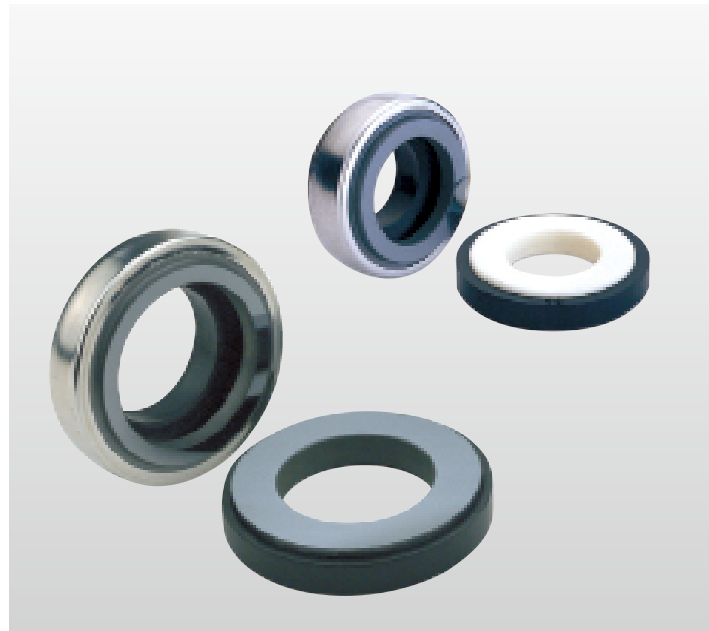
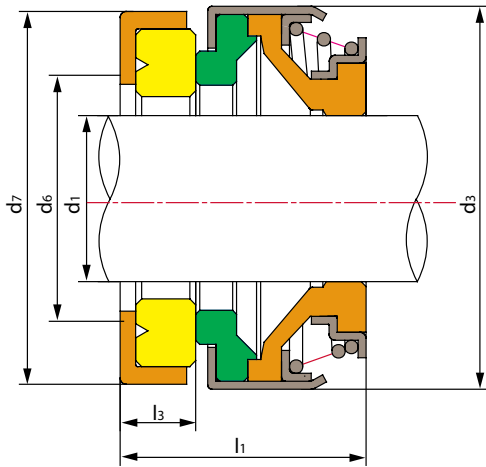


## Single-Spring Mechanical Seal



## Impellers for Pump





# TS 301 :

## Operating Limits

Pressure:  $\leq 0.6\text{MPa}$

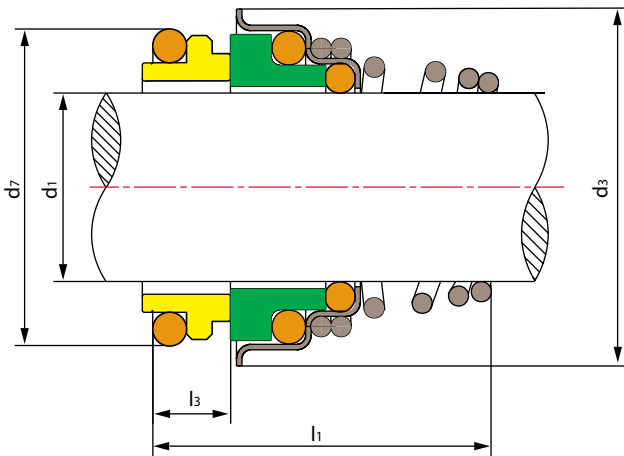
Speed:  $\leq 10\text{m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS301-6	6	18	8	22.0	14.0	4.0
TS301-8S	8	18	10	22.0	15.0	4.0
TS301-8M	8	20	10	22/26	15/16.5	4.0/5.5
TS301-8L	8	24	10	26.0	16.5	5.5
TS301-10	10	24	12	26.0	21.0	8.0
TS301-11	11	24	13	26.0	21.0	8.0
TS301-12	12	24	14	25/26	21.0	8.0
TS301-13	13	24	15	26.0	18.5/21	5.5/8.0
TS301-13L	13	28	16	28.0	21.0	8.0
TS301-13H	13	32	16	29.5	30.5	8.0
TS301-14	14	28	16	28/28.5	21.0	8.0
TS301-14L	14	32	16	29.5	21.0	8.0
TS301-15S	15	28	16	28.5/30	21.0	8.0
TS301-15M	15	32	16	30/29.5	21.0	8.0
TS301-15L	15	39	18	38.0	21.0	8.0
TS301-16S	16	28	16	29.5/30	21.0	8.0
TS301-16M	16	32	18	29.5	21.0	8.0
TS301-16L	16	39	18	38.0	21.0	8.0
TS301-16H	16	32	16	30.0	29.0	10.0
TS301-17	17	39	19	42.0	21.0	8.0
TS301-18	18	39	20	42.0	21.0	8.0

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS301-19	19	39	21	42.0	21.0	8.0
TS301-20	20	39	22	42.0	21.0	8.0
TS301-20L	20	42	24	45.0	23.0	10.0
TS301-22S	22	36	24	45.0	26.5	10.0
TS301-22L	22	42	24	45.0	23.0	10.0
TS301-23	23	47	25	50.0	23.5	10.0
TS301-24	24	47	26	50.0	23.5	10.0
TS301-25	25	42	27	50.0	23.5	10.0
TS301-25L	25	47	27	50.0	23.5	10.0
TS301-26	26	47	29	50.0	23.5	10.0
TS301-27	27	47	30	50.0	23.5	10.0
TS301-28	28	54	31	57.0	25.0	10.0
TS301-30	30	54	33	57.0	25.0	10.0
TS301-32	32	54	35	57.0	25.0	10.0
TS301-35	35	60	38	63.0	26.0	10.0
TS301-38	38	65	41	68.0	30.0	12.0
TS301-40	40	65	43	68.0	30.0	12.0
TS301-45	45	70	48	73.0	32.0	12.0
TS301-50	50	85	52	88.0	38.0	15.0
TS301-55	55	85	58	88.0	38.0	15.0
TS301-60	60	105	63	110.0	45.0	15.0
TS301-65	65	105	\	110.0	47.0	15.0
TS301-70	70	105	\	110.0	47.0	15.0



## TS 155

### Operating Limits

Pressure:  $\leq 1\text{MPa}$

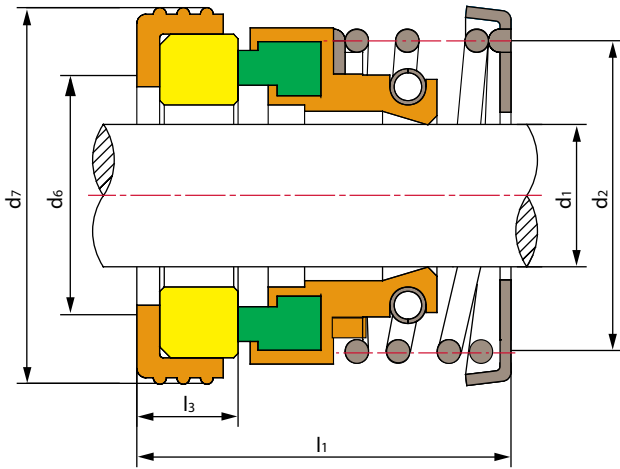
Speed:  $\leq 15\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Ceramic/SiC/TC)
- Stationary Ring(Plastic Carbon/Carbon/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS155-10	10	20.0	18.1	20.5	5.5
TS155-11	11	22.0	20.6	23.5	5.5
TS155-12	12	22.0	20.6	23.5	5.5
TS155-13	13	25.0	23.1	28.0	6.0
TS155-14	14	25.0	23.1	28.0	6.0
TS155-15	15	29.0	26.9	30.0	7.0
TS155-16	16	29.0	26.9	30.0	7.0
TS155-17	17	29.0	26.9	30.0	7.0
TS155-18	18	33.0	30.9	32.0	8.0
TS155-19	19	33.0	30.9	33.0	8.0
TS155-20	20	33.0	30.9	33.0	8.0
TS155-21	21	38.0	35.4	33.0	8.0

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS155-22	22	38.0	35.4	33.0	8.0
TS155-23	23	38.0	35.4	35.0	8.0
TS155-24	24	38.0	35.4	35.0	8.0
TS155-25	25	40.0	38.2	35.5	8.5
TS155-28	28	46.0	43.3	39.0	9.0
TS155-29	29	46.0	43.3	39.0	9.0
TS155-30	30	46.0	43.3	39.0	9.0
TS155-32	32	46.0	43.3	39.0	9.0
TS155-33	33	50.0	53.5	50.5	11.5
TS155-35	35	50.0	53.5	50.5	11.5
TS155-38	38	60.5	60.5	50.5	11.5
TS155-40	40	60.5	60.5	50.5	11.5



## TS 156

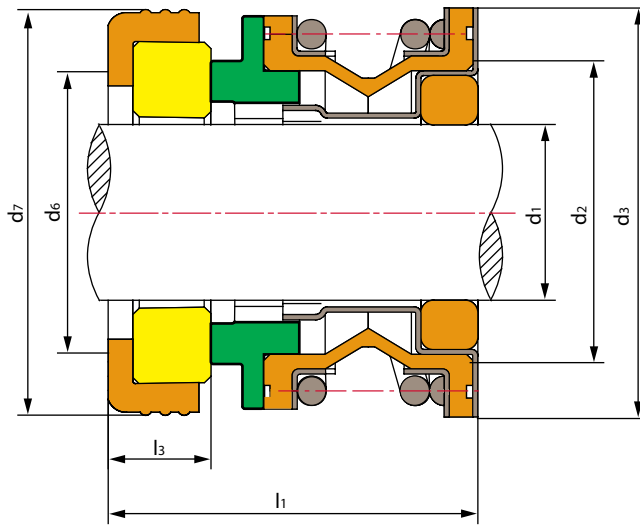
### Operating Limits

Pressure:  $\leq 0.5\text{MPa}$   
 Speed:  $\leq 10\text{m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>2</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS156-8	8	16.0	13	18/21	18	5/6
TS156-9	9	18.0	16	21	23	6
TS156-10	10	20.0	16	20/22/24	23	6.5
TS156-11	11	20.0	16	24	23	7
TS156-12	12	22.5	17	26	24	7
TS156-13	13	22.5	17	26	24	7
TS156-14	14	24.5	21	28/30	25	7
TS156-15	15	24.5	21	28/30	25	7
TS156-16	16	28.5	22	32	27	8
TS156-17	17	28.5	22	32	27	8
TS156-18	18	31.5	25	35	29	8
TS156-19	19	31.5	25	35	29	8

