DISCUSSION 360°

GET THE GREEN LIGHT

FOR ENERGY EFFICIENCY WITH INNOVATIVE SOLUTIONS FROM NSK

DP050

HAYLEY
DEXIS

HAYLEY DEXIS
NSK BEARINGS

Manufacturers are currently facing increasing pressure to find ways of offsetting the spiralling price of energy and raw materials. Since January 2021, energy costs have doubled and are set to rise further, forcing many industrial companies to seek out new technologies that can help drive efficiencies. The latest bearing innovations, for example, can make a major contribution to the energy efficiency of your machines and equipment, as can the optimised set-up of shafts and belts. Perfect alignment between your machine and electric motor, for example, means more energy-efficient operation.

ALIGN EFFECTIVELY TO SAVE ENERGY

This issue is a real pain point for industry, where over 50% of machines and industrial equipment run out of alignment in reference to ISO standards. Misalignment occurs when coupled shafts are positioned so that their gaps or offsets are outside acceptable limits. Shafts subsequently run off-centre, in an elliptical motion, causing higher loading, heat generation and energy consumption.

There are many warning signs of misalignment, including high vibration, increased temperature, loose coupling bolts and excessive lubricant leakage at bearing seals, to list but a few. If you've noticed that your machine suffers from any of these effects, it will almost certainly be costing you money in higher power consumption.

NSK and HAYLEY DEXIS can help by offering NSK's advanced laser alignment tools for shafts and belts. These tools ensure quick and perfect alignment every time, an outcome that not only reduces energy consumption, but also reduces wear on important machine components such as seals and couplings, minimises machine downtime and maximises productivity.

The more precisely your machines are aligned, the more efficiently rotational power is transferred. Using NSK laser alignment tools, it's possible to achieve power consumption savings of up to 17%. And that's just for a single machine. Due to the significant energy savings available, the return on investment for laser alignment tools is very short.

Energy efficiency is a critical focus point for industry, which is under pressure to play its part in the drive towards net-zero. Electric motors and the systems they drive account for more than 40% of global electricity consumption.

ENERGY EFFICIENT BEARING SOLUTIONS

NSK has an extensive range of energy-efficient bearing solutions - available from HAYLEY DEXIS - that not only save money through lower machine running costs, but also reduce CO2 emissions and contribute to a more sustainable industry. For instance, NSK has a series of deep groove ball bearings that generates up to 80% less energy loss in electric motors. In comparison with conventional deep groove ball bearings, these high-efficiency bearings demonstrate 60% less friction when using a steel cage and 80% less friction when using a plastic cage.

A further innovation is NSK EA7 grease, which reduces internal friction, increases energy efficiency and doubles the service interval for electric motors. Alongside optimised grease fill, this low-viscosity and friction-reduced lubricant provides the ideal solution for any manufacturer looking to reduce torque and, in turn, cut CO2 emissions.

REDUCE FRICTION IN YOUR ROLLING ELEMENTS

Non-contact seals represent another contributor to energy-efficient bearing performance. When looking to design energy-efficient drive systems, you should always take rolling bearings into account. The inherent friction which occurs from the contact of conventional seals can compromise drive efficiency. HAYLEY DEXIS and NSK can offer solutions that ensure efficient sealing properties without increasing frictional torque or operating temperature.

The automotive industry is among those that can benefit as it sets about increasing the energy efficiency of its on-vehicle drive mechanisms. Further market demand for low-friction ball

bearings comes from applications such as domestic appliance production, especially washing machines, where manufacturers declaring a favourable efficiency class enjoy a distinct competitive edge in the market.

Turning to another important innovation, our bearings are proving popular for improving the high-speed rotational performance of electric vehicle (EV) motors, thanks largely to the utilisation of various advanced technologies, including a plastic cage. Plastic cages are lighter than steel cages, offering reduced mechanical losses, excellent self-lubricating properties and a low co-efficient of friction, all of which contribute to energy efficiency and sustainability.

CONTACT US!

Speak to your local branch today about NSK bearing solutions that can improve the energy efficiency of your machinery.

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

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

HAYLEY

DEXIS