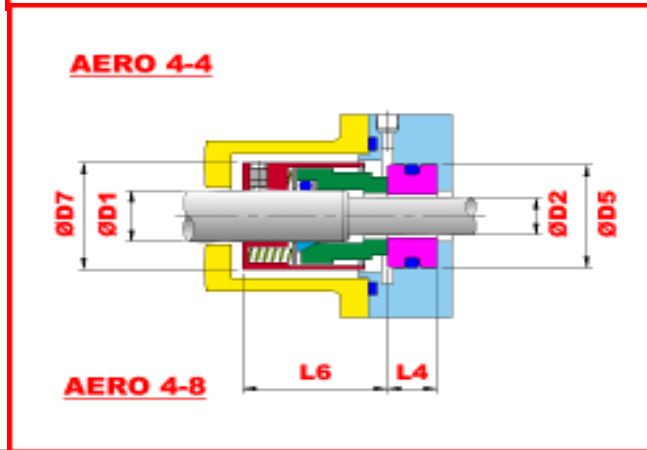
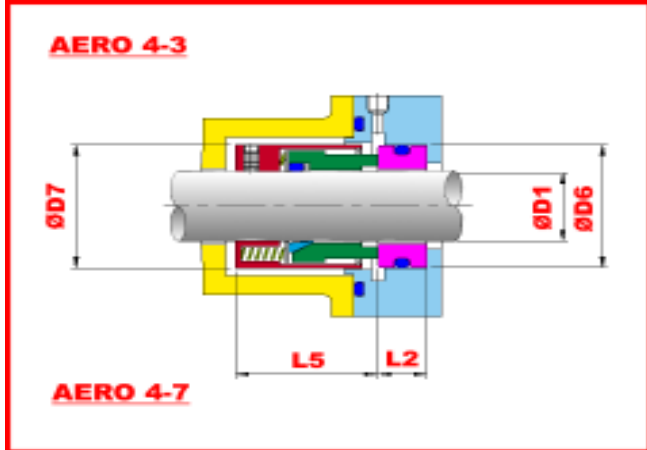
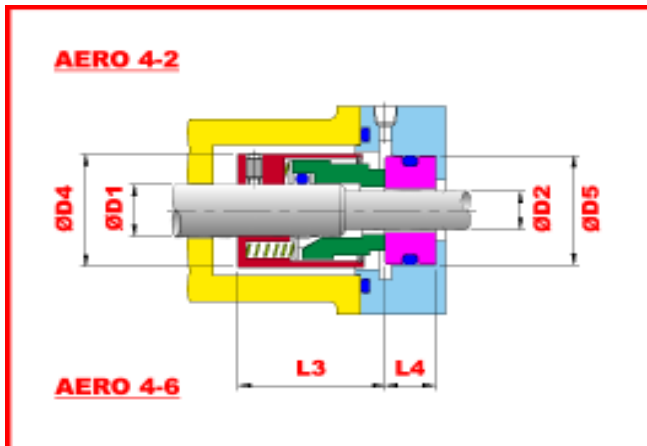
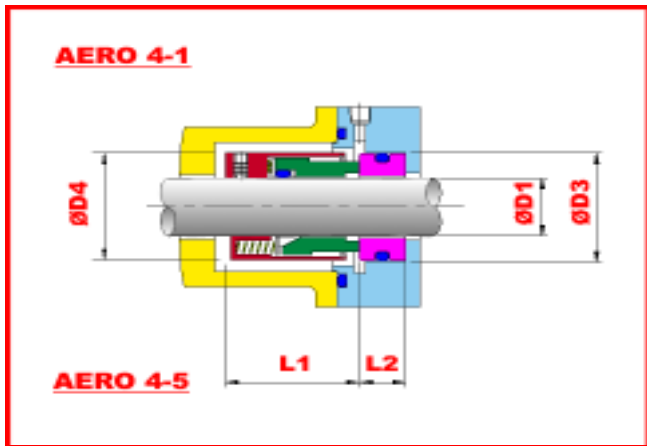
## AERO 3-9



## AERO 3-0

### AERO 3 Series

| SEAL SIZE |        | D 1   | D 2    | D 3    | D 4    | L 1   | L 2   | L 3   |
|-----------|--------|-------|--------|--------|--------|-------|-------|-------|
| INCH      | METRIC |       |        |        |        |       |       |       |
| 1.000     | 25.40  | 25.40 | 39.67  | 41.27  | 38.10  | 31.75 | 11.10 | 42.85 |
| 1.125     | 28.57  | 28.57 | 42.85  | 44.45  | 41.27  | 31.75 | 11.10 | 39.67 |
| 1.250     | 31.75  | 31.75 | 46.02  | 47.62  | 44.45  | 31.75 | 11.10 | 39.67 |
| 1.375     | 34.92  | 34.92 | 49.20  | 50.80  | 49.20  | 31.75 | 11.10 | 44.45 |
| 1.500     | 38.10  | 38.10 | 55.12  | 53.97  | 53.97  | 31.75 | 11.10 | 44.45 |
| 1.625     | 41.27  | 41.27 | 58.29  | 60.32  | 57.15  | 38.10 | 12.70 | 44.45 |
| 1.750     | 44.45  | 44.45 | 61.47  | 63.50  | 60.32  | 38.10 | 12.70 | 44.45 |
| 1.875     | 47.62  | 47.62 | 64.64  | 66.67  | 63.50  | 38.10 | 12.70 | 44.45 |
| 2.000     | 50.80  | 50.80 | 67.82  | 69.75  | 66.67  | 38.10 | 12.70 | 44.45 |
| 2.125     | 53.97  | 53.97 | 71.00  | 76.20  | 69.85  | 38.10 | 14.27 | 44.45 |
| 2.250     | 57.15  | 57.15 | 74.17  | 79.37  | 73.02  | 38.10 | 14.27 | 47.63 |
| 2.375     | 60.32  | 60.32 | 77.34  | 82.55  | 76.20  | 38.10 | 14.27 | 47.63 |
| 2.500     | 63.50  | 63.50 | 80.95  | 85.72  | 79.37  | 38.10 | 14.27 | 47.63 |
| 2.625     | 66.67  | 66.67 | 84.12  | 85.72  | 82.55  | 38.10 | 15.87 | 47.63 |
| 2.750     | 69.85  | 69.85 | 87.30  | 88.90  | 88.21  | 41.27 | 15.87 | 47.63 |
| 2.875     | 73.02  | 73.02 | 92.07  | 95.25  | 90.47  | 41.27 | 15.87 | 47.63 |
| 3.000     | 76.20  | 76.20 | 95.25  | 98.42  | 92.12  | 41.27 | 15.87 | 47.63 |
| 3.125     | 79.37  | 79.37 | 98.42  | 101.60 | 96.82  | 41.27 | 19.84 | 47.63 |
| 3.250     | 82.55  | 82.55 | 101.60 | 104.77 | 100.00 | 41.27 | 19.84 | 47.63 |
| 3.375     | 85.72  | 85.72 | 104.78 | 107.95 | 103.17 | 41.27 | 19.84 | 47.63 |
| 3.500     | 88.90  | 88.90 | 107.95 | 111.12 | 106.34 | 41.27 | 19.84 | 47.63 |

