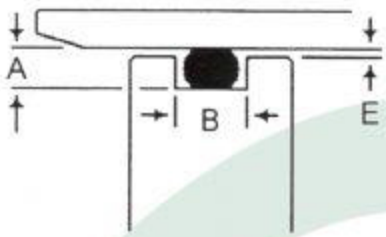
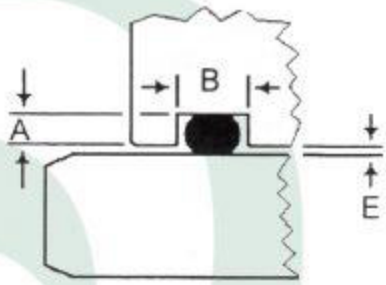
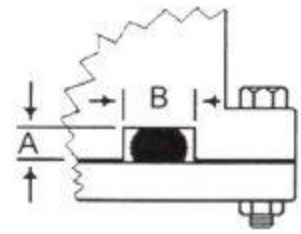
O'RING MACHINING GROOVES



PISTON - DYNAMIC



GLAND - DYNAMIC



FACE - STATIC

Groove Sizes Dynamic Applications HYDRAULICS		
Cross Sec. mm	A mm	B mm
1.00	0.90	1.30
1.50	1.30	1.90
1.60	1.40	2.00
1.78	1.50	2.30
1.90	1.60	2.40
2.00	1.70	2.40
2.40	2.10	2.90
2.50	2.20	3.00
2.62	2.30	3.10
2.70	2.40	3.20
3.00	2.60	3.60
3.50	3.10	4.20
3.53	3.10	4.20
3.60	3.20	4.30
4.00	3.50	4.80
4.50	4.00	5.40
5.00	4.45	6.00
5.33	4.70	6.40
5.50	4.95	6.60
5.70	5.10	6.90
6.00	5.40	7.20
6.50	5.80	7.80
6.99	6.30	8.40
7.00	6.30	8.40
7.50	6.70	9.00
8.00	7.20	9.60
8.40	7.60	10.10
8.50	7.70	10.20
9.00	8.20	10.80
9.50	8.60	11.40
10.00	9.10	12.00

Groove Sizes Dynamic Applications PNEUMATICS		
Cross Sec. mm	A mm	B mm
1.00	0.95	1.30
1.50	1.35	1.90
1.60	1.45	2.00
1.78	1.55	2.30
1.90	1.75	2.40
2.00	1.80	2.40
2.40	2.15	2.90
2.50	2.25	3.00
2.62	2.35	3.10
2.70	2.45	3.20
3.00	2.75	3.60
3.50	3.25	4.20
3.53	3.25	4.20
3.60	3.35	4.30
4.00	3.70	4.80
4.50	4.20	5.40
5.00	4.65	6.00
5.33	4.95	6.40
5.50	5.15	6.60
5.70	5.35	6.90
6.00	5.65	7.20
6.50	6.10	7.80
6.99	6.60	8.40
7.00	6.60	8.40
7.50	7.10	9.00
8.00	7.60	9.60
8.40	7.90	10.10
8.50	8.00	10.20
9.00	8.50	10.80
9.50	9.00	11.40
10.00	9.50	12.00

Static Applications		
Cross Sec. mm	A mm	B mm
1.00	0.80	1.30
1.50	1.10	1.90
1.60	1.20	2.10
1.78	1.30	2.30
1.90	1.40	2.40
2.00	1.50	2.60
2.40	1.80	3.10
2.50	1.90	3.20
2.62	2.00	3.40
2.70	2.10	3.50
3.00	2.30	3.90
3.50	2.70	4.50
3.53	2.70	4.50
3.60	2.80	4.70
4.00	3.15	5.20
4.50	3.60	5.80
5.00	4.00	6.50
5.33	4.30	6.90
5.50	4.50	7.10
5.70	4.65	7.40
6.00	4.95	7.80
6.50	5.40	8.40
6.99	5.85	9.10
7.00	5.85	9.10
7.50	6.30	9.70
8.00	6.75	10.40
8.40	7.15	10.90
8.50	7.25	11.00
9.00	7.70	11.70
9.50	8.20	12.30
10.00	8.65	13.00

When using back-up rings "B" should be increased by width of the back-up ring.

