



NINGBO HUAQIU INDUSTRY AND TRADE CO.,LTD

*NingBo HuaQiang Mechanical Seal Factory*



## 2024 HQ Catalogue 3-B

(O.E.M.Seals)

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# DESCRIPTION

|                                                                                                                                                     |             |
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| Seat Series.....                                                                                                                                    | Catalogue-4 |
| Mixer and Agitator, Kettle, Desulfurization, Slurry Seals, Nozzle, Rotary Joint.....                                                                | Catalogue-5 |



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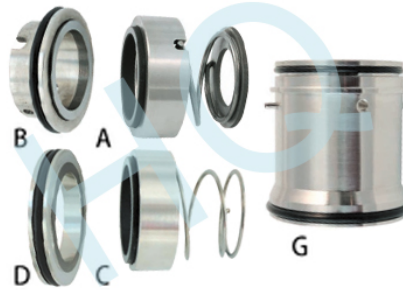


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## FR-01(W-2201/1)

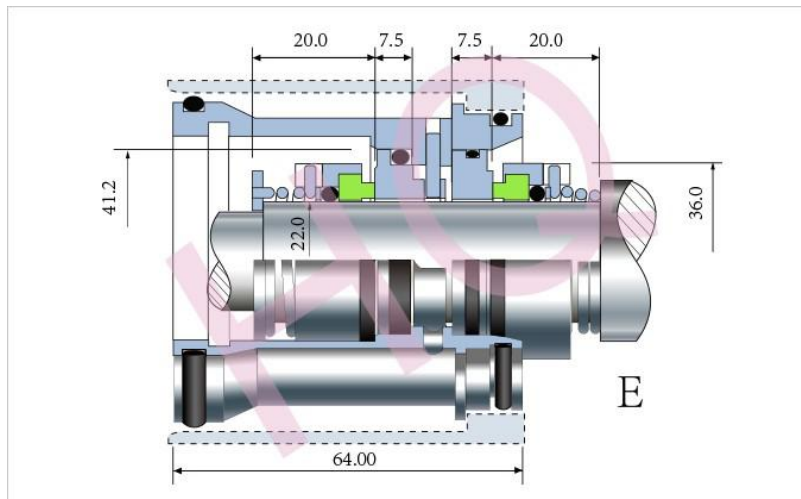


Type: Suit for FRISTAM Pumps  
 Replacement: AES T01F(22mm)  
 Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



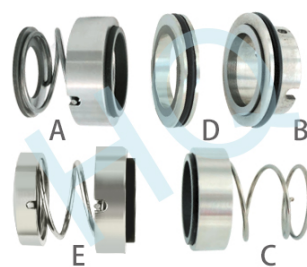
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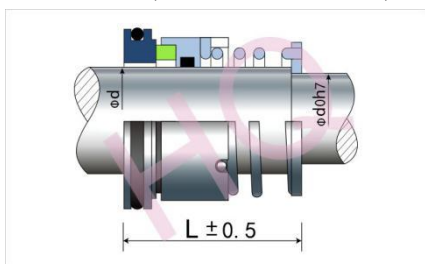
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## FR-2

Type: Suit for FRISTAM Pumps  
 Replacement: AES T01F(22mm,30mm,35mm)  
 Temperature: -20°C to +180°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G

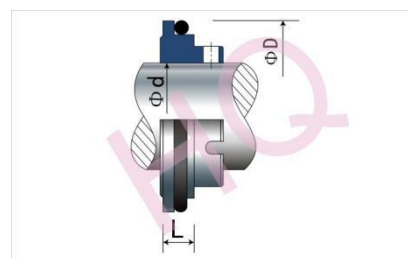


FR-02-A+D(Vulcan W-XX08/12)



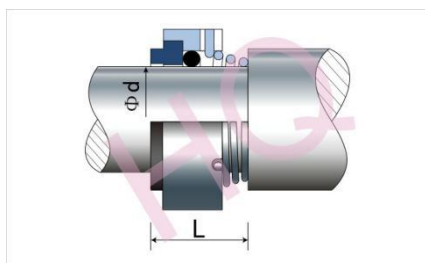
| d<br>(mm) | d0 | L  | Model     | Pump type |
|-----------|----|----|-----------|-----------|
| 22        | 18 | 22 | FR-08-A22 | FP/FL/FT  |
| 30        | 22 | 24 | FR-08-A30 |           |
| 35        | 30 | 26 | FR-08-A35 |           |

FR-02-B(Vulcan W-XX06/61)



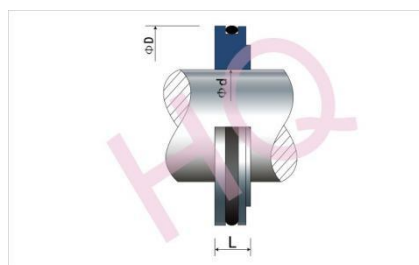
| d<br>(mm) | D    | L   | Model     | Pump type |
|-----------|------|-----|-----------|-----------|
| 22        | 41.2 | 7.5 | FR-08-B22 | FP/FL/FT  |
| 30        | 48.0 | 7.6 | FR-08-B30 |           |
| 35        | 55.5 | 8.6 | FR-08-B35 |           |

FR-02-C(Vulcan W-XX08/12B)



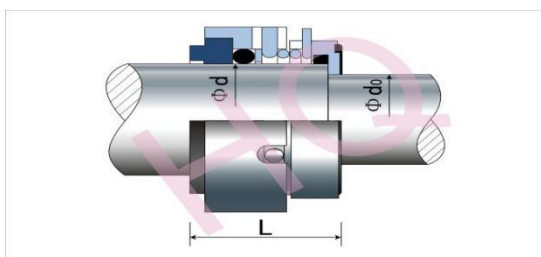
| d(mm) | L  | Model     | Spring | Pump type |
|-------|----|-----------|--------|-----------|
| 22    | 20 | FR-08-C22 | LEFT   | FP/FL/FT  |
| 30    | 22 | FR-08-C30 | LEFT   |           |
| 35    | 26 | FR-08-C35 | LEFT   |           |
|       |    |           | RIGHT  |           |

FR-02-D(Vulcan W-XX05/6)



| d<br>(mm) | D    | L   | Model     | Pump type |
|-----------|------|-----|-----------|-----------|
| 22        | 41.2 | 7.5 | FR-08-C22 | FP/FL/FT  |
| 30        | 48.0 | 7.6 | FR-08-C30 |           |
| 35        | 55.5 | 8.6 | FR-08-C35 |           |

FR-02-E(Vulcan Y-XX08/2)



| d<br>(mm) | d0 | L  | Model     | Pump type |
|-----------|----|----|-----------|-----------|
| 22        | 18 | 18 | FR-08-E22 | FP/FL/FT  |
| 30        | 22 | 22 | FR-08-E30 |           |
| 35        | 28 | 28 | FR-08-E35 |           |

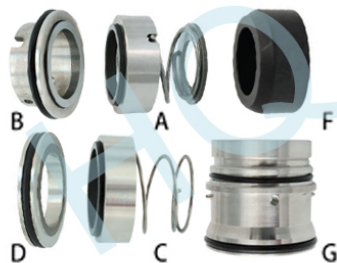


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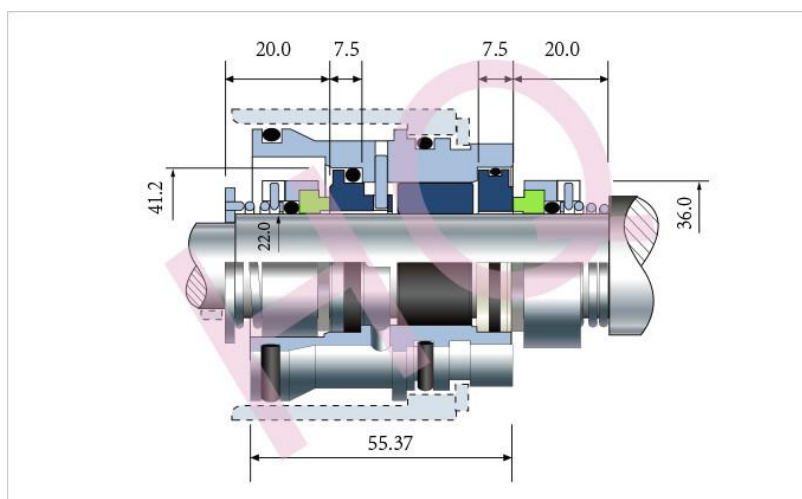


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## FR-3(W2201/3)



Type: Suit for FRISTAM Pumps  
 Replacement: AES T01F(22mm)  
 Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$   
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



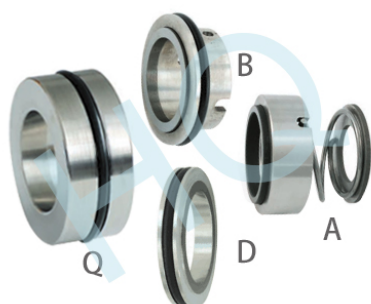
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## FR-4(W2201/3)



Type: Suit for FRISTAM Pumps

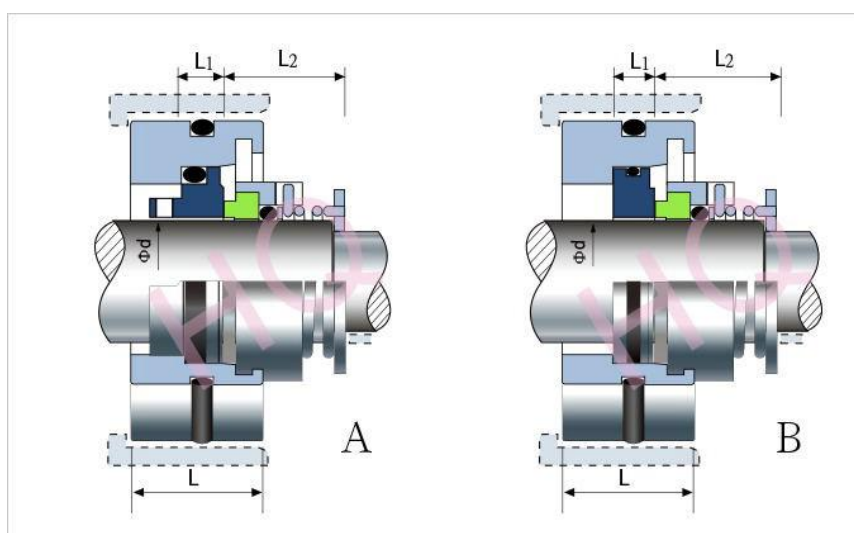
Replacement: AES T01F(22mm)

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | L  | L1  | L2 |
|-----------|----|-----|----|
| 22        | 24 | 7.5 | 20 |

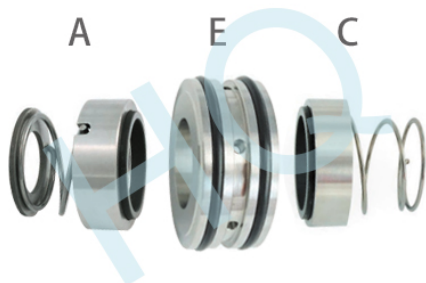


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## FR-5(W-3X01/2)



Type: Suit for FRISTAM Pumps

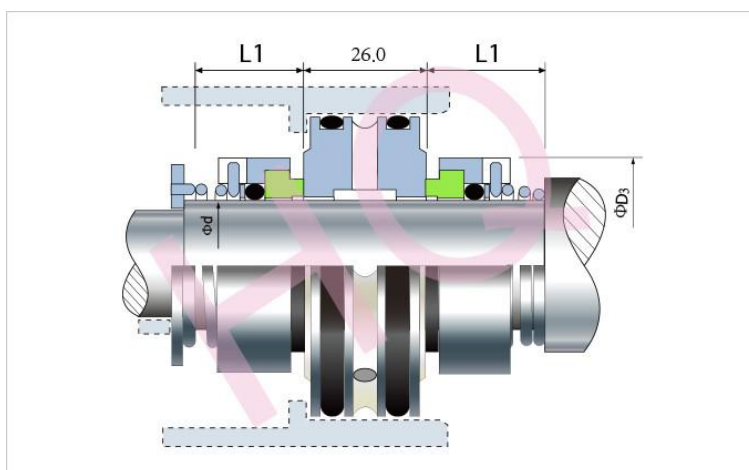
Replacement: AES T01F(30mm,35mm)

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D3 | L  |
|-----------|----|----|
| 30        | 60 | 26 |
| 35        | 70 | 26 |

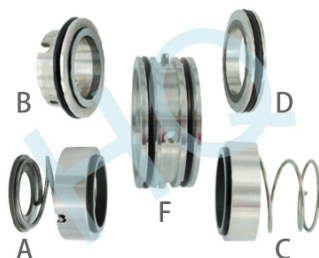


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## FR-6(W-3X01/2)



Type: Suit for FRISTAM Pumps

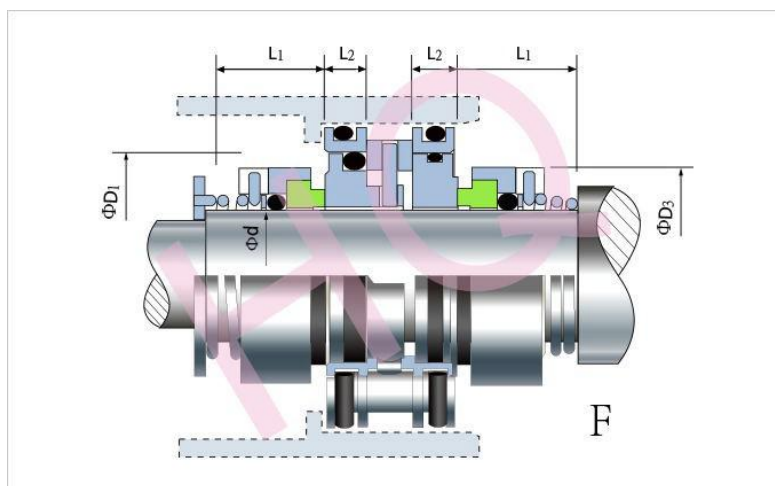
Replacement : AES T01F(30mm,35mm)

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm) | D1   | D3   | L1 | L2  |
|-----------|------|------|----|-----|
| 30        | 48   | 43.8 | 22 | 7.6 |
| 35        | 55.5 | 48.9 | 26 | 8.6 |



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## FR-07(T01F)



Type: Suit for FRISTAM Pumps

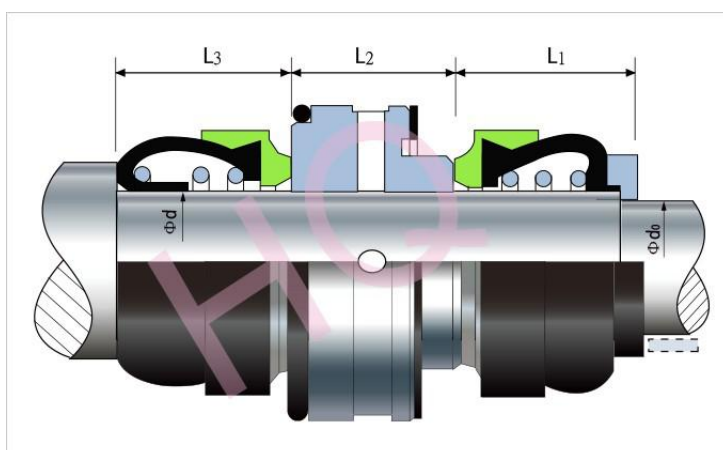
Replacement: AES T01F

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | d0 | D  | L1 | L2   | L3 |
|-----------|----|----|----|------|----|
| 22        | 18 | 50 | 22 | 22.5 | 20 |



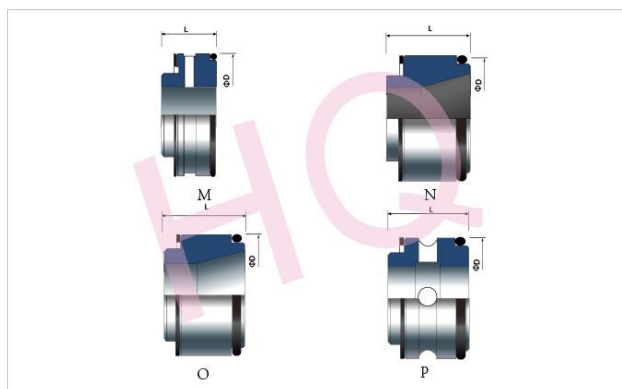
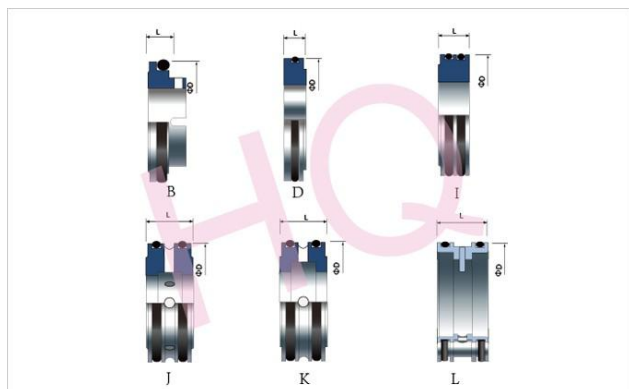
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## FR-9(T01F)

Type: Suit for FRISTAM Pumps  
 Replacement: AES T01F  
 Temperature: -20°C to +180°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: F,G,P,E,V,



| Type | d<br>(mm) | D    | L    |
|------|-----------|------|------|
| B    | 22        | 41.2 | 7.5  |
|      | 30        | 48.0 | 7.6  |
|      | 35        | 55.5 | 8.6  |
| D    | 22        | 41.2 | 7.5  |
|      | 30        | 48.0 | 7.6  |
|      | 35        | 55.5 | 8.6  |
| I    | 30        | 50.0 | 14.0 |
| J    | 22        | 50.0 | 20.0 |
|      | 30        | 60.0 | 26.0 |
|      | 35        | 70.0 | 26.0 |
| K    | 22        | 45.0 | 20.0 |
| L    | 30        | 60.0 | 25.0 |
|      | 35        | 70.0 | 25.0 |
| M    | 22        | 50.0 | 22.5 |
| N    | 30        | 60.0 | 27.0 |
| O    | 22        | 45.0 | 30.0 |
|      | 30        | 60.0 | 27.0 |
| P    | 22        | 45.0 | 30.0 |
|      | 30        | 60.0 | 26.0 |
|      | 35        | 64.0 | 30.0 |



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## FR-10(T01F)

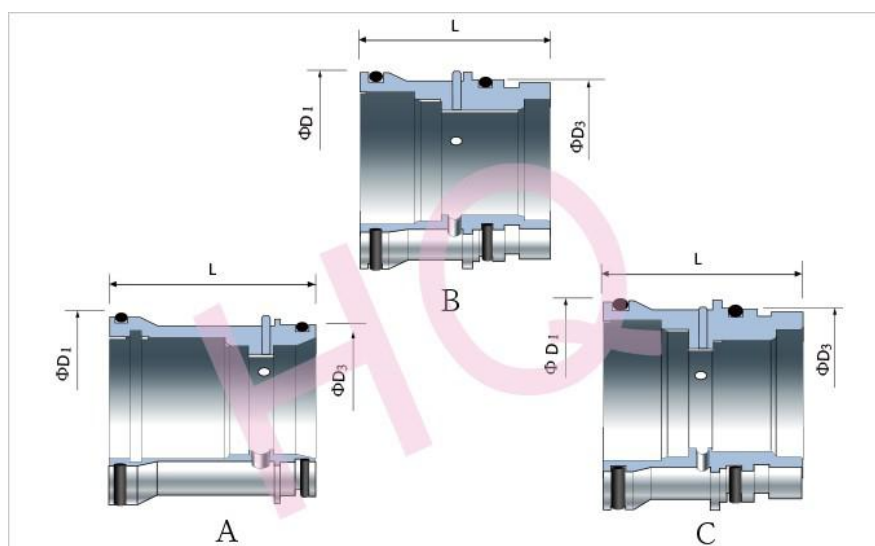


Type: Suit for FRISTAM Pumps  
 Replacement: AES T01F  
 Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: F,G,P,E,V



| Type | D1 | D3 | L    |
|------|----|----|------|
| A    | 60 | 54 | 64.0 |
| B    | 59 | 54 | 55.4 |
| C    | 59 | 54 | 55.4 |



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## FR-11(T01F)



Type: Used for Food, Beverage  
and Dairy in dustries

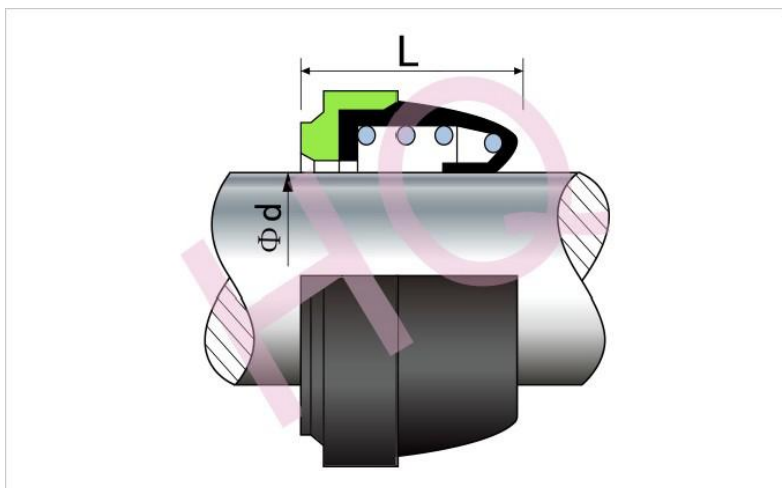
Replacement: Vulcan 2209/1, Billi BB14A

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, E, F, G



| d<br>(mm) | L  | Pump type |
|-----------|----|-----------|
| 22        | 20 | FP/FL/FT  |
| 30        | 22 |           |



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## FR-12(T01F)



Type: Used for Food, Beverage  
and Dairy industries

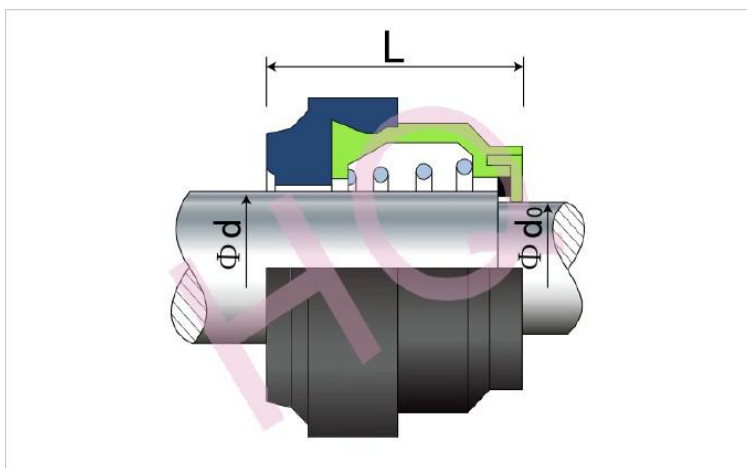
Replacement: Vulcan 2209/2, Billi BB14B

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, E, F, G



| d<br>(mm) | d0 | L  | Pump type |
|-----------|----|----|-----------|
| 22        | 15 | 22 | FP/FL/FT  |
| 30        | 22 | 24 |           |



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## FR-13(T01F)



Type: Used for Food,Beverage

and Dairy in dustries

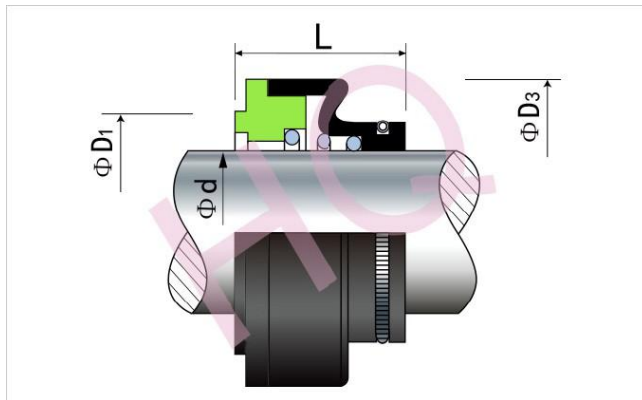
Replacement: Vulcan 2209/3,Billi BB14C

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,E,F,G



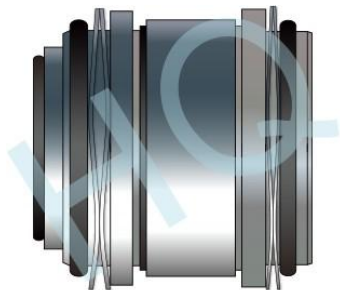
<http://www.hqseal.com>



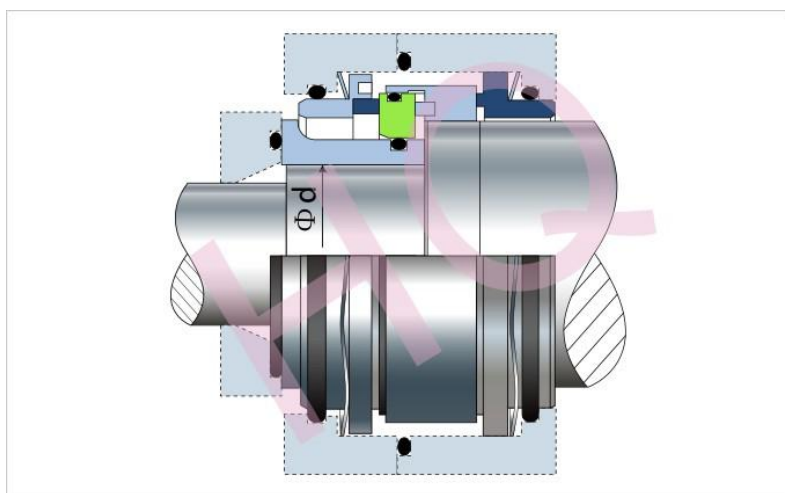
[hq@hqseal.com](mailto:hq@hqseal.com)

| d<br>(mm) | D1   | D3    | L  | pump type |
|-----------|------|-------|----|-----------|
| 6         | 13.0 | 18.0  | 10 | FP/FL/FT  |
| 10        | 19.0 | 24.0  | 16 |           |
| 12        | 21.0 | 26.0  | 16 |           |
| 14        | 23.0 | 28.0  | 16 |           |
| 15        | 24.0 | 30.0  | 16 |           |
| 16        | 26.0 | 33.0  | 18 |           |
| 18        | 28.5 | 36.0  | 18 |           |
| 20        | 31.0 | 38.0  | 18 |           |
| 22        | 33.0 | 40.0  | 20 |           |
| 24        | 35.5 | 43.0  | 20 |           |
| 25        | 36.0 | 44.0  | 20 |           |
| 28        | 39.5 | 47.0  | 22 |           |
| 30        | 43.0 | 50.0  | 22 |           |
| 32        | 45.5 | 53.0  | 26 |           |
| 35        | 48.0 | 56.5  | 26 |           |
| 38        | 52.0 | 59.0  | 26 |           |
| 40        | 54.0 | 61.0  | 26 |           |
| 45        | 61.0 | 73.0  | 26 |           |
| 50        | 67.0 | 78.0  | 26 |           |
| 65        | 84.0 | 95.0  | 30 |           |
| 70        | 90.0 | 100.0 | 30 |           |

## FR-8(WOF)



Type: Fristam Pump Seals  
 Replacement: AES WOF  
 Temperature: -20 to +180°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



d=25mm,30mm,40mm,52mm,0.984",1.181",1.575",2.047".



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## FR-14(WOFA)

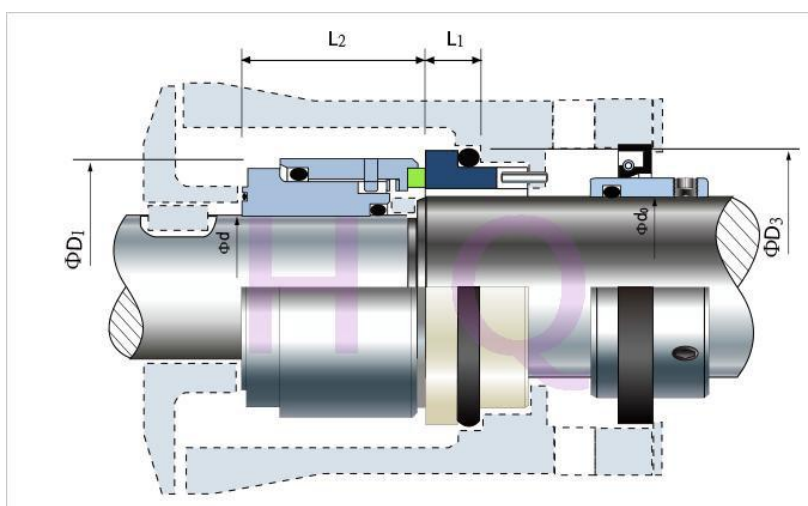


Type: Suit for FRISTAM FM,FPH,FPH Pumps  
 Replacement: AES WOFA,Billi BB14-8  
 Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | d0 | D1 | D3 | L1 | L2 |
|-----------|----|----|----|----|----|
| 32        | 43 | 59 | 61 | 14 | 40 |



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## FR-15(WOFC)

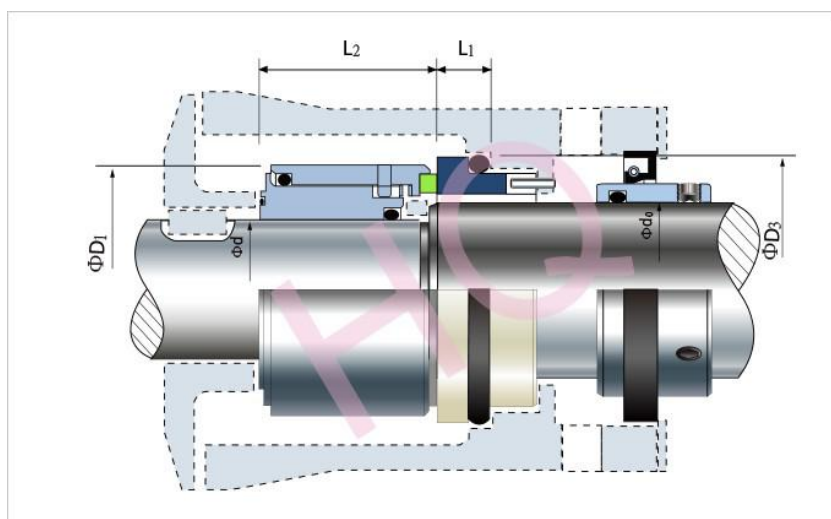


Type: Suit for FRISTAM FM 312,322,342 Pumps  
 Replacement: AES WOFC  
 Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | d0 | D1 | D3 | L1 | L2 |
|-----------|----|----|----|----|----|
| 35        | 43 | 59 | 61 | 14 | 30 |



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## FR-16(WOFB)



Type: Suit for FRISTAM FKF,FKFN,FLF  
FLFN,FLV Pumps

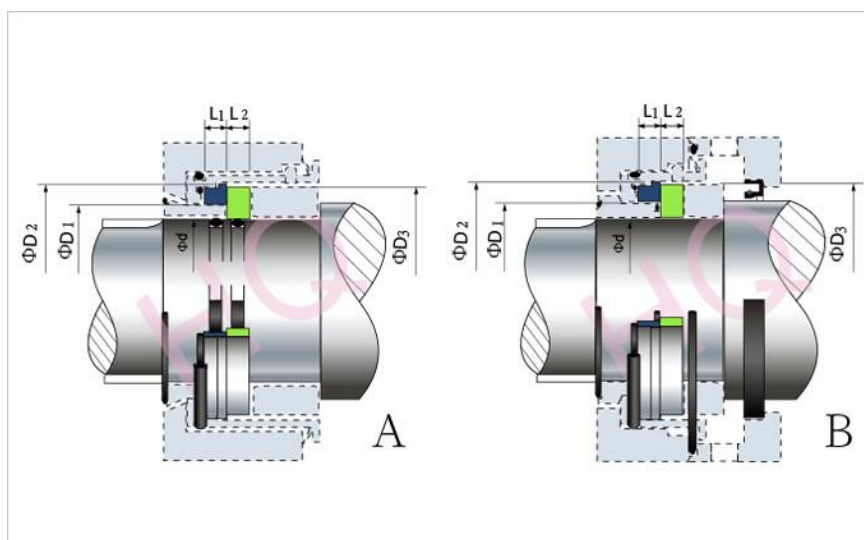
Replacement: AES WOFB,Billi BB14-FK-FL-KIT

Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: F,G



| d<br>(mm) | Size<br>Code | O.E.M<br>PUMP model |
|-----------|--------------|---------------------|
| 20        | 0200         | FL55, FLF55         |
| 31        | 0300         | FL75, FLF75         |
| 38        | 0380         | FL100, FLF100       |
| 52        | 0500         | FL130, FLF130       |



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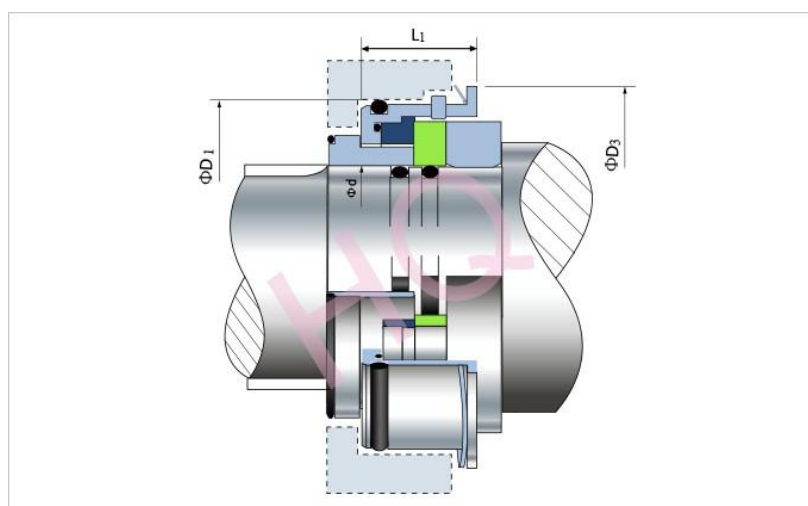


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## FR-18(MOFBC)



Type: Suit for FRISTAM FLF55  
and FLFN 55 Pumps  
Replacement: AES WOFBC,Billi BB14-FL  
Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$   
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | Size<br>Code | O.E.M<br>PUMP Model |
|-----------|--------------|---------------------|
| 20        | 0200         | FL55, FLF55         |
| 31        | 0300         | FL75, FLF75         |
| 38        | 0380         | FL100, FLF100       |

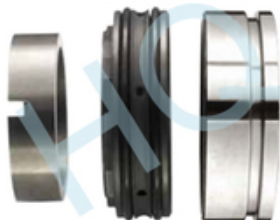


<http://www.hqseal.com>

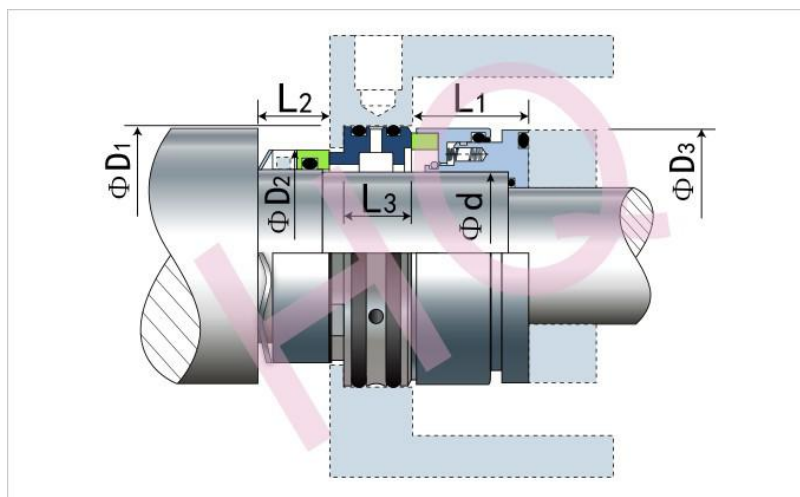


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## FR-18(MOFC)



Type: Suit for Fristam FPR Pumps  
 Replacement: AES MOFC  
 Temperature:  $-20^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$   
 Pressure:  $\leq 2.1\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: A,G,Y



| d<br>(mm)   | D1   | D3    | L1    | L2    | L3    |
|-------------|------|-------|-------|-------|-------|
| 37.5        | 47   | 56.5  | 26    | 15.6  | 15.2  |
|             |      |       |       |       |       |
| d<br>(inch) | D1   | D3    | L1    | L2    | L3    |
| 1.476       | 1.85 | 2.224 | 1.024 | 0.616 | 0.600 |

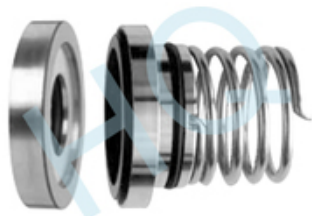


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## FR-19(P09)

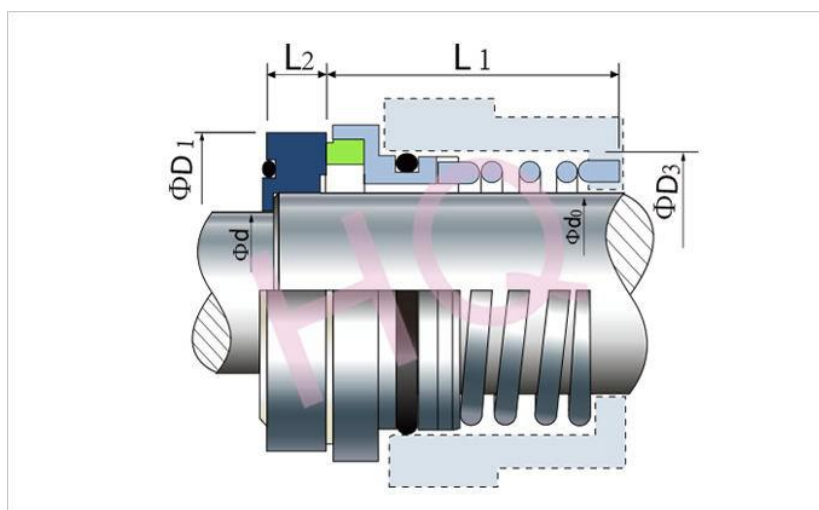


Type: Suit for FRISTAM Pumps  
 Replacement: AES P09, Burgmann MR,  
 Vulcan 94, Lidering FR-Z-21  
 Temperature: -20°C to +200°C

Pressure:  $\leq 2.5$  Mpa

Speed:  $\leq 20$  m/s

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0 | D1 | D3 |
|-----------|----|----|----|
| 21        | 25 | 59 | 50 |



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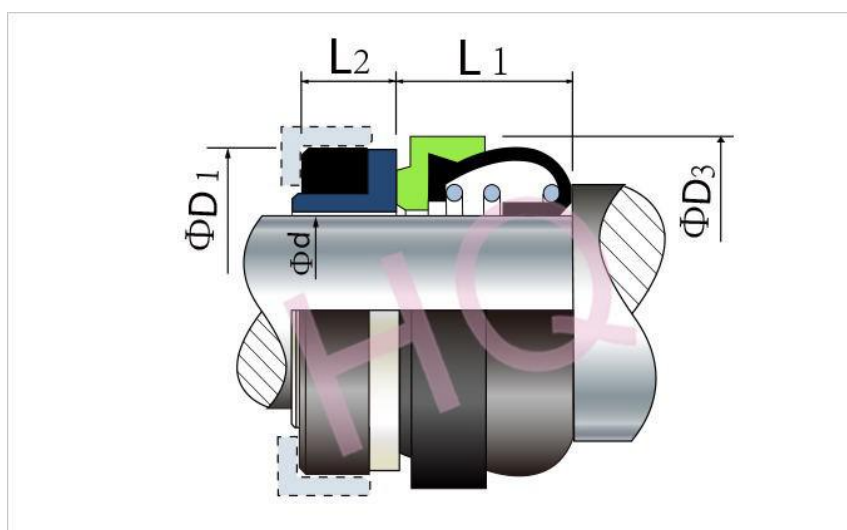


## FR-20(BOH)



Type: Suit for FRISTAM Pumps  
 Replacement: AES BOH, Crane 6J  
 Temperature:  $-20^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 20\text{m/s}$   
 Material: B,A,P,E,N,V



| d<br>(inch) | D1   | D3   | L1 | L2   |
|-------------|------|------|----|------|
| 22.2        | 40.5 | 44.5 | 16 | 10.5 |

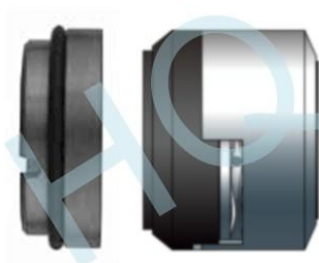


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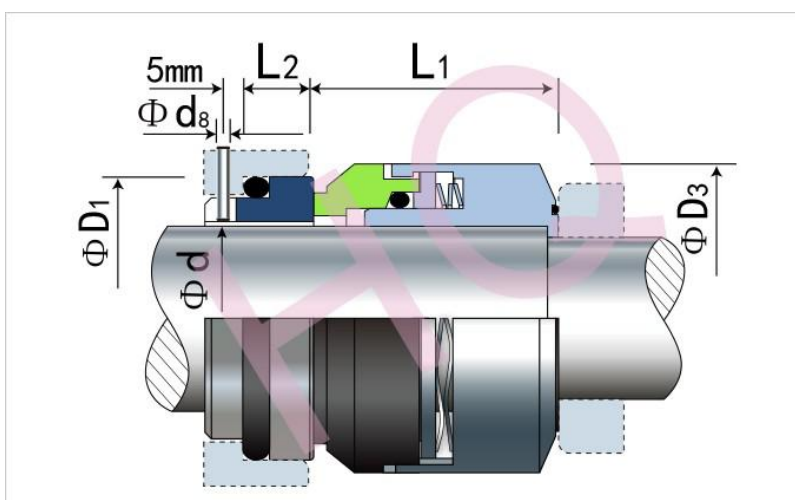


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## FR-26(W07DMBFU)



Type: Suit for FRISTAM FPH Pumps  
 Replacement: AES W07DMBFU  
 Temperature: -40 to +200°C  
 Pressure:  $\leq 2.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 35          | 50    | 56    | 44.5  | 11.5  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.378       | 1.969 | 2.205 | 1.752 | 0.453 |

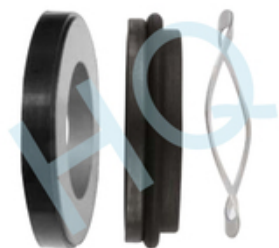


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## FR-27(WOFD)



Type: Fristam Pump Seals

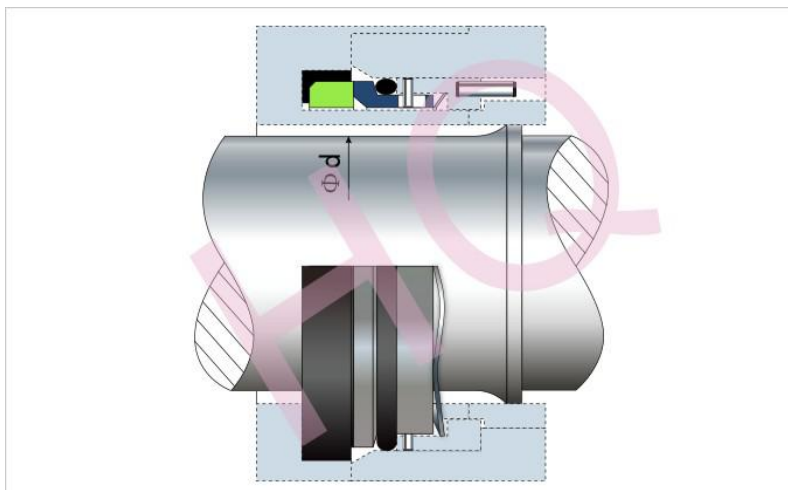
Replacement: AES WOFD

Temperature: -20 to +120°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



d=52mm, 2.047 "

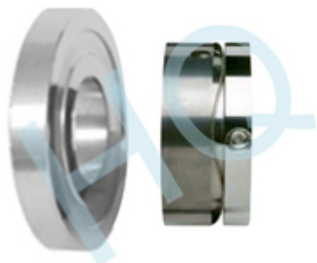


<http://www.hqseal.com>

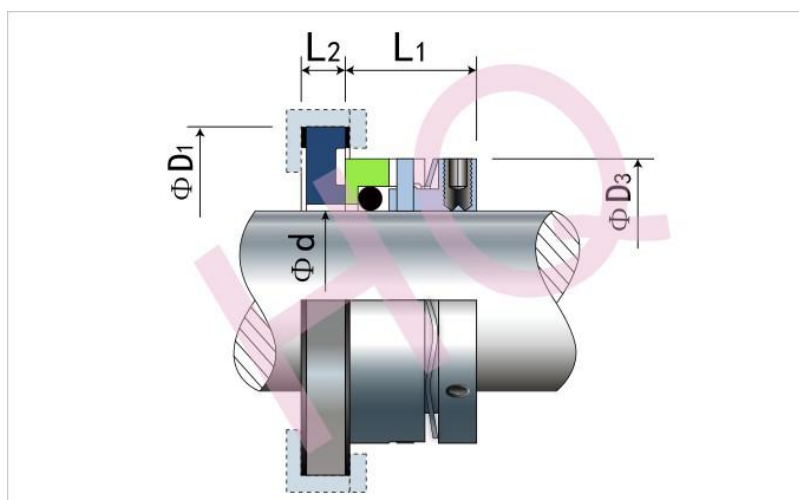


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# FR-28(W01FU)



Type: Suit for FRISTAM Pumps  
 Replacement: AES W01FU  
 Temperature: -20°C to +200°C  
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 22          | 45    | 33.0  | 19.1  | 8     |
| 38          | 62    | 51.8  | 21.1  | 8     |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 0.866       | 1.771 | 1.300 | 0.750 | 0.315 |
| 1.496       | 2.441 | 2.039 | 0.831 | 0.315 |



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## FR-29(W025)

Type: Suit for FRISTAM FKL50 Pumps  
 Replacement: AES W025 Double/Single Seal  
 Temperature: -20°C to +180°C

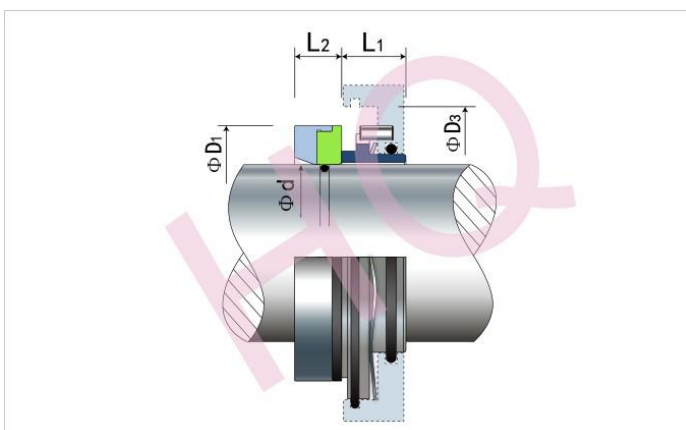
Pressure:  $\leq 15.0\text{Mpa}$

Speed:  $\leq 5\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa

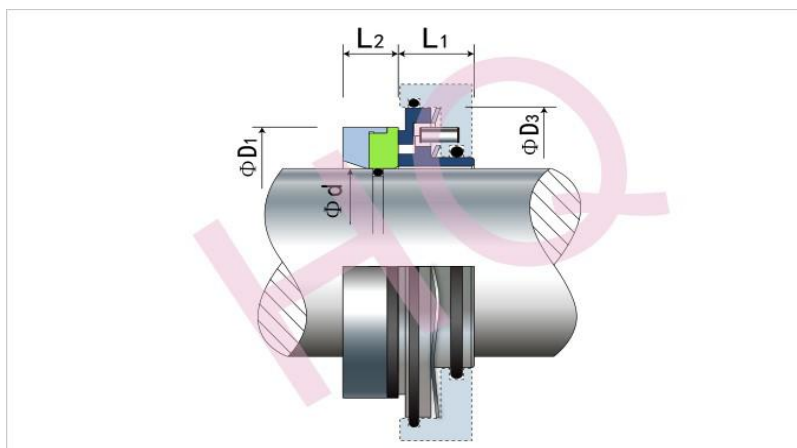


### Single Seal



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 48          | 69    | 64    | 18    | 12.7  |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.890       | 2.717 | 2.520 | 0.709 | 0.500 |

### Double Seal



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 48          | 69    | 78    | 18    | 12.7  |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.890       | 2.717 | 3.071 | 0.709 | 0.500 |

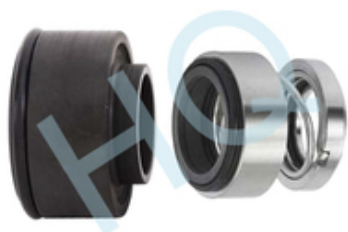


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## FR-21(Y-V9018)

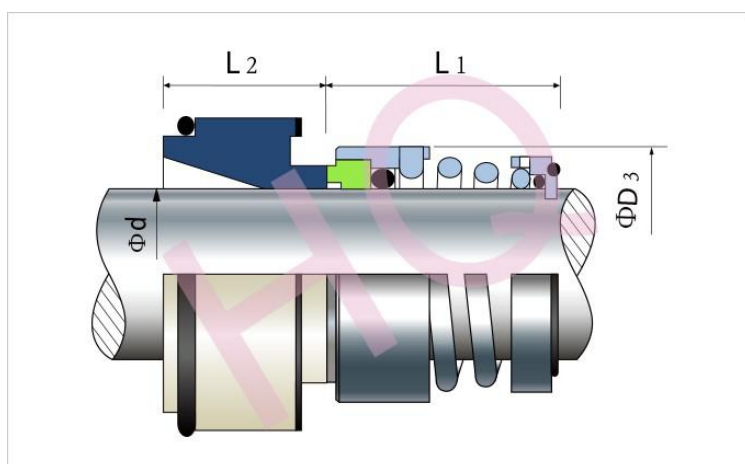


Type: Suit for non-flush Fristam FPX Pumps  
 Replacement: Vulcan Y+V9018,Billi14-9018  
 Temperature: -30°C to +175°C

Pressure:  $\leq 5.0\text{Mpa}$

Speed:  $\leq 2\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D3 | L1 | L2 |
|-----------|----|----|----|
| 22        | 45 | 22 | 30 |
| 30        | 60 | 24 | 27 |



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## FR-22(V9200)



Type: Suit for Fristam FT200 & FT400 series

Pumps

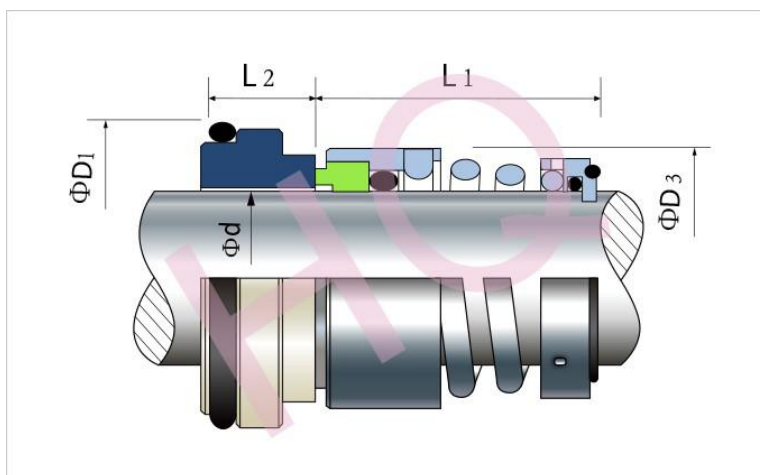
Replacement: Vulcan V9200, Billi BB14-9200

Temperature:  $-45^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$

Pressure:  $\leq 3.0\text{Mpa}$

Speed:  $\leq 5\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | D1   | D3 | L1 | L2 |
|-----------|------|----|----|----|
| 30        | 54.5 | 44 | 24 | 12 |



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## FR-23(W-XX02)



Type: Suit for Fristam FLII series Lobe Rotor

Pumps

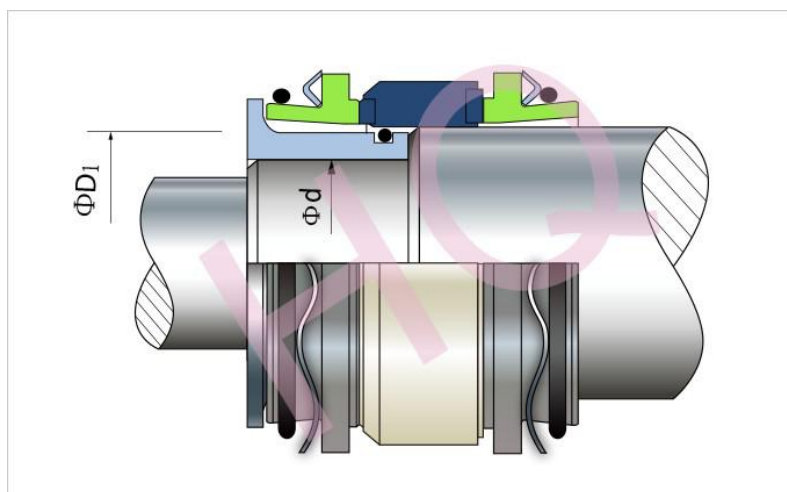
Replacement: Vulcan W-XX02, Billi BB14-FLII

Temperature: -20°C to +140°C

Pressure:  $\leq 3.0\text{Mpa}$

Speed:  $\leq 5\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| Sleeve O.D. D1 | Size Code d | O.E.M PUMP Model |
|----------------|-------------|------------------|
| 28             | 0200        | FLII 55          |
| 38             | 0300        | FLII 75          |
| 50             | 0400        | FLII 100         |
| 62             | 0520        | FLII 130         |



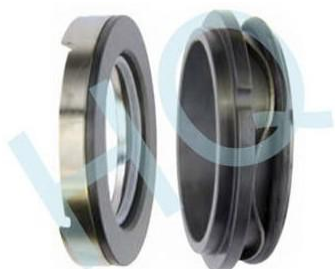
<http://www.hqseal.com>



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## FR-24(W-4820)



Type: Suit for Fristam

FKL50,FZX2100,FZX2150,

FZX2200,FZX2250 Pumps

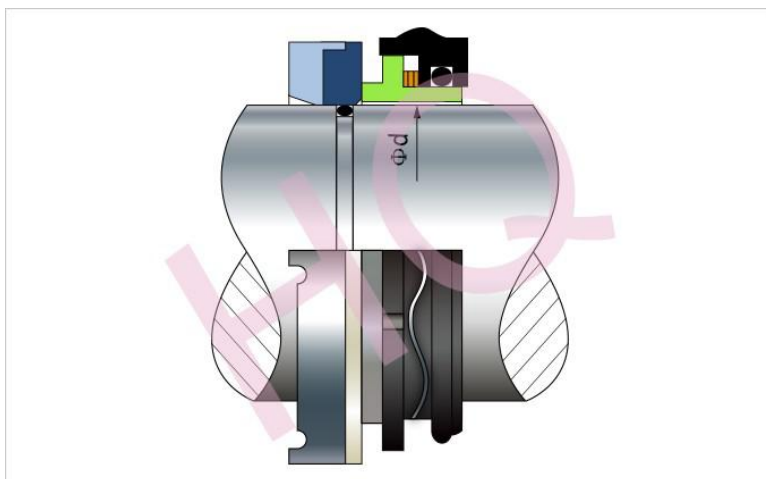
Replacement: Vulcan W-4820,Billi BB14-FKL50

Temperature: -40°C to +180°C

Pressure:  $\leq 15.0\text{Mpa}$

Speed:  $\leq 5\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | O.E.M PUMP Model                      |
|-----------|---------------------------------------|
| 48.00     | FKL50,FZX2100,FZX2150,FZX2200,FZX2250 |

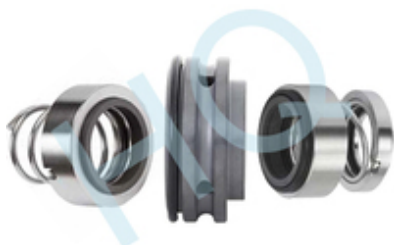


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## FR-25(Y-V9019)

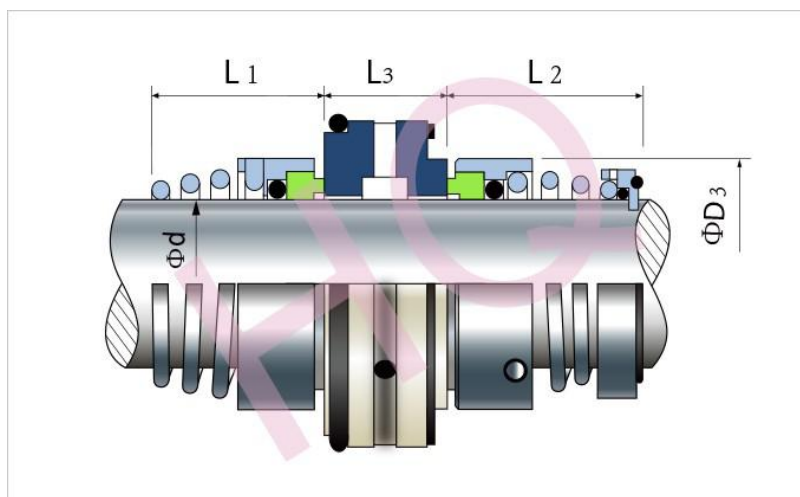


Type: Suit for flushed Fristam FPX Pumps  
 Replacement: VulcanY+V9019,Billi BB14-FPXD  
 Temperature: -45°C to +150°C

Pressure:  $\leq 5.0\text{Mpa}$

Speed:  $\leq 5\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D3 | L1 | L2 | L3 |
|-----------|----|----|----|----|
| 22        | 45 | 20 | 22 | 22 |
| 30        | 60 | 22 | 24 | 28 |
| 35        | 64 | 26 | 26 | 30 |



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## FR-30(1676)



Type: Suit for Fristam Multi-stage  
FM,FPE,FPH,FPH Pumps

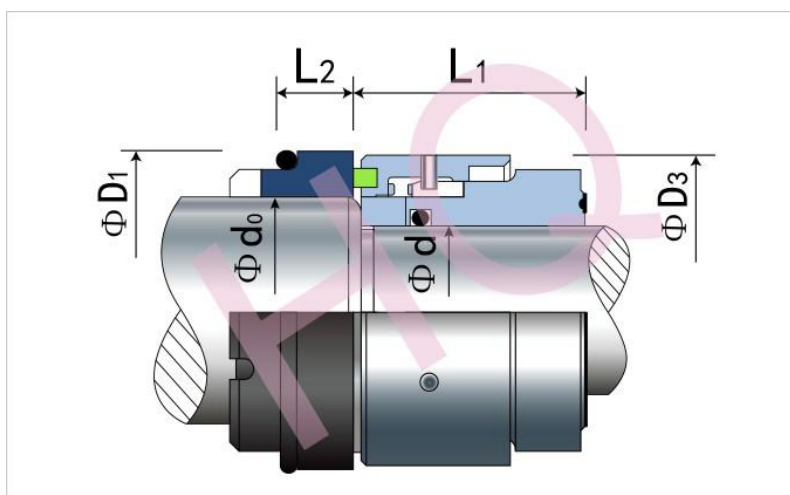
Replacement: Vulcan 1676

Temperature: -30 to +150°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 5\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm) | Size<br>Code | d0 | D1 | D3 | L1   | L1 |
|-----------|--------------|----|----|----|------|----|
| 18        | 0220         | 22 | 37 | 36 | 32.5 | 9  |
| 32        | 0430         | 43 | 61 | 59 | 40.0 | 14 |
| 35        | 0350         | 43 | 61 | 59 | 30.0 | 14 |

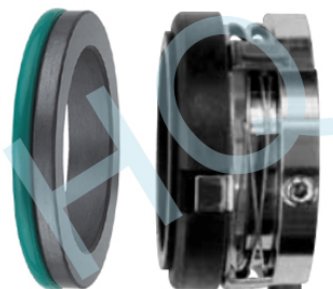


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## FR-31-1 (1696.E.C.)