Model	d <sub>1</sub> (mm)	d <sub>2</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS156-20	20	31.5	27	38	31	8
TS156-22	22	34.5	29	40	32	8
TS156-25	25	37.5	32	44	33	9
TS156-28	28	40.5	34	46	34	9
TS156-30	30	44.5	38	50	35	9
TS156-32	32	47.5	40	54	37	9
TS156-35	35	50.5	44	58	40	10
TS156-38	38	55.0	46	60	42	10
TS156-40	40	56.5	48	64	43	10
TS156-45	45	61.5	52	66	45	10
TS156-50	50	66.5	58	72	47	10



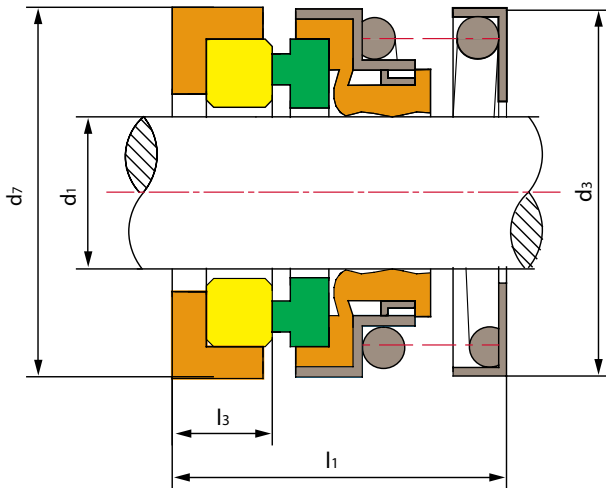
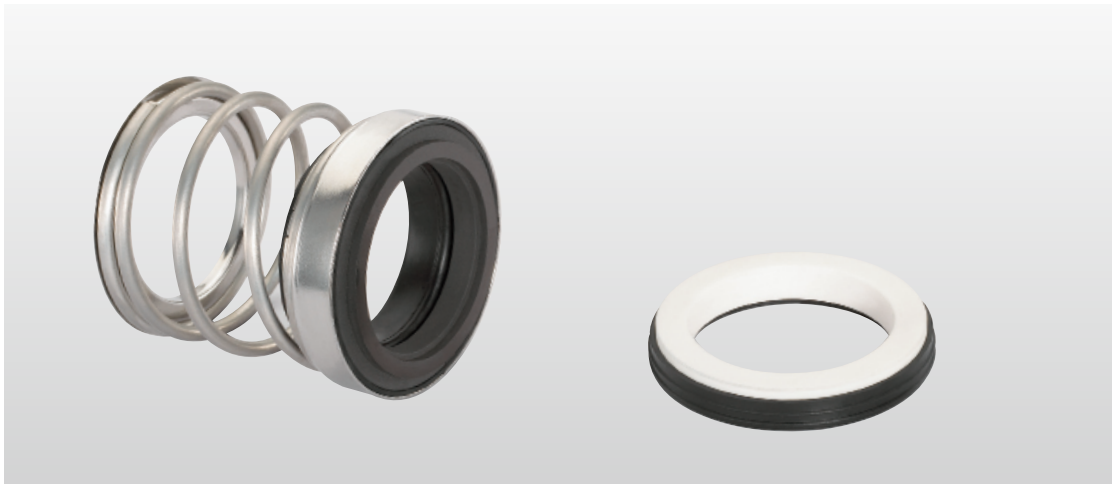
## TSE

### Operating Limits

Pressure:  $\leq 1\text{MPa}$   
 Speed:  $\leq 12\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (inches)	d <sub>7</sub>	d <sub>3</sub>	d <sub>6</sub>	d <sub>2</sub>	l <sub>1</sub>	l <sub>3</sub>
TSE-5/16"	7.925	25.400	27.00	16.00	20.63	24.60	8.0
TSE-3/8"	9.520	22.225	23.80	14.30	17.42	22.22	6.2
TSE-1/2"	12.700	25.400	26.97	17.45	20.63	22.80	6.2
TSE-5/8"	15.875	30.100	30.94	20.63	23.80	26.50	8.7
TSE-5/8"H	15.875	31.750	30.94	20.63	23.80	30.00	10.3
TSE-5/8"K	15.875	31.750	30.94	20.63	23.80	28.50	10.3
TSE-3/4"H	19.050	34.925	34.11	23.80	26.87	30.00	10.3
TSE-3/4"C	19.050	34.925	34.11	23.80	26.87	28.50	10.3
TSE-1"	25.400	41.275	42.85	30.15	33.33	31.73	11.1
TSE-11/8"	28.575	44.45	46.00	33.50	36.50	31.75	11.1



## TS 960

### Operating Limits

Pressure:  $\leq 1.2\text{MPa}$

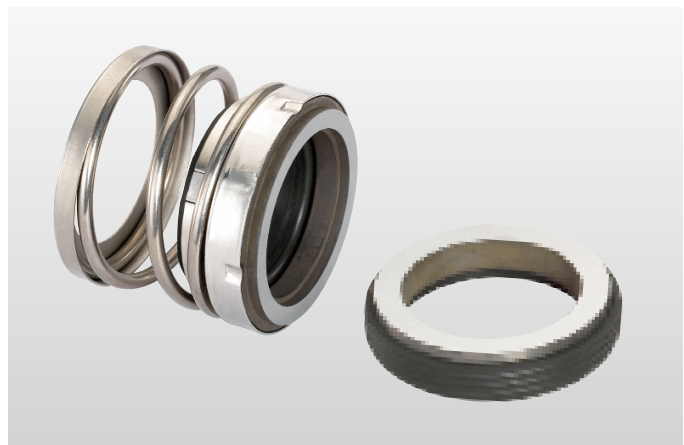
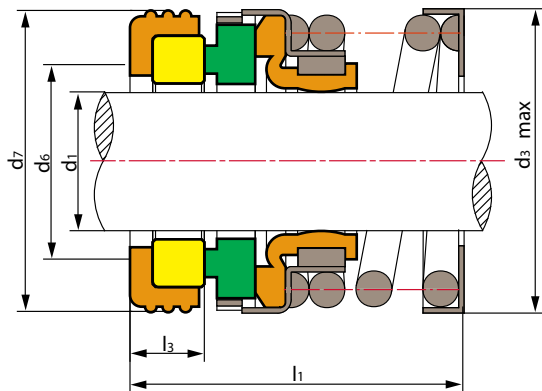
Speed:  $\leq 15\text{m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS960-14	14	24.5	25	35.0	8
TS960-16	16	26.8	27	35.0	8
TS960-18	18	31.8	33	37.5	10
TS960-20	20	32.5	35	37.5	10
TS960-22	22	36.5	37	37.5	10
TS960-24	24	38.8	39	40.0	10
TS960-25	25	38.8	40	40.0	10
TS960-28	28	46.5	43	42.5	10
TS960-30	30	46.5	45	42.5	10
TS960-32	32	46.5	48	42.5	10
TS960-33	33	49.5	48	42.5	10
TS960-35	35	49.5	50	42.5	11

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS960-38	38	54.0	56	45.0	11
TS960-40	40	57.0	58	45.0	11
TS960-43	43	61.5	61	45.0	11
TS960-45	45	61.5	63	45.0	11
TS960-48	48	70.6	66	45.0	11
TS960-50	50	70.6	70	47.5	11
TS960-53	53	70.6	73	47.5	12
TS960-55	55	76.0	75	47.5	12
TS960-58	58	79.6	78	52.5	12
TS960-60	60	79.6	80	52.5	12
TS960-63	63	84.6	83	52.5	12
TS960-65	65	84.6	85	52.5	13



## TS 560A

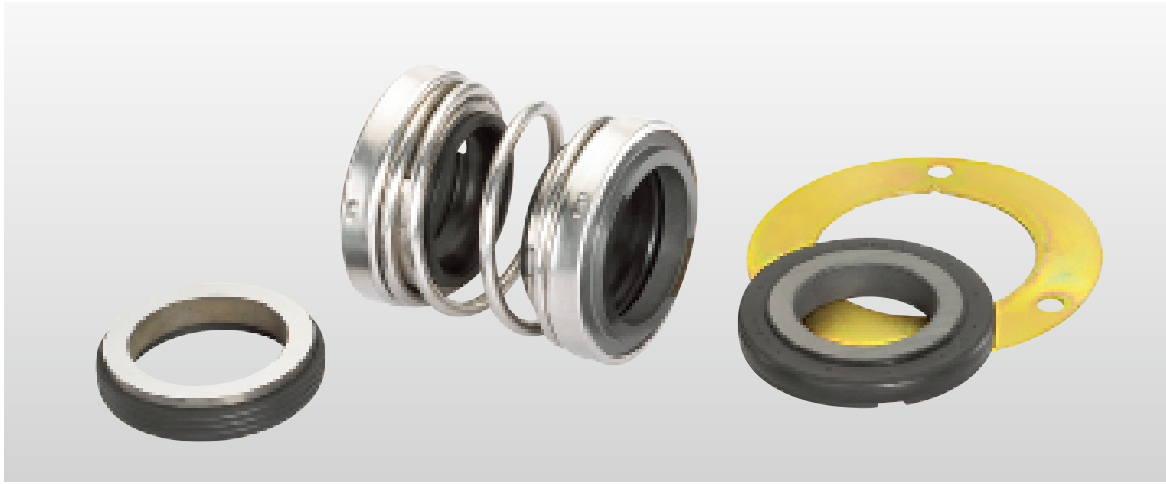
### Operating Limits

Pressure:  $\leq 1$ MPa  
 Speed:  $\leq 12$  m/s  
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS560A-10	10	23.5	16	24	25.0	7.0
TS560A-11	11	23.5	16	24	25.0	7.0
TS560A-12	12	26.0	17	26	25.0	7.0
TS560A-14	14	28.0	21	28	25.5	7.0
TS560A-15	15	30.0	21	28	29.5	7.0
TS560A-16	16	32.0	22	32	33.5	10.0
TS560A-18	18	32.5	25	35	36.5	10.0
TS560A-19	19	32.5	25	35	36.5	10.0
TS560A-20	20	35.5	27	38	38.0	10.0
TS560A-22	22	37.5	29	40	40.3	10.0
TS560A-25	25	42.0	32	44	39.3	10.0
TS560A-28	28	47.0	34	46	40.0	10.0
TS560A-30S	30	46.0	35	45	38.2	7.5
TS560A-30L	30	48.0	38	50	40.0	10.0
TS560A-32	32	50.0	40	54	40.0	10.0
TS560A-35	35	54.5	44	58	42.0	10.0
TS560A-38	38	58.5	46	60	42.6	10.0
TS560A-40	40	62.5	48	64	42.6	10.0
TS560A-45	45	66.5	52	66	45.0	10.0
TS560A-50	50	72.5	58	72	54.6	11.5
TS560A-55S	55	72.0	60	75	59.4	12.0

