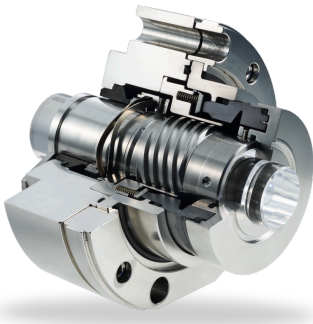


RELY ON EXCELLENCE

## HRC...N

Mechanical seals | Mechanical seals for pumps | Engineered seals



### Features

- Cartridge
- Balanced
- Independent of direction of rotation
- Stationary multiple springs
- Spring protection sleeve
- Variant for operation with pressureless quench available (HRC2000N)
- Dual seal with and without pumping screw (HRC3300NF, HRC3300N) available

### Advantages

- Insensitive to solids containing media. Solids content 40 % (single seal), 60 % (double seal)
- Springs protected from product and leakage
- Variant with short installation length to meet limited space conditions (HRC1100N)
- Dual seal remains closed in case of barrier pressure failure, self-closing at pressure reversal (HRC3300NF)
- Operation under vacuum without seat locking possible
- No damage of the shaft by dynamically loaded O-Ring
- Insensitive to shaft deflections due to stationary design

### Operating range

Shaft diameter:  
 $d_{10} = 30 \dots 60 \text{ mm (1.181" ... 2.362")}$   
 Pressure:  $p_1 = 23 \text{ bar (334 PSI)}$   
 Temperature:  
 $t = -20 \text{ }^{\circ}\text{C} \dots +160 \text{ (200*) }^{\circ}\text{C}$   
 $(-4 \text{ }^{\circ}\text{F} \dots +320 \text{ (382*) }^{\circ}\text{F})$   
 Sliding velocity:  $v_g = 20 \text{ m/s (66 ft)}$   
 Axial movement:  $\pm 1.0 \text{ mm}$

\* Due to shrinking

### Materials

Seal face: Silicon carbide (Q1, Q2)  
 Seat: Carbon graphite antimony impregnated (A), Silicon carbide (Q1, Q2)

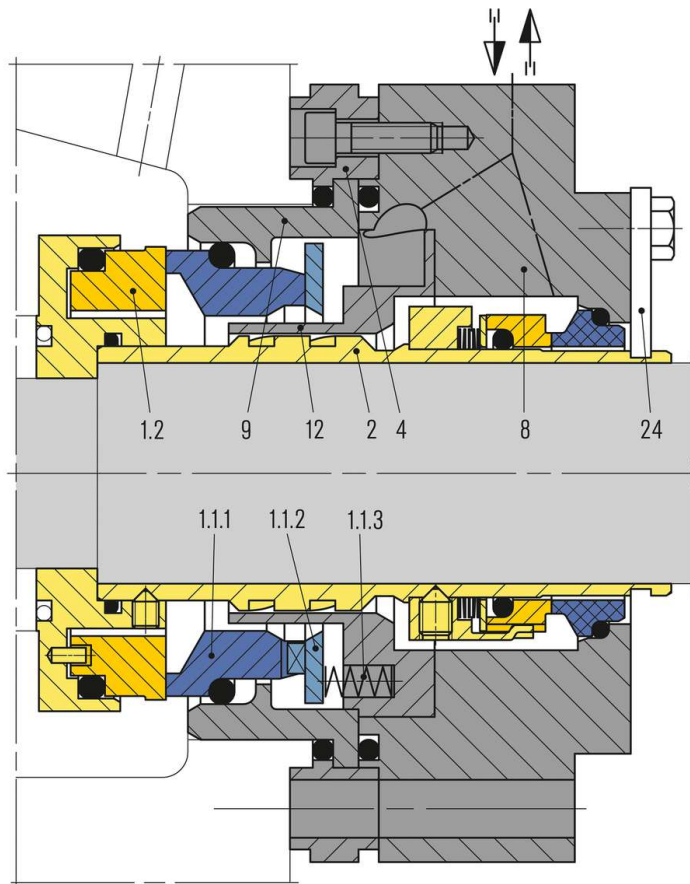
### Standards and approvals

- DIN 24960 C

### Recommended applications

- Chemical industry
- Process industry
- Petrochemical industry
- Mining industry
- Sugar industry
- Dirty, abrasive and solids containing media
- Various chemical processes
- Chemical standard pumps

## RELY ON EXCELLENCE



### HRC3300NF

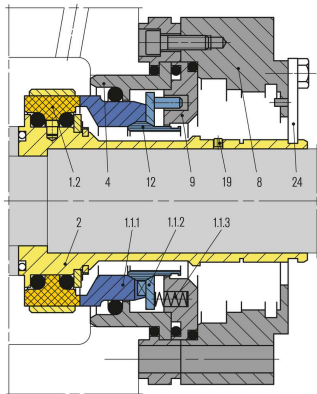
With uni-directional pumping screw. Dual seal remains closed in case of barrier pressure failure and closes in the event of pressure reversal. With guide sleeve (item no. 12). Operation as single seal with quench possible. Encapsulated stationary seat on the product side (bursting protection). Parted seal sleeve for application of highly resistant materials e.g. Hastelloy®.

