GOL PUMPS

SINGLE SPRING MECHANICAL SEALS

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GOL PUMPS TECHNOLOGY INC

Single-Spring Mechanical Seal


TS F 01


TS FB 02


TS FB(INCH) 03


TS FBWE 04


TS FBM 05


TS FW 06


TS FBW 07


TS FBU 08


TS FBS 09


TS FBMT 10


TS FN 11


TS FBSH 12


TS FG 13


TS FH 14


TS FK 15


TS FT 16


TS FTK 17


TS FTK_2 18


TS FTS 19


TS FL 20


TS TB 21


TS T 22


TS K 23

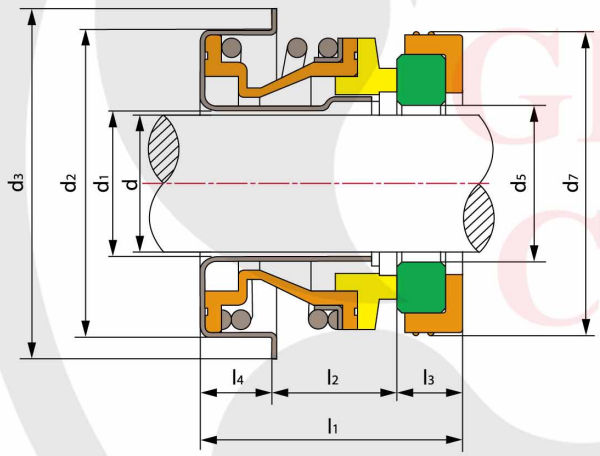

TS KA 24


TS XP 25

TS F

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤5000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



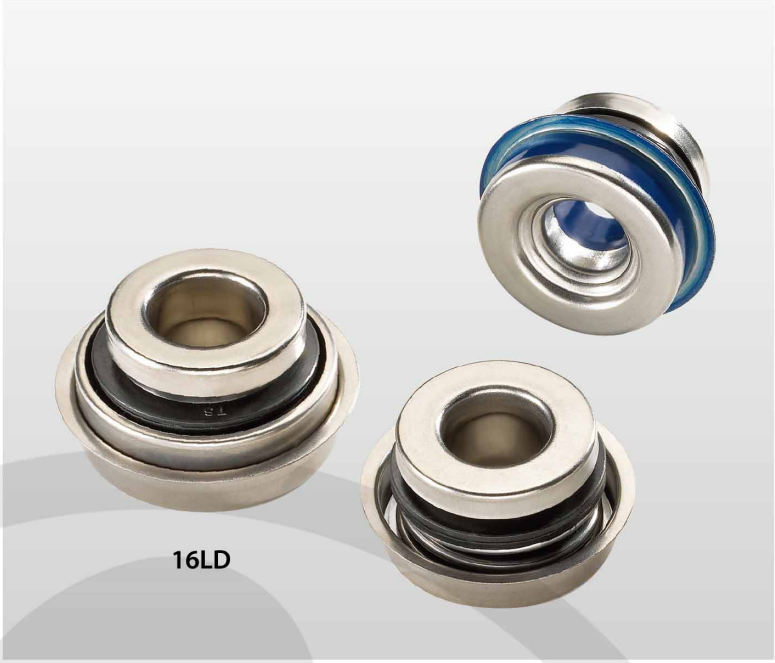
- Rotary Ring(Ceramic/SiC)
- Stationary Ring(Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring & Other Parts (SUS304/SUS316)

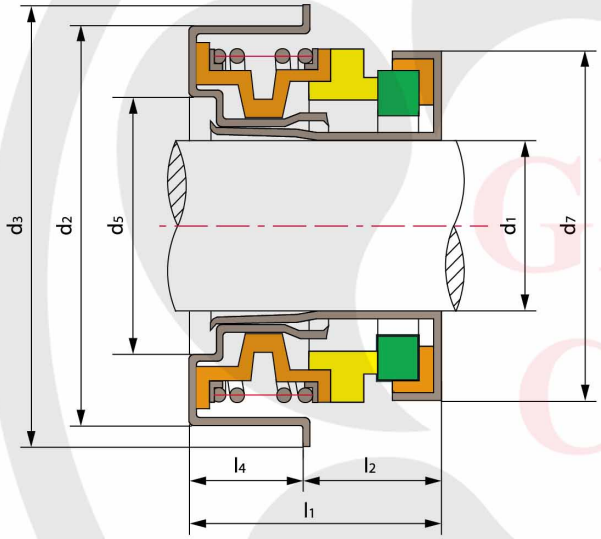
Model	d (inches)	d_1	d_2	d_3	d_5	d_7	l_1	l_2	l_3	l_4
TSF-1/2"	12.700	14.2	30.00	35.0	13.5	25.400	19.2	5.0	6.2	8.0
TSF-5/8"	15.875	18.2	36.50	41.5	17.5	31.750	25.0	6.7	10.3	8.0
TSF-3/4"	19.050	21.2	40.00	43.8	20.0	34.925	25.8	5.5	10.3	10.0
TSF-1"	25.400	26.4	47.00	51.0	27.0	41.275	29.0	5.9	11.1	12.0
Model	d (mm)	d_1	d_2	d_3	d_5	d_7	l_1	l_2	l_3	l_4
TSF-10	10	11.0	24.00	29.0	12	23	17.0	6.0	4	7.0
TSF-12S	12	14.2	28.57	32.0	14	25	18.2	5.2	5	8.0
TSF-12M	12	14.2	30.00	35.0	15	24/23	18.0	5.0	5	8.0
TSF-12L	12	14.2	33.40	38.0	14	25	18.0	6.3	5	6.7
TSF-16	16	18.2	36.50	41.5	18	31	19.8	6.8	5	8.0
TSF-16L	16	18.2	38.10	43.5	18	31	19.8	6.0	5	8.8
TSF-16LD	16	18.2	38.10	43.5	18	31	19.8	6.0	5	8.8
TSF-20S	20	21.2	38.00	43.8	21	35	20.5	5.5	5	10.0
TSF-20	20	21.2	40.00	43.8	21	35	20.5	5.5	5	10.0
TSF-25S	25	26.4	46.00	51.0	26	44	25.0	8.0	7	10.0
TSF-25	25	26.4	47.00	51.0	26	44	25.0	6.0	7	12.0
TSF-25L	25	26.4	52.00	57.0	27	48	25.0	6.0	7	12.0
TSF-30	30	31.0	52.00	57.0	32	48	27.0	8.0	8	11.0

TS FB

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤9000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze





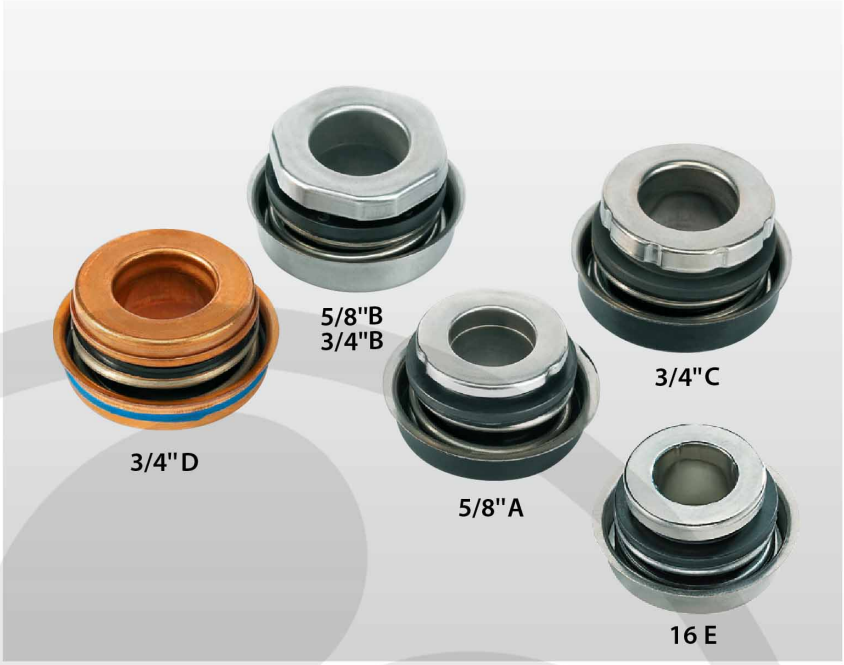
- Rotary Ring(Ceramic/SiC)
- Stationary Ring(Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring & Other Parts (SUS304/SUS316)

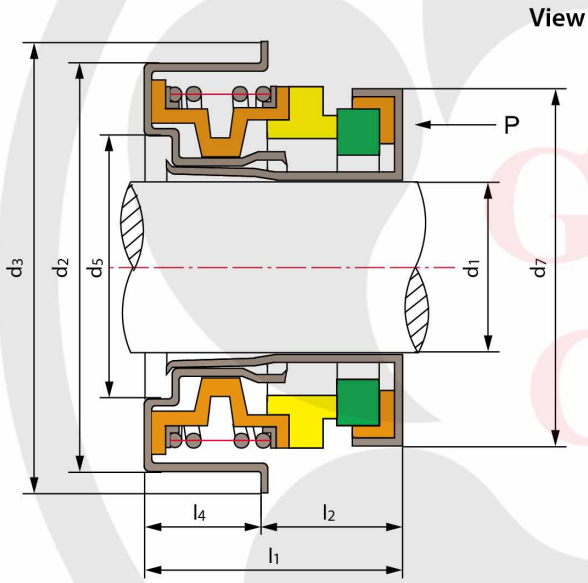
Model	d_1 (mm)	d_2	d_3	d_5	d_7	l_1	l_2	l_4
TSFB-12S	12	28.57	32.0	18.5	25/26	18.2	10.2	8.0
TSFB-12M	12	30.00	35.0	18.5	25/26	18.2	10.2	8.0
TSFB-12L	12	33.40	38.0	18.5	25/26	18.2	11.5	6.7
TSFB-13	13	30.00	35.0	18.5	25.0	18.0	10.0	8.0
TSFB-15	15	36.50	41.5	22.5	30.5	20.5	12.0	8.5
TSFB-16	16	36.50	41.5	22.5	30.5	20.5	12.0	8.5
TSFB-16B	16	36.50	41.5	22.5	28.0	20.0	12.0	8.5
TSFB-16T	16	36.50	41.5	19.3	31.5	20.5	11.5	9.0
TSFB-16L	16	38.10	43.5	22.5	30.5	20.5	11.7	8.8
TSFB-16LD	16	38.10	43.5	22.5	28.5	20.5	11.7	8.8
TSFB-20	20	38/40	43.8	26.5	37.0	22.0	12.5	9.5
TSFB-20T	20	40.00	43.8	28.0	37.0	22.0	12.5	9.5

