

RELY ON EXCELLENCE

## Cartex Single seals

Mechanical Seals | Mechanical seals for pumps | Standard cartridge seals



### Features

- Single seal
- Cartridge
- Balanced
- Independent of direction of rotation
- Single seals without connections (-SNO), with flush (-SN) and with quench combined with lip seal (-QN) or throttle ring (-TN)
- Additional variants available for ANSI pumps (e.g. -ABPN) and eccentric screw pumps (-Vario)

### Advantages

- Ideal seal for standardizations
- Universal applicable for packings conversions, retrofits or original equipment
- No dimensional modification of the seal chamber (centrifugal pumps) necessary, small radial installation height
- No damage of the shaft by dynamically loaded O-Ring
- Extended service life
- Straightforward and easy installation due to pre-assembled unit
- Individual adaptation to pump design possible
- Customer specific versions available

### Operating range

Cartex-SN, -SNO, -QN, -TN, -Vario

Shaft diameter:

d1 = 25 ... 100 mm (1.000" ... 4.000")

Other sizes on request

Temperature:

t = -40 °C ... 220 °C (-40 °F ... 428 °F)

(Check O-Ring resistance)

Sliding face material combination B01

Pressure: p1 = 25 bar (363 PSI)

Sliding velocity: vg = 16 m/s (52 ft/s)

Sliding face material combination

Q1Q1 or U2Q1

Pressure: p1 = 12 bar (174 PSI)

Sliding velocity: vg = 10 m/s (33 ft/s)

Axial movement:

±1.0 mm, d1 ≥ 75 mm ±1.5 mm

### Materials

Seal face: Silicon carbide (Q1), Carbon graphite

resin impregnated (B), Tungsten carbide (U2)

Seat: Silicon carbide (Q1)

Secondary seals: FKM (V), EPDM (E), FFKM (K),

Perfluorocarbon rubber/PTFE (U1)

Springs: Hastelloy® C-4 (M)

Metal parts: CrNiMo steel (G), CrNiMo cast steel (G)

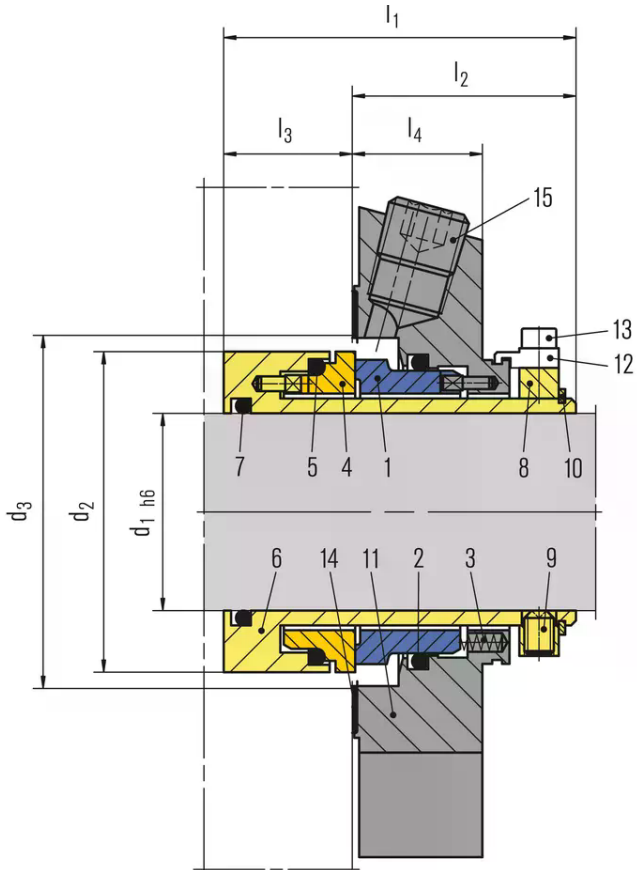
### Standards and approvals

- WRAS
- UBA(KTW)

