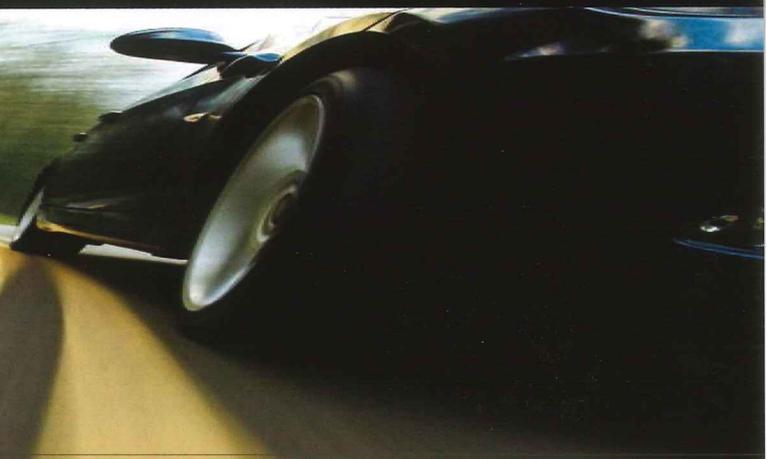




# TRANSMISSION SEALS

THE BEST SEAL  
AND SERVICE  
IN THE WORLD

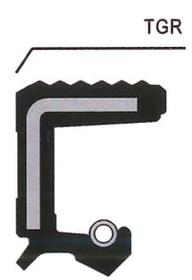
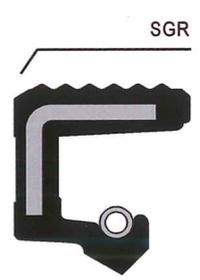
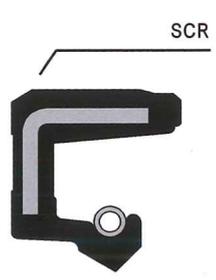


## OIL SEAL PRODUCTS FOR TRANSMISSION

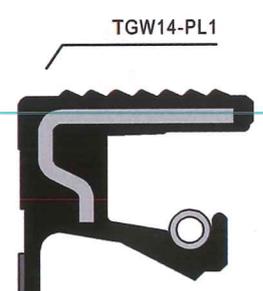
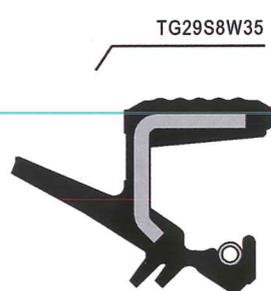
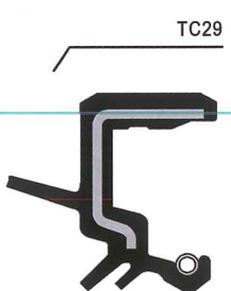
There are two models of transmission that are predominantly used within the automotive sector. They include a manual transmission model that contains the shift lever and input/output shaft seals. An automatic transmission model on the other hand is further classified into an AT, CVT and DCT. Besides the manual transmission mentioned, for these types of transmissions, bonded piston seals are used since application runs automatically without any external gear change requirement.



### Transmission Input Seals



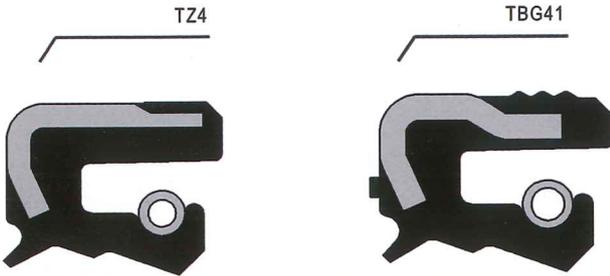
### Transmission Output Seals





# TRANSMISSION SEALS

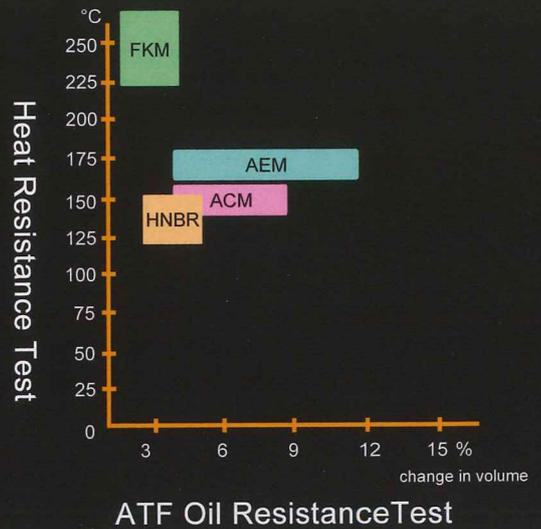
## Transmission Selector Seals



These are example types of NAK transmission seal. For more information please contact us.

