

MECHANICAL SEAL
TSMA



CAT020 ENG REV 09.05

Mechanical seal featuring welded metal bellows which allows to have both secondary seals of static type. The flexibility of the bellows gives the capability to tolerate misalignments and vibrations. Secondary seals are "O" Ring type.

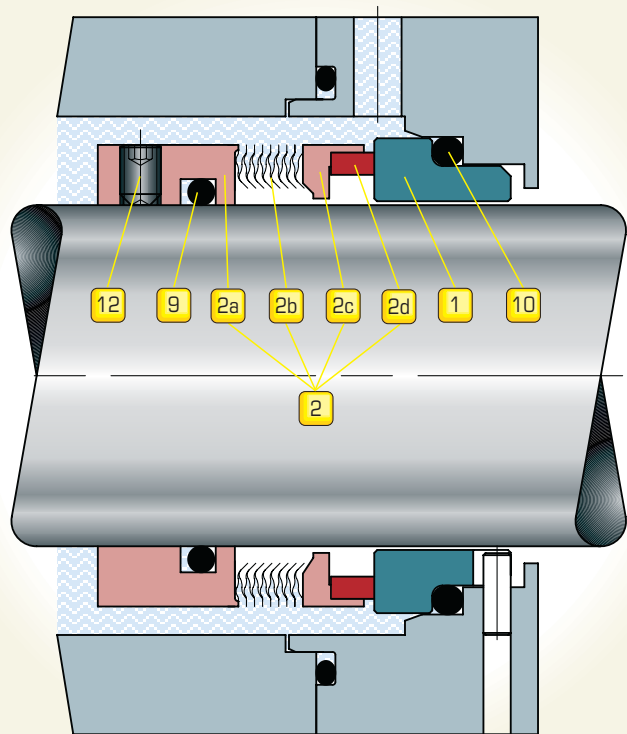
The TSMA is particularly suitable for medium-high temperature service, with products crystallizing in atmosphere and with highly corrosive products when featuring bellows in Hastelloy.

TSMA is a single balanced seal, stationary seat type A, bi-directional, designed according standard UNI EN 12756 (ex DIN 24960)

In addition to the standard type, the following series are available:
- Shaft dimensions in inches
Customized cartridge versions, complete of sleeve and flange, designed according API 682 and API 610 standards, are available.



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ELEMENTS:

- 1** STATIONARY SEAT
- 2** BELLOWS COMPLETE
- 9** ROTARY FACE "O" RING
- 10** STATIONARY SEAT "O" RING
- 12** SETSCREW

OPERATING LIMITS:

DIAMETER: (mm)	SPEED: (m/sec)	PRESSURE: (bar g)	TEMPERATURE: (°C)
100	20	22	+300
↑	↑	↑	↑
20	0	0	-70

CHARACTERISTICS:



SINGLE



BI-DIRECTIONAL



BALANCED



UNI EN 12756



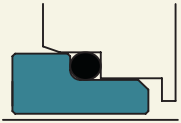
RESISTANT TO ACIDS & BASES



CRYSTALLIZING PRODUCTS

STATIONARY SEAT: 1

SOLID TYPE A



Cr-Mo Steel: **Y1**
Silicon Carbide: **U31**

STATIONARY SEAT "O" RING: 10

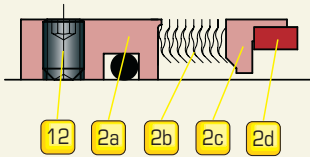
- Nitrile Rubber: **G**
- Ethylene Propylene: **D**
- Fluoroelastomer: **V**
- Perfluoroelastomer: **G711**
- PTFE: **T**

ROTARY FACE "O" RING: 9

- Nitrile Rubber: **G**
- Ethylene Propylene: **D**
- Fluoroelastomer: **V**
- Perfluoroelastomer: **G711**

- Fluoroelastomer + FEP: **V2**

ROTARY PART:



INSERT

- Insert (Pos. 2d) in Graphite Resins impr.: **Z32**
- Insert (Pos. 2d) in Silicon Carbide: **U32**
- Insert (Pos. 2d) in Tungsten Carbide: **K22**