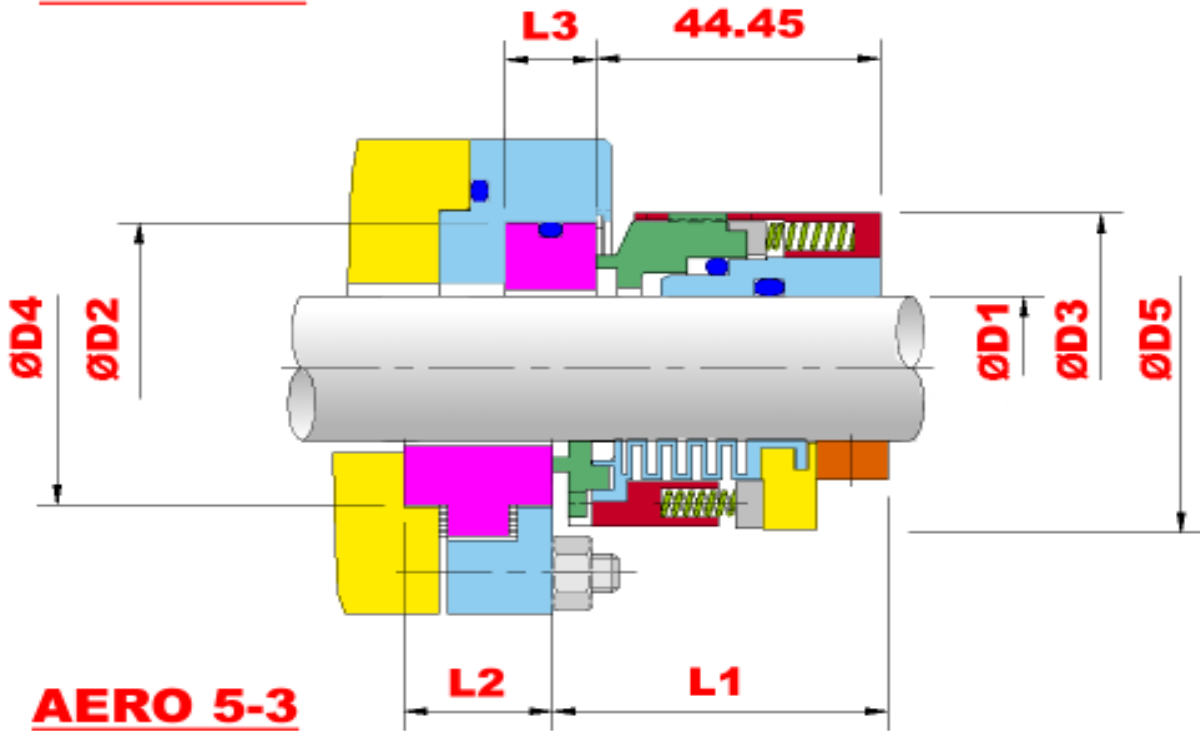


**AERO 4 Series**

| SEAL SIZE |        | D1     | D2    | D3     | D4     | D5     | D6     | D7     | L1    | L2    | L3    | L4    | L5    | L6    |
|-----------|--------|--------|-------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| INCH      | METRIC |        |       |        |        |        |        |        |       |       |       |       |       |       |
| 1.000     | 25.40  | 25.40  | 22.22 | 41.27  | 39.67  | 38.10  | 36.50  | 36.50  | 25.40 | 11.10 | 33.33 | 10.31 | 25.40 | 33.33 |
| 1.125     | 28.57  | 28.57  | 25.40 | 44.45  | 42.85  | 41.27  | 39.67  | 39.67  | 26.97 | 11.10 | 34.92 | 11.10 | 25.40 | 34.92 |
| 1.250     | 31.75  | 31.75  | 28.57 | 47.63  | 47.63  | 44.45  | 42.85  | 42.85  | 26.97 | 11.10 | 34.92 | 11.10 | 25.40 | 34.92 |
| 1.375     | 34.92  | 34.92  | 28.57 | 50.80  | 50.80  | 44.45  | 49.20  | 49.20  | 28.57 | 11.10 | 36.50 | 11.10 | 34.92 | 42.85 |
| 1.500     | 38.10  | 38.10  | 31.75 | 53.97  | 53.97  | 47.62  | 49.20  | 49.20  | 28.57 | 11.10 | 36.50 | 11.10 | 28.57 | 36.50 |
| 1.625     | 41.27  | 41.27  | 34.92 | 60.32  | 60.32  | 50.80  | 57.15  | 57.15  | 34.92 | 12.70 | 44.45 | 11.10 | 29.36 | 40.46 |
| 1.750     | 44.45  | 44.45  | 38.10 | 63.50  | 63.50  | 53.97  | 58.72  | 58.72  | 34.92 | 12.70 | 44.45 | 11.10 | 34.92 | 44.45 |
| 1.875     | 47.62  | 47.62  | 41.27 | 66.67  | 66.67  | 60.32  | 63.50  | 63.50  | 34.92 | 12.70 | 44.45 | 12.70 | 34.92 | 44.45 |
| 2.000     | 50.80  | 50.80  | 44.45 | 69.75  | 69.75  | 63.50  | 66.67  | 66.67  | 34.92 | 12.70 | 44.45 | 12.70 | 34.92 | 44.45 |
| 2.125     | 53.97  | 53.97  | 47.62 | 76.20  | 76.20  | 66.67  | 71.42  | 71.42  | 42.86 | 14.28 | 52.37 | 12.70 | 42.86 | 52.37 |
| 2.250     | 57.15  | 57.15  | 50.80 | 79.37  | 79.37  | 69.85  | 71.42  | 72.21  | 42.86 | 14.28 | 52.37 | 12.70 | 34.92 | 44.45 |
| 2.375     | 60.32  | 60.32  | 53.97 | 82.55  | 82.55  | 76.20  | 76.20  | 76.20  | 42.86 | 14.28 | 52.37 | 14.27 | 42.86 | 52.37 |
| 2.500     | 63.50  | 63.50  | 57.15 | 85.72  | 85.72  | 79.37  | 79.37  | 79.37  | 42.86 | 14.28 | 52.37 | 14.27 | 34.92 | 44.45 |
