MSA waterless packaged mechanical seal

West Lake Bay

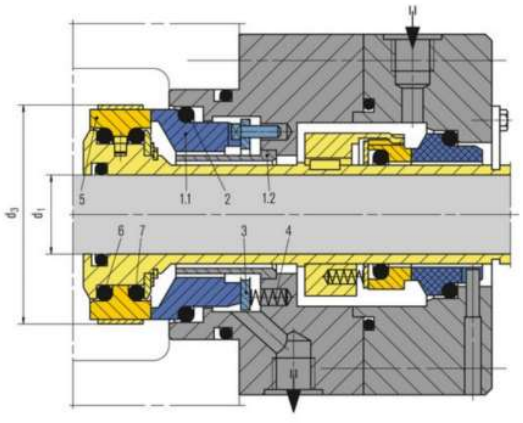
Product overview

The structural style of the MSA waterless packaged mechanical seal is similar to that of external cooling packaged mechanical seal, with cooling rinse water and skeleton oil seal cancelled; Plenty of water resources and operating costs are saved. The structure characteristic of the mechanical seal is lubricating the sealing face completely by conveying sealing medium (size), and the concentration of solid particles in the medium determines the heat dissipation and wear of the sealing surface. To reduce the axial load, in addition to ensuring the necessary spring preloading, the balanced mechanical seal structure is used to reduce fluid action area, namely reducing the axial load which is the equilibrium ratio B (refer to ratio of fluid action area AS to sealing area Af) as the pressure of the sealing system increases. Therefore, the waterless packaged mechanical seal is of balanced structure, the end specific pressure and PV value of the sealing surface are reduced, and the sealing surface shall be close to the impeller as far as possible to avoid medium deposition around the sealing surface, resulting in mechanical seal failure; The seal chamber near the sealing surface is made into horn mouth form to facilitate medium flow and heat dissipation. The structure characteristics of the mechanical seal are as follows: Saving precious water resources. Due to very poor service environment of the mechanical seal, the special design of low spring specific pressure and sealing surface structure is used for the waterless packaged mechanical seal to meet the operating requirement of the mechanical seal. As for the seal chamber of the waterless packaged mechanical seal structure machinery seal, the evacuation and idle running without sealing medium are forbidden when the pump is running.

Product features

- Balanced structure;
- Cooling rinse water and skeleton oil seal are cancelled; Plenty of water resources and operating costs are saved;
- The balanced mechanical seal structure is used to reduce the fluid action area;
- The seal chamber near the sealing surface is made into horn mouth form to facilitate medium flow and heat dissipation;
- Sliding type optional position locking, easy installation and simple use and maintenance;
- Balanced type, arbitrary direction of turning;
- Forbidding the spring protection structure and strong anti-clogging ability;
- Small spring design, compact structure, uniform stress and wide serviceable range;
- No rinse water is needed, greatly saving water resources, the rinse water entering the process to form secondary evaporation is reduced, no circulating water discharge occurs, and the zero leakage control and environmental protection requirements are met;
- Multiple spring and single end face. The high-quality hard alloy and silicon carbide are used for sealing surface. SUS304, SUS316L, 2205 and 2507 can be chosen as the matrix material.

Product application



The spring outside avoids the contact between it and medium, the compensation ring is effectively protected, the spring can carry a large load without rotation, the working range of cavitation and evacuation spring is large which can withstand a great axial movement with simple and easy installation and the mechanical seal can be installed without seal chamber dismantled. It applies to the low-viscosity working conditions containing particles without cooling or cooling required. It's used for water and wastewater treatment technology sewage pump, pulp and paper-making industry, oil sand extraction, oil and gas industry flue gas desulfurization suspension pump and mining industry factory dirty, abrasive and solid-containing media.

