

RELY ON EXCELLENCE

## Mtex Dual seals

Mechanical seals | Mechanical seals for pumps | Standard cartridge seals



### Features

- Double seal
- Mtex-DN: API Plan 52 (53/54)
- Mtex9-DN: API Plan 53/54
- Cartridge
- Balanced
- Independent of direction of rotation
- Metal bellows
- Stationary Springs
- Pumping device independent of direction of rotation

### Advantages

- Ideal seal for standardizations
- Universal applicable for packings conversions, retrofits or OEM
- No dimensional modification of the seal chamber (centrifugal pumps) necessary, small radial installation height
- Trouble-free running due to bellows unit with vibration dampers (essential in case of dry-running)
- No damage of the shaft by dynamically loaded O-Ring
- Self cleaning effect of the bellows
- Straightforward and easy installation due to pre-assembled unit

### Operating range

Shaft diameter:  
 $d_1 = 25 \dots 80 \text{ mm (1" ... 3.15")}$   
 Temperature:  
 $t^* = -40 \text{ °C ... } +220 \text{ °C (-40 °F ... } +428 \text{ °F)}$   
 Pressure:  $p_1 = 25 \text{ bar (232 PSI)}$   
 Sliding velocity:  $v_g = 20 \text{ m/s (66 ft/s)}$

Barrier fluid circulation system:  
 $p_{3\text{max}} = 16 \text{ bar (232 PSI)}$   
 $\Delta p (p_3 - p_1) \text{ ideal} = 2 \dots 3 \text{ bar (29 ... 44 PSI)}$   
 $\Delta p (p_3 - p_1) \text{ max.}$   
 $= 10 \text{ bar (145 PSI) at } <120 \text{ °C (<248 °F)}$   
 $= 5 \text{ bar (73 PSI) at } \leq 220 \text{ °C (\leq 232 °F)}$

API Plan 52 (53/54)

Pump startup:  
 $\Delta p (p_3 - p_1) \text{ max. } 16 \text{ bar (232 PSI) allowed}$

\* Operating limits of O-Rings to be observed

### Materials

Seal face:  
 Carbon graphite (A), Silicon carbide (Q1)  
 Seat:  
 Silicon carbide (Q1), Tungsten carbide (U2)  
 Secondary seals:  
 FPM (V), EPDM (E), FFKM (K)  
 Bellows: Inconel® 718 (M6)  
 Springs: Hastelloy® C-4 (M)  
 Metal parts: CrNiMo steel (G), Duplex (G1)

### Recommended applications

- Process industry
- Chemical industry
- Hot media
- Cold media
- Highly viscous media
- Pumps
- Special rotating equipment

### Recommended piping plans

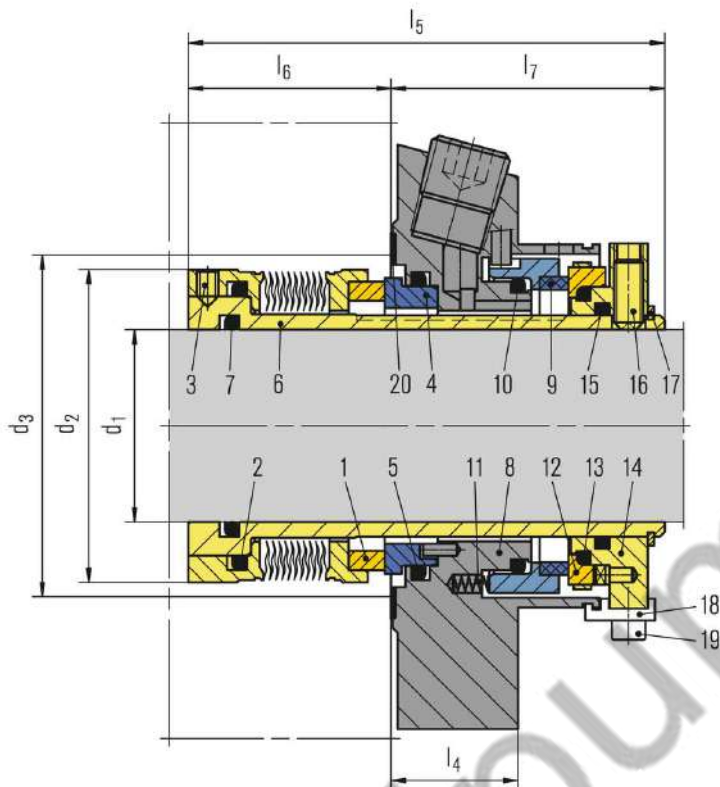
EagleBurgmann TS 2000 Thermosiphon system

