DUO CONE INSTALLATION GUIDE

PLEASE READ PRIOR TO INSTALL

Duo cone seal groups must be installed with great care. The installation location must be kept free from dust and dirt.
Duo cone seals may fail from mistakes that are made during assembly or installation of the seal components.

KEY POINTS

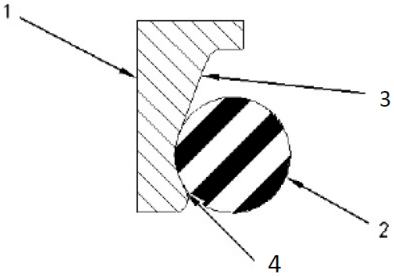
- **Never permit oil to contact rubber toric ring, housing ramp or seal ring ramp** before both seal rings are assembled in the final position.
- Be careful when you are working with the rubber toric ring. Nicks, cuts, or scratches will cause leaks.
- Do not use Stanosol or any other liquid that leaves an oil film and/or does not evaporate quickly.
- The Rubber toric ring (2) may twist during installation if the seal is not completely wet or if there are burrs or fins on housing retaining lip. **Misalignments, twists and bulges of the rubber toric ring WILL cause Duo-Cone Seal failures.** If correct installation is not obvious, remove the toric ring from the housing and repeat the installation procedure.
- Rubber toric ring (2) must never slip on the ramps of seal ring (1) or the ramps of seal ring housing. In order to prevent slippage, allow adequate time for evaporation of the lubricant before proceeding with the procedure. **Once the rubber toric ring is correctly positioned, the rubber toric ring must roll only on the ramps.**
- Do not force the seal ring housing together in a sudden manner. The seal faces could be damaged causing an oil leak.

INSPECTION

- Remove the seal from its packing only immediately before installation.
- Do not stand the seal on the lapped surface.
- Use isopropyl alcohol or other approved cleaning agents. Use a clean lint free cloth for wiping. All components should be completely dry before proceeding.
- Check that the housing is free of nicks or burrs on installation area and always inspect the installation tool for wear or damage.

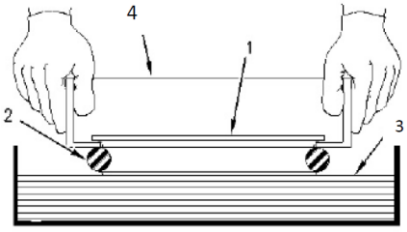
INSTALLATION PROCESS

Put the rubber toric ring (2) on seal ring (1). Make sure that the rubber toric ring is positioned at the bottom of seal ring ramp (3). The rubber toric ring must rest against retaining lip (4). The rubber toric ring must be straight in the seal ring, please ensure it is not twisted. (use the molding seam on toric ring as a guide) Once the rubber toric ring (2) is on the seal ring (1) attach the correct installation tool. Lightly dampen the lower half of rubber toric ring (2) with an appropriate lubricant, such as, Isopropyl Alcohol.



1. Seal Ring
2. Rubber Toric Ring
3. Seal Ring Ramp
4. Retaining Lip

Place towels or a foam mat the bottom of a container and soak with the lubricant. Dip the rubber toric seal in the container. Lightly dampening the lower half of the rubber toric ring.



1. Seal ring
2. Rubber Toric Ring
3. Foam soaked in Lubricant
4. Installation Tool

Make sure that the lower half of rubber toric ring (2) is still wet. Use installation tool (4) to position the seal ring (1) and rubber toric ring (2) squarely against seal ring housing.
For small diameter seals make sure that you use even pressure when you press into the housing retaining lip. For larger seals push the rubber toric ring over the seal ring retaining lip on one side and tap the installation tool with a rubber mallet on the opposite side of the rubber toric ring. Tap until the rubber toric ring is past the seal ring retaining lip of the housing. **IMPORTANT: Ensure the rubber toric ring is still wet during this part of the installation.**

NOTES

If the seal set is taken apart in the course of repairs, a new set will have to be installed even if the wear limit is not yet reached.
The mating faces will have run in on a common line after a relatively short time, and there is no certainty of re-assembling them in exactly the same position. The wear paths of the seal faces would no longer match, and unacceptable leakage would occur until the faces had run in again.

SILICON O-RINGS

Many Duo Cone Seals now come with silicon toric rings. As an option to using liquid lubricants to install silicone toric rings, the rings can be chilled for easier installation.

This will allow the toric ring to contract for easier installation. If chilling is desired, Seals should be placed in a freezer for 5 minutes prior to installation. Temperature in the freezer should be between -40°C (-40°F) to -18°C (0°F). Contraction will be enough to allow installation.

The seals should be allowed to warm to room temperature prior to further assembly.

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COMPLETE THE INSTALLATION

- Always check the assembled height variation in at least 4 locations to ensure seal is correctly fitted with no twists in the rubber toric ring.
- Once the Duo Cone Seals are installed, wipe the seal ring face by using a lint free cloth. Ensure that there are no foreign particles of any kind on the sealing surfaces.

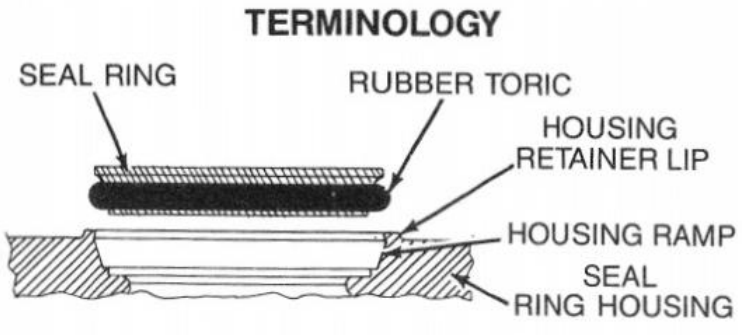
A small fragment from a paper towel can force apart the seal ring face, which will cause a leak.

- Apply a thin film of clean oil on the entire seal ring face of one or both seals. Use a lint free cloth or brush in order to distribute the oil evenly.

Be careful not to get any oil on the rubber toric rings. Lubricate the seal faces by using the same oil that was used during assembly.

- Line up both halves of the seal ring housings and slowly bring them together. Tighten the bolts once correctly positioned.

REMEMBER:

- Handle the seal ring carefully. Nicks and scratched on the seal ring face – CAUSE LEAKS.
- Remove any oily film from the housing, seal ring ramp and from the Toric Ring – **BOTH RAMPS MUST BE DRY.**

Under no circumstances should oil or seal ring lubricant get onto the ramp or toric – UNTIL AFTER BOTH SEAL RINGS ARE TOGETHER IN THEIR FINAL POSITION.