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS560A-55L	55	76.0	60	78	59.8	12.0
TS560A-60	60	80.0	65	80	63.0	12.0
TS560A-65	65	85.0	70	85	64.0	13.0
TS560A-70	70	92.0	75	92	60.0	11.0
Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>6</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS560A-3/8"	9.525	23.5	14.3	22.230	28.6	7.9
TS560A-1/2"	12.700	26.0	17.5	25.400	28.6	7.9
TS560A-5/8"	15.875	30.0	20.6	31.750	32.5	10.3
TS560A-3/4"	19.050	32.5	23.8	34.930	32.5	10.3
TS560A-7/8"	22.225	37.5	27.0	38.100	34.1	10.3
TS560A-1"	25.400	44.0	30.2	41.280	36.5	11.1
TS560A-1 1/8"	28.575	48.0	33.3	44.450	38.1	11.1
TS560A-1 1/4"	31.750	50.0	36.5	47.630	38.1	11.1
TS560A-1 3/8"	34.925	54.5	39.7	50.800	39.7	11.1
TS560A-1 1/2"	38.100	58.5	42.9	53.980	39.7	11.1
TS560A-1 5/8"	41.275	64.0	46.0	60.330	47.6	12.7
TS560A-1 3/4"	44.450	67.0	49.2	63.500	47.6	12.7
TS560A-1 7/8"	47.625	71.0	52.4	66.680	50.8	12.7
TS560A-2"	50.800	73.5	55.6	69.850	50.8	12.7
TS560A-2 1/8"	53.975	75.6	\	76.200	57.2	14.3
TS560A-2 1/4"	57.150	80.0	65.0	79.380	57.2	14.3
TS560A-2 3/8"	60.325	79.6	\	82.550	57.2	14.3
TS560A-2 1/2"	63.500	84.9	70.0	85.730	60.3	14.3
TS560A-2 5/8"	66.675	84.6	\	85.725	65.1	15.9
TS560A-2 3/4"	69.850	93.0	\	88.900	65.1	15.9
TS560A-3"	76.200	102.0	\	98.425	68.3	15.9



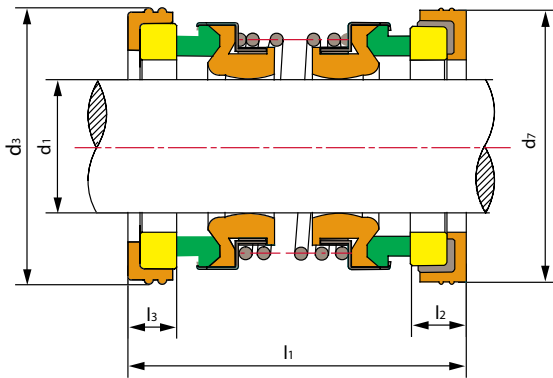
## TS 560D

### Operating Limits

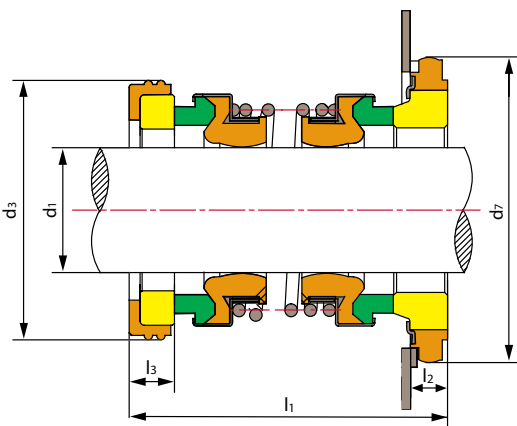
Pressure:  $\leq 0.3\text{MPa}$

Speed:  $\leq 10\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$



560D-13~16



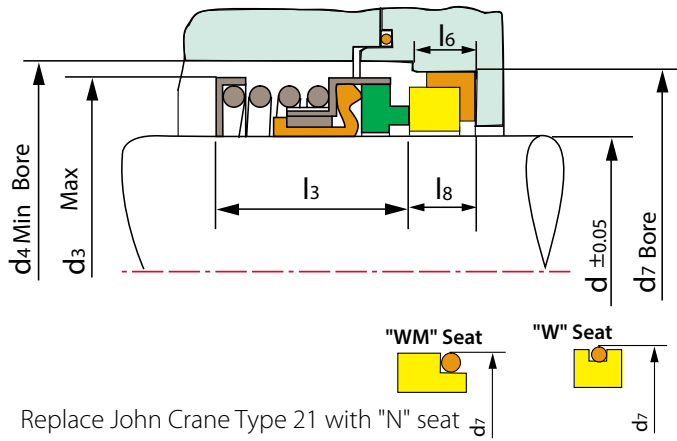
560D-18~50

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Ring(NBR/EPDM/VITON)
- Spring and Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>
TS560D-13	13	25	25	36	5	5
TS560D-14	14	30	30	37	5	5
TS560D-15	15	30	30	37	5	5
TS560D-16	16	30	30	37	5	5
TS560D-18	18	35	38	49	7	10
TS560D-19	19	35	38	49	7	10
TS560D-20	20	38	44	49	7	7
TS560D-25	25	44	50	51	7	7
TS560D-30	30	50	57	59	9	8
TS560D-35	35	58	64	61	9	9
TS560D-40	40	64	70	64	11	9
TS560D-45	45	66	70	65	10	9
TS560D-50	50	72	80	69	10	9



Type TS21 Seal With "N" Seat



Replace John Crane Type 21 with "N" seat

# TS 21



### Operating Limits

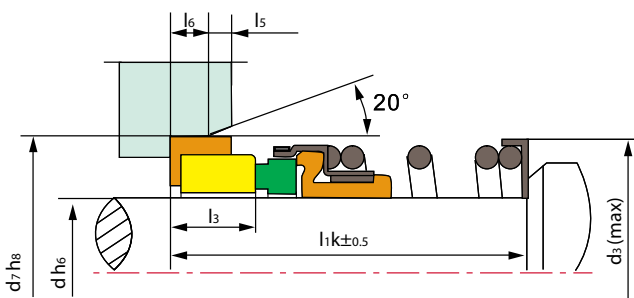
Pressure: 0~1MPa  
 Speed: ≤13 m/s  
 Temperature: -30°C ~ +200°C

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/ITON)
- Spring & Other Parts(S.S/SUS304/SUS316)

Design Feature:

- a. Single spring,rubber bellows seal.
- b. Besides the stationary ring of type "N",other stationary rings such as John Crane types "W" , "WM" can also be provided.

Seal size (inches)	d	d <sub>3</sub>	d <sub>4</sub>	l <sub>3</sub>	d <sub>7</sub>	l <sub>6</sub>	l <sub>8</sub>
0.500	12.70	23.81	26.99	20.64	27.80	7.1	8.7
0.625	15.88	26.99	33.34	22.23	30.95	8.7	10.3
0.750	19.05	30.16	36.51	22.23	34.15	8.7	10.3
0.875	22.23	33.34	39.69	23.81	37.30	8.7	10.3
1.000	25.40	42.85	49.20	25.40	40.50	8.7	10.3
1.125	28.58	46.02	52.37	26.97	47.65	10.3	11.9
1.250	31.75	49.20	55.55	26.97	50.80	10.3	11.9
1.375	34.93	52.37	58.72	28.58	54.00	10.3	11.9
1.500	38.10	55.55	61.90	28.58	57.15	10.3	11.9
1.625	41.28	63.50	69.85	34.93	60.35	10.3	11.9
1.750	44.45	66.68	73.03	34.93	63.55	10.3	11.9
1.875	47.63	69.85	76.20	38.10	66.70	10.3	11.9
2.000	50.80	73.03	80.95	38.10	69.85	11.9	13.5
2.125	53.98	76.20	84.12	42.85	73.05	11.9	13.5
2.250	57.15	79.38	87.30	42.85	76.20	11.9	13.5
2.375	60.33	82.55	90.47	46.02	79.40	11.9	13.5
2.500	63.50	84.91	93.65	46.02	82.55	11.9	13.5
2.625	66.68	88.90	101.60	49.20	92.10	14.3	15.9
2.750	69.85	95.25	104.78	49.20	95.25	14.3	15.9
2.875	73.03	98.43	111.13	52.37	98.45	14.3	15.9
3.000	76.20	101.60	114.30	52.37	101.60	14.3	15.9
3.125	79.38	104.78	120.65	55.55	111.15	18.3	19.9
3.250	82.55	107.95	123.83	55.55	114.30	18.3	19.9
3.375	85.73	114.30	133.35	55.55	117.50	18.3	19.9
3.500	88.90	117.48	136.53	55.55	120.65	18.3	19.9
3.625	92.08	120.65	139.70	58.72	123.85	18.3	19.9
3.750	95.25	123.83	142.88	58.72	127.00	18.3	19.9
3.875	98.43	127.00	146.05	61.90	130.20	18.3	19.9
4.000	101.60	130.18	149.23	61.90	133.35	18.3	19.9



