

# Product Information



ISO-9001 / 14001  
ISO / TS-16949  
OHSAS-18001

## **NAK Pre-greased Oil Seals**

NAK supplies a variety of pre-greased oil seals. Oil seals pre-filled with grease can provide better sealing performance since the grease additive held in contact with rotary shaft and bearing assemblies can avoid the entrance of the external contaminant into the seal and offer the function of pre-lubrication. In addition, NAK utilizes automatic grease feeding machines to control the ration of the grease precisely and shorten the production process. NAK pre-greased seals can be made in both standard range and variation to satisfy a wide range of operation conditions.



*Navigator of Sealing Technology*

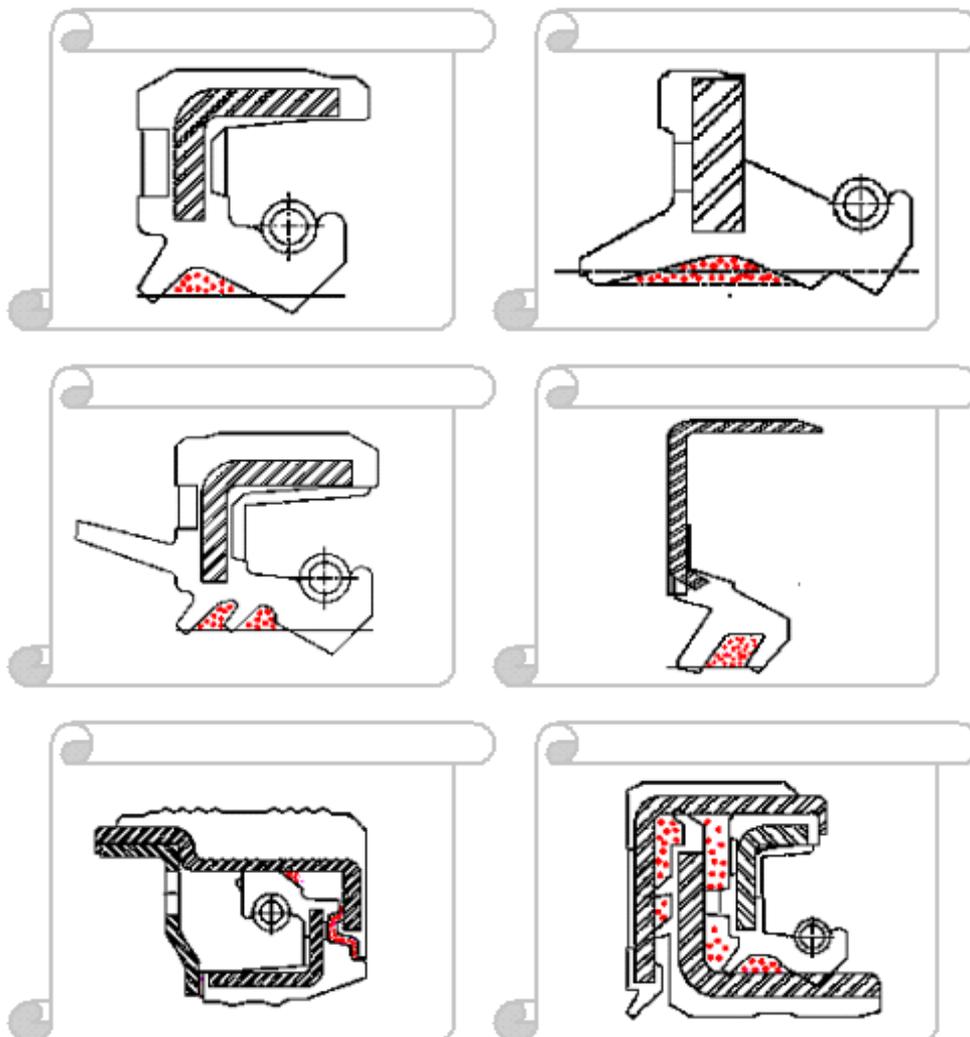
### Feature of Pre-greasing :

