

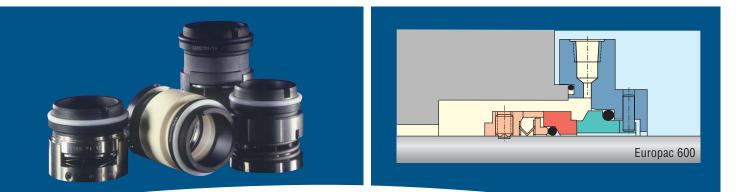
Europac Safety with economy

Standard Mechanical Seals for various industries



Experience In Motion





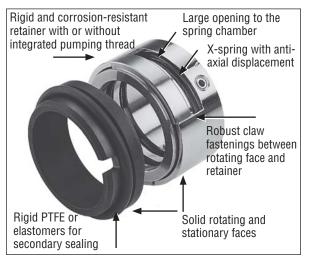
Europac - a versatile mechanical seal according DIN standards

Europac 600

Single, unbalanced single wavy spring seal designed according to the metric DIN EN 12 756 standard to L1k. This seal is applied on a wide range of duties, primarily in the chemical industry where DIN standard pumps are used.

Europac 610: balanced design needing stepped shaft.

Features



Standard Materials of Construction

Europac 615

Single mechanical seal, bi-directional, balanced, single spring. For hot water services without additional cooling.

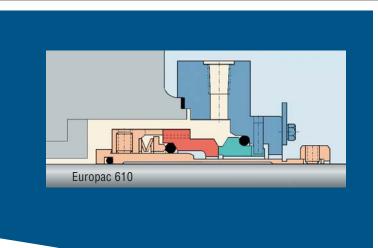
"Lube groove" - seal face

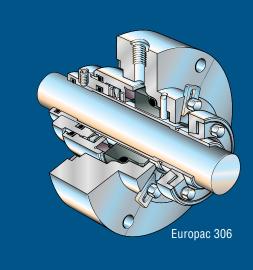
With conventional mechanical seal faces, the fluid film between the seal faces has a consistent pressure profile across the seal faces which, with hot water at some radial portion, gives vaporisation. This vaporisation causes the seal faces to open and leakage to pass across the open faces. The Flowserve "lube groove" seal has tangential placed grooves in one seal face. These grooves are not connected directly to either the outside diameter (pressure side) or the inside diameter (atmospheric side) of the seal face.

Benefits Europac 615

- Provides customers with lube groove technology in a DIN package
- Maximum interchangeability with the Europac range for lowest cost
- No external water cooler required for hot water services, saving cost

| Europac | 600, 610 | 615 | 306 |
|------------------|--|-------------------------------------|--|
| Rotating face: | Silicon carbide; Tungsten carbide; Chrome steel casting; Aluminium oxide | Silicon carbide | Silicon carbide; Tungsten carbide |
| Stationary face: | Silicon carbide; Tungsten carbide; Resin or metal impregnated carbon | Antimon impregnated carbon | Silicon carbide; Tungsten carbide; Resin or metal impregnated carbon |
| Gaskets: | Ethylene Propylene; Fluorocarbon; PTFE; PTFE-encapsulated; Perfluoroelastomer | Ethylene Propylene; Fluorocarbon | Ethylene Propylene; Fluorocarbon; PTFE; PTFE-encapsulated; Perfluoroelastomer |
| Spring: | 316 TI stainless steel; 1.4310; AlloyC | G55 - 316 TI stainless steel | 316 TI stainless steel; 1.4310; AlloyC |
| Metal parts: | 316 TI stainless steel; AlloyC | G30 - 316 TI stainless steel | 316 TI stainless steel; AlloyC |





Europac 306

Single mechanical seal, bi-directional, balanced, single spring.