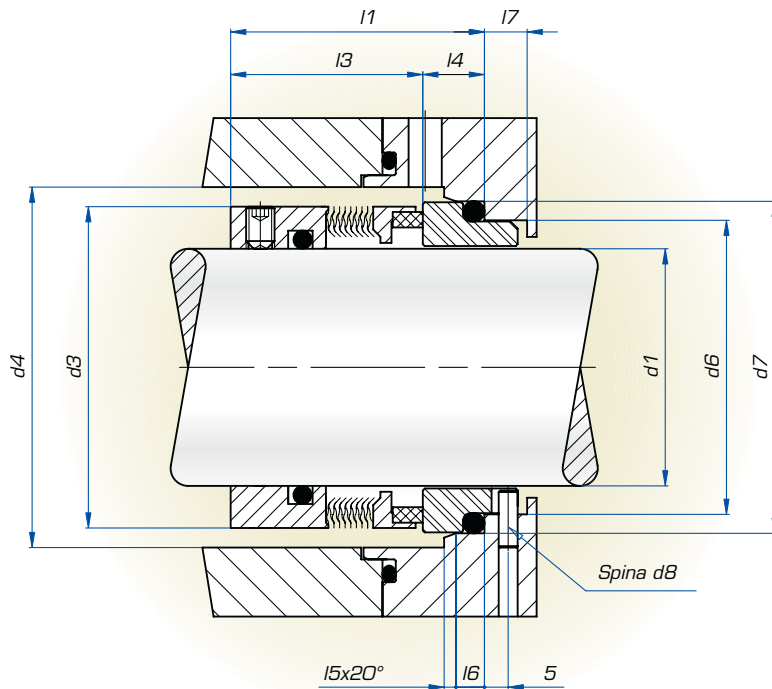
BELLOWS AND OTHER PARTS

- Bellows (Pos. 2b) AM350 +
- Intert Support (Pos. 2c) AISI 316 +
- Other Parts (Pos. 2a/12) AISI 316: **xG**

- Bellows (Pos. 2b) Hastelloy C +
- Intert Support (Pos. 2c) Hastelloy C +
- Other Parts (Pos. 2a/12) Hastelloy C: **xH**

- Bellows (Pos. 2b) Hastelloy C +
- Insert Support (Pos. 2c) AISI 316 +
- Other Parts (Pos. 2a/12) AISI 316: **xI**

- Bellows (Pos. 2b) AM350 +
- Insert Support (Pos. 2c) Carpenter 42 +
- Other Parts (Pos. 2a/12) AISI 316: **xK**



Diam. Tenuta	d1	d3 ⁽⁴⁾	d4	d6	d7	d8	l1	l3	l4	l5	l6	l7
	h6		min	H11	H8		± 0,5	± 0,5				
20	20	37*	39*	29	35	3	37,5	27,5	10	2	5	9
22	22	37*	39*	31	37	3	37,5	27,5	10	2	5	9
24	24	37	40	33	39	3	40	30	10	2	5	9
25	25	37	41	34	40	3	40	30	10	2	5	9
28	28	42,8*	44	37	43	3	42,5	32,5	10	2	5	9
30	30	43	46	39	45	3	42,5	32,5	10	2	5	9
32	32	43	48	42	48	3	42,5	32,5	10	2	5	9
33	33	49,2*	51*	42	48	3	42,5	32,5	10	2	5	9
35	35	49,2*	51	44	50	3	42,5	32,5	10	2	5	9
38	38	49,4	58	49	56	4	45	34	11	2	6	9
40	40	55,5	60	51	58	4	45	34	11	2	6	9
43	43	58,7	63	54	61	4	45	34	11	2	6	9
45	45	58,7	65	56	63	4	45	34	11	2	6	9
48	48	61,9	68	59	66	4	45	34	11	2	6	9
50	50	65,1	70	62	70	4	47,5	34,5	13	2,5	6	9
53	53	68,2	73	65	73	4	47,5	34,5	13	2,5	6	9
55	55	71,4*	75	67	75	4	47,5	34,5	13	2,5	6	9
58	58	74,6	83	70	78	4	52,5	39,5	13	2,5	6	9
60	60	74,6	85	72	80	4	52,5	39,5	13	2,5	6	9
63	63	80,9	88	75	83	4	52,5	39,5	13	2,5	6	9
65	65	84,1	90	77	85	4	52,5	39,5	13	2,5	6	9
68	68	87,3	93	81	90	4	52,5	37,5	15	2,5	7	9
70	70	87,3	95	83	92	4	60	45	15	2,5	7	9
75	75	92,1	104	88	97	4	60	45	15	2,5	7	9
80	80	98,4	109	95	105	4	60	44,5	15,5	3	7	9
85	85	104,8	114	100	110	4	60	44,5	15,5	3	7	9
90	90	108	119	105	115	4	65	49,5	15,5	3	7	9
95	95	114,3	124	110	120	4	65	49,5	15,5	3	7	9
100	100	120,7	129	115	125	4	65	49,5	15,5	3	7	9

Dimensions subject to modifications without notice.

Example:

To order the seals shown on this page for shaft 70 mm and material shown in the table below :

2 (Insert)	1	9	10	2 12 (Bellows and other parts)
U32	U31	V	V	xH

The code will be: T SMA070 - U32U31VxH⁽³⁾

NOTES:

- 1) The material shown on this page is only part of the available range, for other products stock items, please call our Technical Sales Office.
- 2) The material should be chosen according to the operating conditions. All queries should be sent to our Technical Sales Office
- 3) When the material of the seal on the stationary seat "O" ring is the same as the seal on the rotary face "O" ring the product code is not repeated.
- 4) Dimension marked with asterisk are greater than dimensions specified on standard UNI EN 12756.