- Assistant in internal lubrication to prevent shaft / lip wear
- Assistance in preventing incursion of external contaminants
- Complete adhesion of lubrication element to the working surface
- Better antirust capability than add-on lubricant



### Industry Application :

For the combination type of seals (cassette seals, labyrinth seals) such as the NAK ST and AP series, pre-greasing is recommended to be standard procedure to provide internal lubrication between seal body and sleeve. Pre-greasing can also be applied to other applications such as shock absorber seals, transmission seals, conveyer roller seal, and etc. Basically, it can be applied to any types of seals with double or multiple lips for applications in which dry-running should be avoided.



## ...> Technical Information of Grease

**Grease** is a semi-fluid to solid mixed with fluid lubricants, thickeners, and additives.

◆ Fluid Lubricants	Fluid lubricants used to formulate grease are normally petroleum (mineral) or synthetic oils. The base oil selected in formulating grease should have the same characteristics as if the equipment is to be lubricated by oil.
◆ Thickeners	The thickener gives grease its physical character. It not only provides consistency to grease, but it affects desired properties such as water- and heat-resistance and pumpability.
◆ Additives	Surface-protecting and performance-enhancing additives that can effectively improve the overall performance of grease.

The grease will have different characteristic according to the different ingredient's ratio.

Relying on sealing application, NAK provides the suitable grease based on sealing design.



### Grease Characteristics

- ✧ Apparent Viscosity. At start-up, grease has a resistance to motion, implying a high viscosity.
- ✧ Consistency. A grease's consistency is its resistance to deformation by an applied force which was altered by handling or working.
- ✧ Contaminants. Greases tend to hold solid contaminants on their outer surfaces and protect lubricated surfaces from wear.
- ✧ Corrosion- and rust-resistance. Grease can protect metal parts from chemical attack.
- ✧ Oxidation stability. Grease has the ability to resist a chemical union with oxygen.
- ✧ Water resistance. Grease has the ability to withstand the effects of water with no change in its ability to lubricate.

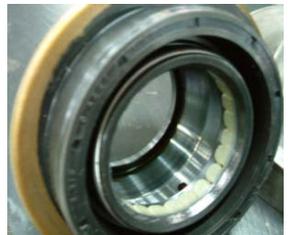


**NAK has implemented automated machines to effectively bring down the manufacturing cost!!**



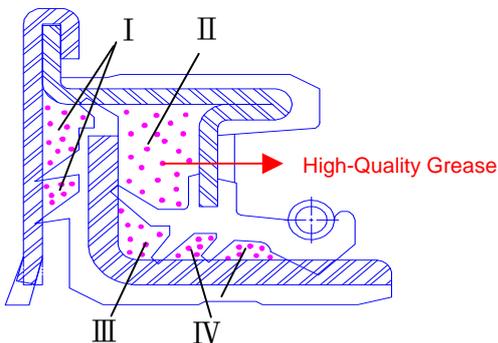
### Rotary Injection Grease Feeding Machine

- Numbers of machine in NAK plant : 6
- Application : position I , II , and III (Please refer to below drawing).



### Dripping Out Grease Feeding Machine

- Numbers of machine in NAK plant : 9
- Application : position IV (Please refer to below drawing).



#### Disclaimer

1. NAK product is prohibited to use, install or apply in or on any aerospace related instrument and equipment.
2. NAK has no liability under any express or implied Warranty if NAK Product:
  - is modified or tampered;
  - is misused, abused or misapplied;
  - is used in a critical environment or specific equipment without NAK prior written acknowledgement;
  - is not used in accordance with the printed user instruction materials;
  - is damaged owing to natural deterioration, decomposition or transformation of chemical structure.
3. If NAK's product to be applied in critical environment or specific equipment, it is only allowed to launch into mass production when the sample has been passed the testing conducted by the user.



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