### Recommended applications

- Universally applicable
- Process industry
- Petrochemical industry
- Chemical industry
- Pharmaceutical industry
- Power plant technology
- Pulp and paper industry
- Water and waste water technology
- Mining industry
- Food and beverage industry
- Sugar industry
- CCUS
- Lithium
- Hydrogen
- Sustainable plastics production
- Alternative fuels production
- Power generation
- Nuclear power technology
- Centrifugal pumps
- Eccentric screw pumps
- Process pumps

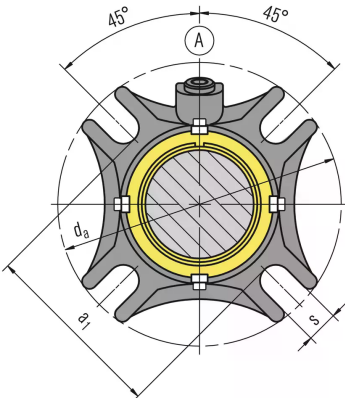
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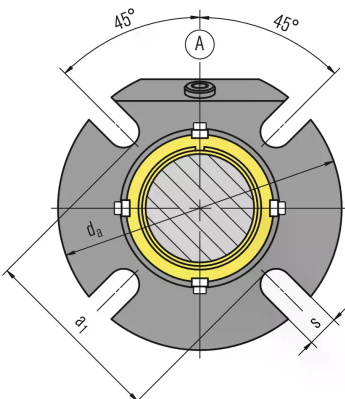
| Item    | Description                         |
|---------|-------------------------------------|
| 1       | Seal face                           |
| 2, 5, 7 | O-Ring                              |
| 3       | Spring                              |
| 4       | Seat                                |
| 6       | Shaft sleeve                        |
| 8       | Drive collar                        |
| 9       | Set screw                           |
| 10      | Snap ring                           |
| 11      | Cover                               |
| 12      | Assembly fixture                    |
| 13      | Screw                               |
| 14      | Gasket                              |
| 15      | Screw plug                          |
| 16      | Lip seal (-QN), throttle ring (-TN) |

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### Installation, details, options



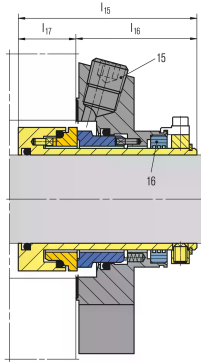
**Seal cover**  
Cast version



**Seal cover**  
Machined version

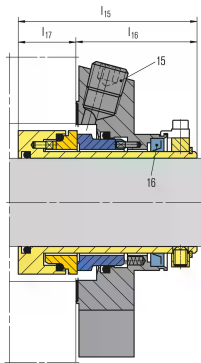
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## Product variants



### Cartex-TN

Single seal, same as Cartex-SN but with throttle ring (item 16). The cover has auxiliary connections for flushing and quench.  
Throttle ring: PTFE carbon-graphite reinforced (T12).



### Cartex-QN

Single seal for operation with unpressurized quench. Same as '-SN' version but with outboard lip seal (item 16). The cover has auxiliary connections for flushing and quench.  
Lip seal: NBR (P), PTFE carbon reinforced (T3).

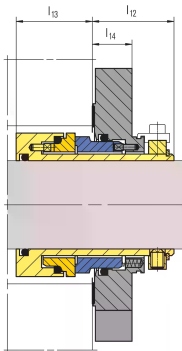


### Cartex-Vario

Cartridge seals with modified cover for eccentric screw pumps.

For e.g. Seepex BN,  
Netzsch NM...S, NM...B, NE (P),  
Allweiler AE, AEB, AED,  
Robbins & Myers / Moyno 2000 CC,  
and Mono E-Range.  
Please inquire.