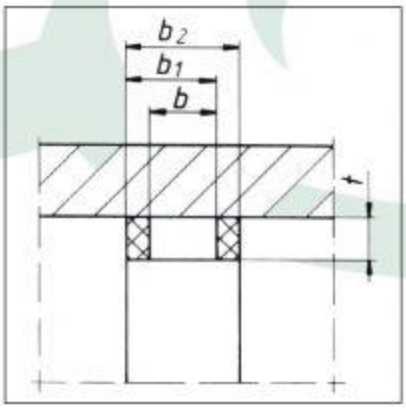
		Pounds Per Square Inch												
		100	200	300	400	600	800	1000	1500	2000	3000	4000	5000	6000
E	With Back-Up Ring	0.036	0.032	0.028	0.026	0.024	0.021	0.018	0.014	0.010	0.006	0.004	0.003	0.002
E	Without back-up ring	0.031	0.025	0.022	0.018	0.014	0.010	0.007	0.004	0.002				

oz seals

O'RING MACHINING GROOVES INCLUDING BACKUPS

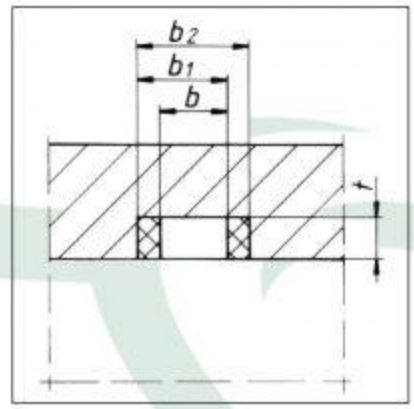
	Housing sealing on the outside and inside, radial pressure Housing Types 1 and 2				Housing axially sealing, inward press. Housing Type 3		Radius R_1		Chamfer
Cord Ø d_2	Groove depth	Groove width			Groove depth	Groove width	without support ring	with support ring	a
	t + 0.05	b + 0.25	b_1 + 0.25	b_2 + 0.25	t + 0.05	b + 0.25			
1.50	1.20	2.10	3.50	4.90	1.10	2.30	0.30	0.30	1.50
1.78	1.40	2.40	3.80	5.20	1.30	2.60	0.30	0.30	1.50
2.00	1.60	2.60	4.00	5.40	1.50	2.80	0.30	0.30	2.00
2.50	2.00	3.40	4.80	6.20	1.90	3.60	0.30	0.30	2.00
2.62	2.10	3.60	5.00	6.40	2.00	3.80	0.30	0.30	2.00
3.00	2.40	4.00	5.40	6.80	2.30	4.20	0.60	0.40	2.50
3.50	2.80	4.70	6.10	7.50	2.70	4.90	0.60	0.40	2.50
3.53	2.80	4.80	6.20	7.60	2.70	5.00	0.60	0.40	2.50
4.00	3.20	5.40	6.80	8.20	3.10	5.60	0.60	0.40	3.00
5.00	4.10	6.60	8.50	10.40	4.00	6.80	0.60	0.40	3.00
5.33	4.30	7.10	9.00	10.90	4.20	7.30	1.00	0.60	4.00
5.70	4.60	7.70	9.60	11.50	4.50	7.90	1.00	0.60	4.00
6.00	4.90	8.00	10.80	13.60	4.70	8.20	1.00	0.60	4.00
6.99	5.80	9.50			5.70	9.70	1.00		4.00
7.00	5.80	9.50			5.70	9.70	1.00		4.00
8.00	6.70	10.80			6.50	11.00	1.00		5.00
10.00	8.50	13.50			8.30	13.70	1.00		5.00

Groove width: b = without support ring, b_1 = with one support ring, b_2 = with two support rings



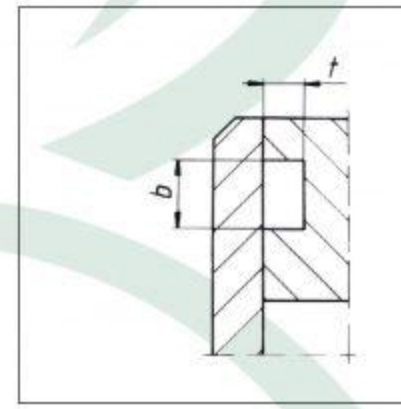
O-rings, sealing on the outside, radial pressure
Housing Type 1

In this type of housing, it is necessary to ensure that the O-ring rests firmly on the bottom of the groove. Stretching of the O-ring in the installed condition is permissible up to 6%.



O-rings, sealing on the inside, radial pressure
Housing Type 2

In this type of housing, the outer periphery of the O-ring rests on the bottom of the groove. Compression of up to 3% is permissible.



O-rings, axially sealing, inward pressure
Housing Type 3

In this type of housing, the "inward pressure" direction is the decisive factor in determining the O-ring size.

In the unpressurised condition, the O-ring must rest on the outer wall of the groove so that the O-ring does not move in the housing when pressure is applied.

oz seals