ISO3069,DIN24960

GB6556,

Design Feature: Installation dimension conform to ISO3069,DIN24960 and GB6556



## TS 43

### Operating Limits

Pressure:  $\leq 1\text{MPa}$

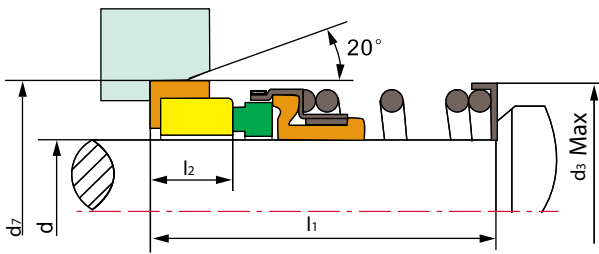
Speed:  $\leq 10\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(S.S/SUS304/SUS316)

Model	d (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>k</sub>	l <sub>3</sub>	l <sub>5</sub>	l <sub>6</sub>
TS43-10	10	20.6	21	32.5	6.0	1.5	4
TS43-12	12	22	23	32.5	6.6	1.5	4
TS43-14	14	24	25	35.0	8.0	1.5	4
TS43-16	16	26	27	35.0	8.0	1.5	4
TS43-18	18	32	33	37.5	10.0	2.0	5
TS43-20	20	34	35	37.5	10.0	2.0	5
TS43-22	22	37	37	37.5	10.0	2.0	5
TS43-24	24	39	39	40.0	10.0	2.0	5
TS43-25	25	39	40	40.0	10.0	2.0	5
TS43-28	28	42	43	42.5	10.0	2.0	5
TS43-30	30	44	45	42.5	10.0	2.0	5
TS43-32	32	47	48	42.5	10.0	2.0	5
TS43-33	33	47	48	42.5	10.0	2.0	5
TS43-35	35	49	50	42.5	10.5	2.0	5
TS43-38	38	54	56	45.0	11.0	2.0	6
TS43-40	40	56	58	45.0	10.5	2.0	6
TS43-43	43	59	61	45.0	11.0	2.0	6

Model	d (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>k</sub>	l <sub>3</sub>	l <sub>5</sub>	l <sub>6</sub>
TS43-45	45	62	63	45.0	10.5	2.0	6
TS43-48	48	64	66	45.0	10.5	2.0	6
TS43-50	50	66	70	47.5	11.0	2.5	6
TS43-53	53	69	73	47.5	11.5	2.5	6
TS43-55	55	72	75	47.5	12.0	2.5	6
TS43-58	58	80	78	52.5	12.0	2.5	6
TS43-60	60	80	80	52.5	12.0	2.5	6
TS43-63	63	83	83	52.5	12.0	2.5	6
TS43-65	65	85	85	52.5	13.0	2.5	6
TS43-68	68	88	90	52.5	11.3	2.5	7
TS43-70	70	90	92	60.0	11.3	2.5	7
TS43-75	75	99	97	60.0	11.3	2.5	7
TS43-80	80	104	105	60.0	12.0	3.0	7
TS43-85	85	108	110	60.0	14.0	3.0	7
TS43-90	90	114	115	65.0	14.0	3.0	7
TS43-95	95	119	120	65.0	14.0	3.0	7
TS43-100	100	124	125	65.0	14.0	3.0	7



## TS BIA



### Operating Limits

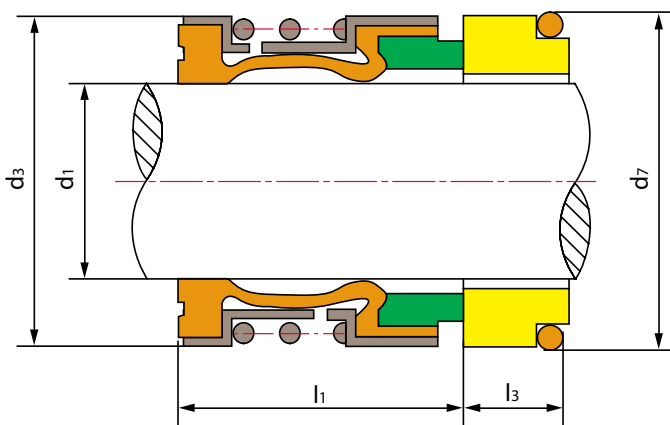
Pressure:  $\leq 1\text{MPa}$

Speed:  $\leq 10\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(S.S/SUS304/SUS316)

Model	d (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>2</sub>
TSBIA-14	14	27.0	30	23.7	5.0
TSBIA-16	16	28.5	32	26.0	5.0
TSBIA-18	18	30.5	35	30.0	7.5
TSBIA-20	20	34.0	35	29.0	8.0
TSBIA-25	25	39.0	40	33.5	8.0
TSBIA-28	28	42.0	43	33.5	8.0
TSBIA-30	30	44.0	45	34.5	9.0
TSBIA-32	32	47.0	48	42.5	9.0
TSBIA-33	33	47.0	48	42.5	9.0
TSBIA-35	35	49.0	50	42.5	9.0
TSBIA-38	38	54.0	56	42.5	9.0
TSBIA-40	40	56.0	58	42.5	9.0
TSBIA-43	43	59.0	61	46.0	9.5
TSBIA-45	45	62.0	63	47.5	9.5
TSBIA-48	48	64.0	66	47.5	9.5
TSBIA-50	50	66.0	70	47.5	9.5
TSBIA-53	53	69.0	73	50.5	9.5
TSBIA-55	55	72.0	75	50.5	9.5
TSBIA-58	58	80.0	78	51.5	9.5
TSBIA-60	60	80.0	80	51.5	9.5
TSBIA-70	70	90.0	92	56.0	11.0



Replace John Crane type 2100 with "BO" seat ,  
and "G60" seat also can be provided

## TS CG:

### Operating Limits

Pressure:  $\leq 1.2\text{MPa}$

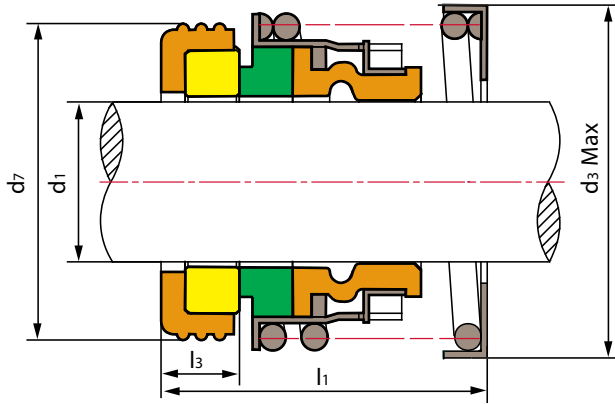
Speed:  $\leq 10\text{ m/s}$

Temperature:  $-30^\circ\text{C} \sim +200^\circ\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	$d_1$ (mm)	$d_3$	$d_7$	$l_1$	$l_3$
TSCG-16	16	26	27	15	12.0
TSCG-18	18	32	33	20	13.5
TSCG-20	20	34	35	20	13.5
TSCG-22	22	36	37	20	13.5
TSCG-24	24	38	39	20	13.5
TSCG-25	25	39	40	20	13.0
TSCG-28	28	42	43	26	12.5
TSCG-30	30	44	45	26	12.0
TSCG-32	32	46	48	26	12.0
TSCG-33	33	47	48	26	12.0
TSCG-35	35	49	50	26	12.0
TSCG-38	38	54	56	30	13.0

Model	$d_1$ (mm)	$d_3$	$d_7$	$l_1$	$l_3$
TSCG-40	40	56	58	30	13.0
TSCG-43	43	59	61	30	13.0
TSCG-45	45	61	63	30	13.0
TSCG-48	48	64	66	30	13.0
TSCG-50	50	66	70	30	13.5
TSCG-53	53	69	73	30	13.5
TSCG-55	55	71	75	30	13.5
TSCG-60	60	80	80	33	13.5
TSCG-65	65	85	85	33	13.5
TSCG-70	70	90	92	33	14.5
TSCG-75	75	99	97	40	14.5



TS 580 Replace John Crane Type 2 with "N" seat(Euro Standard), and "WM" seat also can be provided.

## TS 580



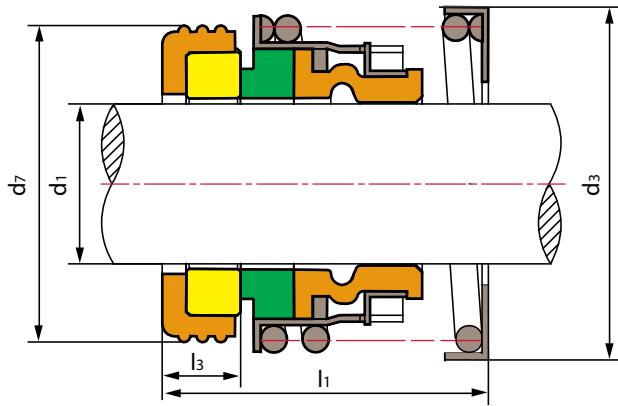
### Operating Limits

Pressure:  $\leq 2.8\text{MPa}$   
 Speed:  $\leq 13\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS580-3/8"	9.525	28	24.60	33.7	8.7
TS580-1/2"	12.700	32	27.80	33.7	8.7
TS580-5/8"	15.875	35	30.95	35.3	10.3
TS580-3/4"	19.050	40	34.15	35.3	10.3
TS580-7/8"	22.225	43	37.30	35.3	10.3
TS580-1"	25.400	47	40.50	35.3	10.3
TS580-1 1/8"	28.575	56	47.65	44.9	11.9
TS580-1 1/4"	31.750	59	50.80	44.9	11.9
TS580-1 3/8"	34.925	63	54.00	44.9	11.9
TS580-1 1/2"	38.100	67	57.15	44.9	11.9
TS580-1 5/8"	41.275	71	60.35	44.9	11.9
TS580-1 3/4"	44.450	74	63.50	52.9	11.9
TS580-1 7/8"	47.625	77	66.70	52.9	11.9
TS580-2"	50.800	81	69.85	54.5	13.5
TS580-2 1/8"	53.970	84	73.05	54.5	13.5
TS580-2 1/4"	57.150	88	76.20	54.5	13.5
TS580-2 3/8"	60.320	91	79.40	54.5	13.5
TS580-2 1/2"	63.500	94	82.55	54.5	13.5

Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS580-20	20	41	35	35	10
TS580-22	22	41	37	35	10
TS580-24	24	47	39	35	10
TS580-25	25	47	40	35	10
TS580-28	28	51	43	44.9	11.9
TS580-30	30	55	45	43	10
TS580-32	32	55	48	44.9	11.9
TS580-35	35	56	50	43	10
TS580-38	38	66	56	44	11
TS580-40	40	67	58	44	11
TS580-43	43	72	61	52	11
TS580-45	45	72	63	52	11
TS580-48	48	76	66	52	11
TS580-50	50	80	70	52	11
TS580-55	55	88	75	53	12
TS580-60	60	91	80	53	12



Replace John Crane Type 2 with 'cup' seat (US Standard), and O-Ring seat also can be provided.



