



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

Product Information

Automotive Boots and Bellows



NAK SEALING TECHNOLOGIES CORPORATION
ISO9001/TS16949 Company

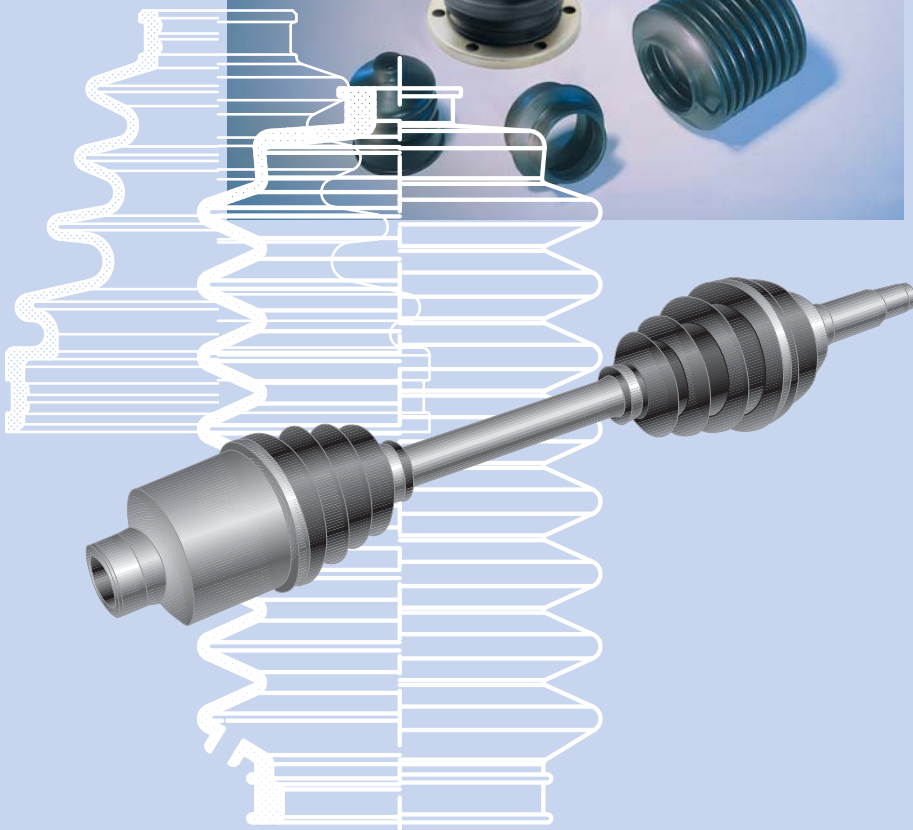
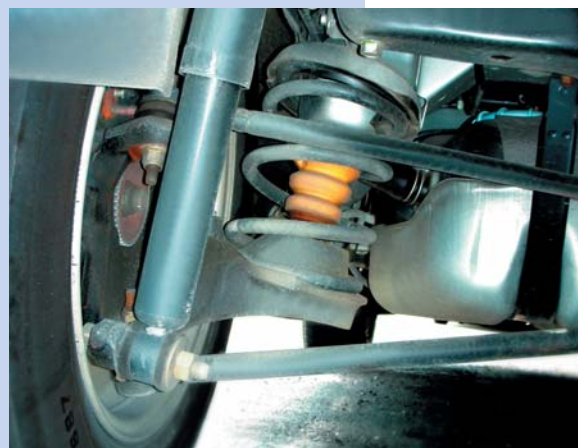
Overview

NAK C.V. Joint Boots & Steering Rack Bellows

are designed to operate in critical conditions such as high speed, large rotational angle, and extreme temperatures. They are technical rubber components in the vehicle for protecting transmission and steering systems from outside contaminants. Both the transmission shaft and steering rack are expensive to replace. **NAK Automotive Boots and Bellows** made of high-performance elastomers can ensure greater durability thus reducing the cost for replacement.



Boots and Bellows



Description

NAK Automotive Boots and Bellows are designed to protect the system assembly against dirt, dust, mud, water and any other contaminants. They can increase product service life and save the cost for replacing the transmission shaft and steering rack.

