

# CTXAPI Single & Dual Seals

## Standard Cartridge Seals

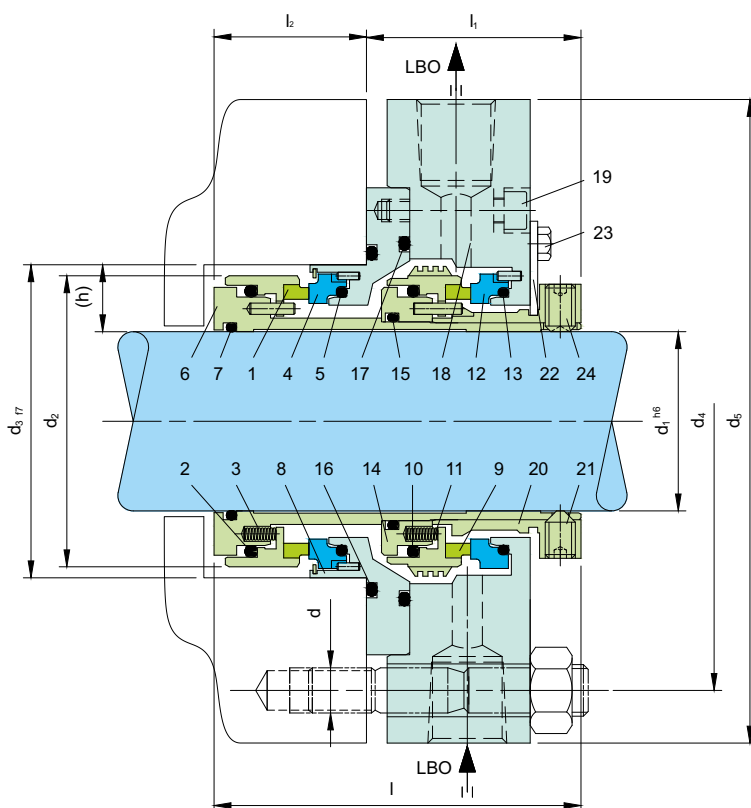


### Product Description

1. Single and Dual seal configuration
2. Balanced design
3. Independent of direction of rotation
4. Cartridge construction
5. Seal design in accordance with API 682 / ISO 21049
6. Conforming to Category 1, Type A, Arrangement 1, 2 or 3
7. Single seal with API Plan 11 and 61
8. Dual seals with API Plan 52 / 53
9. Robust construction with shrink-fitted seal faces
10. Heavy duty solid seat design
11. Also available in design variation for independent of direction of rotation
12. Additional flushing plans available on request

### Technical Features

1. Designed to accommodate shaft deflections and process fluctuations
2. Efficient construction for heat dissipation
3. Compact installation design
4. Factory assembled cartridge unit for easy installation
5. Springs are product protected to avoid contamination
6. Can accommodate reverse pressure
7. Can handle extensive applications in various temperatures and pressures
8. Versatile in design to fit various seal chambers



**Note:** The item numbers as depicted above are based on our technical experience and knowledge and are placed in the chronological order of their assembly procedure.

| Item                        | Description      |
|-----------------------------|------------------|
| 1, 9                        | Seal face        |
| 2, 5, 7, 10, 13, 15, 16, 17 | O-ring           |
| 3, 11                       | Spring           |
| 4, 12                       | Seat             |
| 6                           | Shaft sleeve     |
| 8                           | Adapter          |
| 14                          | Driver           |
| 18                          | Housing          |
| 19                          | HSH Cap screw    |
| 20                          | Set ring         |
| 21                          | Set screw        |
| 22                          | Assembly fixture |
| 23                          | Hexagon bolt     |
| 24                          | Set screw        |

### Typical Industrial Applications

|                             |                         |
|-----------------------------|-------------------------|
| API & ISO Pumps             | Low abrasive media      |
| Acids (some)                | Low solids content      |
| Aqueous solutions           | Oil & gas               |
| Chemical                    | Petrochemical           |
| Fertiliser                  | Poor lubrication media  |
| Highly viscous hydrocarbons | Refining technology     |
| Light volatile hydrocarbons | Toxic & hazardous media |

