

CASE STUDY

BIRRANA™ ENHANCED WHEEL GROUP PERFORMANCE AT ONE OF THE WORLDS LARGEST COPPER MINES

H-E PARTS INTERNATIONAL (H-E PARTS) PROVIDES SOLUTIONS FOR THE ENTIRE DRIVETRAIN, SPECIALIZES IN THE RE-MANUFACTURE OF MAJOR MOBILE EQUIPMENT COMPONENTS, AND OFFERS INDUSTRY LEADING BIRRANA™ PRODUCTS. THE ENHANCED DESIGN FEATURES OF THE BIRRANA™ PRODUCTS DELIVER EXTENDED LIFE, EASE OF MAINTENANCE, AND SUPERIOR PERFORMANCE.

Freeport-McMoRan, Cerro Verde operations (Cerro Verde) is an open-pit copper and molybdenum mining complex, which sits at 2,800 meters (9,186 ft) above sea level, and is located approximately 32 kilometers (20 miles) southwest of Arequipa, Peru. H-E Parts approached Cerro Verde and offered an enhanced wheel group solution for the mixed fleet of haul trucks, which would provide an improved asset life cycle, superior operational performance and a lower total cost of ownership.

Cerro Verde committed to trialling two Caterpillar (CAT) 793 rear wheel groups. This involved re-manufacturing the 793 wheel groups incorporating H-E Parts proprietary Birrana™ enhancements, such as:

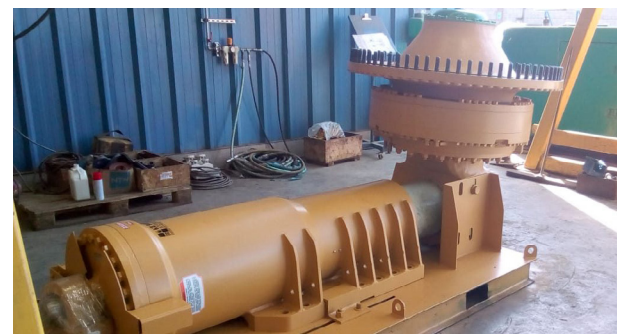
- The Birrana™ control fit wheel bearing system, which includes flexible spacer, hardened spacer, custom bearing design and specifications, and preload adjustment.
- Birrana™ contamination control which includes isolation seals, contamination guards, and contamination kits.
- Birrana™ brake wear gauge allowing easy and fast brake wear measurement, reduced downtime, and improved safety.

Utilizing H-E Parts wheel groups has provided Cerro Verde with increased maintenance planning accuracy through shorter repair times and increased service exchange availability. Due to this product and service performance, with both wheel groups completing over 21,000 hours, Cerro Verde has continued to adopt the Birrana™ enhanced wheel groups on the CAT 793 fleet and also into the Komatsu 930E fleet of haul trucks. Since the first install, over 70 wheel groups have now been put into service across both CAT and Komatsu trucks, over a five year period.

With this success and on-going performance demonstrated by the Birrana™ enhanced wheel groups, Cerro Verde engaged H-E Parts to provide a solution for an improved rear suspension removal and installation process. By incorporating Birrana™ colleted pins into the rear suspensions of the trucks, Cerro Verde was able to reduce pin removal and reinstall times from in excess of 12 hours, down to 4 hours. Additionally, the H-E Parts solution removed the need for thermal lancing, making the procedure safer as well as more cost effective. H-E Parts also provides other major components, such as differentials and cylinders, as well as suspension and brake packages, to Cerro Verde.

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CUSTOMER	Freeport-McMoRan - Cerro Verde
LOCATION	Peru
APPLICATION	CAT 793 and Komatsu 930E
PRODUCT	Birrana™ enhanced wheel groups and colleted pins



H-E Parts re-manufactured 793 wheel groups