Type: Fristam Multi-Stage Pumps Seals  
Replacement: Vulcan 1696 E.C  
Temperature: -30 to +150°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 5\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

d=22mm,38mm.



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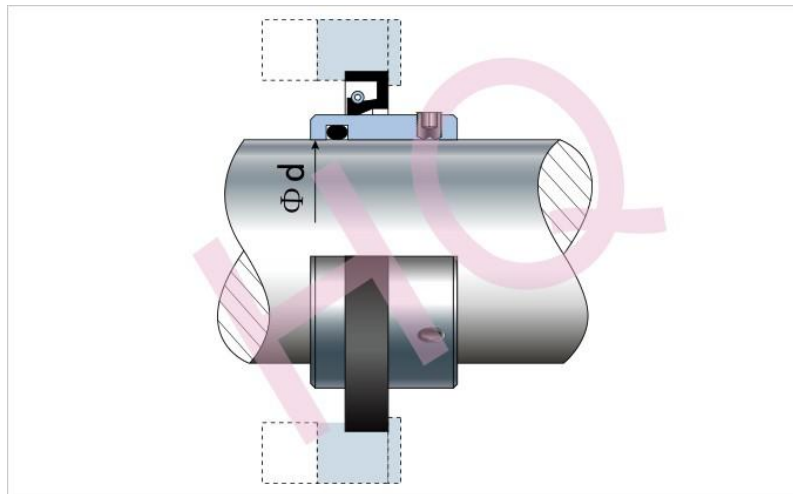


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## FR-31-2(1696.E.N/A)



Type: Suit for Fristam Multi-Stage Pumps, to be  
used with 1676 for Flushed configuration  
Replacement: Vulcan 1696, AES T01FSLV  
Temperature:  $-30^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$   
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 5\text{m/s}$   
Material: Q1, Q2, U2, T, V, M1, F, G, M



$d=18\text{mm}, 32\text{mm}, 35\text{mm}, 22\text{mm}, 38\text{mm}.$

Used with 1676 or 1696 for flushed configuration.



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# GR-Z6



Type: Suit for Grundfos,FRISTAM

FP,FPE,FPX,FR,FT,FZ Pumps

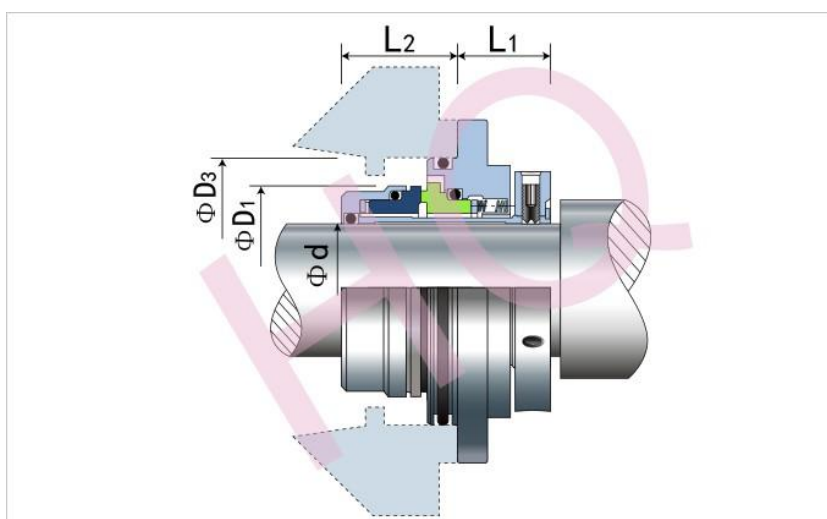
Replacement: AES MOGCE

Temperature: -20 to +180°C

Pressure:  $\leq 2.5$  Mpa Speed:

Speed:  $\leq 10$  m/s

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 30          | 46.8  | 60    | 24.9  | 30.9  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.181       | 1.843 | 2.362 | 0.978 | 1.216 |



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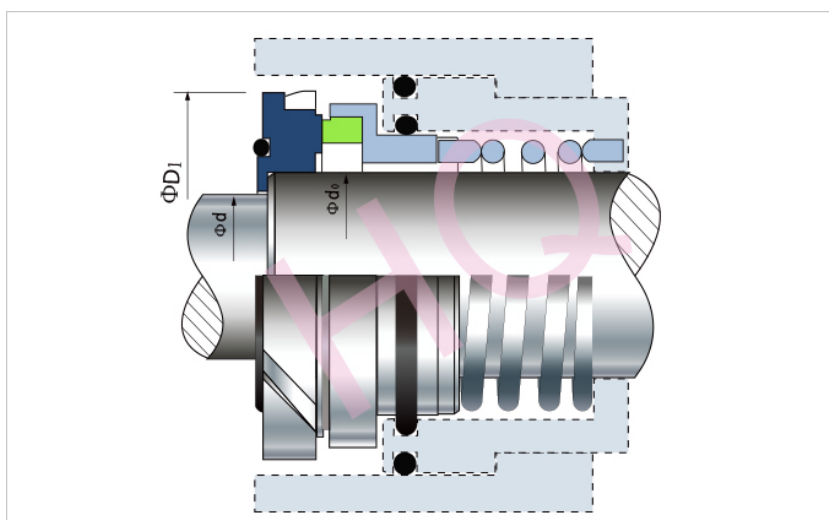


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## TH-02(P09S)



Type: Suit for Tuchenhagen VPB,VPC,VPD  
Pumps  
Replacement: AES P09S, Vulcan B94,Burgmann MR,  
Latty TN2, Lidering ZB  
Temperature: -20°C to +200°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 20\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | d0   | D1   |
|-----------|------|------|
| 18        | 22.0 | 52.0 |
| 22        | 30.0 | 66.0 |
| 30        | 35.0 | 66.0 |



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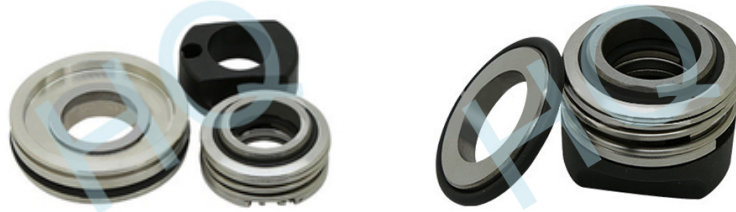
<http://www.hqseal.com>



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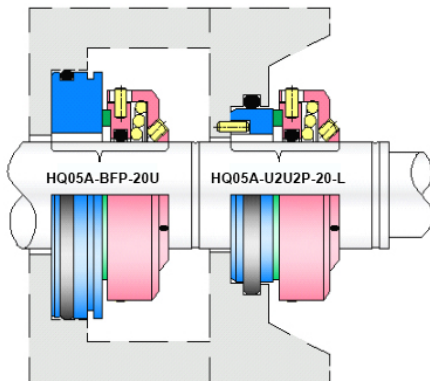
## HQ05 A-L20/U20(new type)



Type: Flygt Pump Seal  
Replacement: AES T05 A(new Type)

### Flygt Pump Mechanical Seals

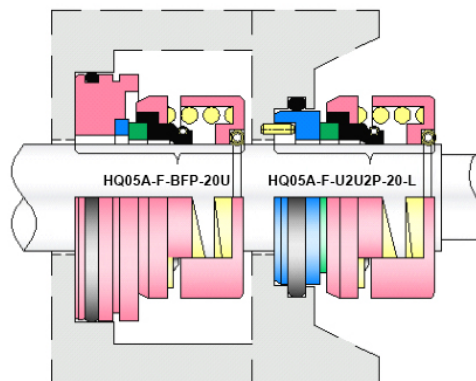
#### HQ05A



HQ05A seal instead of AES T05A seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation

#### HQ05A-F



HQ05A-F seal instead of original Flygt seal  
used for Flygt pump no: 2024/2066/2075/2101/3065/3080/Ready 24

- Monolithic stationary faces
- Supplied with removable setting clip



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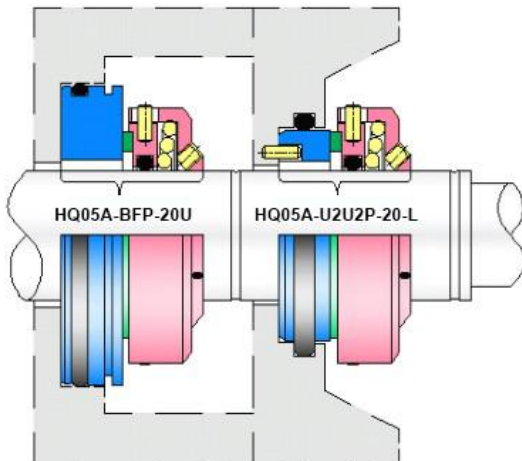
## HQ05 A-L20/U20



Type: Flygt Pump Seal  
Replacement: AES T05 A

### Flygt Pump Mechanical Seals

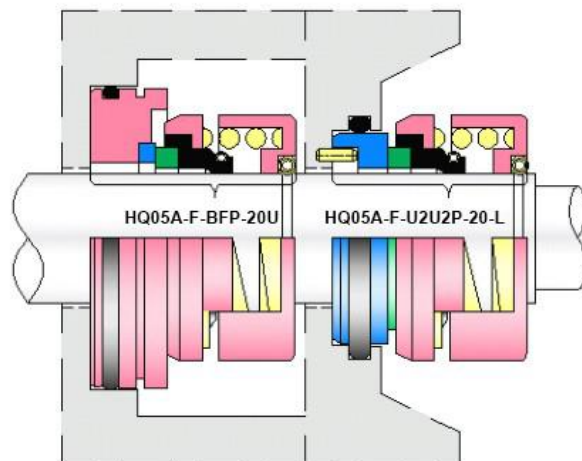
#### HQ05A



HQ05A seal instead of AES T05A seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation

#### HQ05A-F



HQ05A-F seal instead of original Flygt seal  
used for Flygt pump no: 2024/2066/2075/21  
01/3065/3080/Ready 24

- Monolithic stationary faces
- Supplied with removable setting clip



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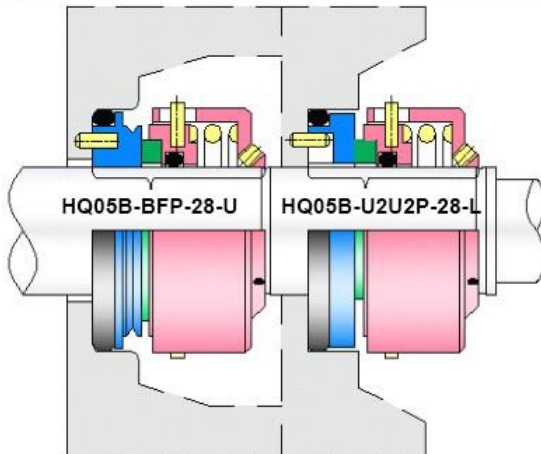
## HQ05 B-L28/U28



Type: Flygt Pump Seal  
Replacement: AES T05 B

### Flygt Pump Mechanical Seals

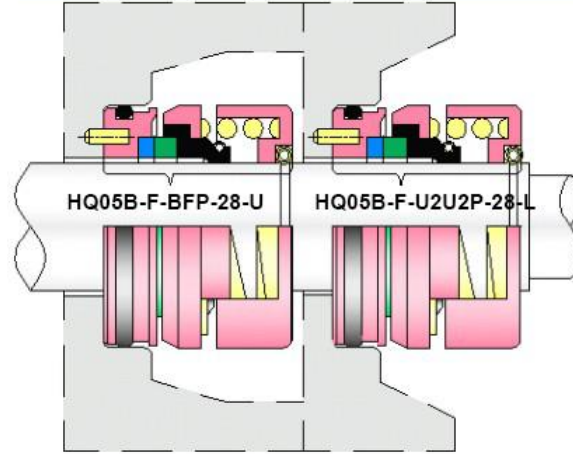
#### HQ05B



HQ05B seal instead of AES T05B seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation

#### HQ05B-F



HQ05B-F seal instead of original Flygt seal

- used for Flygt pump no: 3101
- Monolithic stationary faces
- Supplied with removable setting clip



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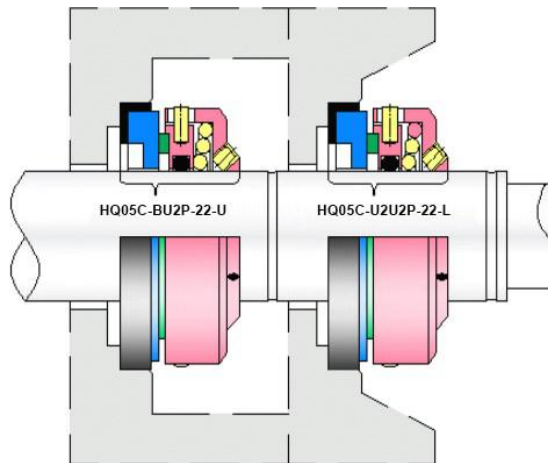
## HQ05 C-L22/U22



Type: Flygt Pump Seal  
Replacement: AES T05 C

### Flygt Pump Mechanical Seals

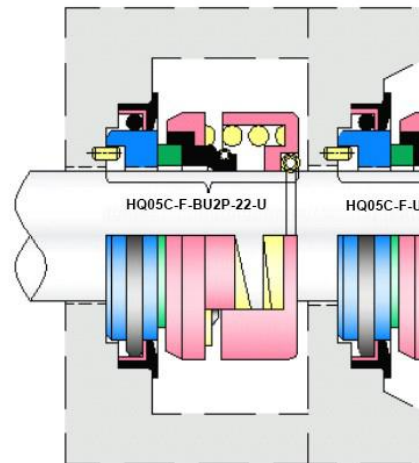
#### HQ05C



HQ05C seal instead of AES T05C seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- Unitised rotary, no loose faces to fall out during installation
- Monolithic stationary faces

#### HQ05C-F



HQ05C-F seal instead of original used for Flygt pump no:2040/2102

- 2-041/2102-220/Ready 40/Ready
- Seats designed to replace original wear protector
- Supplied with removable setting
- No plastic parts



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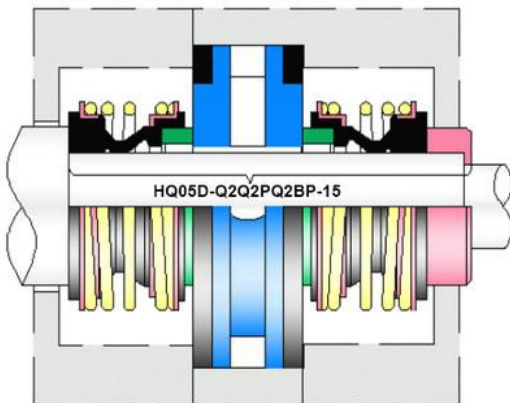
## HQ05 D-15



Type: Flygt Pump Seal  
Replacement: AES T05 D

### Flygt Pump Mechanical Seals

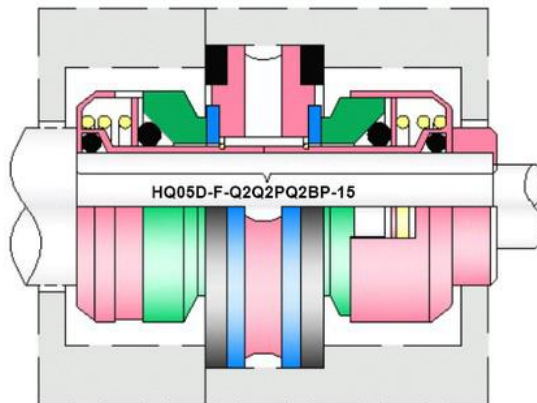
#### HQ05D



HQ05D seal instead of AES T05D seal

- Enclosed Bellows rotary design
- Stainless Steel metal parts
- Monolithic stationary face
- Supplied with setting collar

#### HQ05D-F



HQ05D-F seal instead of original Flygt seal  
used for Flygt pump no: 2004/2008/2012/20  
16/2050/2052/Ready 4/Ready 8/Ready 12/  
Ready 16



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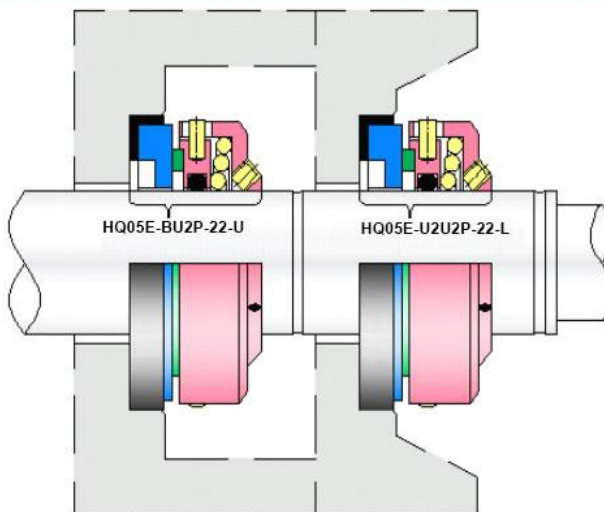
## HQ05 E-L22/U22



Type: Flygt Pump Seal  
Replacement: AES T05 E

### Flygt Pump Mechanical Seals

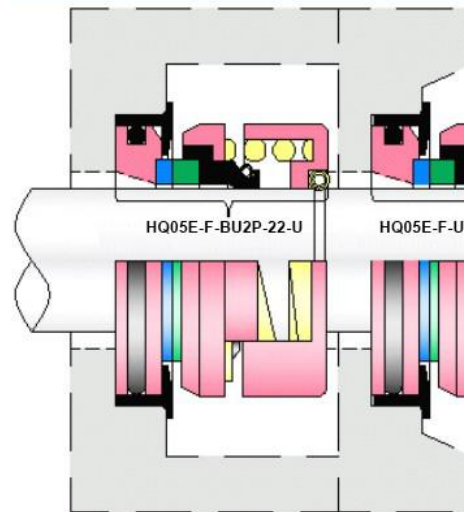
#### HQ05E



HQ05E seal instead of AES T05E seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation

#### HQ05E-F



HQ05E-F seal instead of original f  
used for Flygt pump no: 2070/2102

- Monolithic stationary faces
- Supplied with removable setting



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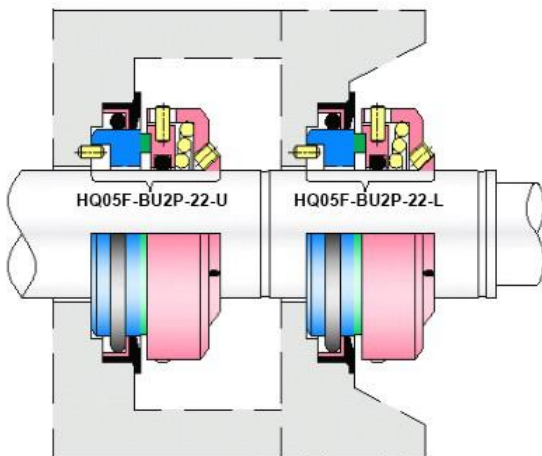
[hq@hqseal.com](mailto:hq@hqseal.com)

## HQ05 F-L22/U22



Type: Flygt Pump Seal  
Replacement: AES T05 F

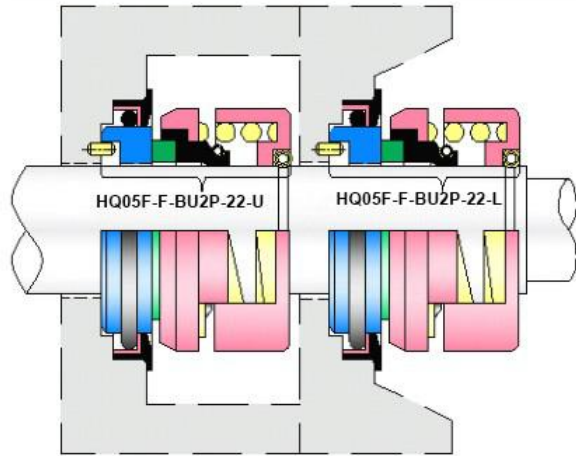
### Flygt Pump Mechanical Seals HQ05F



HQ05F seal instead of AES T05F seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation

### HQ05F-F



HQ05F-F seal instead of original Flygt seal  
used for Flygt pump no: 2040/2071/2102-210/2102-041/2102-220/Ready 40/Ready 56

- Monolithic stationary faces
- Supplied with removable setting clip



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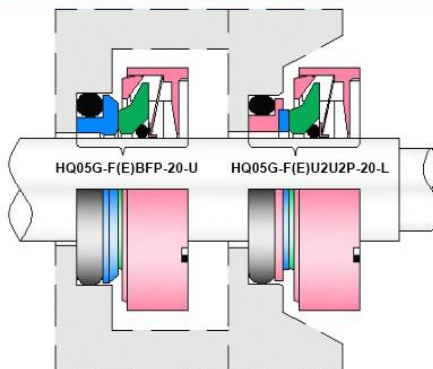
# HQ05 G-L20/U20

Type: Flygt Pump Seal  
Replacement: AES T05 G

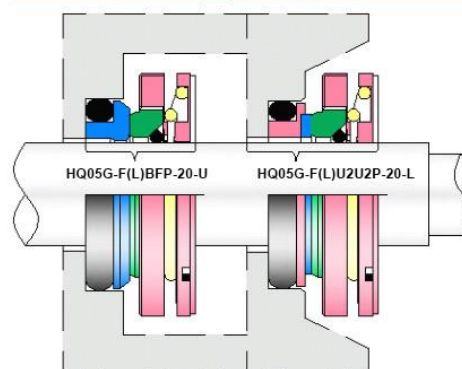


## Flygt Pump Mechanical Seals

### HQ05G-F(E)

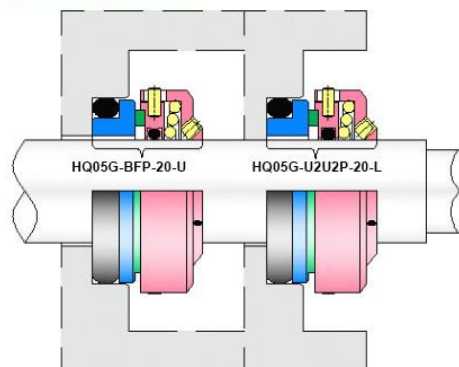


### HQ05G-F(L)



HQ05G-F(E) seal and HQ05G-F(L) seal instead of original Flygt seal used for Flygt pump no: 2060/3041-171/3041-180/3041-281/3057/3060/3066/3067-890/3067-690/3067-590/3067-250/3067-170/3067-090/3067-180/3068/3085-091/3085-092/3085-120/3085-170/3085-171/3085-172/3085-180/3085-181/3085-182/3085-890/3085-891/Steady 7

## HQ05G



HQ05G seal instead of AES T05G sea

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Monolithic stationary faces
- Supplied with removable setting clip
- No special fitting tool required



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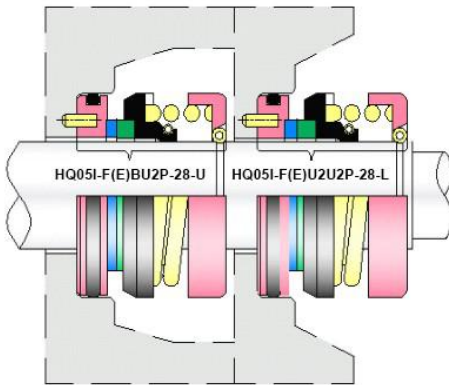
## HQ05 I-L28/U28

Type: Flygt Pump Seal  
Replacement: AES T05 I

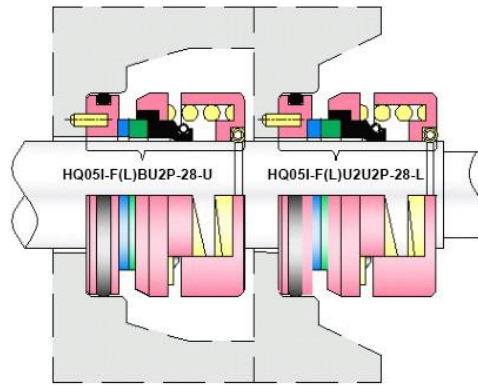


### Flygt Pump Mechanical Seals

#### HQ05I-F(E)

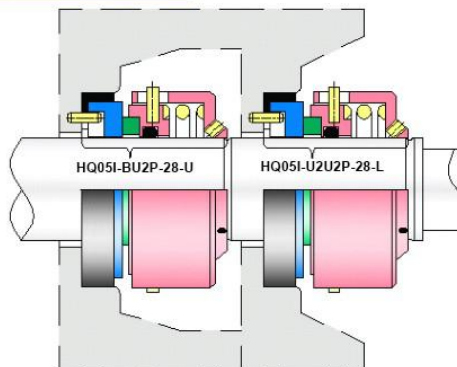


#### HQ05I-F(L)



HQ05I-F(E) seal and HQ05I-F(L) seal instead of original Flygt seal used for Flygt pump  
no: 2082/2090/2125/2140/Ready 90

### HQ05I



- HQ05I seal instead of AES T05I seal
- Robust & compact rotary design
  - Grub/set screwed (Allen Key included)
  - Stainless Steel metal parts
  - No plastic parts
  - Unitised rotary, no loose faces to fall out during installation
  - Monolithic stationary faces
  - Boot mounted seats for improved sealing in worn or corroded housings
  - Supplied with removable setting clip



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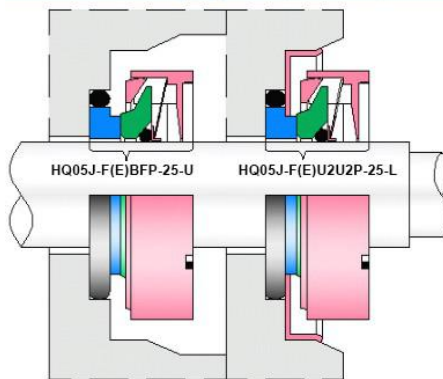
[hq@hqseal.com](mailto:hq@hqseal.com)

## HQ05 J-L25/U25

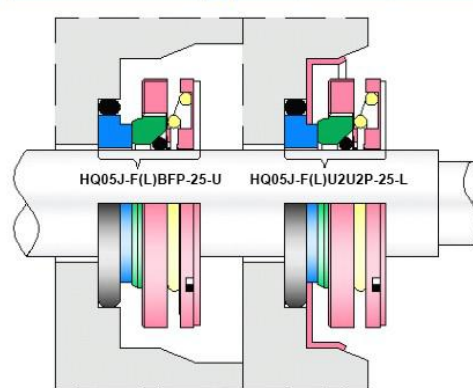
Type: Flygt Pump Seal  
Replacement: AES T05 J



### HQ05J-F(E)

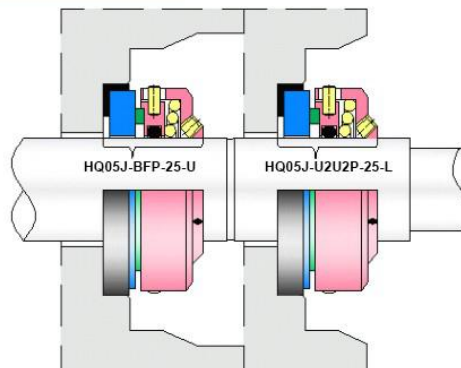


### HQ05J-F(L)



HQ05J-F(E) seal and HQ05J-F(L) seal instead of original Flygt seal used for Flygt pump  
no: 3102

### HQ05J



HQ05J seal instead of AES T05J seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Monolithic stationary faces
- Boot mounted seats for improved sealing in worn or corroded housings
- Supplied with removable setting clip
- No special fitting tool required



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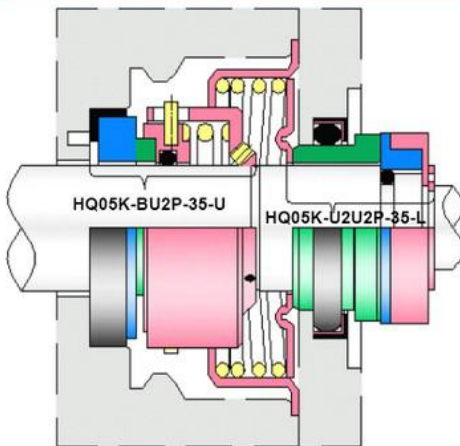
## HQ05 K-L35/U35



Type: Flygt Pump Seal  
Replacement: AES T05 K

### Flygt Pump Mechanical Seals

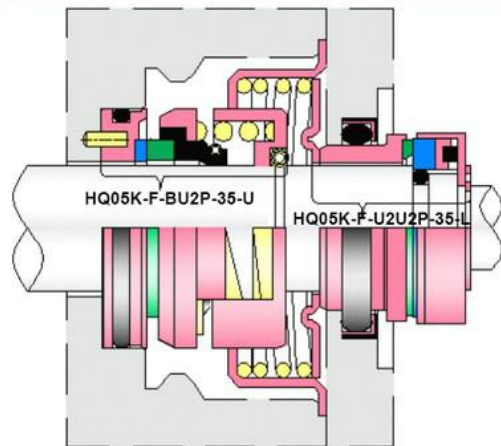
#### HQ05K



HQ05K seal instead of AES T05K seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation
- Monolithic stationary face

#### HQ05K-F



HQ05K-F seal instead of original Flygt seal  
used for Flygt pump no: 2151-010/3126-090  
/3126-180

- Boot mounted seat for improved sealing in worn or corroded housings
- Stainless Steel metal parts
- No pressed steel parts
- Monolithic seal faces



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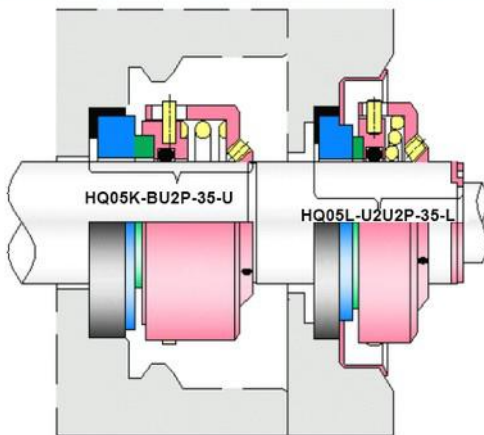
## HQ05 KL-L35/U35



Type: Flygt Pump Seal  
Replacement: AES T05KL

### Flygt Pump Mechanical Seals

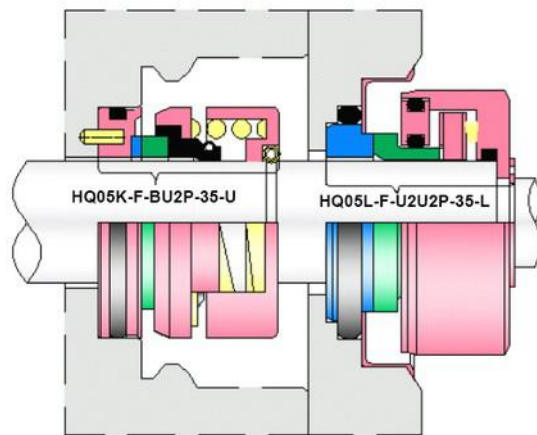
#### HQ05KL



HQ05KL seal instead of AES T05KL seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- Unitised rotary, no loose faces to fall out during installation
- No plastic parts
- Monolithic stationary faces

#### HQ05KL-F



HQ05KL-F seal instead of original Flygt seal used for Flygt pump no:2084/ 2135/2151-01 1/2151-050

- Boot mounted seats for improved sealing in worn or corroded housings
- Supplied with removable setting clip



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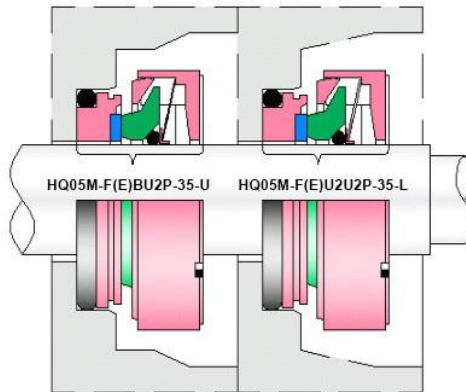
# HQ05 M-L35/U35

Type: Flygt Pump Seal  
Replacement: AES T05 M

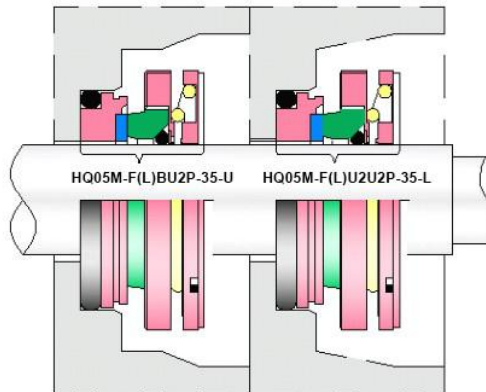


## Flygt Pump Mechanical Seals

### HQ05M-F(E)

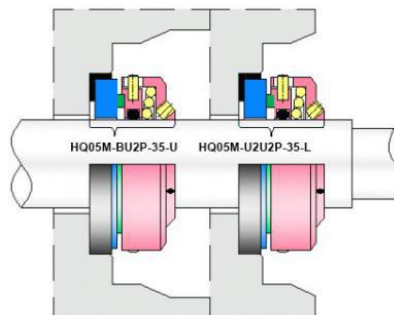


### HQ05M-F(L)



HQ05M-F(E) seal and HQ05M-F(L) seal instead of original Flygt seal used for Flygt pump  
no: 3126-181/3127/4440/5530

### HQ05M



HQ05M seal instead of AES T05M seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Monolithic stationary faces
- Boot mounted seats for improved sealing in worn or corroded housings
- Supplied with removable setting clip
- No special fitting tool required



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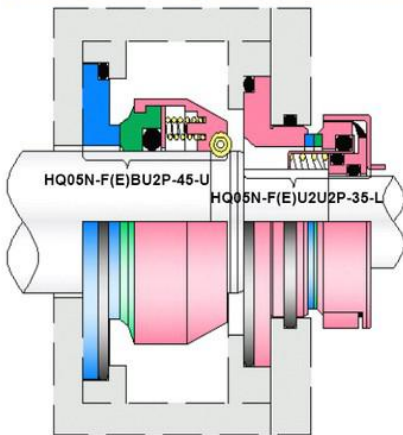
# HQ05 N-L35/U45

Type: Flygt Pump Seal  
Replacement: AES T05 N

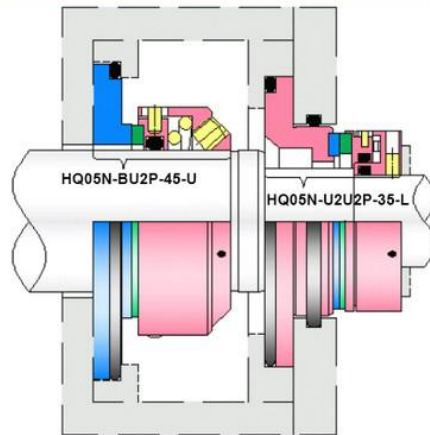


## Flygt Pump Mechanical Seals

### HQ05N-F(E)

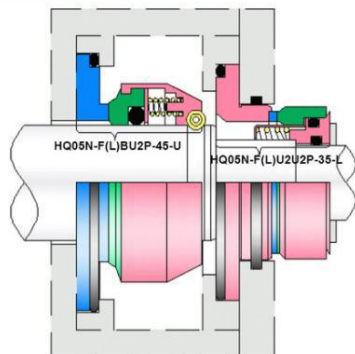


### HQ05N-F(L)



HQ05N-F(E) seal and HQ05N-F(L) seal instead of original Flygt seal used for Flygt pump  
no:2201-430/2201-320/2201-480/2201-590/2201-690

### HQ05N



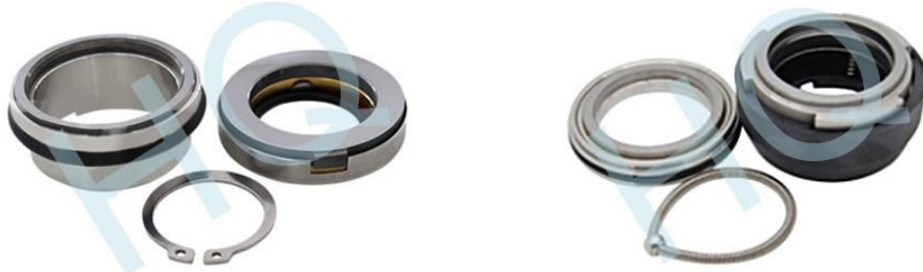
- HQ05N seal instead of AES T05N seal
- Robust & compact rotary design
  - Grub/set screwed (Allen Key included)
  - Stainless Steel metal parts
  - No plastic parts
  - Unitised rotary, no loose faces to fall out during installation
  - Supplied with removable setting clip (Upper)



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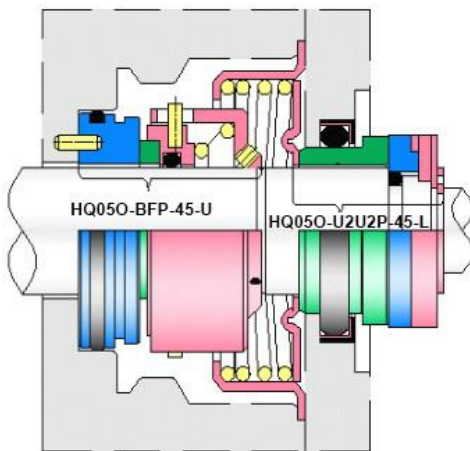
[hq@hqseal.com](mailto:hq@hqseal.com)



Type: Flygt Pump Seal  
Replacement: AES T05 O

## Flygt Pump Mechanical Seals

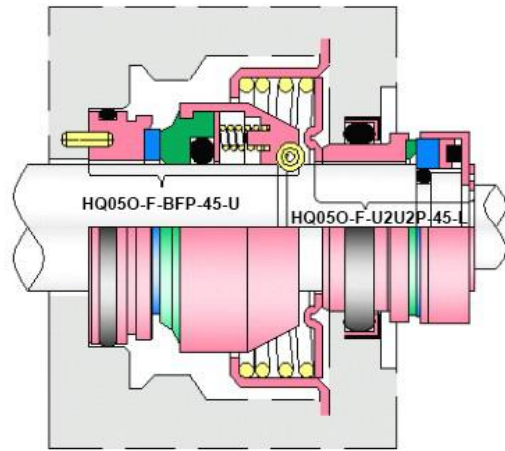
### HQ05O



HQ05O seal instead of AES T05O seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No plastic parts
- Monolithic stationary face
- Supplied with removable setting clip

### HQ05O-F



HQ05O-F seal instead of original Flygt seal  
used for Flygt pump no:2201-011 LT/3140/3  
152/4650/4660

- Unitised rotary, no loose faces to fall out during installation
- Stainless Steel metal parts
- No pressed steel parts
- Monolithic seal faces



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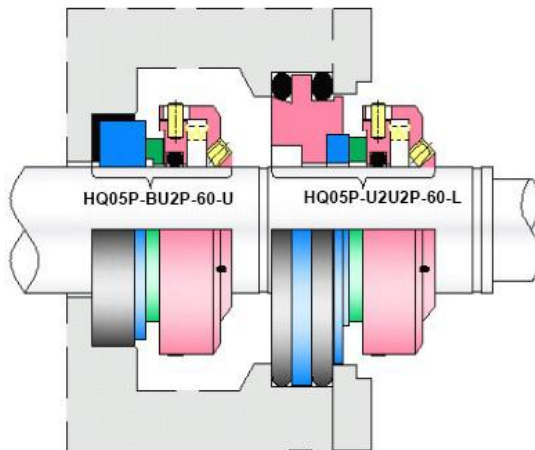
## HQ05 P-L60/U60



Type: Flygt Pump Seal  
Replacement: AES T05 P

### Flygt Pump Mechanical Seals

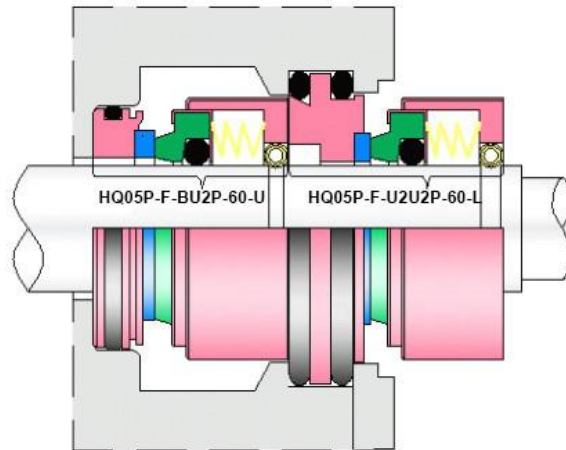
#### HQ05P



HQ05P seal instead of AES T05P seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No pressed Steel parts
- Monolithic Stationary face (Upper)

#### HQ05P-F



HQ05P-F seal instead of original Flygt seal  
used for Flygt pump no:2250/2290/3200

- Boot mounted seat for improved sealing in worn or corroded housings (Upper)
- Supplied with removable setting clip



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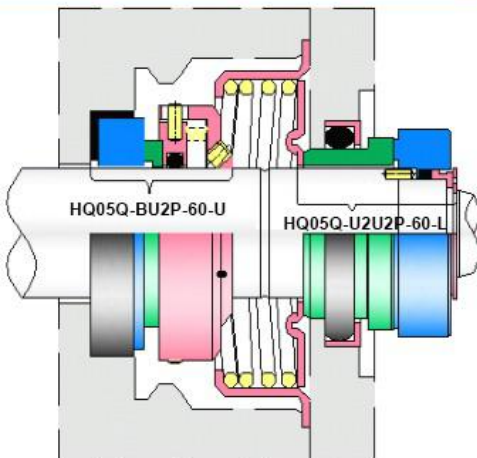
## HQ05 Q-L60/U60



Type: Flygt Pump Seal  
Replacement: AES T05 Q

### Flygt Pump Mechanical Seals

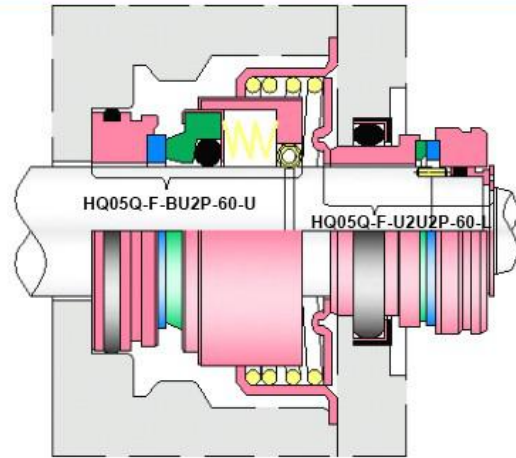
#### HQ05Q



HQ05Q seal instead of AES T05Q seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No pressed Steel parts
- Monolithic stationary face
- Boot mounted seat for improved sealing in worn or corroded housings

#### HQ05Q-F



HQ05Q-F seal instead of original Flygt seal  
used for Flygt pump no:600/3170/3201/467  
0/4680/7045

- Supplied with removable setting clip
- Stainless Steel metal parts
- Monolithic seal faces



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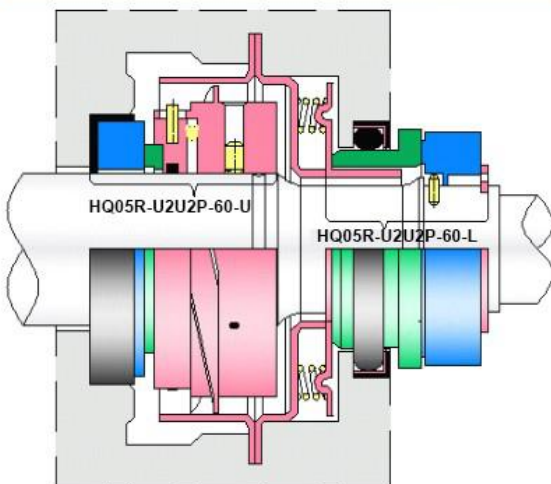
## HQ05 R-L60/U60



Type: Flygt Pump Seal  
Replacement: AES T05 R

### Flygt Pump Mechanical Seals

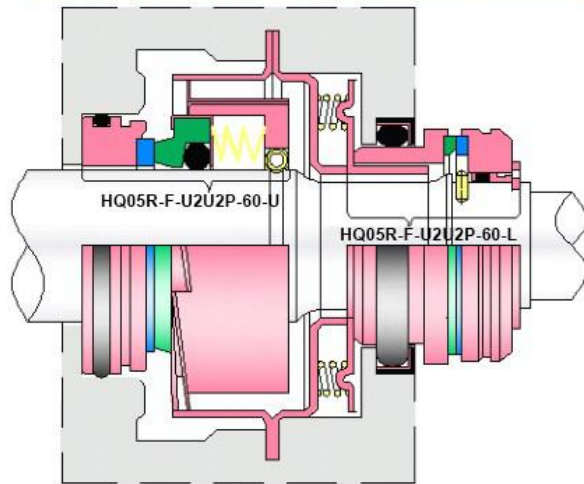
#### HQ05R



HQ05R seal instead of AES T05R seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No pressed Steel parts
- Fully machined impeller
- Monolithic stationary face

#### HQ05R-F



HQ05R-F seal instead of original Flygt seal  
used for Flvat pump no:2400

- Boot mounted seat for improved sealing in worn or corroded housings
- Supplied with removable setting clip
- Stainless Steel metal parts
- Monolithic seal faces



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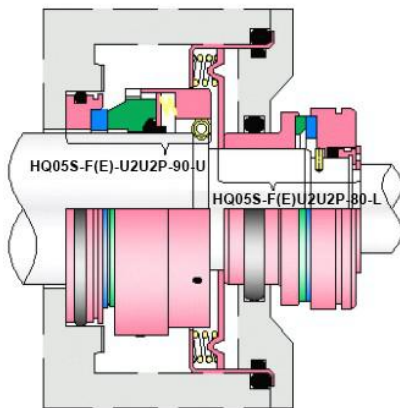
# HQ05 S-L80/U90

