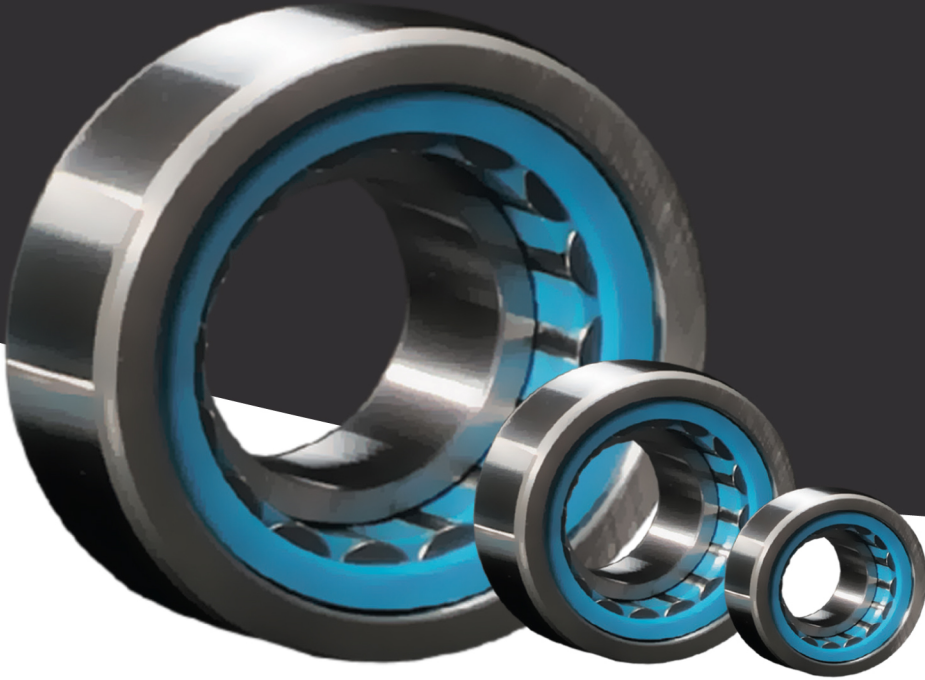


# Koyo



## Koyo Solid Lubrication Technology



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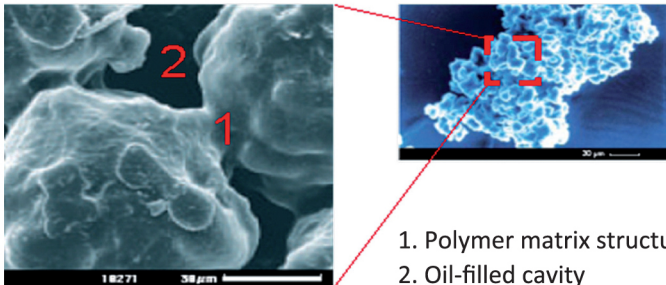
“...processed under serial production conditions, providing maximum value to our customers...”

## Introduction

Solid lubrication is an alternative lubricant for bearings. It was developed by Koyo for applications where oil or grease does not provide the best lubrication solution.

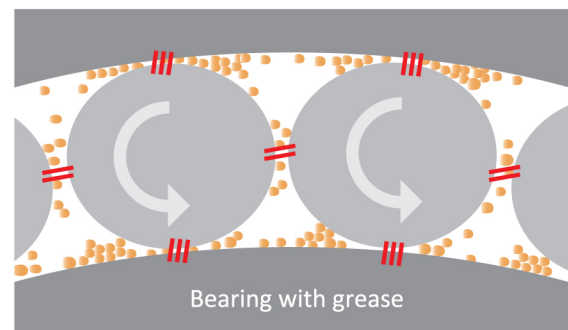
## What is solid lubrication?

- It is a compound of a specially developed polyethylene, synthetic oil and carefully selected additives.
- The oil content in Koyo solid lubrication is ~70%.
- Its micro porous network (matrix structure) has excellent properties to absorb and provide oil.
- It is injection moulded into the bearing.
- It provides long-lasting (forced) lubrication.

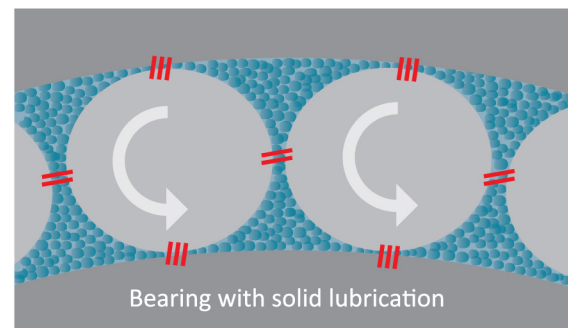


1. Polymer matrix structure  
2. Oil-filled cavity

## How does it Work?



During standard operation the grease will partly be displaced to areas where it is not needed.