## TST2:

### Operating Limits

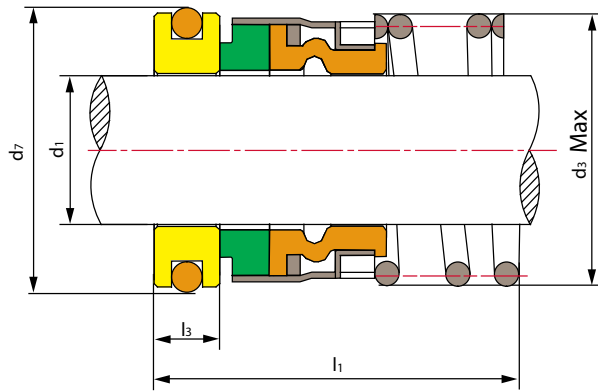
Pressure:  $\leq 2.8\text{MPa}$

Speed:  $\leq 13\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
T2-1"	25.400	46.00	41.275	36.50	11.10
T2-1 1/8"	28.575	49.20	44.450	38.10	11.10
T2-1 1/4"	31.750	52.40	47.625	38.10	11.10
T2-1 3/8"	34.925	57.20	50.800	39.70	11.10
T2-1 1/2"	38.100	60.30	53.975	39.70	11.10
T2-1 5/8"	41.275	69.00	60.325	47.63	12.70
T2-1 3/4"	44.450	69.90	63.500	47.63	12.70
T2-1 7/8"	47.625	73.00	66.675	50.80	12.70
T2-2"	50.800	76.20	69.850	50.80	12.70
T2-2 1/8"	53.975	82.50	76.200	57.15	14.30
T2-2 1/4"	57.150	85.70	79.375	57.15	14.30
T2-2 3/8"	60.325	88.90	82.550	60.30	14.30
T2-2 1/2"	63.500	94.00	85.725	60.30	14.30
T2-3"	76.200	107.95	98.425	68.28	15.90
T2-4"	101.600	141.28	123.830	78.57	19.84



TS 580B Replace John Crane Type 1A(European Standard).

## TS 580B

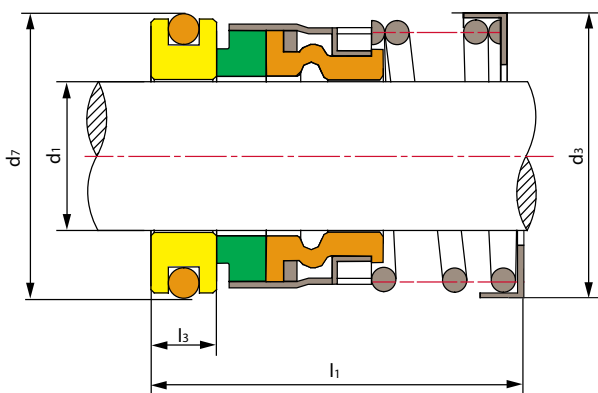
### Operating Limits

Pressure:  $\leq 2.8\text{MPa}$   
 Speed:  $\leq 13\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC/SUS304)
- Secondary Ring(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS580B-14	14	29	25	52	8
TS580B-16	16	29	27	52	8
TS580B-18	18	32	33	52	8
TS580B-19	19	32	35	52	8
TS580B-20	20	33	37	52	8
TS580B-24	24	38	39	52	8
TS580B-25	25	38	40	52	8
TS580B-28	28	46	43	69	9
TS580B-30	30	49	45	69	9
TS580B-32	32	49	48	69	9

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS580B-35	35	52	50	70	10
TS580B-38	38	56	56	70	10
TS580B-40	40	59	58	70	10
TS580B-45	45	62	63	81	10
TS580B-48	48	65	66	81	10
TS580B-50	50	68	70	81	10
TS580B-55	55	75	75	83	12
TS580B-60	60	78	80	83	12
TS580B-65	65	86	85	83	12



Replace John Crane Type 1 (US Standard).

## TST1:



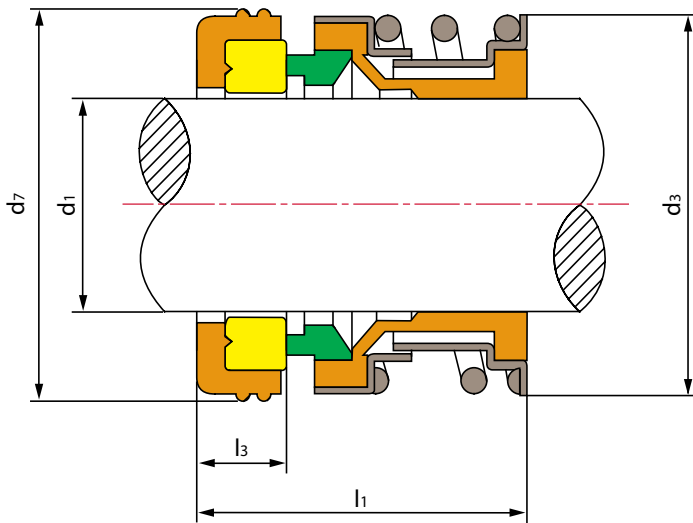
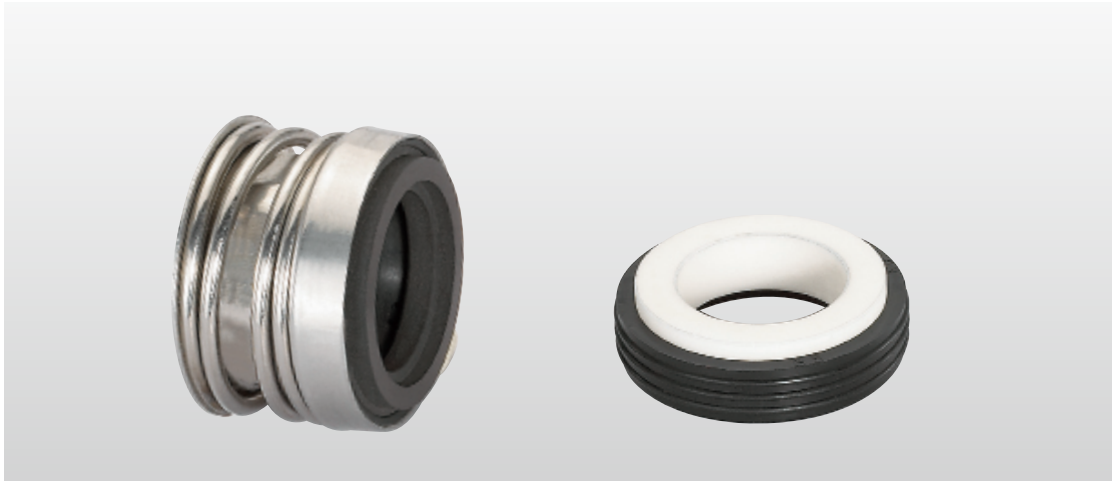
### Operating Limits

Pressure:  $\leq 2.8\text{MPa}$   
 Speed:  $\leq 13\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC/SUS304)
- Secondary Ring(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
T1-1 "	25.400	38.1	41.275	50.77	11.1
T1-1 1/8"	28.575	41.5	44.450	52.40	11.1
T1-1 1/4"	31.750	46.0	47.625	52.40	11.1
T1-1 3/8"	34.925	47.6	50.800	53.90	11.1
T1-1 7/16"	36.500	50.8	53.975	53.90	11.1
T1-1 1/2"	38.100	50.8	53.975	53.90	11.1
T1-1 5/8"	41.275	57.2	60.325	63.50	12.7
T1-1 3/4"	44.450	60.5	63.500	63.50	12.7
T1-1 7/8"	47.625	63.5	66.675	66.70	12.7
T1-2"	50.800	66.7	69.850	66.70	12.7
T1-2 1/8"	53.975	71.4	76.200	74.60	14.3
T1-2 1/4"	57.150	74.6	79.375	74.60	14.3
T1-2 3/8"	60.325	77.8	82.550	77.80	14.3
T1-2 1/2"	63.500	81.0	85.725	77.80	14.3
T1-2 5/8"	66.675	85.7	85.725	85.75	15.9
T1-2 3/4"	69.850	88.9	88.900	85.75	15.9
T1-2 7/8"	73.025	92.0	95.250	88.90	15.9
T1-3"	76.200	95.2	98.425	88.90	15.9
T1-3 1/2"	88.9	111.1	111.1	99.18	19.8





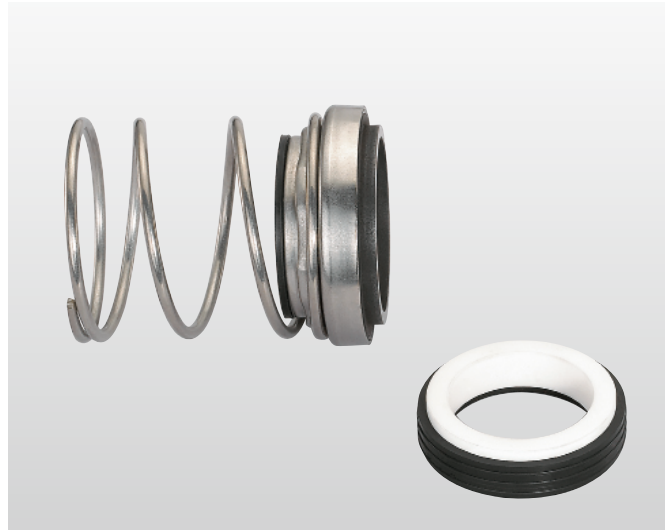
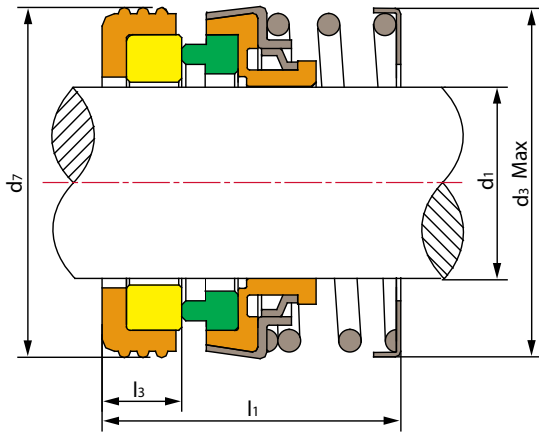
## TS 166