TS FB(INCH)

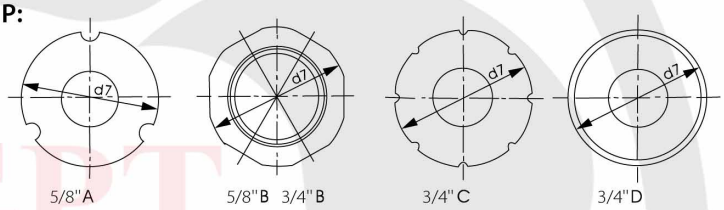
Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤9000r/min
Temperature: -30˚C ~+150˚C
Medium: Clean water, seawater, gas engine antifreeze





View P:



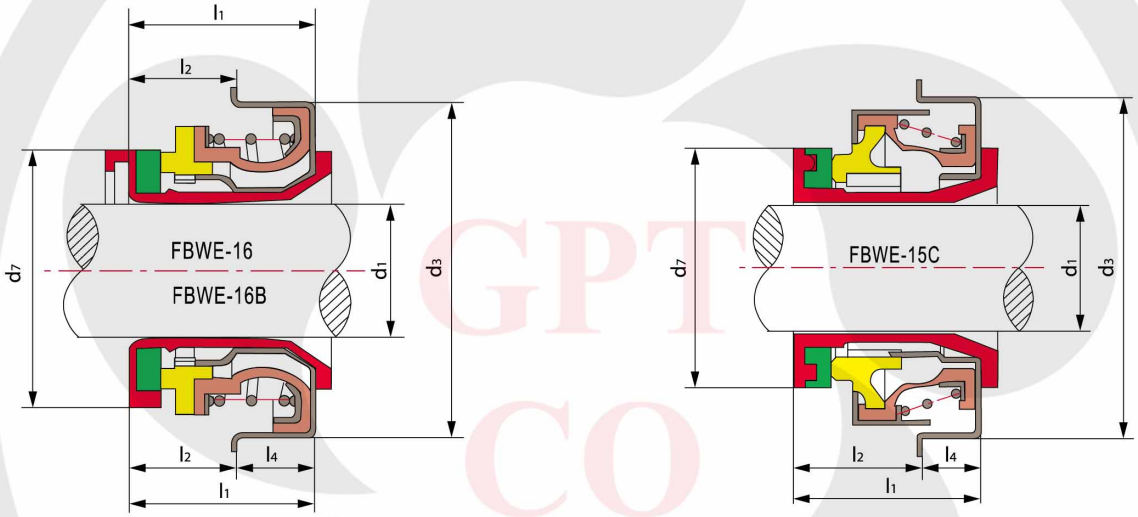
- Rotary Ring(Ceramic/SiC)
- Stationary Ring(Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring & Other Parts (SUS304/SUS316/Red Cooper)

Model	d_1 (mm)	d_2	d_3	d_5	d_7	l_1	l_2	l_4
TSFB-16 E	16	36.5	41.5	22.5	28.0	20.5	12.0	8.5
Model	d_1(inches)	d_2	d_3	d_5	d_7	l_1	l_2	l_4
TSFB-1/2"S	12.700	28.57	32.0	18.5	25.0	17.5	9.50	8.0
TSFB-1/2"M	12.700	30.00	35.0	18.5	25.0	17.5	9.50	8.0
TSFB-5/8"	15.875	36.50	41.5	22.5	30.5	20.5	12.0	8.5
TSFB-3/4"	19.000	40.00	43.8	26.5	37.0	22.0	12.5	9.5
TSFB-5/8"A	15.875	36.50	41.5	22.0	29.0	20.0	11.5	8.5
TSFB-5/8"B	15.875	36.50	41.8	22.0	28.0	21.0	12.5	8.5
TSFB-3/4"B	19.050	40.00	43.8	23.0	35.8	22.0	12.8	9.2
TSFB-3/4"C	19.050	40.00	43.8	23.0	34.0	22.0	12.8	9.2
TSFB-3/4"D	19.050	40.00	44.0	22.0	36.5	19.5	10.9	8.6

TS FBWE

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤7000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



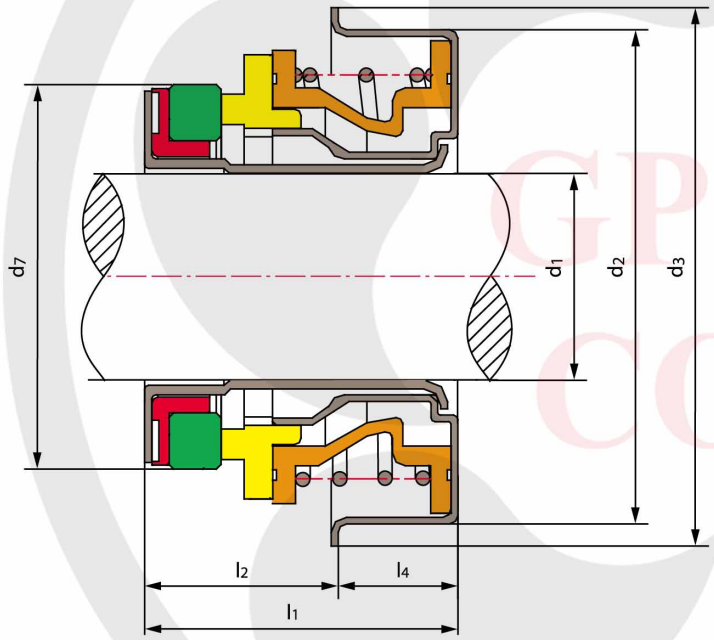
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Axial Pipe (NBR/HNBR/VITON)
- Stationary Seat (Brass/SUS304)
- Bellows (NBR/HNBR/VITON)
- Spring Holder (Brass/SUS304)
- Drive Ring (Brass/SUS304)

Model	d_1 (mm)	d_3	d_7	l_1	l_2	l_4
TSFBWE-16	16	36.5	28.65	19.5	12.0	7.5
TSFBWE-16B	16	36.5	31.50	19.5	11.5	8.0
TSFBWE-15C	15	36.5	28.50	18.5	11.5	7.0
TSFBWE-16D	16	36.5	27.00	19.9	12.4	7.5

TS FBM

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤9000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



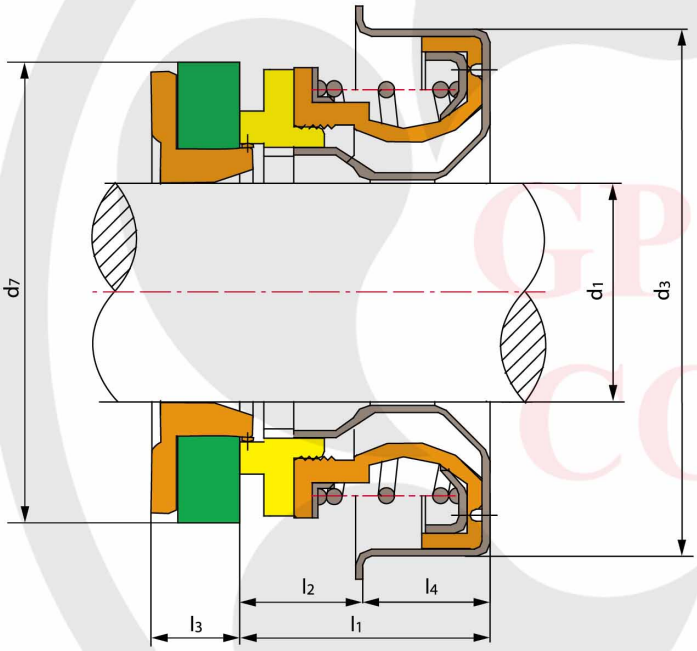
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (65Mn/SUS304/SUS316)
- Axial Pipe (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Cup Gasket (NBR/EPDM/VITON)

Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_2	l_4
TSFBM-12S	12	28.57	32.0	24.0	18.5	10.5	8.0
TSFBM-12M	12	30.00	35.0	24.0	18.5	10.5	8.0
TSFBM-12L	12	33.40	38.0	24.0	18.5	11.8	6.7
TSFBM-16	16	36.50	41.6	26.0	20.5	12.0	8.5
TSFBM-16L	16	38.10	43.5	26.0	20.5	11.7	8.8
TSFBM-16LX	16	39.30	43.6	26.0	20.0	11.3	8.7
TSFBM-20	20	40.00	43.8	29.5	21.5	12.0	9.5

TS FW

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤5000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



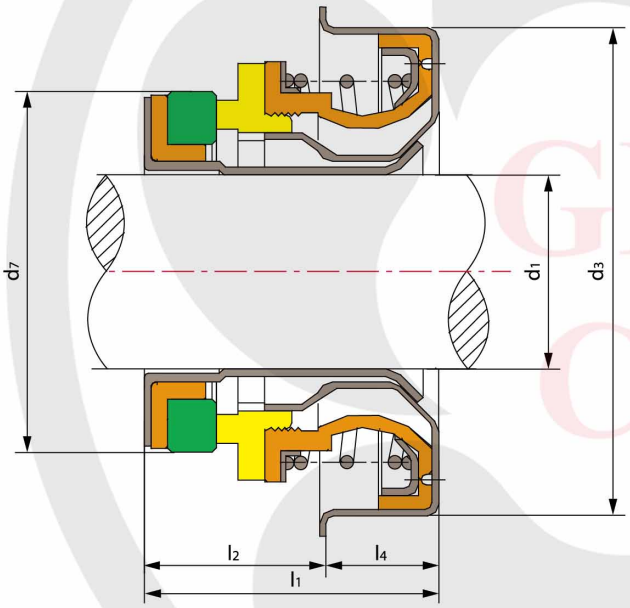
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (65Mn/SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Drive Ring (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Spring Retainer (SUS304/SUS316)
- Cup Gasket (NBR/EPDM/HNBR/VITON)