## MATERIAL

- Transmission input / output seals mainly use ACM or FKM.
- Transmission bonded piston seals mainly use AEM, ACM or HNBR



## RELIABILITY

Transmission Dynamic Test Rig



Lab Test



Please scan the QR code and visit our website at <http://www.nak.com.tw/>  
If you require any further information, feel free to contact us at [service@mail.nak.com.tw](mailto:service@mail.nak.com.tw)



# SHOCK ABSORBER SEALS



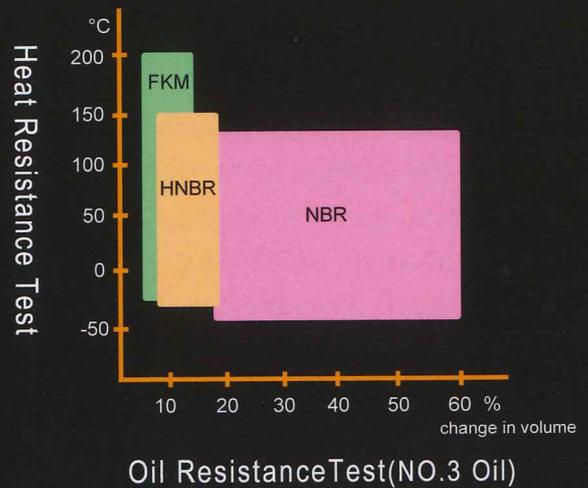
NAK's NBR rubber compound at the environment of -45°C



FKM and NBR are major rubber compounds used for the shock absorber seals

## MATERIAL

NAK has the ability to develop our own rubber compounds according to different application. Usually for shock absorber seals we suggest NBR, HNBR and FKM because of high temperature, low temperature resistance or oil resistance.



## RELIABILITY

To support our customer testing needs in different applications, NAK can conduct a variety of dynamic testing such as service life, friction, pressure, stroke length, rod velocity and damper force of the shock absorber seals.



Please scan the QR code and visit our website at <http://www.nak.com.tw/>  
If you require any further information, feel free to contact us at [service@mail.nak.com.tw](mailto:service@mail.nak.com.tw)

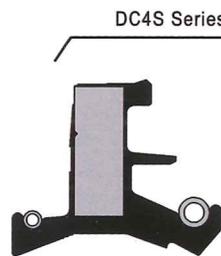
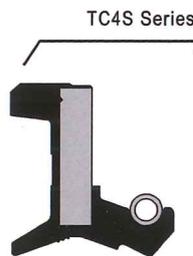


# SHOCK ABSORBER SEALS

**THE BEST SEAL  
AND SERVICE  
IN THE WORLD**

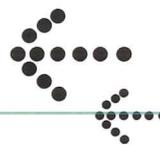
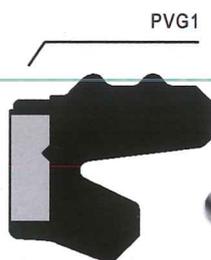
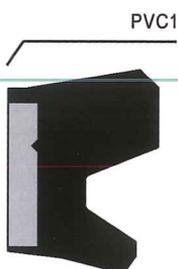
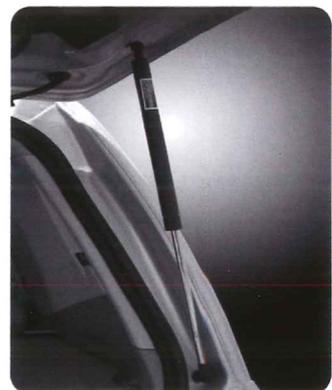
## OIL SEAL PRODUCTS FOR SHOCK ABSORBER

NAK Shock Absorber Seals are specially oil seals for use in the automotive shock absorber with double functions, to prevent the leakage of the dampening fluid / gas and to seal against external contaminants during the reciprocating motion of the shaft, which are critical requirements for the shock absorber in regard to its function and service life. The semicircular design of the secondary lip also helps reduce friction in addition to leakage prevention.



## OIL SEAL PRODUCTS FOR GAS SPRING

NAK Gas Spring Seals are also designed to prevent leakage of the dampening gas and to seal against external contaminants. Gas Spring Seals designed by NAK can work well for either the compression type of gas spring or the extension type with superior sealing capability.

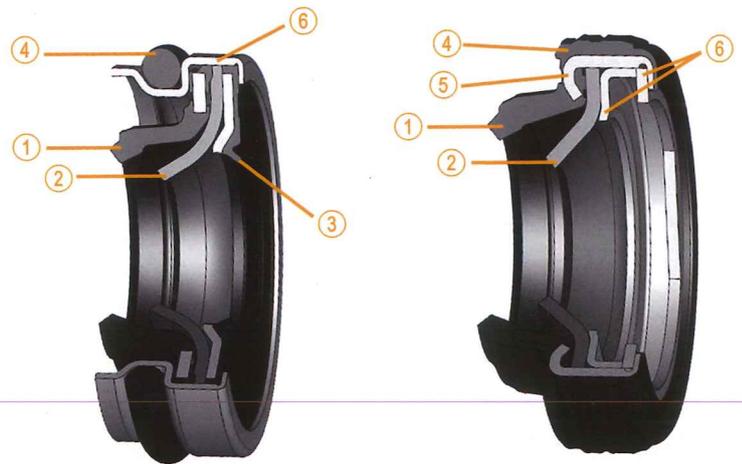




# AUTOMOTIVE A/C COMPRESSOR SEALS

## MATERIAL

- Automotive A/C compressor seals mainly use HNBR and PTFE.
- NAK provides customized requirements and demands according to variety application.



