



DISCUSSION 360°

GROUND-BREAKING

**BEARING SOLUTIONS
FOR THE AGGREGATES
INDUSTRY**

DP049



HAYLEY
DEXIS

HAYLEY DEXIS

BEARINGS IN THE AGGREGATES INDUSTRY

While bearings keep machines and equipment moving, what happens when the operating conditions are particularly challenging, such as in the construction, mining or quarrying sectors? As experts in bearing technology, we know that the presence of invasive contaminants and heavy loads can easily compromise the service life of standard bearings, leading to costly maintenance, repairs and production downtime.

BEARING SELECTION IS KEY

In mining and quarrying, core processes like extraction, transportation, preparation, separation and enrichment create debris and contamination that can easily penetrate poorly specified bearings. The same is true in construction due to continuous digging and earthmoving activities.

This does not bode well for operation-critical assets such as conveyors in aggregates applications. Frequent starting and stopping, along with reversals in direction, mean conveyors are prone to reliability issues, made worse by the high potential for contamination. In these environments, NSK bearings provide the toughness required above all else. Based on proprietary, state-of-the-art material technology, we exceed the performance boundaries of conventional bearings in terms of long operating life and high limiting speed.

Correct bearing selection means that mining, quarrying and construction sites can maximise their uptime and productivity while simultaneously reducing maintenance costs, which is where enlisting the expertise of NSK and HAYLEY DEXIS can pay real dividends. Together, we have years of experience in specifying bearings and supporting customers in these industries. NSK's portfolio of bearing solutions for aggressive environments is comprehensive and proven.

INNOVATIONS FROM NSK

Among popular selections is the new and innovative series of NSK spherical roller bearings with a detachable seal. This notable design feature enables accurate management of the proper clearance during bearing assembly and prevents the entry of dirt. The concept centres

on a seal mounted to a ring/holder that is fully detachable (via bolts), providing access for clearance measurements using feeler gauges.

This unique design requires no heat-shrink equipment and continues to make use of ISO-standard tapered adapter sleeves and locknuts, thus offering interchangeability with existing solutions.

Importantly, despite the addition of the detachable seal, there's no extension of the ISO-specified boundary width dimension, permitting the use of standard bearing housings. This outcome has been achieved by deploying the NSK proprietary, independently certified Hi-TF/ Super-TF bearing material to mitigate the design constraints of the seal. This material increases the load rating in comparison with a standard open bearing, allowing the solution to remain within the same dimensional envelope.

In 2017, the test house DNV GL certified that, when using Super-TF material, it is possible to improve the basic dynamic load rating in roller bearings by 23%. This increase equates to an effective doubling of fatigue life in comparison with bearings made from standard steel.



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Another proven solution for sectors such as mining, quarrying and construction is the NSK Self-Lube® mounted bearing unit (comprising housing and insert), which exceed the life of conventional bearings through their state-of-the-art design, material, lubricant and seals.

By selecting Self-Lube® bearings with triple lip seal and shaft end protectors, mines, quarries and construction sites can reduce downtime and repair costs even further.

There are also many application-specific solutions in the NSK portfolio. For example, the HPS series of spherical roller bearings offer long service life - twice that of conventional bearings - enabling vibrating sorting and screening machines at mining facilities to operate continuously thanks to a special surface on the outer ring raceway.

With vibration dampening properties and high resistance to heavy or shock loads, you can reduce your maintenance costs considerably.

If you're seeking cylindrical roller bearing solutions, NSK's EMM-VS series for vibrating equipment features high load-carrying capability and an innovative outer-ring-guided machined brass cage that gives higher strength and wear-resistance under vibrating conditions.

Ultimately, correct bearing selection means that mining, quarrying and construction sites can maximise their uptime and productivity while simultaneously reducing maintenance costs.

If you would like advice in choosing a bearing for your aggressive operating environment, we have the in-house expertise available at HAYLEY DEXIS and NSK to ensure you always receive the optimal solution.

CONTACT US!

Speak to your local branch today about any of your bearing requirements.

You can find their details by using our online **Branch Finder** tool:

www.hayley-group.co.uk/branch-finder



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