

Bearings for the Petrochemical Industry

In response to the economic and environmental challenges which face the petrochemical industry, NSK has made use of its knowledge and expertise to develop reliable and effective technical solutions.





NSK

hydrocarbons

oils

gas

displacement
blowers

pharma-
ceuticals

pumps

cosmetics

conveyors

chemicals

petroleum

onshore

offshore

Whether operating in a harsh or standard environment, NSK offers a wide range of bearings designed specifically for use in petrochemical applications. Select one of these products to achieve an effective technical solution for the challenges posed by your particular application, a solution which will assist you in achieving your objectives in terms of performance, reliability and cost management.

Cylindrical roller bearings with brass cages (EM series), pressed steel cages (EW series) and polyamide cages (ET series)



- high load rating
- low noise levels
- low rise in temperature
- longer service life
- APPLICATIONS: pumps, compressors, displacement blowers.

Single row angular contact ball bearings

- APPLICATIONS: pumps, compressors.

Polyamide cage



- 40° contact angle
 - high load rating
 - polyamide 46 cage can function at temperatures up to 150°C
 - universal mounting
 - preload or axial clearance according to application
- Series 7200 - 7300 B EA T85 SU N

Steel cage



- 40° contact angle
 - steel cage
 - universal mounting
- Series 7200 - 7300 B W G

Brass cage



- 40° contact angle
 - Machined brass cage
 - Application: petrochemical
 - ▶ P6 accuracy (Abec 3)
 - ▶ specific axial clearance
 - ▶ universally ground faces
 - ▶ compliance with API 610
- Series 7200 - 7300 B M PC

Double row angular contact ball bearings

Range of products: Series 3200-3300/5200-5300



- steel or polyamide cage
- ZZ shields
- DDU contact seals
- without seals or shields
- APPLICATIONS: centrifugal pumps, displacement blowers.

Deep groove ball bearings

Range of products: Series 600, 6800, 6900, 16000, 16100, 6000, 6200, 6300, 6400



- standard and specialised applications
- steel, polyamide or brass cage
- numerous options for shields and seals (with or without contact: ZZ, VV, DDU, DDW, DDG)
- special steels
- large selection of greases
- low noise levels

pumps

compressors

SPACEA™ Series



For high-temperature applications

- service life is 6 times longer than bearings with conventional types of lubricants
- maximum temperature 400° C
- constant running torque
- APPLICATIONS: conveyors and kiln cars.



For clean room applications

- optimum service life under extreme conditions
- low levels of particle emission
- lubrication using specialised lubricants or fluororesin-coated cage
- APPLICATIONS: robotics, medical and pharmaceutical equipment.



For corrosive environments

- optimum service life in the following types of environments:
 - ▶ humid (washdown or immersion)
 - ▶ low acid or alkaline
 - ▶ strong acid
- APPLICATIONS: chemical and pharmaceutical industries, cleaning equipment.



For vacuum environments

- optimum service life
- function at pressures up to 10⁽⁻¹⁰⁾ Pa
- low levels of component degassing
- APPLICATIONS: vacuum pumps, medical equipment.

Self-aligning housed bearings



Triple-seal housed bearings

- metal shield and triple lip nitrile sealing lip offers maximum protection
- wide product range
- interchangeable
- APPLICATIONS: conveyors in polluted environments.



Silver-Lube® housed bearings



- available in base plate, bracket or takeup models
- corrosion resistant (thermoplastic body and stainless steel bearings)
- temperature range from -20 °C to +90 °C
- protective covers available
- APPLICATIONS: conveyors subjected to washdowns.

Extraction, transport, refining, production, handling, packaging: for every key manufacturing step involved in chemical and petrochemical processing, numerous rotating machines are needed to successfully complete these processes. Below are two examples of solutions to technical challenges which have been developed by NSK.

Centrifugal pumps

As the primary type of equipment utilised in petrochemical applications, centrifugal pumps transport a variety of fluids through the various stages of finished product production.

In order to adequately respond to the harsh mechanical constraints posed in these environments and to optimise material reliability,

NSK recommends solutions which incorporate:

- high-performance cylindrical roller bearings (Series EW / ET / EM).
- paired 40° angular contact ball bearings (with pressed steel, polyamide or brass cages).

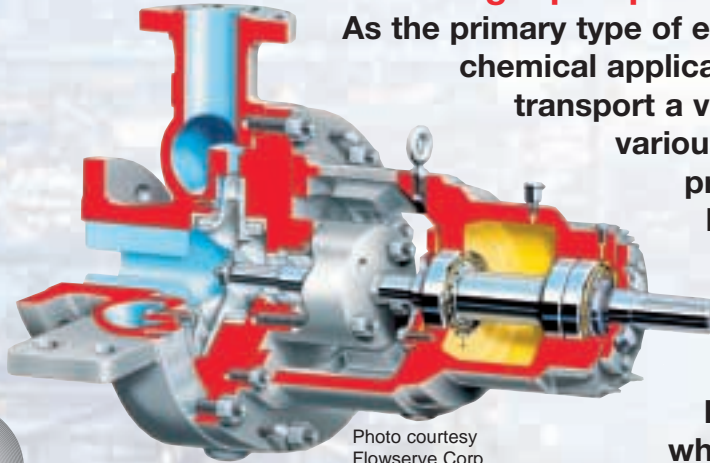


Photo courtesy
Flowsolve Corp.

pumps

compressors

Displacement blowers

Designed to convey air or neutral gases, displacement blowers require solutions specifically designed for these applications.

Radial loads are carried by cylindrical roller bearings (Series EW / ET / EM). Axial loads generated by synchronisation gears are carried either by double row ball bearings (3000/5000 series) or by paired tapered roller bearings.



Photo courtesy
Aerzener Maschinenfabrik GmbH

These are just two examples of application solutions offered by NSK which have been developed on the basis of expertise and knowledge.

NSK also offers a full range of the following products:

- SPACEA™ (ball bearings) for applications in clean, vacuum, corrosive or high-temperature environments
- standard and specialised housed bearings for applications at high temperatures or in corrosive environments

NSK bearings provide you with reliable and effective solutions for all your bearing needs.



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