Type: Flygt Pump Seal  
Replacement: AES T05 S

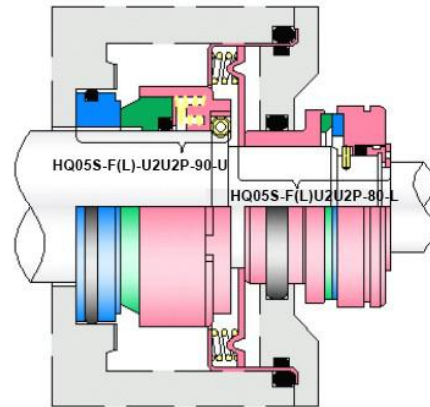


## Flygt Pump Mechanical Seals

### HQ05S-F(E)

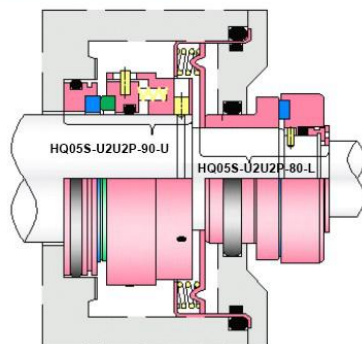


### HQ05S-F(L)



HQ05S-F(E) seal and HQ05S-F(L) seal instead of original Flygt seal used for Flygt pump  
no:605/615/665/670/680/705/715/720/721/735/745/760/765/770/775/820/840/841/860/  
880/881/900/3230/3300-091/3300-181/3300-280/3300-980/3305/3355/3356/3357/7050/  
7051/7055/7060/7061/7076/70807556

### HQ05S



- HQ05S seal instead of AES T05S seal
- Robust & compact rotary design
  - Grub/set screwed (Allen Key included)
  - Stainless Steel metal parts
  - No pressed Steel parts
  - No plastic parts
  - Unitised rotary, no loose faces to fall out during installation
  - Stainless Steel metal parts
  - Monolithic stationary face



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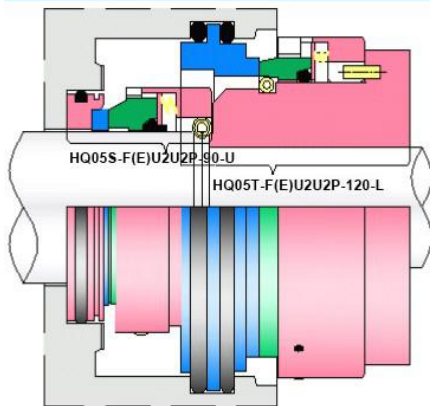
[hq@hqseal.com](mailto:hq@hqseal.com)

# HQ05 ST-L120/U90

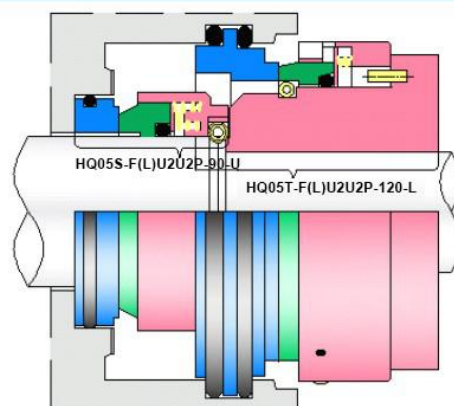
Type: Flygt Pump Seal  
Replacement: AES T05 ST



## Flygt Pump Mechanical Seals HQ05ST-F(E)

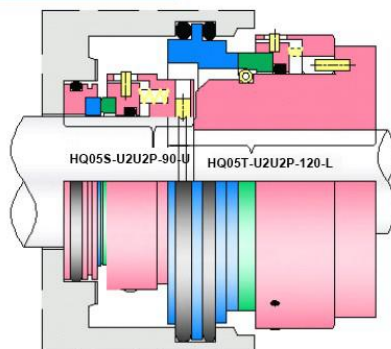


## HQ05ST-F(L)



HQ05ST-F(E) seal and HQ05ST-F(L) seal instead of original Flygt seal used for Flygt pump  
no:705/715/720/721/735/745/760/765/770/775/820/840/841/860/880/881/900/3310/3311/  
3312/3350/3351/3500/3501/3530/3531/3600/3601/3602/7080/7115/7570/7585

## HQ05ST



HQ05ST seal instead of AES T05ST seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No pressed Steel parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation
- Robust & compact rotary design
- Stainless Steel metal parts
- No pressed Steel parts
- Unitised rotary, no loose faces to fall out during installation
- Monolithic stationary face



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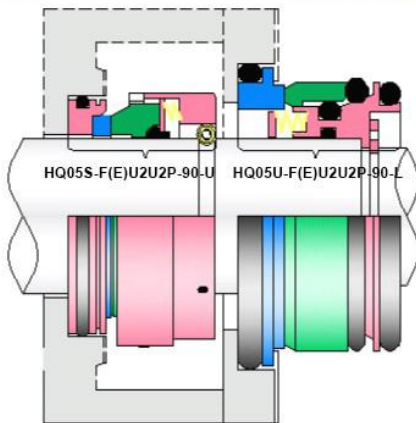


# HQ05 SU-L90/U90

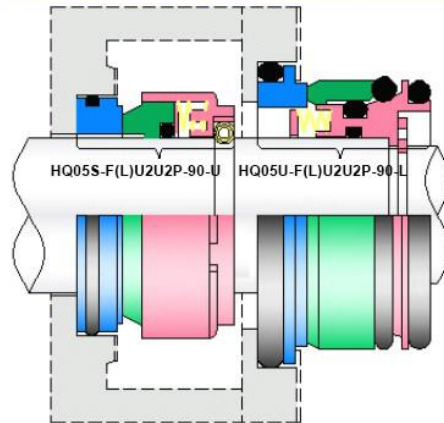
Type: Flygt Pump Seal  
Replacement: AES T05 SU



## Flygt Pump Mechanical Seals HQ05SU-F(E)

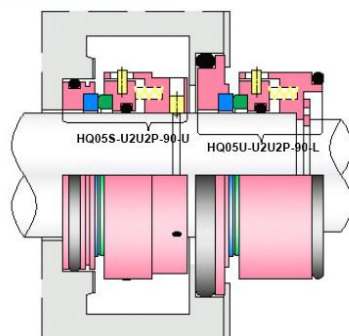


## HQ05SU-F(L)



HQ05SU-F(E) seal and HQ05SU-F(L) seal instead of original Flygt seal used for Flygt pump  
no:705/715/720/721/735/745/760/765/770/775/820/840/841/860/880/881/900/3400/7081/  
7101

## HQ05SU



HQ05SU seal instead of AES T05SU seal

- Robust & compact rotary design
- Grub/set screwed (Allen Key included)
- Stainless Steel metal parts
- No pressed Steel parts
- No plastic parts
- Unitised rotary, no loose faces to fall out during installation



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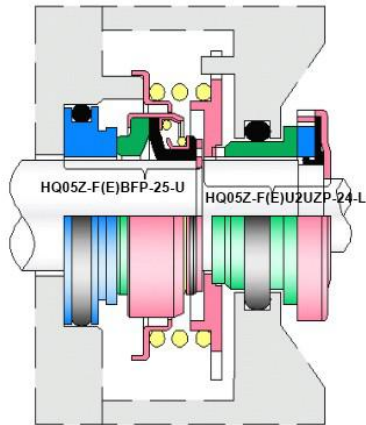
# HQ05 Z-L25/U24

Type: Flygt Pump Seal  
Replacement: AES T05 Z

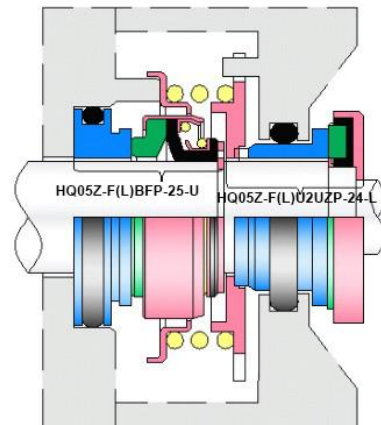


## Flygt Pump Mechanical Seals

### HQ05Z-F(E)

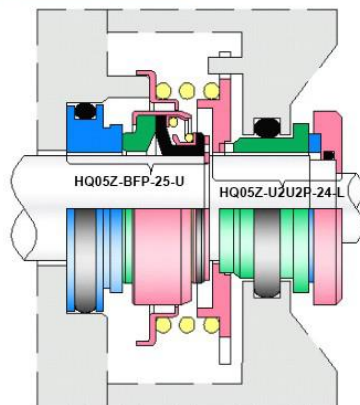


### HQ05Z-F(L)



HQ05Z-F(E) seal and HQ05SU-F(L) seal instead of original Flygt seal used for Flygt pump  
no: All other pumps

### HQ05Z



HQ05Z seal instead of AES T05Z seal

- Simple & compact rotary design
- Stainless Steel metal parts
- Monolithic stationary faces
- Unitised rotary, no loose faces to fall out during installation



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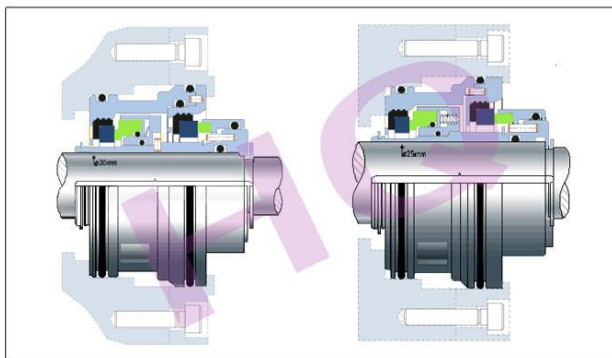


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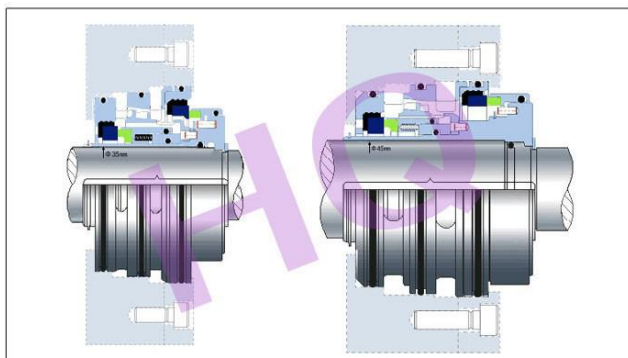
# HQLZ Series

Type: Flygt Pump Seals  
Replacement: AES T05VC

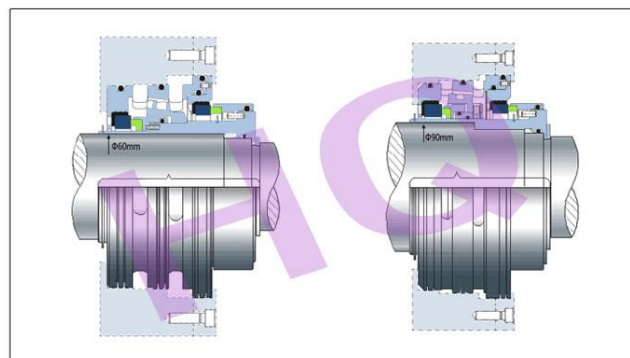
LZ-20mm, 25mm



LZ-35mm, 45mm



LZ-60mm, 90mm



| HQ Seal Code | Size | Material       | Fits Flygt Pumps/Mixers                                   |
|--------------|------|----------------|-----------------------------------------------------------|
| LZ20         | 20mm | TC/TC-TC/CER/V | 2610, 2620, 2630, 2640, 4610 & 4620                       |
| LZ25         | 25mm | TC/TC-TC/CER/V | 2660, 4630 & 4640                                         |
| LZ35         | 35mm | TC/TC-TC/TC/V  | 2670, 3153, 5100.210, 5100.211, 5100.220 & 5100.221       |
| LZ45         | 45mm | TC/TC-TC/TC/V  | 3171, 4650, 4660, 5100.250, 5100.251, 5100.260 & 5100.261 |
| LZ60         | 60mm | TC/TC-TC/TC/V  | 3202, 4670, 4680, 5100.300, 5100.310, 5150.300 & 5150.310 |
| LZ90         | 90mm | TC/TC-TC/TC/V  | 3301, 5150.350 & 5150.360                                 |



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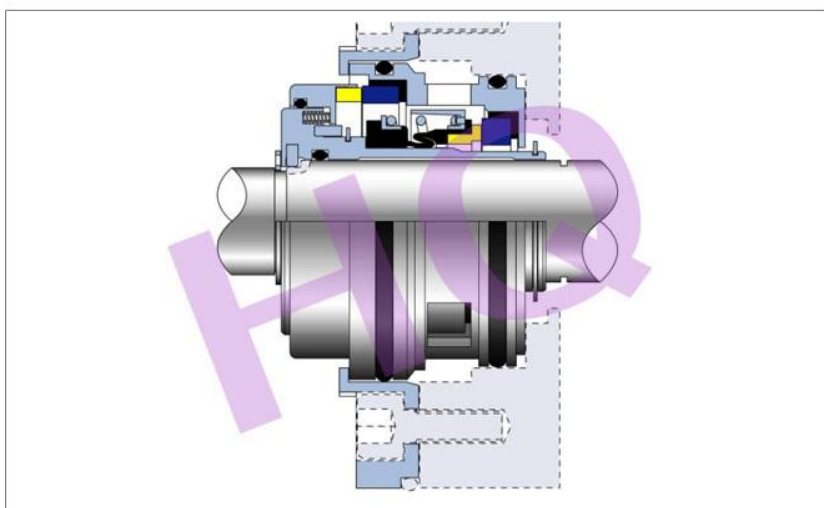
[hq@hqseal.com](mailto:hq@hqseal.com)



## HQLT Series



Type: Flygt Pump Seals  
Replacement: AES T05VC



| HQ Seal Code | Size | Material       | Fits Flygt Pumps/Mixers                                   |
|--------------|------|----------------|-----------------------------------------------------------|
| LT20         | 20mm | TC/TC-TC/CER/V | 2610, 2620, 2630, 2640, 4610 & 4620                       |
| LT25         | 25mm | TC/TC-TC/CER/V | 4630 & 4640                                               |
| LT35         | 35mm | TC/TC-TC/TC/V  | 2670, 3153, 5100.210, 5100.211, 5100.220 & 5100.221       |
| LT45         | 45mm | TC/TC-TC/TC/V  | 3171, 4650, 4660, 5100.250, 5100.251, 5100.260 & 5100.261 |
| LT60         | 60mm | TC/TC-TC/TC/V  | 3202, 4670, 4680, 5100.300, 5100.310, 5150.300 & 5150.310 |
| LT90         | 90mm | TC/TC-TC/TC/V  | 3301, 5150.350 & 5150.360                                 |



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# HQ05 Series Cross Reference Charts and Drawing

## HQ05 Series



|                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |              |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------------|----------|
| <p style="text-align: center;">HQ05M - U2U2P - 35 - L</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Seal Type</p> <p>Rotary Material</p> </div> <div style="text-align: center;"> <p>Seat Material</p> <p>Elastomer Material</p> </div> <div style="text-align: center;"> <p>Size Code</p> </div> <div style="text-align: center;"> <p>Position</p> </div> </div> |                              |              |          |
| MATERIAL CODE<br>(Rotary & Seat)                                                                                                                                                                                                                                                                                                                                                                                                              | MATERIAL CODE<br>(Elastomer) | SIZE<br>CODE | POSITION |
| B=Carbon                                                                                                                                                                                                                                                                                                                                                                                                                                      | P=Nitrile                    | 35=35mm      | L=Lower  |
| Q2=Silicon Carbide                                                                                                                                                                                                                                                                                                                                                                                                                            |                              |              | U=Upper  |
| F=Stainless Steel                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |              |          |
| U2=Tungsten Carbide                                                                                                                                                                                                                                                                                                                                                                                                                           |                              |              |          |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

| Flygt<br>Unit<br>Type<br>Model<br>Version | HQSEAL<br>Alternative<br>Upper<br>(Inner) | Size | HQSEAL<br>Alternative<br>Lower<br>(outer) | Size  |  | Flygt<br>Unit<br>Type<br>Model<br>Version | HQSEAL<br>Alternative<br>Upper<br>(Inner) | Size | HQSEAL<br>Alternative<br>Lower<br>(outer) | Size  |
|-------------------------------------------|-------------------------------------------|------|-------------------------------------------|-------|--|-------------------------------------------|-------------------------------------------|------|-------------------------------------------|-------|
| 600                                       | HQ05Q                                     | 60mm | HQ05Q                                     | 60mm  |  | 881                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |
| 605                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 881                                       | HQ05S                                     | 90mm | HQ05T                                     | 120mm |
| 615                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 881                                       | HQ05S                                     | 90mm | HQ05U                                     | 90mm  |
| 665                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 900                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |
| 670                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 900                                       | HQ05S                                     | 90mm | HQ05T                                     | 120mm |
| 680                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 900                                       | HQ05S                                     | 90mm | HQ05U                                     | 90mm  |
| 705                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 905                                       | --                                        | --   | HQ05T                                     | 120mm |
| 705                                       | HQ05S                                     | 90mm | HQ05T                                     | 120mm |  | 935                                       | --                                        | --   | HQ05T                                     | 120mm |
| 705                                       | HQ05S                                     | 90mm | HQ05U                                     | 90mm  |  | 2004                                      | HQ05D                                     | 15mm | N/A                                       | --    |
| 715                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 2008                                      | HQ05D                                     | 15mm | N/A                                       | --    |
| 715                                       | HQ05S                                     | 90mm | HQ05T                                     | 120mm |  | 2012                                      | HQ05D                                     | 15mm | N/A                                       | --    |
| 715                                       | HQ05S                                     | 90mm | HQ05U                                     | 90mm  |  | 2016                                      | HQ05D                                     | 15mm | N/A                                       | --    |
| 720                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 2024                                      | HQ05A                                     | 20mm | HQ05A                                     | 20mm  |
| 720                                       | HQ05S                                     | 90mm | HQ05S                                     | 120mm |  | 2040                                      | HQ05C or<br>HQ05F                         | 22mm | HQ05C or<br>HQ05F                         | 22mm  |
| 720                                       | HQ05S                                     | 90mm | HQ05S                                     | 90mm  |  | 2050                                      | HQ05D                                     | 15mm | N/A                                       | --    |
| 721                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 2052                                      | HQ05D                                     | 15mm | N/A                                       | --    |
| 721                                       | HQ05S                                     | 90mm | HQ05T                                     | 120mm |  | 2060                                      | HQ05G                                     | 20mm | HQ05G                                     | 20mm  |
| 721                                       | HQ05S                                     | 90mm | HQ05U                                     | 90mm  |  | 2066                                      | HQ05A                                     | 20mm | HQ05A                                     | 20mm  |
| 735                                       | HQ05S                                     | 90mm | HQ05S                                     | 80mm  |  | 2070                                      | HQ05E                                     | 22mm | HQ05E                                     | 22mm  |
| 735                                       | HQ05S                                     | 90mm | HQ05T                                     | 120mm |  | 2071                                      | HQ05F                                     | 22mm | HQ05F                                     | 22mm  |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

|     |       |      |       |       |  |            |                   |      |                   |      |
|-----|-------|------|-------|-------|--|------------|-------------------|------|-------------------|------|
| 735 | HQ05S | 90mm | HQ05U | 90mm  |  | 2075       | HQ05A             | 20mm | HQ05A             | 20mm |
| 745 | HQ05S | 90mm | HQ05S | 80mm  |  | 2082       | HQ05I             | 28mm | HQ05I             | 28mm |
| 745 | HQ05S | 90mm | HQ05T | 120mm |  | 2084       | HQ05K             | 35mm | HQ05L             | 35mm |
| 745 | HQ05S | 90mm | HQ05U | 90mm  |  | 2090       | HQ05I             | 28mm | HQ05I             | 28mm |
| 760 | HQ05S | 90mm | HQ05S | 80mm  |  | 2101       | HQ05A             | 20mm | HQ05A             | 20mm |
| 760 | HQ05S | 90mm | HQ05T | 120mm |  | 2102-210   | HQ05C or<br>HQ05F | 22mm | HQ05C or<br>HQ05F | 22mm |
| 760 | HQ05S | 90mm | HQ05U | 90mm  |  | 2102-040   | HQ05E             | 22mm | HQ05E             | 22mm |
| 765 | HQ05S | 90mm | HQ05S | 80mm  |  | 2102-041   | HQ05C or<br>HQ05F | 22mm | HQ05C or<br>HQ05F | 22mm |
| 765 | HQ05S | 90mm | HQ05T | 120mm |  | 2102-220   | HQ05C or<br>HQ05F | 22mm | HQ05C or<br>HQ05F | 22mm |
| 765 | HQ05S | 90mm | HQ05U | 90mm  |  | 2125       | HQ05I             | 28mm | HQ05I             | 28mm |
| 770 | HQ05S | 90mm | HQ05S | 80mm  |  | 2135       | HQ05K             | 35mm | HQ05L             | 35mm |
| 770 | HQ05S | 90mm | HQ05T | 120mm |  | 2140       | HQ05I             | 28mm | HQ05I             | 28mm |
| 770 | HQ05S | 90mm | HQ05U | 90mm  |  | 2151-010   | HQ05K             | 35mm | HQ05K             | 35mm |
| 775 | HQ05S | 90mm | HQ05S | 80mm  |  | 2151-011   | HQ05K             | 35mm | HQ05L             | 35mm |
| 775 | HQ05S | 90mm | HQ05T | 120mm |  | 2151-050   | HQ05K             | 35mm | HQ05L             | 35mm |
| 775 | HQ05S | 90mm | HQ05U | 90mm  |  | 2201-430   | HQ05N             | 45mm | HQ05N             | 35mm |
| 805 | --    | --   | HQ05T | 120mm |  | 2201-320   | HQ05N             | 45mm | HQ05N             | 35mm |
| 820 | HQ05S | 90mm | HQ05S | 80mm  |  | 2201-010   | HQ05O             | 45mm | HQ05K             | 35mm |
| 820 | HQ05S | 90mm | HQ05T | 120mm |  | 2201-011HT | HQ05O             | 45mm | HQ05N             | 35mm |
|     |       |      |       |       |  |            |                   |      |                   |      |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

|     |       |      |       |       |  |            |                |      |                   |      |
|-----|-------|------|-------|-------|--|------------|----------------|------|-------------------|------|
| 820 | HQ05S | 90mm | HQ05U | 90mm  |  | 2201-011LT | HQ05O          | 45mm | HQ05O             | 45mm |
| 835 | --    | --   | HQ05T | 120mm |  | 2201-011MT | HQ05O          | 45mm | HQ05N             | 35mm |
| 840 | HQ05S | 90mm | HQ05S | 80mm  |  | 2201-480   | HQ05N          | 45mm | HQ05N             | 35mm |
| 840 | HQ05S | 90mm | HQ05T | 120mm |  | 2201-590   | HQ05N          | 45mm | HQ05N             | 35mm |
| 840 | HQ05S | 90mm | HQ05U | 90mm  |  | 2201-690   | HQ05N          | 45mm | HQ05N             | 35mm |
| 841 | HQ05S | 90mm | HQ05S | 80mm  |  | 2250       | HQ05P          | 60mm | HQ05P             | 60mm |
| 841 | HQ05S | 90mm | HQ05T | 120mm |  | 2290       | HQ05P          | 60mm | HQ05P             | 60mm |
| 841 | HQ05S | 90mm | HQ05U | 90mm  |  | 2400       | HQ05R          | 60mm | HQ05R             | 60mm |
| 860 | HQ05S | 90mm | HQ05S | 80mm  |  | 2540       | --             | --   | HQ05R             | 60mm |
| 860 | HQ05S | 90mm | HQ05T | 120mm |  | 3041-171   | HQ05G          | 20mm | HQ05G or<br>HQ05H | 20mm |
| 860 | HQ05S | 90mm | HQ05U | 90mm  |  | 3041-180   | HQ05G          | 20mm | HQ05G or<br>HQ05H | 20mm |
| 865 | --    | --   | HQ05T | 120mm |  | 3041-281   | HQ05G          | 20mm | HQ05G             | 20mm |
| 880 | HQ05S | 90mm | HQ05S | 80mm  |  | 3057       | HQ05G          | 20mm | HQ05G or<br>HQ05H | 20mm |
| 880 | HQ05S | 90mm | HQ05T | 120mm |  | 3060       | HQ05G          | 20mm | HQ05G             | 20mm |
| 880 | HQ05S | 90mm | HQ05U | 90mm  |  | 3065       | HQ05A<br>Lower | 20mm | HQ05A             | 20mm |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

| Flygt<br>Unit<br>Type<br>Model<br>Version | HQSEAL<br>Alternative<br>Upper<br>(Inner) | Size | HQSEAL<br>Alternative<br>Lower<br>(outer) | Size |  | Flygt<br>Unit Type<br>Model<br>Version | HQSEAL<br>Alternative<br>Upper(Inner) | Size | HQSEAL<br>Alternative<br>Lower(outer) | Size |
|-------------------------------------------|-------------------------------------------|------|-------------------------------------------|------|--|----------------------------------------|---------------------------------------|------|---------------------------------------|------|
| 3066                                      | HQ05Q                                     | 20mm | HQ05G or<br>HQ05H                         | 20mm |  | 3501                                   | HQ05S                                 | 90mm | HQ05T                                 | 120  |
| 3067-<br>890                              | HQ05Q                                     | 20mm | HQ05G or<br>HQ05H                         | 20mm |  | 3530                                   | HQ05S                                 | 90mm | HQ05T                                 | 120  |
| 3067-<br>690                              | HQ05Q                                     | 20mm | HQ05G or<br>HQ05H                         | 20mm |  | 3531                                   | HQ05S                                 | 90mm | HQ05T                                 | 120  |
| 3067-<br>590                              | HQ05Q                                     | 20mm | HQ05G or<br>HQ05H                         | 20mm |  | 3600                                   | HQ05S                                 | 90mm | HQ05T                                 | 120  |
| 3067-<br>250                              | HQ05Q                                     | 20mm | HQ05G                                     | 20mm |  | 3601                                   | HQ05S                                 | 90mm | HQ05T                                 | 120  |
| 3067-<br>170                              | HQ05Q                                     | 20mm | HQ05G                                     | 20mm |  | 3602                                   | HQ05S                                 | 90mm | HQ05T                                 | 120  |
| 3067-<br>090                              | HQ05Q                                     | 20mm | HQ05G or<br>HQ05H                         | 20mm |  | 4351                                   | HQ05G                                 | 20mm | HQ05H                                 | 20   |
| 3067-<br>180                              | HQ05Q                                     | 20mm | HQ05G or<br>HQ05H                         | 20mm |  | 4352                                   | HQ05G                                 | 20mm | HQ05H                                 | 20   |
| 3068                                      | HQ05Q                                     | 20mm | HQ05G                                     | 20mm |  | 4400                                   | HQ05G                                 | 20mm | HQ05H                                 | 20   |
| 3080                                      | HQ05A                                     | 20mm | HQ05A                                     | 20mm |  | 4410                                   | N/A                                   | --   | HQ05Q                                 | 60   |
| 3082                                      | HQ05E                                     | 20mm | HQ05E                                     | 22mm |  | 4430                                   | N/A                                   | --   | HQ05Q                                 | 60   |
| 3085-<br>290                              | HQ05Q                                     | 20mm | HQ05H                                     | 20mm |  | 4440                                   | HQ05M                                 | 35mm | HQ05M                                 | 35   |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

|          |       |      |                  |      |  |      |                |      |       |    |
|----------|-------|------|------------------|------|--|------|----------------|------|-------|----|
| 3085-280 | HQ05Q | 20mm | HQ05H            | 20mm |  | 4650 | HQ05O          | 45mm | HQ05O | 45 |
| 3085-091 | HQ05Q | 20mm | HQ05G            | 20mm |  | 4660 | HQ05O or HQ05Q | 45mm | HQ05O | 45 |
| 3085-092 | HQ05Q | 20mm | HQ05G or HQ05H   | 20mm |  | 4670 | HQ05Q          | 60mm | HQ05Q | 60 |
| 3085-120 | HQ05Q | 20mm | HQ05G or HQ05H   | 20mm |  | 4680 | HQ05Q          | 60mm | HQ05Q | 60 |
| 3085-170 | HQ05Q | 20mm | HQ05G or HQ05H   | 20mm |  | 5100 | HQ05O          | 45mm | --    | -- |
| 3085-171 | HQ05Q | 20mm | HQ05G or HQ05H   | 20mm |  | 5520 | --             | --   | HQ05J | 25 |
| 3085-172 | HQ05Q | 20mm | HQ05G or HQ05H   | 20mm |  | 5530 | HQ05M          | 35mm | HQ05M | 35 |
| 3085-180 | HQ05Q | 20mm | HQ05G or HQ05H-- | 20mm |  | 5540 | HQ05O          | 45mm | --    | -- |
| 3085-181 | HQ05Q | 20mm | HQ05G-- or HQ05H | 20mm |  | 5550 | HQ05Q          | 60mm | --    | -- |
| 3085-182 | HQ05Q | 20mm | HQ05G or HQ05H   | 20mm |  | 5560 | HQ05S          | 90mm | --    | -- |
| 3085-890 | HQ05Q | 20mm | HQ05G            | 20mm |  | 7045 | HQ05Q          | 60mm | HQ05Q | 60 |
| 3085-891 | HQ05G | 20mm | HQ05G or HQ05H   | 20mm |  | 7050 | HQ05S          | 90mm | HQ05S | 80 |
| 3101     | HQ05B | 28mm | HQ05B            | 28mm |  | 7051 | HQ05S          | 90mm | HQ05S | 80 |
| 3102     | HQ05J | 25mm | HQ05J            | 25mm |  | 7055 | HQ05S          | 90mm | HQ05S | 80 |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

|          |       |      |        |      |  |          |                   |      |                   |     |
|----------|-------|------|--------|------|--|----------|-------------------|------|-------------------|-----|
| 3126-290 | HQ05K | 35mm | HQ05M  | 35mm |  | 7060     | HQ05S             | 90mm | HQ05S             | 80  |
| 3126-280 | HQ05K | 35mm | HQ05M  | 35mm |  | 7061     | HQ05S             | 90mm | HQ05S             | 80  |
| 3126-181 | HQ05M | 35mm | HQ05M  | 35mm |  | 7076     | HQ05S             | 90mm | HQ05S             | 80  |
| 3126-090 | HQ05K | 35mm | HQ05K1 | 35mm |  | 7080     | HQ05S             | 90mm | HQ05S             | 80  |
| 3126-091 | HQ05K | 35mm | HQ05M  | 35mm |  | 7080     | HQ05S             | 90mm | HQ05T             | 120 |
| 3126-190 | HQ05K | 35mm | HQ05K  | 35mm |  | 7081     | HQ05S             | 90mm | HQ05U             | 90  |
| 3127     | HQ05M | 35mm | HQ05M  | 35mm |  | 7101     | HQ05S             | 90mm | HQ05U             | 90  |
| 3140     | HQ05O | 45mm | HQ05O  | 45mm |  | 7115     | HQ05S             | 90mm | HQ05T             | 120 |
| 3152     | HQ05O | 45mm | HQ05O  | 45mm |  | 7556     | HQ05S             | 90mm | HQ05S             | 80  |
| 3170     | HQ05Q | 60mm | HQ05Q  | 60mm |  | 7570     | HQ05S             | 90mm | HQ05T             | 120 |
| 3200     | HQ05P | 60mm | HQ05P  | 60mm |  | 7585     | HQ05S             | 90mm | HQ05T             | 120 |
| 3201     | HQ05Q | 60mm | HQ05Q  | 60mm |  | Ready 4  | HQ05D             | 15mm | N/A               | --  |
| 3230     | HQ05S | 90mm | HQ05S  | 80mm |  | Ready 8  | HQ05D             | 15mm | N/A               | --  |
| 3300-091 | HQ05S | 90mm | HQ05S  | 80mm |  | Ready 12 | HQ05D             | 15mm | N/A               | --  |
| 3300-181 | HQ05S | --   | HQ05S  | 80mm |  | Ready 16 | HQ05D             | 15mm | N/A               | --  |
| 3300-280 | HQ05S | 90mm | HQ05S  | 80mm |  | Ready 24 | HQ05A             | 20mm | HQ05A             | 20  |
| 3300-980 | HQ05S | 90mm | HQ05S  | 80mm |  | Ready 40 | HQ05C or<br>HQ05F | 22mm | HQ05C or<br>HQ05F | 22  |
| 3305     | HQ05S | 90mm | HQ05S  | 80mm |  | Ready 56 | HQ05C or<br>HQ05F | 22mm | HQ05C or<br>HQ05F | 22  |



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## HQ05 Series Cross Reference Charts

### (Flygt/Grindex Pump Seals)

|      |       |      |       |       |  |                    |                             |      |                             |    |
|------|-------|------|-------|-------|--|--------------------|-----------------------------|------|-----------------------------|----|
| 3310 | HQ05S | 90mm | HQ05T | 120mm |  | Ready 90           | HQ05I                       | 28mm | HQ05I                       | 28 |
| 3311 | HQ05S | 90mm | HQ05T | 120mm |  | Ready 7            | HQ05G                       | 20mm | HQ05G                       | 20 |
| 3312 | HQ05S | 90mm | HQ05T | 120mm |  |                    |                             |      |                             |    |
| 3350 | HQ05S | 90mm | HQ05T | 120mm |  |                    |                             |      |                             |    |
| 3351 | HQ05S | 90mm | HQ05T | 120mm |  |                    |                             |      |                             |    |
| 3355 | HQ05S | 90mm | HQ05S | 80mm  |  | Grindex<br>Pump    | HQ SEAL                     |      | HQ SEAL                     |    |
| 3356 | --    | --   | HQ05S | 80mm  |  |                    | Alternative<br>Upper(inner) |      | Alternative<br>Lower(outer) |    |
| 3357 | HQ05S | 90mm | HQ05S | 80mm  |  |                    |                             |      |                             |    |
| 3400 | HQ05S | 90mm | HQ05U | 90mm  |  | Maxi               | HQ05O                       |      | HQ05N                       |    |
| 3500 | HQ05S | 90mm | HQ05T | 120mm |  | All other<br>pumps | HQ05Z                       |      | HQ05Z                       |    |



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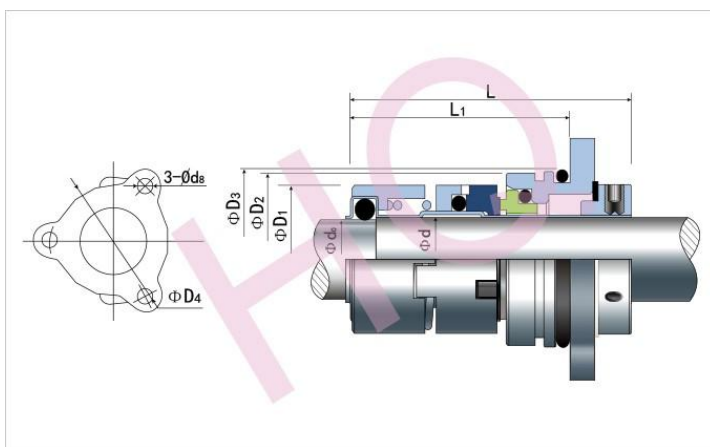
<http://www.hqseal.com>



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Type: Grundfos Pump Seal  
 Temperature:  $-30^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$   
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: Q1,Q2,A,B,U1,U2,P,E,V,  
 T,F,G,T2,M5



$d=12\text{mm}, 16\text{mm}, 43\text{mm}, 48\text{mm}.$

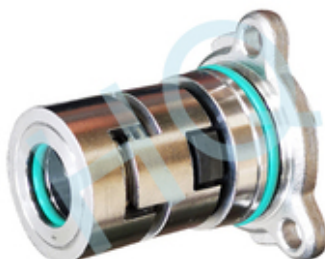
Suitable for use in Grundfos pumps: CR1, CR3, CR5, CR10, CR15, CR20, CR32, CR45, CR64, CR90 water pumps, O-ring assembly type CRN1, CRN3, CRN5, CRN10, CRN15, CRN20, CRN32, CRN



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Type: Grundfos Pump Seal  
Temperature: -30°C to +180°C  
Pressure:  $\leq 1.0\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: Q1,Q2,A,B,U1,U2,P,E,V,  
T,F,G,T2,M5

d=12mm,16mm,43mm,48mm.

Suitable for use in Grundfos pumps:CR1, CR3, CR5, CR10, CR15, CR20, CR32, CR45, CR64, CR90 water pumps, O-ring assembly type CRN1, CRN3, CRN5, CRN10, CRN15, CRN20, CRN32, CRN



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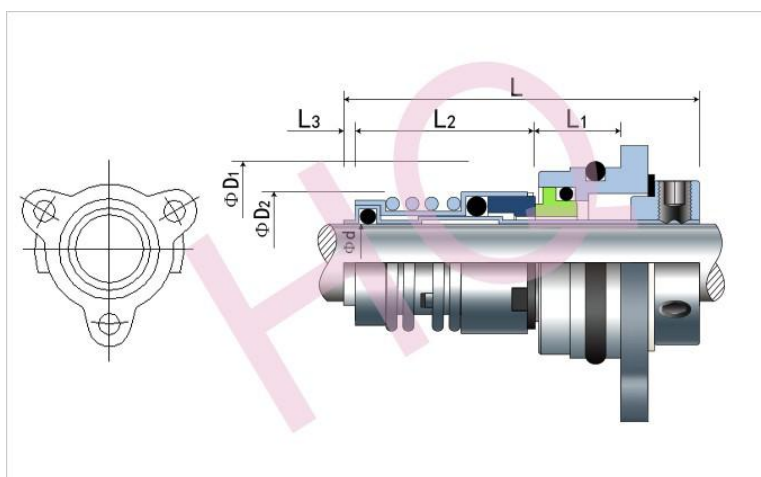


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## GR-Z-1



Type: Grundfos Pump Seal  
 Temperature:  $-30$  to  $+150^{\circ}\text{C}$   
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B, Q2, U2, P, E, N, V, F, G, Alfa



It suits for Grundfos Pumps.

Belongs to GR-Z series.

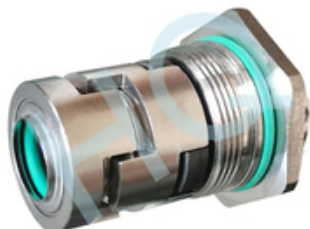
$d=12\text{mm}, 16\text{mm}, 22\text{mm}.$



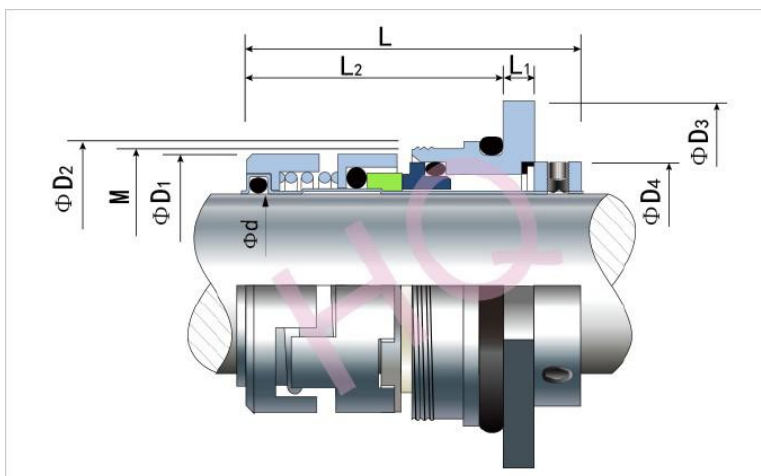
<http://www.hqseal.com>



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Type: Grundfos Pump Seals  
 Replacement: Equivalent with Grundfos type H seals  
 Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$   
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 25\text{m/s}$   
 Material: B,Q2,U2,P,E,V,F,G



| d  | D1   | D2 | D3   | D4 | L    | L1 | L2   | M      |
|----|------|----|------|----|------|----|------|--------|
| 12 | 25   | 29 | 33.5 | 25 | 55.5 | 4  | 44.5 | 28X1.5 |
| 14 |      |    |      |    |      |    |      |        |
| 16 | 30.5 | 34 | 40.5 | 29 | 58   | 5  | 46   | 33x1.5 |
| 18 |      |    |      |    |      |    |      |        |

Suit for CR1, CR3, CR5, CRN1, CRN3, CRN5, CRI1, CRI3, CRI5, CR32, CR45, CR64, CR90, CRN32, CRN45, CRN64, CRN90

Series Pumps.



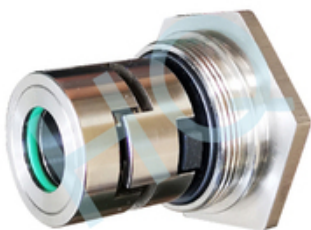
<http://www.hqseal.com>



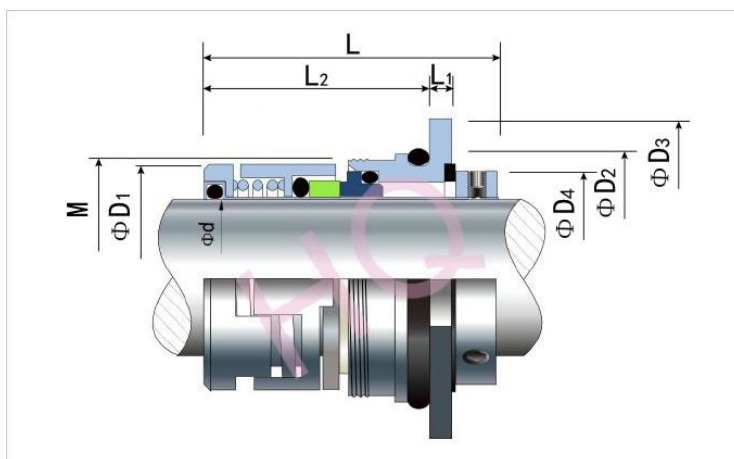
[hq@hqseal.com](mailto:hq@hqseal.com)



## GR-Z1-1



Type: Grundfos Pump Seals  
 Replacement: Replace Grundfos H type  
 Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$   
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 25\text{m/s}$   
 Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1   | D2 | D3   | D4 | L    | L1 | L2   | M      |
|-----------|------|----|------|----|------|----|------|--------|
| 12        | 25.0 | 29 | 33.5 | 25 | 55.5 | 4  | 44.5 | 28X1.5 |
| 16        | 30.5 | 34 | 40.5 | 29 | 58.0 | 5  | 46.0 | 33X1.5 |

Suit for CR1, CR3, CR5, CRN1, CRN3, CRN5, CRI1, CRI3, CRI5, CR32, CR45, CR64, CR90, CRN32, CRN45, CRN64, CRN90 Series Pumps.



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## GR-Z1-2



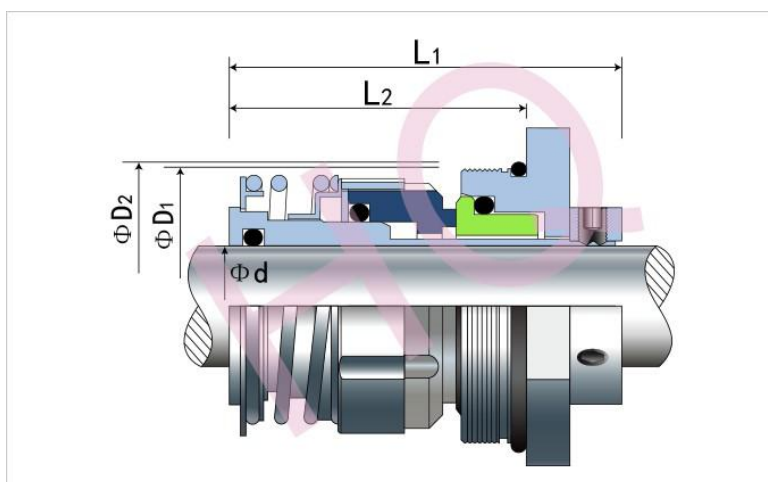
Type: Suit for Grundfos CR,CRI, CRN1, 3, 5,CR, CRI, CRN10, 15, 20,CR, CRN32, 45, 64, 90,CR, CRN120, 150 Pumps

Temperature: - 20 to +120°C

Pressure:  $\leq 2.5$  Mpa

Speed:  $\leq 25$  m/s

Material: Q1,Q2,V,K,E,P,G,M5,M6,T4



| d<br>(mm) | D1      | D2   | L1 | L2   |
|-----------|---------|------|----|------|
| 12        | M28X1.5 | 29.8 | 57 | 44.5 |
| 16        | M33X1.5 | 34.8 | 58 | 46.0 |



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## GR-Z1-3

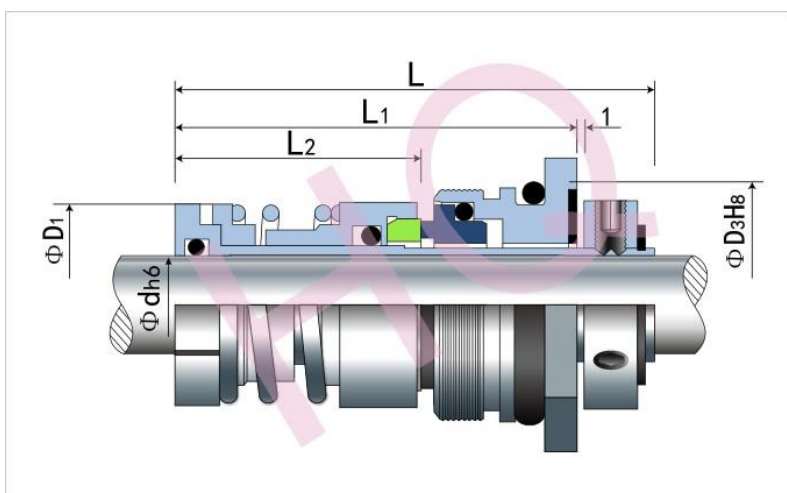


Type: Suit for Grundfos Pumps  
Temperature: -20 to +120°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 20\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm) | D1   | D3   | M       | L    | L1   | L2   |
|-----------|------|------|---------|------|------|------|
| 12        | 25.0 | 29.0 | M28X1.5 | 58.5 | 49.0 | 30.0 |
| 16        | 30.5 | 34.0 | M33X1.5 | 60.0 | 51.0 | 30.5 |



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Type: Suit for Grundfos CR1, CR3, CR5, CRN1, CRN3, CRN5, CRI1, CRI3, CRI5 Pumps, CR32, CR45, CR64, CR90 Pumps, CRN32, CRN45, CRN64, CRN90 Pumps Replacement:

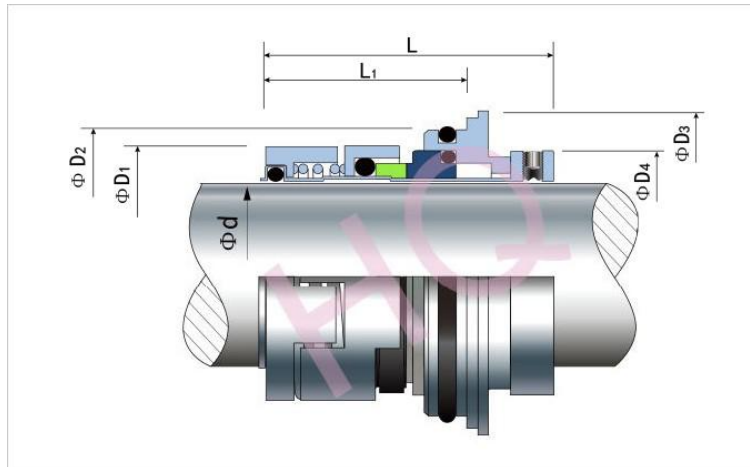
Replacement: Equivalent with Grundfos Type H seals/HQQV/HQQE

Temperature: -30°C to +200°C

Pressure:  $\leq 2.5$  Mpa

Speed:  $\leq 25$  m/s

Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1   | D2   | D3 | D4 | BORE<br>(H8) | L    | L1   |
|-----------|------|------|----|----|--------------|------|------|
| 22        | 39.5 | 51.2 | 60 | 39 | 50           | 70.5 | 50.5 |
| 32        |      |      |    |    |              |      |      |

Suit for CR1, CR3, CR5, CRN1, CRN3, CRN5, CRI1, CRI3, CRI5, CR32, CR45, CR64, CR90, CRN32, CRN45, CRN64, CRN90

Series Pumps.



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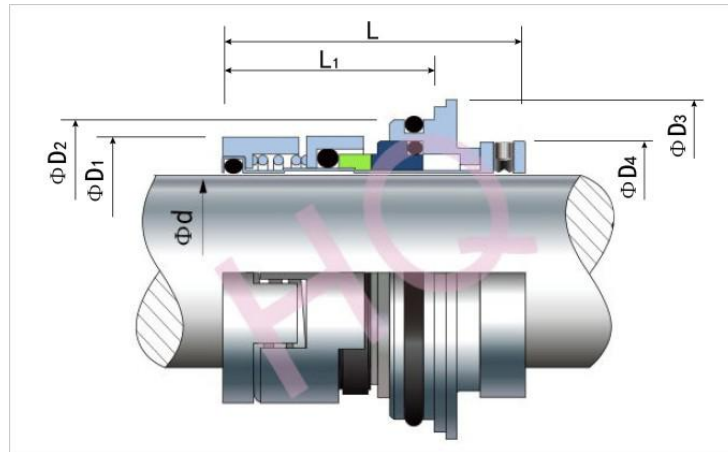


Type: Grundfos Pump Seals  
Replacement: Replace Grundfos H type  
Temperature: -30°C to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 25\text{m/s}$

Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1   | D2   | D3 | D4 | BORE<br>(H8) | L    | L1   |
|-----------|------|------|----|----|--------------|------|------|
| 22        | 39.5 | 51.2 | 60 | 39 | 50           | 70.5 | 50.5 |
|           |      |      |    |    |              |      |      |

Suit for CR1, CR3, CR5, CRN1, CRN3, CRN5, CRI1, CRI3, CRI5, CR32, CR45, CR64, CR90, CRN32, CRN45, CRN64, CRN90

Series Pumps.



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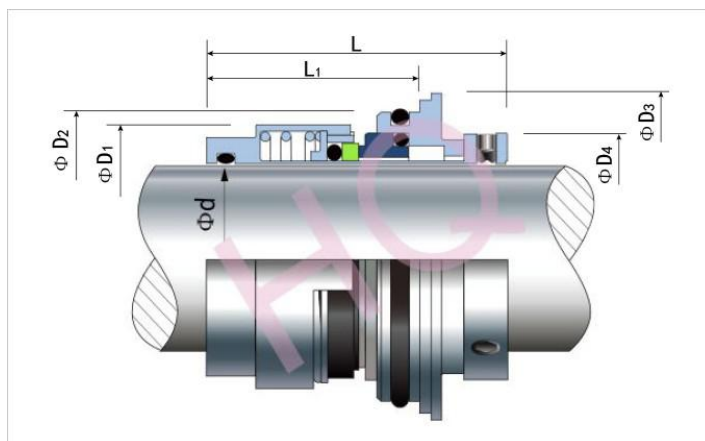
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## GR-Z2-2



Type: Grundfos Pump Seals  
Replacement: Replace Grundfos H type  
Temperature: -30°C to +200°C

Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 25\text{m/s}$   
Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1   | D2   | D3 | D4 | BORE<br>(H8) | L    | L1   |
|-----------|------|------|----|----|--------------|------|------|
| 22        | 39.5 | 51.2 | 60 | 39 | 50           | 70.5 | 50.5 |
|           |      |      |    |    |              |      |      |

Suit for CR1, CR3, CR5, CRN1, CRN3, CRN5, CRI1, CRI3, CRI5, CR32, CR45, CR64, CR90, CRN32, CRN45, CRN64, CRN90

Series Pumps.



