

## Dynamic sealing

**O-rings** are used successfully as sealing elements in dynamic applications. However, their use is limited to lower pressures and speeds, or to use in small installation housings.

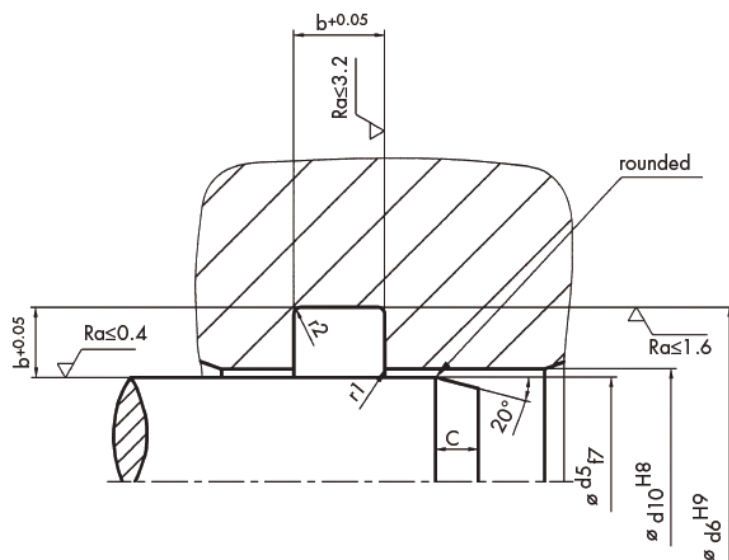
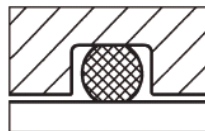
Because of the friction resistance in movement, e.g. in hydraulic or pneumatic components, a smaller O-ring deformation is chosen than for static sealing. The item should always be well lubricated in order to prevent a loss of power due to friction and premature wear of the O-ring if it runs dry.

The installation housings are the same for the reciprocating movement, and for the movement with simultaneous rotating (helical) movement. There are differences between the housings of hydraulic and pneumatic applications, because of the differences in pressure and lubrication.

### Hydraulics

O-rings should only be used to seal hydraulic pistons and rods if there is little space for the installation, or if the rod stroke is relatively short with a low frequency, and the seal does not have to be completely leak-proof. In fact, a tiny amount of leakage is desirable as it provides a lubricant film that reduces friction and wear.

**Dynamic 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	0.9	1.3	1	3.7	3.2	4.8	2
1.2	1	1.6	1	4	3.5	5.1	2
1.25	1.1	1.6	1	4.3	3.8	5.5	2.5
1.3	1.1	1.7	1.2	4.5	4	5.7	2.5
1.5	1.3	1.9	1.2	5	4.4	6.4	2.7
1.6	1.4	2	1.2	5.3	4.7	6.8	2.9
1.78	1.5	2.3	1.3	5.33	4.7	6.9	2.9
1.8	1.5	2.4	1.3	5.5	4.9	7.1	3
1.9	1.6	2.5	1.3	5.7	5.1	7.2	3
2	1.7	2.6	1.3	6	5.4	7.5	3.6
2.2	1.9	2.8	1.3	6.5	5.8	8.1	3.6
2.4	2.1	3	1.4	6.99	6.2	8.8	3.6
2.5	2.2	3.1	1.4	7	6.2	8.9	3.6
2.6	2.2	3.3	1.5	7.5	6.7	9.4	3.8
2.62	2.2	3.4	1.5	8	7.1	10.2	4
2.65	2.3	3.4	1.5	8.4	7.5	10.6	4.2
2.7	2.4	3.4	1.5	8.5	7.6	10.8	4.2
2.8	2.4	3.6	1.6	9	8.1	11.4	4.5
3	2.6	3.8	1.8	9.5	8.5	12	4.5
3.1	2.7	3.9	1.8	10	9	12.6	4.5
3.5	3.1	4.4	2	10.5	9.5	13.2	5
3.53	3.1	4.5	2	11	9.9	13.9	5
3.55	3.1	4.5	2	12	10.9	15.1	5
3.6	3.1	4.6	2	15	13.7	18.8	5