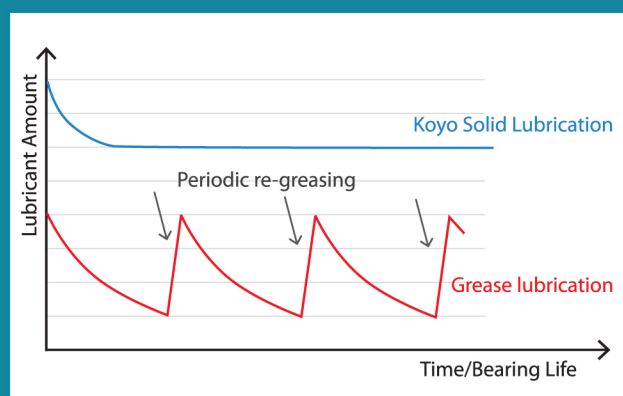
Forced lubrication results in a continuous presence of oil exactly where it is needed.

## Why use Solid Lubrication?

Solid lubrication can improve bearing performance considerably in cases where other lubricants fail to guarantee optimum performance.

Some of the benefits:

- lubricant content: up to 3 times higher compared to standard grease.
- extended bearing life (for certain application up to 10 times longer than conventionally greased products).
- extended maintenance intervals/reduced down time.
- avoid maintenance in applications where the bearings are difficult to reach.
- making oil lubrication circuit/pump redundant.
- particularly suitable under severe operating conditions such as: high oscillation, moderate speed in combination with high load
- Koyo solid lubrication bearings have been in serial production since 2006.





Steel Mill Industry

Forklift Truck

Food Processing

Forestry Machinery

Wintersport Equipment

## Applications & Characteristics

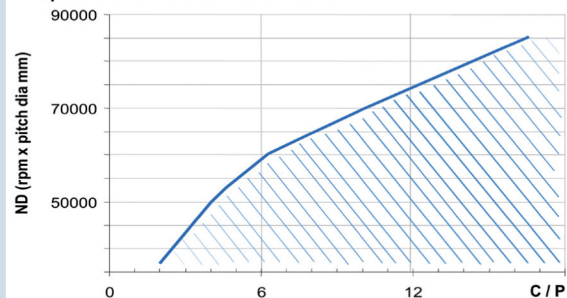
- Koyo solid lubrication technology was initially developed for needle and cylindrical roller bearings used in the textile machinery industry. As this solution can be applied in virtually any type of bearing, new applications followed soon.
  - Koyo solid lubrication technology is designed for operational temperature ranging from -40° and +85°C. Short peak temperatures of 100o C are admissible.
  - Koyo introduced the speed limit/load ratio-curve to define much more precisely the recommended application area for solid lubrication, for each bearing type (see picture).
- ➔ Don't hesitate to ask your Koyo contact for further support to determine the suitability of Koyo solid lubrication for your specific application.
- The static and dynamic load rating of the bearing remain unchanged after applying solid lubrication.
  - An oil type compatible for machines used in food industry is optional.
  - Solid lubrication is currently available for bearings with OD up to 250 mm (larger sizes can be studied).
  - To prevent rolling elements from slipping, it is advisable to follow the recommended minimum radial load for each bearing type (catalogue value).
  - Avoid direct contact with organic solvents like acetone, kerosene and benzene.
  - For each application a dedicated technical study is required (this is not an off-the-shelf product).

### Characteristics

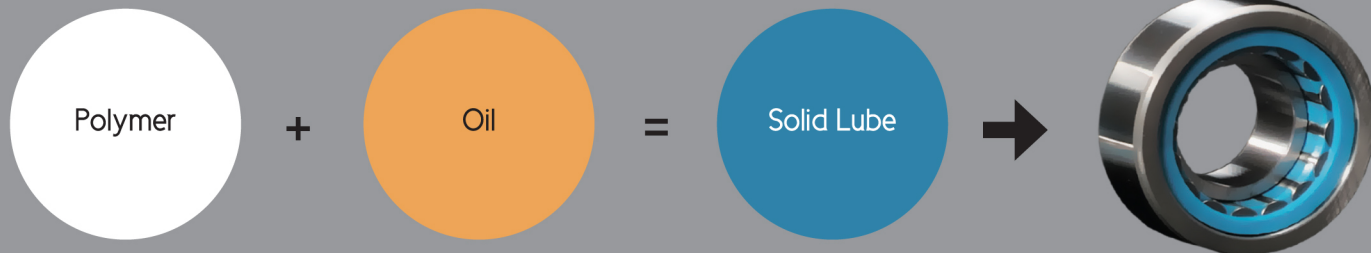
### Applicable Area

1. Temperature range	-40° to 85°C (short peaks of 100°C)
2. Applicable load & speed	Applicable area according to the right chart
3. Bearing types	Basically applicable in all bearing types
4. Size range	Currently up to OD 250mm
5. Minimum radial load	According to normal catalogue values
6. Static/dynamic load	According to normal catalogue values
7. Surrounding environment	Avoid contact with organic solvents

Speed Limit vs. Load Ratio - Curve



### Solid lubrication



Mining Machinery

Construction Machinery

Conveyor Systems

Textile Machinery

Paper Mill Industry



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