Product link:  
[EagleBurgmann TS2000](#)

Detailed information on these API 682 4th edition plans:

- [API Plan 52](#)
- [API Plan 53A](#)
- [API Plan 53B](#)
- [API Plan 53C](#)
- [API Plan 54](#)

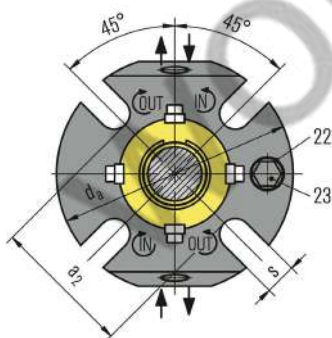
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Item	Description
1	Bellows unit
2	O-Ring
3	Set screw
4	Seat
5	O-Ring
6	Shaft sleeve
7	O-Ring
8	Cover
9	Seal face
10	O-Ring
11	Spring
12	Seat
13	O-Ring
14	Drive collar
15	O-Ring
16	Set screw
17	Retaining ring
18	Assembly fixture
19	Hex socket head screw
20, 22	Gasket
23	Screw plug

## Installation, details, options

Seal cover



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### Product variants

#### Mtex9-DN

Dimensions, items and descriptions as for Mtex-DN, but with optimized seal face geometry for pressurized operation according to API Plan 53/54. A barrier fluid system (e.g. EagleBurgmann TS2000) is necessary.

Pressure:  $p_1 = 10 \text{ bar (145 PSI)}$

Sliding velocity:  $v_g = 20 \text{ m/s (66 ft/s)}$

Barrier fluid circulation system:

$p_{3\text{max}} = 16 \text{ bar (232 PSI)}$

$\Delta p (p_3 - p_1)_{\text{ideal}} = 2 \dots 3 \text{ bar (29 \dots 44 PSI)}$

$\Delta p (p_3 - p_1)_{\text{max}} = 16 \text{ bar (232 PSI)}$

API Plan 53/54

Pump startup:

$\Delta p (p_3 - p_1)_{\text{max}} = 16 \text{ bar (232 PSI)}$  allowed

### Dimensions

$d_1$	$d_2$	$d_3 \text{ min.}$	$d_3 \text{ max.}$	$l_4$	$l_5$	$l_6$	$l_7$	$d_a$	$a_2$	$s$
25	45.0	47.0	51.0	25.4	87.0	33.6	53.4	105.0	62.0	13.2
30	49.4	52.0	56.0	25.4	86.5	33.1	53.4	105.0	67.0	13.2
32	52.3	54.5	57.0	25.4	86.5	33.1	53.4	108.0	70.0	13.2
33	52.3	54.5	57.0	25.4	86.5	33.1	53.4	108.0	70.0	13.2
35	54.8	58.0	61.5	25.4	86.5	33.1	53.4	113.0	72.0	13.2
38	57.5	60.0	66.0	25.4	86.5	33.1	53.4	123.0	75.0	14.0
40	58.8	62.0	68.0	25.4	86.3	32.9	53.4	123.0	77.0	14.2
43	61.9	64.5	70.5	25.4	86.5	33.1	53.4	133.0	80.0	14.2
45	65.0	68.5	73.0	25.4	86.5	33.1	53.4	138.0	82.0	14.2
48	68.4	71.0	75.0	25.4	86.8	33.4	53.4	138.0	85.0	14.2
50	70.0	73.0	78.0	25.4	87.2	33.8	53.4	148.0	87.0	14.2
53	71.9	75.0	87.0	25.4	87.4	34.0	53.4	148.0	97.0	18.0
55	74.6	77.0	83.0	25.4	87.0	33.6	53.4	148.0	92.0	18.0
60	83.9	87.0	91.0	25.4	88.2	34.8	53.4	157.0	102.0	18.0
65	87.5	90.0	98.5	25.4	88.1	34.7	53.4	163.0	109.3	18.0
70	93.0	98.0	108.0	25.4	89.6	36.2	53.4	178.0	118.3	18.0
75	96.8	101.6	118.0	28.0	107.4	43.5	63.9	190.0	129.0	18.0
80	104.7	108.0	124.0	28.0	106.8	42.9	63.9	195.0	135.0	18.0

Dimensions in millimeter