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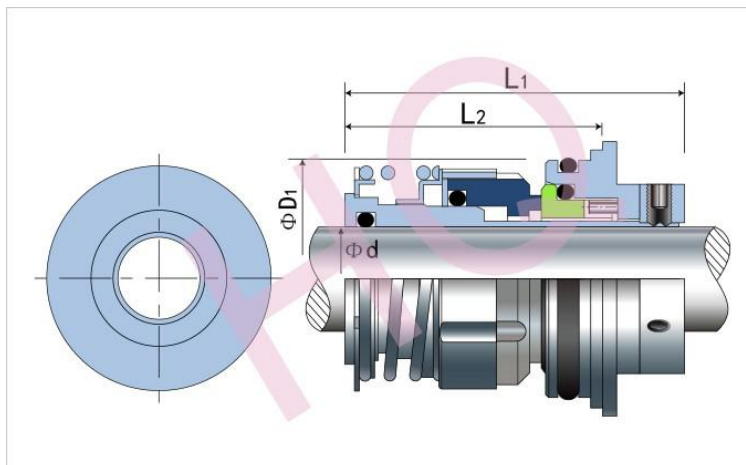


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## GR-Z2-3



Type: Grundfos Pump Seal  
 Temperature:  $-30$  to  $+180^{\circ}\text{C}$   
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 25\text{m/s}$   
 Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



$d=22\text{mm}$



<http://www.hqseal.com>



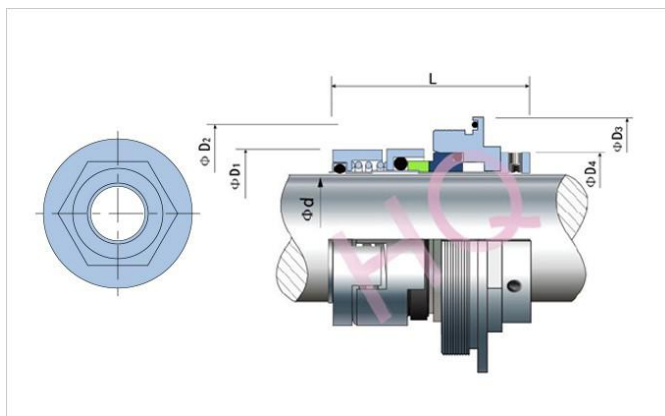
[hq@hqseal.com](mailto:hq@hqseal.com)



## GR-Z2-4



Type: Grundfos Pump Seal  
 Temperature: -30 to +180°C  
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 25\text{m/s}$   
 Material: B, Q2, U2, P, E, N, V, F, G, Alfa



d=22mm



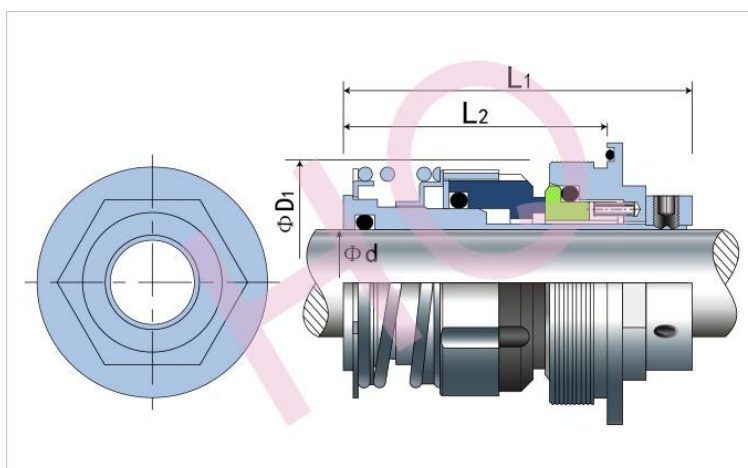
<http://www.hqseal.com>



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Type: Grundfos Pump Seal  
 Temperature: -30 to +180°C  
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 25\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



d=22mm



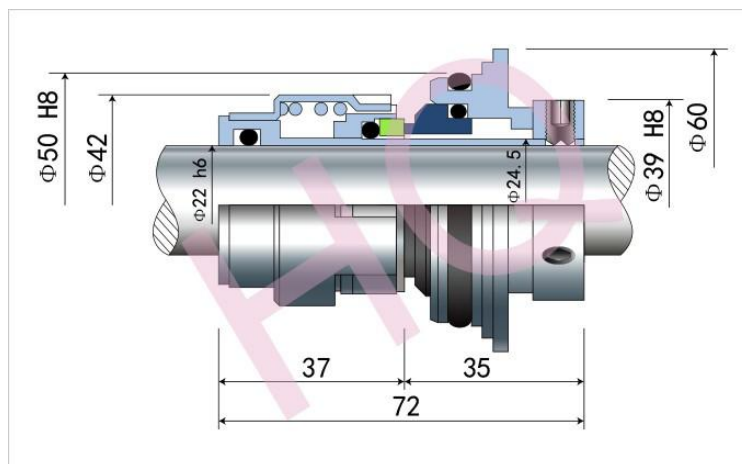
<http://www.hqseal.com>



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Type: Grundfos Pump Seal  
 Temperature: -30 to +180°C  
 Pressure:  $\leq 2.5\text{Mpa}$  Speed:  $\leq 25\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



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## GR-Z2-7



Type: Suit for GRUNDFOS "H" code

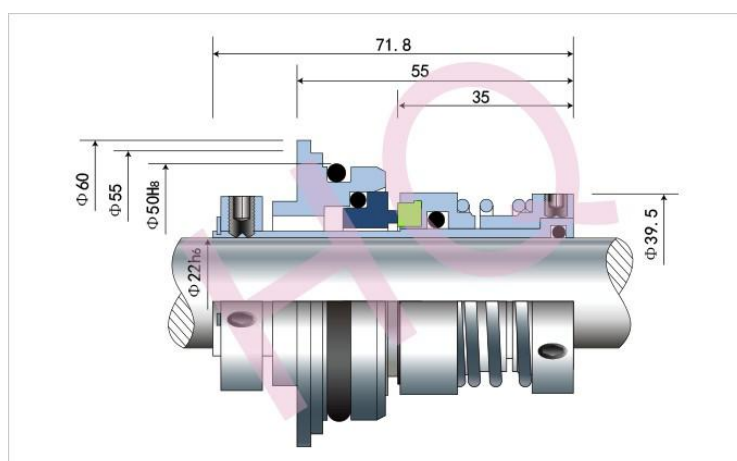
seals, Installed in CR, CRI and CRIE Pumps

Temperature: -30 to +180°C

Pressure: 2.1Mpa

Speed:  $\leq 22\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



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## GR-Z2-8



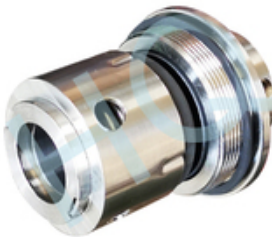
Type: Mechanical Seal  
Temperature: -30 to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 23\text{m/s}$

Material: B, Q2, U2, P, E, N, V, F, G, Alfa

## GR-Z2-9



Type: Mechanical Seal  
Temperature: -30 to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 23\text{m/s}$

Material: B, Q2, U2, P, E, N, V, F, G, Alfa

This is 22mm Type E Cartridge Seal.

It is machined type, replace the original Grundfos pump seals.

## GR-Z2-10



Type: Grundfos Pump Seal  
Replacement: Suit for Grundfos SL Frame A pumps  
Temperature: -20 to +180°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B, Q2, U2, P, E, N, V, F, G, Alfa

Suit for Grundfos pumps.

A new type based on GR-Z2-1.



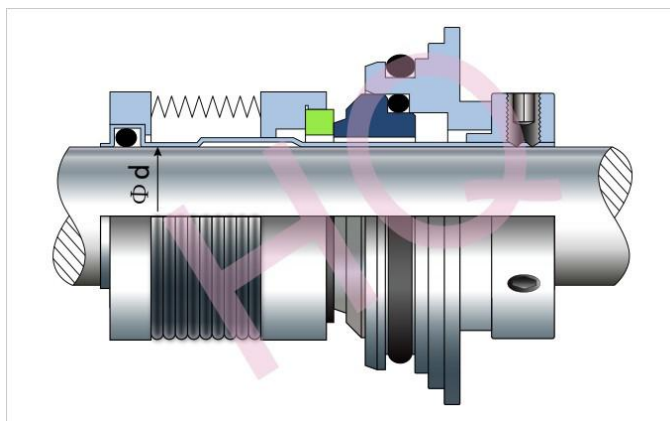
<http://www.hqseal.com>



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Type: Grundfos Pump Seal  
Replacement: Equivalent with Grundfos K  
type seal  
Temperature: -20 to +120°C  
Pressure:  $\leq 2.8\text{Mpa}$   
Speed:  $\leq 25\text{m/s}$   
Material: A,B,U1,U2,Q1,Q2,F,V,G,K,T,M5



d=22mm

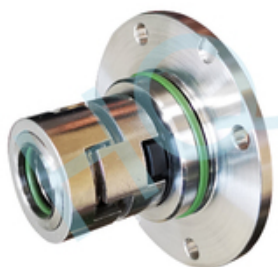


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## GR-Z4



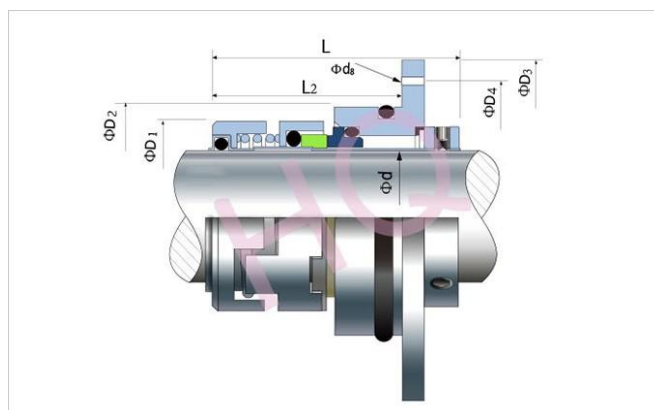
Type: Suit for GRUNDFOS CR,CRN  
and CRI series pumps

Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 25\text{m/s}$

Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | d8  | D1   | D2 | D3 | D4 | L    | L2   |
|-----------|-----|------|----|----|----|------|------|
| 12        | 6.0 | 25.0 | 31 | 58 | 44 | 55.5 | 44.5 |
| 16        | 6.5 | 30.0 | 34 | 65 | 49 | 58.0 | 46.0 |
| 22        | 7.0 | 39.5 | 50 | 90 | 72 | 70.5 | 50.5 |

## GR-Z4-0



Type: Grundfos Pump Seal

Temperature:  $-25$  to  $+150^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa

d=12mm,16mm,22mm.



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## GR-Z4-1



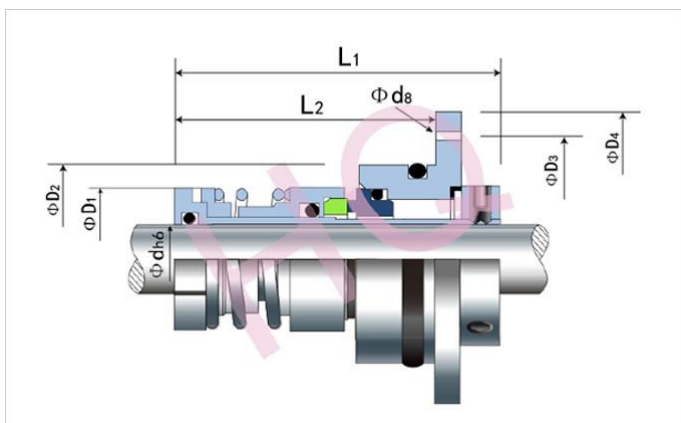
Type: Suit for Grundfos Pumps  
 Temperature: -30 to +180°C  
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 23\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa

d=12mm,16mm,22mm.

## GR-Z4-2



Type: Grundfos Pump Seal  
 Temperature: -30 to +180°C  
 Pressure:  $\leq 2.1\text{Mpa}$   
 Speed:  $\leq 20\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



d=12mm,16mm,22mm.



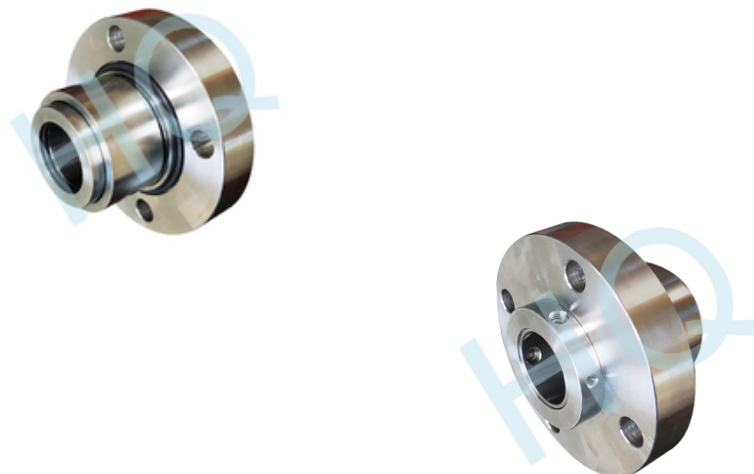
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## GR-Z4-3



Type: Grundfos Pump Seal

Replacement: Suit for CR,CRN, CRI 120 Series pumps

Temperature: -30 to +150°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for CR,CRN, CRI 120 Series pumps

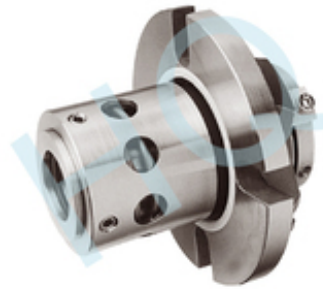
d=32mm



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Type: Grundfos Pump Seal  
Temperature: -30 to +180°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 20\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for Grundfos Pumps

d=12mm,16mm,22mm,35mm.



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Type: Suit for Grundfos,FRISTAM  
FP,FPE,FPX,FR,FT,FZ Pumps

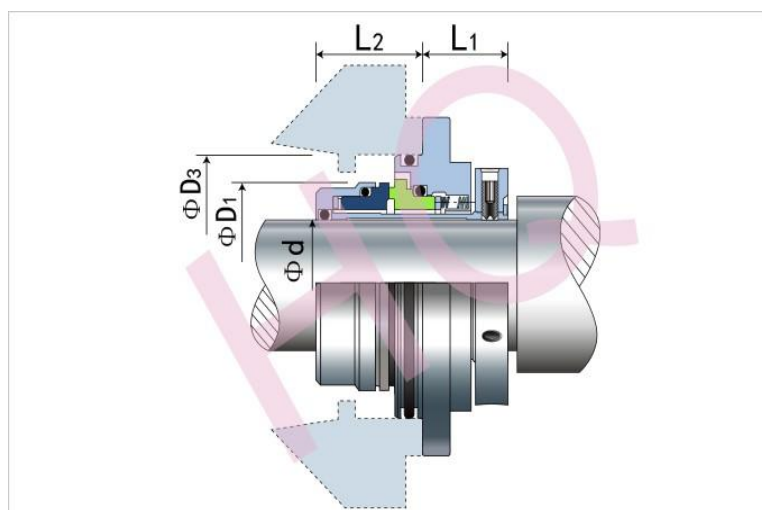
Replacement: AES MOGCE

Temperature: -20 to +180°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 30          | 46.8  | 60    | 24.9  | 30.9  |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.181       | 1.843 | 2.362 | 0.978 | 1.216 |



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## GR-Z7



Type: Grundfos Pump Seal  
Replacement: Suit for Grundfos SL Frame A pumps  
Temperature: -20 to +180°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for Grundfos SL Frame A pumps

## GR-Z8(TD5)



Type: Mechanical Seal  
Replacement: Suit for Southern Pump  
Temperature: -20 to +100°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for Sountern Pumps.

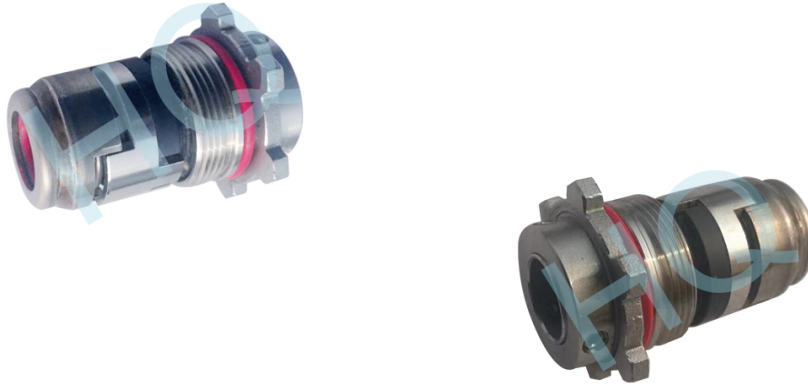
d=40mm,43mm,48mm,55mm,60mm.



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Type: Mechanical Seal

Replacement: Suit for Southern Pump

Temperature: -20 to +100°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for Sountern Pumps.

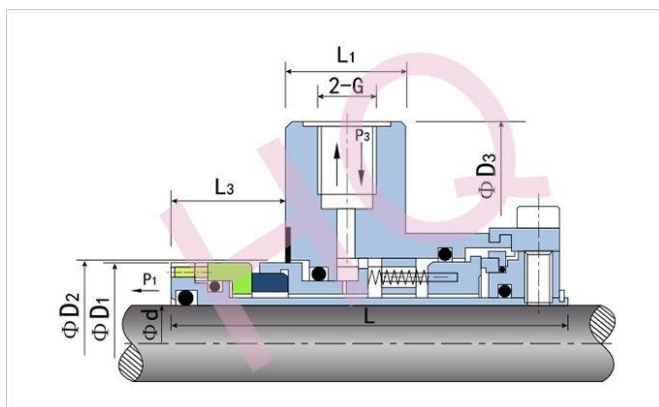


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# GR-G02(CARTEX)



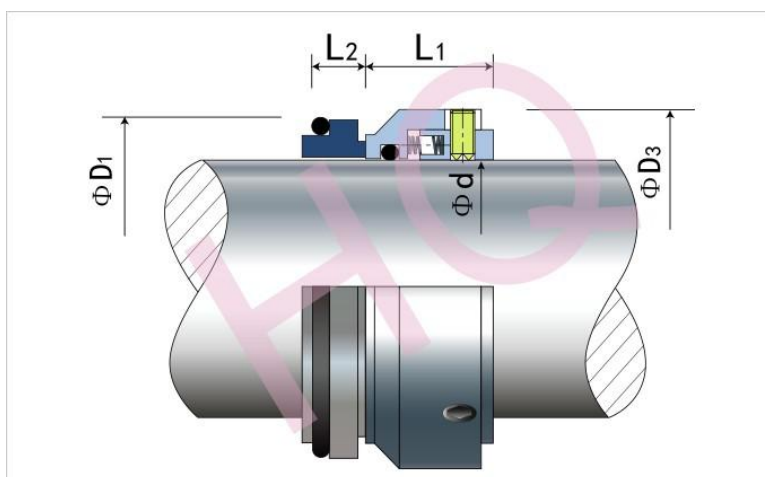
Type: Cartridge Seal  
Replacement: Burgmann CARTEX  
Temperature: -40 to +204°C

Pressure:  $\leq 4.0\text{Mpa}$   
Speed:  $\leq 23\text{m/s}$   
Material: Q1,Q2,U2,T,V,M1,F,G,M

| d<br>(mm) | D1    | D2    |       | D3  | D5  | L     | L1   | L3 | S  | G<br>(Inch) |
|-----------|-------|-------|-------|-----|-----|-------|------|----|----|-------------|
|           |       | min   | max   |     |     |       |      |    |    |             |
| 25        | 43.0  | 51.0  | 44.0  | 105 | 62  | 86.5  | 25.4 | 24 | 14 | 1/4"        |
| 28        | 46.0  | 52.0  | 47.0  | 105 | 62  | 86.5  | 25.4 | 24 | 14 | 1/4"        |
| 30        | 48.0  | 56.0  | 49.0  | 105 | 65  | 86.5  | 25.4 | 24 | 14 | 1/4"        |
| 33        | 50.0  | 57.0  | 51.0  | 110 | 67  | 86.5  | 25.4 | 24 | 14 | 1/4"        |
| 35        | 53.0  | 61.0  | 54.0  | 113 | 70  | 86.5  | 25.4 | 24 | 14 | 1/4"        |
| 38        | 56.0  | 66.0  | 57.0  | 123 | 75  | 86.5  | 25.4 | 24 | 14 | 3/8"        |
| 40        | 58.0  | 68.0  | 59.0  | 123 | 78  | 86.5  | 25.4 | 24 | 16 | 3/8"        |
| 43        | 60.0  | 70.5  | 61.5  | 133 | 80  | 86.5  | 25.4 | 24 | 16 | 3/8"        |
| 45        | 62.5  | 73.0  | 64.0  | 138 | 81  | 86.5  | 25.4 | 24 | 16 | 3/8"        |
| 48        | 65.5  | 75.0  | 67.0  | 138 | 84  | 86.5  | 25.4 | 24 | 16 | 3/8"        |
| 50        | 68.0  | 78.0  | 69.0  | 148 | 87  | 86.5  | 25.4 | 24 | 16 | 3/8"        |
| 55        | 73.0  | 83.0  | 74.0  | 148 | 90  | 86.5  | 25.4 | 24 | 18 | 3/8"        |
| 60        | 78.0  | 91.0  | 79.0  | 157 | 102 | 86.5  | 25.4 | 24 | 18 | 3/8"        |
| 65        | 83.0  | 98.5  | 84.5  | 163 | 109 | 86.5  | 25.4 | 24 | 18 | 3/8"        |
| 70        | 93.0  | 108.0 | 95.0  | 178 | 118 | 86.5  | 25.4 | 24 | 18 | 3/8"        |
| 75        | 100.0 | 118.0 | 101.6 | 190 | 129 | 108.0 | 28.0 | 30 | 18 | 3/8"        |
| 80        | 106.4 | 124.0 | 108.0 | 195 | 135 | 108.0 | 28.0 | 30 | 18 | 3/8"        |
| 85        | 109.5 | 128.0 | 111.1 | 198 | 139 | 108.0 | 28.0 | 30 | 22 | 3/8"        |
| 90        | 115.9 | 135.0 | 117.5 | 205 | 145 | 108.0 | 28.0 | 30 | 22 | 3/8"        |
| 95        | 119.1 | 138.0 | 120.7 | 208 | 148 | 108.0 | 28.0 | 30 | 22 | 3/8"        |
| 100       | 125.4 | 144.0 | 127.0 | 218 | 154 | 108.0 | 28.0 | 30 | 22 | 3/8"        |



Type: Grundfos Pump Seals  
 Replacement: LIDERING GR-SA-65  
 Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$   
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



\*Siut for Grundfos Pumps

\*Shaft size: 30mm, 38mm, 50mm, 65mm.



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## GR-G12(SSAIS06)



Type: Multi Spring Seal, Suit for Grundfos Sarlin

Pump

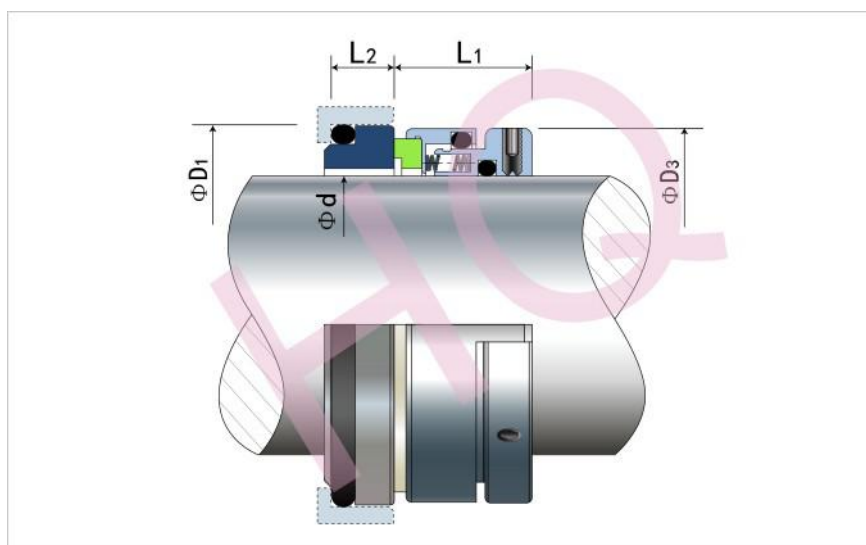
Replacement: AES SSAIS06, Upper Seal for Grundfos S range submersible pump seals

Temperature: -30°C to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1 | D3 | L1 | L2 |
|-----------|----|----|----|----|
| 30        | 45 | 46 | 24 | 10 |
| 38        | 56 | 58 | 27 | 11 |
| 50        | 70 | 70 | 27 | 13 |
| 65        | 85 | 90 | 32 | 13 |

| d(inch) | D1    | D3    | L1    | L2    |
|---------|-------|-------|-------|-------|
| 1.181   | 1.772 | 1.811 | 0.945 | 0.394 |
| 1.496   | 2.205 | 2.283 | 1.063 | 0.433 |
| 1.969   | 2.756 | 2.756 | 1.063 | 0.512 |
| 2.559   | 3.348 | 3.543 | 1.260 | 0.512 |



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## GR-G13(M010SA)



Type: Multi Spring Seal, Suit for Grundfos Sarlin Pumps

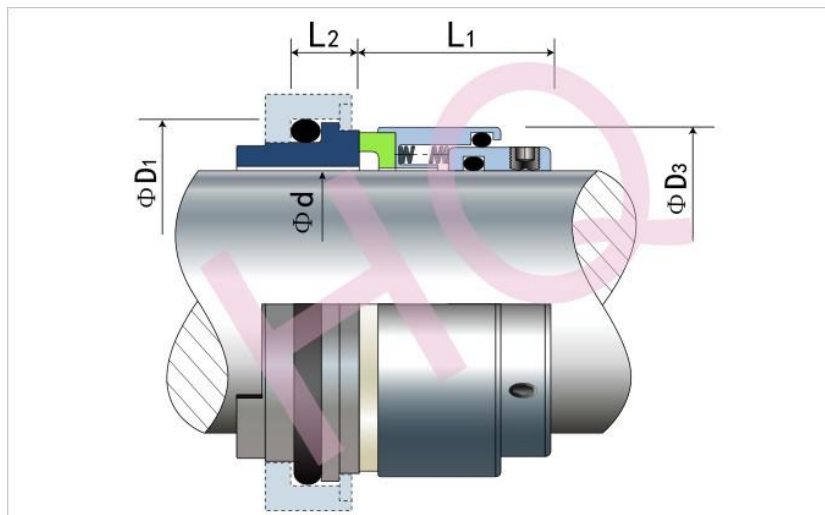
Replacement: AES M010SA, ROPLAN 210, Lower Seal for Grundfos S range submersible pump seals

Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, Q2, U2, P, E, V, F, G



| d<br>(mm) | D1   | D3 | L1   | L2   |
|-----------|------|----|------|------|
| 25        | 38.0 | 39 | 29.9 | 9.6  |
| 32        | 48.0 | 46 | 32.4 | 11.0 |
| 38        | 55.0 | 54 | 33.9 | 11.2 |
| 50        | 69.3 | 66 | 34.4 | 14.0 |
| 65        | 85.4 | 85 | 38.9 | 15.3 |

| d(inch) | D1    | D3    | L1    | L2    |
|---------|-------|-------|-------|-------|
| 0.984   | 1.498 | 1.535 | 1.177 | 0.378 |
| 1.260   | 1.890 | 1.811 | 1.276 | 0.433 |
| 1.496   | 2.165 | 2.126 | 1.335 | 0.441 |
| 1.969   | 2.728 | 2.598 | 1.354 | 0.551 |
| 2.559   | 3.362 | 3.346 | 0.531 | 0.602 |



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## GR-G14(43)



Type: Double "Plug in" Cartridge seals. Suit for

GR-SL1 Pumps

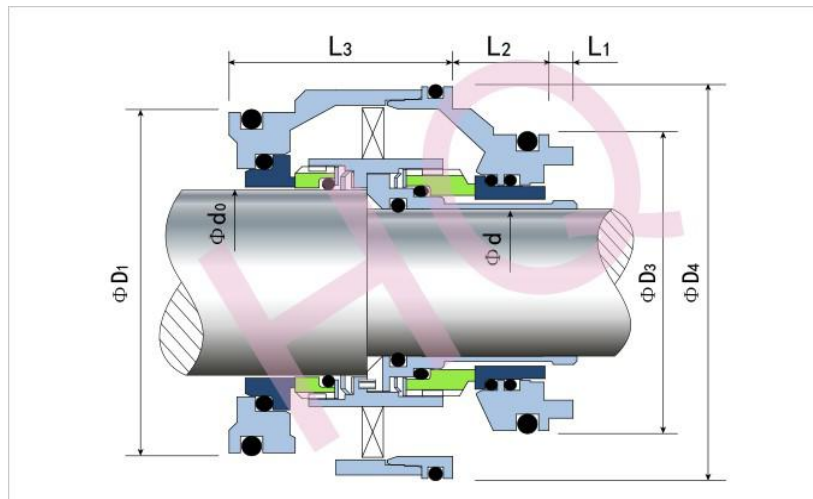
Replacement: Suit for Grundfos SL1 Frame A pumps

Temperature: -20 to +160°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,P,E,V,F,G



Suit for Grundfos Sewage Pumps.

d=55mm+43mm



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## GR-G15(40S8)



Type: Upper seal to suit for Grundfos S- series

Pumps

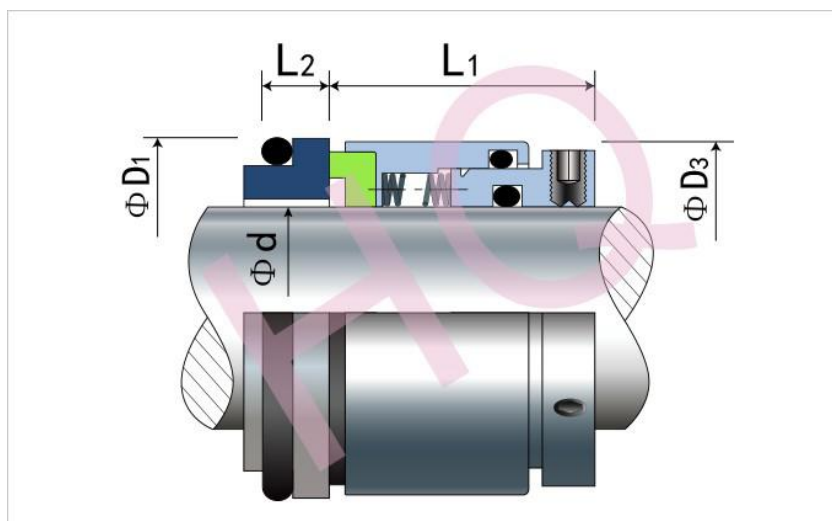
Replacement: Vulcan 40S8

Temperature:  $-30^{\circ}\text{C}$  to  $+175^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: A,B,Q1,Q2,V,E,P,F,G,M,T6



| d<br>(mm) | D1 | D3   | L1   | L3   | Type code |
|-----------|----|------|------|------|-----------|
| 38        | 56 | 53.0 | 34.0 | 11.0 | 40S       |
| 50        | 70 | 65.6 | 34.5 | 9.5  | 40S8      |
| 65        | 85 | 84.2 | 36.5 | 11.0 | 40S8      |



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# GR-G16(42)



Type: Lower seal to suit for Grundfos S- Series

Pumps

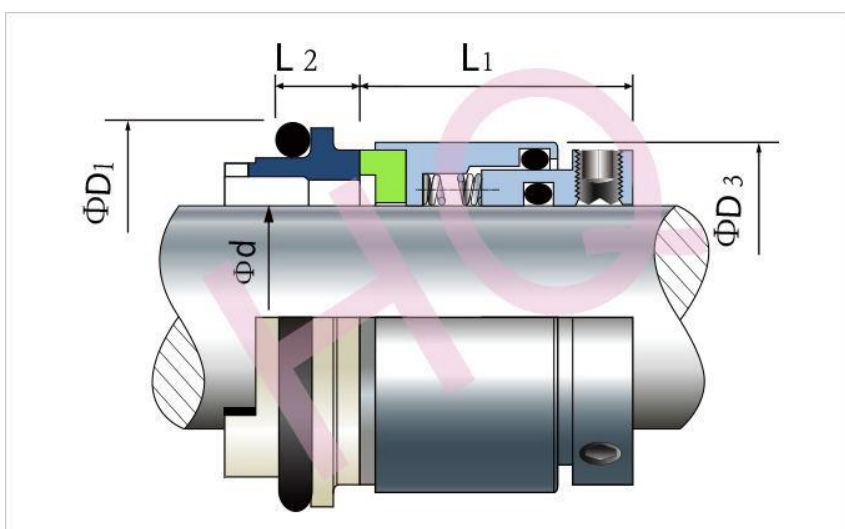
Replacement: Vulcan 42

Temperature: -30°C to +180°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,T,Graphite,V,G,F,M,T6



| d<br>(mm) | D1 | D3   | L1   | L3   |
|-----------|----|------|------|------|
| 32        | 48 | 46.0 | 34.0 | 11.0 |
| 38        | 55 | 53.0 | 34.0 | 11.5 |
| 50        | 70 | 65.6 | 34.5 | 14.0 |
| 65        | 85 | 84.2 | 66.0 | 15.0 |



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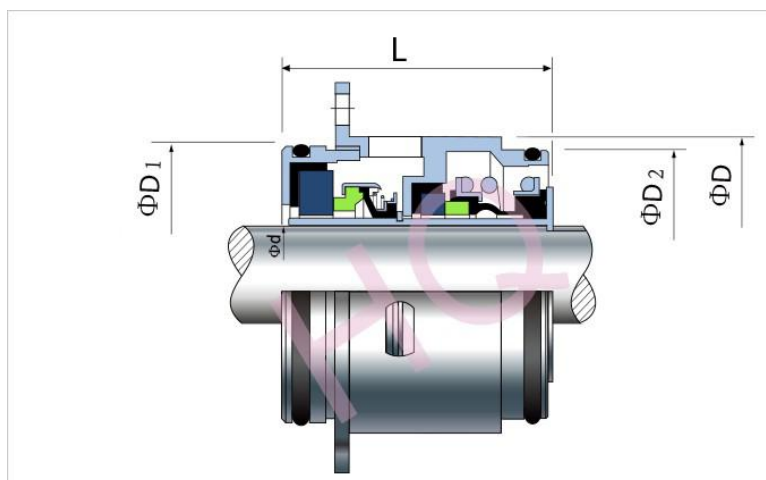


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Type: Suit Grundfos pump SE series pumps  
 Replacement: Lidering GR-SE  
 Temperature: -20°C to +180°C

Pressure:  $\leq 1.2\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1 | D2 | D  | L    |
|-----------|----|----|----|------|
| 22        | 58 | 56 | 62 | 63.5 |
| 32        | 71 | 68 | 73 | 70.0 |



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## GR-G20(1615)



Type: Suit for GRUNDFOS CR,CRN and CRI

series pumps

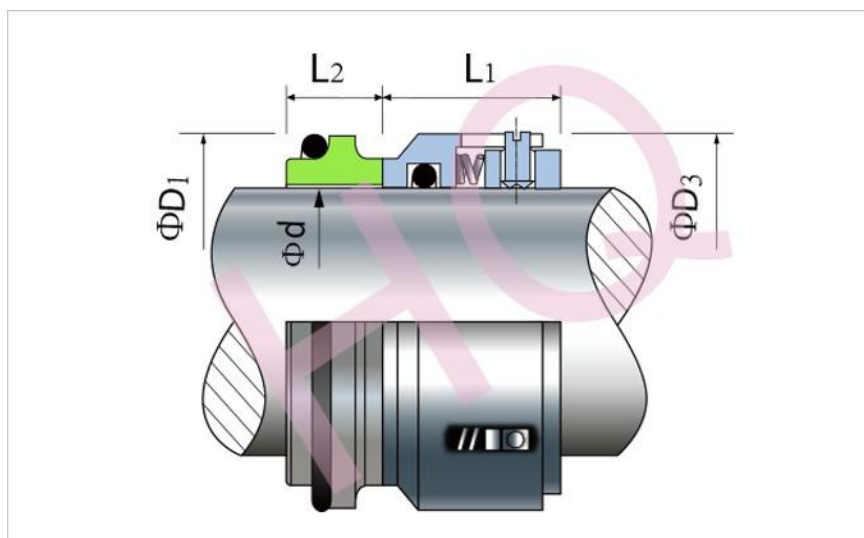
Replacement: Vulcan 1615, Billi BB30L

Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: Stainless steel rotary face and antimony  
carbon seats and viton O-ring.



| d<br>(mm) | D1 | D3   | L1   | L2   |
|-----------|----|------|------|------|
| 30        | 45 | 45.5 | 28.0 | 10.5 |
| 38        | 56 | 55.0 | 31.0 | 14.0 |
| 50        | 70 | 70.5 | 32.5 | 15.0 |



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# GR-G35(HJ92N)

Type: Wave Spring Mechanical Seal, Suit for  
Grundfos CRT, NK Pumps, CLM-G, CLP-G  
Pumps

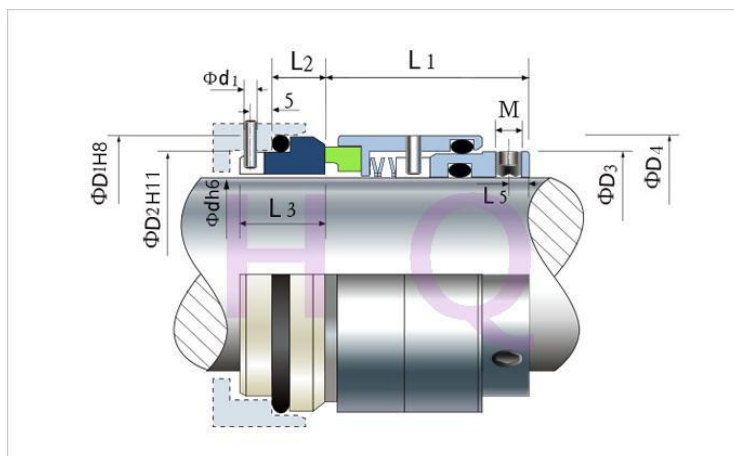
Replacement: Burgmann HJ92N, Grundfos Type D

Temperature: -30°C to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



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| d<br>(mm) | D1 | D2 | D3   | D4 | d1 | L1   | L2  | L3   | L5  | M  |
|-----------|----|----|------|----|----|------|-----|------|-----|----|
| 18        | 33 | 27 | 26.0 | 32 | 3  | 30.5 | 7.0 | 15.0 | 3.0 | M4 |
| 20        | 35 | 29 | 28.0 | 34 | 3  | 30.5 | 7.0 | 15.0 | 3.0 | M4 |
| 22        | 37 | 31 | 30.0 | 36 | 3  | 30.5 | 7.0 | 15.0 | 3.0 | M4 |
| 24        | 39 | 33 | 32.5 | 38 | 3  | 33.0 | 7.0 | 15.0 | 3.5 | M5 |
| 25        | 40 | 34 | 33.5 | 39 | 3  | 33.0 | 7.0 | 15.0 | 3.5 | M5 |
| 28        | 43 | 37 | 36.5 | 42 | 3  | 35.5 | 7.0 | 15.0 | 3.5 | M5 |
| 30        | 45 | 39 | 38.5 | 44 | 3  | 35.5 | 7.0 | 15.0 | 3.5 | M5 |
| 32        | 48 | 42 | 41.5 | 47 | 3  | 35.5 | 7.0 | 15.0 | 3.5 | M5 |
| 33        | 48 | 42 | 41.5 | 47 | 3  | 35.5 | 7.0 | 15.0 | 3.5 | M5 |
| 35        | 50 | 44 | 43.5 | 49 | 3  | 35.5 | 7.0 | 15.0 | 3.5 | M5 |
| 38        | 56 | 49 | 47.5 | 54 | 4  | 37.0 | 8.0 | 16.0 | 4.0 | M5 |
| 40        | 58 | 51 | 49.5 | 56 | 4  | 37.0 | 8.0 | 16.0 | 4.0 | M5 |
| 43        | 61 | 54 | 52.5 | 59 | 4  | 37.0 | 8.0 | 16.0 | 4.0 | M5 |
| 45        | 63 | 56 | 54.5 | 61 | 4  | 37.0 | 8.0 | 16.0 | 4.0 | M5 |
| 48        | 66 | 59 | 57.5 | 64 | 4  | 37.0 | 8.0 | 16.0 | 4.0 | M5 |
| 50        | 70 | 62 | 59.5 | 66 | 4  | 38.0 | 9.5 | 17.0 | 4.5 | M6 |

# GR-G36(HJ977GN)

Type: Wave Spring Mechanical Seal, Suit for  
Grundfos CRT, NK Pumps, CLM-G, CLP-G  
Pumps

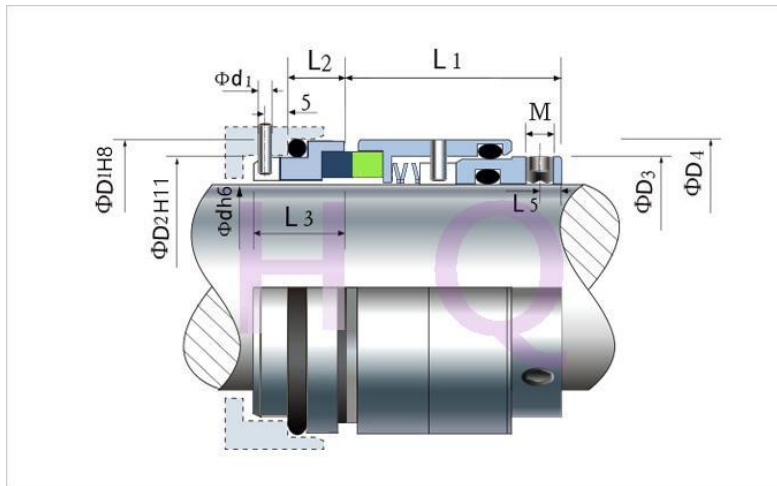
Replacement: Burgmann HJ977GN, Grundfos Type D

Temperature:  $-20^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: A, B, Q1, Q2, V, E, P, F, G, M, T6



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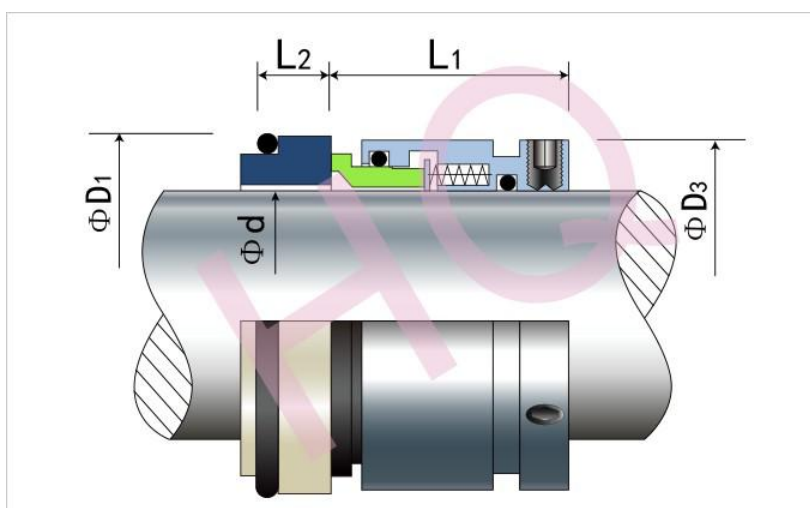
| d<br>(mm) | D1 | D2 | D3   | D4 | d1 | L1   | L2   | L3   | L5  | M  |
|-----------|----|----|------|----|----|------|------|------|-----|----|
| 18        | 33 | 27 | 26.0 | 32 | 3  | 28.5 | 9.0  | 17.0 | 3.0 | M4 |
| 20        | 35 | 29 | 28.0 | 34 | 3  | 28.5 | 9.0  | 17.0 | 3.0 | M4 |
| 22        | 37 | 31 | 30.0 | 36 | 3  | 28.5 | 9.0  | 17.0 | 3.0 | M4 |
| 24        | 39 | 33 | 32.5 | 38 | 3  | 31.0 | 9.0  | 17.0 | 3.5 | M5 |
| 25        | 40 | 34 | 33.5 | 39 | 3  | 31.0 | 9.0  | 17.0 | 3.5 | M5 |
| 28        | 43 | 37 | 36.5 | 42 | 3  | 33.0 | 9.5  | 17.5 | 3.5 | M5 |
| 30        | 45 | 39 | 38.5 | 44 | 3  | 33.0 | 9.5  | 17.5 | 3.5 | M5 |
| 32        | 48 | 42 | 41.5 | 47 | 3  | 33.0 | 9.5  | 17.5 | 3.5 | M5 |
| 33        | 48 | 42 | 41.5 | 47 | 3  | 33.0 | 9.5  | 17.5 | 3.5 | M5 |
| 35        | 50 | 44 | 43.5 | 49 | 3  | 33.0 | 9.5  | 17.5 | 3.5 | M5 |
| 38        | 56 | 49 | 47.5 | 54 | 4  | 34.5 | 10.5 | 18.5 | 4.0 | M5 |
| 40        | 58 | 51 | 49.5 | 56 | 4  | 34.5 | 10.5 | 18.5 | 4.0 | M5 |
| 43        | 61 | 54 | 52.5 | 59 | 4  | 34.5 | 10.5 | 18.5 | 4.0 | M5 |
| 45        | 63 | 56 | 54.5 | 61 | 4  | 34.5 | 10.5 | 18.5 | 4.0 | M5 |
| 48        | 66 | 59 | 57.5 | 64 | 4  | 34.5 | 10.5 | 18.5 | 4.0 | M5 |
| 50        | 70 | 62 | 59.5 | 66 | 4  | 35.5 | 12.0 | 19.5 | 4.5 | M6 |



## GR-G37



Type: Upper seal to suit for Grundfos CRT、NK、  
CLM-G、CLP-G Series Pumps  
Replacement: Original Grundfos Seal  
Temperature: -30°C to +200°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1 | D3 | L1 | L2 |
|-----------|----|----|----|----|
| 38        | 56 | 58 | 27 | 11 |
| 50        | 70 | 70 | 27 | 13 |
| 65        | 85 | 90 | 32 | 13 |



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## GR-G38



Type: Lower seal to suit for Grundfos CRT、NK、

CLM-G、CLP-G Series Pumps

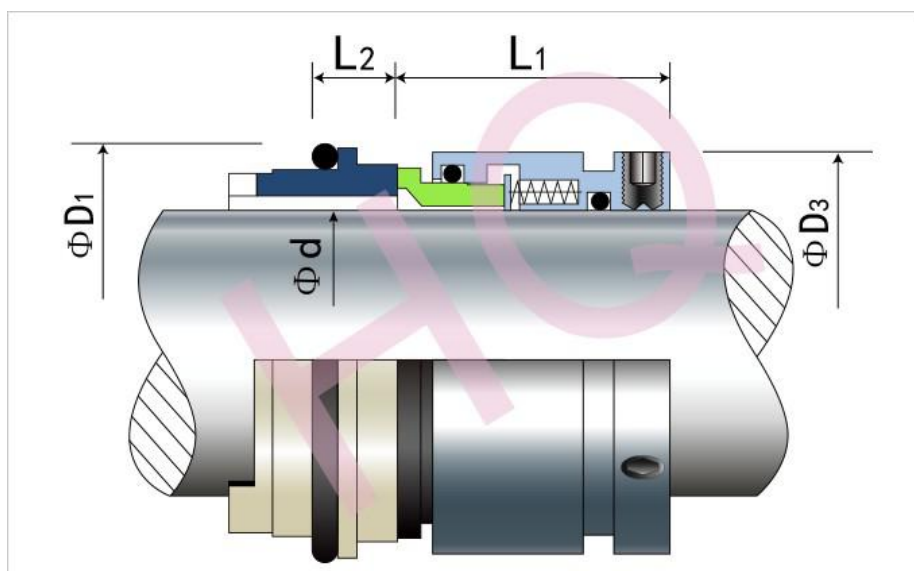
Replacement: Original Grundfos Seal

Temperature: -30°C to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,V,F,G



| d<br>(mm) | D1   | D3 | L1   | L2   |
|-----------|------|----|------|------|
| 32        | 48.0 | 46 | 32.4 | 11.0 |
| 38        | 55.0 | 54 | 33.9 | 11.2 |
| 50        | 69.3 | 66 | 34.4 | 14.0 |
| 65        | 85.4 | 85 | 38.9 | 15.3 |



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## GR-G40



Type: Grundfos double entry Pump Seals  
Temperature: -40 to +180°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for Grundfos double entry Pumps

Manufacture it according to client's requirement



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Type: Grundfos Pump Seal  
Replacement: ITT 1335  
Temperature: -20 to +200°C  
Pressure:  $\leq 1.0\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Suit for Grundfos double entry Pumps

Manufacture it according to client's requirement



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# HQM7N/M74/M74F

Type: Wave Spring Mechanical Seal

Replacement: Burgmann M7N/M74/M74F

Temperature: -20°C to +120°C

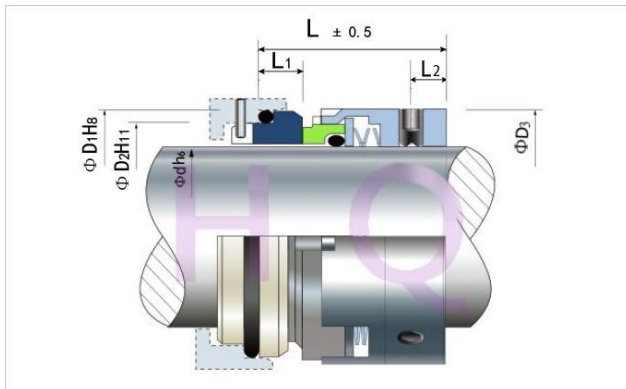
Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

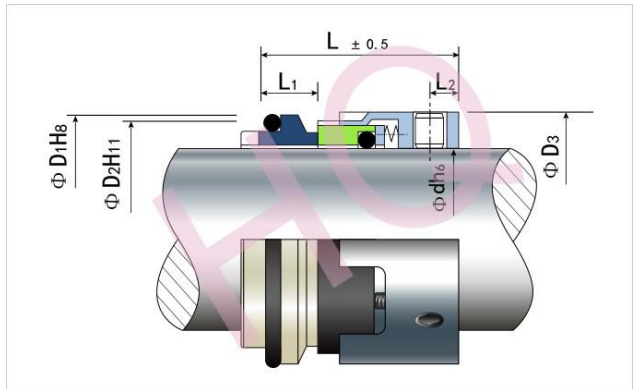
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



HQM7N



HQM74



| d<br>(mm) | D1 | D2 | D3 | L    | L1   | L2 |
|-----------|----|----|----|------|------|----|
| 14        | 25 | 21 | 25 | 35.0 | 10.0 | 6  |
| 16        | 27 | 23 | 27 | 35.0 | 10.0 | 6  |
| 18        | 33 | 27 | 33 | 37.5 | 11.5 | 7  |
| 20        | 35 | 29 | 35 | 37.5 | 11.5 | 7  |
| 22        | 37 | 31 | 37 | 37.5 | 11.5 | 7  |
| 24        | 39 | 33 | 39 | 40.0 | 11.5 | 8  |
| 25        | 40 | 34 | 40 | 40.0 | 11.5 | 8  |
| 28        | 43 | 37 | 43 | 42.5 | 11.5 | 8  |
| 30        | 45 | 39 | 45 | 42.5 | 11.5 | 8  |
| 32        | 48 | 42 | 47 | 42.5 | 11.5 | 8  |
| 33        | 48 | 42 | 48 | 42.5 | 11.5 | 8  |
| 35        | 50 | 44 | 50 | 42.5 | 11.5 | 8  |
| 38        | 56 | 49 | 55 | 45.0 | 14.0 | 8  |
| 40        | 58 | 51 | 57 | 45.0 | 14.0 | 8  |
| 43        | 61 | 54 | 60 | 45.0 | 14.0 | 8  |
| 45        | 63 | 56 | 62 | 45.0 | 14.0 | 8  |
| 48        | 66 | 59 | 65 | 45.0 | 14.0 | 8  |



Type: Suit for JP, CH8, CH12, CRK (I)2,  
CRK(I)4,SPK1, SPK2,SPK4,SPK8,CR2,  
CR4 Series Pumps

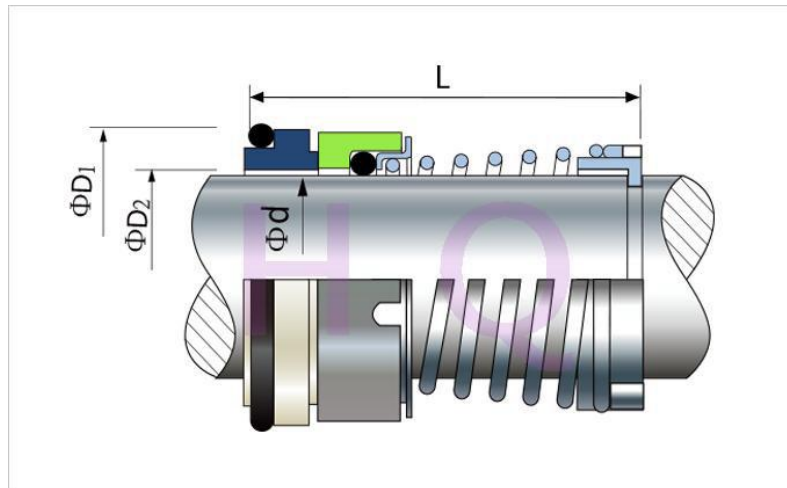
Replacement: Equivalent with Grundfos type C seals

Temperature: -20°C to +180°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1   | D2 | L    |
|-----------|------|----|------|
| 12        | 22.7 |    | 44.5 |



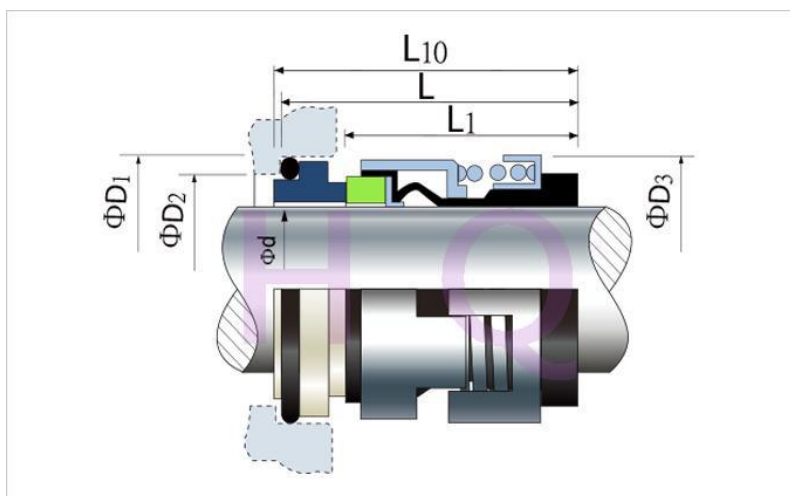
<http://www.hqseal.com>



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Type: Suit for CH, CHI, CHE, CRK, SPK,  
TP,AP,CR,CRN,NK, TP, LM(D)/LP(D)  
NM/ NP, DNM/DNP Series Pumps  
Replacement: Grundfos Type B,Lidering GR-B  
Temperature: -20°C to +180°C  
Pressure:  $\leq 1.2\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm)  | D1 | D2 | D3 | L    | L1   | L10  |
|------------|----|----|----|------|------|------|
| GR-G3-12   | 23 | 19 | 22 | 39   | 31   | 40.5 |
| GR-G3-S-12 | 23 | 19 | 22 | 34   | 26   | 35.5 |
| GR-G3-16   | 27 | 23 | 26 | 40.5 | 32.5 | 41.5 |
| GR-G3-S-16 | 27 | 23 | 26 | 35.5 | 27.5 | 36.5 |



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## GR-G3-S



Type: Suit for GRUNDFOS

CH,CHI,CHE,CRK,SPK,TP,AP  
Pumps,CR,CRN,NK,TP  
Pumps,LM(D)/LP(D),NM/NP,  
DNM/DNP Pumps.

