



Quality Creates Value

WD Solid Lubricated Bearings



Introduction

Bearings operating in humid and contaminated environments suffer from unreliability, premature fatigue, and shortened service life resulting in costly maintenance and downtime.

WD solid lubricated bearings are specifically developed for applications where bearings are exposed to dust, dirt, and humidity making conventional grease and oil unsuitable.

This innovative solid lubricant includes lubricating oil and a porous polymer matrix. The polymer matrix has millions of micro-pores which hold two to four times more oil than conventional lubricated bearings. The polymer material fills the free space inside the bearing and provides lubrication directly to the cage, rolling elements, and raceways enabling the bearing to rotate with low friction.



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Benefits



a. Reduce maintenance requirements

- Solid lubricated bearings carry higher oil volume allow for less frequent maintenance - even maintenance free in some cases
- Solid lubricated bearings can be flushed by water
- Solid lubricant extends the bearing service life

b. Prevent foreign contamination

- Since the free space inside the bearing is filled by the solid polymer, it resists foreign contamination such as water, dust, etc
- Additional seals can be used to provide extra protection

c. Eliminate oil leakage

- Solid lubricant reduces the risk of oil leakage from the bearing to prevent pollution of machinery and goods
- The lubrication oil is re-absorbed by the polymer matrix in a stationary condition

d. Environment friendly

- Solid lubricant is environment friendly as it prevents oil leakage
- High quality synthetic oil is used in solid lubricant to provide better oxidation resistance
- Food grade oil is available for food & beverage industry

Application



• Agricultural Machinery



• Food & Beverage Industry



• Automation & Robotics

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Technical Data

Composition of solid lubricant

Solid lubricant is normally produced with a very high quality synthetic oil which is suitable for most applications.

lubricant viscosity:

140cSt at 40°C

19cSt at 100°C

Temperature limits

The max temperature for bearings lubricated with solid lubricant (measured on the bearing outer ring):

Max.continuous operating temperature	85°C
Max.intermittent operating temperature	95°C
Min.start-up temperature	-40°C

Bearings with solid lubricant can be heated to a maximum of 100°C for mounting purposes (Heating plates or oil baths should not be used).

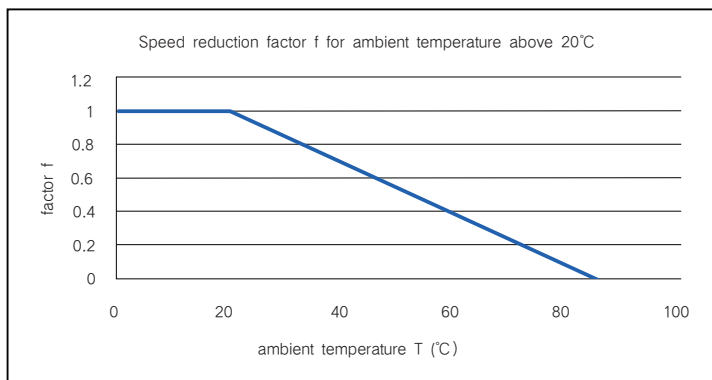
The recommended maximum speed limits for bearings and bearing units with solid lubricant is limited by the maximum continuous operating temperature of 85°C.

For bearing with solid lubricant operating at the recommended speed limits, an increase in the operating temperature of approximately 65°C above ambient is to be expected.

bearing type	recommended max. speed limit
single row deep groove ball bearings with a stamped metal cage	300000/d _m
single row deep groove ball bearings with a polymer cage	40000/d _m
double row deep groove ball bearings	40000/d _m
cylindrical roller bearings with a stamped metal cage	150000/d _m
cylindrical roller bearings with a polymer cage	40000/d _m

Note: $d_m = 0.5(d+D)$. For bearings with integral seals, use 80% of the recommended speed limits. Consult WD technician for recommended speed limits of more bearings.

For ambient temperatures above 20°C, the speed limit should be reduced.



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