## RELY ON EXCELLENCE



**Cartex-SNO**  
Single seal without connections, for dead-end operation.

## RELY ON EXCELLENCE

### Dimensions

| d <sub>1</sub> | d <sub>2</sub> | d <sub>3min.</sub> | d <sub>3max.</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>12</sub> | l <sub>13</sub> | l <sub>14</sub> | l <sub>15</sub> | l <sub>16</sub> | l <sub>17</sub> | a <sub>1</sub> | d <sub>a</sub> | s     |
|----------------|----------------|--------------------|--------------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|-------|
| 1.000          | 1.693          | 1.750              | 2.000              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 2.440          | 4.134          | 0.520 |
| 1.125          | 1.811          | 1.875              | 2.050              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 2.440          | 4.134          | 0.520 |
| 1.250          | 1.960          | 2.000              | 2.250              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 2.640          | 4.330          | 0.520 |
| 1.375          | 2.086          | 2.125              | 2.420              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 2.750          | 4.449          | 0.520 |
| 1.500          | 2.200          | 2.250              | 2.625              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 2.950          | 4.842          | 0.520 |
| 1.625          | 2.340          | 2.375              | 2.700              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 3.030          | 4.842          | 0.599 |
| 1.750          | 2.460          | 2.500              | 2.812              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 3.190          | 5.433          | 0.599 |
| 1.875          | 2.582          | 2.625              | 2.940              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 3.190          | 5.433          | 0.599 |
| 2.000          | 2.677          | 2.750              | 3.190              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 3.430          | 5.827          | 0.599 |
| 2.125          | 2.834          | 2.875              | 3.437              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 3.820          | 5.827          | 0.709 |
| 2.250          | 2.960          | 3.000              | 3.560              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 3.940          | 6.181          | 0.709 |
| 2.375          | 3.070          | 3.125              | 3.590              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 4.020          | 6.181          | 0.709 |
| 2.500          | 3.212          | 3.250              | 3.800              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 4.170          | 6.417          | 0.709 |
| 2.625          | 3.338          | 3.375              | 3.937              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 4.290          | 6.417          | 0.709 |
| 2.750          | 3.660          | 3.750              | 4.250              | 2.640          | 1.669          | 0.969          | 1.000          | 1.378           | 1.260           | 0.689           | 3.130           | 2.102           | 1.028           | 4.650          | 7.008          | 0.709 |
| 2.875          | 3.937          | 4.000              | 4.646              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | -               | -               | -               | 5.079          | 7.480          | 0.709 |
| 3.000          | 3.937          | 4.000              | 4.646              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | 3.858           | 2.516           | 1.343           | 5.079          | 7.480          | 0.709 |
| 3.125          | 4.190          | 4.125              | 4.764              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | 3.858           | 2.516           | 1.343           | 5.315          | 7.677          | 0.709 |
| 3.250          | 4.189          | 4.250              | 4.882              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | 3.858           | 2.516           | 1.343           | 5.315          | 7.677          | 0.709 |
| 3.375          | 4.311          | 4.375              | 5.039              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | -               | -               | -               | 5.472          | 7.795          | 0.866 |
| 3.500          | 4.437          | 4.500              | 5.157              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | -               | -               | -               | 5.591          | 7.795          | 0.866 |
| 3.625          | 4.563          | 4.625              | 5.315              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | -               | -               | -               | 5.709          | 8.071          | 0.866 |
| 3.750          | 4.689          | 4.750              | 5.433              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | 3.858           | 2.516           | 1.343           | 5.827          | 8.189          | 0.866 |
| 4.000          | 4.937          | 5.000              | 5.669              | 3.307          | 2.260          | 1.047          | 1.102          | 1.815           | 1.492           | 0.866           | -               | -               | -               | 6.063          | 8.583          | 0.866 |