| 2.625     | 66.67  | 66.67  | 60.32 | 85.72  | 88.90  | 82.55  | 82.55  | 82.55  | 42.86 | 15.87 | 52.37 | 14.27 | 42.86 | 52.37 |
| 2.750     | 69.85  | 69.85  | 63.50 | 88.90  | 92.07  | 85.72  | 85.72  | 85.72  | 42.86 | 15.87 | 52.37 | 14.27 | 42.86 | 52.37 |
| 2.875     | 73.02  | 73.02  | 66.67 | 95.25  | 95.25  | 85.72  | 88.90  | 88.90  | 42.86 | 15.87 | 52.37 | 15.87 | 42.86 | 52.37 |
| 3.000     | 76.20  | 76.20  | 69.85 | 98.42  | 96.82  | 88.90  | 92.07  | 92.07  | 42.86 | 15.87 | 52.37 | 15.87 | 42.86 | 52.37 |
| 3.125     | 79.37  | 79.37  | 73.02 | 101.60 | 100.00 | 95.25  | 95.25  | 95.25  | 42.86 | 19.84 | 52.37 | 15.87 | 42.86 | 52.37 |
| 3.250     | 82.55  | 82.55  | 76.20 | 104.77 | 104.77 | 98.42  | 98.43  | 98.42  | 42.86 | 19.84 | 52.37 | 15.87 | 42.86 | 52.37 |
| 3.375     | 85.72  | 85.72  | 79.37 | 107.95 | 107.95 | 101.60 | 101.60 | 101.60 | 42.86 | 19.84 | 52.37 | 19.84 | 42.86 | 52.37 |
| 3.500     | 88.90  | 88.90  | 82.55 | 111.12 | 111.12 | 104.77 | 104.77 | 104.77 | 42.86 | 19.84 | 52.37 | 19.84 | 42.86 | 52.37 |
| 3.625     | 92.07  | 92.07  | 85.72 | 114.30 | 114.30 | 107.95 | 107.95 | 107.95 | 42.86 | 19.84 | 52.37 | 19.84 | 42.86 | 52.37 |
| 3.750     | 95.25  | 95.25  | 88.90 | 117.47 | 117.47 | 111.12 | 111.12 | 111.12 | 42.86 | 19.84 | 52.37 | 19.84 | 42.86 | 52.37 |
| 3.875     | 98.42  | 98.42  | 92.07 | 120.65 | 120.65 | 114.30 | 114.30 | 114.30 | 42.86 | 19.84 | 52.37 | 19.84 | 42.86 | 52.37 |
| 4.000     | 101.60 | 101.60 | 95.25 | 123.82 | 123.82 | 117.47 | 117.48 | 117.47 | 42.86 | 19.84 | 52.37 | 19.84 | 42.86 | 52.37 |
| 4.125     | 104.78 | 104.77 | -     | -      | -      | -      | 127.00 | 127.00 | -     | 19.84 | -     | -     | 42.86 | -     |
| 4.250     | 107.95 | 107.95 | -     | -      | -      | -      | 130.18 | 130.18 | -     | 19.84 | -     | -     | 42.86 | -     |
| 4.375     | 111.13 | 111.12 | -     | -      | -      | -      | 133.35 | 133.35 | -     | 19.84 | -     | -     | 42.86 | -     |
| 4.500     | 114.30 | 114.30 | -     | -      | -      | -      | 136.52 | 136.52 | -     | 19.84 | -     | -     | 42.86 | -     |

# **AERO 5-0**

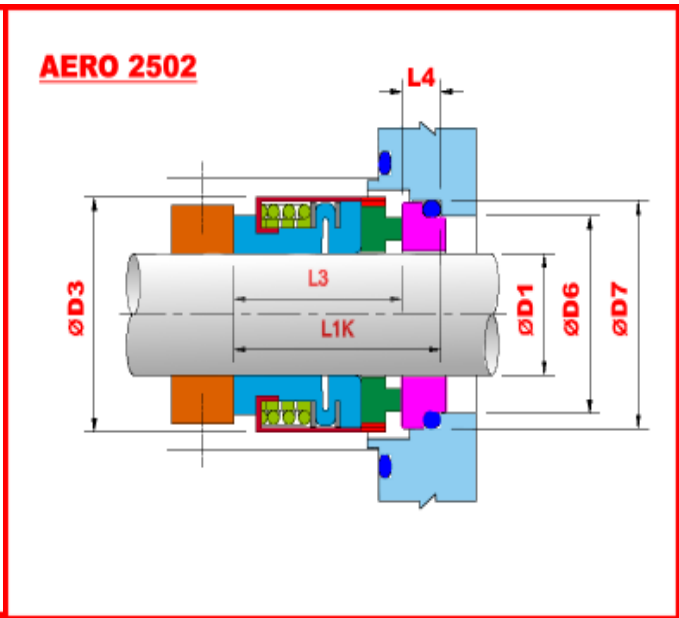
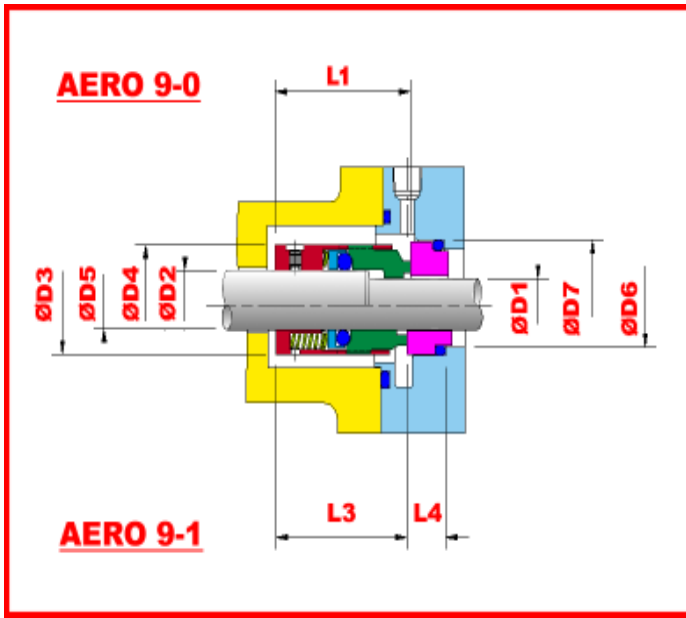
**(SEAL W.L.)**



