

# HRN



## Operating range

Shaft diameter:  
 $d = 18 \dots 100 \text{ mm} (0.71" \dots 3.94")$   
 Pressure:  $p_1^* = 25 \text{ bar} (363 \text{ PSI})$   
 Temperature:  
 $t = -40 \text{ °C} \dots +220 \text{ °C} (-40 \text{ °F} \dots 428 \text{ °F})$   
 Sliding velocity:  $v_g = 20 \text{ m/s} (66 \text{ ft/s})$   
 Axial movement:  $\pm 1.0 \text{ mm}$

\* Additional seat locking is not needed in vacuum operation. For operation under vacuum it is necessary to arrange for quenching on the atmosphere side.

## Recommended applications

- Water and waste water technology
- Refining technology
- Dirty, abrasive and solid containing media
- Fugitive hydrocarbons (no API seal!)
- Sticky and stringy media
- Chemical standard pumps
- Sewage pumps

## Features

- Single seal
- Balanced
- Independent of direction of rotation
- Stationary springs
- Dual seals in tandem as well as back-to-back arrangements (also in combination with H10 seal)

## Materials

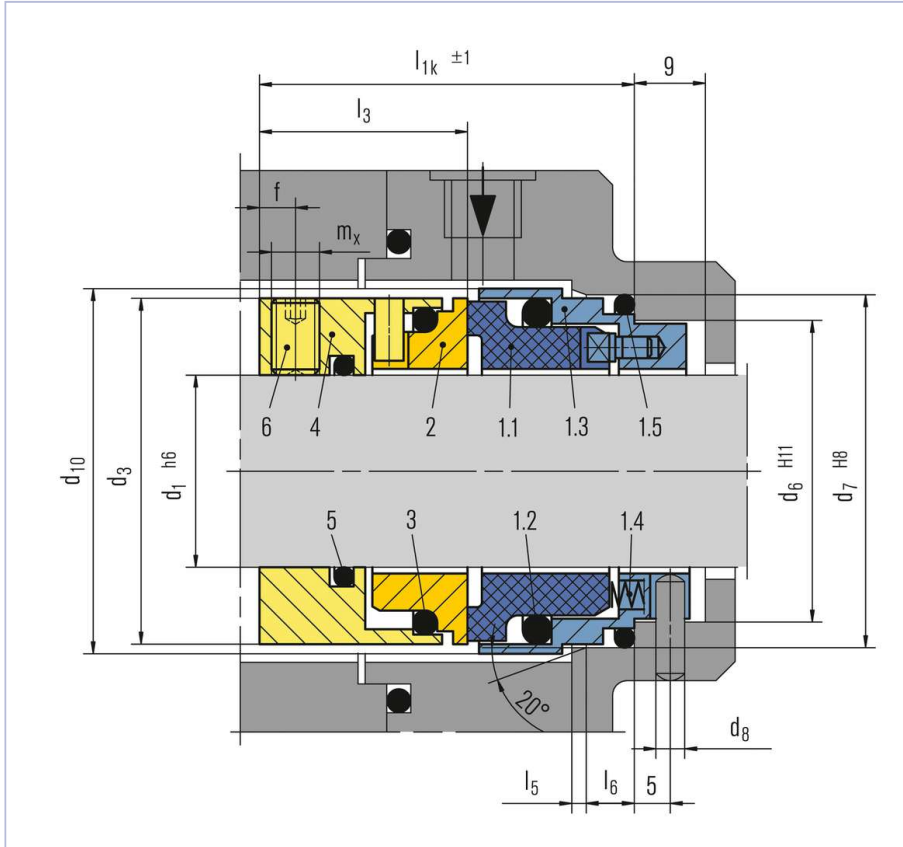
Seal face: Carbon graphite resin impregnated (B), Silicon carbide (Q1)  
 Seat: Silicon carbide (Q1)  
 Secondary seals: FKM (V), NBR (P), FFKM (K), PTFE (T)  
 Springs: Hastelloy® C-4 (M)  
 Metal parts: CrNiMo steel (G)