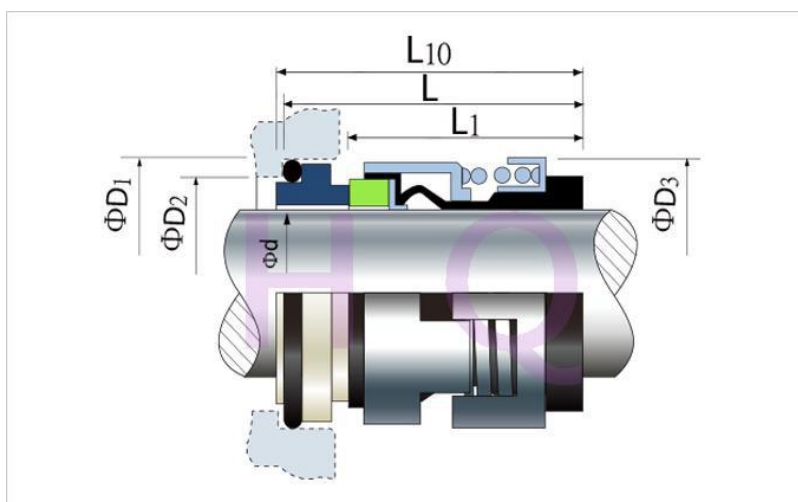
Replacement: Grundfos Type B,Lidering GR-B-SH

Temperature: -20 to +150°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)  | D1 | D2 | D3 | L    | L1   | L10  |
|------------|----|----|----|------|------|------|
| GR-G3-12   | 23 | 19 | 22 | 39   | 31   | 40.5 |
| GR-G3-S-12 | 23 | 19 | 22 | 34   | 26   | 35.5 |
| GR-G3-16   | 27 | 23 | 26 | 40.5 | 32.5 | 41.5 |
| GR-G3-S-16 | 27 | 23 | 26 | 35.5 | 27.5 | 36.5 |



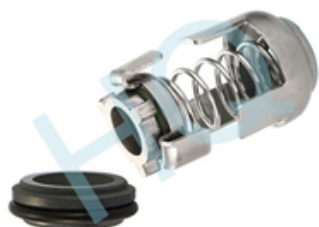
<http://www.hqseal.com>



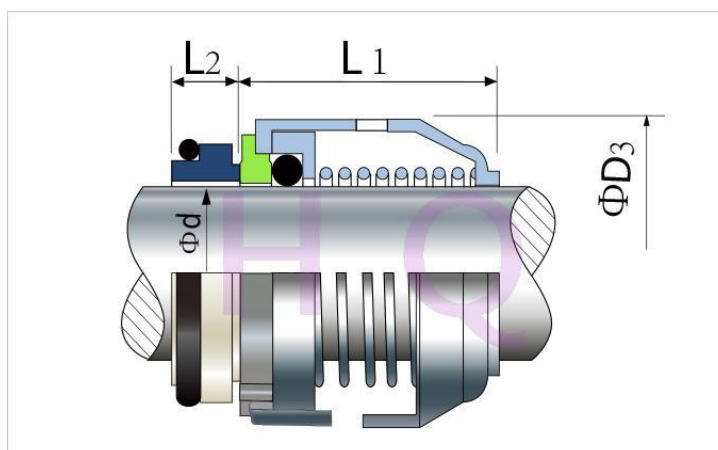
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## GR-G4(12mm)



Type: Suit for GRUNDFOS ,SARLIN,HIG  
HIGLE,INOXPA and JABSO pumps series  
Replacement: Equivalent with Grundfos type A seals  
Lidering GR-A12  
Temperature: -20°C to +180°C  
Pressure:  $\leq 1.2\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D3 | L2+L2 |
|-----------|----|-------|
| 12        | 29 | 40.0  |
| 16        | 36 | 38.6  |



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## GR-G4(16mm)



Type: Suit for GRUNDFOS,SARLIN,HIGLE,  
INOXPA and JABSO Pumps

Replacement: Equivalent with Grundfos type A  
seals,Lidering GR-A16

Temperature: -20 to +180°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa

Refer to GR-G4(12mm)



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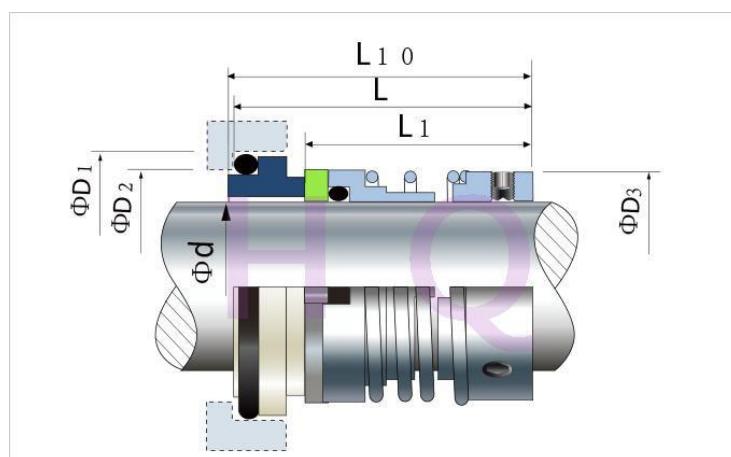


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## GR-G5



Type: Suit for CNP-CDL Pumps  
 Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$   
 Pressure:  $\leq 1.2\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1 | D2 | D3 | L    | L1   | L10  |
|-----------|----|----|----|------|------|------|
| 12        | 23 | 19 | 22 | 39.0 | 31.0 | 40.5 |
| 16        | 27 | 23 | 26 | 40.5 | 32.5 | 41.5 |



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## GR-G6



Type: Suit for CM CME1,3,5,10,15,25  
and CMV Series Pumps

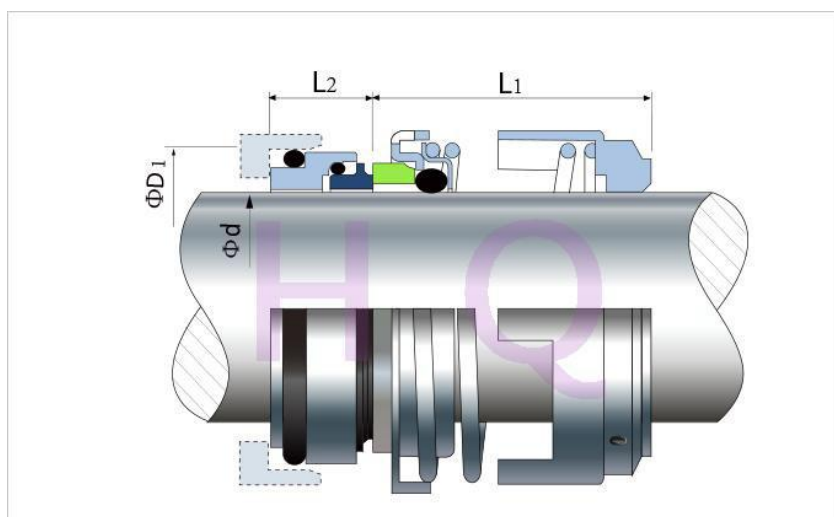
Replacement: Liding GR-A-LG-22

Temperature: -20°C to +180°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1   | L1   | L2   |
|-----------|------|------|------|
| 22        | 38.3 | 50.5 | 15.5 |



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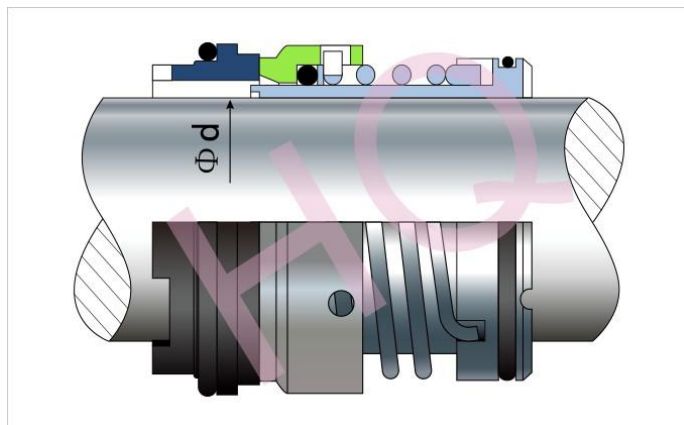


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## GR-G9



Type: Grundfos Pump Seal  
Replacement: LIDERING GR-SA-LG65  
Temperature: -20°C to +180°C  
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: A,B,Q1,Q2,V,E,P,F,G,M,T6



\*Suit for Grundfos Pump.

Shaft Size: 65mm.



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## GR-G11



Type: Suit for Grundfos CM series pumps

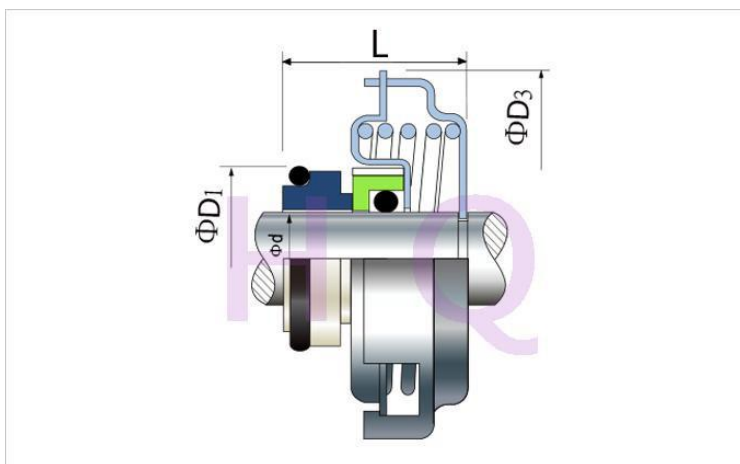
Replacement: AES SOS

Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,P,E,V,F,G



| d<br>(mm) | D1   | D3 | L    |
|-----------|------|----|------|
| 12        | 22.5 | 48 | 23.6 |
| 16        | 27.0 | 48 | 23.6 |



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# GR-G11-E



Type: Suit for Grundfos CM series pumps

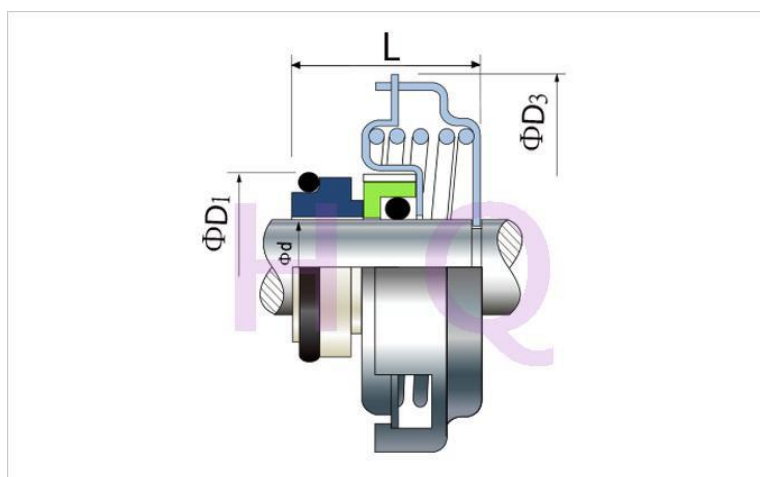
Replacement: AES SOS

Temperature: -20 to +180°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,P,E,V,K,G,F,G



| d<br>(mm) | D1   | D3 | L    |
|-----------|------|----|------|
| 12        | 22.5 | 48 | 23.6 |
| 16        | 27.0 | 48 | 23.6 |



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## GR-G8

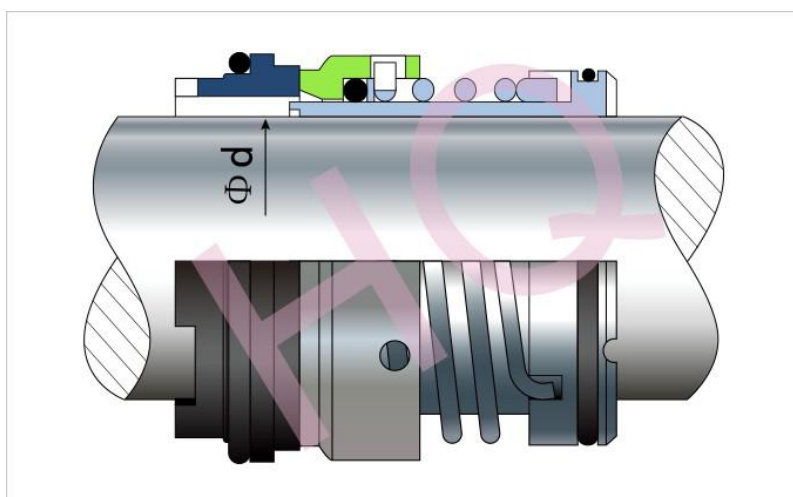


Type: Grundfos Pump Seal  
Replacement: Grundfos-A-65  
Temperature: -20 to +120°C

Pressure:  $\leq 1.5\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A.B,Q1,Q2,P,E,V,F,G



\* Suit for Grundfos Pumps.

\* d=65mm.



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## GR-G18(MG12S/B012G)



Type: Suit for Grundfos PT,NP5,LPD,NP,LP

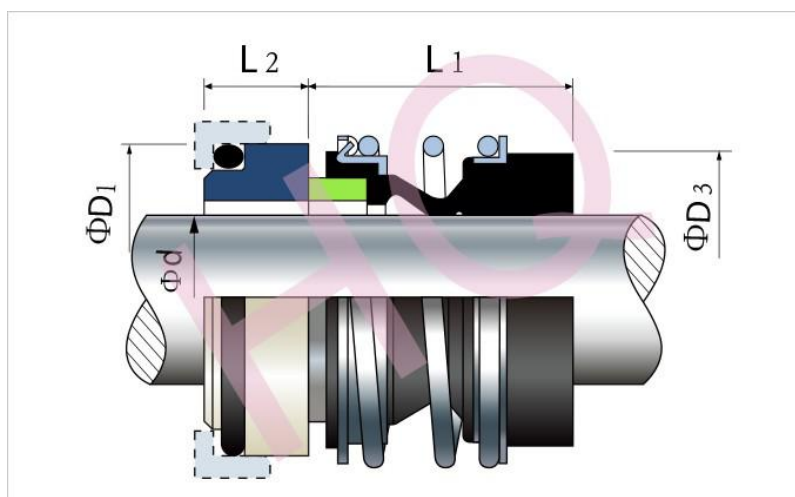
Replacement: Grundfos type G,Vulcan 192G,  
Burgmann MG12S, AES B012G

Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1 | D3 | L1   | L2   |
|-----------|----|----|------|------|
| 12        | 23 | 24 | 25.9 | 15.0 |
| 16        | 27 | 28 | 28.4 | 12.3 |
| 22        | 37 | 36 | 30.0 | 11.1 |
| 33        | 48 | 51 | 35.0 | 7.5  |



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## GR-G19(T01SA)

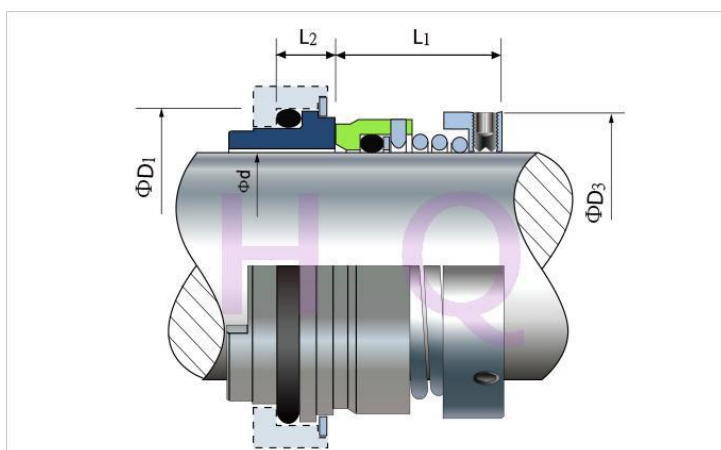


Type: Lower Seal to Suit for Sarlin Pumps series  
 Replacement: AES T01SA, Buegmann M337S11  
 Temperature: -20°C to +180°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1 | D3 | L1   | L2 |
|-----------|----|----|------|----|
| 32        | 48 | 50 | 37.6 | 11 |



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## GR-G44



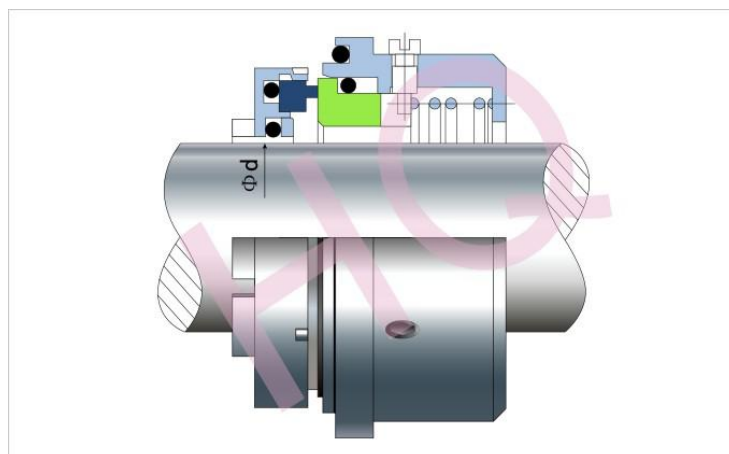
Type: Grundfos Pump Seals

Temperature: -30 to +180°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 12\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



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## GR-G22(19616mm)



Type: Elastomer bellows seals with spacer and damp ring. Suit for CP-Series pumps

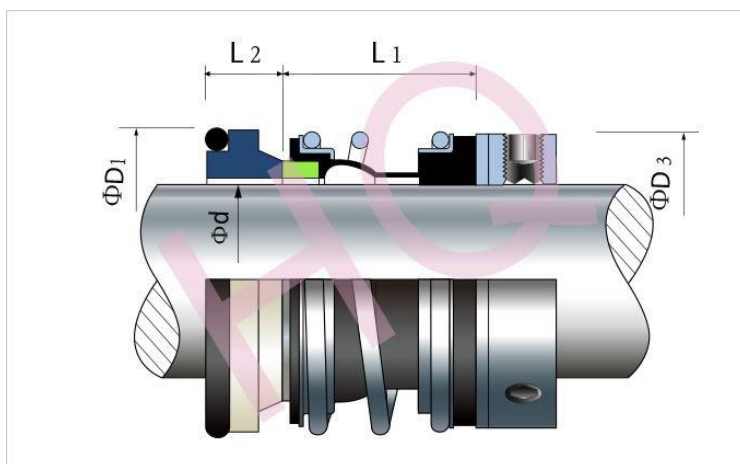
Replacement: Vulcan 196+Spacer. Suit Grundfos "CP" series pumps

Temperature:  $-20^{\circ}\text{C}$  to  $+140^{\circ}\text{C}$

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1   | D3   | L1   | L2   |
|-----------|------|------|------|------|
| 16        | 31.5 | 28.5 | 21.5 | 10.5 |



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## GR-G23(81)



Type: O-Ring mounted conical spring seals with positive drive.

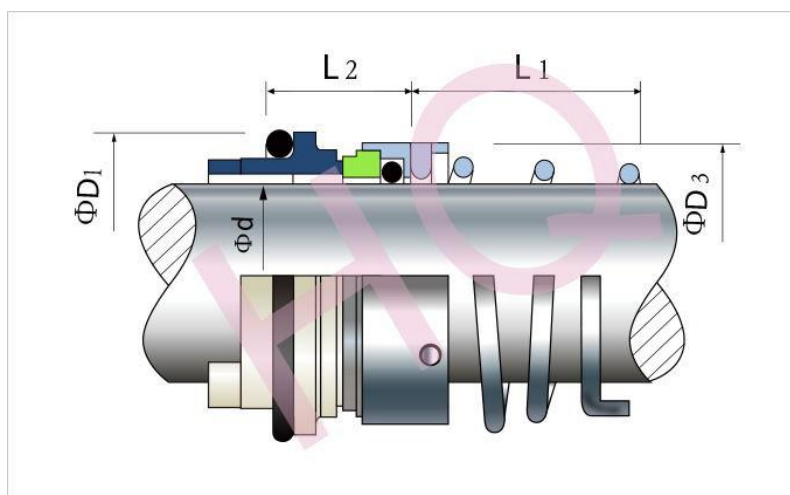
Replacement: Vulcan 81, Billi BB30U, Suit for Grundfos S-Sereis Pumps

Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,P,E,V,F,G



| d<br>(mm) | D1 | D3 | L1   | L2   |
|-----------|----|----|------|------|
| 25        | 38 | 36 | 26.5 | 10.0 |
| 32        | 48 | 46 | 28.5 | 11.0 |
| 38        | 55 | 53 | 33.5 | 11.5 |



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Type: Elastomeric bellows mechanical seal, Suit for

Grundfos, Hilge Pumps

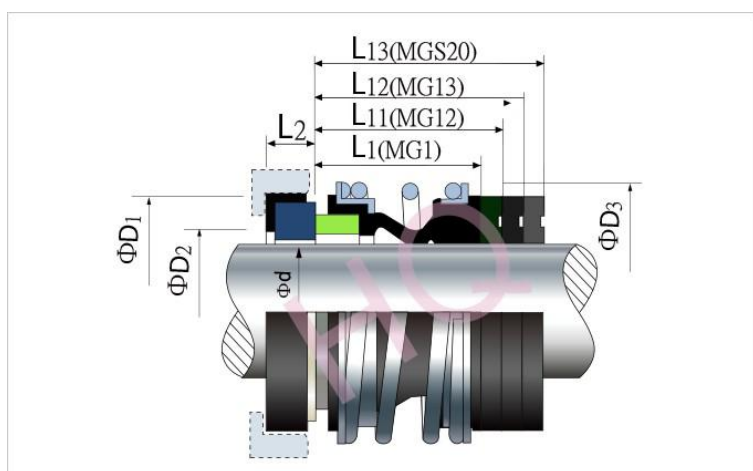
Replacement: Burgmann MG1/12/13/S20, AES  
B02/B012/B01, Vulcan 191/192/193, Roten  
L3/L3K/L3N, Flowserve 190/192/193

Temperature: -20°C to +120°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: V, Q1, Q2, U2, U1, B, A, P, E, V, F, G



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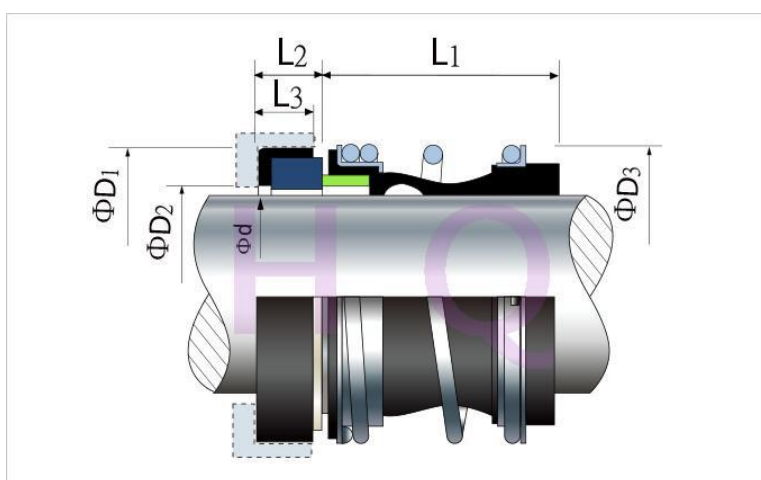
[hq@hqseal.com](mailto:hq@hqseal.com)

| Siz<br>(mm) | d  | D3   | D2 | D1 | L1   | L11  | L12  | L13 | L2  |
|-------------|----|------|----|----|------|------|------|-----|-----|
| 10          | 10 | 22.5 | 17 | 21 | 14.5 | 25.9 | 33.4 | 25  | 6.6 |
| 12          | 12 | 25.0 | 19 | 23 | 15.0 | 25.9 | 33.4 | 25  | 6.6 |
| 14          | 14 | 28.5 | 21 | 25 | 17.0 | 28.4 | 33.4 | 25  | 6.6 |
| 15          | 15 | 28.5 | -  | -  | 17.0 | 28.4 | 33.4 | 25  | -   |
| 16          | 16 | 28.5 | 23 | 27 | 17.0 | 28.4 | 33.4 | 25  | 6.6 |
| 18          | 18 | 32.0 | 27 | 33 | 19.5 | 30.0 | 37.5 | 25  | 7.5 |
| 19          | 19 | 37.0 | -  | -  | 21.5 | 30.0 | 37.5 | 25  | -   |
| 20          | 20 | 37.0 | 29 | 35 | 21.5 | 30.0 | 37.5 | 25  | 7.5 |
| 22          | 22 | 37.0 | 31 | 37 | 21.5 | 30.0 | 37.5 | 25  | 7.5 |
| 24          | 24 | 42.5 | 33 | 39 | 22.5 | 32.5 | 42.5 | 25  | 7.5 |
| 25          | 25 | 42.5 | 34 | 40 | 23.0 | 32.5 | 42.5 | 25  | 7.5 |
| 28          | 28 | 49.0 | 37 | 43 | 26.5 | 35.0 | 42.5 | 33  | 7.5 |
| 30          | 30 | 49.0 | 39 | 45 | 26.5 | 35.0 | 42.5 | 33  | 7.5 |
| 32          | 32 | 53.5 | 42 | 48 | 27.5 | 35.0 | 47.5 | 33  | 7.5 |
| 33          | 33 | 53.5 | 42 | 48 | 27.5 | 35.0 | 47.5 | 33  | 7.5 |
| 35          | 35 | 57.0 | 44 | 50 | 28.5 | 35.0 | 47.5 | 33  | 7.5 |

## GR-G25



Type: Elastomeric bellow mechanical seal  
 Replacement: Vu1can1520(Metric), AES BP02,  
 BURGMANN MG1S20, Crane 2(N  
 Seat), Flowserve150  
 Temperature: -40°C to +150°C  
 Pressure:  $\leq 1.2\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: V,Q1,Q2,U2,U1,B,A,P,E,V,F,G



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| Size<br>(mm) | D1    | D2    | D3 | L1    | L2    | L3    |
|--------------|-------|-------|----|-------|-------|-------|
| 10           | 24.60 | 16.00 | 20 | 25.40 | 8.74  | 7.47  |
| 12           | 27.79 | 19.05 | 22 | 25.40 | 8.74  | 7.47  |
| 13           | 27.79 | 19.05 | 22 | 25.40 | 8.74  | 7.47  |
| 14           | 30.95 | 22.23 | 24 | 25.40 | 10.32 | 8.97  |
| 15           | 30.95 | 22.23 | 25 | 25.40 | 10.32 | 8.97  |
| 16           | 30.95 | 22.23 | 26 | 25.40 | 10.32 | 8.97  |
| 18           | 34.15 | 25.40 | 32 | 25.40 | 10.32 | 8.97  |
| 19           | 34.15 | 25.40 | 32 | 25.40 | 10.32 | 8.97  |
| 20           | 35.70 | 26.99 | 34 | 25.40 | 10.32 | 8.97  |
| 22           | 37.30 | 28.58 | 36 | 25.40 | 10.32 | 8.97  |
| 24           | 40.50 | 31.75 | 38 | 25.40 | 10.32 | 8.97  |
| 25           | 40.50 | 31.75 | 39 | 25.40 | 10.32 | 8.97  |
| 28           | 47.63 | 35.72 | 42 | 33.34 | 11.99 | 10.46 |
| 30           | 50.80 | 38.89 | 44 | 33.34 | 11.99 | 10.46 |
| 32           | 50.80 | 38.89 | 46 | 33.34 | 11.99 | 10.46 |
| 33           | 53.98 | 42.07 | 47 | 33.34 | 11.99 | 10.46 |
| 34           | 53.98 | 42.07 | 49 | 33.34 | 11.99 | 10.46 |
| 35           | 53.98 | 42.07 | 49 | 33.34 | 11.99 | 10.46 |

## GR-G26(196-22mm)



Type: Elastomer bellow seals with special profile

boot mounted seats

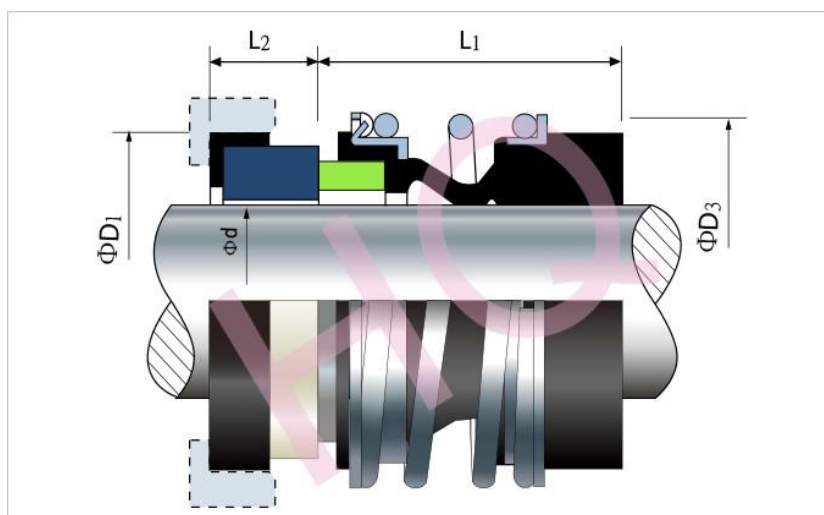
Replacement: Vulcan 196 22mm, Suit for Grundfos LM, LP, LPD, LPE Pumps

Temperature: -20°C to +180°C Pressure:

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: A,B,Q1,Q2,U1,U2,P,E,V,F,G



| d<br>(mm) | D1 | D3 | L1 | L2 |
|-----------|----|----|----|----|
| 22        | 37 | 36 | 33 | 12 |



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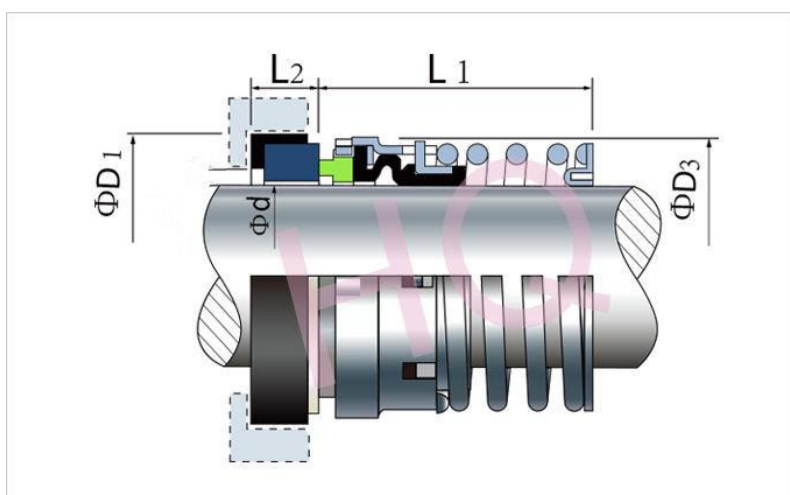


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Type: Elastomer Bellow Mechanical Seal  
 Replacement: Vulcan A5, Crane 1+Vulcan 11  
 Temperature: -20°C to +120°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B, Q2, U2, P, E, N, V, F, G, Alfa



<http://www.hqseal.com>



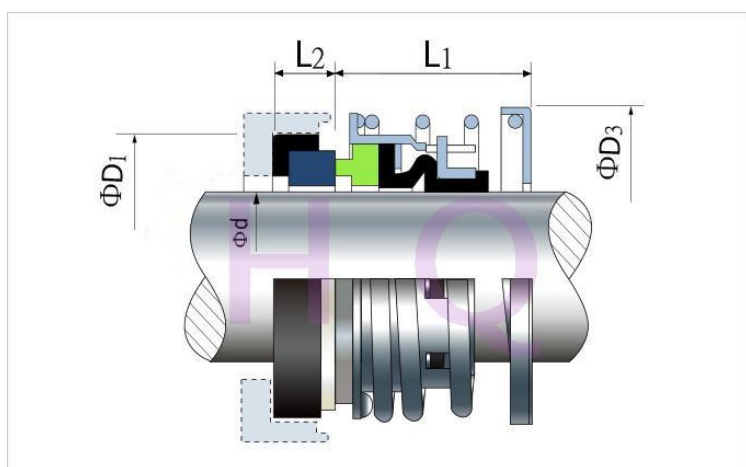
[hq@hqseal.com](mailto:hq@hqseal.com)

| d<br>(inch) | D1    |       | D3    |       | L1    |       | L2    |       |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | mm    | inch  | mm    | inch  | mm    | inch  | mm    | inch  |
| 0.500       | 25.40 | 1.000 | 23.80 | 0.937 | 30.16 | 1.187 | 7.93  | 0.312 |
| 0.625       | 31.75 | 1.250 | 27.76 | 1.093 | 33.32 | 1.312 | 10.28 | 0.405 |
| 0.750       | 34.93 | 1.375 | 30.94 | 1.218 | 33.32 | 1.312 | 10.28 | 0.405 |
| 0.875       | 38.10 | 1.500 | 34.11 | 1.343 | 34.93 | 1.375 | 10.28 | 0.405 |
| 1.000       | 41.28 | 1.625 | 38.10 | 1.500 | 39.67 | 1.562 | 11.10 | 0.437 |
| 1.125       | 44.44 | 1.750 | 41.28 | 1.625 | 41.28 | 1.625 | 11.10 | 0.437 |
| 1.250       | 47.63 | 1.875 | 46.02 | 1.812 | 41.28 | 1.625 | 11.10 | 0.437 |
| 1.375       | 50.80 | 2.000 | 48.68 | 1.917 | 42.85 | 1.687 | 11.10 | 0.437 |
| 1.500       | 53.98 | 2.125 | 51.85 | 2.041 | 42.85 | 1.687 | 11.10 | 0.437 |
| 1.625       | 60.38 | 2.375 | 58.10 | 2.287 | 50.80 | 2.000 | 12.70 | 0.500 |
| 1.750       | 63.50 | 2.500 | 61.27 | 2.412 | 50.80 | 2.000 | 12.70 | 0.500 |
| 1.875       | 66.68 | 2.625 | 64.44 | 2.537 | 53.98 | 2.125 | 12.70 | 0.500 |
| 2.000       | 69.85 | 2.750 | 67.21 | 2.646 | 53.98 | 2.125 | 12.70 | 0.500 |
| 2.125       | 76.20 | 3.000 | 72.02 | 2.835 | 60.33 | 2.375 | 14.28 | 0.562 |
| 2.250       | 79.38 | 3.125 | 75.30 | 2.965 | 60.33 | 2.375 | 14.28 | 0.562 |
| 2.375       | 82.55 | 3.250 | 78.30 | 3.083 | 63.50 | 2.500 | 14.28 | 0.562 |
| 2.500       | 85.73 | 3.375 | 81.54 | 3.210 | 63.50 | 2.500 | 14.28 | 0.562 |

## GR-G28



Type: Elastomer Bellow Mechanical Seal  
 Replacement: Vulcan A4, Crane2+Vulcan11  
 Temperature: -20°C to +120°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



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| d(inch) | D1    |       | D3    |       | L1    |       | L2    |       |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|
|         | mm    | inch  | mm    | inch  | mm    | inch  | mm    | inch  |
| 0.500   | 25.40 | 1.000 | 30.14 | 1.187 | 20.64 | 0.813 | 7.93  | 0.312 |
| 0.625   | 31.75 | 1.250 | 33.32 | 1.312 | 22.23 | 0.875 | 10.28 | 0.405 |
| 0.750   | 34.93 | 1.375 | 36.52 | 1.438 | 22.23 | 0.875 | 10.28 | 0.405 |
| 0.875   | 38.10 | 1.500 | 39.72 | 1.564 | 23.8  | 0.937 | 10.28 | 0.405 |
| 1.000   | 41.28 | 1.625 | 45.30 | 1.783 | 25.40 | 1.000 | 11.10 | 0.437 |
| 1.125   | 44.44 | 1.750 | 48.47 | 1.908 | 26.97 | 1.062 | 11.10 | 0.437 |
| 1.250   | 47.63 | 1.875 | 52.80 | 2.079 | 26.97 | 1.062 | 11.10 | 0.437 |
| 1.375   | 50.80 | 2.000 | 55.98 | 2.204 | 28.58 | 1.125 | 11.10 | 0.437 |
| 1.500   | 53.98 | 2.125 | 59.15 | 2.329 | 28.58 | 1.125 | 11.10 | 0.437 |
| 1.625   | 60.38 | 2.375 | 66.96 | 2.636 | 34.93 | 1.375 | 12.70 | 0.500 |
| 1.750   | 63.50 | 2.500 | 70.12 | 2.761 | 34.93 | 1.375 | 12.70 | 0.500 |
| 1.875   | 66.68 | 2.625 | 73.16 | 2.88  | 38.10 | 1.500 | 12.70 | 0.500 |
| 2.000   | 69.85 | 2.750 | 76.48 | 3.011 | 38.10 | 1.500 | 12.70 | 0.500 |
| 2.125   | 76.20 | 3.000 | 82.71 | 3.256 | 42.85 | 1.987 | 14.28 | 0.562 |
| 2.250   | 79.38 | 3.125 | 85.89 | 3.381 | 42.85 | 1.987 | 14.28 | 0.562 |
| 2.375   | 82.55 | 3.250 | 89.06 | 3.506 | 46.02 | 1.812 | 14.28 | 0.562 |
| 2.500   | 85.73 | 3.375 | 92.24 | 3.631 | 46.02 | 1.812 | 14.28 | 0.562 |

## GR-G29



Type: Elastomeric bellows mechanical seal

Suit for Grundfos, Hilge Pumps

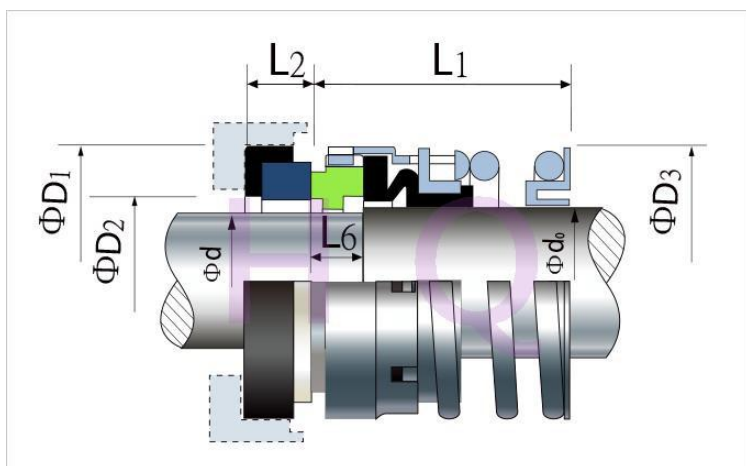
Replacement: Crane 1B+ Vulcan 11

Temperature:  $-20^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



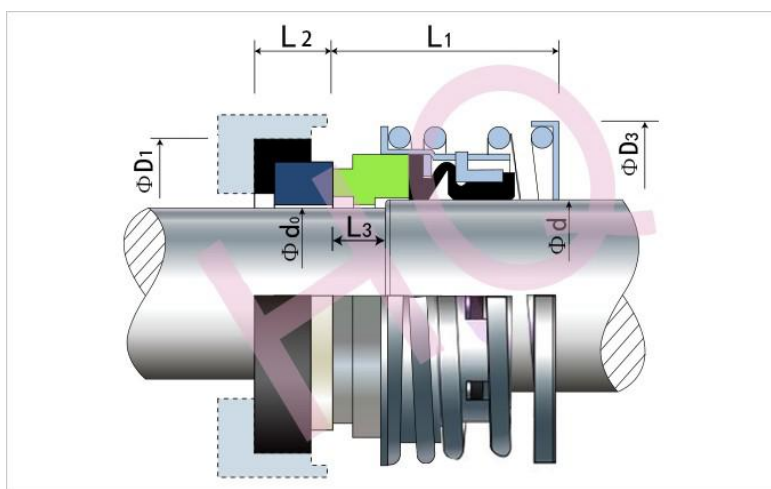
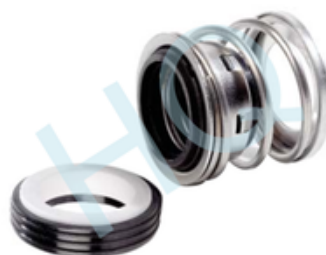
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| Size<br>(Inch) | d0   | D1    | D2    | D3    | L1    | L2    | L6    |
|----------------|------|-------|-------|-------|-------|-------|-------|
| 1.000          | 25.4 | 41.28 | 33.32 | 38.10 | 47.63 | 11.10 | 8.70  |
| 1.125          | 28.5 | 44.44 | 36.50 | 41.28 | 49.20 | 11.10 | 8.70  |
| 1.250          | 31.7 | 47.63 | 39.70 | 46.02 | 49.20 | 11.10 | 8.70  |
| 1.375          | 34.9 | 50.80 | 42.84 | 47.63 | 50.80 | 11.10 | 8.70  |
| 1.500          | 38.1 | 53.98 | 46.05 | 50.80 | 50.80 | 11.10 | 8.70  |
| 1.625          | 41.2 | 60.33 | 50.80 | 57.15 | 60.33 | 12.70 | 11.10 |
| 1.750          | 44.4 | 63.50 | 53.97 | 60.33 | 60.33 | 12.70 | 11.10 |
| 1.875          | 47.6 | 66.68 | 57.15 | 63.50 | 63.50 | 12.70 | 11.10 |
| 2.000          | 50.8 | 69.85 | 60.32 | 66.68 | 63.50 | 12.70 | 11.10 |
| 2.125          | 53.9 | 76.20 | 60.32 | 71.42 | 69.85 | 14.27 | 12.70 |
| 2.250          | 57.1 | 79.38 | 61.90 | 74.60 | 69.85 | 14.27 | 12.70 |
| 2.375          | 60.3 | 82.55 | 67.39 | 77.77 | 73.03 | 14.27 | 12.70 |
| 2.500          | 63.5 | 85.73 | 68.25 | 80.95 | 73.03 | 14.27 | 12.70 |

Type: Elastomer Bellow Mechanical Seal, Suit for  
Grundfos, Hilge Pumps  
Replacement: Crane 2B+Vulcan 11  
Temperature: -20°C to +120°C  
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



| d<br>(Inch) | d0    | D1    | D3    | L1    | L2    | L3    |
|-------------|-------|-------|-------|-------|-------|-------|
| 1.000       | 0.875 | 1.500 | 1.812 | 1.312 | 0.405 | 0.343 |
| 1.125       | 1.000 | 1.125 | 1.937 | 1.375 | 0.437 | 0.343 |
| 1.250       | 1.125 | 1.750 | 2.062 | 1.375 | 0.437 | 0.343 |
| 1.375       | 1.250 | 1.875 | 2.250 | 1.437 | 0.437 | 0.343 |
| 1.500       | 1.375 | 2.000 | 3.375 | 1.437 | 0.437 | 0.343 |
| 1.625       | 1.500 | 2.125 | 2.718 | 1.750 | 0.500 | 0.437 |
| 1.750       | 1.625 | 2.375 | 2.750 | 1.750 | 0.500 | 0.437 |
| 1.875       | 1.750 | 2.500 | 2.875 | 1.875 | 0.500 | 0.437 |
| 2.000       | 1.875 | 2.625 | 3.000 | 1.875 | 0.500 | 0.437 |
| 2.125       | 2.000 | 2.750 | 3.250 | 2.062 | 0.562 | 0.500 |
| 2.250       | 2.125 | 3.000 | 3.375 | 2.062 | 0.562 | 0.500 |
| 2.375       | 2.250 | 3.125 | 3.500 | 2.187 | 0.562 | 0.500 |
| 2.500       | 2.375 | 3.250 | 3.625 | 2.187 | 0.562 | 0.500 |
| 2.625       | 2.500 | 3.375 | 3.875 | 2.312 | 0.562 | 0.562 |
| 2.750       | 2.625 | 3.375 | 4.000 | 2.312 | 0.562 | 0.562 |
| 2.875       | 2.750 | 3.500 | 4.125 | 2.437 | 0.562 | 0.562 |
| 3.000       | 2.875 | 3.750 | 4.250 | 2.437 | 0.562 | 0.562 |

# GR-G31



Type: Elastomer Bellow Mechanical Seal

Suit for Grundfos, Hilde Pumps

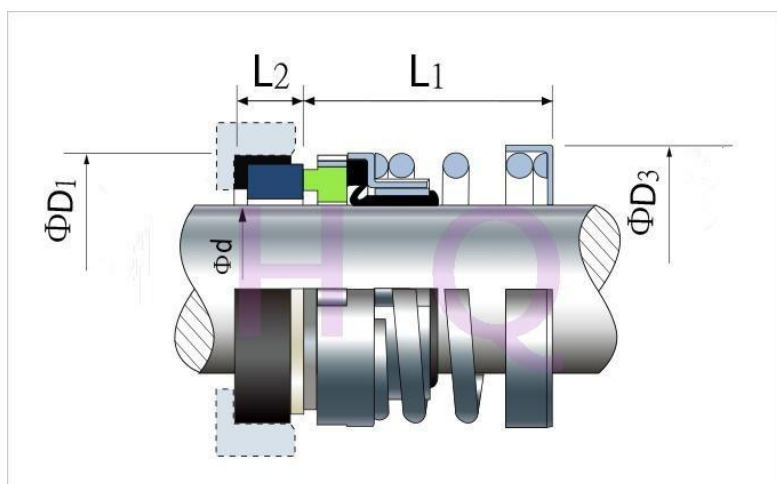
Replacement: Vulcan 10

Temperature: -20°C to +120°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



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| d<br>(mm) | D1    | D3   | L1    | L2    |
|-----------|-------|------|-------|-------|
| 10        | 24.60 | 21.8 | 43.66 | 8.74  |
| 12        | 27.79 | 23.5 | 43.66 | 8.74  |
| 13        | 27.79 | 23.5 | 43.66 | 8.74  |
| 14        | 30.95 | 27.0 | 43.66 | 10.32 |
| 15        | 30.95 | 27.0 | 43.66 | 10.32 |
| 16        | 30.95 | 27.0 | 43.66 | 10.32 |
| 18        | 34.15 | 30.7 | 43.66 | 10.32 |
| 19        | 34.15 | 30.7 | 43.66 | 10.32 |
| 20        | 35.70 | 33.4 | 43.66 | 10.32 |
| 22        | 37.30 | 33.4 | 43.66 | 10.32 |
| 24        | 40.50 | 39.2 | 43.66 | 10.32 |
| 25        | 40.50 | 39.2 | 43.66 | 10.32 |
| 28        | 47.63 | 45.6 | 60.33 | 11.99 |
| 29        | 47.63 | 45.6 | 60.33 | 11.99 |
| 30        | 50.80 | 47.4 | 60.33 | 11.99 |
| 32        | 50.80 | 47.4 | 60.33 | 11.99 |
| 33        | 53.98 | 52.0 | 60.33 | 11.99 |
| 34        | 53.98 | 52.0 | 60.33 | 11.99 |
| 35        | 53.98 | 52.0 | 60.33 | 11.99 |
| 38        | 57.15 | 55.6 | 60.33 | 11.99 |
| 40        | 60.33 | 59.2 | 60.33 | 11.99 |

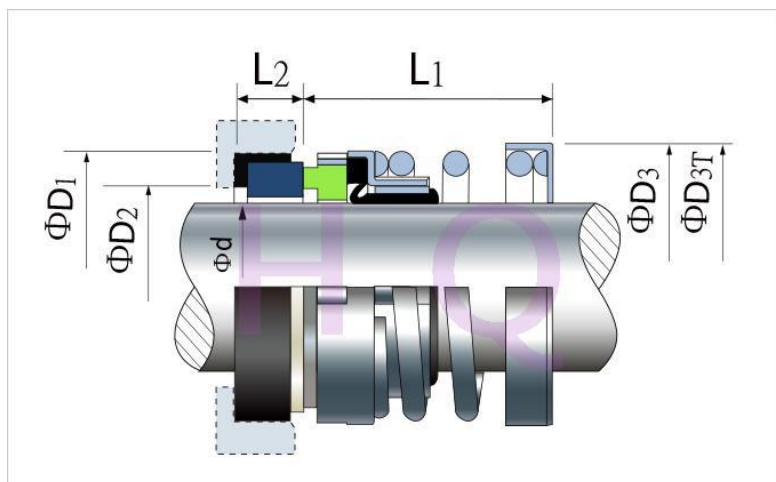
## FR-G39

Type: Elastomeric bellow mechanical seal  
 Replacement: AES P04/P04T, Crane 21, Vulcan 11,  
 Roten 21A, Flowserve 110  
 Temperature: -20°C to +120°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: V, Q1, Q2, U2, U1, B, A, P, E, V, F, G

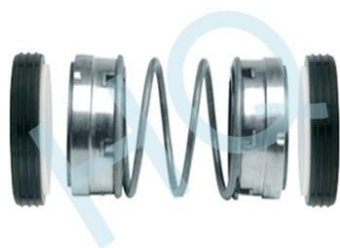


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| Size<br>(inch) | d    | D3<br>(HQ21) | D3T<br>(HQ21T) | D1    | L1    | L2    |
|----------------|------|--------------|----------------|-------|-------|-------|
| 0.500          | 12.7 | 24.0         | 22.8           | 25.40 | 20.62 | 7.95  |
| 0.625          | 15.8 | 26.7         | 26.7           | 31.75 | 22.23 | 10.31 |
| 0.750          | 19.1 | 31.2         | 30.4           | 34.93 | 22.23 | 10.31 |
| 0.875          | 22.2 | 33.5         | 33.4           | 38.10 | 23.80 | 10.31 |
| 1.000          | 25.4 | 43.2         | 39.3           | 41.28 | 25.40 | 11.10 |
| 1.125          | 28.6 | 46.5         | 42.0           | 44.45 | 26.97 | 11.10 |
| 1.250          | 31.7 | 49.5         | 45.8           | 47.63 | 26.97 | 11.10 |
| 1.375          | 34.9 | 52.7         | 49.3           | 50.8  | 28.58 | 11.10 |
| 1.500          | 38.1 | 56.0         | 52.8           | 53.98 | 28.58 | 11.10 |
| 1.625          | 41.2 | 62.2         | 55.5           | 60.33 | 34.93 | 12.70 |
| 1.750          | 44.4 | 66.0         | 61.0           | 63.50 | 34.93 | 12.70 |
| 1.875          | 47.6 | 66.0         | 64.0           | 66.68 | 38.10 | 12.70 |
| 2.000          | 50.8 | 73.0         | 66.0           | 69.85 | 38.10 | 12.70 |
| 2.125          | 53.9 | 73.5         | 71.5           | 76.20 | 42.85 | 14.27 |
| 2.250          | 57.1 | 79.6         | 79.6           | 79.38 | 42.85 | 14.27 |
| 2.375          | 60.3 | 82.0         | 79.6           | 82.55 | 46.05 | 14.27 |
| 2.500          | 63.5 | 85.0         | 81.5           | 85.73 | 46.05 | 14.27 |
| 2.625          | 66.6 | 88.5         | 84.6           | 85.73 | 49.20 | 15.88 |
| 2.75           | 69.8 | 92.7         | 90.0           | 88.90 | 49.20 | 15.88 |
| 3.00           | 76.2 | 102.0        | 96.8           | 98.40 | 52.37 | 15.88 |