# **AERO 5-3**

## **AERO 5 Series**

| SEAL SIZE |        | D 1    | D 2    | D 3    | D 4    | D 5    | L 1   | L 2   | L 3   |
|-----------|--------|--------|--------|--------|--------|--------|-------|-------|-------|
| INCH      | METRIC |        |        |        |        |        |       |       |       |
| 1.000     | 25.40  | 25.40  | 44.45  | 53.98  | 44.45  | 57.15  | 27.00 | 20.64 | 11.10 |
| 1.125     | 28.58  | 28.57  | 47.62  | 57.15  | 47.62  | 60.32  | 28.57 | 20.64 | 11.10 |
| 1.250     | 31.75  | 31.75  | 50.80  | 59.00  | 50.80  | 66.67  | 28.57 | 20.64 | 11.10 |
| 1.375     | 34.93  | 34.92  | 53.97  | 63.50  | 53.97  | 69.85  | 28.57 | 22.22 | 11.10 |
| 1.500     | 38.10  | 38.10  | 60.32  | 66.67  | 57.15  | 73.02  | 28.57 | 22.22 | 12.70 |
| 1.625     | 41.28  | 41.27  | 63.50  | 71.42  | 60.32  | 76.20  | 34.92 | 22.22 | 12.70 |
| 1.750     | 44.45  | 44.45  | 66.67  | 72.21  | 63.50  | 79.37  | 34.92 | 22.22 | 12.70 |
| 1.875     | 47.63  | 47.62  | 69.85  | 76.20  | 66.67  | 85.72  | 34.92 | 22.22 | 12.70 |
| 2.000     | 50.80  | 50.80  | 76.20  | 79.37  | 69.85  | 88.90  | 34.92 | 25.40 | 14.27 |
| 2.125     | 53.98  | 53.97  | 79.37  | 82.55  | 73.02  | 92.07  | 42.86 | 25.40 | 14.27 |
| 2.250     | 57.15  | 57.15  | 82.55  | 85.72  | 76.20  | 95.25  | 42.86 | 25.40 | 14.27 |
| 2.375     | 60.33  | 60.32  | 85.72  | 88.90  | 79.37  | 98.42  | 42.86 | 25.40 | 14.27 |
| 2.500     | 63.50  | 63.50  | 85.72  | 92.07  | 82.55  | 101.60 | 42.86 | 25.40 | 15.87 |
| 2.625     | 66.68  | 66.67  | 88.90  | 95.25  | 85.72  | 104.77 | 42.86 | 25.40 | 15.87 |
| 2.750     | 69.85  | 69.85  | 95.25  | 98.42  | 88.90  | 107.95 | 42.86 | 25.40 | 15.87 |
| 2.875     | 73.03  | 73.02  | 98.42  | 101.60 | 92.07  | 111.12 | 42.86 | 25.40 | 15.87 |
| 3.000     | 76.20  | 76.20  | 101.60 | 104.77 | 95.25  | 114.30 | 42.86 | 25.40 | 19.84 |
| 3.125     | 79.38  | 79.37  | 104.77 | 107.95 | 98.42  | 123.82 | 42.86 | 25.40 | 19.84 |
| 3.250     | 82.55  | 82.55  | 107.95 | 111.12 | 101.60 | 127.00 | 42.86 | 25.40 | 19.84 |
| 3.375     | 85.73  | 85.72  | 111.12 | 114.30 | 104.77 | 130.17 | 42.86 | 25.40 | 19.84 |
| 3.500     | 88.90  | 88.90  | 114.30 | 117.47 | 107.95 | 133.35 | 42.86 | 25.40 | 19.84 |
| 3.625     | 92.08  | 92.07  | 117.47 | 127.00 | 111.12 | 136.52 | 42.86 | 25.40 | 19.84 |
| 3.750     | 95.25  | 95.25  | 120.65 | 130.17 | 114.30 | 139.70 | 42.86 | 25.40 | 19.84 |
| 3.875     | 98.43  | 98.42  | 123.82 | 133.35 | 123.82 | 142.87 | 42.86 | 25.40 | 19.84 |
| 4.000     | 101.60 | 101.60 | 130.17 | 136.52 | 127.00 | 146.05 | 42.86 | 25.40 | 19.84 |