## Advantages

- Safe operation (no fractures) because of seal face locking by square pin
- Spring unit averted from the product so no sticking and clogging of the springs
- Suitable for pressure reversals
- Operation in vacuum without additional seat locking possible
- No damage of the shaft by a dynamically loaded O-Ring
- Small installation sizes
- Best suitable for conversions, no adaptations of the pump
- Insensitive to solid containing and abrasive media
- Advantages of a balanced seal even with plain shafts
- Insensitive to shaft movements because of the stationary design

## Standards and approvals

- EN 12756



**Item Part no. to  
DIN 24250**

Item	Part no. to DIN 24250	Description
1.1	472	Seal face
1.2	412.1	O-Ring
1.3	485	Retainer
1.4	477	Spring
1.5	412.2	O-Ring
2	475	Seat
3	412.3	O-Ring
4	485	Drive collar
5	412.4	O-Ring
6	904	Set screw

## Dimensions

d <sub>1</sub>	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	d <sub>8</sub>	d <sub>10</sub>	l <sub>1k</sub>	l <sub>3</sub>	l <sub>5</sub>	l <sub>6</sub>	f	m <sub>x</sub>
18	33	27	33	3	34.7	37.5	19.5	2.0	5	3.0	4
20	35	29	35	3	36.7	37.5	19.5	2.0	5	3.0	4
22	37	31	37	3	38.7	37.5	19.5	2.0	5	3.0	4
24	39	33	39	3	40.7	40.0	20.5	2.0	5	3.5	5
25	40	34	40	3	41.7	40.0	20.5	2.0	5	3.5	5
28	43	37	43	3	44.7	42.5	21.5	2.0	5	3.5	5
30	45	39	45	3	46.7	42.5	21.5	2.0	5	3.5	5
32	48	42	48	3	49.7	42.5	21.5	2.0	5	3.5	5
33	48	42	48	3	49.7	42.5	21.5	2.0	5	3.5	5
35	50	44	50	3	51.7	42.5	21.5	2.0	5	3.5	5
38	56	49	56	4	57.7	45.0	24.0	2.0	6	4.0	6
40	58	51	58	4	59.7	45.0	24.0	2.0	6	4.0	6
43	61	54	61	4	62.7	45.0	24.0	2.0	6	4.0	6
45	63	56	63	4	64.7	45.0	24.0	2.0	6	4.0	6
48	66	59	66	4	67.7	45.0	24.0	2.0	6	4.0	6
50	70	62	70	4	71.7	47.5	25.0	2.5	6	4.0	6
53	73	65	73	4	74.7	47.5	25.0	2.5	6	4.0	6
55	75	67	75	4	76.7	47.5	25.0	2.5	6	4.0	6
58	78	70	78	4	80.5	52.5	28.0	2.5	6	4.0	6
60	80	72	80	4	82.5	52.5	28.0	2.5	6	4.0	6
63	83	75	83	4	85.5	52.5	28.0	2.5	6	4.0	6
65	85	77	85	4	87.5	52.5	28.0	2.5	6	4.0	6
68	90	81	90	4	92.5	52.5	28.0	2.5	7	4.0	6
70	92	83	92	4	94.5	60.0	34.0	2.5	7	6.0	8
75	97	88	97	4	100.5	60.0	34.0	2.5	7	6.0	8
80	105	95	105	4	108.5	60.0	34.0	3.0	7	6.0	8
85	110	100	110	4	113.5	60.0	34.0	3.0	7	6.0	8
90	115	105	115	4	118.5	65.0	39.0	3.0	7	10.0	8
95	120	110	120	4	123.5	65.0	39.0	3.0	7	10.0	8
100	125	115	125	4	128.5	65.0	39.0	3.0	7	10.0	8

Dimensions in Millimeter