

Installation housings and design recommendations

The installation housings

(grooves) for O-rings should if possible be produced with right angles. The dimensions for the required depth and width depend on the particular application and cross-section. The dimensions are recommendations for the particular type of installation, and refer to the nominal sizes. They should be observed because the sealing function depends on the precise execution of the grooves.

Static sealing

O-rings are ideal for sealing resting machine elements. We speak of a static or resting seal when the machine elements that are to be sealed do not move in relation to each other. If the groove is executed correctly, the items used as intended and the right material chosen, O-rings can seal pressures of up to 1000 bar.

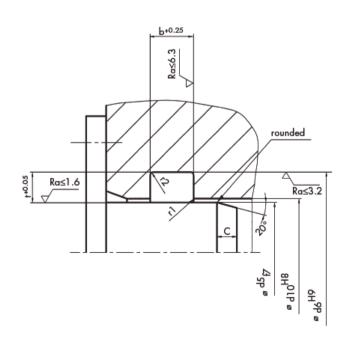
(Back-rings may also be required.)

Rectangular groove by radial deformation

This type of sealing is the preferred choice for sealing pins, bolts, tube connections or cylindrical tubes. The O-ring section is deformed radially on installation, i.e. in the direction of the centre of the bolt/pipe. The position of the groove, whether on the inside or the outside, does not play a functional part on solid components, but depends on the processing and installation possibilities. On thin walled parts where elastic deformation could occur such as with a cylindrical pipe, the groove should be on the fixed outer part (cylinder bottom) so that the groove on the side that is not subject to pressure does not increase as the item opens out.

Static sealing, internal sealing, rectangular groove by radial deformation







Groove dimensions	d2	Groove depth t+0.05	Groove width b+0.25	Lead-in chamfer C	d2	Groove depth t+0.05	Groove width b+0.25	Lead-in chamfer C
	1	0.75	1.3	1.2	4	3.2	5.2	3
	1.2	0.9	1.6	1.2	4.3	3.4	5.6	3
	1.25	0.9	1.7	1.2	4.5	3.6	5.8	3
	1.3	1	1.7	1.2	5	4	6.5	3
	1.5	1.1	2	1.5	5.3	4.3	7	3
	1.6	1.2	2.1	1.5	5.33	4.3	<i>7</i> .1	3.5
	1.78	1.3	2.4	1.5	5.5	4.5	7.2	3.5
	1.8	1.3	2.4	1.5	5.7	4.6	7.6	3.5
	1.9	1.4	2.5	1.5	6	4.9	7.9	3.5
	2	1.5	2.6	2	6.5	5.4	8.4	4
	2.2	1.7	3	2	6.99	5.8	9.2	4
	2.4	1.8	3.2	2	7	5.8	9.3	4
	2.5	1.9	3.3	2	7.5	6.3	9.8	4
	2.6	2	3.4	2	8	6.7	10.5	4
	2.62	2	3.5	2	8.4	7.1	10.9	4.5
	2.65	2	3.6	2	8.5	7.2	11	4.5
	2.7	2.1	3.6	2	9	7.7	11. <i>7</i>	4.5
	2.8	2.2	3.7	2	9.5	8.2	12.3	4.5
	3	2.3	3.9	2.5	10	8.6	13	5
	3.1	2.4	4	2.5	10.5	9	13.8	5
	3.5	2.7	4.6	2.5	11	9.5	14.3	5
	3.53	2.7	4.7	2.5	12	10.5	15.6	5
	3.55	2.8	4.7	2.5	15	13.2	19.2	5
	3.6	2.8	4.8	2.5				
	3.7	2.9	4.9	2.5				

Static sealing, external sealing, rectangular groove by radial deformation