**AERO 9 AND AERO 2502 Series**

| SEAL SIZE (MM) | D1  | D2  | D3  | D4  | D5  | D6  | D7  | L1    | L3    | L4    | L1K  |
|----------------|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|------|
| 10             | -   | -   | -   | -   | 10  | -   | -   | -     | 20.50 | 12.00 | -    |
| 12             | -   | -   | -   | -   | 12  | -   | -   | -     | 20.50 | 12.00 | -    |
| 14             | 14  | 18  | 24  | 32  | 14  | 21  | 25  | 30.50 | 23.00 | 12.00 | 35   |
| 16             | 16  | 20  | 26  | 34  | 16  | 23  | 27  | 30.50 | 23.00 | 12.00 | 35   |
| 18             | 18  | 22  | 32  | 36  | 18  | 27  | 33  | 31.50 | 24.00 | 13.50 | 37.5 |
| 20             | 20  | 24  | 34  | 38  | 20  | 29  | 35  | 31.50 | 24.00 | 13.50 | 37.5 |
| 22             | 22  | 26  | 36  | 40  | 22  | 31  | 37  | 31.50 | 24.00 | 13.50 | 37.5 |
| 24             | 24  | 28  | 38  | 42  | 24  | 33  | 39  | 34.20 | 26.50 | 13.30 | 40   |
| 25             | 25  | 30  | 40  | 44  | 25  | 34  | 40  | 34.50 | 27.00 | 13.00 | 40   |
| 28             | 28  | 33  | 42  | 47  | 28  | 37  | 43  | 37.50 | 30.00 | 12.50 | 42.5 |
| 30             | 30  | 35  | 44  | 49  | 30  | 39  | 45  | 38.00 | 30.50 | 12.00 | 42.5 |
| 32             | 32  | 38  | 47  | 54  | 32  | 42  | 48  | 38.00 | 30.50 | 12.00 | 42.5 |
| 33             | 33  | 38  | 49  | 54  | 33  | 42  | 48  | 38.00 | 30.50 | 12.00 | 42.5 |
| 35             | 35  | 40  | 54  | 56  | 35  | 44  | 50  | 38.00 | 30.50 | 12.00 | 42.5 |
| 38             | 38  | 43  | 54  | 59  | 38  | 49  | 56  | 39.50 | 32.00 | 13.00 | 45   |
| 40             | 40  | 45  | 56  | 61  | 40  | 51  | 58  | 39.50 | 32.00 | 13.00 | 45   |
| 43             | 43  | 48  | 59  | 64  | 43  | 54  | 61  | 39.50 | 32.00 | 13.00 | 45   |
| 45             | 45  | 50  | 61  | 66  | 45  | 56  | 63  | 39.50 | 32.00 | 13.00 | 45   |
| 48             | 48  | 53  | 64  | 69  | 48  | 59  | 66  | 39.50 | 32.00 | 13.00 | 45   |
| 50             | 50  | 55  | 66  | 71  | 50  | 62  | 70  | 44.00 | 34.00 | 13.50 | 47.5 |
| 53             | 53  | 58  | 69  | 78  | 53  | 65  | 73  | 44.00 | 34.00 | 13.50 | 47.5 |
| 55             | 55  | 60  | 71  | 80  | 55  | 67  | 75  | 44.00 | 34.00 | 13.50 | 52.5 |
| 58             | 58  | 63  | 78  | 83  | 58  | 70  | 78  | 49.00 | 39.00 | 13.50 | 52.5 |
| 60             | 60  | 65  | 80  | 85  | 60  | 72  | 80  | 49.00 | 39.00 | 13.50 | 52.5 |
| 63             | 63  | 68  | 83  | 88  | 63  | 75  | 83  | 49.00 | 39.00 | 13.50 | 52.5 |
| 65             | 65  | 70  | 85  | 90  | 65  | 77  | 85  | 49.00 | 39.00 | 13.50 | 52.5 |
| 68             | -   | -   | 88  | -   | 68  | 81  | 90  | -     | 39.00 | 13.50 | 52.5 |
| 70             | 70  | 75  | 90  | 95  | 70  | 83  | 92  | 55.50 | 40.50 | 14.50 | 60   |
| 75             | 75  | 80  | 95  | 104 | 75  | 88  | 97  | 55.50 | 40.50 | 14.50 | 60   |
| 80             | 80  | 85  | 104 | 109 | 80  | 95  | 105 | 55.00 | 40.00 | 15.00 | 60   |
| 85             | 85  | 90  | 109 | 114 | 85  | 100 | 110 | 60.00 | 40.00 | 15.00 | 60   |
| 90             | 90  | 95  | 114 | 119 | 90  | 105 | 115 | 60.00 | 50.00 | 15.00 | 65   |
| 95             | 95  | 100 | 119 | 124 | 95  | 110 | 120 | 60.00 | 50.00 | 15.00 | 65   |
| 100            | 100 | 105 | 124 | 129 | 100 | 115 | 125 | 60.00 | 50.00 | 15.00 | 65   |
| 105            | -   | -   | -   | -   | -   | -   | -   | -     | -     | -     | -    |

