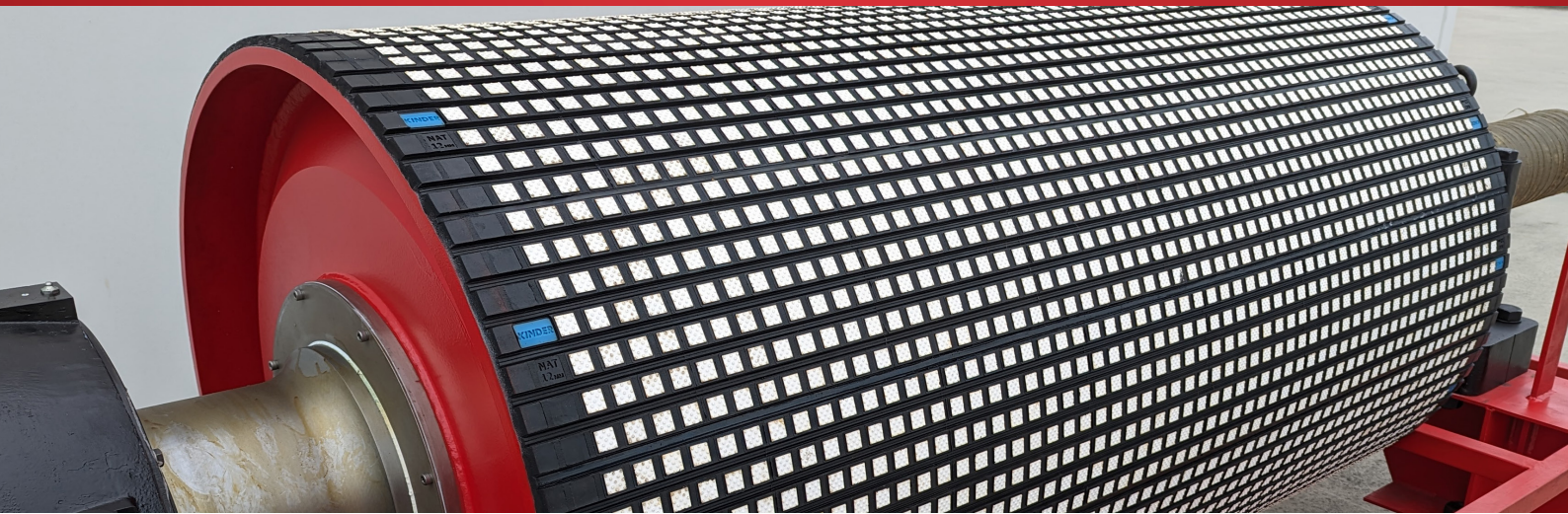


# PROJECT

## K-Conveyor Pulleys

**KINDER K**<sup>TM</sup>  
EXPERIENCE INNOVATION PRODUCTIVITY

**40**  
**YEARS**  
OF INNOVATION



**Kinder Australia Product:**

**Custom Engineered K-Conveyor Pulleys (Qty 72)**

**Project:**

**Expansion - Crushing and Ore Sorting**

**Location:**

**Western Australia**

**Conveyed Materials:**

**Lithium**

**Product TPH / Conveyor Qty:**

**86 - 2298 / 16**

**Conveyor Belt Width / Speed:**

**600 - 1800 / 0.13 - 2.5 m/s**

**Installation Date:**

**2025**

## Project Overview

To meet the demanding conditions of our world-class lithium producer in the Pilbara, WA, Kinder engineered and delivered a fully customised conveyor pulley solution - designed, manufactured, and tested to ensure maximum performance, minimal maintenance, and long-term reliability.

Through advanced design methodologies, rigorous quality control, and innovative features, Kinder pulley assemblies are engineered to withstand extreme loads, reduce operational downtime, and align with the mining operator's commitment to sustainable, efficient materials handling.

## Values Delivered

**Kinder's engineered pulley solution delivered measurable operational value to across several key areas:**



### Enhanced Durability

High-performance materials, advanced sealing, and precision balancing ensure extended equipment life in high-load environments.



### Lower Maintenance Burden

Locking element covers, SKF/Taconite seals, and robust lagging reduce wear, contamination risk, and maintenance frequency.



### Optimised System Integration

Customised design for gearbox, coupling, and holdback interfaces allowed seamless integration with existing infrastructure.