Features Europac 306

- Also suitable for mediums containing solid particles
- Springs outside of the pumped product: eliminates clogging
- No shaft step required •

Features Europac 615

- · Designed for hot water services
- No additional cooling required ٠
- Uses lub grooves, proven technology with many field • installations
- Based on the proven Europac 610 balanced DIN seal
- · Dimensions correspond with DIN EN 12 756 KB (short form length K, form B)

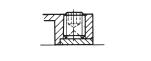
Special designs

Alternative retainers

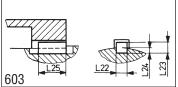
Alternative

pumping

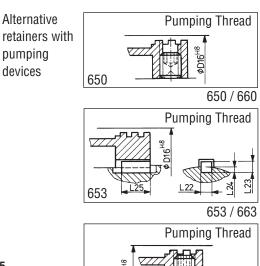
devices

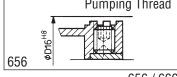


606



603 / 613





656 / 666

arbonA

Standard Operating Limits

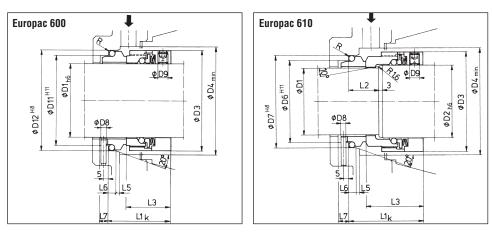
| Europac | 306 | 600 | 610 | 615 | |
|--|-----------|-----------|-----------|--|-----|
| Shaft sizes (mm): | 18 - 100 | 10 - 100 | 10 - 100 | 10-100 | 656 |
| Surface speed (m/sec.): | up to 25 | up to 25 | up to 50 | up to 25 | |
| Temperature (°C): | up to 180 | up to 220 | up to 220 | up to 170 | |
| Max. pressure (bar): Min. pressure (bar): | up to 25 | up to 10 | up to 50 | 17,5 dyn. 25 stat. S 2 above vapor pres | |