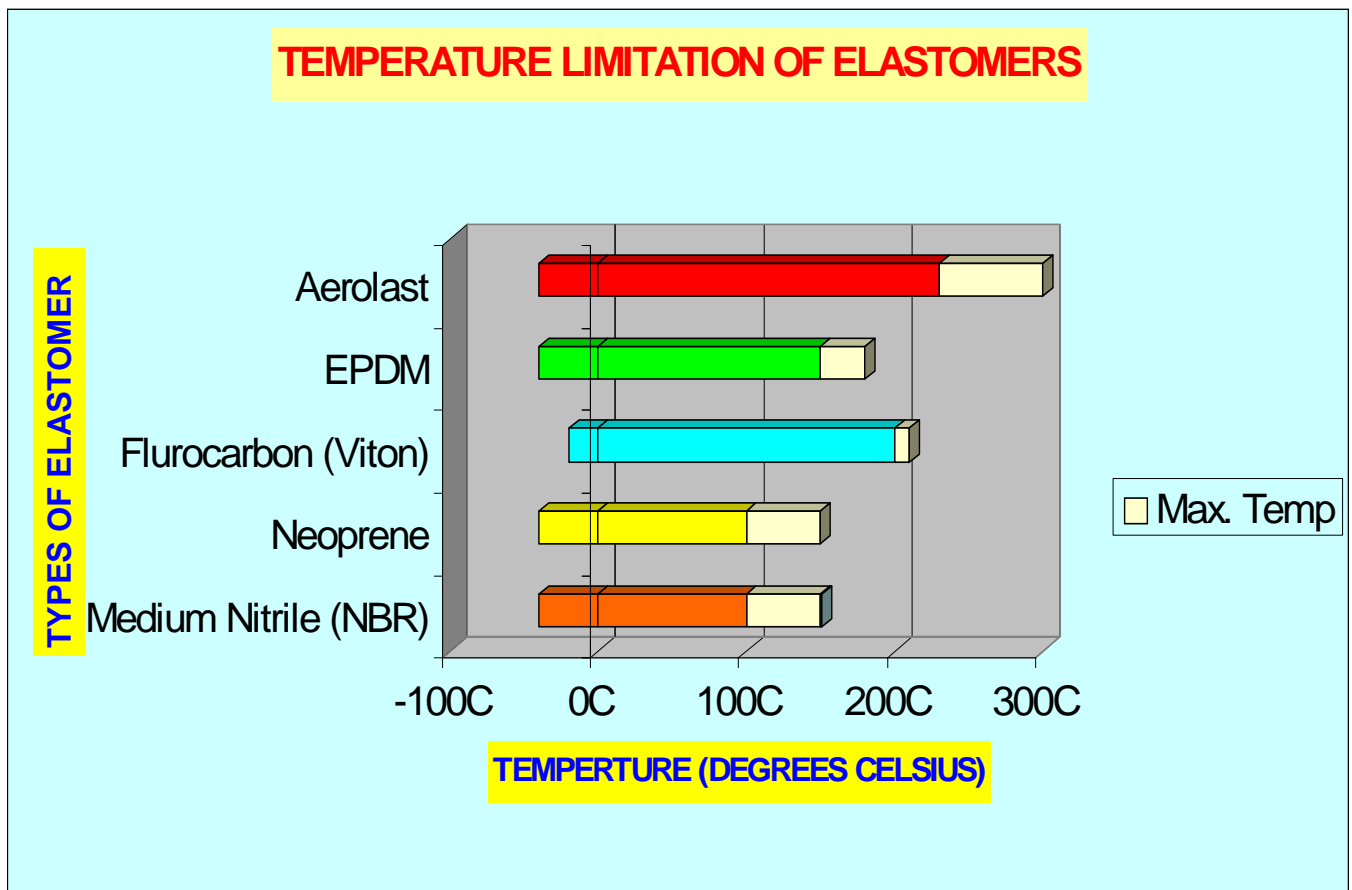
## STATIONARY SEAT CONFIGURATION

- O-RING SEAT, E03
- CUP MOUNTED SEAT, E05 AND E054
- DIN 24960 SEAT, E21 AND E22
- CLAMP SEAT, E18

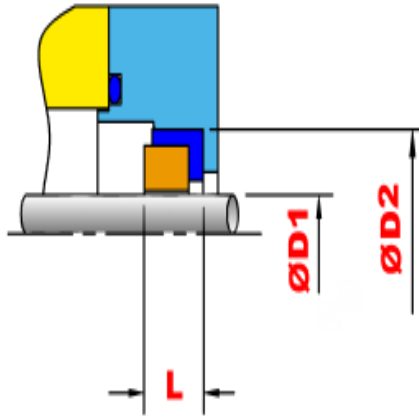
## MATERIAL AVAILABILITY

- AUSTENITIC CAST IRON
- ALUMINIUM OXIDE, CERAMIC
- AEROLITE, HARD FACED STAINLESS STEEL
- STELLITE ON STAINLESS STEEL
- SILICON CARBIDE
- TUNGSTEN CARBIDE

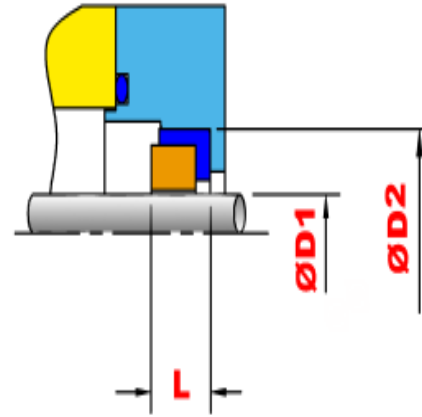
## SEAT O-RING AND ELASTOMER TEMPERATURE LIMITS



