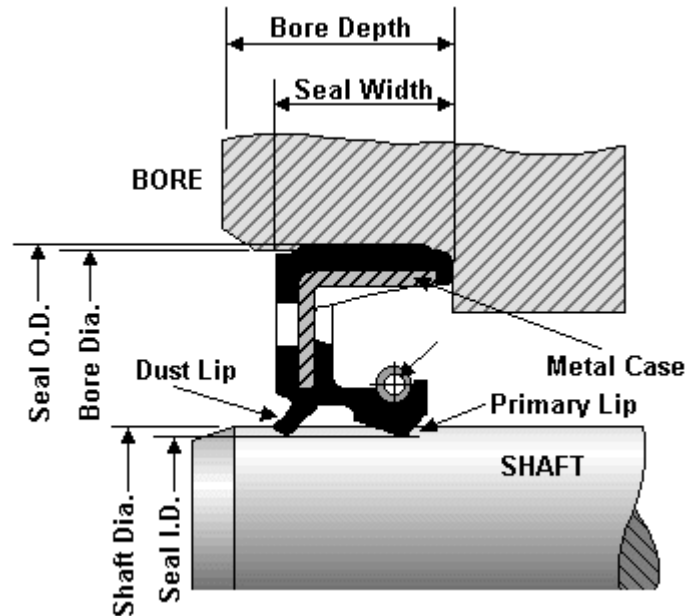


## Dimensioning an Oil Seal



- \* Oil Seal O.D's follow SAE/RMA recommended pressfits & tolerances
- \* Seal I.D. will vary from different manufacturers due to different production processes & design.



### **Type A Single Lip - Rubber Coated w/ Spring**

**DIN:** 3760 Standard.

**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** Carbon Steel - Stainless Available.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only. Generally used for sealing lower pressure (up to 0.5 bar/7psi) fluids or heavy greases depending on shaft speed. If a backup ring is used, it can operate at medium pressure (4 bar/57psi).

### Type ADL Double Lip - Rubber Coated w/ Spring

**DIN:** 3760 Standard.

**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** Carbon Steel - Stainless Available.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only. Generally used for sealing lower pressure conditions with medium dirt exclusion of foreign materials. Used for lower pressure (up to 0.5 bar/7psi).



### Type AW Single Lip - Rubber Coated - No Spring

**DIN:** 3760 Standard.

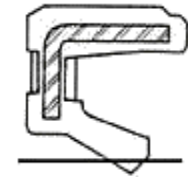
**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** N/A.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type "Springless". Rotary Motion Only. Generally used for sealing non-pressure medium, especially for grease or viscous fluids. Otherwise only for less critical sealing applications.



### Type B Single Lip - Metal Case w/ Spring

**DIN:** 3760 Standard.

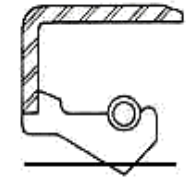
**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** Carbon Steel - Stainless Available.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only. Generally used for sealing lower pressure (up to 0.5 bar/7psi) fluids or heavy greases depending on shaft speed. If a backup ring is used, it can operate at medium pressure (10 bar/140psi).



### Type BDL Double Lip - Metal Case w/ Spring

**DIN:** 3760 Standard.

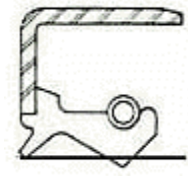
**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** Carbon Steel - Stainless Available.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only. Generally used for lower pressure conditions with medium dirt exclusion of foreign materials. Used for lower pressure (up to 0.5 bar/7psi).



**Type BW Single Lip - Metal Case - No Spring**

**DIN:** 3760 Standard.

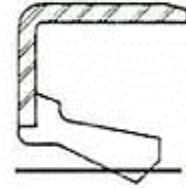
**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** N/A.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only. Generally used for sealing non-pressure medium, especially for grease or viscous fluids. Otherwise only for less critical sealing applications.



**Type C Single Lip - Full Metal Case w/ Spring**

**DIN:** 3760 Standard.

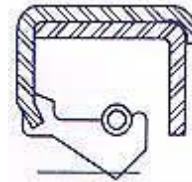
**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** Carbon Steel - Stainless Available.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only Generally used for sealing lower pressure (up to 0.5 bar/7psi) fluids or heavy greases depending on shaft speed. If a backup ring is used, it can operate at medium pressure (10 bar/140psi).



**Type CDL Double Lip - Full Metal Case w/ Spring**

**DIN:** 3760 Standard.

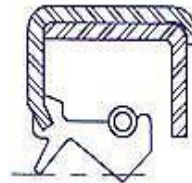
**Common Materials:** NBR, VITON, Silicone, EPDM, Polyacrylate, Neoprene.

**Spring make:** Carbon Steel - Stainless Available.

**Pressure Rating:** Max 7psi.

**Mounting:** Press-fit.

**Comments:** Common grease seal type. Rotary Motion Only Generally used for lower pressure conditions with medium dirt exclusion foreign materials. Used for lower pressure (up to 0.5 bar/7psi).



**Tolerances**

**Seal outside Diameter Tolerance in Imperial**

Bore Diameter	Press-fit Allowance		Tolerance	
	Metal Case	Rubber Covered Case	Metal Case	Rubber Covered Case
Up to 1.000	+0.004	+0.006	±0.002	±0.003
1.001 to 2.000	+0.004	+0.007	±0.002	±0.003
2.001 to 3.000	+0.004	+0.008	±0.002	±0.003

3.001 to 4.000	+0.005	+0.010	±0.002	±0.004
4.001 to 6.000	+0.005	0+0.010	+0.003/-0.002	±0.004
6.001 to 8.000	+0.006	+0.010	+0.003/-0.002	±0.004
8.001 to 10.000	+0.008	+0.010	+0.004/-0.002	±0.004
10.001 to 20.000	+0.008	+0.010	+0.006/-0.002	±0.004
20.001 to 40.000	+0.008	+0.010	+0.008/-0.002	±0.004
40.001 to 60.000	+0.008	+0.010	+0.010/-0.002	±0.004

### Seal Outside Diameter Tolerance in Metric

Bore Diameter	Press-fit Allowance		Permissible Eccentricity
	Metal Case	Rubber Covered Case	
Up to 50	+0.20/+0.10	+0.30/+0.15	0.25
Over 50 to 80	+0.23/+0.13	+0.35/+0.20	0.35
Over 80 to 120	+0.25/+0.15	+0.35/+0.20	0.50
Over 120 to 180	+0.28/+0.18	+0.45/+0.25	0.65
Over 180 to 300	+0.30/+0.20	+0.45/+0.25	0.80
Over 300 to 500	+0.35/+0.23	+0.55/+0.30	1.00

### Seal Width Tolerance in Imperial and Metric

Unit	Width range	Tolerance
inch	all	±0.015
mm	Up to 10	±0.20
	Over 10	±0.30

### Shaft Tolerance in Metric

Shaft Diameter (ISO)		Tolerance in mm ( h11 )	
Over	to	Lower	Upper
0	3	+0.000	-0.060
3	6	+0.000	-0.070

6	10	+0.000	-0.090
10	18	+0.000	-0.120
18	30	+0.000	-0.140
30	50	+0.000	-0.160
50	80	+0.000	-0.190
80	120	+0.000	-0.220
120	180	+0.000	-0.260
180	250	+0.000	-0.300
250	315	+0.000	-0.340
315	400	+0.000	-0.360
400	500	+0.000	-0.400