### Improved Throughput and Efficiency

Balanced shafts and lagging performance improved belt tracking and reduced vibration leading to smoother, more efficient operation.



### Sustainable Operation

Reduced replacement frequency and lower maintenance demands contribute to our mining client's operational sustainability goals.

## Tailored Engineering to Unique Customer Demands

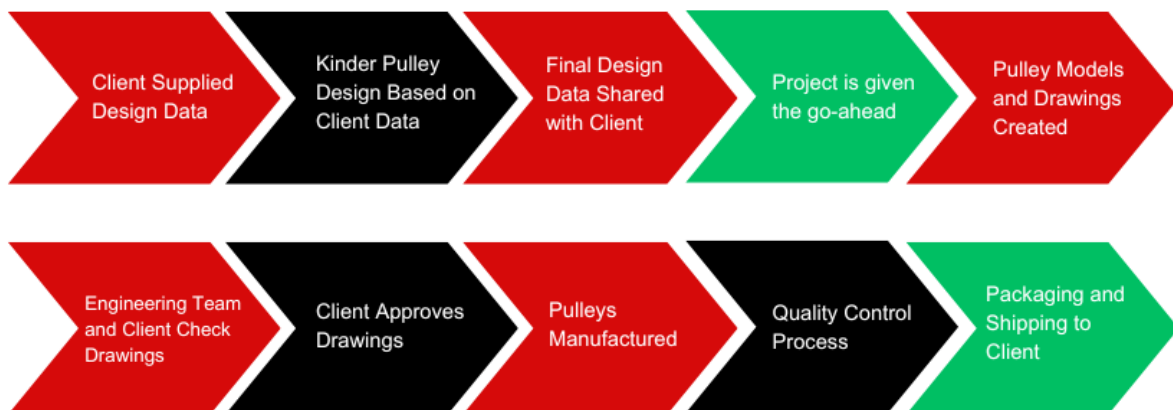
The WA mining operator required conveyor pulleys capable of handling high belt tensions, variable speeds, and harsh environmental exposure. Kinder's in-house engineering team developed a solution from the ground up, using detailed project specifications and client-supplied operational data.

Key design considerations included:

- Belt tensions (T1 and T2).
- Belt width and speed parameters.
- Required bearing life expectancy.
- Mounting footprint compatibility with existing structures.
- Interface requirements for gearbox, coupling, and holdback units.

All pulleys were designed using Kinder's proprietary Pulley Design Software to produce in-depth Pulley Design Reports, ensuring each unit was built to exact specifications. Shaft designs were modelled using Helix delta-D Pulley Shaft Design Software, incorporating:

- Shaft deflection analysis to ensure deformation within AS1403 limits.
- Bending moment evaluations for structural stability under load.
- Bearing load calculations to guarantee service life and performance reliability.



## Precision Manufacturing, Built for Reliability

**Each pulley underwent a robust manufacturing process, adhering to the highest industry standards for safety and performance:**

- Welding and fabrication in accordance with AS/NZS 1554.1:2014
- Dynamic balancing to ISO 1940-1 standards, reducing vibration and increasing bearing life
- Non-Destructive Testing (NDT) using Magnetic Particle Inspection to detect surface and subsurface flaws.
- Post-weld stress relief to reduce residual stresses and extend service life.
- Material testing of tensile and yield strength to validate component integrity.

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## Innovative Sealing & Lagging For Harsh Environments

Kinder's pulleys are equipped with SKF bearings and Taconite sealing systems, ensuring protection from abrasive dust, moisture, and other site contaminants.

To further extend reliability, each pulley includes Kinder's proprietary locking element covers, preventing dust ingress and corrosion of critical internal components - an innovation now implemented as standard across all pulley units.

### Lagging options include:

- Hot vulcanised diamond grooved rubber for optimal belt traction.
- 38% coverage ceramic lagging (dimpled and smooth) for exceptional wear resistance and longevity.
- All lagging is applied using hot vulcanisation methods - superior to cold bonding - for a stronger, more durable bond between shell and rubber layer.



## Packaging and Operational Readiness

To support operational efficiency, Kinder delivered pulleys in protective steel stillages, with:

- UV-resistant wrapping for outdoor storage.
- Pre-greased pulleys ready for installation.
- Spare pulleys greased for storage, with clear labelling and maintenance indicators.

This ensures safe transport, quick deployment, and straightforward inventory management for site personnel.



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