

INDUSTRY

MATERIAL HANDLING

APPLICATION

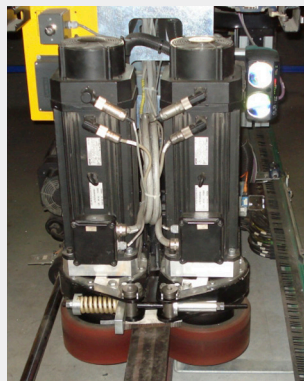
CRANE APPLICATION IN DISTRIBUTION CENTER

COST SAVINGS: \$62,074

A distribution center's automated crane was experiencing regular wheel bearing failures due to loss of grease. The customer had to change 40 wheel hub units over a 5 year period. NSK conducted a bearing failure analysis confirming that the wheel bearings were suffering inadequate lubrication along with radial pre-load. To overcome this, NSK recommended the use of pre-greased NSK Sealed Double Row Angular Contact Bearings with an increased radial internal clearance of C3. An 8-wheel trial was completed. No bearing failures were reported over 12 months. The sealed solution increased productivity and reduced maintenance costs resulting in a significant cost saving.

KEY FACTS

- › Material handling and warehousing
- › Frequent bearing failure – 40 wheel hubs changes in 5 years
- › Failure caused significant production down time and additional cost
- › Poor lubrication and particle ingress
- › Radial pre-load problems
- › Expensive OEM parts
- › NSK Solution: pre-greased Sealed Double Row Angular Contact Bearings with C3 clearance
- › Productivity improvement & cost saving generated



Crane Wheel Hub

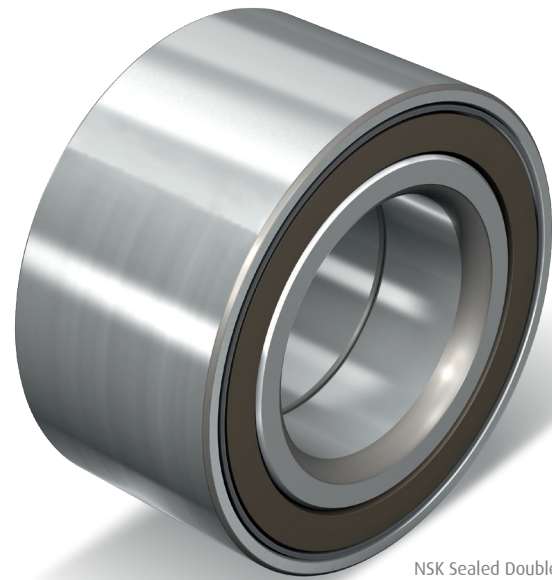
VALUE PROPOSALS

- › NSK conducted an Application Review and a Bearing Failure Analysis showing poor lubrication along with radial pre-load.
- › NSK engineering reviewed the original wheel design, recommending the use of a pre-greased sealed NSK Angular Contact Bearing, issuing modified wheel machining drawings and a fitting procedure for correct assembly
- › A trial was completed on 8 modified crane wheels utilizing pre-loaded NSK Angular Contact Bearing with seals
- › Trial resulted in increased bearing life, reduction of maintenance costs and increase in productivity.







PRODUCT FEATURES

- › Seals RSR: made of nitrile rubber reinforced with an embedded steel disc
- › Contact seals provide excellent protection against the ingress of contamination, reducing wear on the raceways and ball surface, which in turn reduces noise, vibration, and risk of lubricant failure
- › Accommodate radial and axial forces in both directions



NSK Sealed Double-Row Angular Contact Ball Bearing

COST-SAVINGS BREAKDOWN

BEFORE	COST P.A.	NSK SOLUTION	COST P.A.
 OEM parts replacing 40 wheel hubs over 5 years	\$28,682	Replacement of 8 crane wheel hubs over 5 years	\$6,402
 Loss of crane production	\$32,010	Loss in production: no crane wheel failures	\$0
 Labor costs: Maintenance time	\$10,000	Labor costs: Maintenance time	\$2,000
 NSK Engineering Analysis	\$4,268	Wheel hub modification, bearings plus cost of machining	\$5,020
TOTAL COSTS	\$75,630		\$13,556

YOUR PARTNER FOR MACHINE OPTIMIZATION

Our AIP Added Value Program is based around a simple proposition: ‘improvement pays’. By working with you throughout the AIP Value Cycle, we will help you achieve improvements in machine reliability, productivity and performance, all of which carry a tangible and measurable cost benefit – and we have the tools to prove it! That’s what we mean by **improvement pays**.