Type: Elastomer Bellow Mechanical Seal,  
Suit for Grundfos, Hilge Pumps

Replacement: Crane 1 Double

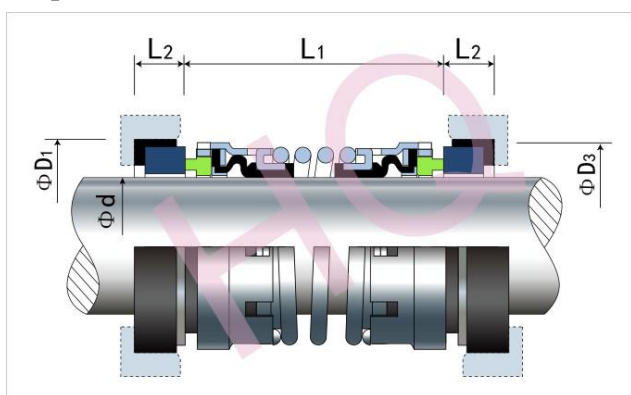
Temperature: -20°C to +120°C

Pressure:  $\leq 1.5\text{Mpa}$

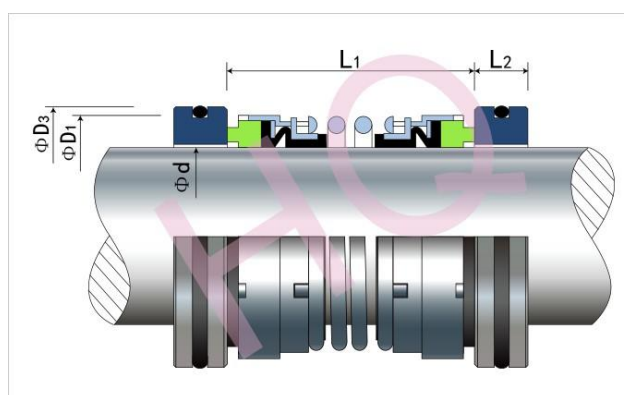
Speed:  $\leq 10\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa

Cup Seat



O-Ring Seat



| d<br>(inch) | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 0.875       | 1.406 | 1.500 | 2.000 | 0.406 |
| 1.000       | 1.500 | 1.625 | 2.312 | 0.437 |
| 1.125       | 1.625 | 1.750 | 2.375 | 0.437 |
| 1.250       | 1.812 | 1.875 | 2.375 | 0.437 |
| 1.375       | 1.875 | 2.000 | 2.437 | 0.437 |
| 1.500       | 2.000 | 2.125 | 2.437 | 0.437 |
| 1.625       | 2.250 | 2.375 | 2.875 | 0.500 |
| 1.750       | 2.375 | 2.500 | 2.875 | 0.500 |
| 1.875       | 2.500 | 2.625 | 3.000 | 0.500 |
| 2.000       | 2.625 | 2.750 | 3.000 | 0.500 |
| 2.125       | 2.812 | 3.000 | 3.375 | 0.562 |
| 2.250       | 2.937 | 3.125 | 3.375 | 0.562 |
| 2.375       | 3.062 | 3.250 | 3.500 | 0.562 |
| 2.500       | 3.187 | 3.375 | 3.500 | 0.562 |



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Type: Elastomer Bellows Mechanical Seal,

Suit for Grundfos, Hilge Pump

Replacement: Crane 2 Double+Vulcan 31

Temperature: -20°C to +120°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa

Elastomer Bellows Mechanical seal. Equivalent  
to Crane2 double+Vulcan 11. Refer to HQ2

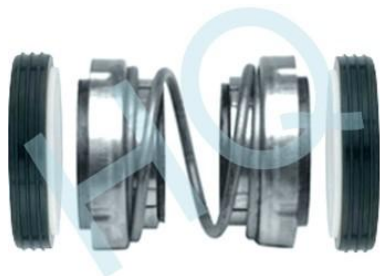


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Type: Elastomer Bellow Mechanical Seal,Suit  
for Grundfos,Hilge Pump  
Replacement: Crane 21DBI+Vulcan 11  
Temperature: -20°C to +120°C  
Pressure:  $\leq 1.2\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa

Elastomer Bellow Mechanical seal,  
Equalent to Crane21 DBI+Vulcan 11  
Refer to HQ21



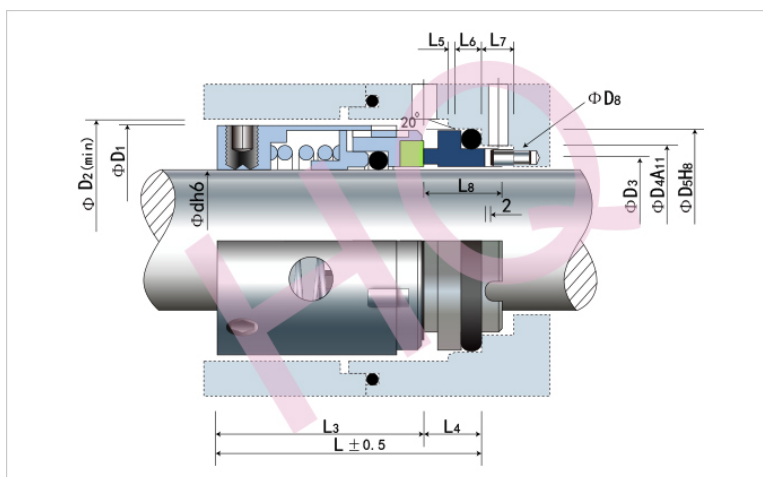
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# HQ104

Type: O-Ring Mechanical Seal  
 Temperature: -20 to +200°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 20\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



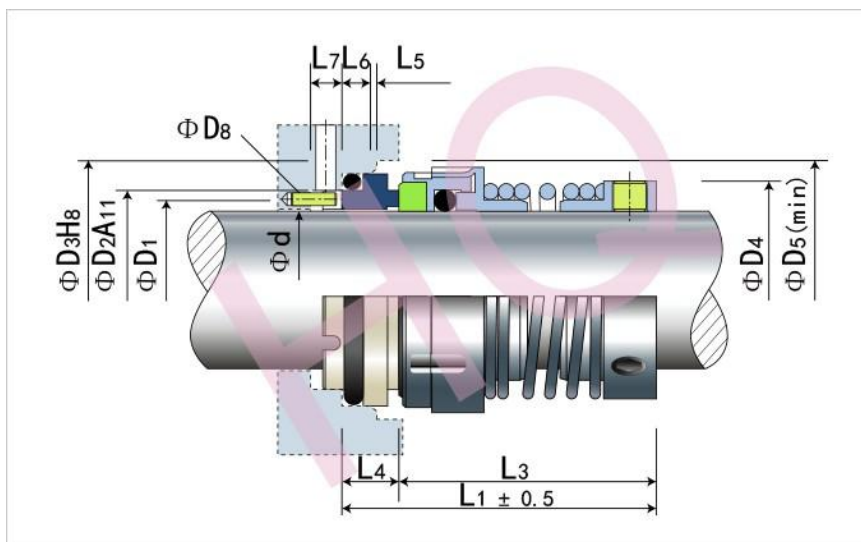
| d<br>(mm) | D1  | D2  | D3  | D4  | D5  | D8 | L   | L3  | L4 | L5  | L6  | L7 | L8 |
|-----------|-----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|----|----|
| 16        | 33  | 36  | 21  | 25  | 33  | 2  | 49  | 37  | 12 | 1.5 | 5.5 | 7  | 16 |
| 18        | 35  | 38  | 23  | 28  | 36  | 2  | 52  | 40  | 12 | 1.5 | 5.5 | 7  | 16 |
| 20        | 37  | 40  | 25  | 30  | 40  | 3  | 54  | 40  | 14 | 2.0 | 6.5 | 8  | 19 |
| 22        | 39  | 42  | 27  | 32  | 42  | 3  | 57  | 43  | 14 | 2.0 | 6.5 | 8  | 19 |
| 25        | 42  | 45  | 30  | 35  | 45  | 3  | 57  | 43  | 14 | 2.0 | 6.5 | 8  | 19 |
| 28        | 45  | 48  | 33  | 38  | 48  | 3  | 58  | 44  | 14 | 2.0 | 6.5 | 8  | 19 |
| 30        | 52  | 55  | 35  | 40  | 50  | 3  | 63  | 49  | 14 | 2.0 | 6.5 | 8  | 19 |
| 35        | 57  | 60  | 40  | 45  | 55  | 3  | 65  | 51  | 14 | 2.0 | 6.5 | 8  | 19 |
| 40        | 62  | 65  | 45  | 50  | 60  | 3  | 68  | 54  | 14 | 2.0 | 6.5 | 8  | 19 |
| 45        | 67  | 70  | 50  | 55  | 65  | 3  | 74  | 60  | 14 | 2.0 | 6.5 | 8  | 19 |
| 50        | 72  | 75  | 55  | 60  | 70  | 3  | 77  | 63  | 14 | 2.5 | 6.5 | 8  | 19 |
| 55        | 77  | 80  | 60  | 65  | 75  | 3  | 79  | 65  | 14 | 2.5 | 6.5 | 8  | 19 |
| 60        | 82  | 85  | 65  | 70  | 80  | 3  | 79  | 65  | 14 | 2.5 | 6.5 | 8  | 19 |
| 65        | 92  | 95  | 73  | 80  | 90  | 3  | 91  | 74  | 17 | 2.5 | 6.5 | 8  | 22 |
| 70        | 97  | 100 | 78  | 85  | 97  | 3  | 95  | 76  | 19 | 2.5 | 7.5 | 9  | 25 |
| 75        | 102 | 105 | 83  | 90  | 102 | 3  | 95  | 76  | 19 | 2.5 | 7.5 | 9  | 25 |
| 80        | 107 | 110 | 88  | 95  | 107 | 3  | 100 | 81  | 19 | 3.0 | 7.5 | 9  | 25 |
| 85        | 112 | 115 | 93  | 100 | 112 | 3  | 101 | 82  | 19 | 3.0 | 7.5 | 9  | 25 |
| 90        | 117 | 120 | 98  | 105 | 117 | 3  | 102 | 83  | 19 | 3.0 | 7.5 | 9  | 25 |
| 95        | 122 | 125 | 103 | 110 | 122 | 3  | 102 | 83  | 19 | 3.0 | 7.5 | 9  | 25 |
| 100       | 127 | 130 | 108 | 115 | 127 | 3  | 102 | 83  | 19 | 3.0 | 7.5 | 9  | 25 |
| 110       | 141 | 145 | 120 | 130 | 142 | 3  | 126 | 105 | 21 | 3.0 | 8.0 | 9  | 27 |
| 120       | 151 | 155 | 130 | 140 | 152 | 3  | 126 | 105 | 21 | 3.0 | 8.0 | 9  | 27 |

Type: O-Ring Seal, Suit for Grundfos Pumps  
 Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: Q1, Q2, V, K, E, P, G, M5, M6, T4



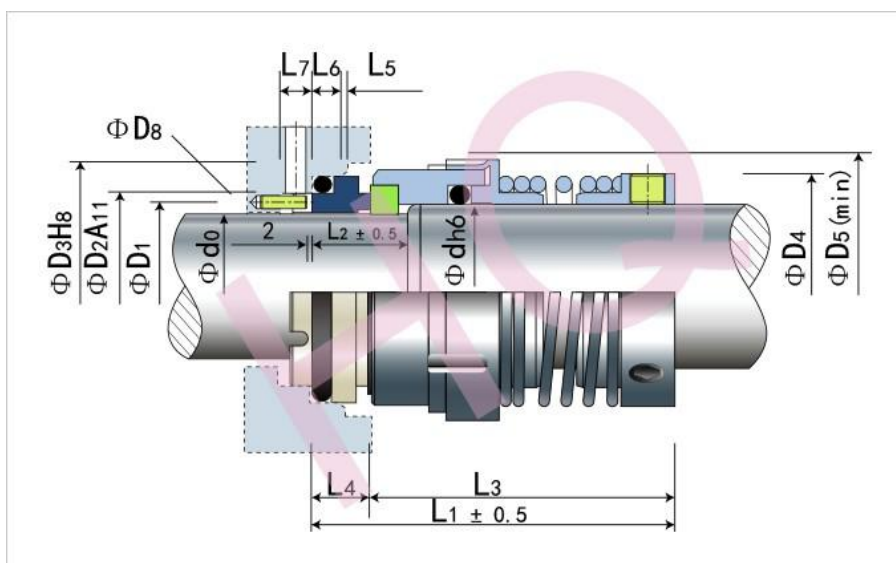
| d<br>(mm) | D3  | D4  | D1 | D2 | D3  | D<br>8 | L1  | L3 | L4 | L5  | L6  | L7 |
|-----------|-----|-----|----|----|-----|--------|-----|----|----|-----|-----|----|
| 16        | 33  | 36  | 21 | 25 | 33  | 2      | 52  | 40 | 12 | 1.5 | 5.5 | 7  |
| 18        | 35  | 38  | 23 | 28 | 36  | 2      | 56  | 44 | 12 | 1.5 | 5.5 | 7  |
| 20        | 37  | 40  | 25 | 30 | 40  | 3      | 58  | 44 | 14 | 2.0 | 6.5 | 8  |
| 22        | 39  | 42  | 27 | 32 | 42  | 3      | 62  | 48 | 14 | 2.0 | 6.5 | 8  |
| 25        | 42  | 45  | 30 | 35 | 45  | 3      | 62  | 48 | 14 | 2.0 | 6.5 | 8  |
| 28        | 45  | 48  | 33 | 38 | 48  | 3      | 64  | 50 | 14 | 2.0 | 6.5 | 8  |
| 30        | 52  | 55  | 35 | 40 | 50  | 3      | 70  | 56 | 14 | 2.0 | 6.5 | 8  |
| 35        | 57  | 60  | 40 | 45 | 55  | 3      | 74  | 60 | 14 | 2.0 | 6.5 | 8  |
| 40        | 62  | 65  | 45 | 50 | 60  | 3      | 78  | 64 | 14 | 2.0 | 6.5 | 8  |
| 45        | 67  | 70  | 50 | 55 | 65  | 3      | 85  | 71 | 14 | 2.0 | 6.5 | 8  |
| 50        | 72  | 75  | 55 | 60 | 70  | 3      | 89  | 75 | 14 | 2.5 | 6.5 | 8  |
| 55        | 77  | 80  | 60 | 65 | 75  | 3      | 91  | 77 | 14 | 2.5 | 6.5 | 8  |
| 60        | 82  | 85  | 65 | 70 | 80  | 3      | 91  | 77 | 14 | 2.5 | 6.5 | 8  |
| 65        | 92  | 95  | 73 | 80 | 90  | 3      | 106 | 89 | 17 | 2.5 | 6.5 | 8  |
| 70        | 97  | 100 | 78 | 85 | 97  | 3      | 110 | 91 | 19 | 2.5 | 7.5 | 9  |
| 75        | 102 | 105 | 83 | 90 | 102 | 3      | 110 | 91 | 19 | 2.5 | 7.5 | 9  |
| 80        | 107 | 110 | 88 | 95 | 107 | 3      | 117 | 98 | 19 | 3.0 | 7.5 | 9  |

Type: O-Ring Seal, Suit for Grundfos Pumps  
 Temperature:  $-20^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, Q2, U2, P, E, N, V, F, G, Alfa



| d<br>(mm) | d0 | D4  | D5  | D1  | D2  | D3  | D8 | L1  | L2 | L3  | L4 | L5  | L6  | L7 |
|-----------|----|-----|-----|-----|-----|-----|----|-----|----|-----|----|-----|-----|----|
| 16        | 11 | 33  | 36  | 19  | 25  | 33  | 2  | 60  | 20 | 48  | 12 | 1.5 | 5.5 | 7  |
| 18        | 13 | 35  | 38  | 22  | 28  | 36  | 2  | 64  | 20 | 52  | 12 | 1.5 | 5.5 | 7  |
| 20        | 15 | 37  | 40  | 23  | 30  | 40  | 3  | 66  | 22 | 52  | 14 | 2.0 | 6.5 | 8  |
| 22        | 17 | 39  | 42  | 26  | 32  | 42  | 3  | 70  | 22 | 56  | 14 | 2.0 | 6.5 | 8  |
| 25        | 20 | 42  | 45  | 28  | 35  | 45  | 3  | 70  | 22 | 56  | 14 | 2.0 | 6.5 | 8  |
| 28        | 22 | 45  | 48  | 31  | 38  | 48  | 3  | 72  | 22 | 58  | 14 | 2.0 | 6.5 | 8  |
| 30        | 25 | 52  | 55  | 33  | 40  | 50  | 3  | 79  | 23 | 65  | 14 | 2.0 | 6.5 | 8  |
| 35        | 28 | 57  | 60  | 37  | 45  | 55  | 3  | 84  | 24 | 70  | 14 | 2.0 | 6.5 | 8  |
| 40        | 34 | 62  | 65  | 42  | 50  | 60  | 3  | 88  | 24 | 74  | 14 | 2.0 | 6.5 | 8  |
| 45        | 38 | 67  | 70  | 47  | 55  | 65  | 3  | 95  | 24 | 81  | 14 | 2.0 | 6.5 | 8  |
| 50        | 44 | 72  | 75  | 52  | 60  | 70  | 3  | 99  | 24 | 85  | 14 | 2.5 | 6.5 | 8  |
| 55        | 48 | 77  | 80  | 57  | 65  | 75  | 3  | 101 | 24 | 87  | 14 | 2.5 | 6.5 | 8  |
| 60        | 52 | 82  | 85  | 62  | 70  | 80  | 3  | 101 | 24 | 87  | 14 | 2.5 | 6.5 | 8  |
| 65        | 58 | 92  | 95  | 70  | 80  | 90  | 3  | 113 | 27 | 96  | 17 | 2.5 | 6.5 | 8  |
| 70        | 62 | 97  | 100 | 74  | 85  | 97  | 3  | 120 | 32 | 101 | 19 | 2.5 | 7.5 | 9  |
| 75        | 66 | 102 | 105 | 79  | 90  | 102 | 3  | 120 | 32 | 101 | 19 | 2.5 | 7.5 | 9  |
| 80        | 72 | 107 | 110 | 84  | 95  | 107 | 3  | 127 | 32 | 108 | 19 | 3.0 | 7.5 | 9  |
| 85        | 76 | 112 | 115 | 89  | 100 | 112 | 3  | 129 | 32 | 110 | 19 | 3.0 | 7.5 | 9  |
| 90        | 82 | 117 | 120 | 94  | 105 | 117 | 3  | 130 | 32 | 111 | 19 | 3.0 | 7.5 | 9  |
| 95        | 85 | 122 | 125 | 99  | 110 | 122 | 3  | 130 | 32 | 111 | 19 | 3.0 | 7.5 | 9  |
| 100       | 90 | 127 | 130 | 104 | 115 | 127 | 3  | 130 | 32 | 111 | 19 | 3.0 | 7.5 | 9  |

## GR-G41(Sleeve)



Type: Grundfof Sleeve  
Temperature: -20 to +180°C  
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Manufacture it according to client's requirement



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## GR-G10-1(SOS)/GR-G10-2(SSOS)



Type: Suit for Grundfos SE- and SV series submersible pumps.

Replacement: AES SOS

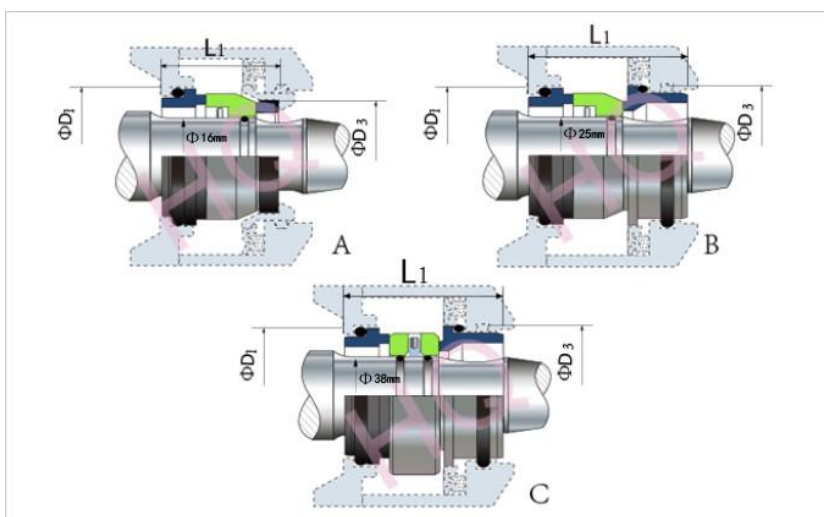
Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$

Pressure:  $\leq 1.2\text{Mpa}$

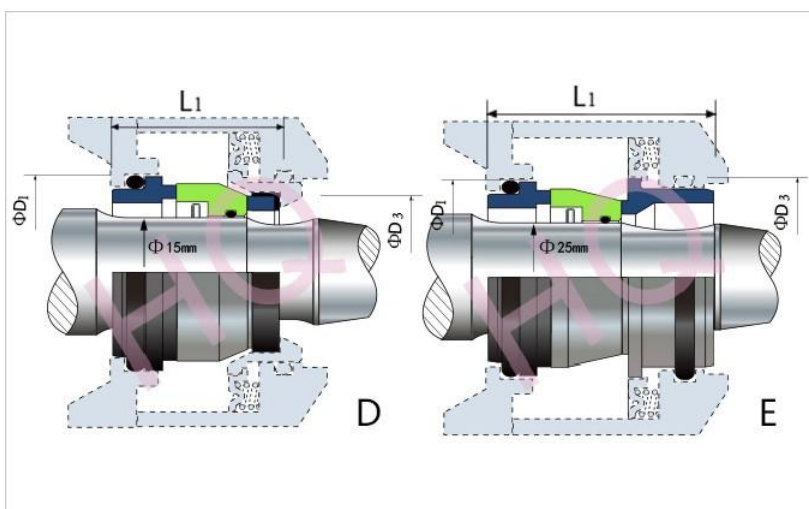
Speed:  $\leq 10\text{m/s}$

Material: Q1,Q2,A,B,P,E,V

### GR-G10-1(SOS)

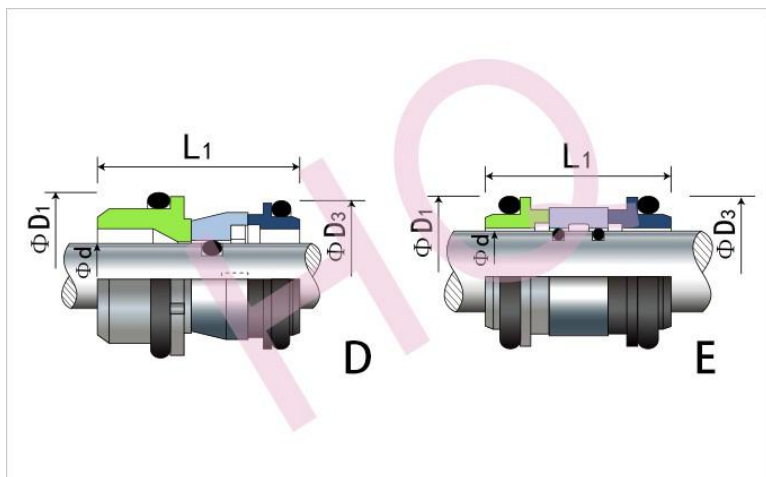
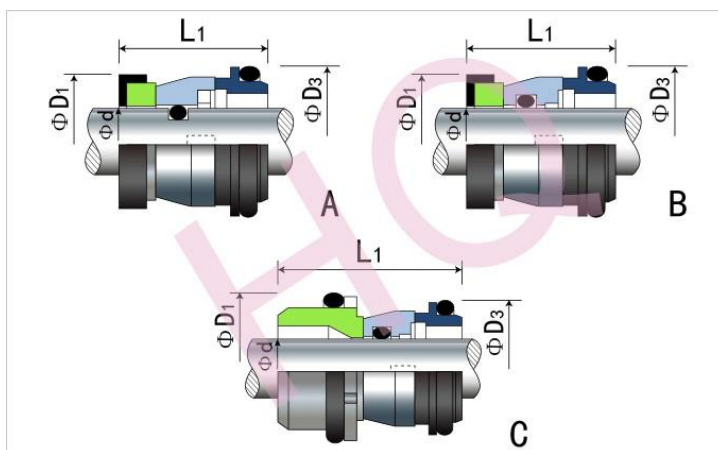


### GR-G10-2(SSOS)



## GR-G10-3(86)

Type: Double Seal, Suit for Grundfos  
SE- and SV- Series Pump  
Replacement: Vulcan 86  
Temperature: -20°C to +140°C  
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: Q1,Q2,A,B,P,E,V



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| Diagram | d<br>(mm) | D1 | D3 | L1   | Type |
|---------|-----------|----|----|------|------|
| A       | 16        | 28 | 35 | 30.0 | 86B  |
| B       | 16        | 28 | 35 | 30.0 | 86   |
| C       | 24        | 48 | 45 | 50.0 | 86   |
| D       | 24        | 48 | 45 | 50.0 | 86   |
| E       | 38        | 53 | 56 | 65.5 | 86   |

## GR-G42(HB80)



Type: Mechanical Seal  
Replacement: Suit for Grundfos Pumps  
Temperature: -20 to +120°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 12\text{m/s}$   
Material: Q1,Q2,U2,T,V,M1,F,G,M

### Product Details

#### \* The product description:

Vertical sectional plus stainless steel shell structure, the import and export of the pump at the same level and same caliber, can like valve installed in the pipeline, it focus on the multistage pump of high pressure, the vertical pump cover an small area and pipeline has the advantages of convenient installation, excellent hydraulic model is adopted at the same time, so also has the advantages of high efficiency and energy saving, smooth operation, mechanical seal and shaft seal adopts wear-resisting, leakproof, long service life.



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## HQ502L)

Type: Suit for Grundfos,Hilge Pumps

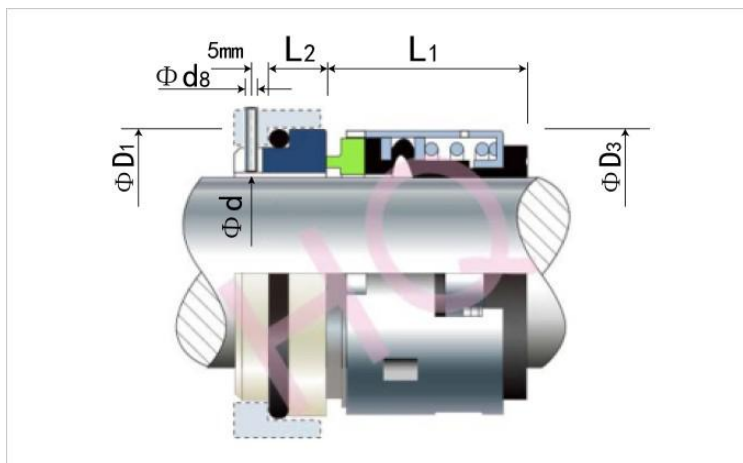
Replacement: AES B07SL,Vulcan 502/BP

Temperature: -20°C to +120°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: A,Q1,Q2,U1,U2,Graphite,F,G,M,M5



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| d<br>(mm) | D1  | D3    | d8 | L1   | L2   |
|-----------|-----|-------|----|------|------|
| 12        | 23  | 22.0  | 3  | 23.9 | 8.6  |
| 14        | 25  | 24.0  | 3  | 26.4 | 8.6  |
| 16        | 27  | 26.2  | 3  | 26.4 | 8.6  |
| 18        | 33  | 32.2  | 3  | 27.5 | 10.0 |
| 20        | 35  | 33.9  | 3  | 27.5 | 10.0 |
| 22        | 37  | 36.1  | 3  | 27.5 | 10.0 |
| 24        | 39  | 38.1  | 3  | 30.0 | 10.0 |
| 25        | 40  | 38.8  | 3  | 30.0 | 10.0 |
| 28        | 43  | 42.1  | 3  | 32.5 | 10.0 |
| 30        | 45  | 44.2  | 3  | 32.5 | 10.0 |
| 32        | 48  | 45.8  | 3  | 32.5 | 10.0 |
| 33        | 48  | 46.9  | 3  | 32.5 | 10.0 |
| 35        | 50  | 48.8  | 3  | 32.5 | 10.0 |
| 38        | 56  | 54.2  | 4  | 34.0 | 11.0 |
| 40        | 58  | 56.1  | 4  | 34.0 | 11.0 |
| 43        | 61  | 58.8  | 4  | 34.0 | 11.0 |
| 45        | 63  | 60.9  | 4  | 34.0 | 11.0 |
| 48        | 66  | 64.1  | 4  | 34.0 | 11.0 |
| 50        | 70  | 66.2  | 4  | 34.5 | 13.0 |
| 53        | 73  | 69.1  | 4  | 34.5 | 13.0 |
| 55        | 75  | 71.1  | 4  | 34.5 | 13.0 |
| 58        | 78  | 78.2  | 4  | 39.5 | 13.0 |
| 60        | 80  | 79.9  | 4  | 39.5 | 13.0 |
| 63        | 83  | 82.8  | 4  | 39.5 | 13.0 |
| 65        | 85  | 85.1  | 4  | 39.5 | 13.0 |
| 70        | 92  | 90.0  | 4  | 44.7 | 15.3 |
| 75        | 97  | 97.0  | 4  | 44.7 | 15.3 |
| 80        | 105 | 104.0 | 4  | 44.3 | 15.7 |
| 85        | 110 | 108.0 | 4  | 44.3 | 15.7 |
| 90        | 115 | 114.0 | 4  | 49.3 | 15.7 |
| 95        | 120 | 118.0 | 4  | 49.3 | 15.7 |
| 100       | 125 | 124.0 | 4  | 49.3 | 15.7 |

## HQ60/65

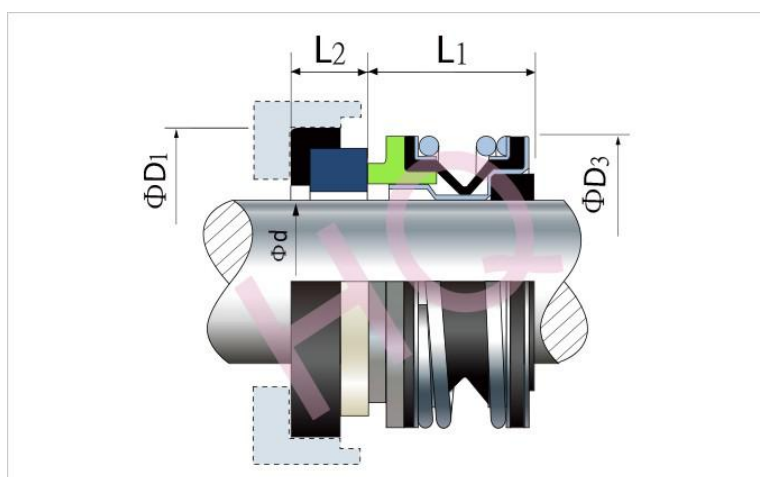


Type: Suit for Grundfos, Hilge Pumps  
 Replacement: Vulcan 60/65, AES B04/B04U,  
 Crane 106, Roten 16, Flowserve 160  
 Temperature: -20 to +120°C

Pressure:  $\leq 0.5$  Mpa

Speed:  $\leq 10$  m/s

Material: B, Q2, U2, P, E, N, V, F, G, Alfa



| Size<br>(mm) | d    | D1   | D3    | L1    | L2    |
|--------------|------|------|-------|-------|-------|
| 60/0.375     | 9.5  | 22.2 | 24.00 | 16.00 | 6.20  |
| 60/0.500     | 12.7 | 25.4 | 27.00 | 16.60 | 6.20  |
| 60/0.625     | 15.8 | 31.8 | 31.00 | 18.70 | 10.31 |
| 60/0.750     | 19.0 | 34.9 | 34.20 | 18.70 | 10.31 |
| 60/1.000     | 25.4 | 41.3 | 43.00 | 20.60 | 11.10 |
| 65/0.375     | 9.5  | 25.4 | 27.00 | 16.60 | 7.90  |
| 65/0.500     | 12.7 | 25.4 | 27.00 | 16.60 | 7.90  |
| 65/0.625     | 15.8 | 31.7 | 31.00 | 18.20 | 10.30 |
| 65/0.750     | 19.1 | 34.9 | 34.20 | 18.20 | 10.30 |
| 65/1.750     | 63.5 | 61.0 | 51.59 | 33.34 | 10.32 |



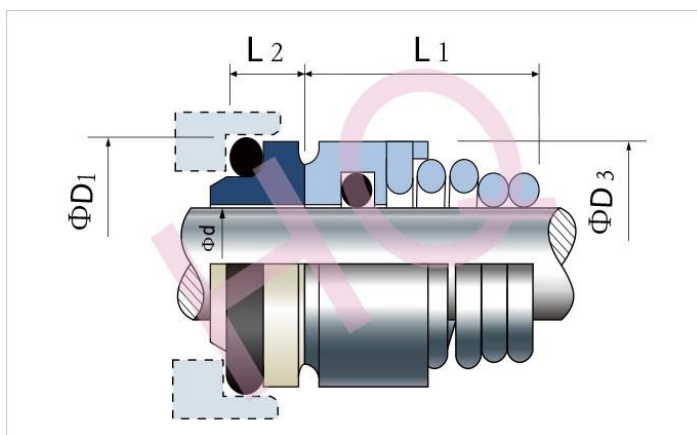
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## HIL-06(8B...127)

Type: Suit for Grundfos, Hilge centrifugal pumps  
 Replacement: Vulcan 8B, 8BU, 12, 12S, 12H, 126, 126L, 127. Billi BB1  
 Temperature: -20°C to +180°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



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| d<br>(mm) | D1   | D3 | L1   | L2   | Vulcan<br>Code | O.E.M.<br>Seal Code |
|-----------|------|----|------|------|----------------|---------------------|
| 19        | 30.9 | 31 | 25.0 | 8.0  | 12             | 001-19 O3           |
| 19        | 30.9 | 31 | 25.0 | 8.0  | 12S            | 001-19 O5           |
| 19        | 35.0 | 31 | 20.0 | 9.5  | 8BU            | 002-19 O3           |
| 22        | 37.0 | 33 | 27.5 | 10.0 | 126            | L1K-22 F3           |
| 28        | 43.3 | 40 | 29.0 | 9.0  | 12             | 001-28 O3           |
| 28        | 43.3 | 40 | 29.0 | 9.0  | 12H            | 001-28 A3           |
| 28        | 43.3 | 40 | 29.0 | 9.0  | 12S            | 001-28-O5           |
| 28        | 42.0 | 40 | 24.6 | 11.0 | 8B             | 002-28 O3           |
| 30        | 45.0 | 43 | 32.5 | 10.0 | 126            | L1K-30 F3           |
| 30        | 45.0 | 43 | 32.5 | 10.0 | 126L           | L1K-30 G3           |
| 30        | 45.0 | 43 | 40.0 | 10.0 | 127            | L1K-30 D3           |
| 38        | 60.5 | 53 | 39.0 | 11.5 | 12             | 001-38 O3           |
| 38        | 55.0 | 53 | 31.0 | 11.5 | 8B             | 002-38 O3           |
| 40        | 58.0 | 56 | 34.0 | 13.0 | 126            | L1K-40 F3           |
| 40        | 58.0 | 56 | 34.0 | 13.0 | 126L           | L1K-40 G3           |
| 50        | 70.0 | 66 | 38.0 | 14.0 | 126            | L1K-50 F3           |
| 50        | 70.0 | 66 | 38.0 | 14.0 | 126L           | L1K-50 G3           |
| 50        | 70.0 | 66 | 43.0 | 14.0 | 8BU            | 1238-50 O3          |

## HIL-07(128)



Type: Suit for Grundfos, Hilge centrifugal Pumps

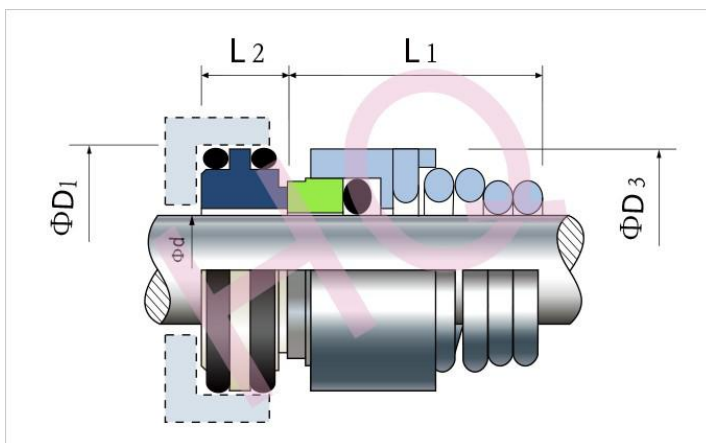
Replacement: Vulcan 128, Billi BB1S

Temperature:  $-20^{\circ}\text{C}$  to  $+180^{\circ}\text{C}$

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | D1   | D3 | L1   | L2   | O.E.M.<br>Seal Code |
|-----------|------|----|------|------|---------------------|
| 19        | 39.3 | 31 | 20.0 | 10.8 | OB3-19 B3           |
| 28        | 47.3 | 40 | 26.5 | 11.3 | OB3-28 B3           |
| 38        | 59.3 | 53 | 33.5 | 11.3 | OB3-38 B3           |

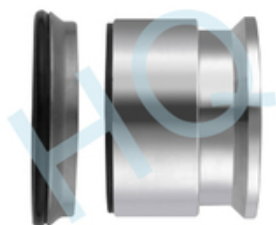


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## HIL-01(M010S1)



Type: Suit for Grundfos, Higel Hygiana

centrifugal Pumps

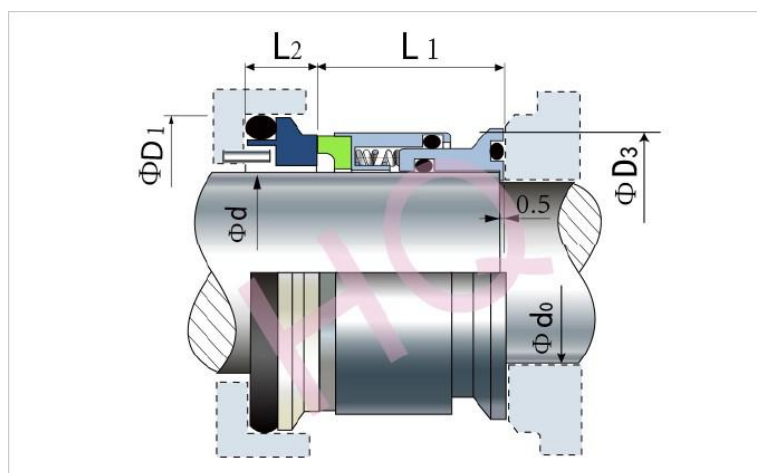
Replacement: AES M010S1, Burgamnn SHJ97, Vulcan 1663, Billi BB8H3, ROTEN EHS3

Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0 | D1   | D3   | L1   | L2   | Vulcan Code | O.E.M.<br>Seal Code |
|-----------|----|------|------|------|------|-------------|---------------------|
| 28        | 24 | 48.0 | 43.0 | 34.5 | 10.5 | 1663        | BS2-28 O1           |
| 38        | 35 | 57.1 | 52.8 | 35.0 | 10.5 | 1663        | BS2-38 O1           |

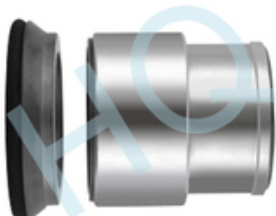


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## HIL-02(M010S1)



Type: Suit for Grundfos, Hilge Euro-Hygia

centrifugal Pumps

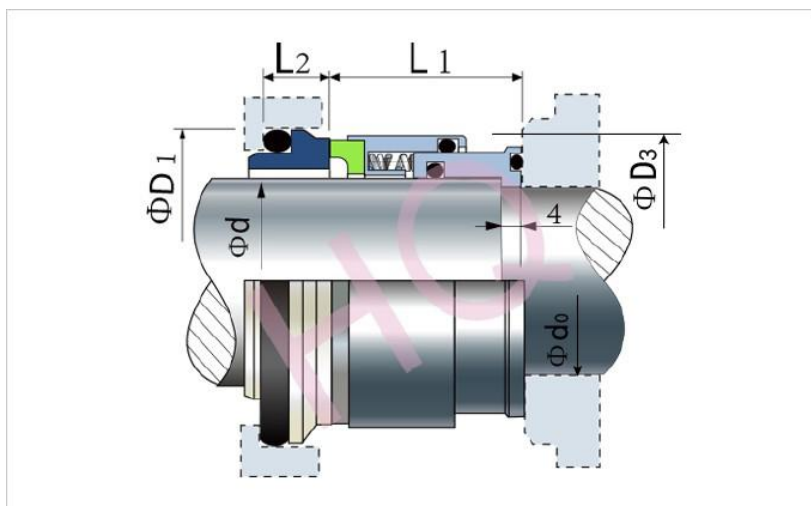
Replacement: AES M010S2, Burgamnn SHJ97,

Vulcan 1663A, Billi BB8H3A,  
ROTEN EHS3

Temperature: -40°C to +250°C

Pressure:  $\leq 2.5$  Mpa Speed:  $\leq 15$  m/s

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0   | D1   | D3   | L1   | L2   | Vulcan<br>Code | O.E.M.<br>Seal Code |
|-----------|------|------|------|------|------|----------------|---------------------|
| 28.0      | 24.0 | 48.0 | 43.0 | 38.0 | 10.5 | 1663A          | BS3-28 O1           |

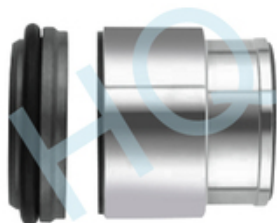


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## HIL-03(M010S1)



Type: Suit for Grundfos, Hilge Euro-

HYGIA, HYGIA, Panda, Sipia

centrifugal Pumps

Replacement: AES M010S3, Burgamnn SHJ97,

Vulcan1662, Billi BB8HA2,

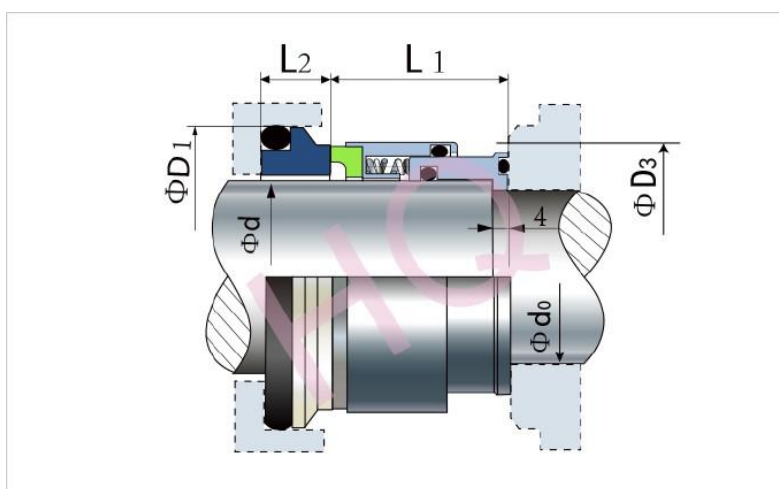
ROTEN EHS3

Temperature: -40°C to +250°C

Pressure:  $\leq 2.5$  Mpa

Speed:  $\leq 15$  m/s

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0 | D1   | D3   | L1 | L2   | Vulcan<br>Code | O.E.M.<br>Seal Code |
|-----------|----|------|------|----|------|----------------|---------------------|
| 19        | 16 | 30.9 | 33.5 | 29 | 8.0  | 1662           | 001-19 O1           |
| 28        | 24 | 43.3 | 43.0 | 33 | 9.0  | 1662           | 001-28 O1           |
| 28L       | 24 | 43.3 | 43.0 | 33 | 9.0  | 1662L          | 001-28 A1           |
| 38        | 35 | 60.5 | 52.8 | 43 | 11.5 | 1662           | 001-38 O1           |



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## HSK-01



Type: Suit Hisaka Pumps  
Replacement: Ridering HSK  
Temperature: -25 to +150°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B, Q2, U2, P, E, N, V, F, G, Alfa

Equal to Lidering HSK Seals

Suit Hisaka Pumps

d=20mm, 35mm, 45mm.



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Type: Suit Inbeat Pumps  
Replacement: Ridering IB Seals  
Temperature: -25 to +150°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Equal to Lidering IB Seals

Suit Inbeat Pumps

d=15mm, 20mm, 25mm,, 35mm

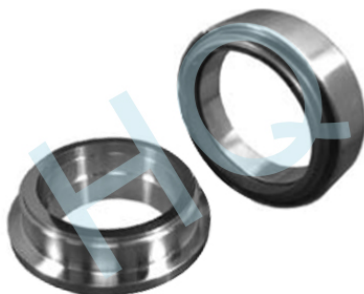


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## ROTO-01



Type: Suit Roto Jet Pumps  
Replacement: U.S. VGXAB  
Temperature: -25 to +150°C  
Pressure:  $\leq 0.8\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa

Suit Roto Jet Pumps

Equal U.S. VGXAB.

d=2 1/2



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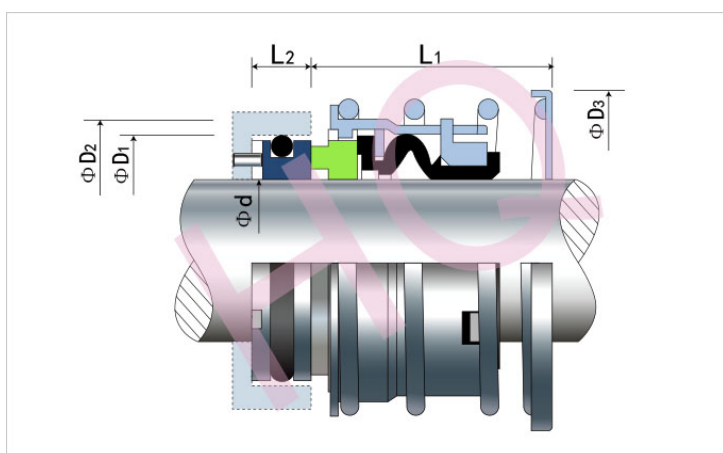


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## OP-02



Type: Viking Pump Seals  
 Replacement: Vulcan V4, Lidering VI 101  
 Temperature: -20 to +150°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 10\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G,Alfa



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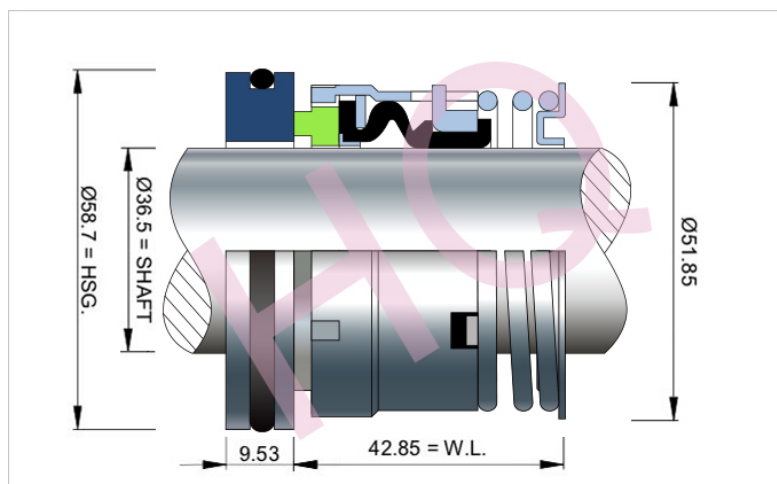


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| d<br>(inch) | Size Code | D1    | D2   | D3   | L1   | L2   |
|-------------|-----------|-------|------|------|------|------|
| 1.000       | 0254      | 40.82 | 37.0 | 43.0 | 25.4 | 7.87 |
| 1.250       | 0317      | 47.60 | 45.5 | 51.5 | 25.4 | 9.65 |

0254.O.AN. Stationary has no ANTI-ROTATION slot

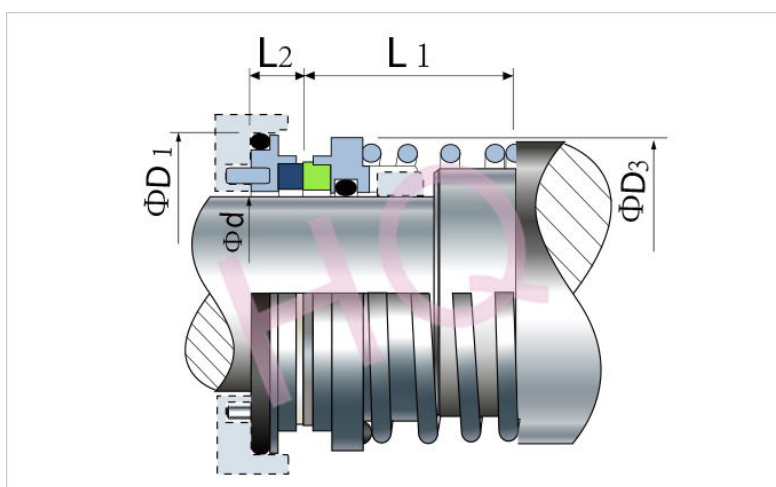
0317.O.AN Stationary has 2 off slots at 180"



## OP-04



Type: Viking Pump Seals  
 Replacement: AES P011, Vulcan 89  
 Temperature: -20°C to +120°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d     |       | D1    |       | D3    |       | L1    |       | L2   |       |
|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| mm    | inch  | mm    | inch  | mm    | inch  | mm    | inch  | mm   | inch  |
| 28.58 | 1.125 | 50.30 | 1.980 | 47.20 | 1.858 | 34.87 | 1.373 | 9.40 | 0.370 |
| 36.50 | 1.437 | 58.00 | 2.283 | 56.50 | 2.224 | 43.73 | 1.722 | 9.40 | 0.370 |



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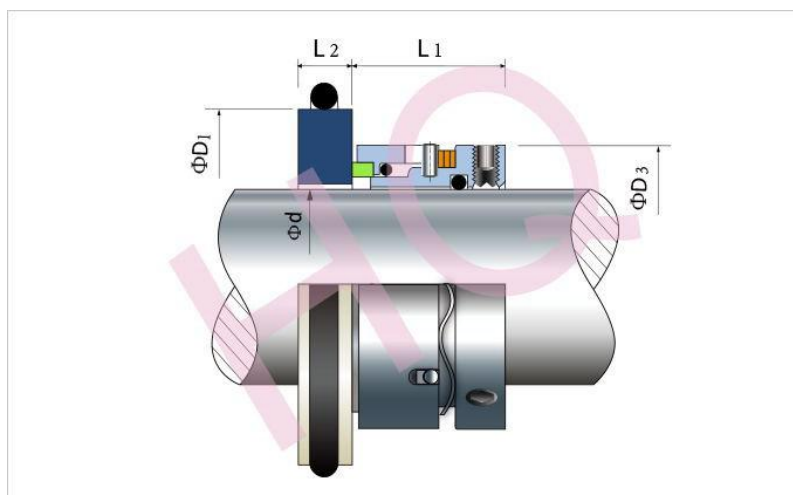


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## GD-01(1653)



Type: Suit Godwin "DRI-PRIME"  
series pumps  
Replacement: Vulcan 1653  
Temperature:  $-40^{\circ}\text{C}$  to  $+205^{\circ}\text{C}$   
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D1   | D3 | L1 | L2   |
|-----------|------|----|----|------|
| 40        | 69.9 | 56 | 32 | 7.5  |
| 50        | 89.9 | 71 | 34 | 13.0 |

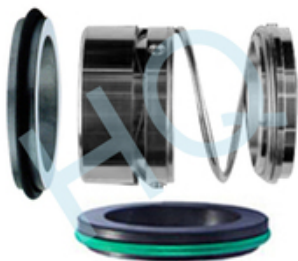


<http://www.hqseal.com>

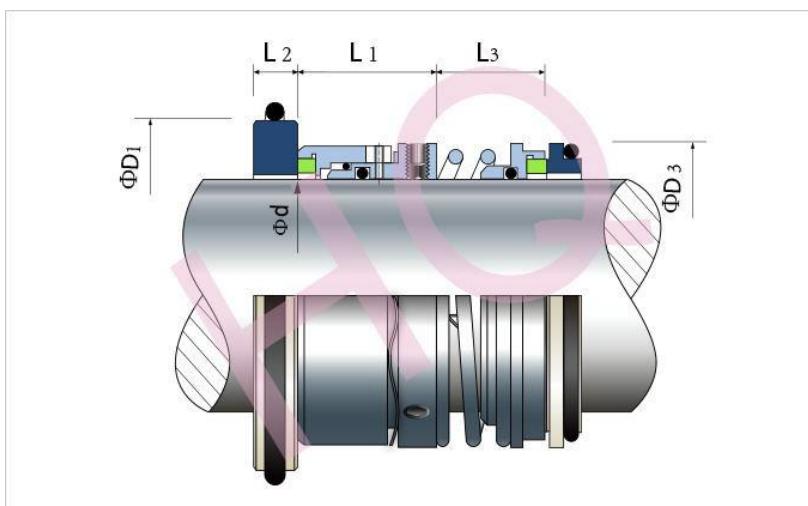


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## GD-02(1653D)



Type: Suit Godwin DRI-PRIME  
 Series pumps  
 Replacement: Vulcan 1653D  
 Temperature: -20°C to +120°C  
 Pressure:  $\leq 1.0\text{Mp}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D1    | D2 | L1   | L2   | L3 |
|-----------|-------|----|------|------|----|
| 75        | 109.9 | 98 | 45.5 | 14.9 | 37 |

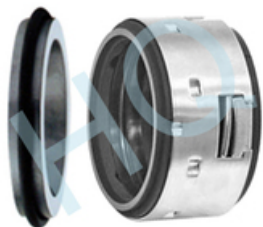


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## GD-03(1724P/1725P)