flowserve.com

Dimensional Data

according to DIN EN 12 756



Europac 600, 610, 615

| D1 | D2* | D3 | D3* | D4 | D4* | D6* | D7* | D8 | D9 | D11 | D12 | D16 | D16* | L1K | L1K* | L2* | L3 | L3* | L5 | L6 | L7 | L22 | L23 | L24 | L25 | L25* | R |
|----------|----------|----------|----------|----------|----------|----------|----------|----|----------|----------|----------|----------|----------|--------------|--------------|----------|--------------|--------------|-----|--------|-----|-----|-----|-----------|--------|---------|-----|
| 10 | 14 | 21 | 25 | 22 | 26 | 17 | 21 | 3 | M4 | 17 | 21 | 24 | 28 | 32.5 | 40 | 18 | 22.5 | 30 | | | 8.5 | 5 | | 1.9+0.1 | 7 | | 1 |
| 12 | 16 | 23 | 27 | 24 | 28 | 19 | 23 | 3 | M4 | 19 | 23 | 26 | 30 | 32.5 | 40 | 18 | 22.5 | 30 | 1.5 | 4 | 8.5 | 5 | 3 | 1.9+0.1 | 7 | 5 | 1 |
| 14 | 18 | 25 | 31 | 26 | 34 | 21 | 25 | 3 | M4 | 21 | 25 | 28 | 35 | 35 | 42.5 | 18 | 25 | 32.5 | 1.5 | 4 | 8.5 | 5 | 3 | 1.9 + 0.1 | 7 | 7 | 1 |
| 16 | 20 | 27 | 33 | 28 | 36 | 23 | 27 | 3 | M4 | 23 | 27 | 30 | 38 | 35 | 42.5 | 18 | 25 | 32.5 | 1.5 | 4 | 8,5 | 5 | 3 | 1.9+0.1 | 7 | 7 | 1 |
| 18 | 22 | 31 | 37 | 34 | 38 | 27 | 33 | 3 | M6 | 27 | 33 | 35 | 40 | 37.5 | 45 | 20 | 26 | 33.5 | 2 | 5 | 9 | 5 | 3 | 1.9+0.1 | 7 | 6 | 1.5 |
| 20 | 24 | 33 | 39 | 36 | 40 | 29 | 35 | 3 | M6 | 29 | 35 | 38 | 42 | 37.5 | 45 | 20 | 26 | 33.5 | 2 | 5 | 9 | 5 | 3 | 1.9+0.1 | 7 | 6 | 1.5 |
| 22 | 26 | 37 | 41 | 38 | 42 | 31 | 37 | 3 | M6 | 31 | 37 | 40 | 44 | 37.5 | 45 | 20 | 26 | 33.5 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 6 | 1.5 |
| 24 | 28 | 39 | 43 | 40 | 44 | 33 | 39 | 3 | M6 | 33 | 39 | 42 | 46 | 40 | 47.5 | 20 | 28.5 | 36 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 6 | 1.5 |
| 25 | 30 | 40 | 45 | 41 | 46 | 34 | 40 | 3 | M6 | 34 | 40 | 43 | 48 | 40 | 47.5 | 20 | 28.5 | 36 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 6 | 1.5 |
| 28 | 33 | 43 | 48 | 44 | 49 | 37 | 43 | 3 | M6 | 37 | 43 | 46 | 51 | 42.5 | 50 | 20 | 31 | 38.5 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 30 | 35 | 45 | 50 | 46 | 51 | 39 | 45 | 3 | M6 | 39 | 45 | 48 | 55 | 42.52 | 50 | 20 | 31 | 38.5 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 32 | 38 | 47 | 55 | 48 | 58 | 42 | 48 | 3 | M6 | 42 | 48 | 51 | 60 | 42.5 | 50 | 20 | 31 | 38.5 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 33 | 38 | 48 | 55 | 49 | 58 | 42 | 48 | 3 | M6 | 42 | 48 | 51 | 60 | 42.5 | 50 | 20 | 31 | 38.5 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 35 | 40 | 50 | 57 | 51 | 60 | 44 | 50 | 3 | M6 | 44 | 50 | 55 | 62 | 42.5 | 50 | 20 | 31 | 38.5 | 2 | 5 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 38 | 43 | 55 | 60 | 58 | 63 | 49 | 56 | 4 | M6 | 49 | 56 | 60 | 65 | 45 | 52.5 | 23 | 32 | 39.5 | 2 | 6 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 40 | 45 | 57 | 62 | 60 | 65 | 51 | 58 | 4 | M6 | 51 | 58 | 62 | 68 | 45 | 52.5 | 23 | 32 | 39.5 | 2 | 6 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 | 1.5 |
| 43 | 48 | 60 | 66 | 63 | 68 | 54 | 61 | 4 | M6 | 54 | 61 | 65 | 70 | 45 | 52.5 | 23 | 32 | 39.5 | 2 | 6 | 9 | 6 | 4 | 2.5+0.1 | 8 | 6 | 1.5 |
| 45 | 50 | 62 | 68 | 65 | 70 | 56 | 63 | 4 | M6 | 56 | 63 | 68 | 72 | 45 | 52.5 | 23 | 32 | 39.5 | 2 | 6 | 9 | 6 | | 2.5+0.1 | 8 | 6 | 1.5 |
| 48 | 53 | 66 | 71 | 68 | 73 | 59 | 66 | 4 | M6 | 59 | 66 | 70 | 75 | 45 | 52.5 | 23 | 32 | 39.5 | 2 | 6 | 9 | 6 | 4 | 2.5+0.1 | 8 | 6 | 1.5 |