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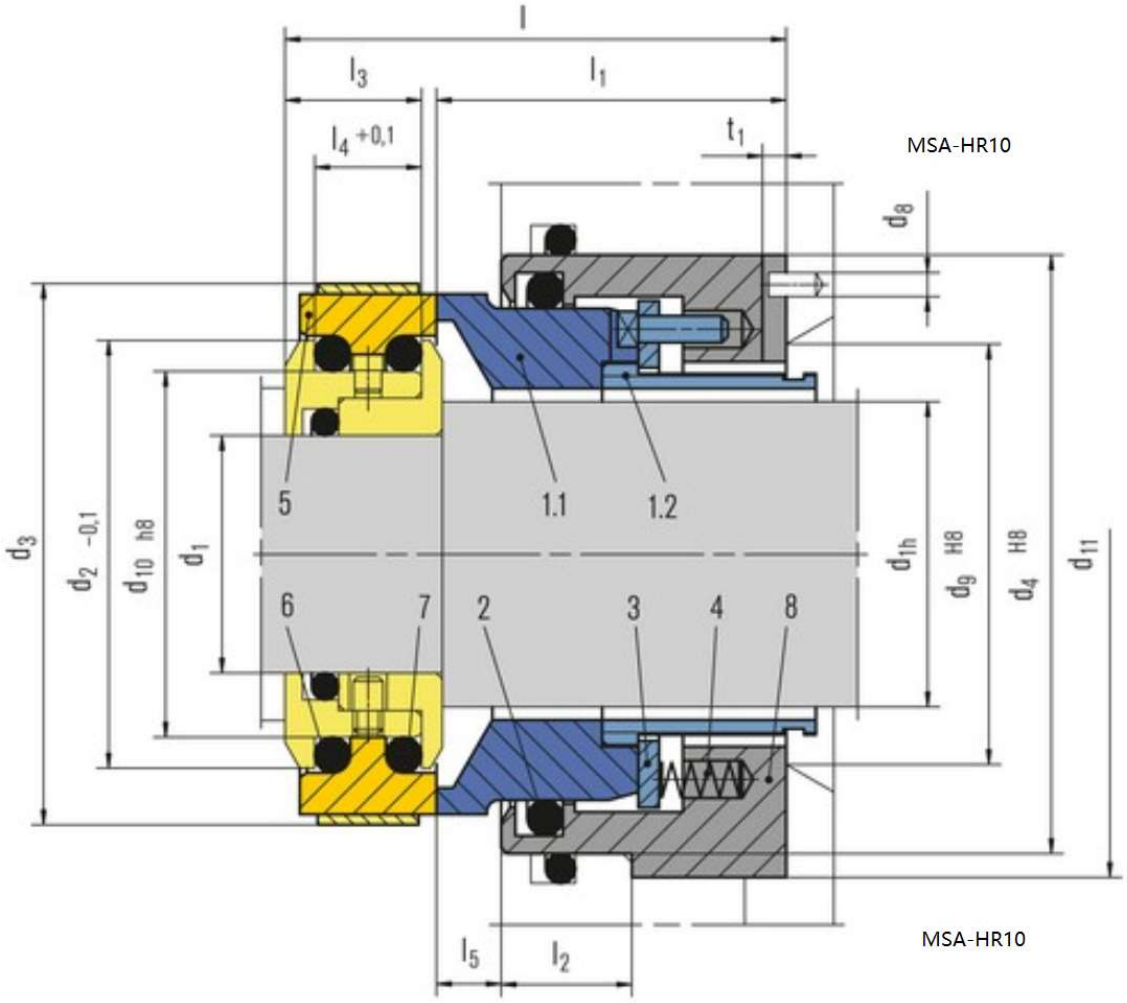

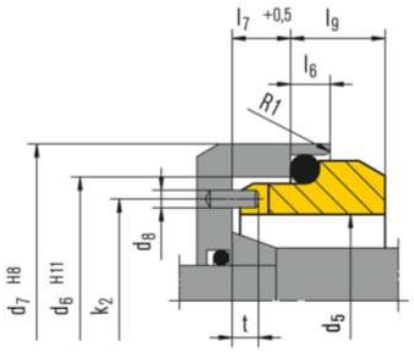

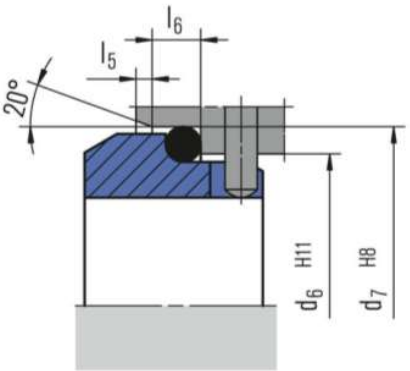

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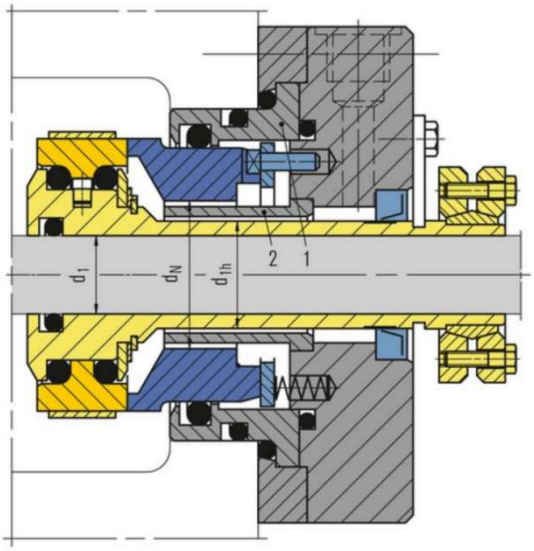