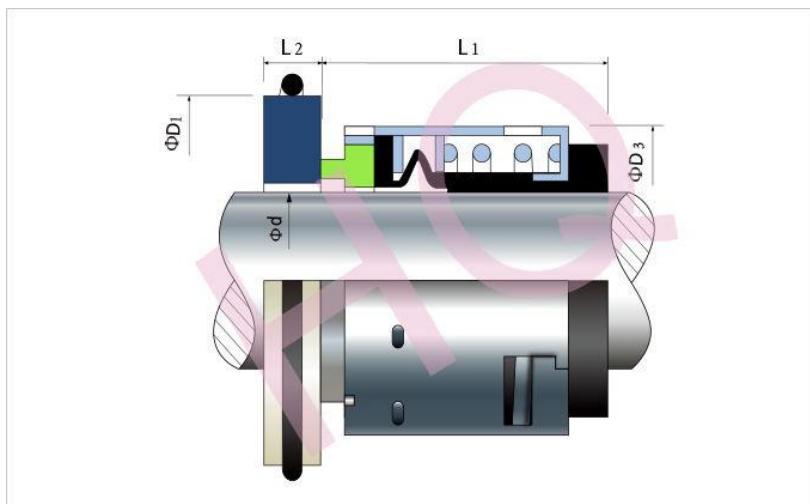


Type: Suit Godwin "DRI-PRIME" series pumps  
 Replacement: Vulcan 1724P and 1725P, AES B07X  
 Temperature: -40°C to +200°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | D1   | D3 | L1   | L2   | Vulcan<br>Type |
|-----------|------|----|------|------|----------------|
| 40        | 69.9 | 56 | 32.0 | 7.35 | 1725P          |
| 50        | 64.5 | 66 | 34.5 | 10.3 | 1724P          |



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# GD-04(B092XU)

Type: Suit for Godwin CD/HL Pumps

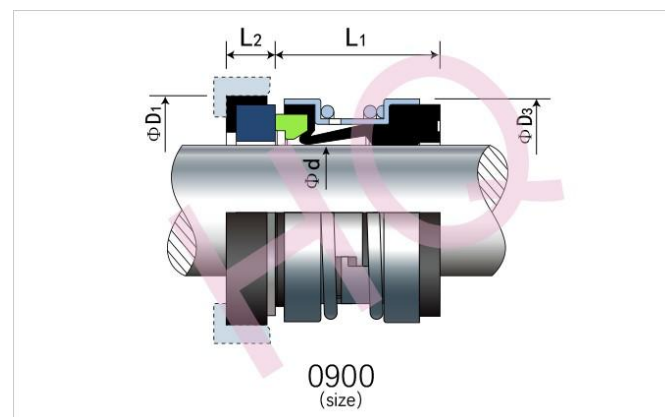
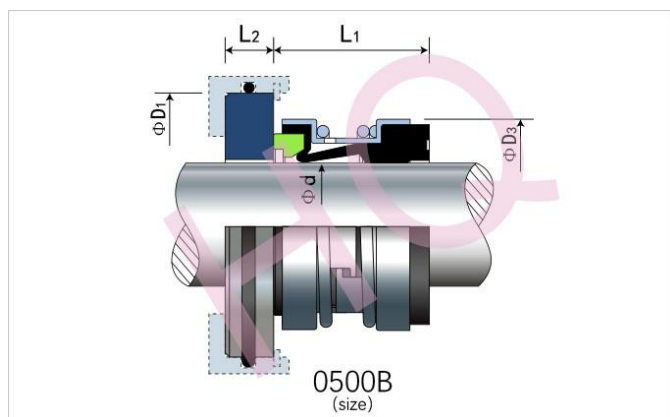
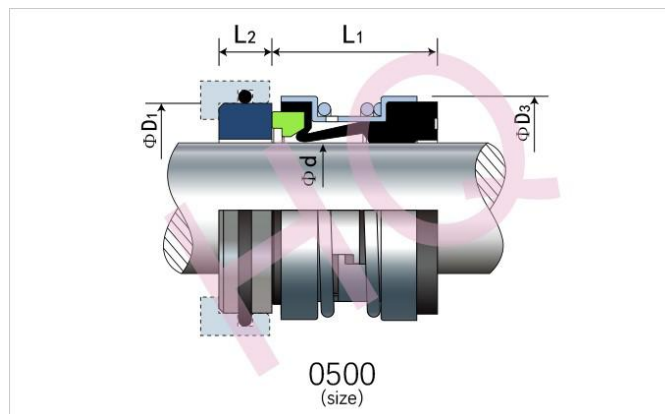
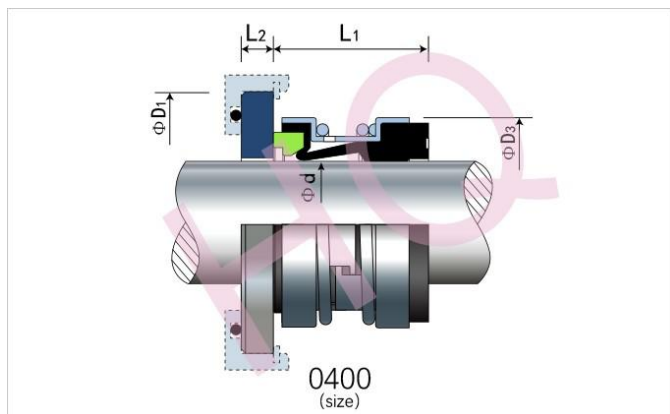
Replacement: AES B092XU

Temperature: -20°C to +120°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

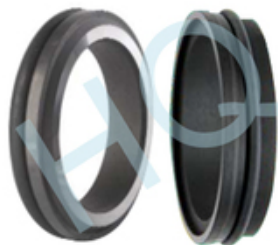
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



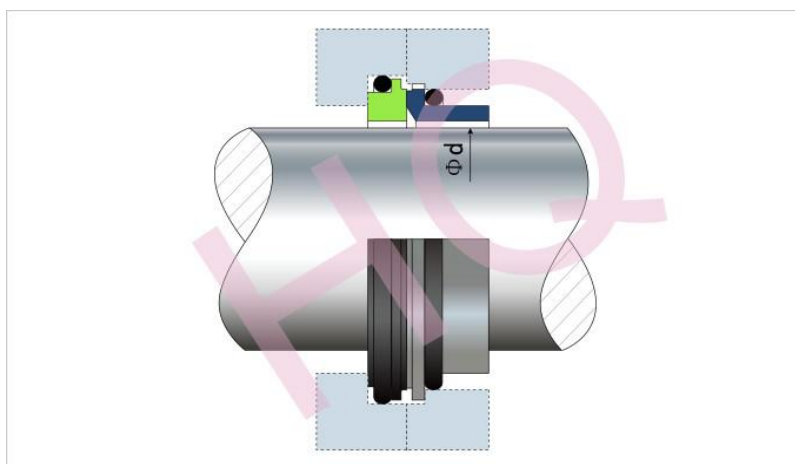
| Size | d<br>(mm)   | D1    | D3    | L1    | L2    |
|------|-------------|-------|-------|-------|-------|
| 40   | 40          | 70.0  | 55    | 32.0  | 7.3   |
| 50   | 50          | 64.5  | 65    | 34.0  | 10.3  |
| 50B  | 50          | 90.0  | 65    | 34.0  | 13.0  |
| 90   | 90          | 115   | 113   | 47.6  | 14.0  |
|      |             |       |       |       |       |
| Size | d<br>(inch) | D1    | D3    | L1    | L2    |
| 40   | 1.575       | 2.756 | 2.165 | 1.260 | 0.287 |
| 50   | 1.969       | 2.539 | 2.559 | 1.339 | 0.406 |
| 50B  | 1.969       | 3.543 | 2.559 | 1.339 | 0.512 |
| 90   | 3.543       | 4.528 | 4.449 | 1.874 | 0.551 |



## GD-05(MOGFPU)



Type: Suit for Godwin Fir Pumps  
 Replacement: AES MOGFPU  
 Temperature: -20 to +180°C  
 Pressure:  $\leq 2.7\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



Suit for Godwin Fire Pumps.

d=44.00mm,1.732 inch

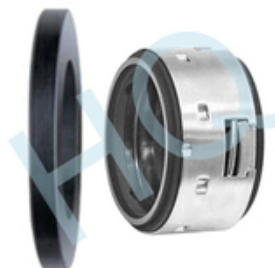


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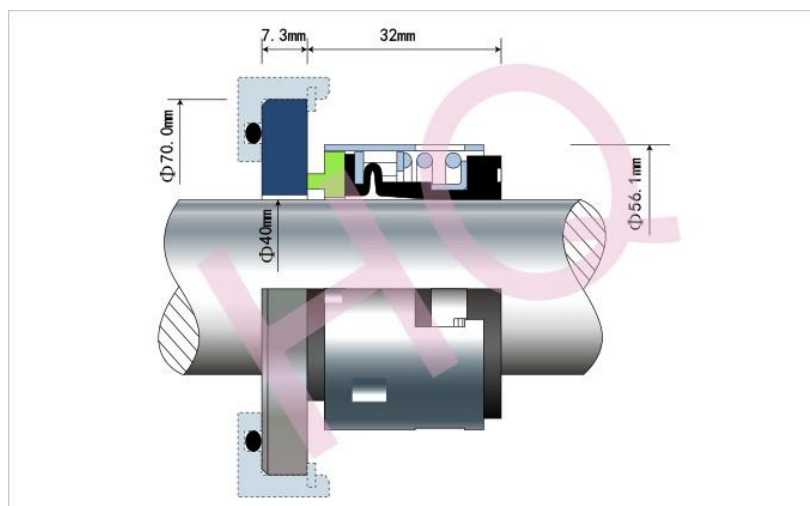


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## GD-06(B07X)



Type: Godwin CD80,CD100  
and CD150 Sals  
Replacement: AES B07X  
Temperature: -20 to +180°C  
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 10\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa



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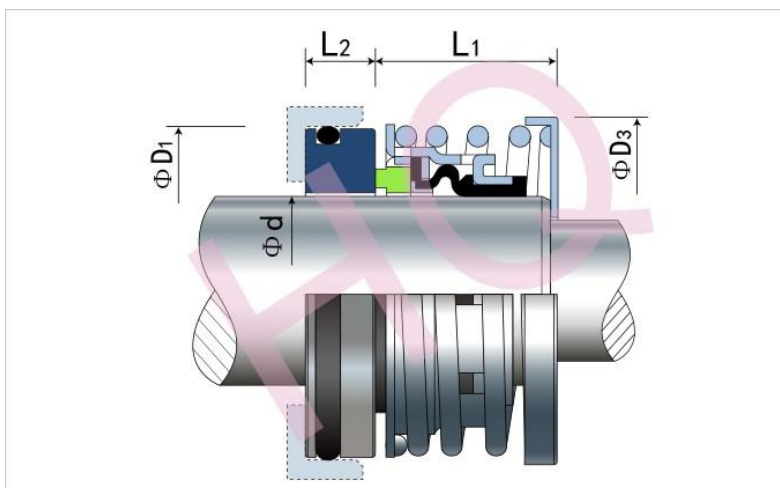


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## GMN-01(P02GU)



Type: GORMAN-RUPP T3/T4/T6  
Pumps Seal  
Replacement: AES P02GU  
Temperature:  $-20^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$   
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 38.1        | 60.3  | 59.2  | 33.3  | 13.2  |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.500       | 2.374 | 2.329 | 1.313 | 0.520 |

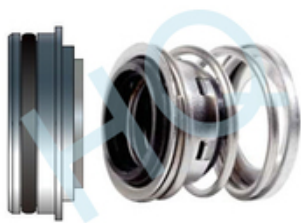


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## GMN-02(P02GU-GR)



Type: MORMAN-RUPP Pump Seal

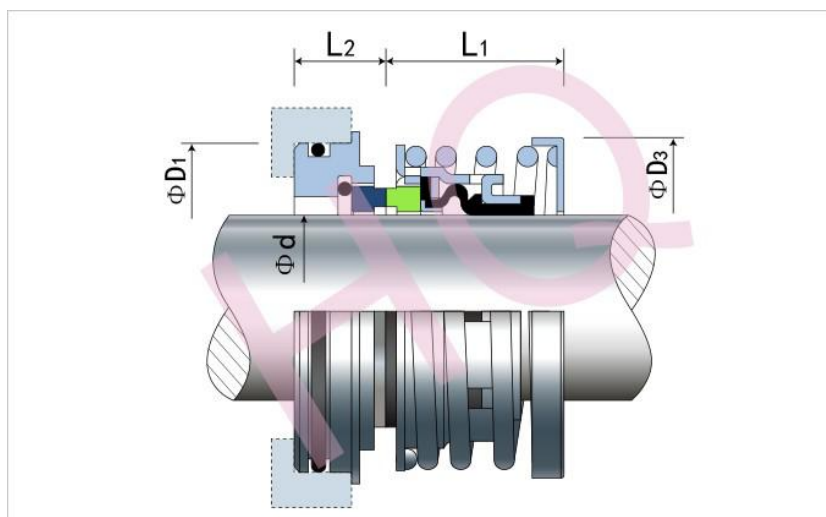
Replacement: AES P02GU-GR

Temperature: -20 to +140°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 47.6        | 73    | 73.2  | 38.1  | 20.6  |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.875       | 2.875 | 2.880 | 1.500 | 0.809 |



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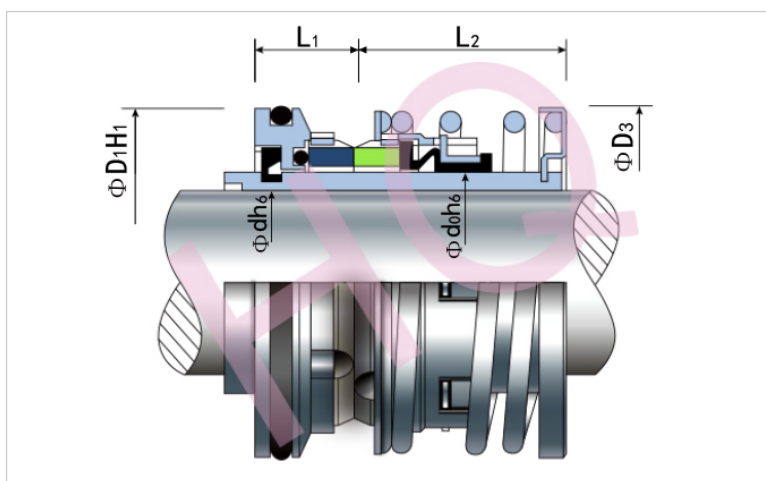


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## GMN-03



Type: MORMAN-RUPP Pump Seal  
 Replacement: Lidering GRN, US VGD  
 Temperature: -20 to +140°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(inch) | d0     | D1     | D3    | L1   | L2   |
|-------------|--------|--------|-------|------|------|
| 1.250       | 38.100 | 60.35  | 62.0  | 17.0 | 36.5 |
| 1.500       | 47.625 | 73.00  | 75.5  | 20.5 | 37.5 |
| 1.875       | 57.150 | 93.00  | 86.0  | 19.0 | 38.0 |
| 2.250       | 69.850 | 102.00 | 104.5 | 22.5 | 46.0 |
| 2.750       |        |        |       |      |      |



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Type: GORMANN-RUPP Pump Seal  
Replacement: US VGDU  
Temperature: -20 to +120°C  
Pressure:  $\leq 1.4\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,Q2,U2,P,E,N,V,F,G,Alfa

Gorman-Rupp Pumps, for T range of self-priming Gorman-Rupp Pumps.

Pumps Model: T3/T4/T6, Model: T8, Model: T10



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## GMN-05

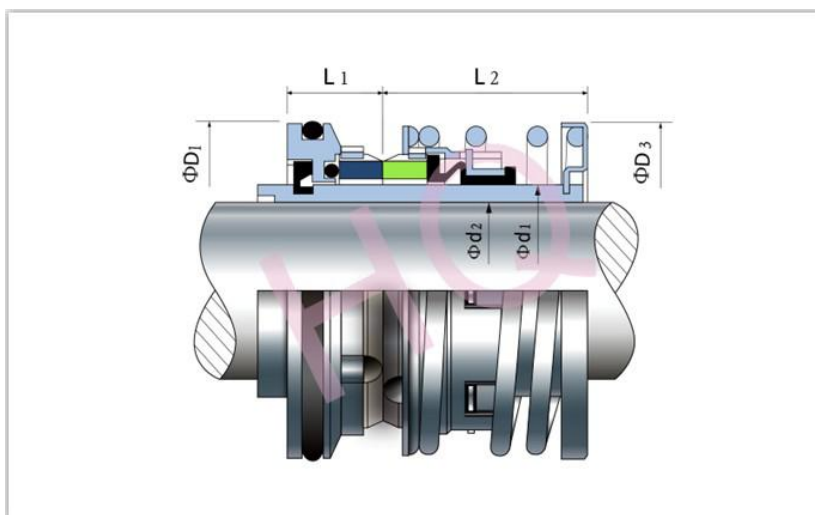


Type: GORMAN-RUPP Pumps Seal  
Temperature: -20°C to +120°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d1   | d2    | D1   | D3   | L1 | L2   |
|------|-------|------|------|----|------|
| 38.1 | 31.75 | 60.3 | 60.1 | 17 | 36.5 |



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Type: GORMANN-RUPP Pump Seal

Temperature: -20 to +120°C

Pressure:  $\leq 1.4\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa

d=30mm



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## CO-P02G



Type: Suit for Gorman Rupp T3,T4 and T6 Pumps.

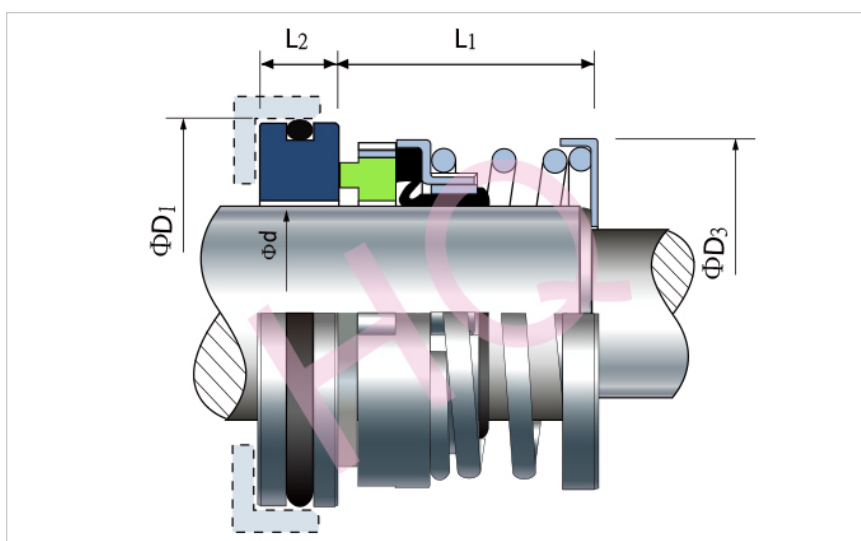
Replacement: AES P02G

Temperature: 20°C to +120°C

Pressure:  $\leq 1.1\text{Mpa}$

Speed:  $\leq 20\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d    | D1   | D3 | L1 | L2   |
|------|------|----|----|------|
| 38.1 | 60.3 | 56 | 32 | 13.2 |



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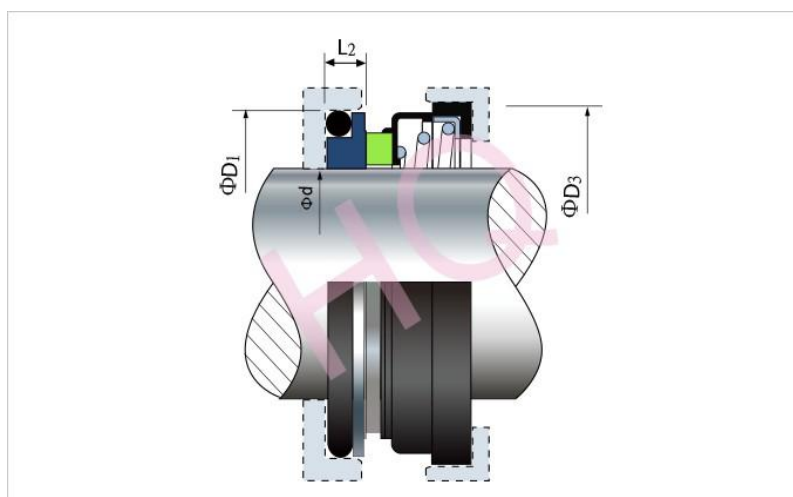


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## HAI-02(B06)



Type: Suit for Haigh Macerators  
 Replacement: AES B06, Vulcan 28,  
 Flowerve MAC  
 Temperature:  $-30^{\circ}\text{C}$  to  $+200^{\circ}\text{C}$   
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: F,B,Q2,V,P,E,G



| d<br>(mm) | D1 | D3   | L2  |
|-----------|----|------|-----|
| 31.7      |    | 57.5 |     |
| 44.4      | 67 | 70.0 | 7.5 |

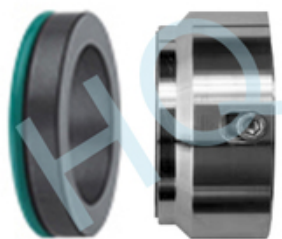


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## HAI-03(1620)



Type: Suit Haigh Macerators

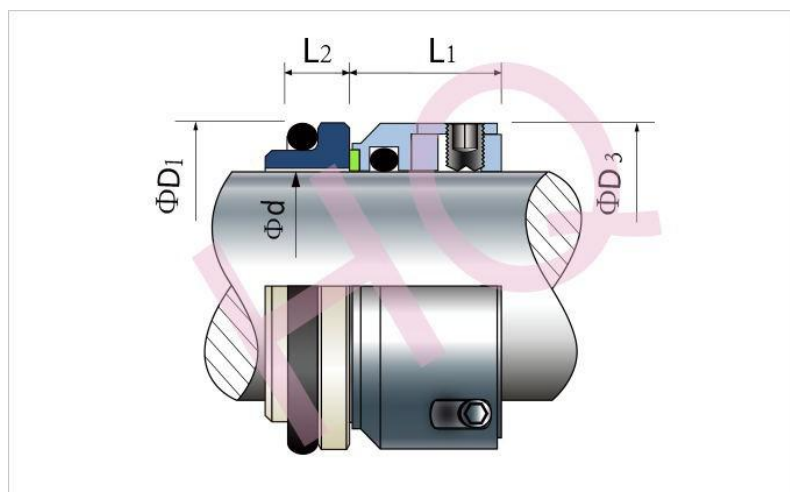
Replacement: Vulcan 1620

Temperature: -40°C to +250°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D1 | D3 | L1    | L2   |
|-----------|----|----|-------|------|
| 42        | 62 | 65 | 30.15 | 14.1 |



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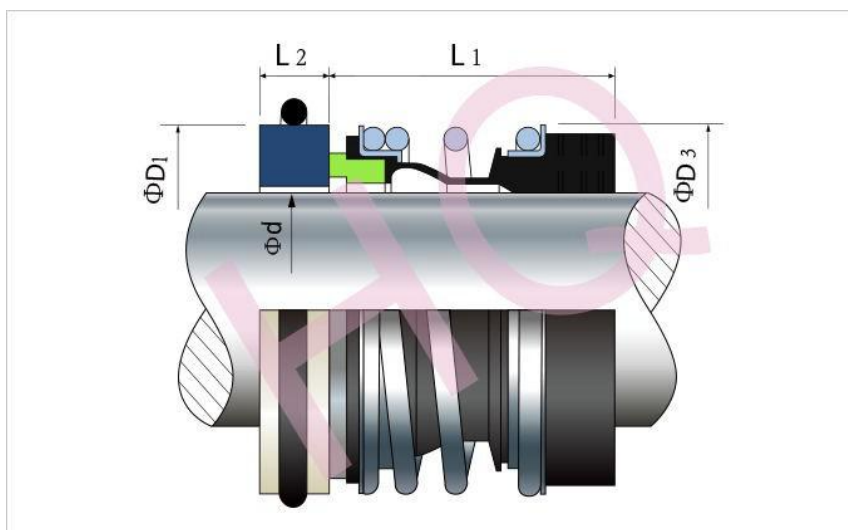


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## HAI-06(144)



Type: KOLMEKS A-,L-,N-  
and T- pumps Seals  
Replacement: Vulcan 144  
Temperature: -20°C to +120°C  
Pressure:  $\leq 1.0\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D1    | D3 | L1    | L2  |
|-----------|-------|----|-------|-----|
| 12        | 22.22 | 22 | 25.40 | 5.5 |
| 28        | 30.15 | 32 | 24.50 | 8.0 |
| 25        | 36.73 | 39 | 25.40 | 8.0 |
| 32        | 46.00 | 46 | 30.15 | 8.5 |
| 40        | 58.00 | 56 | 36.00 | 9.0 |

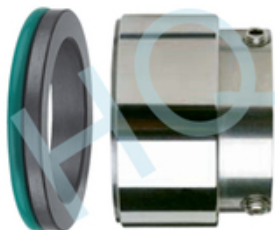


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# HAI-10(M010X)

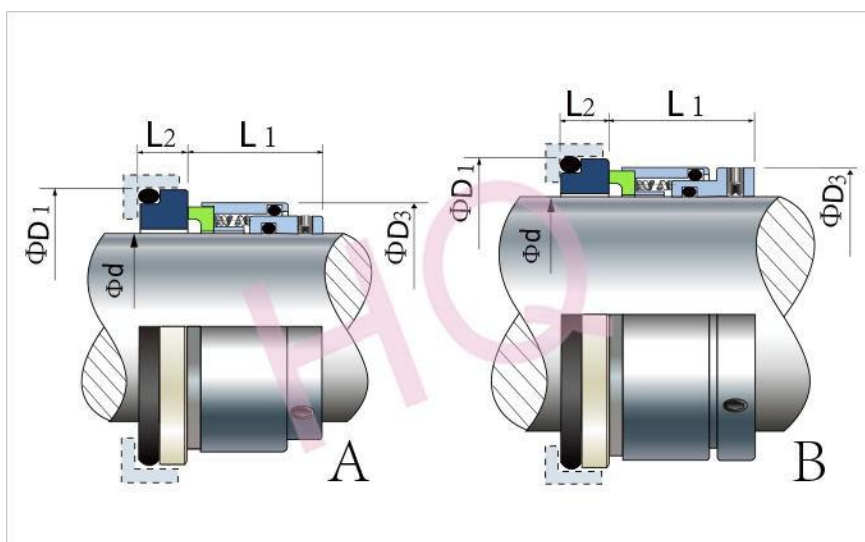


Type: Suit for Haigh MACI Pumps  
 Replacement: AES M010X, Burgmann 477  
 Temperature: -40°C to +250°C

Pressure:  $\leq 1.2\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| Type | d<br>(mm) | D1 | D3   | L1   | L2   |
|------|-----------|----|------|------|------|
| A    | 42        | 62 | 59.0 | 33.9 | 10.1 |
| B    | 70        | 92 | 87.3 | 36.5 | 11.3 |



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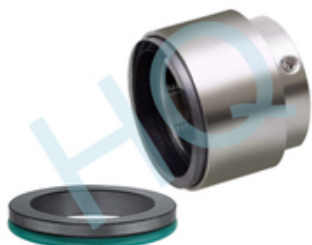


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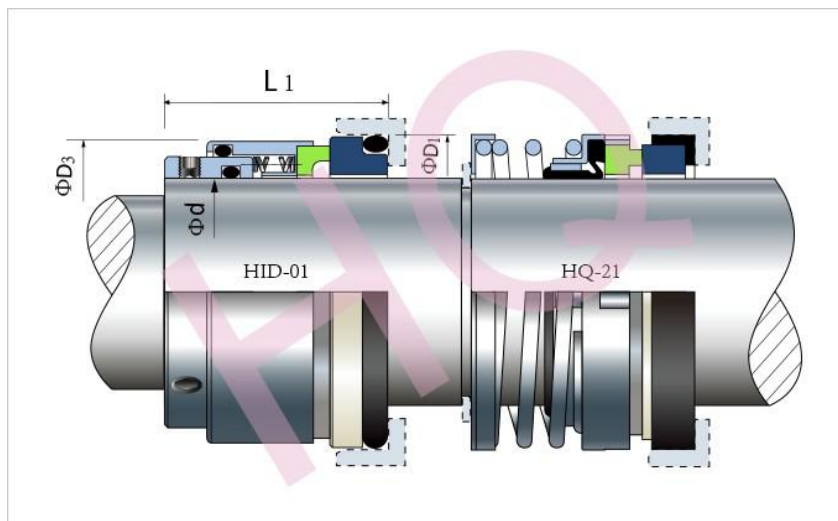


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## HID-10(SAIH)



Type: Suit for Hidrostat  
G,M,X Pumps  
Replacement: AES SAIH  
Temperature: -40°C to +250°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(inch) | D1   | D3   | L1   |
|-------------|------|------|------|
| 28.6        | 44.4 | 43.1 | 38.1 |
| 38.1        | 53.9 | 52.7 | 39.6 |
| 50.8        | 69.8 | 65.9 | 46.6 |
| 76.2        | 98.4 | 93.6 | 52.4 |



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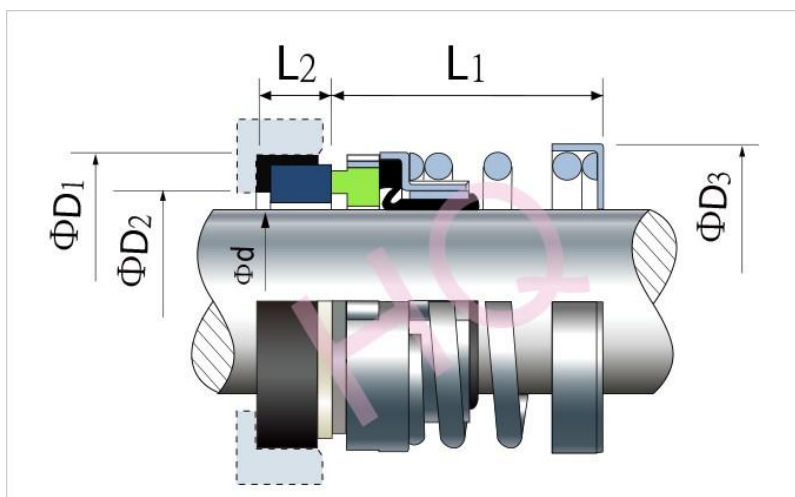


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# HID-02(P03)



Type: Suit for HIDROSTAL Pumps  
 Replacement: AES P03, Vulcan RD11, Burgamnn 912/D1/G60  
 Temperature: -20°C to +120°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d     |       | D1    |       | D3    |       | L1    |       | L2    |       | O.E.M.    |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| mm    | inch  | mm    | inch  | mm    | inch  | mm    | inch  | mm    | inch  | Seal Code |
| 22.23 | 0.875 | 38.10 | 1.500 | 33.4  | 1.315 | 23.80 | 0.937 | 10.28 | 0.405 | C0.6,V0.6 |
| 25.00 | 0.984 | 40.50 | 1.594 | 39.2  | 1.543 | 25.40 | 1.000 | 10.32 | 0.406 | CO25      |
| 28.58 | 1.125 | 44.44 | 1.750 | 46.3  | 1.823 | 26.97 | 1.062 | 11.10 | 0.437 | C1.1,V1.1 |
| 34.93 | 1.375 | 50.80 | 2.000 | 52.6  | 2.071 | 28.58 | 1.125 | 11.10 | 0.437 | C1.3      |
| 38.10 | 1.500 | 53.98 | 2.125 | 55.8  | 2.197 | 28.58 | 1.125 | 11.10 | 0.437 | C1.5      |
| 50.80 | 2.000 | 69.85 | 2.750 | 73.0  | 2.874 | 38.10 | 1.500 | 12.70 | 0.500 | C2.0      |
| 63.50 | 2.500 | 85.73 | 3.375 | 84.9  | 3.343 | 46.02 | 1.812 | 14.28 | 0.562 | C2.5      |
| 76.20 | 3.000 | 98.43 | 3.875 | 102.7 | 4.043 | 52.37 | 2.062 | 15.88 | 0.625 | C3.0      |



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## HID-03(194)



Type: Suit Hidrostral pumps

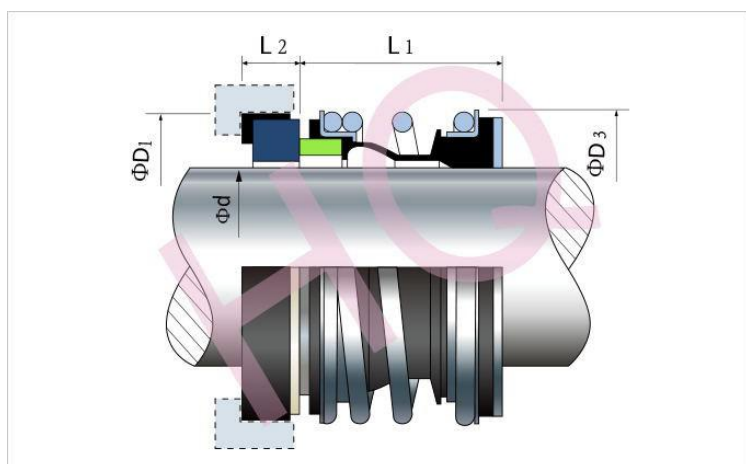
Replacement: Vulcan 194

Temperature: -20°C to +120°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



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| d      |       | D1     |       | D3    |       | L1    |       | L2    |       | O.E.M.    |
|--------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-----------|
| mm     | inch  | mm     | inch  | mm    | inch  | mm    | inch  | mm    | inch  | Seal Code |
| 15.88  | 0.625 | 30.14  | 1.187 | 28.0  | 1.102 | 22.23 | 0.875 | 10.28 | 0.405 | G016      |
| 20.00  | 0.787 | 38.10  | 1.500 | 36.0  | 1.417 | 30.00 | 1.181 | 10.00 | 0.394 | G020      |
| 20.00  | 0.787 | 35.00  | 1.378 | 40.5  | 1.584 | 21.50 | 0.846 | 7.50  | 0.295 | G020K     |
| 28.58  | 1.125 | 44.44  | 1.750 | 47.0  | 1.850 | 26.97 | 1.062 | 11.10 | 0.437 | G1.1      |
| 38.10  | 1.500 | 53.98  | 2.215 | 58.0  | 2.283 | 28.58 | 1.125 | 11.10 | 0.437 | G1.5      |
| 50.80  | 2.000 | 69.85  | 2.750 | 71.0  | 2.795 | 38.10 | 1.500 | 12.70 | 0.500 | G2.0      |
| 63.50  | 2.500 | 85.73  | 3.375 | 90.0  | 3.543 | 46.02 | 1.812 | 14.28 | 0.562 | G2.5      |
| 76.20  | 3.000 | 98.43  | 3.875 | 102.0 | 4.016 | 52.37 | 2.062 | 15.88 | 0.625 | G3.0      |
| 95.00  | 3.740 | 123.85 | 4.876 | 131.0 | 5.157 | 60.33 | 2.375 | 19.10 | 0.752 | G095      |
| 100.00 | 3.937 | 123.85 | 4.876 | 131.0 | 5.157 | 60.33 | 2.375 | 19.10 | 0.752 | G100      |



Type: Suit for HIDROSTAL Pumps

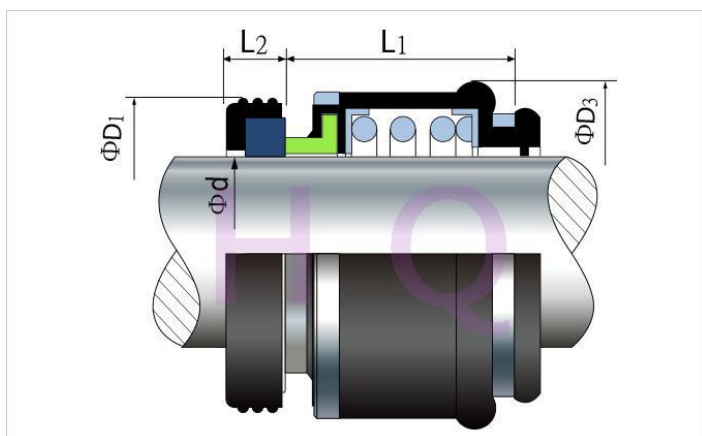
Replacement: Lidering HI, US VG-7087

Temperature: -40°C to +250°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



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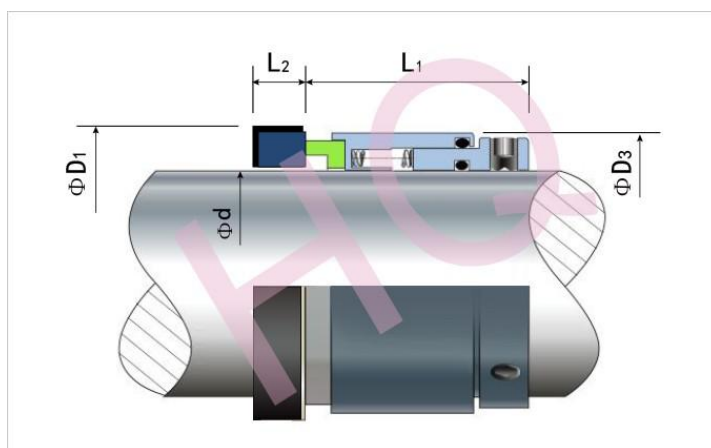


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| d<br>(mm)   | d      | D1     | D3   | L1   | L2   | L1K  |
|-------------|--------|--------|------|------|------|------|
| 28          | 28     | 44     | 50.0 | 30.0 | 10.0 | 40.0 |
| 35          | 35     | 54     | 64.0 | 35.5 | 10.0 | 45.5 |
| 50          | 50     | 70     | 74.5 | 45.2 | 12.2 | 57.4 |
| d<br>(inch) | d      | D1     | D3   | L1   | L2   | L1K  |
| 1.125       | 28.575 | 44.450 | 50.0 | 30.0 | 11.1 | 41.0 |
| 1.500       | 38.100 | 53.975 | 66.0 | 35.5 | 10.0 | 45.5 |
| 2.000       | 50.800 | 69.850 | 75.5 | 45.2 | 13.0 | 58.2 |

## HID-05(41)

Type: Suit for HIDROSTAL Pumps  
 Replacement: Vulcan 41  
 Temperature: -40 to +204°C  
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,A,Q2,U2,P,E,V,F,G



| d<br>(mm)   | D1     | D3    | L1    | L2    | O.E.M     |
|-------------|--------|-------|-------|-------|-----------|
|             |        |       |       |       | Seal Code |
| 25.58       | 44.44  | 44.0  | 30.0  | 8.10  | M1.1      |
| 38.10       | 53.98  | 54.8  | 31.6  | 8.10  | M1.5      |
| 50.80       | 69.85  | 67.6  | 38.1  | 12.70 | M2.0,X2   |
| 63.50       | 85.73  | 78.3  | 46.2  | 14.28 | M2.5,X2.5 |
| 76.20       | 98.43  | 93.7  | 52.4  | 15.88 | M3.0,X3.0 |
| 95.00       | 123.85 | 128.0 | 62.9  | 16.50 | X0.95     |
|             |        |       |       |       |           |
| d<br>(Inch) | D1     | D3    | L1    | L2    | O.E.M     |
|             |        |       |       |       | Seal Code |
| 1.125       | 1.750  | 1.732 | 1.181 | 0.319 | M1.1      |
| 1.500       | 2.125  | 2.157 | 1.244 | 0.319 | M1.5      |
| 2.000       | 2.750  | 2.661 | 1.500 | 0.500 | M2.0,X2   |
| 2.500       | 3.375  | 3.082 | 1.812 | 0.562 | M2.5,X2.5 |
| 3.000       | 3.875  | 3.689 | 2.063 | 0.625 | M3.0,X3.0 |
| 3.740       | 4.876  | 5.039 | 2.477 | 0.649 | X0.95     |



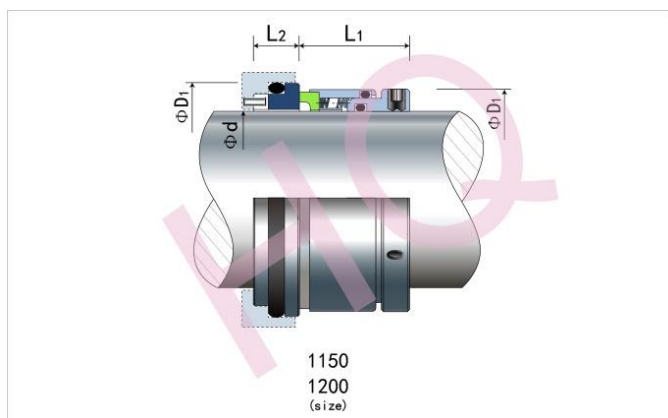
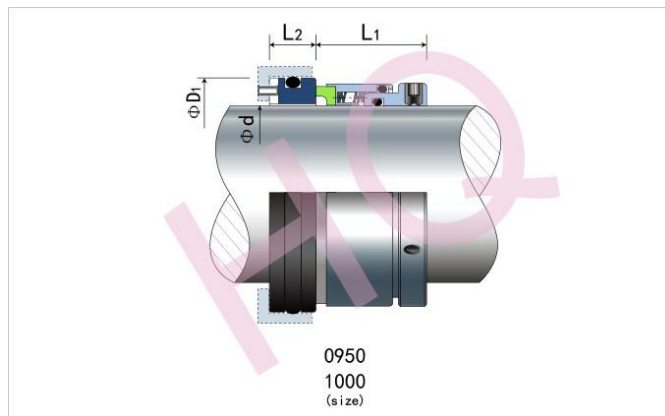
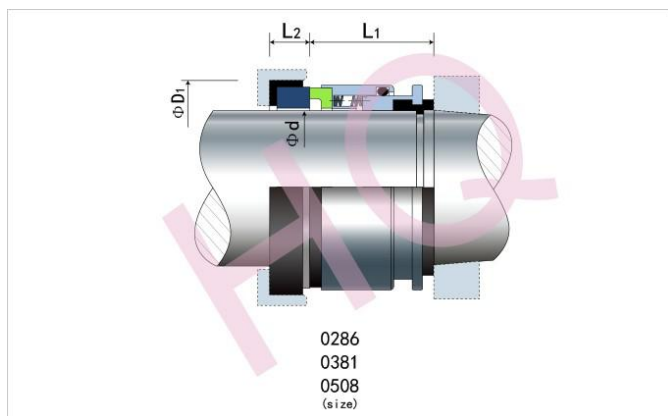
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## HID-06(M010H)

Type: Multi Spring Mechanical Seal, Suit for  
Hidrostat G,M,N,X pump  
Replacement: AES M010H  
Temperature: -40 to +220°C  
Pressure:  $\leq 2.5\text{Mpa}$   
Speed:  $\leq 15\text{m/s}$   
Material: Q1, S, A, Q2, V, E, P, M5, M6, G1, T4, M



| d<br>(mm) | D1    | D3    | L1    | L2   |
|-----------|-------|-------|-------|------|
| 28.6      | 44.4  | -     | 32.6  | 10.6 |
| 38.1      | 53.9  | -     | 34.7  | 11.1 |
| 50.8      | 69.8  | -     | 45.3  | 12.7 |
| 95.0      | 112.8 | -     | 123.8 | 17.4 |
| 100.0     | 119.1 |       | 123.8 | 17.4 |
| 115.0     | 142.9 | 134.9 | 36.5  | 12.5 |
| 120.0     | 142.9 | 141.3 | 36.5  | 12.5 |

| d<br>(inch) | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 1.125       | 1.750 | -     | 1.283 | 0.417 |
| 1.500       | 2.125 | -     | 1.366 | 0.437 |
| 2.000       | 2.750 | -     | 1.783 | 0.500 |
| 3.740       | 4.439 | -     | 4.875 | 0.685 |
| 3.937       | 4.689 | -     | 4.875 | 0.685 |
| 4.527       | 5.625 | 5.312 | 1.437 | 0.492 |
| 4.724       | 5.625 | 5.563 | 1.437 | 0.492 |



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Type: Mechanical Seal  
 Temperature: -20 to +190°C  
 Pressure:  $\leq 1.6\text{Mpa}$   
 Speed:  $\leq 20\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa

## \*Product description

Hidrostal Replacement Pump Seals.      Equivalent with  
 Hidrostal pumps seals

## \*Pump Models

F04K-MH/F06K-S/F10K-MD F06K-H/F06K-S H05K-MH/F06K-H      F04K-MH/F04K-S F04K-MH/F06K-M F10K-HD  
 F10K-MD F10K-HD F10K-SS

| *OEM   | DESCRIPTION | SIZE  | SAF S |
|--------|-------------|-------|-------|
| 157261 | LOW         | 1-    |       |
| 157257 | U           | 1-    |       |
| 157262 | LOWER SEAL  | 1-    |       |
| 157258 | U           | 1-    |       |
| 157263 | L           | 2.000 |       |
| 157259 | U           | 2.000 |       |



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Type: Suit for Grundfos, Hilge Pumps

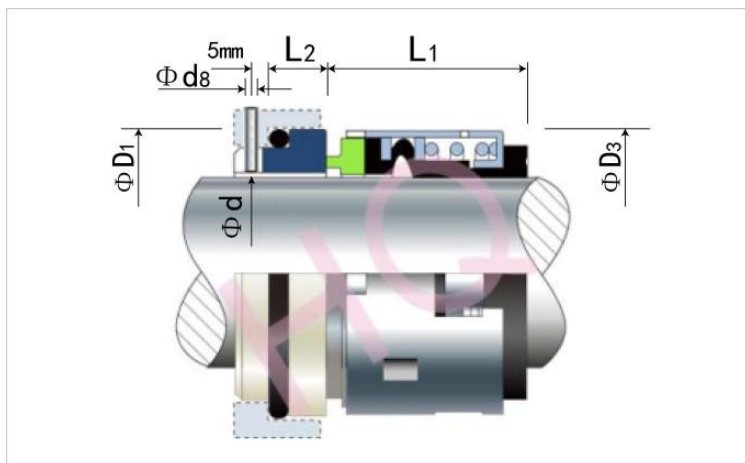
Replacement: AES B07SL, Vulcan 502/BP

Temperature: -20°C to +120°C

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: A, Q1, Q2, U1, U2, Graphite, F, G, M, M5



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| Size<br>(mm) | D1 | D3   | d8 | L1   | L2   |
|--------------|----|------|----|------|------|
| 12           | 23 | 22.0 | 3  | 23.9 | 8.6  |
| 14           | 25 | 24.0 | 3  | 26.4 | 8.6  |
| 16           | 27 | 26.2 | 3  | 26.4 | 8.6  |
| 18           | 33 | 32.2 | 3  | 27.5 | 10.0 |
| 20           | 35 | 33.9 | 3  | 27.5 | 10.0 |
| 22           | 37 | 36.1 | 3  | 27.5 | 10.0 |
| 24           | 39 | 38.1 | 3  | 30.0 | 10.0 |
| 25           | 40 | 38.8 | 3  | 30.0 | 10.0 |
| 28           | 43 | 42.1 | 3  | 32.5 | 10.0 |
| 30           | 45 | 44.2 | 3  | 32.5 | 10.0 |
| 32           | 48 | 45.8 | 3  | 32.5 | 10.0 |
| 33           | 48 | 46.9 | 3  | 32.5 | 10.0 |
| 35           | 50 | 48.8 | 3  | 32.5 | 10.0 |
| 38           | 56 | 54.2 | 4  | 34.0 | 11.0 |
| 40           | 58 | 56.1 | 4  | 34.0 | 11.0 |
| 43           | 61 | 58.8 | 4  | 34.0 | 11.0 |
| 45           | 63 | 60.9 | 4  | 34.0 | 11.0 |
| 48           | 66 | 64.1 | 4  | 34.0 | 11.0 |
| 50           | 70 | 66.2 | 4  | 34.5 | 13.0 |

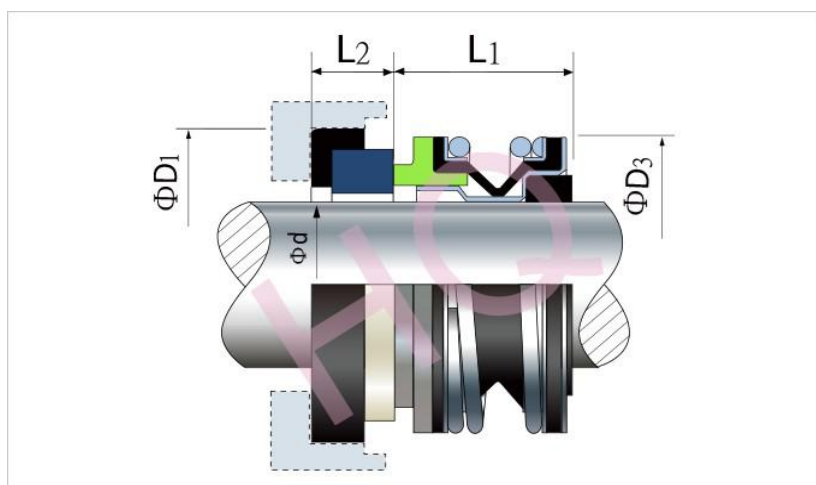


Type: Suit for Grundfos, Hilge Pumps  
 Replacement: Vulcan 60/65, AES B04/B04U,  
 Crane106, Roten 16, Flowserve 160  
 Temperature: -20 to +120°C

Pressure:  $\leq 0.5\text{Mpa}$

Speed:  $\leq 10\text{m/s}$

Material: B, Q2, U2, P, E, N, V, F, G, Alfa



| Size<br>(mm) | d    | D1   | D3    | L1    | L2    |
|--------------|------|------|-------|-------|-------|
| 60/0.375     | 9.5  | 22.2 | 24.00 | 16.00 | 6.20  |
| 60/0.500     | 12.7 | 25.4 | 27.00 | 16.60 | 6.20  |
| 60/0.625     | 15.8 | 31.8 | 31.00 | 18.70 | 10.31 |
| 60/0.750     | 19.0 | 34.9 | 34.20 | 18.70 | 10.31 |
| 60/1.000     | 25.4 | 41.3 | 43.00 | 20.60 | 11.10 |
| 65/0.375     | 9.5  | 25.4 | 27.00 | 16.60 | 7.90  |
| 65/0.500     | 12.7 | 25.4 | 27.00 | 16.60 | 7.90  |
| 65/0.625     | 15.8 | 31.7 | 31.00 | 18.20 | 10.30 |
| 65/0.750     | 19.1 | 34.9 | 34.20 | 18.20 | 10.30 |
| 65/1.750     | 63.5 | 61.0 | 51.59 | 33.34 | 10.32 |



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## HIL-06(8B...127)

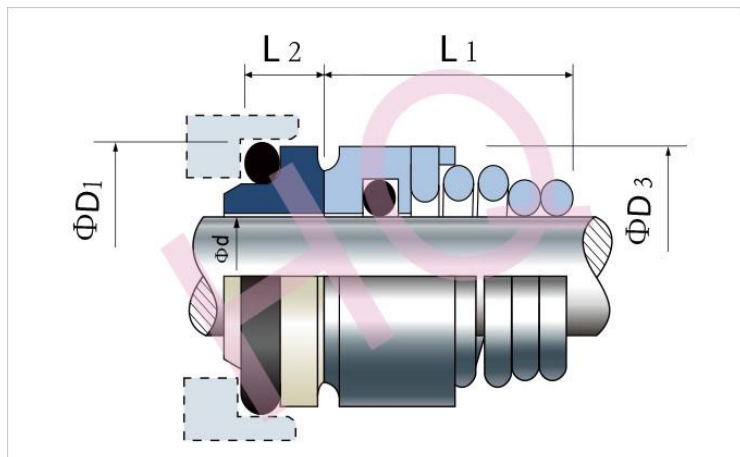
Type: Suit for Grundfos, Hilge centrifugal pumps  
Replacement: Vulcan 8B, 8BU, 12, 12S, 12H, 126, 126L, 127. Billi BB1

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



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| d<br>(mm) | D1   | D3 | L1   | L2   | Vulcan<br>Code | O.E.M.<br>Seal Code |
|-----------|------|----|------|------|----------------|---------------------|
| 19        | 30.9 | 31 | 25.0 | 8.0  | 12             | 001-19 O3           |
| 19        | 30.9 | 31 | 25.0 | 8.0  | 12S            | 001-19 O5           |
| 19        | 35.0 | 31 | 20.0 | 9.5  | 8BU            | 002-19 O3           |
| 22        | 37.0 | 33 | 27.5 | 10.0 | 126            | L1K-22 F3           |
| 28        | 43.3 | 40 | 29.0 | 9.0  | 12             | 001-28 O3           |
| 28        | 43.3 | 40 | 29.0 | 9.0  | 12H            | 001-28 A3           |
| 28        | 43.3 | 40 | 29.0 | 9.0  | 12S            | 001-28-O5           |
| 28        | 42.0 | 40 | 24.6 | 11.0 | 8B             | 002-28 O3           |
| 30        | 45.0 | 43 | 32.5 | 10.0 | 126            | L1K-30 F3           |
| 30        | 45.0 | 43 | 32.5 | 10.0 | 126L           | L1K-30 G3           |
| 30        | 45.0 | 43 | 40.0 | 10.0 | 127            | L1K-30 D3           |
| 38        | 60.5 | 53 | 39.0 | 11.5 | 12             | 001-38 O3           |
| 38        | 55.0 | 53 | 31.0 | 11.5 | 8B             | 002-38 O3           |
| 40        | 58.0 | 56 | 34.0 | 13.0 | 126            | L1K-40 F3           |
| 40        | 58.0 | 56 | 34.0 | 13.0 | 126L           | L1K-40 G3           |
| 50        | 70.0 | 66 | 38.0 | 14.0 | 126            | L1K-50 F3           |
| 50        | 70.0 | 66 | 38.0 | 14.0 | 126L           | L1K-50 G3           |
| 50        | 70.0 | 66 | 43.0 | 14.0 | 8BU            | 1238-50 O3          |