## SEAT - E05

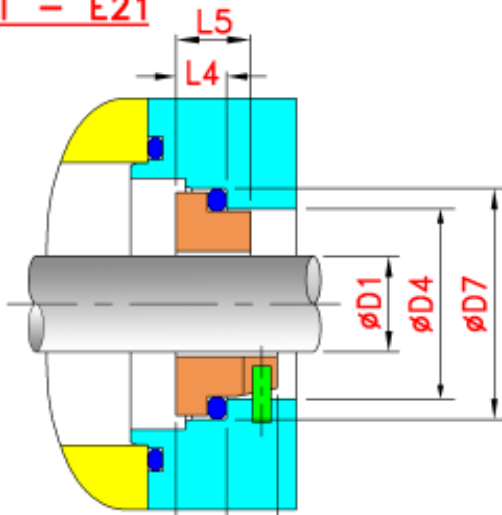


## SEAT - E05

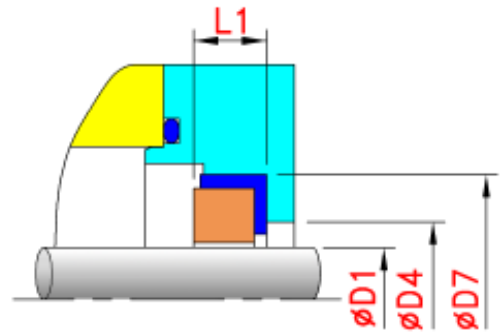


| S E A T E 0 3 A N D E 0 5 |             |             |             |             |           |
|---------------------------|-------------|-------------|-------------|-------------|-----------|
| S E A T S I Z E           |             |             |             |             |           |
| I N C H                   | M E T R I C | D 1         | D 2         | D 3 ( U K ) | L         |
| 0 . 8 7 5                 | 2 2 . 2 3   | 2 2 . 2 3   | 3 8 . 1 0   | 3 7 . 3     | 1 0 . 3 1 |
| 1 . 0 0 0                 | 2 5 . 4 0   | 2 5 . 4 0   | 4 1 . 2 7   | 4 0 . 5 0   | 1 1 . 1 0 |
| 1 . 1 2 5                 | 2 8 . 5 7   | 2 8 . 5 7   | 4 4 . 4 5   | 4 7 . 6 5   | 1 1 . 1 0 |
| 1 . 2 5 0                 | 3 1 . 7 5   | 3 1 . 7 5   | 4 7 . 6 2   | 5 0 . 8 0   | 1 1 . 1 0 |
| 1 . 3 7 5                 | 3 4 . 9 2   | 3 4 . 9 2   | 5 0 . 8 0   | 5 4 . 0 0   | 1 1 . 1 0 |
| 1 . 5 0 0                 | 3 8 . 1 0   | 3 8 . 1 0   | 5 3 . 9 7   | 5 7 . 1 5   | 1 1 . 1 0 |
| 1 . 6 2 5                 | 4 1 . 2 7   | 4 1 . 2 7   | 6 0 . 3 2   | 6 0 . 3 5   | 1 2 . 7 0 |
| 1 . 7 5 0                 | 4 4 . 4 5   | 4 4 . 4 5   | 6 3 . 5 0   | 6 3 . 5 0   | 1 2 . 7 0 |
| 1 . 8 7 5                 | 4 7 . 6 2   | 4 7 . 6 2   | 6 6 . 6 7   | 6 6 . 6 7   | 1 2 . 7 0 |
| 2 . 0 0 0                 | 5 0 . 8 0   | 5 0 . 8 0   | 6 9 . 8 5   | 6 9 . 8 5   | 1 2 . 7 0 |
| 2 . 1 2 5                 | 5 3 . 9 7   | 5 3 . 9 7   | 7 6 . 2 0   | 7 3 . 0 5   | 1 4 . 2 8 |
| 2 . 2 5 0                 | 5 7 . 1 5   | 5 7 . 1 5   | 7 9 . 3 7   | 7 6 . 2 0   | 1 4 . 2 8 |
| 2 . 3 7 5                 | 6 0 . 3 2   | 6 0 . 3 2   | 8 2 . 5 5   | 7 9 . 4 0   | 1 4 . 2 8 |
| 2 . 5 0 0                 | 6 3 . 5 0   | 6 3 . 5 0   | 8 5 . 7 2   | 8 2 . 5 5   | 1 4 . 2 8 |
| 2 . 6 2 5                 | 6 6 . 6 7   | 6 6 . 6 7   | 8 5 . 7 2   | 9 2 . 0 5   | 1 5 . 8 7 |
| 2 . 7 5 0                 | 6 9 . 8 5   | 6 9 . 8 5   | 8 8 . 9 0   | 9 5 . 2 5   | 1 5 . 8 7 |
| 2 . 8 7 5                 | 7 3 . 0 2   | 7 3 . 0 2   | 9 5 . 2 5   | 9 8 . 4 5   | 1 5 . 8 7 |
| 3 . 0 0 0                 | 7 6 . 2 0   | 7 6 . 2 0   | 9 8 . 4 2   | 1 0 1 . 6 0 | 1 5 . 8 7 |
| 3 . 1 2 5                 | 7 9 . 3 7   | 7 9 . 3 7   | 1 0 1 . 6 0 | 1 1 1 . 1 5 | 1 9 . 8 4 |
| 3 . 2 5 0                 | 8 2 . 5 5   | 8 2 . 5 5   | 1 0 4 . 7 7 | 1 1 4 . 3 0 | 1 9 . 8 4 |
| 3 . 3 7 5                 | 8 5 . 7 2   | 8 5 . 7 2   | 1 0 7 . 9 5 | 1 1 7 . 5 0 | 1 9 . 8 4 |
| 3 . 5 0 0                 | 8 8 . 9 0   | 8 8 . 9 0   | 1 1 1 . 1 2 | 1 2 0 . 6 5 | 1 9 . 8 4 |
| 3 . 6 2 5                 | 9 2 . 0 7   | 9 2 . 0 7   | 1 1 4 . 3 0 | 1 2 3 . 8 5 | 1 9 . 8 4 |
| 3 . 7 5 0                 | 9 5 . 2 5   | 9 5 . 2 5   | 1 1 7 . 4 7 | 1 2 7 . 0 0 | 1 9 . 8 4 |
| 3 . 8 7 5                 | 9 8 . 4 2   | 9 8 . 4 2   | 1 2 0 . 6 5 | 1 3 0 . 2 0 | 1 9 . 8 4 |
| 4 . 0 0 0                 | 1 0 1 . 6 0 | 1 0 1 . 6 0 | 1 2 3 . 8 2 | 1 3 3 . 3 5 | 1 9 . 8 4 |
| 4 . 1 2 5                 | 1 0 4 . 7 7 | 1 0 4 . 7 7 | 1 2 7 . 0 0 |             | 1 9 . 8 4 |
| 4 . 2 5 0                 | 1 0 7 . 9 5 | 1 0 7 . 9 5 | 1 3 0 . 1 8 |             | 1 9 . 8 4 |
| 4 . 3 7 5                 | 1 1 1 . 1 2 | 1 1 1 . 1 2 | 1 3 3 . 3 5 |             | 1 9 . 8 4 |
| 4 . 5 0 0                 | 1 1 4 . 3 0 | 1 1 4 . 3 0 | 1 3 6 . 5 2 |             | 1 9 . 8 4 |

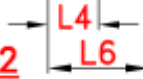
**SEAT - E21**



**SEAT - E054**

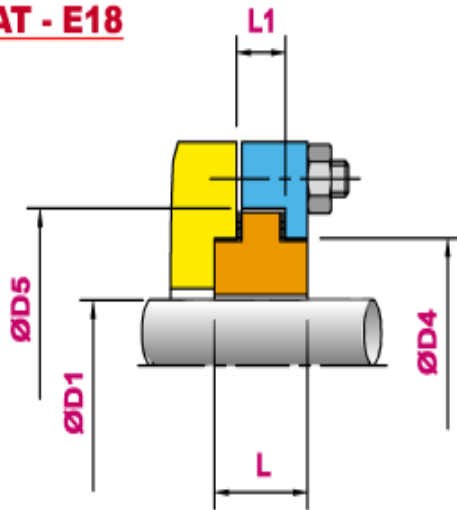
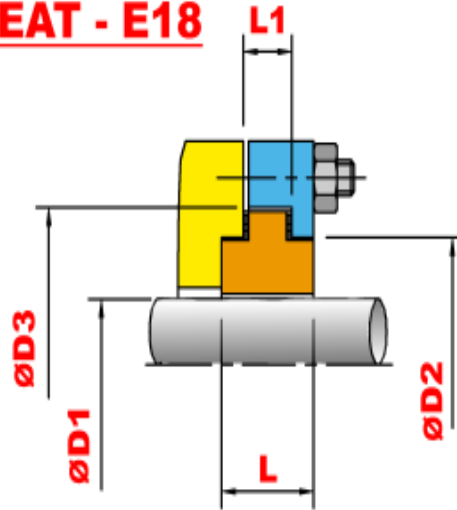


