

# Product Information

## Agricultural “AP” Seal

### NAK Agricultural “AP” SEAL

is designed for use in heavy contaminated applications such as agricultural machinery, construction and mining equipment, track driven vehicles, etc. It is ideal for use where oil or grease must be held in contact with rotary shaft and bearing assemblies, while at the same time sealing against external contaminants is required. With the exceptional design of a unitized seal body and multiple lips and bumpers, the NAK AP Seal is the ultimate dirt excluder. Custom designs can be worked out and NAK will ensure that the seal is made to the exact specification.



### AP SEAL

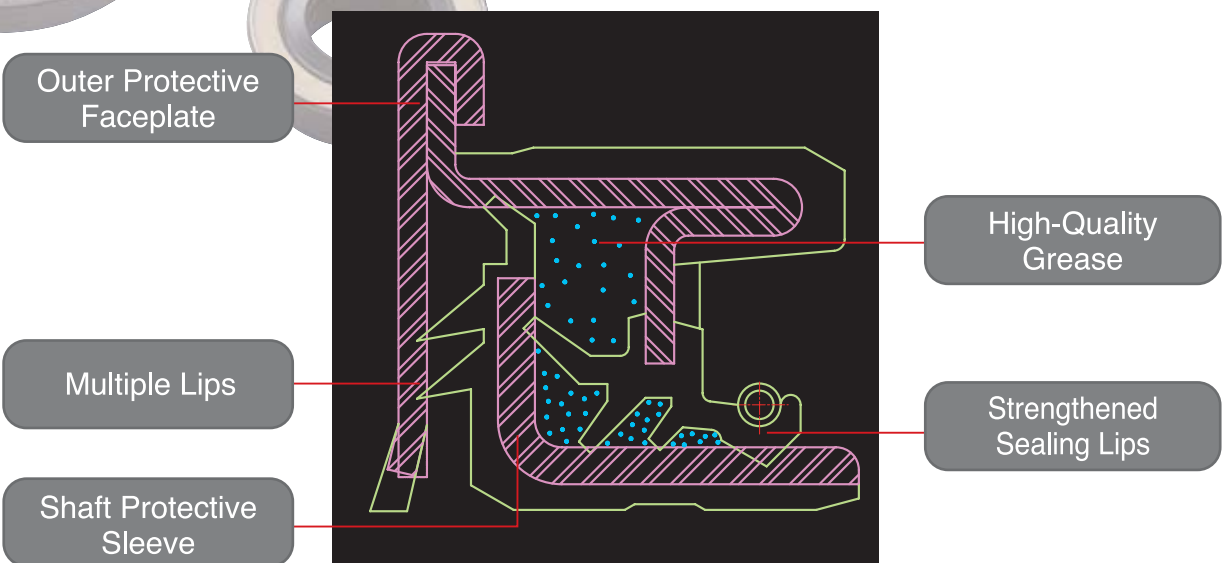


## Product Description

*AP Seal, the Ultimate Dirt Excluder for Heavy Duty and Heavy Contaminated Applications*

**NAK AP Seal** is created for heavy-duty applications especially where environmental and operating conditions are very harsh. The traditional lip seal (such as TC) that consists of a spring loaded radial sealing lip and a static dust lip often falls short in heavy duty and at the same time heavy contaminated applications. In many cases the failure is caused by the penetration of mud and water at the radial lip. NAK AP Seal resolves this problem by providing the optimal protection against mud, water and other contaminants through a variety of design features.

### Improved Seal Geometry



## Features

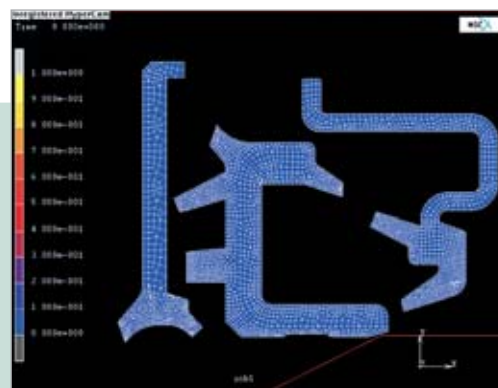
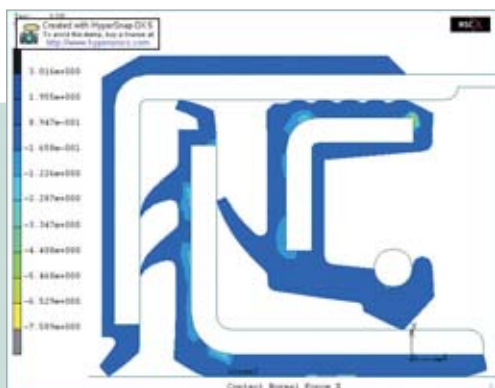
- Outer faceplate for protection against external contaminants and internal oil and grease leakage
- Multiple sealing lips which can be varied to suit required sealing purposes
- Sleeve to protect the shaft from wear, especially when the roughness of the shaft is larger than 1.0 Ra
- Strengthened sealing lips can prevent the leak possibilities, and several bumpers can resist the backward of sleeve to enhance the sealing performance.
- High-Quality Grease can avoid the entrance of water, mud, and sand into the seal and can offer the function of pre-lubrication.

## Technical Information

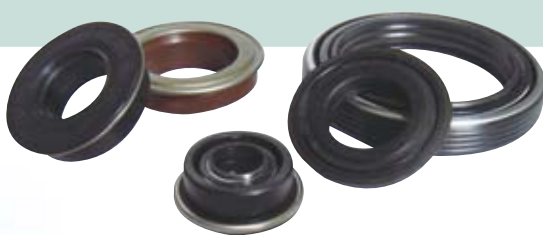
# Advanced Technologies to Ensure the Design Efficiency and Accuracy of the AP Seal

In the creation of the AP Seal, NAK uses whole new design concepts and advanced technologies to give to the AP Seal many superior benefits which are not available in the traditional lip seal.

To ensure the efficiency and accuracy of the design of the AP Seal, NAK uses advanced Computer-Aided Engineering(CAE) technologies such as FEA(Finite-Element-Analysis) and Seal CAD(SCAD) program. The systems are developed by NAK specifically for the purpose of seal design.



In addition, to verify the function and quality of the AP Seal, lab testing and field testing are conducted prior to production launch so that we know the seal is fit for the intended end application.



The excellent performance of NAK AP Seals has been verified in both NAK lab testing and field testing conducted in collaboration with key customers.



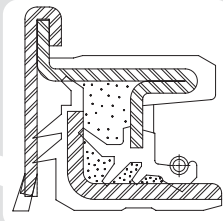
# Application

## Variations and Custom Designs Available for Different Application and Assembly Requirements

**NAK AP** Seals are made in both standard range and variations to suit a wide range of harsh operating conditions. NAK offers AP Seals for both low speed and high revolution, high temperature applications. The seals can be custom made to the individual customer's application and assembly requirements.



### AP Seal for track-driven equipment



#### 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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