### Dimensions in inch

| d <sub>1</sub> | d <sub>2</sub> | d <sub>3min.</sub> | d <sub>3max.</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>12</sub> | l <sub>13</sub> | l <sub>14</sub> | l <sub>15</sub> | l <sub>16</sub> | l <sub>17</sub> | a <sub>1</sub> | d <sub>a</sub> | s    |
|----------------|----------------|--------------------|--------------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|------|
| 25             | 43.0           | 44.0               | 51.5               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 62             | 105            | 13.2 |
| 28             | 46.0           | 47.0               | 52.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 62             | 105            | 13.2 |
| 30             | 48.0           | 49.0               | 56.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 65             | 105            | 13.2 |
| 32             | 49.8           | 51.0               | 57.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 67             | 108            | 13.2 |
| 33             | 49.8           | 51.0               | 57.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 67             | 108            | 13.2 |
| 35             | 53.0           | 54.0               | 61.5               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 70             | 113            | 13.2 |
| 38             | 56.0           | 57.0               | 66.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 75             | 123            | 13.2 |
| 40             | 58.0           | 59.0               | 68.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 75             | 123            | 14.2 |
| 42             | 60.5           | 61.5               | 69.5               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 80             | 133            | 14.2 |
| 43             | 60.5           | 61.5               | 70.5               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 80             | 133            | 14.2 |
| 45             | 62.5           | 64.0               | 73.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 81             | 138            | 14.2 |
| 48             | 65.6           | 67.0               | 75.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 84             | 138            | 14.2 |
| 50             | 68.0           | 69.0               | 78.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 87             | 148            | 14.2 |
| 53             | 72.0           | 73.0               | 87.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 97             | 148            | 18.0 |
| 55             | 73.0           | 74.0               | 83.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 90             | 148            | 18.0 |
| 60             | 78.0           | 79.0               | 91.0               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 102            | 157            | 18.0 |
| 65             | 84.8           | 85.7               | 98.5               | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 109            | 163            | 18.0 |
| 70             | 93.0           | 95.0               | 108.0              | 67             | 42.4           | 24.6           | 25.4           | 35.0            | 32.0            | 17.5            | 79.5            | 53.4            | 26.1            | 118            | 178            | 18.0 |
| 75             | 100.0          | 101.6              | 118.0              | 84             | 57.4           | 26.6           | 28.0           | 46.1            | 37.9            | 22.0            | 98.0            | 63.9            | 34.1            | 129            | 190            | 18.0 |
| 80             | 106.4          | 108.0              | 124.0              | 84             | 57.4           | 26.6           | 28.0           | 46.1            | 37.9            | 22.0            | 98.0            | 63.9            | 34.1            | 135            | 195            | 18.0 |

## RELY ON EXCELLENCE

| d <sub>1</sub> | d <sub>2</sub> | d <sub>3min.</sub> | d <sub>3max.</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | l <sub>12</sub> | l <sub>13</sub> | l <sub>14</sub> | l <sub>15</sub> | l <sub>16</sub> | l <sub>17</sub> | a <sub>1</sub> | d <sub>a</sub> | s    |
|----------------|----------------|--------------------|--------------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|----------------|------|
| 85             | 109.5          | 111.1              | 128.0              | 84             | 57.4           | 26.6           | 28.0           | 46.1            | 37.9            | 22.0            | 98.0            | 63.9            | 34.1            | 139            | 198            | 22.0 |
| 90             | 115.9          | 117.5              | 135.0              | 84             | 57.4           | 26.6           | 28.0           | 46.1            | 37.9            | 22.0            | 98.0            | 63.9            | 34.1            | 145            | 205            | 22.0 |
| 95             | 119.1          | 120.7              | 138.0              | 84             | 57.4           | 26.6           | 28.0           | 46.1            | 37.9            | 22.0            | 98.0            | 63.9            | 34.1            | 148            | 208            | 22.0 |
| 100            | 125.4          | 127.0              | 144.0              | 84             | 57.4           | 26.6           | 28.0           | 46.1            | 37.9            | 22.0            | 98.0            | 63.9            | 34.1            | 154            | 218            | 22.0 |

Dimensions in Millimeter