Model	d_1 (mm)	d_3	d_7	l_1	l_2	l_3	l_4
TSFW-12	12	30.0	24.0	14.5	6.5	5	8.0
TSFW-15	15	36.5	29.5	15.7	7.0	5	8.7
TSFW-16	16	36.5	29.5	15.7	7.0	5	8.7
TSFW-16L	16	38.1	29.5	15.7	7.0	5	8.7
TSFW-19	19	40.0	34.0	17.5	6.5	6	11.0
TSFW-20	20	40.0	34.0	17.5	6.5	6	11.0

TS FBW

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤9000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



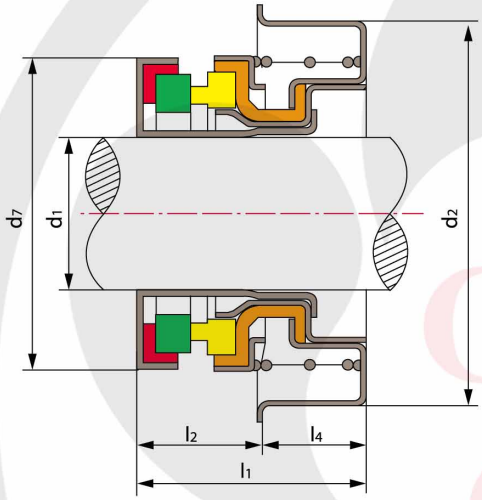
- Rotary Ring(Ceramic/SiC)
- Stationary Ring(Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring & Other Parts (SUS304/SUS316)

Model	d_1 (mm)	d_3	d_7	l_1	l_2	l_4
TSFBW-12M	12	30.0	24.0	20.0	12.5	7.5
TSFBW-15	15	36.5	29.0	19.9	11.2	8.7
TSFBW-16	16	36.5	29.0	19.9	11.2	8.7
TSFBW-16L	16	38.1	29.0	19.8	11.3	8.5
TSFBW-20	20	40.0	34.0	20.0	10.5	9.5
TSFBW-16A	16	36.5	32.5	19.4	11.4	8.0
Model	d_1 (inches)	d_3	d_7	l_1	l_2	l_4
TSFBW-1/2"A	12.7	30.0	28.5	14.7	7.7	7.0

TS FBU

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤7000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



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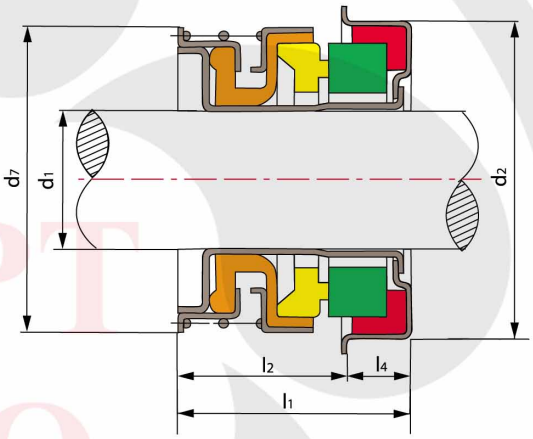
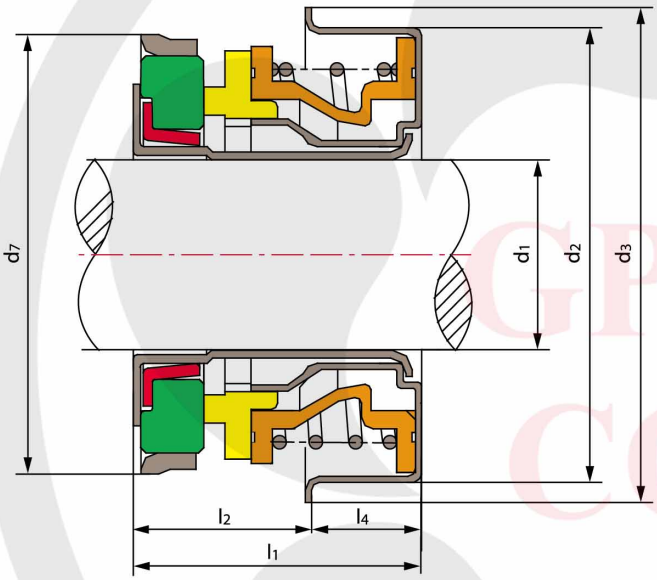


TS FBU-25

- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (65Mn/SUS304/SUS316)
- Axial Pipe (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Drive Ring (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Spring Holder (SUS304/SUS316)
- Cup Gasket (NBR/EPDM/HNBR/VITON)

Model	d_1 (mm)	d_2	d_7	l_1	l_2	l_4
TSFBU-15	15	36.5	32.5	20.8	11.3	9.5
TSFBU-16S	16	36.5	28/28.5	21.0	11.5	9.5
TSFBU-16L	16	36.5	32.5	20.8	11.3	9.5
TSFBU-25	25	41.3	40.8	30.0	21.2	8.8



TS FBS

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤6800r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze

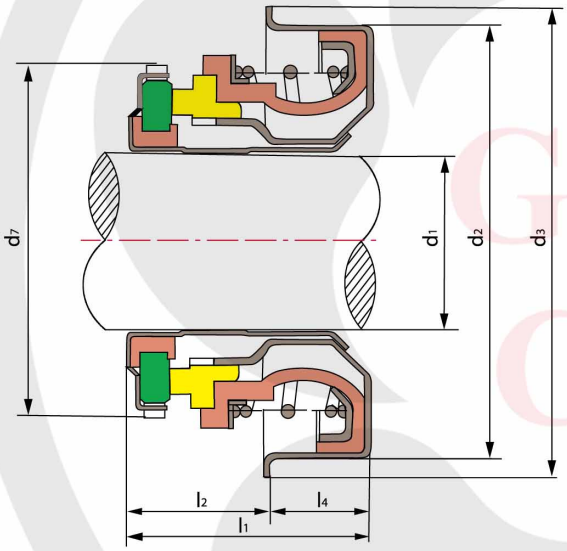
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (65Mn/SUS304/SUS316)
- Axial Pipe (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Outside Cup Gasket (SUS304/SUS316)
- Inside Cup Gasket (NBR/EPDM/HNBR/VITON)

Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_2	l_4
TSFBS-16S	16	34.2	38.8	30.6	18.0	12.4	5.6
TSFBS-16M	16	36.5	41.6	30.6	20.5	12.0	8.5
TSFBS-16L	16	38.1	43.5	30.6	20.5	11.8	8.7

TS FBMT

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤9000r/min
Temperature: -30˚C ~+150˚C
Medium: Clean water, seawater, gas engine antifreeze



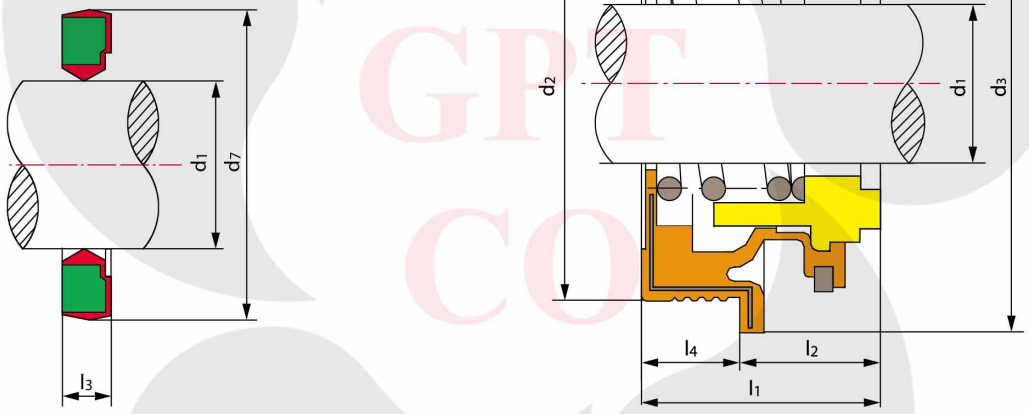
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316/Red Cooper)
- Drive Ring A (SUS304/SUS316)
- Drive Ring B (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Cup Gasket (NBR/EPDM/HNBR/VITON)
- Axial Pipe (SUS304/SUS316)

Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_2	l_4
TSFBMT-12	12	30.0	35	26.5	17.6	9.60	8.0
TSFBMT-12A	12	30.0	34	26.5	16.9	9.30	7.6
TSFBMT-15	15	36.5	40	31.2	19.0	10.5	8.5
TSFBMT-15A	15	36.5	42	31.2	18.0	10.0	8.0
Model	d_1 (inches)	d_2	d_3	d_7	l_1	l_2	l_4
TSFBMT-5/8"	15.875	36.5	40	31.2	19.0	10.5	8.5
TSFBMT-5/8"A	15.875	36.5	42	31.2	18.0	10.0	8.0

TS FN

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤5000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



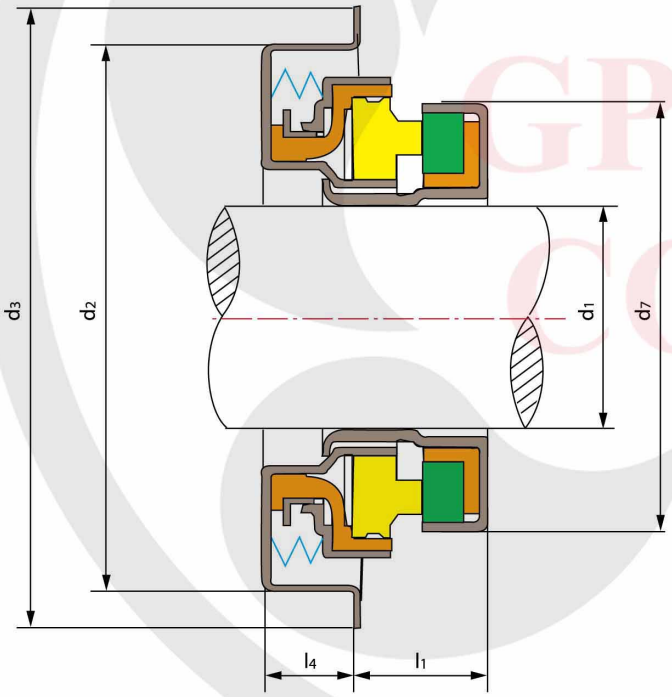
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (65Mn/SUS304/SUS316)
- Drive Ring (Q235-A)
- Cup Gasket (NBR/EPDM/HNBR/VITON)
- Bellows (NBR/EPDM/HNBR/VITON)

Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_2	l_3	l_4
TSFN-12M	12	30.0	34.6	\	15.5	8.5	\	7.0
TSFN-12L	12	33.4	36.6	\	15.5	8.5	\	7.0
TSFN-16	16	36.5	42.6	28.0	16.5	9.0	4.5	7.5
TSFN-16L	16	38.1	42.6	28.0	16.5	9.0	4.5	7.5
TSFN-16B	16	36.5	39.7	28.6	16.5	9.5	3.5	7.0
TSFN-20	20	40.0	42.0	\	18.5	7.5	\	11.0

TS FBSH

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤9000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



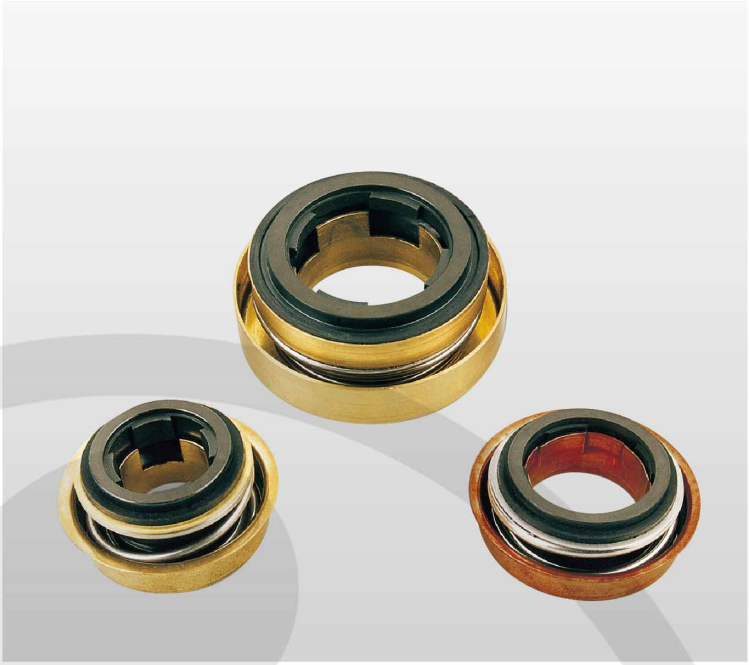
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/HNBR)
- Other Parts (SUS304/SUS316)
- Wave Spring (17-7PH/Steel)

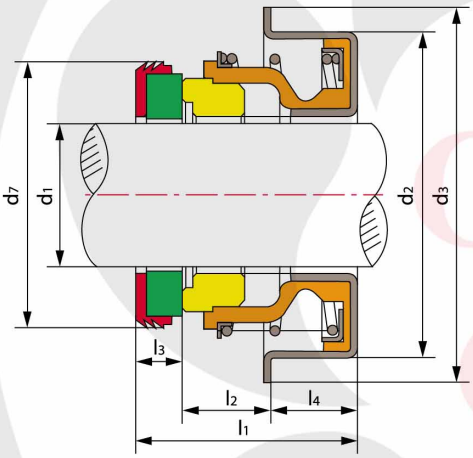
Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_4
TSFBSH-12	12	30	34	23.0	7.5	5.5
TSFBSH-12A	12	30	34	25.2	7.5	5.5
TSFBSH-12B	12	30	34	24.5	7.5	5.5
Model	d_1 (inches)	d_2	d_3	d_7	l_1	l_4
TSFBSH-1/2"	12.7	30	34	24.5	7.5	5.5

TS FG

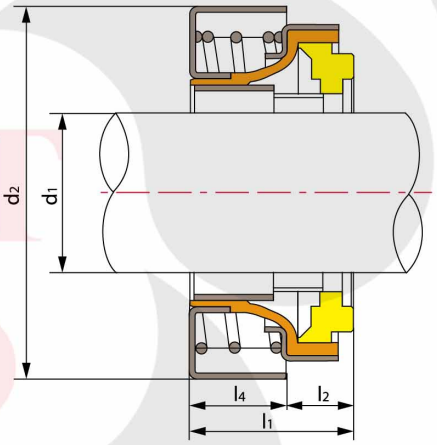
Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4800r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze





TS FG-16/20



TS FG-25/25L/30

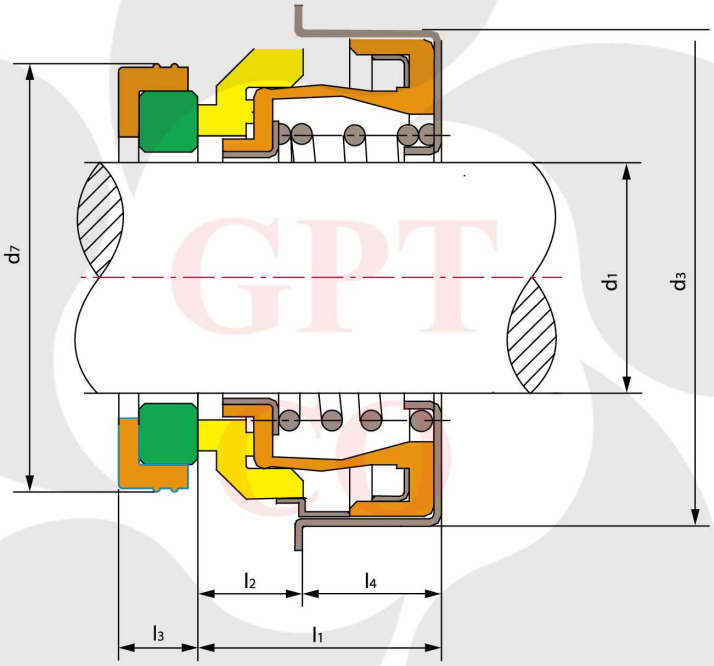
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316/Brass/Red Cooper)
- Bellows (NBR/EPDM/HNBR/VITON)
- Cup Gasket (NBR/EPDM/HNBR/VITON)

Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_2	l_3	l_4
TSFG-15	15	36.5	40	28.4	20.0	6.5	5	8.5
TSFG-16	16	36.5	42	29.5	22.8	7.8	5	10.0
TSFG-16A	16	36.5	40	29.5	22.5	9.0	5	8.5
TSFG-20	20	40.0	44	35.0	20.5	6.9	5	8.6
TSFG-25	25	47.0	\	\	20.3	5.3	\	15.0
TSFG-25L	25	52.0	\	\	22.8	10.8	\	12.0
TSFG-30	30	52.0	\	\	22.0	6.0	\	16.0

TS FH

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



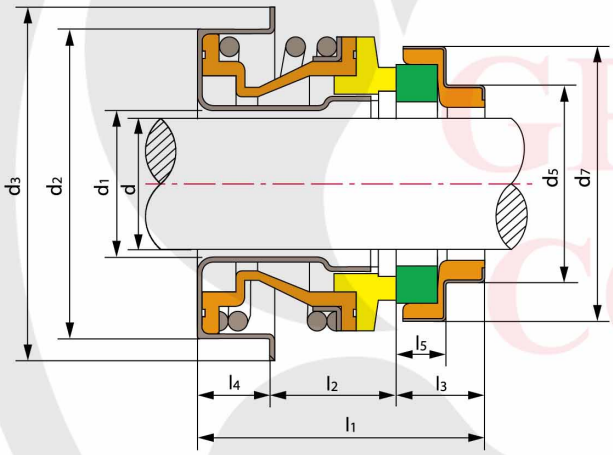
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (65Mn/SUS304/SUS316)
- Spring Holder (Brass)
- Retainer (Brass)
- Drive Ring (Brass)
- Bellows (NBR/EPDM/HNBR/VITON)
- Cup Gasket (NBR/EPDM/HNBR/VITON)

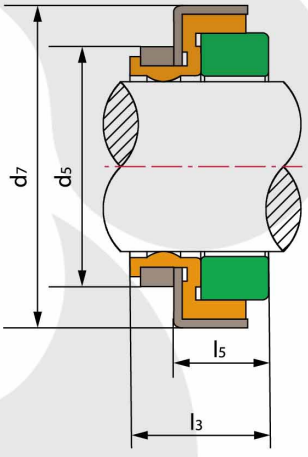
Model	d_1(mm)	d_3	d_7	l_1	l_3	l_2	l_4
TSFH-20A	20	40	33/33.5	17.5	6.5/5.5	6.5	11
TSFH-20B	20	40	33/33.5	17.5	6.5/5.5	6.5	11

TS FK

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4500r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze





TS FK-30/40

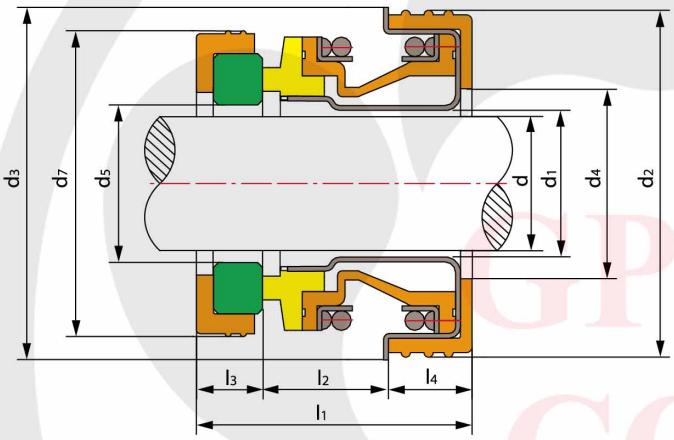
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Rotary Ring Holder (SUS304/SUS316/Q235-A)

Model	d (mm)	d_1	d_2	d_3	d_5	d_7	l_1	l_2	l_3	l_4	l_5
TSFK-16	16	18.2	36.5	41.5	23.0	33.0	24.8	6.8	10.0	8.0	5.0
TSFK-16L	16	18.2	38.1	43.5	23.0	33.0	24.8	6.0	10.0	8.8	5.0
TSFK-19	19	19.2	32.5	36.0	23.0	32.0	26.5	8.5	10.0	8.0	5.5
TSFK-20S	20	21.2	38.1	43.8	32.0	37.0	28.0	8.5	11.5	8.0	5.0
TSFK-20L	20	21.2	40.0	43.8	27.0	38.0	26.5	6.5	10.0	10.0	5.0
TSFK-25S	25	26.4	46.0	51.0	30.5	47.0	31.8	8.8	13.0	10.0	8.5
TSFK-25	25	26.4	47.0	51.0	30.5	47.0	31.8	6.8	13.0	12.0	8.5
TSFK-30	30	31.0	52.0	57.0	42.8	50.0	35.5	9.5	15.0	11.0	9.5
TSFK-40	40	41.2	69.0	75.0	50.8	65.0	45.8	12.0	21.0	12.8	13.0