### Operating Limits

Pressure:  $\leq 1\text{MPa}$   
 Speed:  $\leq 10\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS166-5/16"	7.938	23.29	25.4	24.5	7.9
TS166-3/8"	9.525	23.29	22.225	23.80	7.14
TS166-1/2"	12.700	23.29	25.400	23.01	6.35
TS166-5/8"	15.875	30.10	31.750	28.55	10.31
TS166-3/4"	19.050	33.07	34.925	28.55	10.31
TS166-7/8"	22.225	36.30	38.100	30.94	10.31
TS166-1"	25.400	39.42	41.275	31.72	11.10



## TS 166T

### Operating Limits

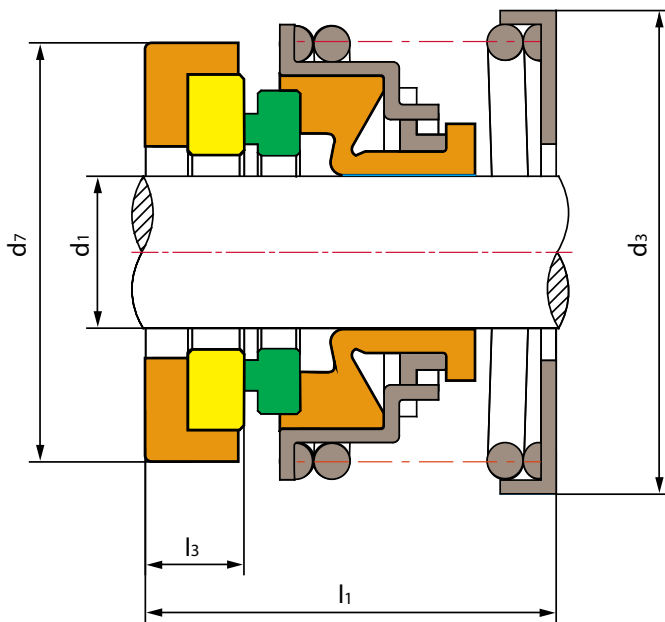
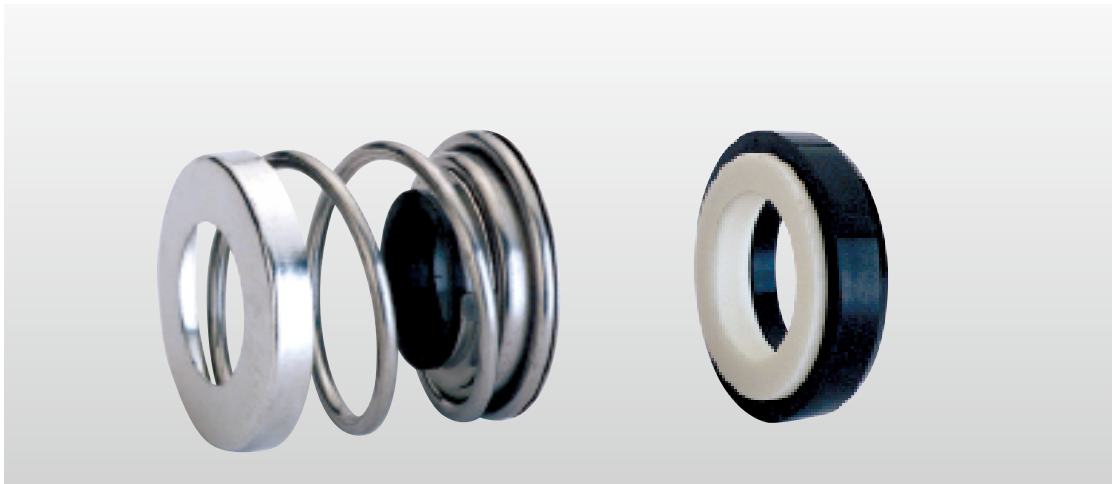
Pressure:  $\leq 1\text{MPa}$

Speed:  $\leq 10\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring( Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Cup Gasket(NBR/EPDM/MITON)
- Spring(SUS304/SUS316)
- Drive Ring(SUS304/SUS316)
- Retainer(SUS304/SUS316)
- Bellows(NBR/EPDM/MITON)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>	Model	d <sub>1</sub> (inches)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS166T-12	12	23.3	27.80	34.1	8.7	TS166T-3/8"	9.525	23.292	24.587	34.138	8.738
TS166T-16	16	30.1	30.95	35.7	10.3	TS166T-7/16"	11.100	22.000	30.000	26.000	5.400
TS166T-20	20	36.3	35.70	35.7	10.3	TS166T-1/2"	12.700	23.292	27.788	34.138	8.738
TS166T-22	22	36.3	37.30	35.7	10.3	TS166T-5/8"	15.875	30.099	30.937	35.712	10.312
TS166T-24	24	39.4	40.50	35.7	10.3	TS166T-3/4"	19.050	33.071	33.1/34.138	35.712	6.5/10.312
TS166T-25	25	39.4	40.50	35.7	10.3	TS166T-7/8"	22.225	36.297	37.287	35.712	10.312
TS166T-28	28	44.4	47.65	45.2	11.9	TS166T-1"	25.400	39.421	40.488/41.28	43.307	10.3/11.1
TS166T-30	30	47.6	50.80	45.2	11.9	TS166T-1 1/8"	28.575	44.450	47.625	44.907	11.913
TS166T-32	32	47.6	50.80	45.2	11.9	TS166T-1 1/4"	31.750	47.625	50.800	44.907	11.913
TS166T-35	35	50.8	54.00	45.2	11.9	TS166T-1 3/8"	34.925	50.800	53.975	44.907	11.913
TS166T-38	38	54.0	57.15	45.2	11.9	TS166T-1 1/2"	38.100	53.975	57.150	44.907	11.913
TS166T-40	40	60.3	60.35	45.2	11.9	TS166T-1 5/8"	41.275	60.325	60.325	44.907	11.913
TS166T-45	46	66.7	63.50	52.4	11.9	TS166T-1 3/4"	44.450	60.325	63.500	52.934	11.913
TS166T-48	48	66.7	66.70	52.4	11.9	TS166T-1 7/8"	47.625	63.881	66.675	52.934	11.913
TS166T-50	50	69.0	69.85	54.0	13.5	TS166T-2"	50.800	69.000	69.850	54.508	13.487
TS166T-55	55	74.6	73.05	54.0	13.5	TS166T-3"	76.200	98.4	101.600	68.250	15.875



## TS 70

### Operating Limits

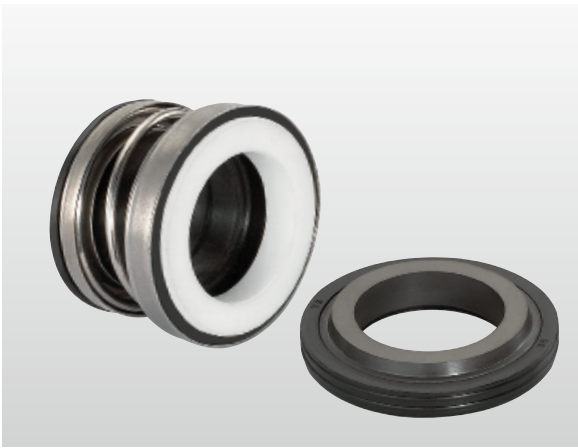
Pressure:  $\leq 0.6 \text{ MPa}$

Speed:  $\leq 10 \text{ m/s}$

Temperature:  $-30^\circ\text{C} \sim +200^\circ\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>7</sub>	d <sub>3</sub>	l <sub>1</sub>	l <sub>3</sub>
TS70-10	10	25.4	22.6	19	5.6
TS70-13	13	29.5	31.5	32	8
TS70-14	14	29.5	31.5	32	8
TS70-15	15	29.5	31.5	26/32	8
TS70-16	16	29.5	31.5	26/32	8

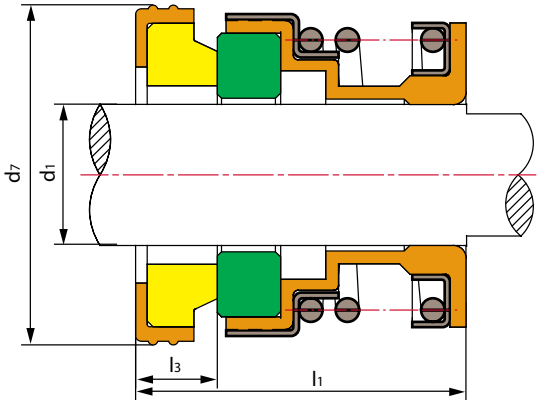


## TS 103

### Operating Limits

Pressure:  $\leq 0.8\text{MPa}$   
 Speed:  $\leq 5\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Ceramic)
- Stationary Ring(Plastic Carbon)
- Secondary Ring(NBR/VITON)
- Spring and Retainer(S.S/Copper)



Model	d <sub>1</sub> (mm)	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS103-10	10	25	20.5	5.0
TS103-12	12	26	20.5	5.5
TS103-12L	12	26	20.5	7.5
TS103-14	14	30	20.5	7.0
TS103-17	17	35	20.5	7.0
TS103-18	18	35	20.5	7.0