## HIL-07(128)

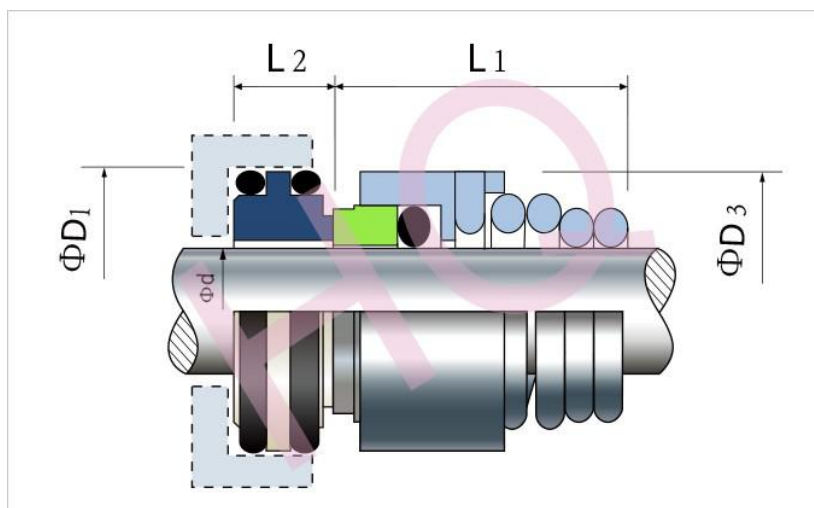


Type: Suit for Grundfos, Hilge c  
entrifugal Pumps  
Replacement: Vulcan 128, Billi BB1S  
Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm) | D1   | D3 | L1   | L2   | O.E.M.<br>Seal Code |
|-----------|------|----|------|------|---------------------|
| 19        | 39.3 | 31 | 20.0 | 10.8 | OB3-19 B3           |
| 28        | 47.3 | 40 | 26.5 | 11.3 | OB3-28 B3           |
| 38        | 59.3 | 53 | 33.5 | 11.3 | OB3-38 B3           |

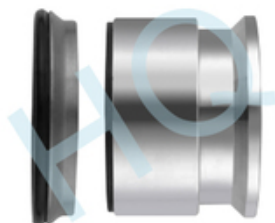


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## HIL-01(M101S1)



Type: Suit for Grundfos, Hight Hygiana

centrifugal Pumps

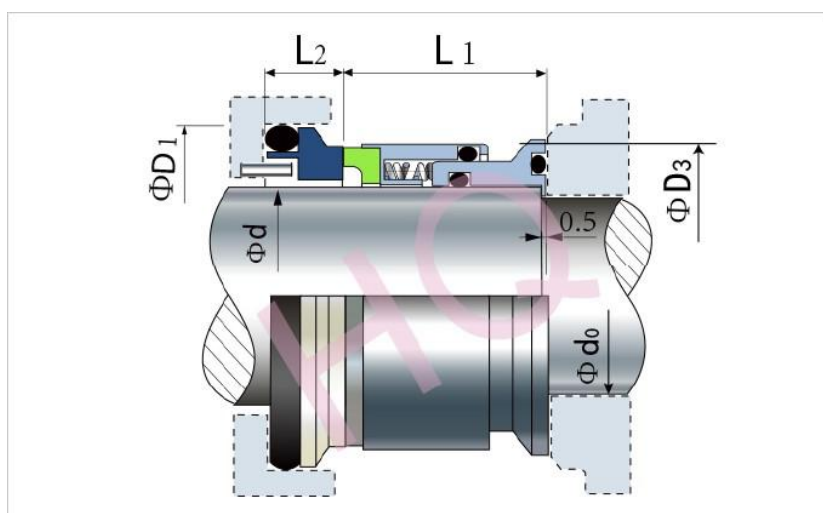
Replacement: AES M010S1, Burgamnn SHJ97, Vulcan  
1663, Billi BB8H3, ROTEN EHS3

Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0 | D1   | D3   | L1   | L2   | Vulcan Code | O.E.M.<br>Seal Code |
|-----------|----|------|------|------|------|-------------|---------------------|
| 28        | 24 | 48.0 | 43.0 | 34.5 | 10.5 | 1663        | BS2-28 O1           |
| 38        | 35 | 57.1 | 52.8 | 35.0 | 10.5 | 1663        | BS2-38 O1           |



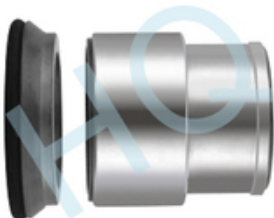
<http://www.hqseal.com>



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## HIL-02(M010S1)



Type: Suit for Grundfos, Hilge Euro-Hygia

centrifugal Pumps

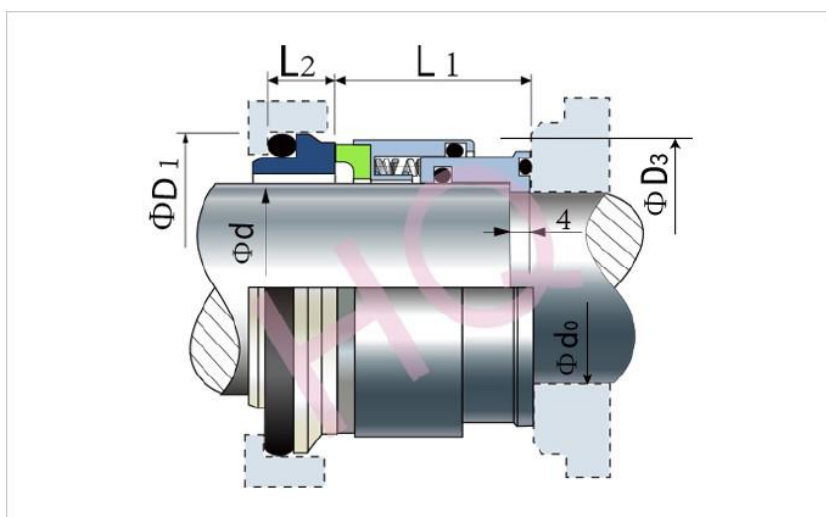
Replacement: AES M010S2, Burgamnn SHJ97,

Vulcan 1663A, Billi BB8H3A,  
ROTEN EHS3

Temperature: -40°C to +250°C

Pressure:  $\leq 2.5$  Mpa Speed:  $\leq 15$  m/s

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0   | D1   | D3   | L1   | L2   | Vulcan<br>Code | O.E.M.<br>Seal Code |
|-----------|------|------|------|------|------|----------------|---------------------|
| 28.0      | 24.0 | 48.0 | 43.0 | 38.0 | 10.5 | 1663A          | BS3-28 O1           |

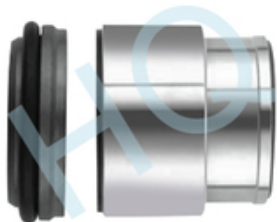


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## HIL-03(M010S1)



Type: Suit for Grundfos, Hilge Euro-

HYGIA, HYGIA, Panda, Sipia

centrifugal Pumps

Replacement: AES M010S3, Burgamnn SHJ97,

Vulcan1662, Billi BB8HA2,

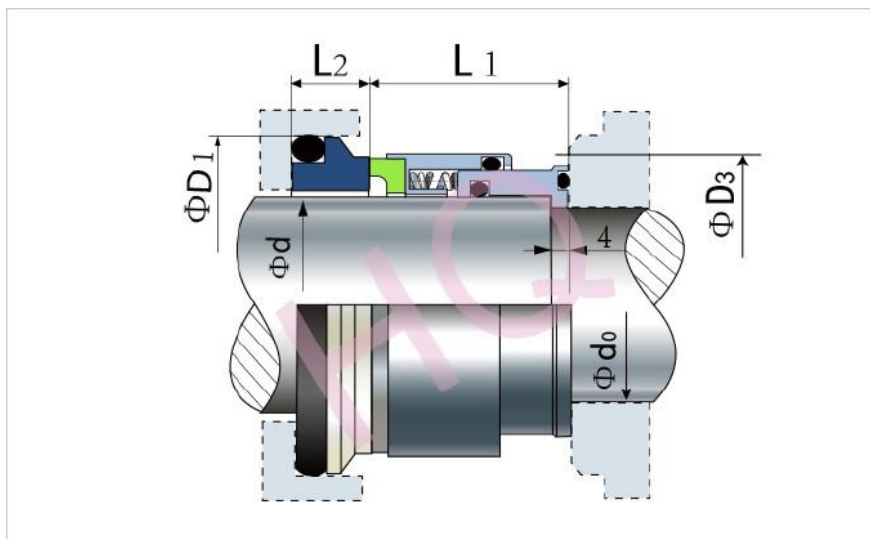
ROTEN EHS3

Temperature:  $-40^{\circ}\text{C}$  to  $+250^{\circ}\text{C}$

Pressure:  $\leq 2.5\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G



| d<br>(mm) | d0 | D1   | D3   | L1 | L2   | Vulcan<br>Code | O.E.M.<br>Seal Code |
|-----------|----|------|------|----|------|----------------|---------------------|
| 19        | 16 | 30.9 | 33.5 | 29 | 8.0  | 1662           | 001-19 O1           |
| 28        | 24 | 43.3 | 43.0 | 33 | 9.0  | 1662           | 001-28 O1           |
| 28L       | 24 | 43.3 | 43.0 | 33 | 9.0  | 1662L          | 001-28 A1           |
| 38        | 35 | 60.5 | 52.8 | 43 | 11.5 | 1662           | 001-38 O1           |

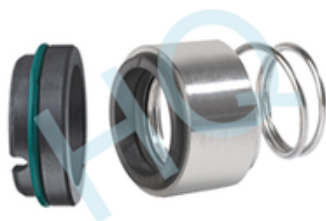


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## HIL-04(T01KU)



Type: Suit for Hilge Maxa,Maxana Pumps

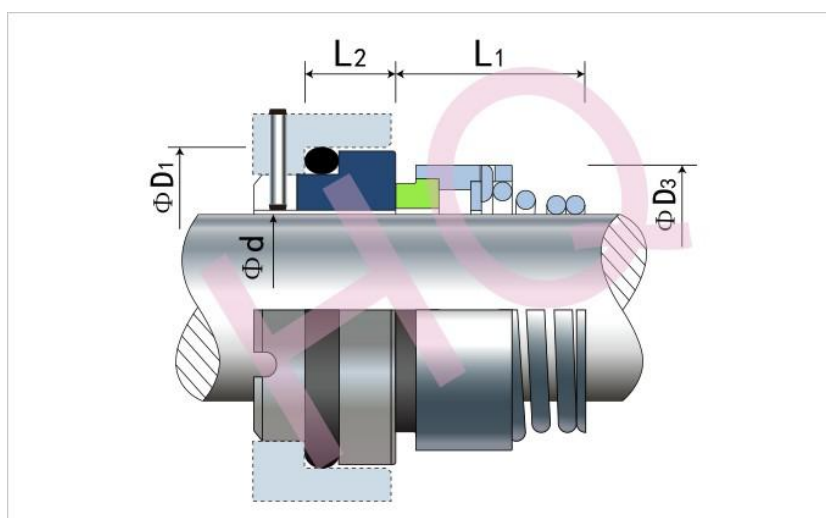
Replacement: AES T01LKU

Temperature: -20°C to +180°C

Pressure:  $\leq 1.0\text{Mp}$

Speed:  $\leq 15\text{m/s}$

Material: B,A1,Q1,Q2,U2,P,E,N,V,F,G



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 30          | 45    | 44    | 31.5  | 11.0  |
| 40          | 58    | 56    | 33.5  | 11.5  |
| 50          | 70    | 66    | 33.5  | 14.0  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.181       | 1.732 | 1.732 | 1.240 | 0.433 |
| 1.575       | 2.205 | 2.205 | 1.319 | 0.453 |
| 1.969       | 2.598 | 2.598 | 1.319 | 0.551 |



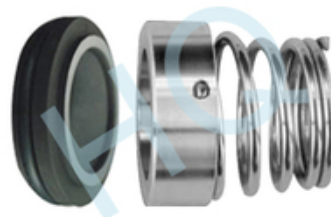
<http://www.hqseal.com>



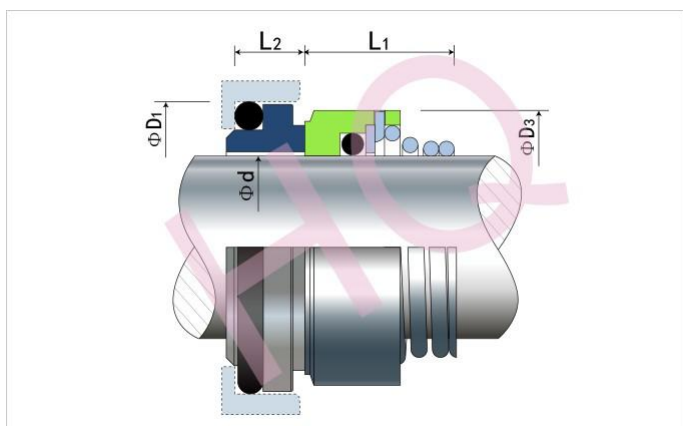
[hq@hqseal.com](mailto:hq@hqseal.com)

# HIL-05(T03HU)

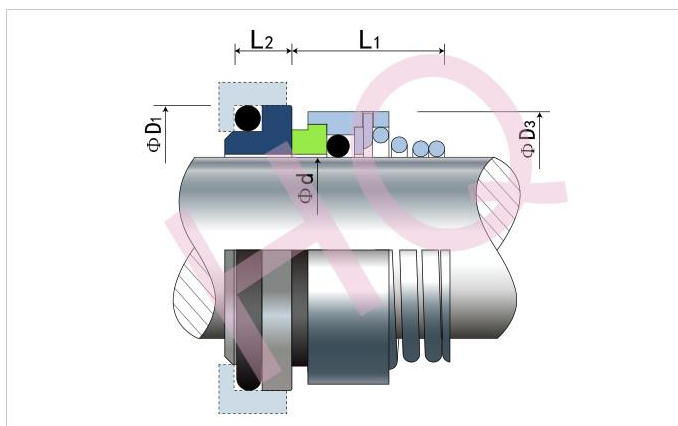
Type: Suit for Grundfos,Higle Pumps  
 Replacement: AES T03HU  
 Temperature: -40 to +200°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



Type A



Type B



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 19          | 30.9  | 32    | 25    | 8.0   |
| 28          | 43.3  | 42    | 29    | 9.0   |
| 38          | 60.5  | 54    | 39    | 11.5  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 0.748       | 1.217 | 1.260 | 0.984 | 0.315 |
| 1.102       | 1.705 | 1.654 | 1.142 | 0.354 |
| 1.496       | 2.382 | 2.126 | 1.535 | 0.453 |



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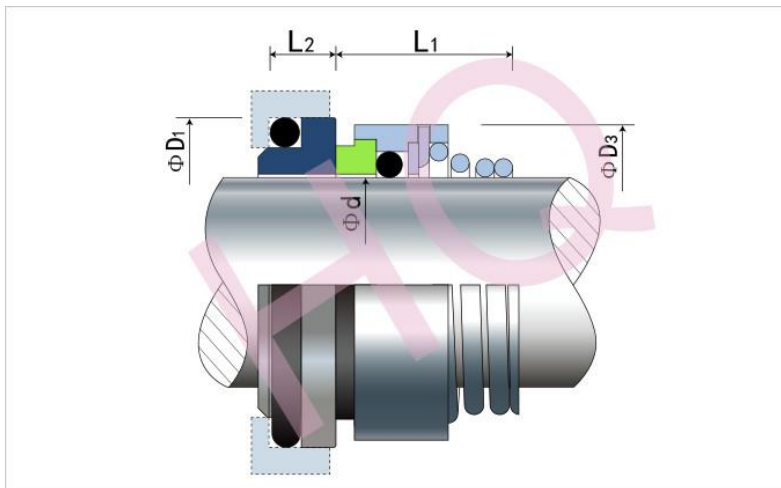


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## HIL-09(T01LOU)

Type: O-ring Mechanical Seal  
 Replacement: AES T01LOU  
 Temperature: -20 to +140°C

Pressure:  $\leq 1\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



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| d<br>(mm) | D1    | D3    | L1    | L2    |
|-----------|-------|-------|-------|-------|
| 19        | 35    | 31    | 22.0  | 7.5   |
| 28        | 42    | 42    | 26.5  | 9.0   |
| 30        | 45    | 44    | 25.0  | 10.5  |
| 38        | 55    | 54    | 32.2  | 10.3  |
| 40        | 58    | 56    | 34.7  | 10.8  |
| 50        | 70    | 66    | 45.9  | 11.6  |
|           |       |       |       |       |
| d<br>(mm) | D1    | D3    | L1    | L2    |
| 0.748     | 1.378 | 1.260 | 0.866 | 0.295 |
| 1.102     | 1.654 | 1.653 | 1.043 | 0.354 |
| 1.181     | 1.772 | 1.732 | 0.984 | 0.413 |
| 1.496     | 2.165 | 2.126 | 1.268 | 0.406 |
| 1.575     | 2.283 | 2.205 | 1.366 | 0.425 |
| 1.969     | 2.756 | 2.598 | 1.799 | 0.457 |

# HIL-10(T01LOU)

Type: O-ring Mechanical Seal

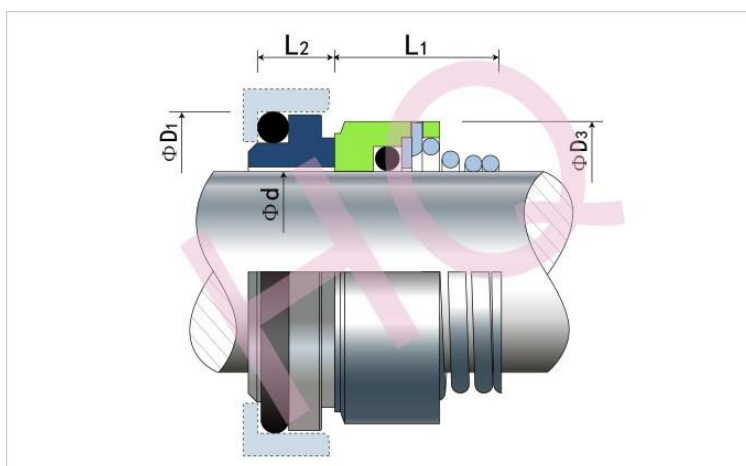
Replacement: AES T02LOU

Temperature: -20 to +140°C

Pressure:  $\leq 1\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



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| d<br>(mm) | D1    | D3    | L1    | L2    |
|-----------|-------|-------|-------|-------|
| 19        | 35    | 31    | 22.0  | 7.5   |
| 28        | 42    | 42    | 26.5  | 9.0   |
| 30        | 45    | 44    | 25.0  | 10.5  |
| 38        | 55    | 54    | 32.2  | 10.3  |
| 40        | 58    | 56    | 34.7  | 10.8  |
| 50        | 70    | 66    | 45.9  | 11.6  |
|           |       |       |       |       |
| d<br>(mm) | D1    | D3    | L1    | L2    |
| 0.748     | 1.378 | 1.26  | 0.866 | 0.295 |
| 1.102     | 1.654 | 1.653 | 1.043 | 0.354 |
| 1.181     | 1.772 | 1.732 | 0.984 | 0.413 |
| 1.496     | 2.165 | 2.126 | 1.268 | 0.406 |
| 1.575     | 2.283 | 2.205 | 1.366 | 0.425 |
| 1.969     | 2.756 | 2.598 | 1.799 | 0.457 |

# HIL-11(T01LFU)

Type: O-ring Mechanical Seal

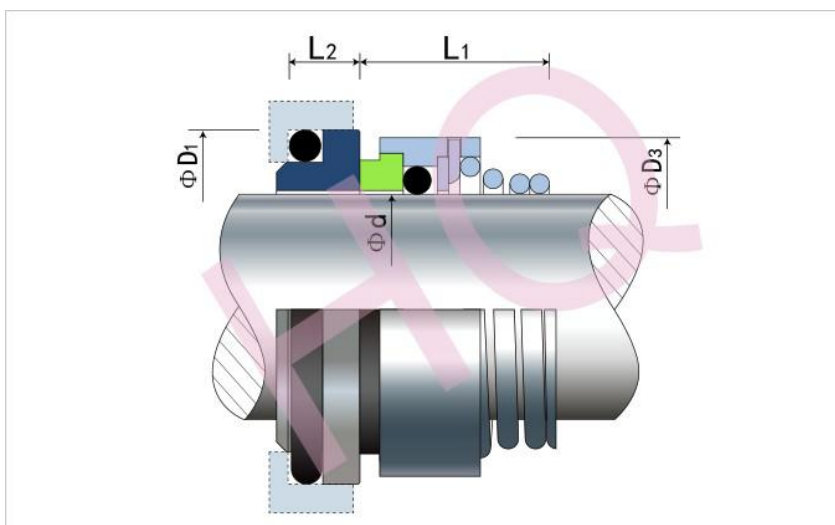
Replacement: AES T01LFU

Temperature: -20 to +140°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm) | D1    | D3    | L1    | L2    |
|-----------|-------|-------|-------|-------|
| 22        | 37    | 36    | 23.5  | 10.0  |
| 30        | 45    | 44    | 31.5  | 11.0  |
| 40        | 58    | 56    | 33.5  | 11.5  |
| 50        | 70    | 66    | 33.5  | 13.0  |
|           |       |       |       |       |
| d<br>(mm) | D1    | D3    | L1    | L2    |
| 0.866     | 1.457 | 1.417 | 0.925 | 0.394 |
| 1.181     | 1.772 | 1.732 | 1.240 | 0.433 |
| 1.575     | 2.283 | 2.205 | 1.319 | 0.453 |
| 1.969     | 2.756 | 2.598 | 1.358 | 0.512 |



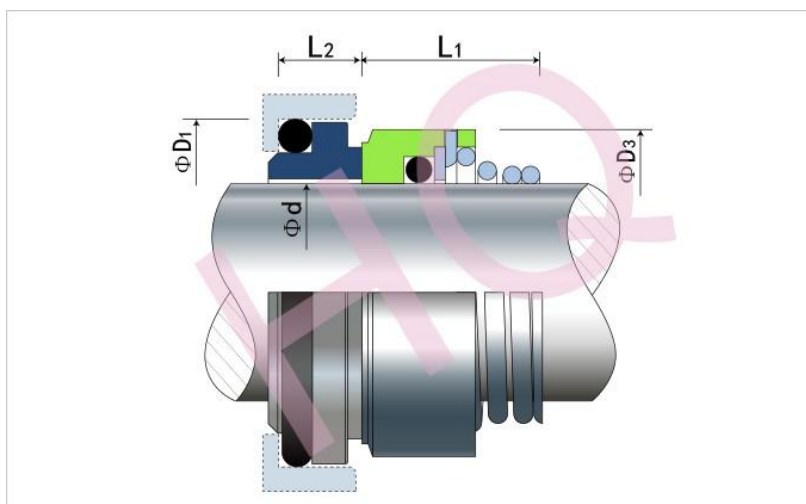
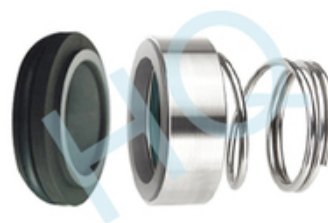
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# HIL-12(T01LFU)

Type: O-ring Mechanical Seal  
 Replacement: AES T02LFU  
 Temperature: -20 to +140°C  
 Pressure:  $\leq 1.0\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm) | D1    | D3    | L1    | L2    |
|-----------|-------|-------|-------|-------|
| 22        | 37    | 36    | 23.5  | 10.0  |
| 30        | 45    | 44    | 31.5  | 11.0  |
| 40        | 58    | 56    | 33.5  | 11.5  |
| 50        | 70    | 66    | 33.5  | 13.0  |
|           |       |       |       |       |
| d<br>(mm) | D1    | D3    | L1    | L2    |
| 0.866     | 1.457 | 1.417 | 0.925 | 0.394 |
| 1.181     | 1.772 | 1.732 | 1.240 | 0.433 |
| 1.575     | 2.283 | 2.205 | 1.319 | 0.453 |
| 1.969     | 2.756 | 2.598 | 1.358 | 0.512 |



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# HIL-13(T01LXU)



Type: O-ring Mechanical Seal

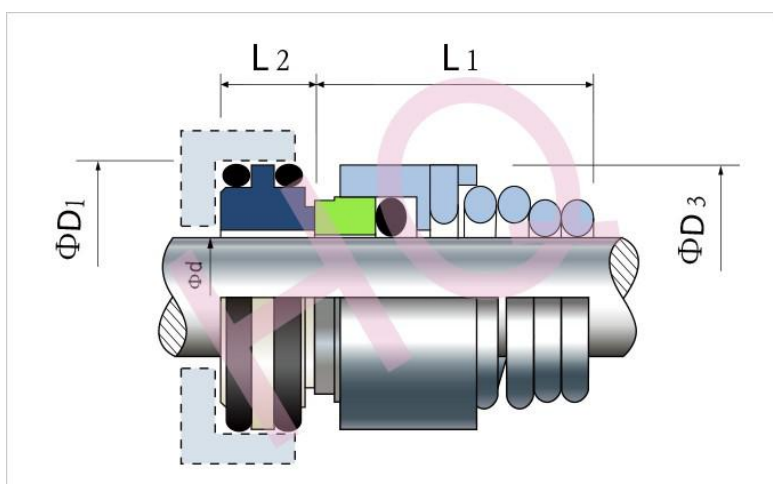
Replacement: AES T01LXU

Temperature: -20 to +140°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 19          | 39.3  | 31    | 20.0  | 15.0  |
| 28          | 47.3  | 40    | 24.5  | 15.5  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 0.748       | 1.220 | 1.260 | 0.787 | 0.591 |
| 1.102       | 1.575 | 1.654 | 0.965 | 0.610 |



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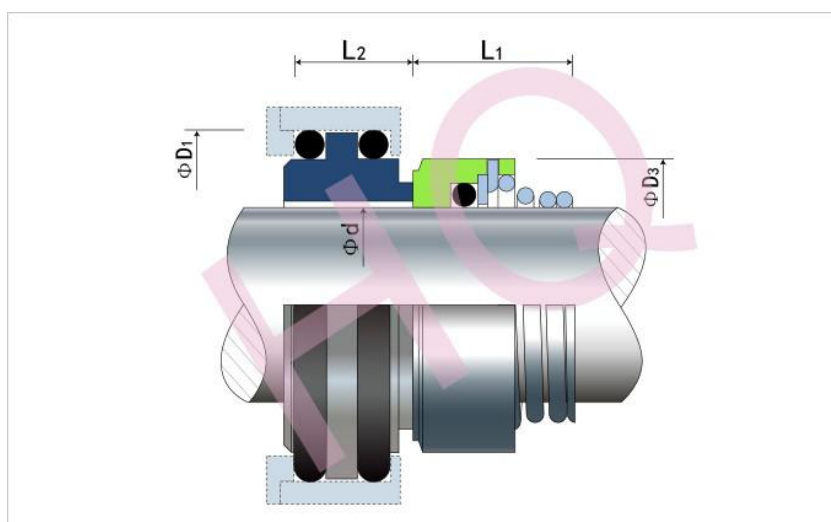


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# HIL-14(T01LXU)



Type: O-ring Mechanical Seal  
 Replacement: AES T02LXU  
 Temperature: -20 to +140°C  
 Pressure:  $\leq 1.4\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 19          | 39.3  | 31    | 20.0  | 15.0  |
| 28          | 47.3  | 40    | 24.5  | 15.5  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 0.748       | 1.220 | 1.260 | 0.787 | 0.591 |
| 1.102       | 1.575 | 1.654 | 0.965 | 0.610 |



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# HIL-15(T01LXSU)



Type: O-ring Mechanical Seal

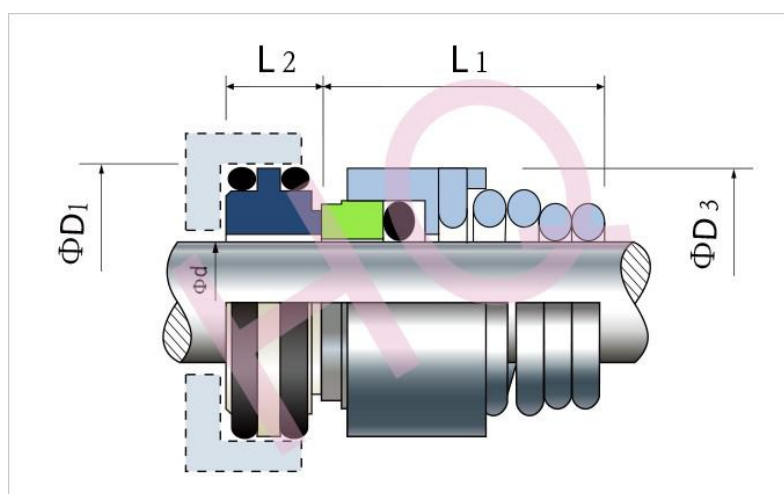
Replacement: AES T01LXSU

Temperature: -20 to +140°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 19          | 35.0  | 32    | 20.0  | 15.0  |
| 28          | 41.3  | 42    | 24.5  | 15.5  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 0.748       | 1.378 | 1.260 | 0.787 | 0.591 |
| 1.102       | 1.626 | 1.654 | 0.965 | 0.610 |



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# HIL-16(T01LXSU)



Type: O-ring Mechanical Seal

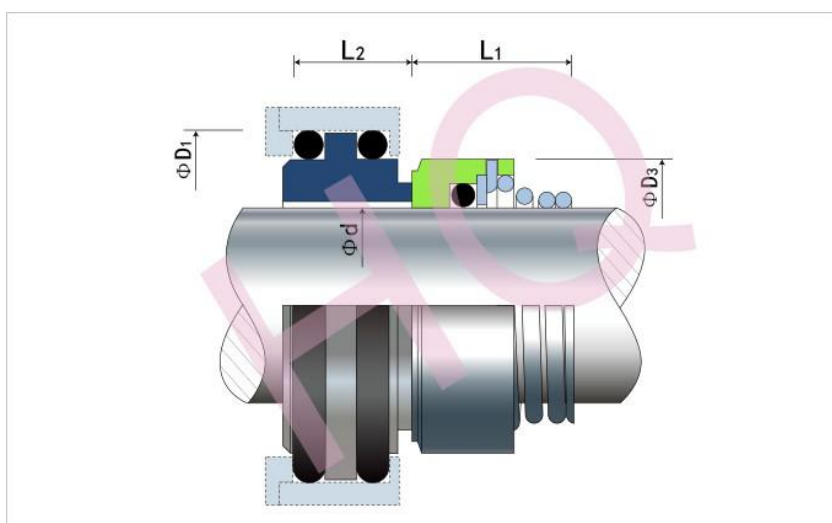
Replacement: AES T02LXSU

Temperature: -20 to +140°C

Pressure:  $\leq 1.0\text{Mpa}$

Speed:  $\leq 15\text{m/s}$

Material: B,Q2,U2,P,E,N,V,F,G,Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 19          | 35.0  | 32    | 20.0  | 15.0  |
| 28          | 41.3  | 42    | 24.5  | 15.5  |
|             |       |       |       |       |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 0.748       | 1.378 | 1.260 | 0.787 | 0.591 |
| 1.102       | 1.626 | 1.654 | 0.965 | 0.610 |



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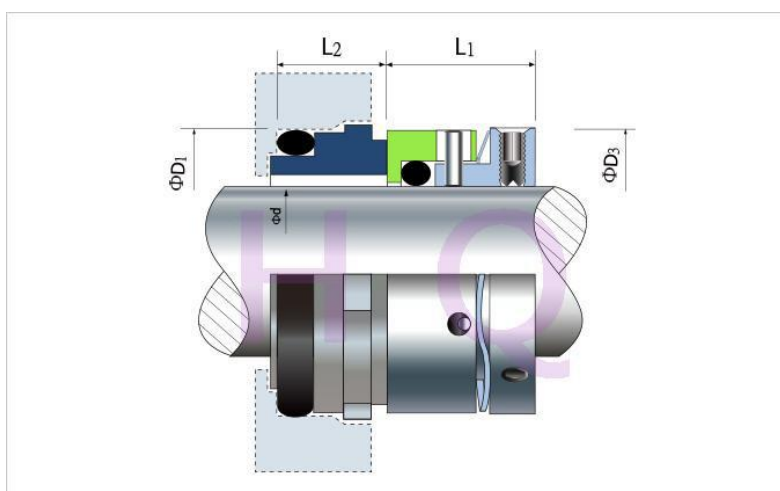


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## HIL-08(W04U)



Type: Suit for Gundfos, Hilge Domina I Pumps  
 Replacement: AES W04U  
 Temperature: -40 to +200°C  
 Pressure:  $\leq 2.5\text{Mpa}$   
 Speed:  $\leq 15\text{m/s}$   
 Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



| d<br>(mm)   | D1    | D3    | L1    | L2    |
|-------------|-------|-------|-------|-------|
| 30          | 40.0  | 41.0  | 19.1  | 9.3   |
| 35          | 44.5  | 45.5  | 19.1  | 9.2   |
| 50          | 62.0  | 61.9  | 21.1  | 10.4  |
| 70          | 85.0  | 88.9  | 25.8  | 14.1  |
| 80          | 95.0  | 101.0 | 25.8  | 16.2  |
| d<br>(inch) | D1    | D3    | L1    | L2    |
| 1.181       | 1.575 | 1.614 | 0.752 | 0.366 |
| 1.378       | 1.752 | 1.791 | 0.752 | 0.362 |
| 1.969       | 2.441 | 2.437 | 0.831 | 0.409 |
| 2.756       | 3.346 | 3.500 | 1.016 | 0.555 |
| 3.150       | 3.740 | 3.976 | 1.016 | 0.638 |



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## JS-01(W06)



Type: Suit for Hilge Domina S and Johnson

OnLine(OL) Series Lobe Rotor pumps

Replacement: AES W06, Vulcan 1650, BURGMANN

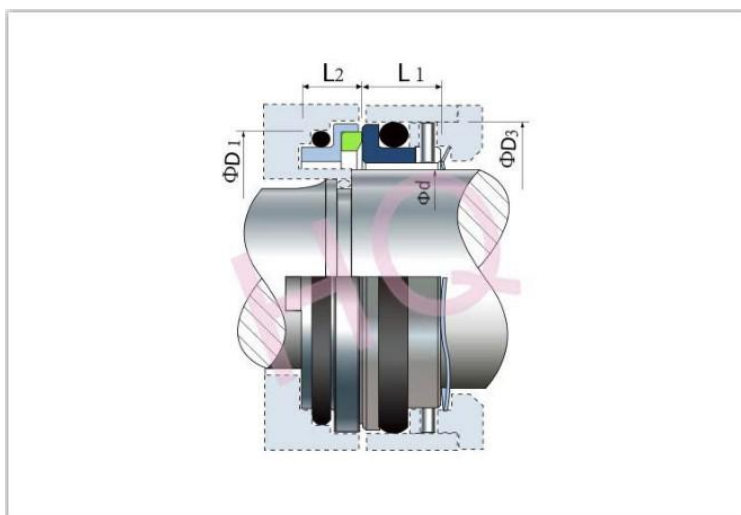
HRZ60

Temperature: -20 to +150°C

Pressure:  $\leq 2.1$  Mpa

Speed:  $\leq 10$  m/s

Material: B, A1, Q1, Q2, U2, P, E, N, V, F, G, Alfa



| d<br>(mm) | D1   | D3 | L1   | L2   | O.E.M<br>Pump Model |
|-----------|------|----|------|------|---------------------|
| 24        | 37.5 | 38 | 14.0 | 11.0 | OL1                 |
| 40        | 56.0 | 58 | 15.5 | 12.5 | OL2                 |
| 53        | 69.0 | 71 | 17.5 | 11.5 | OL3                 |



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## Cross Reference Charts

| HQ                        | BURGMANN | AES      | CRANE | VULCAN  | ROTEN | FLOWERVE | Lidering | U.S |
|---------------------------|----------|----------|-------|---------|-------|----------|----------|-----|
| <b>O E M Seals</b>        |          |          |       |         |       |          |          |     |
| <b>Fristam Pump Seals</b> |          |          |       |         |       |          |          |     |
| FR-01                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-02                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-03                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-04                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-05                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-06                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-07                     | M2S11    | T01F     | -     |         | -     | FRI-     |          |     |
| FR-9                      | M2S11    | T01F     | -     | 2201    | -     | FRI-     |          |     |
| FR-10                     | M2S11    | T01F     |       | 112862  |       | FRI      |          |     |
| FR-11                     | M2S11    | T01F     | -     | 112893  | -     | FRI-     |          |     |
| FR-12                     | M2S11    | T01F     | -     | 112921  | -     | FRI      |          |     |
| FR-13                     |          | T01F     | -     | -       | -     | -        |          |     |
| FR-14                     | -        | WOFA     | -     | -       | -     | -        |          |     |
| FR-15                     | -        | WOFC     | -     | -       | -     | -        |          |     |
| FR-16                     | -        | WOFB     | -     | -       | -     | -        |          |     |
| FR-17                     |          | WOFBC    |       |         |       |          |          |     |
| FR-18                     |          | MOFC     |       |         |       |          |          |     |
| FR-19                     |          | P09      |       |         |       |          |          |     |
| FR-20                     | -        | BOH      |       |         |       |          |          |     |
| FR-21                     |          |          |       | Y+V9018 |       |          |          |     |
| FR-22                     |          |          |       | V9200   |       |          |          |     |
| FR-23                     |          |          |       | W-XX02  |       |          |          |     |
| FR-24                     |          |          |       | W-4280  |       |          |          |     |
| FR-25                     |          |          |       | Y+V9010 |       |          |          |     |
| FR-26                     |          | W07DMBFU |       |         |       |          |          |     |
| FR-28                     |          | W01FU    |       |         |       |          |          |     |
| FR-29                     |          | W025     |       |         |       |          |          |     |
| FR-30                     |          | 1676     |       |         |       |          |          |     |

## Cross Reference Charts

| HQ           | BURGMANN | AES   | CRANE | VULCAN | ROTEN | FLOWSERVE | Lidering | U.S |
|--------------|----------|-------|-------|--------|-------|-----------|----------|-----|
| <b>O E M</b> |          |       |       |        |       |           |          |     |
| FR-31        |          | 1696  |       |        |       |           |          |     |
| GR-Z6        |          | MOGCE |       |        |       |           |          |     |

| HQ                                   | BURGMANN | AES | CRANE | VULCAN | ROTEN | FLOWSERVE | Lidering | U.S |
|--------------------------------------|----------|-----|-------|--------|-------|-----------|----------|-----|
| <b>O E M</b>                         |          |     |       |        |       |           |          |     |
| <b>Seals<br/>Grundfos Pump Seals</b> |          |     |       |        |       |           |          |     |
| GR-Z                                 |          |     |       |        |       |           |          |     |
| GR-Z-1                               |          |     |       |        |       |           |          |     |
| GR-Z1                                |          |     |       |        |       |           |          |     |
| GR-Z1-1                              |          |     |       |        |       |           |          |     |
| GR-Z1-2                              |          |     |       |        |       |           |          |     |
| GR-Z1-3                              |          |     |       |        |       |           |          |     |
| GR-Z2                                |          |     |       |        |       |           |          |     |
| GR-Z2-1                              |          |     |       |        |       |           |          |     |
| GR-Z2-2                              |          |     |       |        |       |           |          |     |
| GR-Z2-3                              |          |     |       |        |       |           |          |     |
| GR-Z2-4                              |          |     |       |        |       |           |          |     |
| GR-Z2-5                              |          |     |       |        |       |           |          |     |
| GR-Z2-6                              |          |     |       |        |       |           |          |     |
| GR-Z2-7                              |          |     |       |        |       |           |          |     |
| GR-Z3                                |          |     |       |        |       |           |          |     |
| GR-Z4                                |          |     |       |        |       |           |          |     |
| GR-Z4-2                              |          |     |       |        |       |           |          |     |
| GR-Z5                                |          |     |       |        |       |           |          |     |
| GR-Z6                                |          |     |       |        |       |           |          |     |
| GR-G1                                |          |     |       |        |       |           | GR-C-12  |     |
| GR-G02                               | CARTEX   |     |       |        |       |           |          |     |
| GR-G3                                |          |     |       |        |       |           | GR-B     |     |
| GR-G3-S                              |          |     |       |        |       |           | GR-B-SH  |     |
| GR-G4                                |          |     |       |        |       |           | GR-A     |     |
| GR-G5                                |          |     |       |        |       |           |          |     |



## Cross Reference Charts

| HQ                         | BURGMANN | AES     | CRANE | VULCAN   | ROTEN | FLOWSERVE | Lidering   | U.S |
|----------------------------|----------|---------|-------|----------|-------|-----------|------------|-----|
| <b>O E M Seals</b>         |          |         |       |          |       |           |            |     |
| <b>Grundfos Pump Seals</b> |          |         |       |          |       |           |            |     |
| GR-G6                      |          |         |       |          |       |           | GR-A-LG-22 |     |
| GR-G7                      |          |         |       |          |       |           | GR-SA-65   |     |
| GR-G8                      |          |         |       |          |       |           |            |     |
| GR-G9                      |          |         |       |          |       |           | GR-SA-LG65 |     |
| GR-G10-1                   |          | SOS     |       |          |       |           |            |     |
| GR-G10-2                   |          | SOSS    |       |          |       |           |            |     |
| GR-G11                     |          |         |       |          |       |           |            |     |
| GR-G12                     |          | SSAIS06 |       |          |       |           |            |     |
| GR-G13                     |          | M010SA  |       |          |       |           |            |     |
| GR-G14                     |          |         |       |          |       |           |            |     |
| GR-G15                     |          | 40S8    |       |          |       |           |            |     |
| GR-G16                     |          | 42      |       |          |       |           |            |     |
| GR-G17                     |          |         |       |          |       |           | GR-SE      |     |
| GR-G18                     | MG12S    | B012G   |       |          |       |           |            |     |
| GR-G19                     | M377S11  | T01SA   |       |          |       |           |            |     |
| GR-G20                     |          |         |       | 1615     |       |           |            |     |
| GR-G21                     |          |         |       |          |       |           |            |     |
| GR-G22                     |          |         |       | 196-16mm |       |           |            |     |
| GR-G23                     |          |         |       | 81       |       |           |            |     |
| GR-G24                     | MG1/G6   |         |       |          |       |           |            |     |



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# Cross Reference Charts

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|-------------------------------|------------|----------|-------------|-------------|-------|-----------|----------|------|
| <b>O E M Seals</b>            |            |          |             |             |       |           |          |      |
| <b>Grundfos Pump Seals</b>    |            |          |             |             |       |           |          |      |
| GR-G25                        | MG1S20/G50 |          |             |             |       |           |          |      |
| GR-G26                        |            |          |             | 196-22mm    |       |           |          |      |
| GR-G27                        |            |          | 1(US)       |             |       |           |          |      |
| GR-G28                        |            |          | 2(US)       |             |       |           |          |      |
| GR-G29                        |            |          | 1B/11       |             |       |           |          |      |
| GR-G30                        |            |          | 2B/11       |             |       |           |          |      |
| GR-G31                        |            |          |             | 10/G50      |       |           |          |      |
| GR-G32                        |            |          | 1 double/11 |             |       |           |          |      |
| GR-G33                        |            |          | 2 double/31 |             |       |           |          |      |
| GR-G34                        |            |          | 21 DBI/11   |             |       |           |          |      |
| GR-G35                        | HJ92N/G16  |          |             |             |       |           |          |      |
| GR-G36                        | HJ92N/46   |          |             |             |       |           |          |      |
| GR-G37                        |            |          |             |             |       |           |          |      |
| GR-G38                        |            |          |             |             |       |           |          |      |
| GR-G39                        |            |          | 21          |             |       |           |          |      |
| <b>Godwin Pump Seals</b>      |            |          |             |             |       |           |          |      |
| GD-01                         |            |          |             | 1653        |       |           |          |      |
| GD-02                         |            |          |             | 1653D       |       |           |          |      |
| GD-03                         |            |          |             | 1724P/1725P |       |           |          |      |
| GD-04                         |            | B092XU   |             |             |       |           |          |      |
| GD-05                         |            | MOGFPU   |             |             |       |           |          |      |
| GD-06                         |            | B07X     |             |             |       |           |          |      |
| <b>Gorman-RUPP Pump Seals</b> |            |          |             |             |       |           |          |      |
| GMN-01                        |            | P02GU    |             |             |       |           |          |      |
| GMN-02                        |            | P02GU0GR |             |             |       |           |          |      |
| GMN-03                        |            |          |             |             |       |           |          | VGD  |
| GMN-04                        |            |          |             |             |       |           |          | VGDU |
| <b>Haigh Pump Seals</b>       |            |          |             |             |       |           |          |      |
| HAI-02                        |            | B06      |             | 28          |       |           |          |      |
| HAI-03                        | 477        |          |             | 1620        |       |           |          |      |
| HAI-06                        |            |          |             | 144         |       |           |          |      |
| HAI-10                        |            |          |             | M010X       |       |           |          |      |

## Cross Reference Charts

| HQ                      | BURGMANN   | AES     | CRANE             | VULCAN | ROTEN | FLOWSERVE | Lidering | U.S |
|-------------------------|------------|---------|-------------------|--------|-------|-----------|----------|-----|
| <b>O E M Seals</b>      |            |         |                   |        |       |           |          |     |
| <b>Hidrostal</b>        |            |         |                   |        |       |           |          |     |
| HID-01                  |            | SAIH    |                   |        |       |           |          |     |
| HID-02                  | 912/D1/G60 | P03     |                   | RD11   |       |           |          |     |
| HID-03                  |            |         |                   | 194    |       |           |          |     |
| HID-04                  |            |         |                   |        |       |           | HI       |     |
| HID-05                  |            |         |                   | 41     |       |           |          |     |
| HID-06                  |            | M010H   |                   |        |       |           |          |     |
| <b>Hilge Pump Seals</b> |            |         |                   |        |       |           |          |     |
| HIL-01                  | SHJ97      | M010S1  |                   |        | EHS3  |           |          |     |
| HIL-02                  | SHJ97      | M010S2  |                   |        | EHS3  |           |          |     |
| HIL-03                  | SHJ97      | M010S3  |                   |        | EHS3  |           |          |     |
| HIL-04                  |            | T01LKU  |                   |        |       |           |          |     |
| HIL-05                  |            | T03HU   |                   |        |       |           |          |     |
| HIL-06                  |            |         | 8B,8BU,12,12S.... |        |       |           |          |     |
| HIL-07                  |            |         | 128               |        |       |           |          |     |
| HIL-08                  |            | W04U    |                   |        |       |           |          |     |
| HIL-09                  |            | T01LOU  |                   |        |       |           |          |     |
| HIL-10                  |            | T02LOU  |                   |        |       |           |          |     |
| HIL-11                  |            | T01LFU  |                   |        |       |           |          |     |
| HIL-12                  |            | T02LFU  |                   |        |       |           |          |     |
| HIL-13                  |            | T01LXU  |                   |        |       |           |          |     |
| HIL-14                  |            | T02LXU  |                   |        |       |           |          |     |
| HIL-15                  |            | T01LXSU |                   |        |       |           |          |     |
| HIL-16                  |            | T02LXSU |                   |        |       |           |          |     |



| Metal Materials          |                                    |            |      |
|--------------------------|------------------------------------|------------|------|
| Type                     | Material Description               | Symbol     | Code |
|                          | Normal Stainless Steel             | 2Cr13      | F2   |
|                          | Stainless Steel                    | 304        | F    |
|                          | Stainless Steel                    | 304L       | F1   |
|                          | Stainless Steel                    | 316        | G    |
|                          | Stainless Steel                    | 316L       | G1   |
|                          | Hastelloy C-4 Alloy                | Hast C4    | M    |
|                          | Hastelloy B-2 Alloy                | Hast B2    | M1   |
|                          | Carpenter                          | Carp.20    | M3   |
|                          | Monel                              | Monel.K50  | M4   |
|                          | Hastelloy C-4C-276 Alloy           | Hast.C-276 | M5   |
|                          | Pure Titanim                       | TA2        | T2   |
|                          | Carpenter                          | Carp.42    | T4   |
|                          | Deposit induration Stainless Steel | Am350      | T6   |
|                          | 08F Coated with Chrome             | Q235-A     | C    |
|                          | Brass                              | H62        | H    |
|                          |                                    |            |      |
| Secondary Seal Materials |                                    |            |      |
| Type                     | Material Description               | Symbol     | Code |
| Rubber                   | Nitrile(NBR)                       | NBR        | P    |
|                          | Ethylene Propylene(EPDM)           | EPR        | E    |
|                          | Fluorocarbon Rubber(Viton)         | FPM        | V    |
|                          | Silicon Rubber                     | SI         | S    |
|                          | Chloroprene Rubber                 | CR         | N    |
|                          | Hydrogen Nitrile                   | HNBR       | H    |
|                          | Perfluoroelastomer(Kalrez,Chemraz) | FFKM       | K    |
| PTFE                     | Pure PTFE                          | PTFE       | T    |
|                          | PTFE, glassfibre reinforced        |            | T2   |
|                          | PTFE,Carbon Reinforced             |            | T3   |
| PTFE Wrapped             | FPM,with PTFE wrapped              | PTFE+FPM   | M1   |
|                          | EPR,with PTFE wrapped              | PTFE+EPR   | M2   |
|                          | MVQ,with PTFE wrapped              | PTFE+MVQ   | M3   |
| Expended graphite        | Expanded Graphite                  |            | G    |

| Seal Ring Materials |                                                  |             |      |
|---------------------|--------------------------------------------------|-------------|------|
| Type                | Material Description                             | Symbol      | Code |
| SIC                 | Silicon Carbide,Sintered Pressureless            | SSIC        | Q1   |
|                     | Silicon Carbide,Sintered Pressureless(shrunk-in) |             | Q12  |
|                     | Silicon Carbide,Reaction bonded                  | RBSIC       | Q2   |
|                     | Silicon Carbide,Reaction bonded(shrunk-in)       |             | Q22  |
|                     | Reaction Silicon Carbide with graphite           |             | Q3   |
|                     | Sintered Silocon Carbide with SB                 |             | Q4   |
| AL203               | Ceramic(Alumina)                                 | 99.5% AL203 | V    |
|                     | Ceramic(Alumina)                                 | 99% AL203   | V1   |
|                     | Ceramic(Alumina)                                 | 95% AL203   | V2   |
|                     | Cermet                                           | Fe+AL203    | V3   |
| TC                  | Co-binder Tungsten Carbide                       | YG6,GY8     | U1   |
|                     | Co-binder Tungsten Carbide(shrunk-in)            |             | U12  |
|                     | Ni-binder Tungsten Carbide                       | M106,M108   | U2   |
|                     | Ni-binder Tungsten Carbide(shrunk-in)            |             | U22  |
|                     | NiCrmo-binder Tungsten Carbide                   |             | U3   |
|                     | NiCrmo-binder Tungsten Carbide(shrunk-in)        |             | U32  |
| Carbon              | Antimony Impreg,Carbon Graphite                  |             | A    |
|                     | Babbitt Alloy Impreg,Carbon Graphite             |             | A1   |
|                     | Copper Alloy Impreg,Carbon Graphite              |             | A2   |
|                     | Resin Impreg Impreg,Carbon Graphite(Furan)       |             | B    |
|                     | Resin Impreg Impreg,Carbon Graphite(Epoxy)       |             | B1   |
|                     | Resin Impreg Impreg,Carbon(Phedol-formaldehyde)  |             | B2   |
|                     | Hot-pressing Carbon                              |             | B5   |



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## Metarial Codes

| Seal Ring Materials |                            |           |      |
|---------------------|----------------------------|-----------|------|
| Metal               | Stainless Steel            | 304       | F    |
|                     | Stainless Steel            | 304L      | F1   |
|                     | Stainless Steel            | 316       | G    |
|                     | Stainless Steel            | 316L      | G1   |
|                     | Tin bronze                 | ZQSn6-6-3 | S1   |
|                     | High silicon cast iron     |           | S2   |
|                     | High nickel cast iron      |           | S3   |
| Plastic             | PTFE,glassfibre reinforced |           | Y1   |
|                     | PTFE,carbon reinforced     |           | Y2   |
|                     |                            |           |      |
| Spring Materials    |                            |           |      |
| Type                | Material Description       | Symbol    | Code |
|                     | Hastelloy C-4 Alloy        | Hast.C4   | M    |
|                     | Stainless Steel            | 304       | F    |
|                     | Stainless Steel            | 304L      | F1   |
|                     | Stainless Steel            | 316       | G    |
|                     | Stainless Steel            | 316L      | G1   |
|                     | 65Mn Coated with Chrome    | 65Mn      | G8   |



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