### Standards

API 682 / ISO 21049

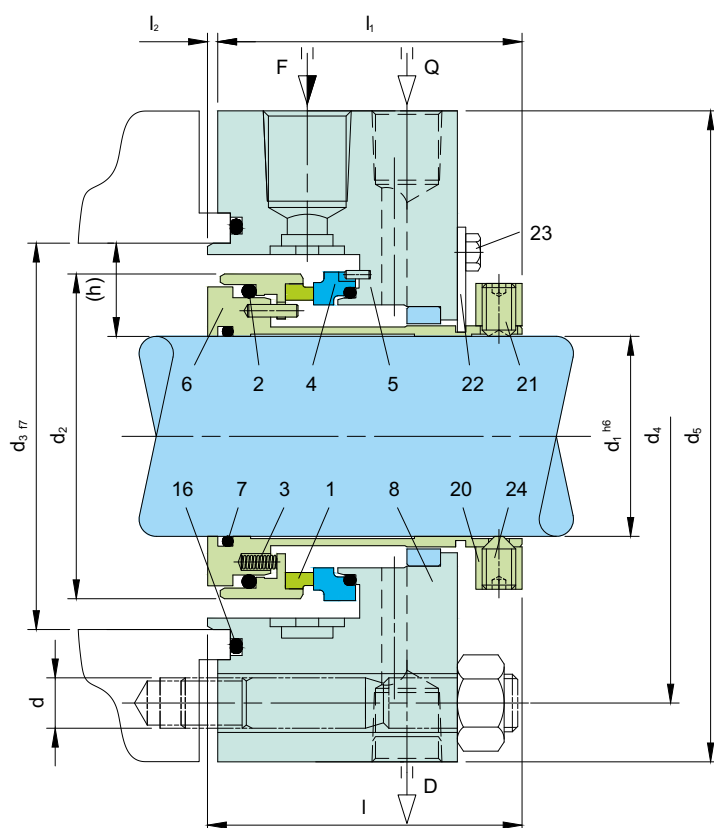
### Materials

|                  |                                                                                       |
|------------------|---------------------------------------------------------------------------------------|
| Seal face:       | Carbon graphite antimony impregnated (A), Silicon carbide sintered pressureless (Q12) |
| Seat:            | Silicon carbide sintered pressureless (Q1)                                            |
| Secondary seals: | FKM (V), FFKM (K), NBR (P), EPDM (E)                                                  |
| Springs:         | Hastelloy® C-4 (M)* and C-276 (M5)                                                    |
| Metal parts:     | CrNiMo steel (G)                                                                      |

### Performance Capabilities

|                        |                                                                                                    |
|------------------------|----------------------------------------------------------------------------------------------------|
| Sizes:                 | Upto 110 mm (Upto 4.250")                                                                          |
| Other sizes on request |                                                                                                    |
| Pressure:              | $p_1 = 22 \text{ bar (319 PSI)}$                                                                   |
| Temperature:           | $t = -40^\circ\text{C} \dots +260^\circ\text{C}$<br>$(-40^\circ\text{F} \dots +500^\circ\text{F})$ |
| Speed:                 | $= 23 \text{ m/s (75 ft/s)}$                                                                       |

## Design Variations



**CTXAPI-SA**  
Single Seal

**Note:** The item numbers as depicted above are based on our technical experience and knowledge and are placed in the chronological order of their assembly procedure.

## Dimensional Data

### Dimensions in millimeter

| d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | d <sub>4</sub> | d <sub>5</sub> | l     | l <sub>1</sub> | l <sub>2</sub> | d    | n | acc. to ASME B73.1<br>(h min) |
|----------------|----------------|----------------|----------------|----------------|-------|----------------|----------------|------|---|-------------------------------|
| 20             | 50.4           | 58             | 105            | 127            | 96.5  | 68.5           | 28             | 13.5 | 4 | 19.05                         |
| 25             | 55.4           | 63             | 110            | 132            | 96.5  | 68.5           | 28             | 13.5 | 4 | 19.05                         |
| 30             | 60.4           | 68             | 115            | 137            | 96.5  | 68.5           | 28             | 13.5 | 4 | 19.05                         |
| 35             | 65.4           | 73             | 120            | 142            | 96.5  | 68.5           | 28             | 13.5 | 4 | 19.05                         |
| 40             | 70.4           | 78             | 125            | 147            | 96.5  | 68.5           | 28             | 13.5 | 4 | 19.05                         |
| 45             | 75.4           | 83             | 135            | 162            | 96.5  | 68.5           | 28             | 17.5 | 4 | 19.05                         |
| 50             | 80.4           | 88             | 140            | 167            | 100   | 72             | 28             | 17.5 | 4 | 19.05                         |
| 55             | 85.4           | 93             | 145            | 172            | 100   | 72             | 28             | 17.5 | 4 | 19.05                         |
| 60             | 96             | 105            | 160            | 187            | 127.5 | 88             | 39.5           | 17.5 | 4 | 22.22                         |
| 65             | 101            | 110            | 165            | 192            | 127.5 | 88             | 39.5           | 17.5 | 4 | 22.22                         |
| 70             | 106            | 115            | 170            | 197            | 127.5 | 88             | 39.5           | 17.5 | 4 | 22.22                         |
| 75             | 111            | 120            | 175            | 202            | 127.5 | 88             | 39.5           | 17.5 | 4 | 22.22                         |
| 80             | 116            | 125            | 185            | 213            | 127.5 | 88             | 39.5           | 22   | 4 | 22.22                         |
| 85             | 123.5          | 136            | 190            | 223            | 131.5 | 92             | 39.5           | 22   | 4 | 25.4                          |
| 90             | 128.5          | 141            | 195            | 228            | 131.5 | 92             | 39.5           | 22   | 4 | 25.4                          |
| 95             | 133.5          | 146            | 200            | 233            | 131.5 | 92             | 39.5           | 22   | 4 | 25.4                          |
| 100            | 138.5          | 151            | 205            | 238            | 131.5 | 92             | 39.5           | 22   | 4 | 25.4                          |
| 105            | 143.5          | 156            | 210            | 243            | 131.5 | 92             | 39.5           | 22   | 4 | 25.4                          |
| 110            | 152.5          | 161            | 215            | 248            | 131.5 | 92             | 39.5           | 22   | 4 | 25.4                          |

inch size available from size 0.750 to 4.250

**Note:** Additional technical & dimensional information will be provided on request.

The specifications, drawings, images etc included in this catalogue are intended to be generic and must be interpreted as equivalent or functionally equivalent, more specifically the performance capabilities mentioned in this catalogue is based on optimum values, however the performance of the product is dependent on size, material of construction, media, pressure, temperature, sliding velocity etc and it shall vary from size to size or application to application. Customers are requested to consult with Sealmatic before employing the product from this catalogue for any application.