TS FT

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤5000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



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

Model	d (mm)	d_1	d_2	d_3	d_4	d_5	d_7	l_1	l_2	l_3	l_4
TSFT-10	10	11.0	27	29.0	15	12	23	18.0	3.5	4	10.5
TSFT-12	12	14.2	32	32.0	20	14	25	19.2	5.2	5	9.0
TSFT-16	16	18.2	41	41.5	22	18	31	21.8	7.8	5	9.0
TSFT-20	20	21.2	45	43.8	30	21	35	22.5	5.5	5	12.0
TSFT-25	25	26.4	52	51.0	35	26	44	27.0	5.5	7	14.5
TSFT-30	30	31.0	58	57.0	40	32	48	29.0	7.7	8	13.3

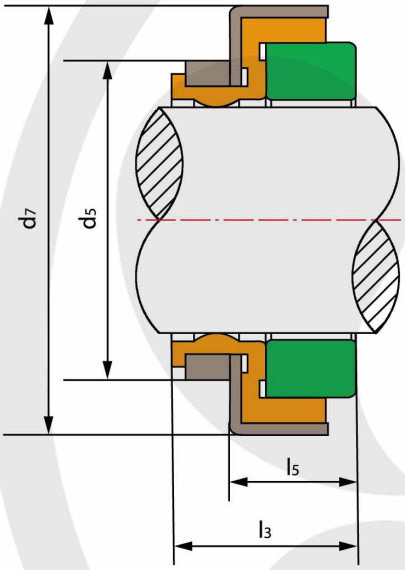
TS SB

Model	d (mm)	d_2	d_3	d_7	l_1	l_2	l_3	l_4
TSSB-12S	12	26	32.0	18.0	20.8	6.0	6.8	8.0
TSSB-12	12	30	35.0	24.0	19.5	5.5	4.5	9.5
TSSB-13	13	30	38.0	25.0	18.7	5.2	5.0	8.5
TSSB-15S	15	30	41.3	21.5	22.8	7.0	6.8	9.0
TSSB-17S	17	35	41.3	25.0	27.0	10.5	7.5	9.0
TSSB-20	20	40	43.8	36.0	29.5	12.0	7.0	10.5
TSSB-25	25	50	51.0	42.0	31.5	10.0	8.0	13.5
TSSB-28	28	54	57.0	45.0	31.5	9.5	7.5	14.5
TSSB-30	30	54	57.0	45.0	32.2	9.5	8.2	14.5

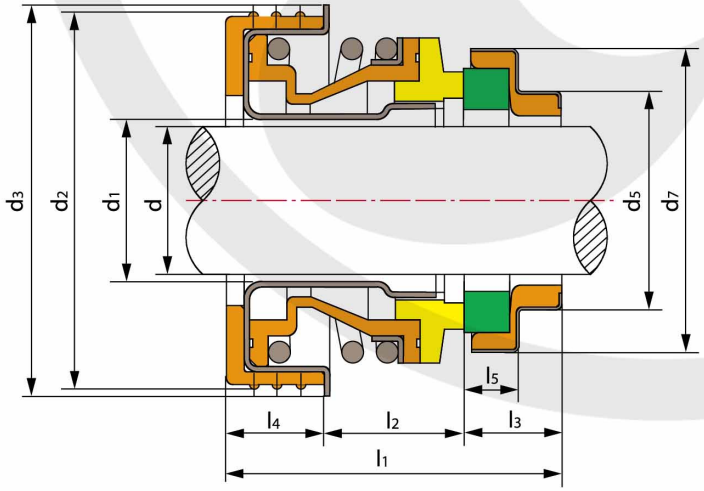
TS FTK

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4500r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Rotary Ring Holder (SUS304/SUS316/Q235-A)

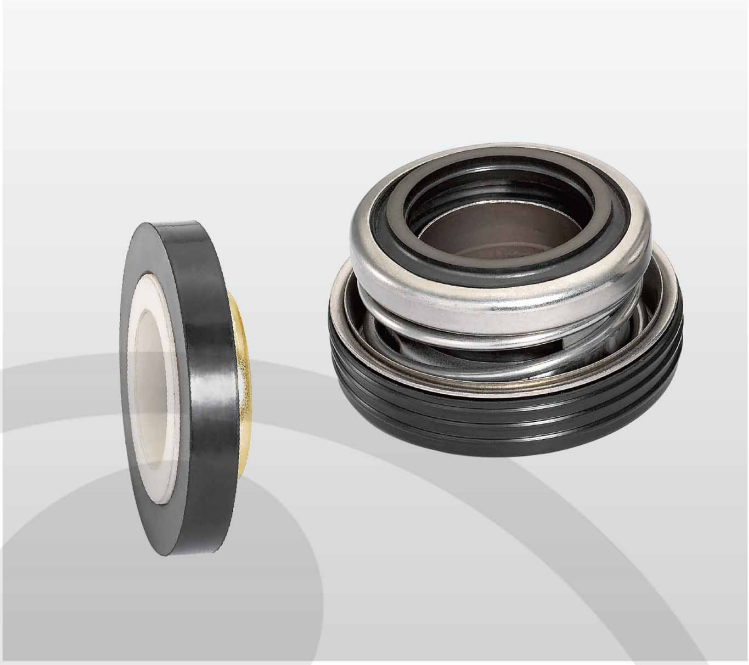


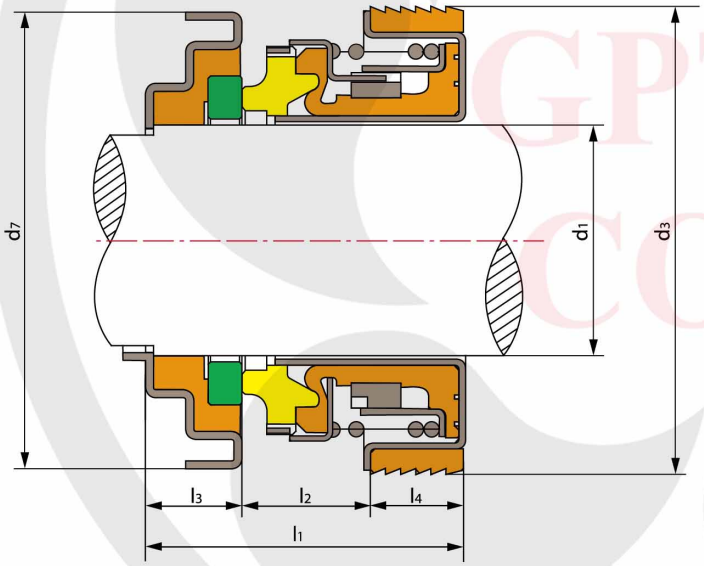
Model	d (mm)	d_1	d_2	d_3	d_5	d_7	l_1	l_2	l_3	l_4	l_5
TSFTK-16	16	18.2	41	41.5	23.0	33	26.5	7.5	10	9.0	5.0
TSFTK-20	20	21.2	45	43.8	27.0	38	29.0	7.0	10	12.0	5.0
TSFTK-25	25	26.4	52	51.0	30.5	47	34.5	7.0	13	14.5	8.5
TSFTK-40	40	41.2	75	75.0	50.5	65	48.6	12.0	21	15.6	13.0

TS FTK2

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4500r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze





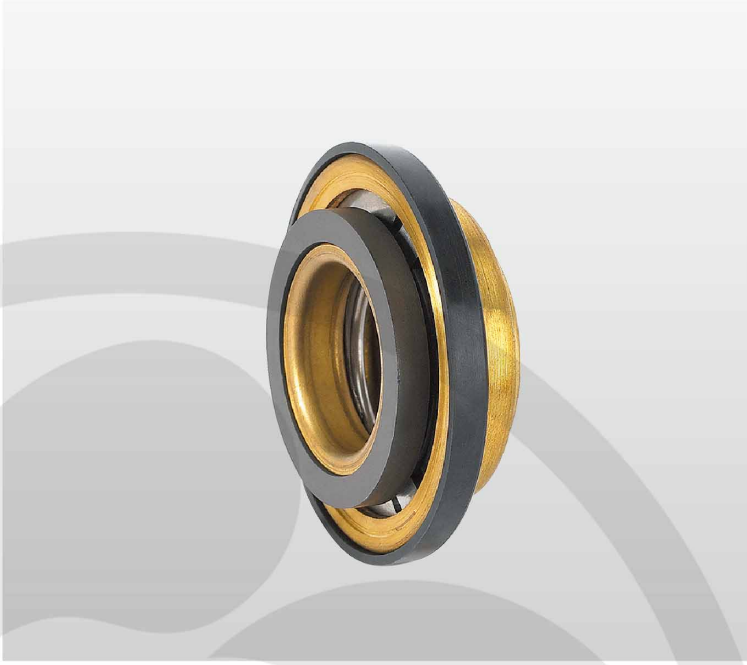
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Stationary Seat (SUS304/SUS316)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Rotary Ring Holder (SUS304/SUS316/Q235-A)

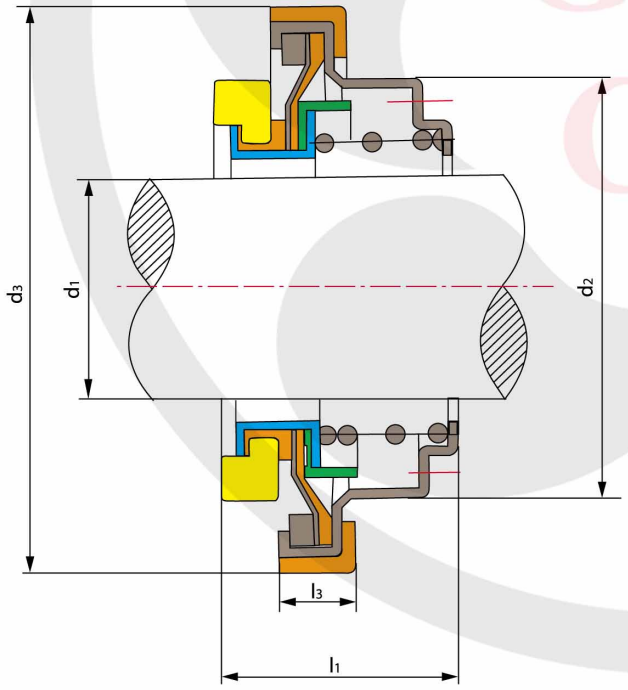
Model	d_1 (mm)	d_3	d_7	l_1	l_2	l_3	l_4
TSFTK2-16	16	41	41	27.5	9.9	10	7.6
TSFTK2-20	20	45	45	30.5	9.5	11	10.0
TSFTK2-25	25	52	52	36.5	12.6	13	10.9
TSFTK2-35	35	66	66	40.5	13.7	14	12.8

