

491™ Rotary Seal

SEAL INSTALLATION

Preparation

Remove the old sealing device such as packing, packing gland, or mechanical seal and prepare the equipment for installation

A. Shaft or Sleeve

1. Remove all sharp corners, burrs, and scratches on the shaft, especially in areas where the O-ring will slide, and polish if necessary to achieve a 0,8 micron AA finish. It should feel smooth when you run your fingernail along the shaft in the axial direction.
2. **Make sure the shaft or sleeve diameter is within 0,05 mm of nominal.**
Example: a 50 mm shaft should not be larger than 50,05 mm or smaller than 49,95 mm.
3. Use a dial indicator to measure the shaft runout in the area where the seal will be installed. **Runout should not exceed 0,001 mm TIR per millimeter of shaft diameter.**
4. If practical, place the dial indicator tip on the end of the shaft sleeve or on a step in the shaft to measure end play. Alternately push and pull the shaft in the axial direction. If the bearings are in good condition, **end play should not exceed 0,13 TIR.**

B. Stuffing box or Seal Chamber

1. The stuffing box face must be flat and smooth enough to seal the stationary/gland. Typically 3,2 microns AA maximum for gaskets and 0,8 micron AA for O-rings. Steps between halves of split case pumps should be machined flat. CHESTERTON Metal Repair System can be used to restore a damaged or corroded box face.
2. If practical, attach the dial indicator base to the shaft and slowly rotate the shaft and indicator to measure the runout of the stuffing box face. Misalignment of the stuffing box relative to the shaft should not exceed that specified by the stationary manufacturer. Typically, a maximum of 0,003 mm TIR per millimeter of shaft diameter is recommended.
3. Disassemble the pump according to the manufacturer's instructions.

Installation

1. Determine the seal installation length using the rotary operating length and stationary length given on the opposite side of these installation instructions. The installation length will vary depending on the type of equipment being sealed.

2. Scribe a mark equal to the installation dimension (determined from the operating length and distance from stationary face to stuffing box face) away from the appropriate reference point (e.g. the stuffing box face).
3. Cover threads and keyway slots with a thin tape to prevent cutting the O-ring. Lubricate the seal sleeve O-ring and shaft with a clean, silicone based grease. A sufficient quantity of lubricant is provided with the seal.
4. Slide the rotary onto the shaft and bring the back of the rotary to the scribe mark. Set screw the seal to the shaft.
5. Reassemble the equipment (with the enclosed stationary installed into the gland as required for the particular equipment). Proper installation of the rotary and stationary will set the 491 at its correct operation length without over or under compressing the seal.
6. Rotate the shaft by hand. The seal should turn freely without binding or using excessive force.
7. You are now ready to start the equipment. **Follow all normal safety procedures when starting the equipment.**

CAUTIONS

These instructions are general in nature. It is assumed that the installer is familiar with seals and certainly with the requirements of their plant for the successful use of mechanical seals. If in doubt, get assistance from someone in the plant who is familiar with seals or delay the installation until a seal representative is available. All necessary auxiliary

arrangements for successful operation (heating, cooling, flushing) as well as safety devices must be employed. These decisions are to be made by the user. The chemical listing is intended as a general reference for this seal only. The decision to use this seal or any other Chesterton seal in a particular service is the customer's responsibility.

DIMENSIONAL DATA (DRAWING)

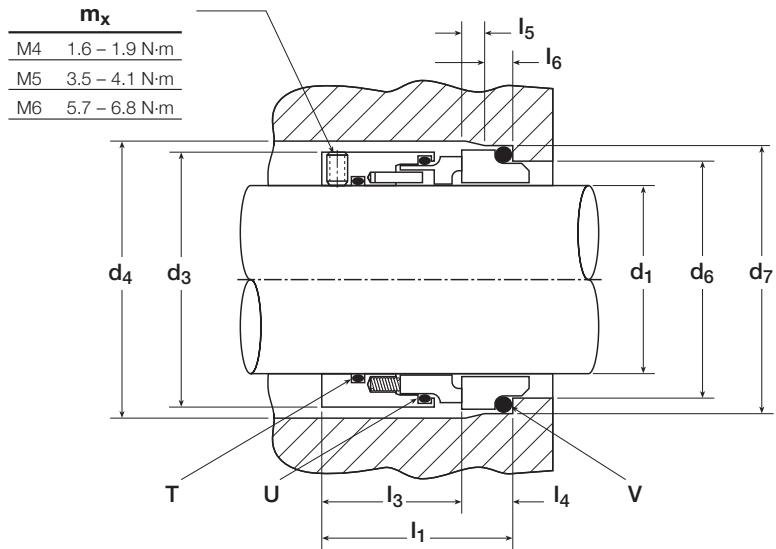
Technical Data:

Performance

- Pressure to 10 Bar
- Temperature to 180°C
- Surface speed to 10m/sec
- Rotational speed to 3600 RPM

Materials of Construction

- Carbon rotary face
- 99.7% Ceramic or Sintered Silicon Carbide stationary seat
- 316 SS / EN 1.4401 rotary holder
- Alloy C276 / EN 2.4819 springs
- EPDM or FKM elastomers



DIMENSIONAL DATA (METRIC)

d_1	d_3	d_4	d_6	d_7	l_1	l_3	l_4	l_5	l_6	m_x	T	U	V
16	28,9	31	23	27	35,0	30,0	5,0	1,5	4	M4	-016	-022	21,89 x 2,62 (-118)
18	32,3	34	27	33	37,5	30,0	7,5	2,0	5	M4	-017	-023	26,58 x 3,53 (-215)
20	34,3	36	29	35	37,5	30,0	7,5	2,0	5	M4	-018	-024	28,17 x 3,53 (-216)
22	36,3	38	31	37	37,5	30,0	7,5	2,0	5	M4	-020	-025	29,74 x 3,53 (-217)
24	38,3	40	33	39	37,5	30,0	7,5	2,0	5	M4	-021	-027	31,34 x 3,53 (-218)
25	39,3	41	34	40	37,5	30,0	7,5	2,0	5	M4	-022	-027	32,92 x 3,53 (-219)
28	42,3	44	37	43	42,5	35,0	7,5	2,0	5	M5	-122	-127	36,09 x 3,53 (-221)
30	44,3	46	39	45	42,5	35,0	7,5	2,0	5	M5	-123	-128	37,69 x 3,53 (-222)
32	46,3	48	42	48	42,5	35,0	7,5	2,0	5	M5	-124	-130	40,87 x 3,53 (-223)
33	47,9	49	42	48	42,5	35,0	7,5	2,0	5	M5	-125	-131	40,87 x 3,53 (-223)
35	49,5	51	44	50	42,5	35,0	7,5	2,0	5	M5	-126	-132	44,04 x 3,53 (-224)
38	54,3	58	49	56	44,0	35,0	9,0	2,0	6	M5	-128	-134	48,00 x 4,00
40	56,1	60	51	58	44,0	35,0	9,0	2,0	6	M5	-129	-135	50,00 x 4,00
43	59,1	63	54	61	44,0	35,0	9,0	2,0	6	M5	-131	-137	53,00 x 4,00
45	61,1	65	56	63	44,0	35,0	9,0	2,0	6	M5	-133	-139	55,00 x 4,00
48	64,1	68	59	66	44,0	35,0	9,0	2,0	6	M5	-134	-141	58,00 x 4,00
50	66,1	70	62	70	44,5	35,0	9,5	2,5	6	M5	-136	-142	61,00 x 4,50
53	69,1	73	65	73	46,0	35,0	11,0	2,5	6	M5	-137	-144	65,00 x 4,50
55	71,1	75	67	75	46,0	35,0	11,0	2,5	6	M5	-139	-145	65,00 x 4,50
60	76,1	85	72	80	46,0	35,0	11,0	2,5	6	M5	-142	-148	71,00 x 4,50
65	81,1	90	77	85	46,0	35,0	11,0	2,5	6	M5	-145	-151	76,00 x 4,50
68	86,1	93	81	90	46,3	35,0	11,3	2,5	7	M5	-147	-152	80,00 x 5,00
70	86,1	95	83	92	46,3	35,0	11,3	2,5	7	M5	-148	-152	82,00 x 5,00
75	98,4	104	88	97	59,3	48,0	11,3	2,5	7	M6	-234	-238	87,00 x 5,00
80	104,2	109	95	105	60,0	48,0	12,0	3,0	7	M6	-236	-240	95,00 x 5,00
85	108,0	114	100	110	60,0	48,0	12,0	3,0	7	M6	-237	-241	100,00 x 5,50
90	114,0	119	105	115	62,0	48,0	14,0	3,0	7	M6	-239	-243	105,00 x 5,50
95	117,5	112,5	110	120	62,0	48,0	17,0	3,0	7	M6	-240	-244	110,00 x 5,50
100	123,8	129	115	125	62,0	48,0	14,0	3,0	7	M6	-242	-246	115,00 x 5,50
110	133,4	139	125	135	62,0	48,0	14,0	3,0	7	M6	-246	-249	125,00 x 5,50



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