

NSK Bearings seal the deal

THE DEAL IN VIRTUALLY EVERY INDUSTRY SECTOR IS THAT MORE UPTIME EQUALS MORE PRODUCTIVITY, WHICH EQUALS MORE PROFITABILITY. IN THE WASTE AND RECYCLING INDUSTRY, ACHIEVING THE DEAL CAN BE EXCEPTIONALLY DIFFICULT.



Kevin Delehanty
Senior Applications Engineer
NSK

Operating conditions in this sector are notoriously tough. Yet as operational pressures increase to keep pace with the growing levels of recycling, it's more important than ever to maximise uptime. Unfortunately, more material for recycling means more hard to handle items for equipment such as separators, screens, conveyors and crushing plant.

Keeping rolling

All these items rely on reliable and efficient rolling bearings.

However, with glass, metals, plastics, wood and even stone being recycled, the life of the bearings is anything but easy. Moisture, dust and abrasive particles continually threaten to contaminate the lubricant and lead to premature bearing failure.

Fine particle contamination, such as wood dust or paper dust, can be kept out of the spherical roller bearings and split plummer block housings found on heavy duty conveyors and elevators, trommels and screens, by using standard two-lip rubber contact seals or V-ring seals. But more

abrasive contaminants, such as crushed glass or hard plastic, can wear away rubber seals, and need a more robust solution.

In these instances NSK recommends the use of NSK 'TACK' seals.

A-TACK-ing the problem

TACK seals consist of a regreasable labyrinth seal combined with a V-ring seal. The grease-filled labyrinth acts as an excellent barrier against fine and abrasive particles, and can also be regreased – which will purge contamination from the labyrinth passage. At the same time, the V-ring seal prevents contamination from entering the bearing.

Standard TACK seals, together with NSK's new SNN housing range and existing HPS spherical roller bearing range, offer the best combination of sealing capability, housing strength and bearing load capacity on the market.

Getting it taped

A recurring problem in household waste recycling plants is cassette tape damage.

Even a small amount of tape is enough to cause major damage and unplanned downtime, by wrapping around drive and support shafts, working its way down the shaft and quickly destroying unprotected bearings. The tape enters the bearing even under triple lip or external radial lip seals.

NSK has found that its range of flinger seal inserts for RHP Self-Lube housings is very effective in preventing cassette tape from entering the bearing.

The strong metal flinger, positioned in front of the bearing seal, deflects any contamination – effectively blocking the path of the tape as it works its way down the shaft. Combined with NSK's moulded oil technology, where grease is replaced by an oil-impregnated polymer, this solution has resulted in significant decreases in bearing failures, and large cost-saving benefits. Which is a good deal whichever way you look at it.



A little goes A LONG WAY

IT'S NOT ALWAYS THE BIGGEST CHANGES WHICH MAKE THE BIGGEST DIFFERENCE. SOMETIMES, A MINOR IMPROVEMENT OR ENHANCEMENT TO A PIECE OF EQUIPMENT CAN MAKE A MAJOR DIFFERENCE – WHETHER THAT'S TO SAFETY OR PERFORMANCE. HERE ARE TWO COMPONENTS FROM ERIKS WHICH MAY BE SMALL, BUT SHOULDN'T BE OVERLOOKED.

Arms and dangerous

Hydraulic cylinders used in lifting operations – like those found on the hydraulic arms of skip loaders, for example – always carry the danger of failure. And then a lifting operation suddenly becomes a dropping operation, which you don't want to get in the way of.

All it takes is for the flexible hydraulic line to snag or break, and the hydraulic lifting arm loses power, lowers rapidly, and takes with it whatever it's lifting. If that's a full skip, the consequences are easy to imagine.

The solution is anti-burst check valves, fitted to the entry and exit ports of the hydraulic cylinders.



Set-up to operate with the required pressure and flow, in the event of a failure of the hydraulic system and a reduction in either of these, the anti-burst check valves act as a non-return valve for the hydraulic fluid

(effectively becoming an emergency brake), preventing the cylinder from moving and the associated lifting arm from descending.

Easy to retrofit, anti-burst check valves from ERIKS are a small step that can make a big difference to safety, in all kinds of areas involving hydraulic equipment.

The dry facts

When your hydraulic systems need refilling, it's often not only the tanks that get the oil.

The usual ISO A/B Series male/female connectors are virtually impossible to disconnect without at least some spillage ending up on the ground. Depending on the location, it then becomes either an environmental hazard or a slip hazard. Either way: not good.

However, there is a way to top up your tanks without a drop being spilled – using flat-face quick release couplings from ERIKS.

These couplings offer not one but two advantages over the traditional male/female versions.

Firstly, they enable a quick and clean release, which won't spill a drop of fluid. Result: no environmental contamination, and no safety issues. Secondly, because they have a flat face, they offer no crevices where dirt can hide. Which means there's less chance of introducing contamination – and all its associated problems – into the system when connecting to the oil tank.

So there are two simple, inexpensive, but highly-effective modifications you can easily make to your hydraulic systems. Modifications which will pay for themselves many times over either in reduced risk and increased safety, or reduced downtime and enhanced environmental performance.