TS FTS

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤3500r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze





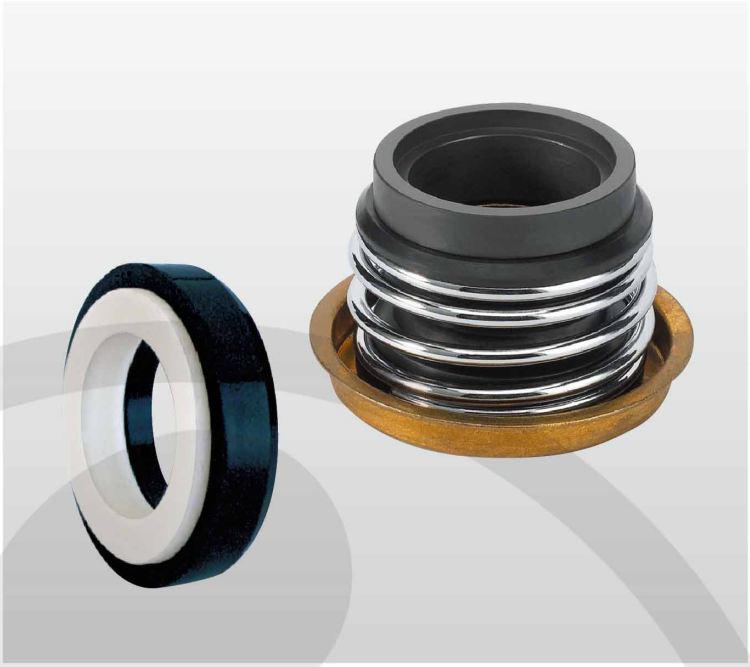
- Stationary Ring (Plastic Carbon/Carbon)
- Cup Gasket (NBR/EPDM/HNBR/VITON)
- Stationary Seat (Brass/SUS304)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Halted Ring (Q235-A)
- Elastic Gasket (SUS304/SUS316)
- Retainer (Brass/SUS304)

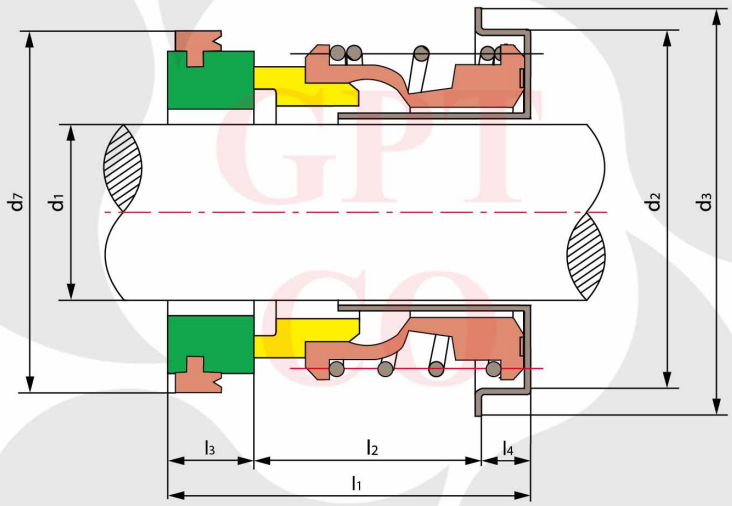
Model	d_1 (mm)	d_2	d_3	l_1	l_3
TSFTS-25	25	43.6	58	21	6

TS FL

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤3500r/min
Temperature: -30˚C ~+150˚C
Medium: Clean water, seawater, gas engine antifreeze





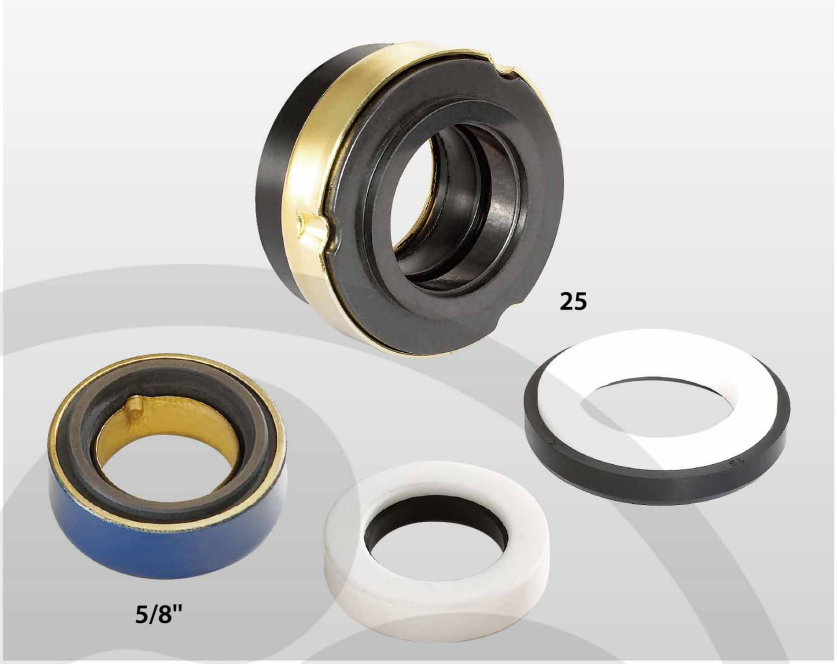
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Cup Gasket (NBR/EPDM/HNBR/VITON)
- Stationary Seat (Brass/SUS304/SUS316)
- Spring (65Mn/SUS304)
- Bellows (NBR/EPDM/HNBR/VITON)

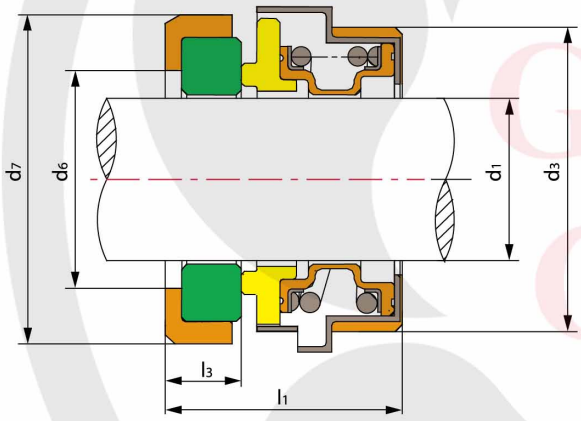
Model	d_1 (mm)	d_2	d_3	d_7	l_1	l_2	l_3	l_4
TSFL-25S	25	47	53	47	44.5	24.5	14	6
TSFL-25L	25	52	58	47	47.5	26.5	14	7

TS TB

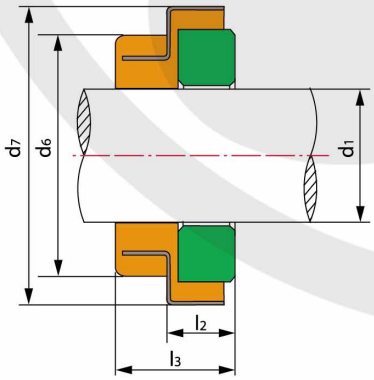
Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4500r/min
Temperature: -30˚C ~ +150˚C





TS TB-25



TS TB-25A

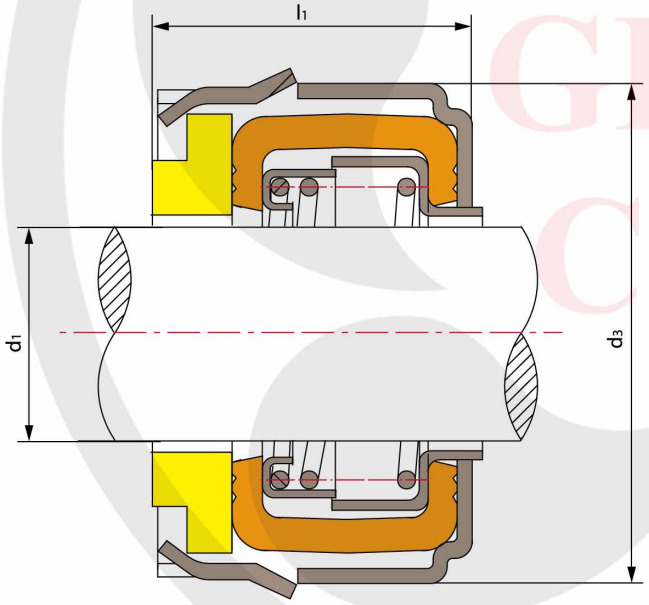
- Rotary Ring (Ceramic/SiC)
- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Cup Gasket (NBR/EPDM/HNBR/VITON)
- Bellows (NBR/EPDM/HNBR/VITON)
- Spring Holder (Brass)
- Spring (SUS304/SUS316)
- Retainer (Brass)

Model	d_1 (mm)	d_3	d_6	d_7	l_1	l_3	l_2
TSTB-25	25	44	32	44	30.0	8.5/10.0	\
TSTB-25A	25	44	35	41	31.5	10.0	5
Model	d_1 (inches)	d_3	d_6	d_7	l_1	l_3	l_2
TSTB-5/8"	15.875	28.7	\	25.5	15.5	5.7	\