Characteristics

- Wide range of materials
- Consistent quality
- Easy installation
- Custom design available
- Resistant to tear and abrasion
- Controlled flexibility and performance by different materials
- Wide O.D. range from 20 to 200 mm
- Excellent temperature range, from -40°C to 100°C




Product Design

NAK has a strong and dedicated team of R&D. Not only do we design, develop and carry out material research on our own but we also take the initiative to follow up with customer requirements. Our team can also develop boots or bellows for special applications. Performance rubber CR, EPDM, etc. as well as TPEs materials are used to suit a wide range of customer applications.



Technical Information

Specialty Material TPE Boots and Bellows are in NAK Production!!



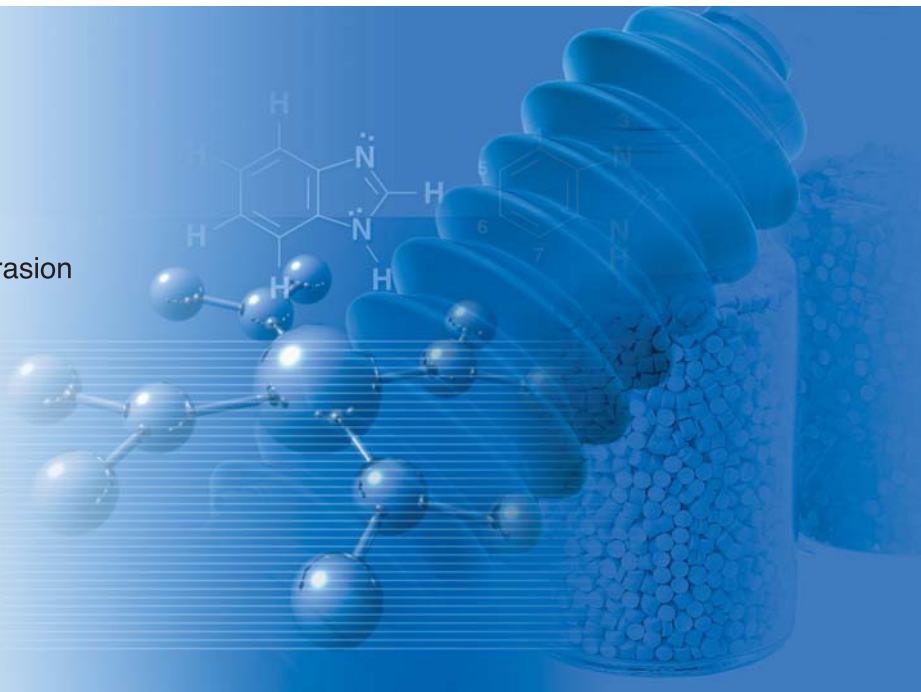
NAK Boots and Bellows can also be developed from Thermoplastic Elastomers (TPEs) to improve component durability and life. Thermoplastic elastomers show both advantages typical of rubbery materials and plastic materials. TPEs also provide functional performance and properties similar to conventional thermoset rubber products, but can be processed with the speed, efficiency and economy of thermoplastics. TPV (e.g. Santoprene) and TPEE (e.g. Hytrel) are in common use during our manufacturing of boots and bellows.

Advantages of TPV

- Resistant to a wide range of solvents and chemicals
- Enhanced performance under extreme weather conditions
- High durability in severe conditions
- Wide range of deflection
- Easier for composite assembly design and higher precision
(can be 2 to 3 times more precise than EPDM, CR)
- Recyclable to be in different products

Advantages of TPEE

- Perfect flex fatigue characteristics
- Excellent temperature capability
- Resistant to tear, severe crack and abrasion
- Outstanding toughness and stiffness
- Resistant to water and other liquids
- Controllable on product quality
- Recyclable to be in different products



Application

NAK Automotive Boots Stand Firm under Rigorous Conditions in Northern Siberia, Russia!!



NAK Automotive Boots and Bellows have been approved and used in a wide range of cars running on all kinds of road conditions. One of our customers in Russia has reported excellent performance of our automotive boots in a Motor Rally running 17,500 km under extreme weather conditions in Russia's Northern Siberia.

In that Rally 124 specially equipped jeeps with properly trained crews and 9 jeeps with new-comers took part. Our Russian customer set **NAK CV Joint Boots** to work on 3 cars of Nissan Terrano and 2 cars of Toyota Surf. The rally was very dangerous. There were not many roads as expected. The only trails were where they drove. The Northern Route made up more than 10,000 km. All in all they drove about 17,500 km.