**SEAT - E22**



**E 2 1 A N D E 2 2**

| SEAT SIZE<br>( M M ) | D 1 | D 4 | D 7 | L 1   | L 4   | L 5   | L 6   |
|----------------------|-----|-----|-----|-------|-------|-------|-------|
| 10                   | 10  | 17  | 21  | 6.60  | 12.00 | 12.80 | 18.50 |
| 12                   | 12  | 19  | 23  | 6.60  | 12.00 | 12.80 | 18.50 |
| 14                   | 14  | 21  | 25  | 6.60  | 12.00 | 12.80 | 18.50 |
| 16                   | 16  | 23  | 27  | 6.60  | 12.00 | 12.80 | 18.50 |
| 18                   | 18  | 27  | 33  | 7.50  | 13.50 | 14.50 | 20.60 |
| 20                   | 20  | 29  | 35  | 7.50  | 13.50 | 14.50 | 20.60 |
| 22                   | 22  | 31  | 37  | 7.50  | 13.50 | 14.50 | 20.60 |
| 24                   | 24  | 33  | 39  | 7.50  | 13.30 | 14.30 | 20.30 |
| 25                   | 25  | 34  | 40  | 7.50  | 13.00 | 14.00 | 20.00 |
| 28                   | 28  | 37  | 43  | 7.50  | 12.50 | 13.50 | 19.50 |
| 30                   | 30  | 39  | 45  | 7.50  | 12.00 | 13.00 | 19.00 |
| 32                   | 32  | 42  | 48  | 7.50  | 12.00 | 13.00 | 19.00 |
| 33                   | 33  | 42  | 48  | 7.50  | 12.00 | 13.00 | 19.00 |
| 35                   | 35  | 44  | 50  | 7.50  | 12.00 | 13.00 | 19.00 |
| 38                   | 38  | 49  | 56  | 9.00  | 13.00 | 14.00 | 20.00 |
| 40                   | 40  | 51  | 58  | 9.00  | 13.00 | 14.00 | 20.00 |
| 43                   | 43  | 54  | 61  | 9.00  | 13.00 | 14.00 | 20.00 |
| 45                   | 45  | 56  | 63  | 9.00  | 13.00 | 14.00 | 20.00 |
| 48                   | 48  | 59  | 66  | 9.00  | 13.00 | 14.00 | 20.00 |
| 50                   | 50  | 62  | 70  | 9.50  | 13.50 | 14.50 | 20.50 |
| 53                   | 53  | 65  | 73  | 11.00 | 13.50 | 14.50 | 20.50 |
| 55                   | 55  | 67  | 75  | 11.00 | 13.50 | 14.50 | 20.50 |
| 58                   | 58  | 70  | 78  | 11.00 | 13.50 | 14.20 | 20.50 |
| 60                   | 60  | 72  | 80  | 11.00 | 13.50 | 14.20 | 20.50 |
| 63                   | 63  | 75  | 83  | 11.00 | 13.50 | 14.20 | 20.50 |
| 65                   | 65  | 77  | 85  | 11.00 | 13.50 | 14.20 | 20.50 |
| 68                   | 68  | 81  | 90  | 11.30 | 13.50 | 14.20 | 20.50 |
| 70                   | 70  | 83  | 92  | 11.30 | 14.50 | 12.80 | 20.50 |
| 75                   | 75  | 88  | 97  | 11.30 | 14.50 | 12.80 | 21.50 |
| 80                   | 80  | 95  | 105 | 12.00 | 15.00 | 15.70 | 22.00 |
| 85                   | 85  | 100 | 110 | 14.00 | 15.00 | 15.70 | 22.00 |
| 90                   | 90  | 105 | 115 | 14.00 | 15.00 | 15.70 | 22.00 |
| 95                   | 95  | 110 | 120 | 14.00 | 15.00 | 15.70 | 22.00 |
| 100                  | 100 | 115 | 125 | 14.00 | 15.00 | 15.70 | 22.00 |

**SEAT - E18****THICK SECTION****SEAT - E18****THIN SECTION****SEAT E18**

| SEAT SIZE |        | D1     | D2     | D3     | D4     | D5     | L     | L1    |
|-----------|--------|--------|--------|--------|--------|--------|-------|-------|
| INCH      | METRIC |        |        |        |        |        |       |       |
| 1.000     | 25.40  | 25.40  | 39.69  | 50.00  | 44.45  | 54.77  | 20.64 | 12.70 |
| 1.125     | 28.57  | 28.57  | 42.86  | 53.20  | 47.62  | 57.94  | 20.64 | 12.70 |
| 1.250     | 31.75  | 31.75  | 46.04  | 56.36  | 50.80  | 61.12  | 20.64 | 12.70 |
| 1.375     | 34.92  | 34.92  | 52.39  | 65.88  | 53.97  | 67.47  | 22.22 | 12.70 |
| 1.500     | 38.10  | 38.10  | 52.39  | 65.88  | 57.15  | 70.64  | 22.22 | 12.70 |
| 1.625     | 41.27  | 41.27  | 60.32  | 73.82  | 63.50  | 77.00  | 22.22 | 12.70 |
| 1.750     | 44.45  | 44.45  | 61.91  | 75.40  | 66.67  | 80.17  | 22.22 | 12.70 |
| 1.875     | 47.62  | 47.62  | 66.67  | 80.17  | 69.85  | 83.34  | 22.22 | 12.70 |
| 2.000     | 50.80  | 50.80  | 69.85  | 86.52  | 73.03  | 89.69  | 25.40 | 15.87 |
| 2.125     | 53.97  | 53.97  | 74.61  | 91.30  | 79.37  | 96.04  | 25.40 | 15.87 |
| 2.250     | 57.15  | 57.15  | 75.40  | 92.07  | 82.55  | 99.22  | 25.40 | 15.87 |
| 2.375     | 60.32  | 60.32  | 79.37  | 96.05  | 85.73  | 102.40 | 25.40 | 15.87 |
| 2.500     | 63.50  | 63.50  | 82.55  | 99.22  | 88.90  | 105.57 | 25.40 | 15.87 |
| 2.625     | 66.67  | 66.67  | 85.72  | 102.40 | 92.07  | 108.74 | 25.40 | 15.87 |
| 2.750     | 69.85  | 69.85  | 88.90  | 105.57 | 95.25  | 111.92 | 25.40 | 15.87 |
| 2.875     | 73.02  | 73.02  | 92.07  | 108.75 | 98.43  | 115.09 | 25.40 | 15.87 |
| 3.000     | 76.20  | 76.20  | 95.25  | 111.92 | 101.60 | 117.27 | 25.40 | 15.87 |
| 3.125     | 79.37  | 79.37  | 98.42  | 115.10 | 103.19 | 119.86 | 25.40 | 15.87 |
| 3.250     | 82.55  | 82.55  | 101.60 | 118.27 | 107.95 | 124.62 | 25.40 | 15.87 |
| 3.375     | 85.72  | 85.72  | 104.77 | 121.45 | 111.13 | 127.80 | 25.40 | 15.87 |
| 3.500     | 88.90  | 88.90  | 107.95 | 124.62 | 114.30 | 130.97 | 25.40 | 15.87 |
| 3.625     | 92.07  | 92.07  | 111.12 | 127.80 | 117.47 | 134.14 | 25.40 | 15.87 |
| 3.750     | 95.25  | 95.25  | 114.30 | 130.97 | 120.65 | 137.32 | 25.40 | 15.87 |
| 3.875     | 98.42  | 98.42  | 117.47 | 134.15 | 123.82 | 140.50 | 25.40 | 15.87 |
| 4.000     | 101.60 | 101.60 | 120.65 | 137.32 | 127.00 | 143.67 | 25.40 | 15.87 |

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