TS T

Operating Limits

Pressure: ≤0.3MPa
Rotary Speed: ≤4500r/min
Temperature: -30˚C ~ +150˚C



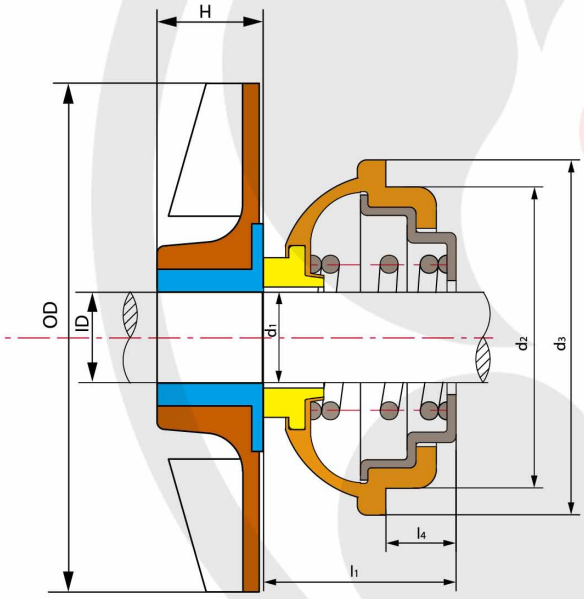
- Stationary Ring(Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring (65Mn/SUS304)
- Other Parts (Brass/SUS304/Q235-A)

Model	d_1 (mm)	d_3	l_1
TST-08	16	36.5	16.5
TST-08S	16	33.4	14.5
TST-04	20	43.0	18.0
TST-02S	25	51.0	25.5
TST-02M	25	52.0	23.0
TST-02L	25	52.5/52.0	27.0

TS K

Operating Limits

Pressure: ≤0.1MPa
Rotary Speed: ≤5000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze



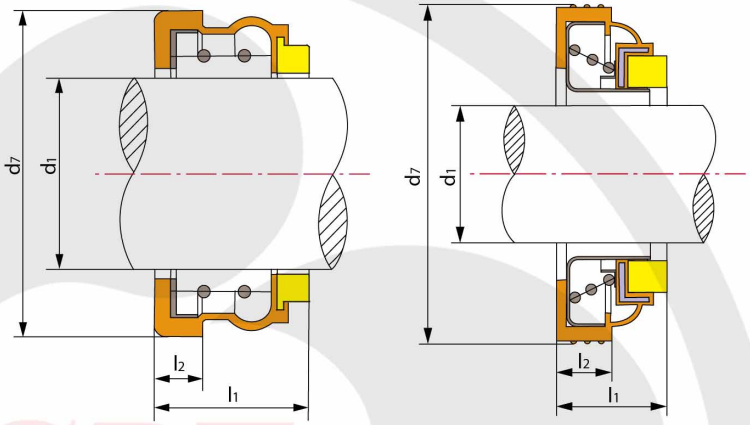
- Rotary Ring (Free-cutting Iron) * with PA66 impeller
- Stationary Ring(Plastic Carbon/Carbon/SiC)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring (SUS304/SUS316/65Mn)
- Other Parts (SUS304/SUS316/Q235-A)

Model	d_1 (mm)	d_2	d_3	l_1	l_4	equivalent
TSK-12	12	29	36.0	14.0	8.0	\
TSK-12A(with impeller)	12	30	37.0	13.5	6.0	\
TSK-14A	14	34	40.6	15.5	7.0	\
TSK-14B	14	30	36.0	16.5	7.0	K-14D
TSK-14C	14	35	40.6	15.5	7.0	\
TSK-16A	16	38	43.6	16.5	8.0	\
TSK-16B	16	37	42.5	16.5	8.0	K-16E
TSK-16C	16	36	42.0	16.5	8.0	K-16F
TSK-19	19	40	49.0	15.5	8.0	K-20
TSK-28	28	49	56.5	27.5	9.5	\

TS KA

Operating Limits

Pressure: ≤0.1MPa
Rotary Speed: ≤5000r/min
Temperature: -30˚C ~ +150˚C
Medium: Clean water, seawater, gas engine antifreeze

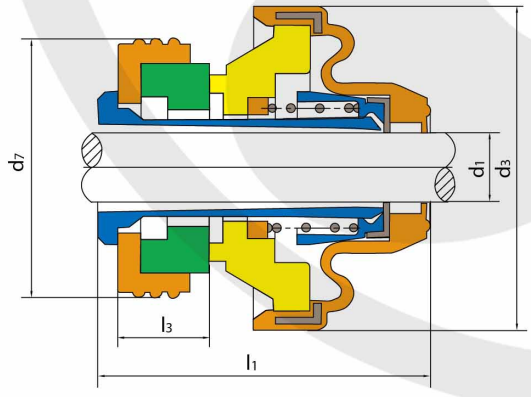


- Stationary Ring (Plastic Carbon/Carbon/SiC)
- Spring (SUS304/SUS316)
- Retainer (SUS304/SUS316)
- Bellows (NBR/EPDM/HNBR/VITON)
- Holder (SUS304/SUS316/Q235-A)

Model	d1 (mm)	d7	l1	l2
TSKA-12	12	28.5	13.8	8.0
TSKA-16	16	31.5	12.5	5.3
TSKA-20	20	42.0	18.5	9.5
TSKA-25	25	47.0	11.5	6.0
TSKA-50	50	80.0	15.0	9.0
TSKA-65	65	100.0	16.0	10.0

Model	d1 (mm)	d7	l1	l2
TSKA₂-19	19.0	38.0	18	6.8
TSKA₂-22	22.0	38.0	18	6.8
TSKA₂-30S	30.0	47.5	19	7.2
TSKA₂-30L	30.0	49.5	19	7.2
Model	d1 (inches)	d7	l1	l2
TSKA₂-1"	25.4	43.0	18	7.2

TSKA 6Z



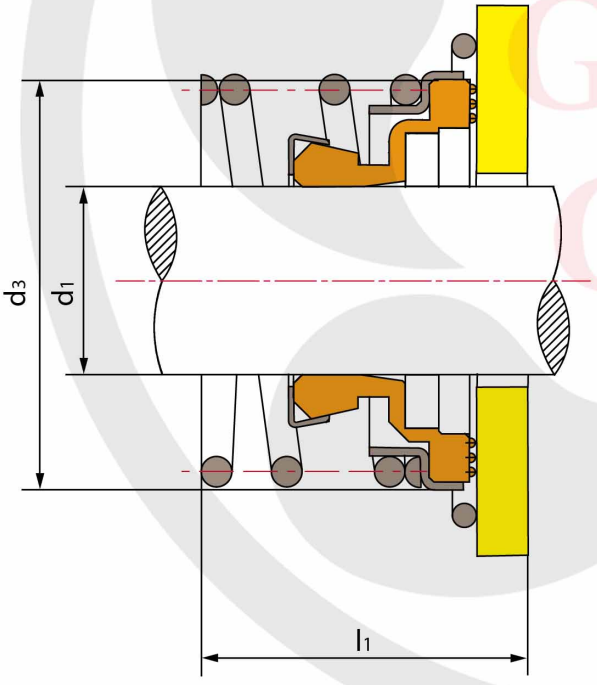
- Rotary Ring (Ceramic/SUS304)
- Stationary Ring(Plastic Carbon/Carbon)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring & Other Parts (SUS304/SUS316)
- Sleeve & Spring Holder (Plastic)

Model	d1 (mm)	d3	d7	l1	l3
TSKA-6Z	6	28.8	21.6	32	8.8

TS XP

Operating Limits

Pressure: ≤0.1MPa
Rotary Speed: ≤4500r/min
Temperature: -30˚C ~ +150˚C



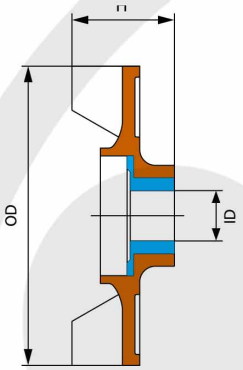
- Stationary Ring(Plastic Carbon/Carbon)
- Secondary Seal (NBR/EPDM/HNBR/VITON)
- Spring & Other Parts (SUS304/SUS316)

Model	d_1 (mm)	d_3	l_1
TSXP-15	15	42.8	27.5
TSXP-17	17	42.0	22.5
TSXP-24	24	41.2	29.0

Plastic impeller of water for auto pump

Technical Data:

1、Appearance: without burr, smooth
2、Static balance: ≤ 200mg cm
3、Operating temperature range: -55˚C -150˚C
4、Medium: water, anti-freezing agent
5、Working mileage： ≥100,000 kilometer



- Crust(PPS/PA66)
- Insert(Automatic Steel/Powder Metallurgr/ Seamless Steel Tube)

Characters:
1. Lighter weight: the weight is 50%-70% less than metal impeller
2.Good cavitation resistance
3.Perfect mechanical property: glass fiber reinfored
4.Good temperature resistance: select PPS high-temperature material
5.Minor noise: benefit from light weight and good rotational balance
6.High precise dimension

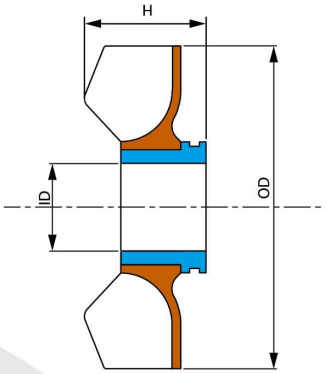
Application

Compared with cast-iron impeller, plastic impeller is better in performance and was widely used in the cooling systems of engine. For example:

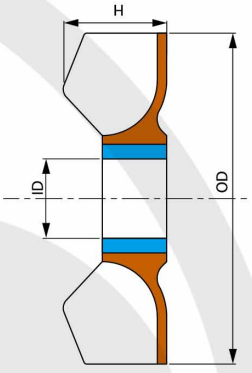
- Car
- Heavy truck
- Bus
- Steamship

Impellers for automobile

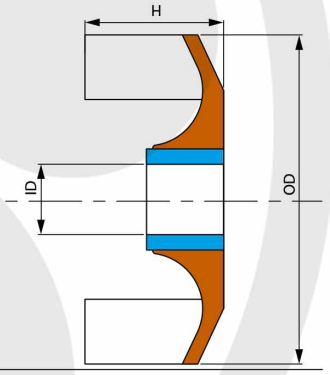

Product Code	OD	ID	H	Application
AT405(TS405)	59.2	16	22.9	Peugeot
AT407(TS407)	68.6	12	24.6	Peugeot



