

RELY ON EXCELLENCE

## Class P unbalanced seals P01, P02, P11, P12

Mechanical Seals | Mechanical seals for pumps | Pusher seals



### Features

- Rotating multi-spring pusher seals
- Unbalanced
- Compact in length
- Available as O-Ring or wedge variants
- Uniform seal face loading
- Circlip design for ease of assembly in P11 / P12 seals
- Independent of direction of rotation
- Available as single, dual and tandem arrangements

### Advantages

- Ideal for general purpose applications
- Over 35 years of running reference in the field
- Narrow cross-section allows the seal fitment in narrow stuffing boxes
- Lower inventory since all parts except seal ring and cups are interchangeable with Class P balanced seals (P03, P04, P13, P14).

### Operating range

Shaft diameter:  $d = 25 \dots 100 \text{ mm}$  (1" ... 3.94")

Pressure:  $p = \text{vacuum to } 16 \text{ bar}$  (232 PSI)

Temperature:

$t = -75 \text{ }^\circ\text{C} \dots +260 \text{ }^\circ\text{C}$  (-103 °F ... +500 °F)

Sliding velocity:  $v_g = 25 \text{ m/s}$  (82 ft/s)

Axial movement:  $\pm 0.5 \text{ mm}$

### Materials

Seal ring: Carbon graphite resin impregnated,  
Carbon graphite antimony impregnated

Mating ring: Silicon carbide, Tungsten carbide,  
Ceramic

Secondary seals: FKM, NBR, FFKM, PTFE

Springs: Hastelloy® C-4

Metal parts: SS 316, other materials on request.

### Recommended applications

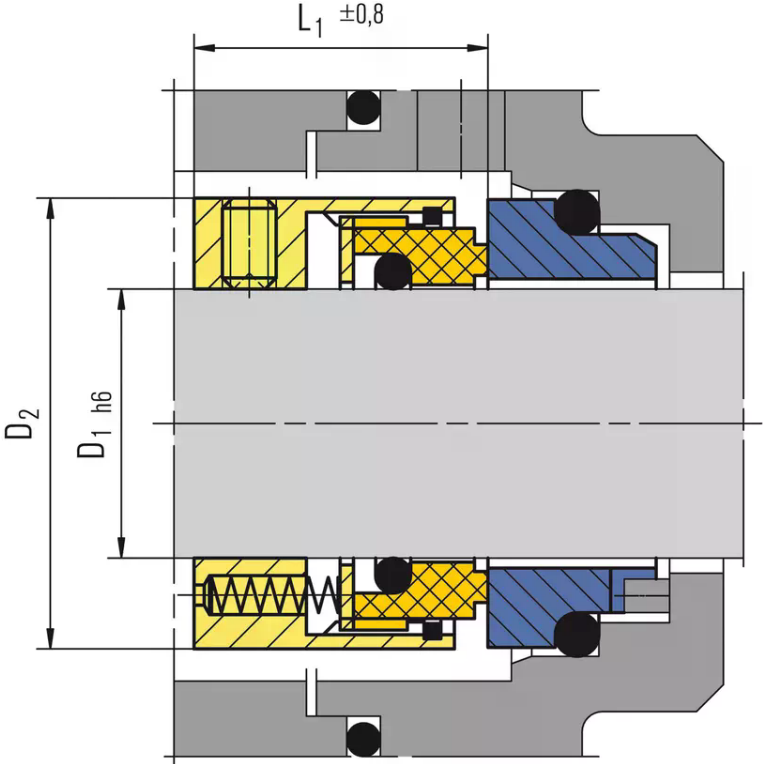
- Process industry
- Oil and gas industry
- Refining technology
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Power plant technology
- Water and waste water technology
- Building services industry
- Food and beverage industry
- Sugar industry
- Horizontal and vertical pumps, agitators, mixers

### Recommended piping plans

API Plans 01, 02, 03, 11, 12, 13, 14, 21, 22, 23, 31, 32, 41, 52, 53A, 53B, 53C, 54, 55, 61, 62, 65A, 65B, 66

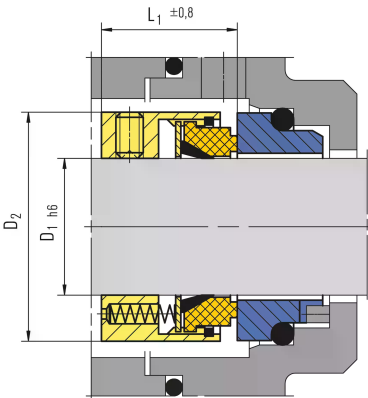
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Drawing shows  
**P11 unbalanced seal**

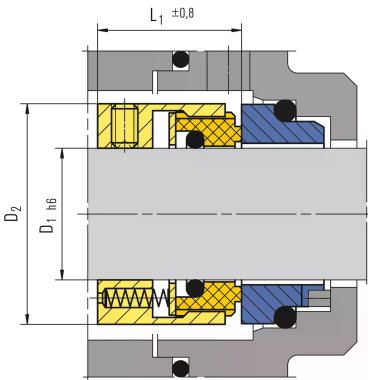


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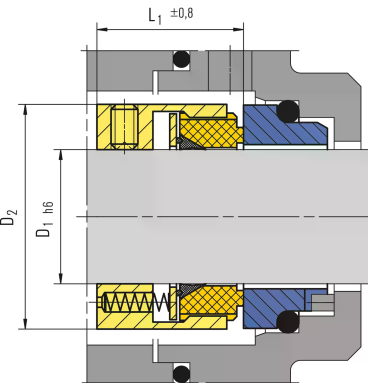
## Product variants



P12 unbalanced seal with circlip



P01 unbalanced seal



P02 unbalanced seal with wedge as secondary seal

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### Dimensions

Dash Size	D1	D2	L1
D016	25.40	36.5	41.2
D018	28.57	39.7	41.2
D020	31.75	42.9	41.2
D022	34.93	49.2	42.2
D024	38.10	52.4	42.2
D026	41.27	55.6	42.2
D028	44.45	58.7	42.2
D030	47.62	63.5	42.2
D032	50.80	66.7	42.2
D034	53.97	71.4	44.5
D036	57.15	72.2	48.3
D038	60.32	76.2	48.3
D040	63.50	79.4	48.3
D042	66.67	82.6	52.4
D044	69.85	85.7	52.4
D046	73.02	93.7	52.4
D048	76.20	96.8	52.4
D050	79.37	101.6	52.4
D052	82.55	104.8	52.4
D054	85.72	108.0	52.4
D056	88.90	111.1	52.4
D058	92.07	114.3	53.9
D060	95.25	117.5	53.9
D062	98.42	120.7	53.9
D064	101.6	123.8	53.9

### Imperial size

Seal Size	D1	D2	L1
25	25	39	30.0
28	28	42	32.5
30	30	44	32.5
32	32	46	32.5
33	33	47	32.5
35	35	49	32.5
38	38	54	34.0
40	40	56	34.0
43	43	59	34.0
45	45	61	34.0
48	48	64	34.0
50	50	66	34.5
53	53	69	34.5
55	55	71	34.5
58	58	78	39.5
60	60	80	39.5
63	63	83	39.5
65	65	85	39.5
68	68	88	37.2

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Seal Size	D1	D2	L1
70	70	90	44.7
75	75	99	44.7
80	80	104	44.3
85	85	109	44.3
90	90	114	49.3
95	95	119	49.3
100	100	124	49.3

Metric size