

# CTX Single Seals

# Standard Cartridge Seals

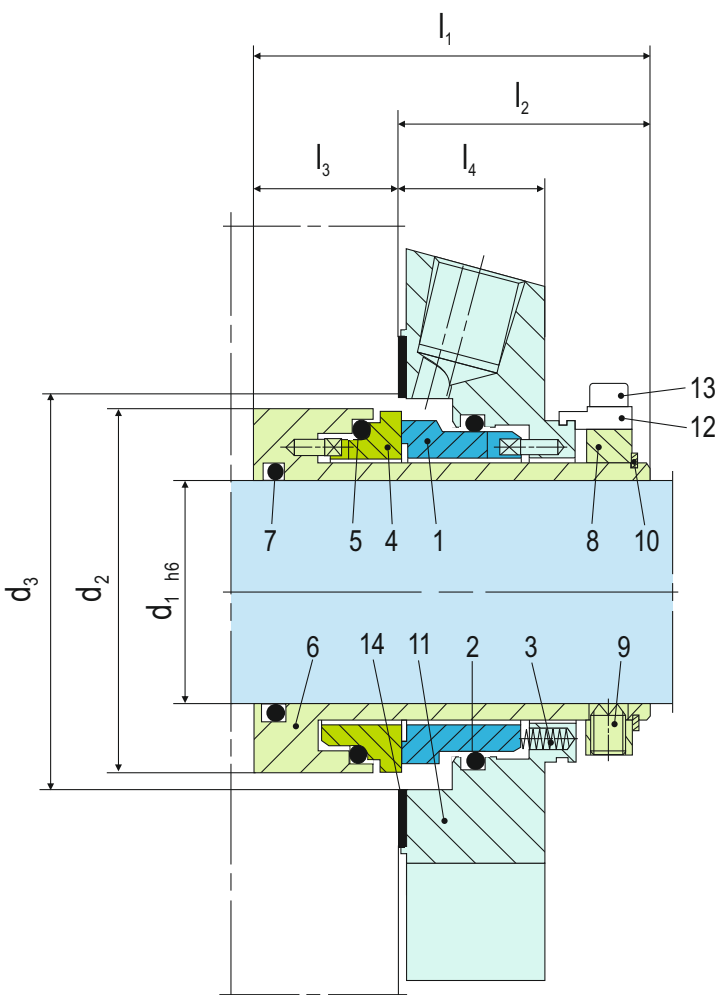


### Product Description

1. Single seal configuration
2. Balanced design
3. Independent of direction of rotation
4. Cartridge construction

### Technical Features

1. Ideal for use in process pump standardization
2. O-ring is dynamically loaded to prevent shaft damage.
3. Dimensional modification of the stuffing box chamber is not required due to short radial installation height
4. Ideal to convert and retrofit pumps with packings and large volume OEM production
5. Cartridge unit factory assembled for easy installation, which reduces downtime
6. Rugged design for long operating life



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.

### Typical Industrial Applications

Chemical industry  
 Food and beverage industry  
 Petrochemical industry  
 Pharmaceutical industry  
 Universally applicable  
 Water and waste water technology  
 Centrifugal pumps  
 Eccentric screw pumps  
 Process pumps

### 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)

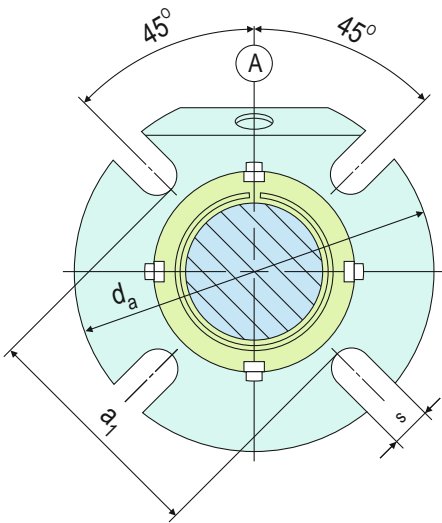
### Performance Capabilities

CTX-SN, -SNO, -QN, -TN  
 Sizes:  $d_1 =$  Upto 100 mm (Upto 4.000")  
 Other sizes on request  
 Temperature:  $t = -40^\circ\text{C} \dots +220^\circ\text{C}$   
 ( $-40^\circ\text{F} \dots +428^\circ\text{F}$ )  
 (Check O-ring resistance)  
**Sliding face material combination BQ1**  
 Pressure:  $p_1 = 25$  bar (363 PSI)  
 Speed = 16 m/s (52 ft/s)  
**Sliding face material combination Q1Q1 or U2Q1**  
 Pressure:  $p_1 = 12$  bar (175 PSI)  
 Speed = 10 m/s (33 ft/s)  
 Permissible axial movement:  $\pm 1.0$  mm,  $d_1 \geq 75$  mm  $\pm 1.5$  mm