The results of the Rally: **NAK CV Joint Boots** stood the hard temperature and road conditions. One of the boots was torn open from mechanical impact and was replaced, but none of the boots had any cracks, and mechanical scratches did not increase. The boots themselves kept up their

elasticity even in low temperatures. Boots of other make showed bad results. They were either ruined on the route or had such bad condition that they could not be used further.

This serves as a testimony to the high-quality performance of NAK Automotive Boots. We will continue our research and development to provide the customer with high-quality products.



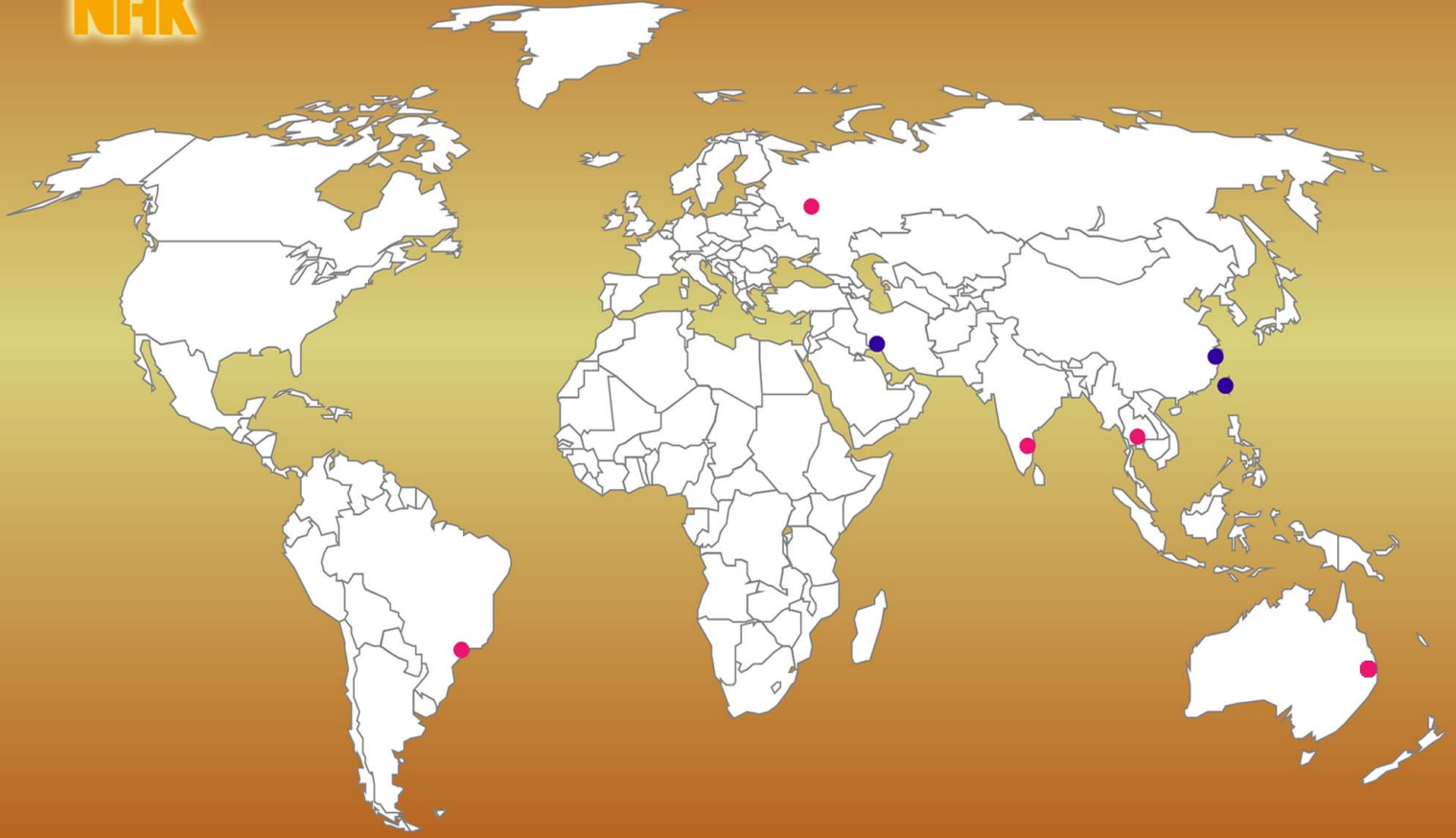


Subsidiary map

Existing subsidiaries worldwide

● Factory

● Service office & warehouse



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