

# LC Profile Seal

## LC Profile Seal Offers Improved Sealability

### Advantages of a One-Piece Seal

LC Profile Seals offer several advantages over more traditional two-piece seal geometry. The problem with traditional two-piece seals occurs at installation and in service, during rapid fluctuations in pressure where expander rings can become partially dislodged - resulting in leakage. The LC Seal's unique one-piece construction eliminates problems associated with seals containing rubber expander rings used to load the seal lips to maintain leak-free operation.

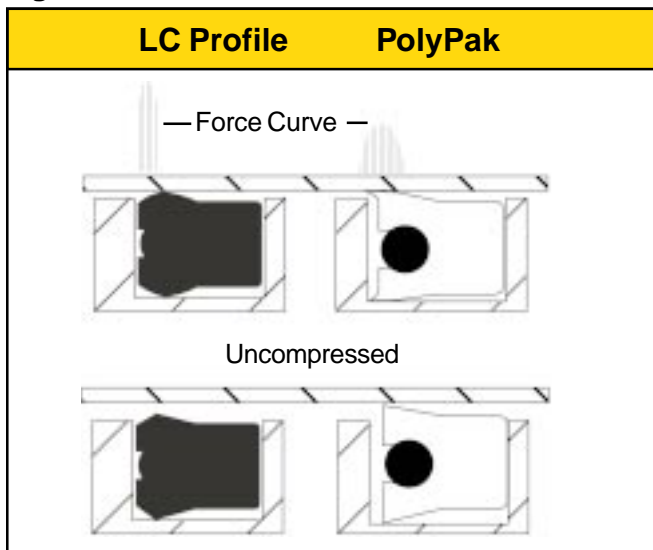
### Better Compression Force

Notice that the LC Profile has a 'back beveled' lip. This supports the sealing lip from both sides causing the compressive force to be directed to a narrower sealing line. Other seals have lips that roll toward the unsupported side when installed resulting in lower compressive force, distributed over a wider sealing line (See Figure 1). Design enhancements in the LC Profile geometry concentrate compressive force to reduce leakage and improve overall sealability.

### Fits Standard Groove Dimensions

The LC Profile's computer-aided design geometry has been engineered to provide reliable sealing from the smallest 1/8" cross-section to the larger 1/2" cross-section. This seal is designed to retrofit into the same seal grooves utilized by a wide range of popular seals having the same seal height and cross-section.

**Figure 1**



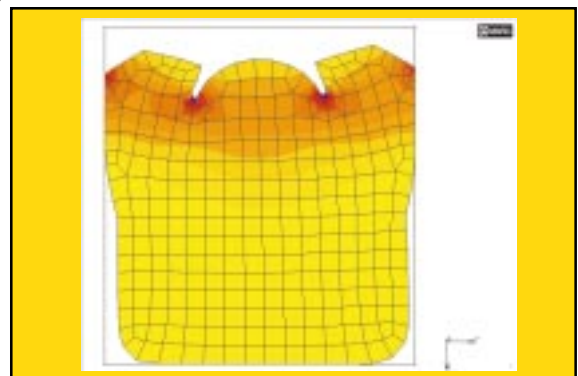
### Computer Aided Testing

Computer-aided testing via FEA (Finite Element Analysis) was performed to optimize the seal design. FEA testing provided conclusive evidence that the LC Profile has a higher sealing force and better contamination resistance than traditional sealing designs. Color contours show the radial stress developed in the LC Profile, indicative of high sealing force at the sealing interface. (See Figure 2)

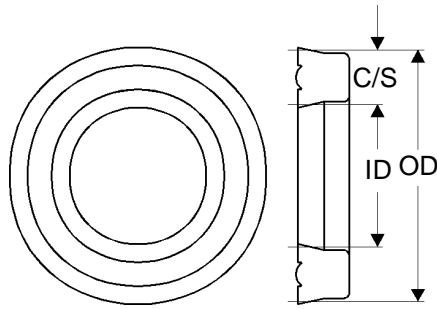
### Contact Valley Seal

The LC Profile was designed for use with rubber elastomers, including the most advanced seal materials. However it can be manufactured in different materials upon request. Contact our technical service representatives for more information and current tooling availability.

**Figure 2**



## LC Profile Seal



### Fluid Compatibility

N4263A90 is recommended for general purpose sealing of petroleum based oils and fluids, silicone greases and oils, di-ester based lubricants, ethylene glycol base fluids and water. It is not recommended for service with halogenated hydrocarbons, nitrohydrocarbons, phosphate ester hydraulic fluids, ketones, strong acids, ozone, and automotive brake fluids.

Part Number	ID	OD	C/S
LC18702000	2	2-3/8	3/16
LC18702500	2-1/2	2-7/8	3/16
LC25002750	2-3/4	3-1/4	1/4
LC25003500	3-1/2	4	1/4
LC31203125	3-1/8	3-3/4	5/16
LC37503500	3-1/2	4-1/4	3/8
LC37503750	3-3/4	4-1/2	3/8
LC37504500	4-1/2	5-1/4	3/8
LC37504750	4-3/4	5-1/2	3/8
LC37505500	5-1/2	6-1/4	3/8

Original Physical Properties	Parker N4263A90	ASTM STANDARD
Hardness, Shore A, pts.	92	D 2240-86
Tensile Strength, PSI	3500	D 412-87
Elongation, %	133	D 412-87
Modulus, @ 100%	3000	D 412-87
Specific Gravity	1.28	D 297-81
Compression Set (%), 70 Hours @ 212° F (100° C)	15	D 395-85
Compression Set (%), 70 Hours @ 257° F (125° C)	23	D 395-85

### Test Results for N4263A90



Testing for 70 hours



Testing for 168 hours/1 week

Media	Hardness Change, pts	Ultimate Tensile Change, %	Elongation Change, %	Volume Change, %	Weight Change, %
Fuel A @ Room Temp.	0	+8	-17	+1	0
Fuel B @ Room Temp.	-10	-23	0	+14	+9
Fuel C @ Room Temp.	-16	-44	-5	+36	+23
Methanol @ Room Temp.	-18	-53	-8	+16	+10
ASTM #1 Oil @ 212° F	0	+11	-12	0	-1
ASTM #1 Oil @ 257° F	0	+3	-20	-1	-1
ASTM #1 Oil @ 302° F	+1	+13	-30	-1	-1
ASTM #3 Oil @ 212° F	-5	-2	0	+14	+9
ASTM #3 Oil @ 257° F	-3	-8	-10	+12	+9
ASTM #3 Oil @ 302° F	-5	+5	-5	+13	+10
JP-4 Jet Fuel @ Room Temp.	-1	-6	+5	+4	+3
Jet A Fuel @ Room Temp.	-1	0	+10	+4	+3
MIL-H-5606; @ 212° F	-5	-7	0	+9	+6
MIL-H-5606 @ 257° F	0	-13	-25	+8	+6
Jet Oil II @ 212° F	-5	-7	-5	+10	+8
Stauffer 7700 @ 212° F	-8	-5	0	+14	+10
Skydrol @ 212° F	-21	-73	-45	+127	+105
Hy-Tran Oil @ 212° F	-2	+2	-5	+5	+4
Ethylene Glycol @ 212° F	0	-12	-10	+5	+4
Distilled Water @ 212° F	-10	-17	-8	+15	+12
Distilled Water @ 212° F	-3	-17	-5	+10	+8
Oven Air Age @ 212° F	+2	+16	-33	-	-2
Oven Air Age @ 257° F	+1	-8	-45	-	-2
Oven Air Age @ 302° F	+1	-12	-70	-	-2