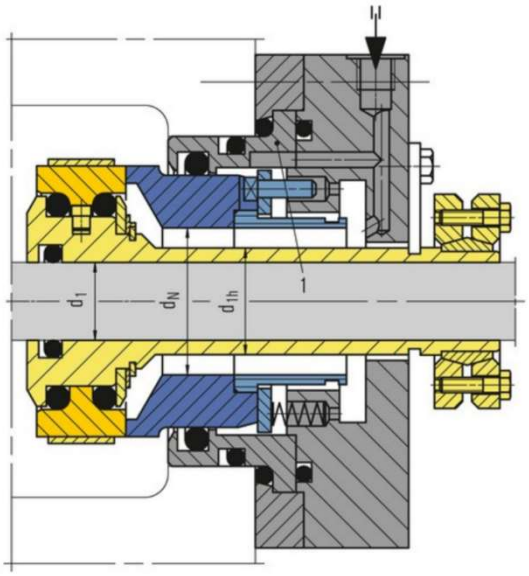

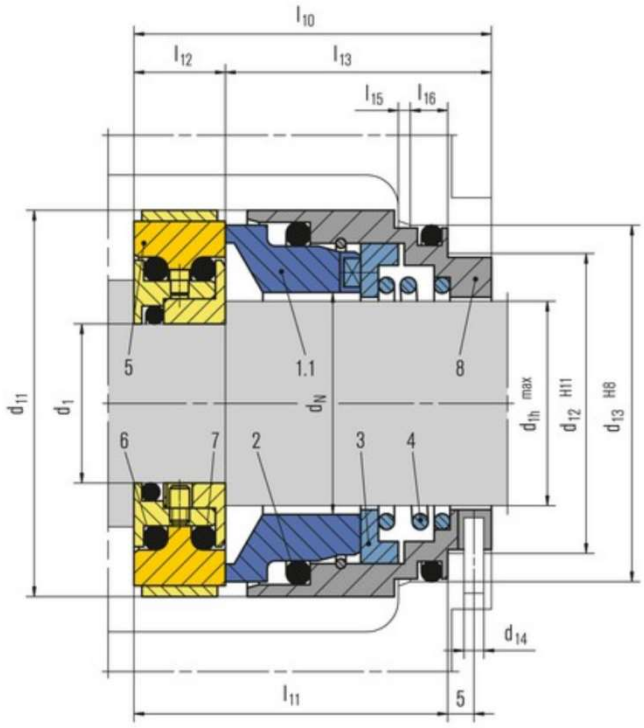

Item	Description
1.1	Sealing surface
1.2	Sleeve
2	O-ring
3	Thrust ring
4	Spring
5	G11)
6	O-ring
7	O-ring
8	Housing
Installation direction	MSA-HR10: from the impeller side
	MSA-HR11: from the bearing side

Diameter of axle: dN = 36 ...270mm (1.4“ ...10.63")

Pressure: p1* = 16 bars (230 pounds/square inch)

Temperature: t = -20 °C ... +160 °C (-4 °F ... +320 °F)

Sliding velocity: vg = 10m/s (33 feet/second)

* For operation under vacuum, the quenching is required on the atmospheric side.