| 50 | 55 58 | 68 71 | 74 79 | 70 73 | 75 83 | 62 65 | 70 73 | 4 | M6 M6 | 62 65 | 70 73 | 72 75 | 78 85 | 47.5 47.5 | 57.5 57.5 | 25 25 | 33.5 33.5 | 43.5 43.5 | 2.5 | 6 6 | 9 | 6 | 4 | 2.5+0.1 | 8 8 | 8 | 2 |
| 53 55 | 58 60 | 74 | 79 82 | 73 | 83 85 | 67 | 73 | 4 | M6 | 67 | 73 | 75 78 | 88 88 | 47.5 | 57.5 57.5 | 25 25 | 33.5 33.5 | 43.5 | 2.5 | 6 | 9 | 6 | 4 | 2.5+0.1 | 8 | 8 8 | 2 |
| 55 58 | 63 | 74 | 02 85 | 83 | 00 88 | 70 | 75 | 4 | M8 | 70 | 78 | 85 | 00 90 | 52.5 | 62.5 | 25 | 38.5 | 48.5 | 2.5 | 6 | 9 | 0 | 4 | | • | 0 10 | 2 |
| 60 | 65 | 82 | 87 | 85 | 90 | 72 | 80 | 4 | M8 | 70 | 80 | 88 | 90 95 | 52.5 | 62.5 | 25 | 38.5 | 48.5 | 2.5 | 6 | 9 | 8 | 5 | 3.1+0.2 | | 10 | 2 |
| 63 | 68 | 85 | 90 | 88 | 93 | 75 | 83 | 4 | M8 | 75 | 83 | 90 | 95 | 52.5 | 62.5 | 25 | 38.5 | 48.5 | 2.5 | 6 | 9 | 8 | 5 | 3.1+0.2 | | 8 | 2 |
| 65 | 70 | 87 | 92 | 90 | 95 | 77 | 85 | 4 | M8 | 77 | 85 | 95 | 98 | 52.5 | 62.5 | 25 | 38.5 | 48.5 | 2.5 | 6 | 9 | 8 | 5 | 3.1+0.2 | 10 | 10 | 2 |
| 70 | 75 | 92 | 100 | 95 | 104 | 83 | 92 | 4 | M8 | 83 | 92 | 98 | 105 | 60 | 70 | 28 | 44 | 54 | | 7 | 9 | 8 | 5 | 3.1+0.2 | | 10 | 2 |
| 75 | 80 | 99 | 105 | 104 | 109 | 88 | 97 | 4 | M8 | 88 | 97 | 105 | 110 | 60 | 70 | 28 | 44 | 54 | 2.5 | 7 | 9 | 8 | 5 | 3.1+0.2 | 10 | 10 | 2 |
| 80 | 85 | 105 | | 109 | 114 | 95 | 105 | 4 | M8 | 95 | 105 | 110 | 115 | 60 | 70 | 28 | 44 | 54 | 3 | 7 | 9 | 8 | 5 | 3.1+0.2 | | 10 | 2.5 |
| 85 | 90 | 110 | 116 | | 119 | 100 | 110 | 4 | M8 | 100 | 110 | 115 | 120 | 60 | 75 | 28 | 44 | 59 | 3 | 7 | 9 | 8 | 5 | 3.1+0.2 | | 13 | 2.5 |
| 90 | 95 | 116 | | 119 | 124 | 105 | 115 | 4 | M8 | 105 | 115 | 120 | 130 | 65 | 75 | 28 | 49 | 59 | 3 | 7 | 9 | 10 | 6 | 3.7+0.2 | | 13 | 2.5 |
| 95 | 100 | 121 | | 124 | 129 | 110 | 120 | 4 | M8 | 110 | 120 | 130 | 132 | 65 | 75 | 28 | 49 | 59 | 3 | 7 | 9 | 10 | 6 | 3.7+0.2 | | 13 | 2.5 |
| 100 | 105 | 126 | 131 | | | 115 | 125 | 4 | M8 | 115 | 125 | 132 | 138 | 65 | 75 | 28 | 49 | 59 | 3 | 7 | 9 | 10 | - | 3.7+0.2 | | 13 | 2.5 |

* Dimensions for the Europac 610, 615. Dimensions for other shaft sizes on request.

FSD128eng REV 01-06 Printed in Europe

To find your local Flowserve representative and find out more about Flowserve Corporation, visit www.flowserve.com

visit www.flowserve.com

Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation. Operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate, they are supplied for informative purposes only and should not be considered certified or as a guarantee of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, regarding any matter with respect to this product. Because Flowserve is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice. Should any question arise concerning these provisions, the purchaser/user should contact Flowserve Corporation at any one of its worldwide operations or offices.

© 2005 Flowserve Corporation

ISO 9000

Certified

ified

USA and Canada

Flowserve Corporation Flow Solutions Kalamazoo, Michigan USA Telephone: 1 269 381 2650 Telefax: 1 269 382 8726

Europe, Middle East, Africa

Flowserve Corporation Flow Solutions Roosendaal, The Netherlands Telephone: 31 165 581400 Telefax: 31 165 552622

Asia Pacific

Flowserve Corporation Flow Solutions Singapore Telephone: 65 684 65100 Telefax: 65 674 71963

Latin America

Flowserve Corporation Flow Solutions Mexico City Telephone: 52 55 5567 7170 Telefax: 52 55 5567 4224

flowserve.com