#### Item Part no. to Description DIN 24250

1.1.1	472.1	Seal face
1.1.2	474	Thrust ring
1.1.3	477.1	Spring
1.2	475.1	Seat
2	523	Shaft sleeve
4	513	Insert
8	160	Cover plate
9	509	Spring carrier
12		Spring protection sleeve
19		Plug
24		Assembly fixture

## RELY ON EXCELLENCE

### Product variants

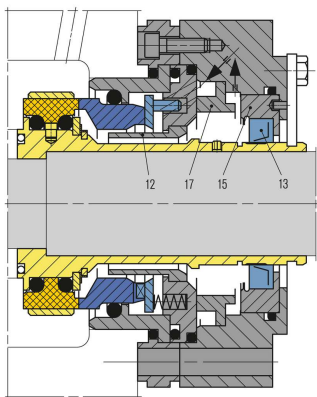


#### HRC1000N

Single seal

#### HRC1100N

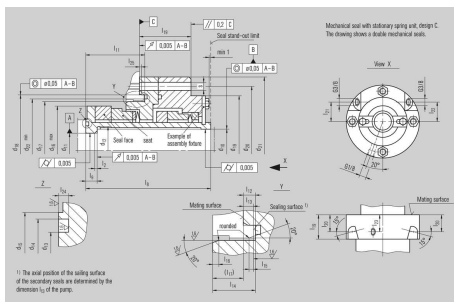
Same design as HRC1000N, but with a shorter cover plate featuring integral spring and drive pin pockets (Item no. 8). No adapter (Item no. 9). Shaft sleeve (Item no. 2) uncoated. Differs from modular system!



#### HRC2000N

Single seal with pressureless quench for cooling, featuring guide sleeve (Item no. 12) baffle (Item no. 17), adapter (Item no. 15) and lip seal (Item no. 13) on the atmosphere side. Option: Throttle ring for sealing steam quench on the atmosphere side.

### Charts



Mechanical seal with stationary spring unit, design C. The drawing shows a double mechanical seal.

## RELY ON EXCELLENCE

### Dimensions

d <sub>10</sub> <sup>1)</sup>	d <sub>11</sub> <sup>1)</sup>	d <sub>12</sub> <sup>2)</sup>	d <sub>13</sub> <sup>3)</sup>	d <sub>14</sub> <sup>2)</sup>	d <sub>15</sub> <sup>4)</sup>	d <sub>16</sub>	d <sub>17</sub> <sup>5)</sup>	d <sub>18</sub> <sup>1)6)</sup>	d <sub>19</sub>	d <sub>20</sub>	d <sub>21</sub>	d <sub>22</sub>	l <sub>87)</sub>	l <sub>9</sub>	l <sub>10</sub>	l <sub>11</sub> <sup>2)7)</sup>	l <sub>12</sub> <sup>2)7)</sup>	l <sub>13</sub> <sup>8)</sup>	l <sub>14</sub>	l <sub>15</sub> l <sub>16</sub>	l <sub>17</sub>	l <sub>18</sub>	l <sub>19</sub>	l <sub>20</sub>	l <sub>21</sub>	l <sub>22</sub>	l <sub>23</sub>	l <sub>24</sub> <sup>9)</sup>	l <sub>25</sub>	s
30	24	31	35	41	44	82	85	95	d <sub>19</sub> 20	110	129	86	115	10	15	50	4	4	20	1	16	0.5	55	39	35	35	39	2	0.5	M10
40	32	41	45	51	54	92	95	110	d <sub>19</sub> 20	130	155	96	130	10	15	52	4	4	22	1	18	0.5	60	44	40	40	44	2	0.5	M12
50	42	51	55	61	66	105	110	125	d <sub>19</sub> 20	145	168	111	140	12	15	55	4	4	25	1	21	0.5	60	44	45	40	44	2	0.5	M12
60	50	61	61	67	76	120	125	140	d <sub>19</sub> 20	160	185	126	166	14	20	70	4	4	30	1	26	0.5	60	44	50	40	44	2	0.5	M12

Dimensions in Millimeter

1) H7 2) +0.2 3) -0.2 4) +0.5 5) h8 6) +7 7) +0.1 8) -0.1 9) ±0.05