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Product specification

d1	d1h	dN	d2	d3	d5	d6	d7	d8	d9	d10	d11 +0.2 min	l	l1	l2	l3	l4	l5	l6	l7	l9	k2	t	t1
20	28	36	47	65	46	56.0	63.0	4	40	38	75	75	53	20	19.5	17	10.5	6	9	8.0	51.0	4.5	3
25	33	41	52	70	51	62.0	70.0	4	45	43	80	75	53	20	19.5	17	10.5	6	9	9.5	56.5	4.5	3
28	38	46	57	75	56	67.0	75.0	4	50	48	85	75	53	20	19.5	17	10.5	6	9	9.5	61.5	4.5	3
33	43	51	62	80	61	72.0	80.0	4	55	53	90	75	53	20	19.5	17	10.5	6	9	10.5	66.5	4.5	3
38	48	56	67	85	66	77.0	85.0	4	60	58	95	75	53	20	19.5	17	10.5	6	9	10.5	71.5	4.5	3
43	53	61	72	90	69	81.0	90.0	4	65	63	100	75	53	20	19.5	17	10.5	7	9	11.0	75.0	4.5	3
48	58	66	77	95	76	88.0	97.0	4	70	68	105	75	53	20	19.5	17	10.5	7	9	11.5	82.0	4.5	3
53	63	71	82	101	81	95.0	105.0	4	75	73	110	75	53	20	19.5	17	10.5	7	9	11.5	88.0	4.5	3
55	65	75	87	106	86	100.0	110.0	4	79	78	115	75	53	20	19.5	17	10.5	7	9	11.5	93.0	4.5	3
60	70	80	92	111	91	105.0	115.0	4	84	83	120	75	53	20	19.5	17	10.5	7	9	13.0	98.0	4.5	3
65	75	85	97	116	96	110.0	120.0	4	89	88	125	75	53	20	19.5	17	10.5	7	9	13.0	103.0	4.5	3
70	80	90	102	121	101	115.0	125.0	4	94	93	130	75	53	20	19.5	17	10.5	7	9	13.0	108.0	4.5	3
75	85	95	107	126	107	122.2	134.3	5	99	98	135	75	53	20	19.5	17	10.5	10	12	20.0	114.5	7.0	3
80	90	100	112	131	107	122.2	134.3	5	104	103	140	75	53	20	19.5	17	10.5	10	12	20.0	114.5	7.0	4
90	100	110	126	147	117	136.2	148.3	5	116	117	163	75	73	30	19.5	17	10.5	10	12	20.0	126.5	7.0	4
100	110	120	136	157	132	146.2	158.3	5	126	127	173	98	73	30	22.0	19	16.0	10	12	20.0	139.0	7.0	4
110	120	130	145	167	142	156.2	168.3	5	136	136	183	98	73	30	22.0	19	16.0	10	12	20.0	149.0	7.0	4
120	130	140	154	177	152	168.2	180.3	5	146	145	193	98	73	30	22.0	19	16.0	10	12	22.0	160.0	7.0	4
130	140	150	164	188	162	178.2	190.3	5	156	155	203	98	73	30	22.0	19	16.0	10	12	24.0	170.0	7.0	4
140	150	160	175	189	172	188.2	200.3	5	166	166	213	98	73	30	22.0	19	16.0	12	12	24.0	180.0	7.0	4
160	170	180	194	220	187	212.5	224.3	5	186	185	238	98	73	30	22.0	19	16.0	12	12	28.0	199.5	7.0	4
180	190	200	214	240	---	---	---	--	206	205	265	98	73	30	22.0	19	16.0	--	--	---	---	---	4
190	200	210	232	255	---	---	---	--	218	220	280	115	83	30	28.4	25	19.0	--	--	---	----	--	5
200	210	220	242	265	---	---	---	--	228	230	290	115	83	40	28.4	25	19.0	--	--	----	----	--	5
210	220	230	252	275	---	---	---	--	238	240	300	115	83	40	28.4	25	19.0	--	--	---	----	---	5
220	230	240	262	285	---	---	---	--	248	250	310	115	83	40	28.4	25	19.0	--	--	--	--	--	5
230	240	250	272	295	---	---	---	--	258	260	320	115	83	40	28.4	25	19.0	--	--	---	-----	--	5
250	260	270	292	315	---	---	---	--	278	280	340	115	83	40	28.4	25	19.0	--	--	----	----	--	5

dN	d1h	d1	d11	d12	d13	d14	l10	l11	l12	l13	l15	l16
35	33	20	56	42	48	3	57.7	49.2	15.0	42.7	2.0	5
43	39	27	67	54	61	4	57.7	49.2	15.0	42.7	2.0	6
54	50	35	78	65	73	4	59.8	52.1	15.5	44.3	2.5	6
66	60	47	91	77	85	4	66.0	58.0	16.5	49.5	2.5	6
77	72	55	103	88	97	4	74.5	66.0	17.5	57.0	2.5	7
100	90	70	125	110	120	4	82.0	73.0	21.0	61.0	3.0	7

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