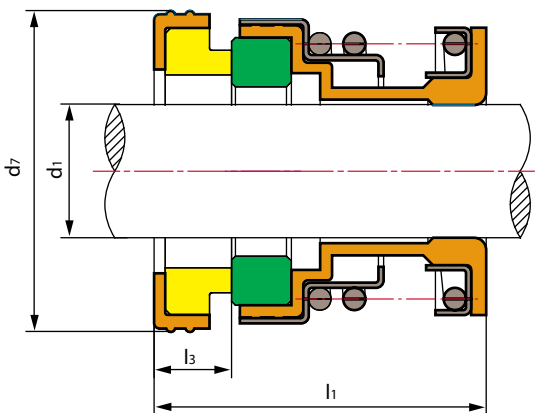


## TS 104

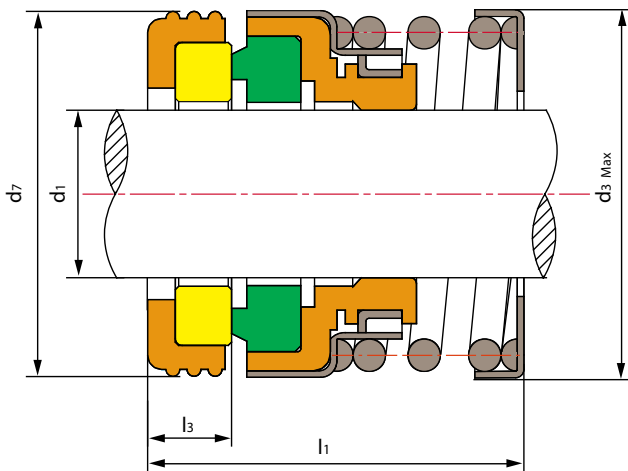
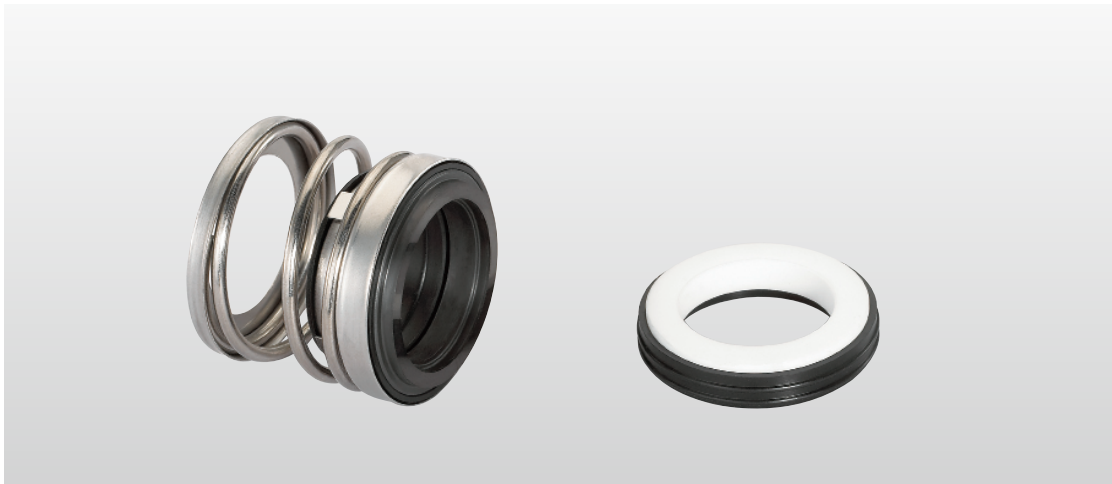
### Operating Limits

Pressure:  $\leq 0.8\text{MPa}$   
 Speed:  $\leq 5\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Ceramic)
- Stationary Ring(Plastic Carbon)
- Secondary Ring(NBR/VITON)
- Spring and Retainer(S.S/Copper)



Model	d <sub>1</sub> (mm)	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS104-9	9	22	20	5.5
TS104-10	10	22	20	5.5
TS104-11	11	24	20	5.5
TS104-12	12	24	20	5.5
TS104-14	14	26	25	7.0
TS104-15	15	28	25	7.0
TS104-16	16	28	25	7.0
TS104-17	17	34	25	7.0
TS104-18	18	34	25	7.0
TS104-19	19	36	25	7.0
TS104-20	20	36	25	7.0
TS104-22	22	38	25	7.0
TS104-25	25	41	37	9.0
TS104-30	30	46	37	9.0
TS104-35	35	51	37	9.0
TS104-40	40	60	40	10.5
TS104-45	45	65	40	10.5



## TS 108

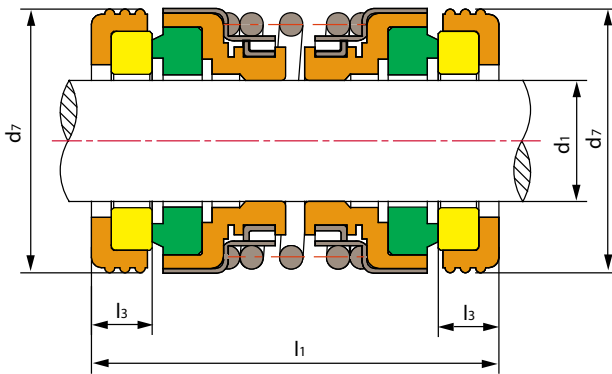
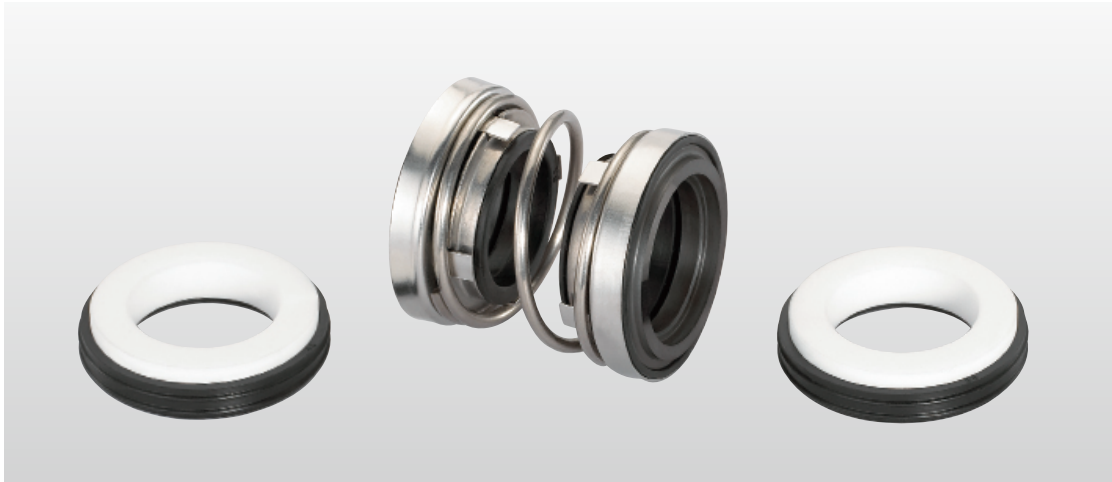
### Operating Limits

Pressure:  $\leq 1\text{MPa}$   
 Speed:  $\leq 10\text{ m/s}$   
 Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Seal(NBR/EPDM/VITON)
- Spring & Other Parts(SUS304/SUS316)

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS108-9	9	20.6	21	20	5.0
TS108-10	10	20.6	21	20	5.0
TS108-11	11	22.0	23	20	5.0
TS108-12	12	22.0	23	20	5.0
TS108-14	14	24.5	25	25	5.2
TS108-15	15	26.5	27	25	5.2
TS108-16	16	26.5	27	25	5.2
TS108-17	17	32.0	33	25	5.2
TS108-18	18	32.0	33	25	5.2
TS108-19	19	34.0	35	25	7.5

Model	d <sub>1</sub> (mm)	d <sub>3</sub>	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS108-20	20	34.0	35	25	7.5
TS108-22	22	36.5	37	28	7.5
TS108-25	25	39.0	40	32	8.0
TS108-28	28	46.5	43	35	8.0
TS108-30	30	46.5	45	35	8.0
TS108-35	35	50.0	50	37	8.0
TS108-40	40	56.0	58	40	8.7
TS108-45	45	62.0	63	40	9.0
TS108-50	50	69.0	70	45	9.0
TS108-55	55	76.0	75	45	10.5



## TS 208

### Operating Limits

Pressure:  $\leq 1.2\text{MPa}$

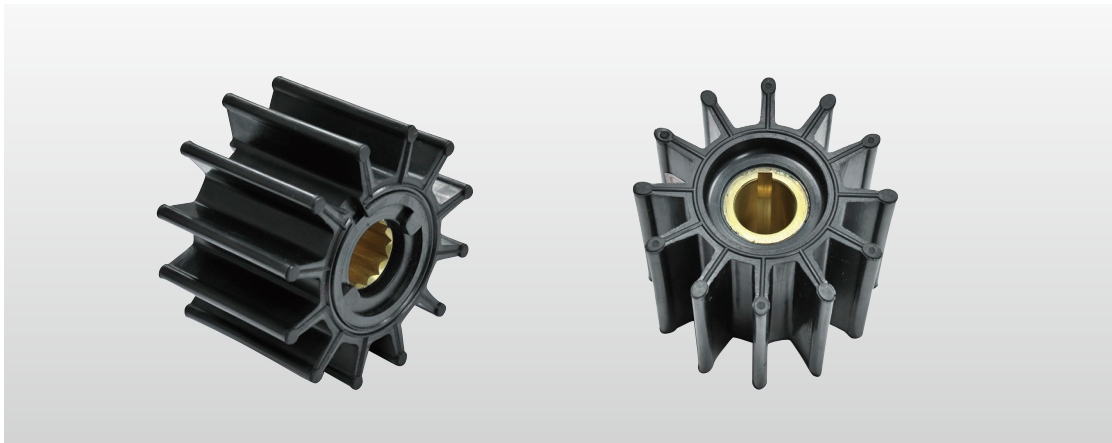
Speed:  $\leq 10\text{ m/s}$

Temperature:  $-30^{\circ}\text{C} \sim +200^{\circ}\text{C}$

- Rotary Ring(Plastic Carbon/Carbon/SiC/TC)
- Stationary Ring(Ceramic/SiC/TC)
- Secondary Ring(NBR/EPDM/VITON)
- Spring and Retainer(SUS304/SUS316)