- ① Primary 1<sup>st</sup> lip: HNBR has effective resistance against refrigerants and refrigeration lubricants and also has excellent temperature resistance range from -40°C to 150°C.
- ② Primary 2<sup>nd</sup> lip: This high performance lip is made of PTFE to seal refrigerants inside the compressor and to prevent primary 1<sup>st</sup> lip wear when rotating in high speed.
- ③ Dust lip: To prevent dust and mud from invading the compressor.
- ④ O-ring / bonded rubber O.D: Made of HNBR for static sealing to prevent leakage of refrigerants inside the compressor.
- ⑤ Case: Usually in SPCC metals which are phosphate, coated with adhesion of rubber.
- ⑥ Case: Usually in SPCC metals which are phosphate, coated with zinc plated to avoid case corroding.

## APPLICATION



**Size:** shaft  $\varnothing 11 \sim \varnothing 16$ ; bore  $\varnothing 23 \sim \varnothing 30$

**Temperature:** -40°C to 150°C

**Media:** refrigerants and refrigeration lubricants

**Pressure:** 1~6 bar

**Speed:** 800~10,000 rpm, rotary



Please scan the QR code and visit our website at <http://www.nak.com.tw/>  
If you require any further information, feel free to contact us at [service@mail.nak.com.tw](mailto:service@mail.nak.com.tw)

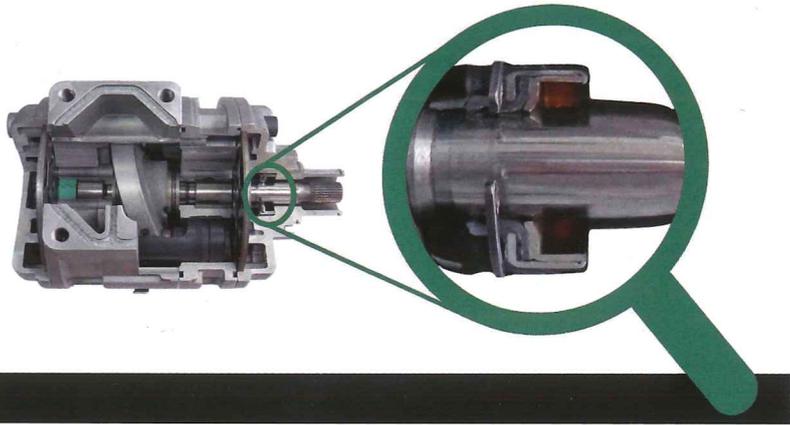


# AUTOMOTIVE A/C COMPRESSOR SEALS

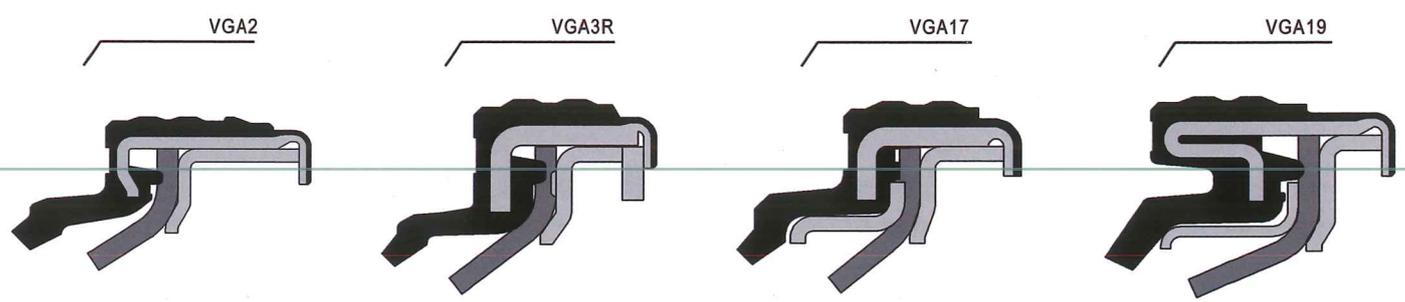
**THE BEST SEAL  
AND SERVICE  
IN THE WORLD**

## OIL SEAL PRODUCTS FOR AUTOMOTIVE A/C COMPRESSOR

The compressor is the heart of automotive air conditioning system which is designed to make the driver and passengers feel more comfortable during muggy, hot, or stuff trips in a vehicle. Due to the fact some refrigerants were leading to ozone depletion in the atmospheric layer, people found new refrigerants intending to reduce and eliminate the contaminants with an impact on greenhouse effect. The new refrigerants also accompanied the use of corrosive lubrication and higher operating temperature conditions.



### Automotive A/C Compressor Seals



These are example types of NAK automotive A/C compressor seal. For more information please contact us.