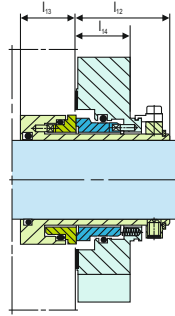
Item	Description
1	Seal face
2, 5, 7	O-ring
3	Spring
4	Seat
6	Shaft sleeve
8	Drive collar
9	Set screw

Item	Description
10	Snap ring
11	Cover
12	Assembly fixture
13	HSH Cap Screw
14	Gasket
16	Lip seal (-QN), throttle ring (-TN)

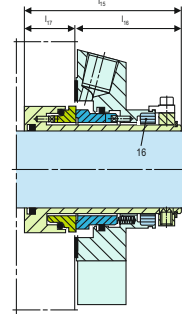
### Installation, Details, Options



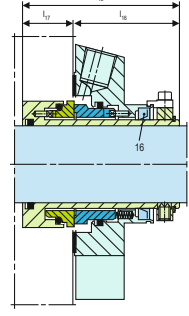
### Design Variations



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



**CTX-TN**  
Single seal for operation with unpressurized quench. Same as CTX-SN but with throttle ring (item 16). The cover has auxiliary connections for flushing and quench.  
Throttle ring: PTFE carbon-graphite reinforced (T12).



**CTX-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), FKM (V), PTFE carbon reinforced (T3).

### Dimensional Data

#### 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	Connection
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	1/4 NPT
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	1/4 NPT
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	1/4 NPT
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	1/4 NPT
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	3/8 NPT
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	3/8 NPT
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	3/8 NPT
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	3.307	5.433	0.599	3/8 NPT
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	3/8 NPT
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	3.543	5.827	0.709	3/8 NPT
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	3/8 NPT
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	3/8 NPT
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	3/8 NPT
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	3/8 NPT
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	3/8 NPT
2.875	3.937	4.000	4.646	3.307	2.260	1.047	1.000	1.815	1.492	0.866	-	-	-	5.079	7.480	0.709	3/8 NPT
3.000	3.937	4.000	4.646	3.307	2.260	1.047	1.000	1.815	1.492	0.866	3.858	2.516	1.343	5.079	7.480	0.709	3/8 NPT
3.125	4.190	4.125	4.764	3.307	2.260	1.047	1.000	1.815	1.492	0.866	3.858	2.516	1.343	5.315	7.677	0.709	3/8 NPT
3.250	4.189	4.250	4.882	3.307	2.260	1.047	1.000	1.815	1.492	0.866	-	-	-	5.315	7.677	0.709	3/8 NPT
3.375	4.311	4.375	5.039	3.307	2.260	1.047	1.000	1.815	1.492	0.866	-	-	-	5.472	7.795	0.866	3/8 NPT
3.500	4.437	4.500	5.157	3.307	2.260	1.047	1.000	1.815	1.492	0.866	-	-	-	5.591	7.795	0.866	3/8 NPT
3.625	4.563	4.625	5.315	3.307	2.260	1.047	1.000	1.815	1.492	0.866	-	-	-	5.709	8.071	0.866	3/8 NPT
3.750	4.689	4.750	5.433	3.307	2.260	1.047	1.000	1.815	1.492	0.866	3.858	2.516	1.343	5.827	8.189	0.866	3/8 NPT
4.000	4.937	5.000	5.669	3.307	2.260	1.047	1.000	1.815	1.492	0.866	-	-	-	6.063	8.583	0.866	3/8 NPT

#### Dimensions in millimeter

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	Connection
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	1/4 NPT
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	1/4 NPT
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	1/4 NPT
32	50.0	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	1/4 NPT
33	50.0	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	1/4 NPT
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	1/4 NPT
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	3/8 NPT
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	3/8 NPT
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	79	133	14.2	3/8 NPT
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	79	133	14.2	3/8 NPT
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	3/8 NPT
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	3/8 NPT
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	18.0	3/8 NPT
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	3/8 NPT
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	3/8 NPT
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	3/8 NPT
65	83.1	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	3/8 NPT
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	3/8 NPT
75	100.0	101.6	118.0	84	57.4	26.6	25.4	46.1	37.9	22.0	98.0	63.9	34.1	129	190	18.0	3/8 NPT
80	106.4	108.0	124.0	84	57.4	26.6	25.4	46.1	37.9	22.0	98.0	63.9	34.1	135	195	18.0	3/8 NPT
85	109.5	111.1	128.0	84	57.4	26.6	25.4	46.1	37.9	22.0	98.0	63.9	34.1	139	198	22.0	3/8 NPT
90	115.9	117.5	135.0	84	57.4	26.6	25.4	46.1	37.9	22.0	98.0	63.9	34.1	145	205	22.0	3/8 NPT
95	119.1	120.7	138.0	84	57.4	26.6	25.4	46.1	37.9	22.0	98.0	63.9	34.1	148	208	22.0	3/8 NPT
100	125.4	127.0	144.0	84	57.4	26.6	25.4	46.1	37.9	22.0	98.0	63.9	34.1	154	218	22.0	3/8 NPT

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