LUBRICATION

Lubrication of all types of O-ring seals is extremely important - for installation of all types, operation of moving and seating of static seals. The specific rule for installation is: **The greatest benefit in using a lubricant is obtained during the installation of the O-ring.**

Lubricants are commonly used on O-rings and other elastomeric seals. Using a grease or an oil at assembly helps protect the O-ring from damage by abrasion, pinching, or cutting. It helps seat the O-ring properly, speeds up assembly operations, and makes automated assembly line procedures possible. An additional benefit is the protection that the lubricant gives as a surface film. It helps protect some polymers from degradation by atmosphere, and its presence helps extend the service life of the O-ring. A lubricant is almost essential in pneumatic applications requiring dynamic service. In vacuum applications lubricants help reduce the leakage rate by filling the asperities of the metal. Parker Seal offers two lubricants that will satisfy most service needs. **PARKER O-LUBE** is an outstanding general purpose grease intended for use with seals that perform in hydrocarbon service. It can also be used in pneumatic service. Its useful temperature is -20° to +180°F(-29° to 82°C). **PARKER SUPER-0-LUBE** is an exceptional all purpose lubricant. It is not a grease, but a high viscosity silicone oil. It is especially useful as a seal lubricant. Its temperature range is - 65° to +400°F (- 54° to +204°C).

Parker Super-O-Lube can be used as an assembly lubricant on all rubber polymers, including silicones*. In addition Parker Super-O-Lube has some unique advantages. It clings tenaciously to the rubber or metal surface helping prevent it from being washed away easily by the system fluid. It has one of the most useful temperature ranges of any lubricant available. It can be used for high pressure systems or vacuums. Its inert nature lends itself to a wide variety of fluid systems. Since there are no fillers, there can be no clogging of microfilters.

In addition to its outstanding performance in service, Parker Super-O-Lube gives protection to rubber polymers that are normally age sensitive when exposed to the atmosphere. This is a typical concern with ozone sensitive polymers that require age control.

There are special situations that may exist where one of the two Parker lubricants would not be the best recommendation. For instance, there may be a need for a special high vacuum grease, or a grease that would be especially suited to phosphate ester service. For guidance in handling these unique situations consult a Parker Applications Engineer near you.

*NOTE: Silicones require special consideration.

Before selecting a lubricant (other than fluid sealed) for use with O-rings, determine that it meets the following requirements:

1. It or the additives that it contains, should not cause shrinkage or excessive swelling of the O-ring compound being used.
2. It should not excessively soften or solidify over the anticipated temperature range.
3. It should not break-down and leave gummy or gritty deposits after cycling, or due to action of fluid being sealed.
4. It should be capable of forming thin, strong films over the metal being lubricated that the O-ring cannot wipe away.
5. It should be compatible with the fluid being sealed if used inside the system.
6. It should pass through filters used in the system.

TABLE A4-1 PARKER O-RING LUBRICANTS

		O-LUBE	SUPER-0-LUBE
Type		Barium grease	High viscosity silicone fluid
Temperature Range	°F °C	-20 to + 180 (1) (-29 to +82)	-65 to +400 (2) (-54 to +204)
Seal Use		Hydrocarbon fluids, Pneumatic systems under 200 psi	General purpose High pressure pneumatic
Will Pass Through Micronic Filters?		No	Yes
Compatible With:		Fluorocarbon Fluorosilicone Neoprene Nitrile Polyacrylate Polysulfide Polyurethane	Fluorocarbon Fluorosilicone Neoprene Nitrile Polyacrylate Polysulfide Polyurethane Butadiene Butyl Ethylene Propylene lsoprene SBR (GRS) Silicone (2)

NOTES:

Assembly lubricants should always be used sparingly during application. A light film is all that is required. This is doubly important in cases 1 and 2 below.

1. When a thin film of O-Lube is used for assembly purposes only, the assembly may be subjected to higher temperatures, with limits determined by the fluid and elastomer being used.

2. Use only a thin film of Super-O-Lube on silicone rubber if the temperature will exceed 300° F.