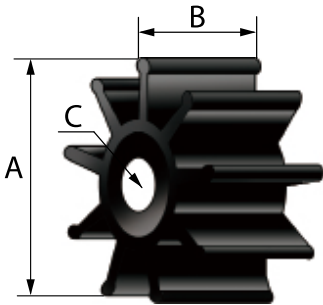
Model	d <sub>1</sub> (mm)	d <sub>7</sub>	l <sub>1</sub>	l <sub>3</sub>
TS208-10	10	21	30	5.0
TS208-12	12	23	30	5.0
TS208-14	14	26/28	38	6.0
TS208-16	16	28/30	38	5.0
TS208-18	18	33/35	38	5.0
TS208-20	20	35/36	40	5.5
TS208-25	25	40/41	48	8.0
TS208-30	30	45	51	8.0
TS208-35	35	50	51	8.0
TS208-40	40	58	58	9.0
TS208-45	45	63	58	9.0

# Impellers for pump



## IMPELLER

Units:Milimeters(mm)



A: Impeller Diameter B: Impeller Width C: Shaft Diameter

## INSERT TYPE

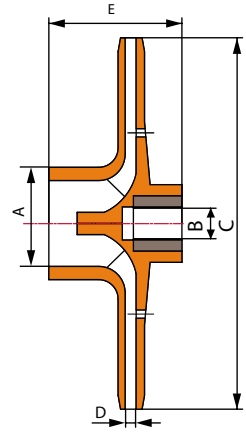
1	SLOTTED SHAFT PIN DRIVE	
2	KEY DRIVE	
3	SINGLE FLAT DRIVE DOUBLE	
4	FLAT DRIVE HEXA SPLINE	
5	DRIVE SPLINE DRIVE	
6		

Item	Product Code	A	B	C	Numbers of Blades	Insert Type	Application
1	RI061127	50.8	22	12.7	6	1	Jabsco 673-0001/09-1026B
2	RI062220	59.5	33.5	22	6	2	/
3	RI063080-1	51	22	8	6	3	Jabsco 6303-0001
4	RI063080-2	35	13	8	6	3	/
5	RI086160-1	65	37	16	8	6	Jabsco 11979-0001, Sherwood 60.06804-0005
6	RI086160-2	65	50	16	8	6	Jabsco 17937-0001, Sherwood 18200
7	RI096200	80	54	20	9	6	SP100
8	RI094250	95	63	25	9	4	
9	RI096250-1	93	95.1	25	9	6	Yanmar, 6ES, 6BN, SP-300
10	RI096250-2	95	63.5	25	9	6	/
11	RI096250-3	95	88.5	25	9	6	Jabsco 6760-0001
12	RI106248	114.2	109.5	24.8	10	6	/
13	RI106250	114	110	25	10	6	Sherwood 22000, Caterpillar 3412 (153-9123)(3N8449)
14	RI122201	84	74	20.1	12	2	/
15	RI126156	57.5	44	15.6	12	6	/
16	RI126160	57	31.5	16	12	6	Jabsco 1210-0001, Perkins, Onan 132-0162/Mini-50 Sole 351.11.008
17	RI126230	94.3	64	23	12	6	/
18	RI126248	94.5	101.5	24.8	12	6	/
19	RI126250	95	63	25	12	6	Jabsco 17935-0001, Caterpillar 5N9360, 3306, KT, 903
20	RI126360	128	101.5	36	12	6	Jabsco 31500-0001, Mitsubishi S6R2, Yanmar

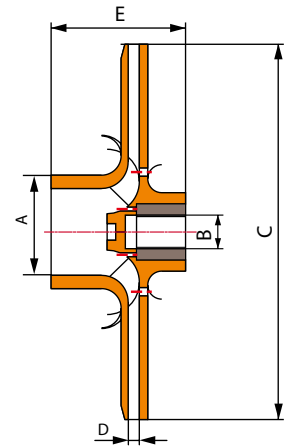
## Impellers for pump



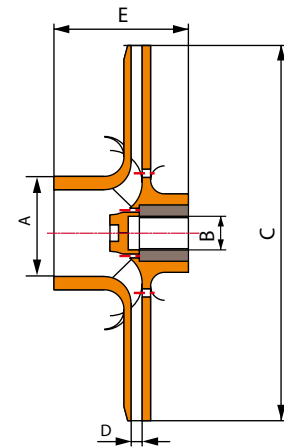
Product Code	A	B	C	D	E	Material
PI001P-1	37.2	11.5	116.0	3.7	48.5	PPO+Brass
PI001P-2	37.2	11.5	132.5	4.3	49.2	PPO+Brass
PI001P-3	44.9	11.5	142.0	5.0	61.8	PPO+Brass



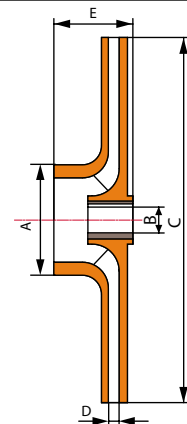
Product Code	A	B	C	D	E	Material
PI002P-1	40.5	11.5	121.0	4.5	48.5	PPO+Brass
PI002P-2	40.5	11.5	126.5	4.0	48.5	PPO+Brass
PI002P-3	40.5	11.5	134.5	4.0	48.5	PPO+Brass
PI002P-4	40.5	11.5	135.5	6.0	50.5	PPO+Brass
PI002P-5	50.0	11.5	149.5	5.0	64.0	PPO+Brass
PI002P-6	50.0	11.5	154.0	5.0	64.0	PPO+Brass



Product Code	A	B	C	D	E	Material
PI002C-1	40.5	11.5	121.0	4.5	48.5	PC+Brass
PI002C-2	40.5	11.5	126.5	4.0	48.5	PC+Brass
PI002C-3	40.5	11.5	134.5	4.0	48.5	PC+Brass
PI002C-4	40.5	11.5	135.5	6.0	50.5	PC+Brass
PI002C-5	50.0	11.5	149.5	5.0	64.0	PC+Brass
PI002C-6	50.0	11.5	154.0	5.0	64.0	PC+Brass



Product Code	A	B	C	D	E	Material
PI003P	46.0	12.0	130.0	3.0	34.0	PPO+Brass

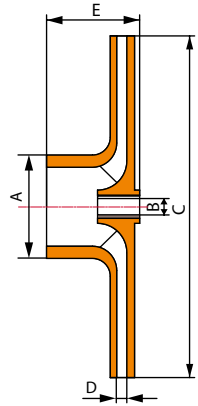




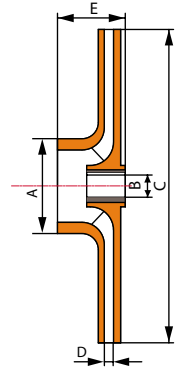
# Impellers for pump



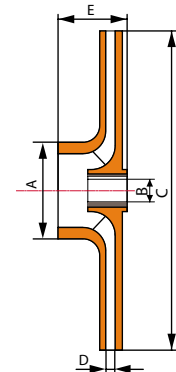
Product Code	A	B	C	D	E	Material
PI004P	32.0	10.0	120.0	4.0	20.5	PPO+Brass



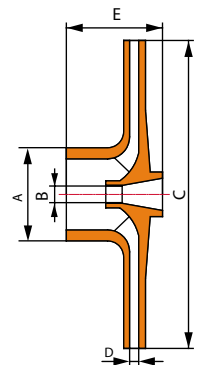
Product Code	A	B	C	D	E	Material
PI005P	37.0	12.0	115.0	3.1	28.0	PPO+Brass



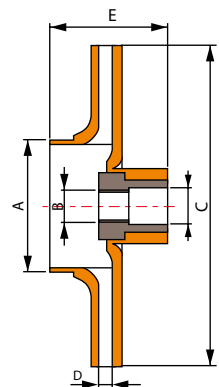
Product Code	A	B	C	D	E	Material
PI006P-1	40.5	14.0	126.0	4.0	29.5	PPO+Brass
PI006P-2	40.5	14.0	126.0	5.0	29.5	PPO+Brass



Product Code	A	B	C	D	E	Material
PI007P	37.4	M8	114.0	2.5	29.5	PPO+Brass



Product Code	A	B	C	D	E	Material
PI008C	46.0	M10	130.0	3.8	31.7	PC+Brass

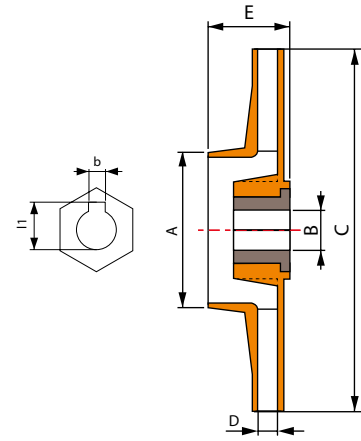


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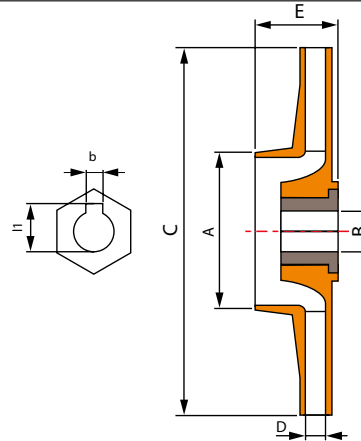
# Impellers for pump



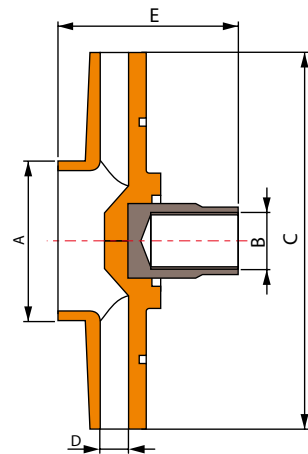
Product Code	A	B	C	D	E	Material
PI009P	39.0	8.5	130.0	6.0	35.5	PPO+Brass



Product Code	A	B	C	D	E	Material
PI010P	39.0	9.0	130.0	7.5	33.6	PPO+Brass



Product Code	A	B	C	D	E	Material
PI011P-1	53.0	7/16-20 UNF	112.0	5.8	61.0	PPO+Brass
PI011P-2	53.0	7/16-20 UNF	116.0	6.6	61.0	PPO+Brass



Product Code	A	B	C	D	E	Material
PI012-1	55.2	1/2-20 UNF	124.0	8.5	57.3	PPO+Brass
PI012-2	55.2	1/2-20 UNF	124.0	7.2	57.3	PPO+Brass
PI012-3	55.2	1/2-20 UNF	124.0	6.0	57.3	PPO+Brass