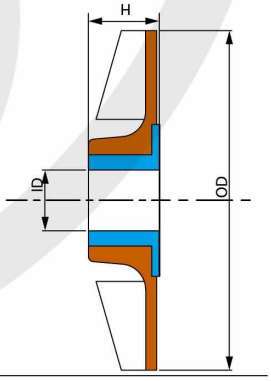

Product Code	OD	ID	H	Application
AT406(TS406)	59.2	16	19.9	Peugeot



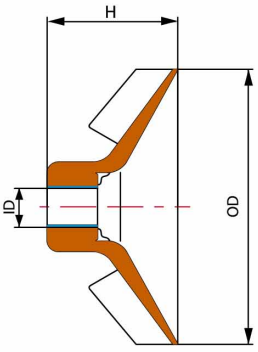

Product Code	OD	ID	H	Application
AT803(TS803)	54.2	12	22.5	




Product Code	OD	ID	H	Application
AW001	67	12.6	14	Iran pumps

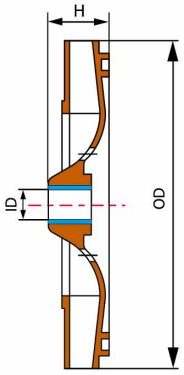



Product Code	OD	ID	H	Application
AW002(TS-VL-001)	119.7	16	57	Volvo



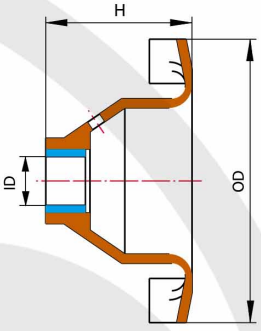
Impellers for automobile



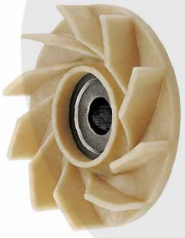
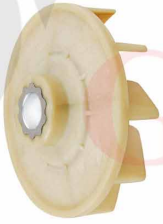
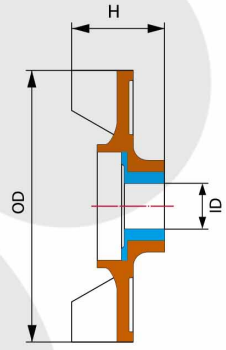


Product Code	OD	ID	H	Application
TSWD004(TS-W-003)	130	12	22.8	Volvo



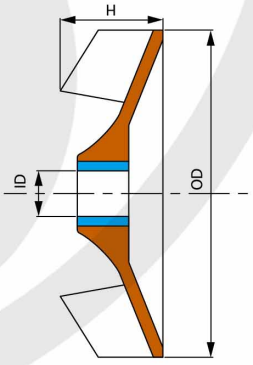


Product Code	OD	ID	H	Application
AW003(TS-BK-001)	98.5	16	48	Buick

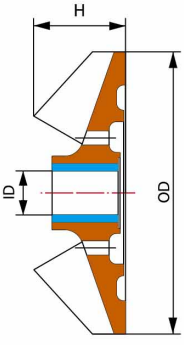
Product Code	OD	ID	H	Application
AW004(TS-BZ-001)	95	16	33.8	Benz





Product Code	OD	ID	H	Application
AW005(TS-HD-001)	85	12	28	Hyundai

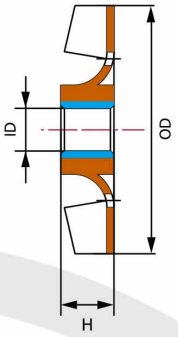


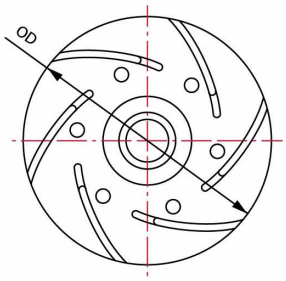


Product Code	OD	ID	H	Application
AW006(TS-CM-001)	77	12	17.5	Cummins

Impellers for automobile

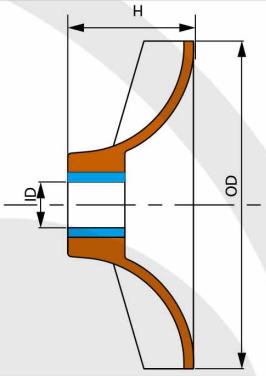






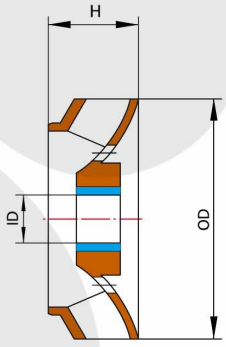
Product Code	OD	ID	H	Application
AW007(TS-FD-001)	70	12	15	Ford





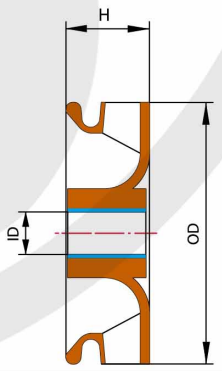
Product Code	OD	ID	H	Application
AW008(TS-W-028)	85.8	12	33	





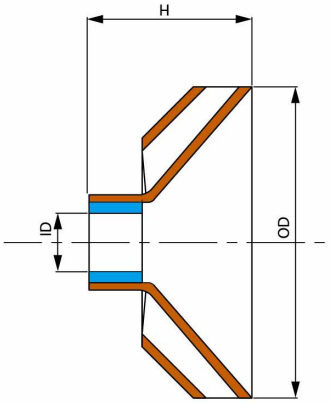
Product Code	OD	ID	H	Application
AWD001(TS-AD-001)	60	12	24	Audi





Product Code	OD	ID	H	Application
AWD002(TS-BW-001)	74	12	23.5	BMW





Product Code	OD	ID	H	Application
AWD003(MSB-16)	85	16	44.2	

PA66 Physical Property Index

Raw Material Description					
Specification Grade :	Grivory HTV Grade		Appearance Color :	Black, Nature	
Character:	33% High strength glass fiber				
Raw Material Technical Data					
Property		Test Condition	Test Method	Test Result	Unit
Key Property	Water absorption	Dipping 24hrs(23˚C)	ASTM D-570	0.7	%
	Water absorption	Saturation(23˚C)	ASTM D-570	5.4	%
	Specific gravity	-	ASTM D-792	1.38	-
Mechanical Property	Rockwell hardness M	DAM	ASTM D-785	M101	-
	Taber abrasion value	50%RH	-	14	cycles
	Elongation strength	23˚C,DAM	ASTM D-638	196.1	MPa
	Elongation strength	23˚C,50%RH	ASTM D-638	124.1	MPa
	Breakage extension percentage	23˚C,DAM	ASTM D-638	3	%
	Breakage extension percentage	23˚C,50%RH	ASTM D-638	4	%
	Squeeze clipping strength	23˚C,DAM	ASTM D-732	86	MPa
	Flexing modulus	23˚C,DAM	ASTM D-790	8963	-
	Flexing modulus	23˚C,50%RH	ASTM D-790	6205	MPa
	Flexing strength	23˚C,DAM	ASTM D-790	262	MPa
	Aizuo impact	23˚C,DAM	ASTM D-256	107	j/m
	Aizuo impact strength	23˚C,50%RH	ASTM D-256	133	j/m
Electric Property	Dielectric strength	DAM	ASTM D-149	530	volts/mil
	Dielectric strength	Method of fractional steps	ASTM D-149	440	volts/mil
	Dielectric constanct	DAM@103Hz	ASTM D-150	4.5	-
	Dielectric constanct	100%RH@103Hz	ASTM D-150	25.0	-
	Dielectric constanct	DAM@106Hz	ASTM D-150	3.7	-
	Dielectric constanct	100%RH@106Hz	ASTM D-150	10.7	-
	Dissipation factor	DAM@103Hz	ASTM D-150	0.02	-
	Dissipation factor	100%RH@106Hz	ASTM D-150	0.02	-
	Mass resistivity	DAM	ASTM D-257	1015	ohm-cm
	Mass resistivity	100%RH	ASTM D-257	109	ohm-cm
Thermal Property	Melting point	50%RH	ASTM D-789	255	˚C
	Linear thermal expansion coefficient	-	ASTM D-696	2.3×10^{-5}	m/m/˚C
	Melting point	DAM	ASTM D-789	255	˚C
	HDT	1.8MPa	ASTM D-648	249	-

PPS Physical Property Index

Raw Material Description					
Specification :	Grivory HTV Grade		Appearance Color:	Black, Nature	
Character :	High strength				
Raw Material Technical Data					
Properties		Test Condition	Test Method	Test Data	Unit
Key Property	Melt Viscosity	310˚C 、 1000/sec	ISO 11443	260	Pa .s
	Water Absorption	Immersion in water,24hr 23˚C	ISO 62	0.01	%
	Density	-	ISO 1183	1.66	g/cm^3
Physical Property	Fire Resistance	-	UL 94	V-0	-
Mechanical Property	Tensile Strength	-	ISO 527-1,2	210	Mpa
	Breaking Strain	-	ISO 527-1,2	1.9	%
	Flexural Modulus	-	ISO 178	14000	Mpa
	Flexural Strength	-	ISO 178	290	Mpa
	Free Beam Impact Strength(Notched)	-	ISO 179/leA	11	KJ/m^2
Electric Property	Dielectric Brekadown Strength	1KHZ	IEC 60250	0.001	-
	Dielectric Constant	1KHZ	IEC 60250	4.2	-
	Anti-electric Conduction Track	-	IEC 60112	150	V
	Electric Volume Resistivity	-	IEC 60093	4×10^{16}	Ω.cm
	Dielectric Dissipation Factor	3mmt	IEC 60243-1	16	kv/mm
	Dielectric Constant	1KHZ	IEC 60250	4.2	-
	Dielectric Brekadown Strength	1MHZ	IEC 60250	0.002	-
	Electrical Surface Resistivity	-	IEC 60093	3×10^{17}	Ω
Processability	Molding Shrinkage Ratio	80˚C × 2mmt	-	0.3	%
		80˚C × 2mmt	-	0.7	%
Hot Property	Linear Thermal Expansion Coefficient	Flow Direction	ISO 11359-2	2	$\times 10^{-5}$/˚C
	Load Derivative Temperature	1.8MPa	ISO 75-1	270	˚C
	Linear Thermal Expansion Coefficient	Vertical Direction	-	4	$\times 10^{-5}$/˚C

Mark and Glue

Ink Printing

Laser Printing

with Japan Silicon-glue

with Chinese Paint

Packing Type

1, Rectangular Covered Box

2, Square Box with Tray

3, Plastic Tray

4, Impeller Tray Packing

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