WHITMORE®

Case Study

CALIBER™ XR 2

May 9, 2016

Problem

Despite daily application, poor lubricant performance was leading to a shorter life cycle for pins and bushings.

Goals

Reduce maintenance costs without sacrificing operating runtime. Ideal lubricant must:

- Pump easily in all weather
- Form and maintain seal
- Reduce wear
- Protect from high shock loads
- Fit within budget

Results

- Test period of 643 days (20 hrs a day) or 12,856 hours
- Greased daily (as with previous lubricant[1])
- Lack of measurable change in pin or bushing dimension
- All but eliminated need for scheduled hinge refitting
- Minimum projected bi-annual savings:

  USD $3,300 (ZAR 52514.16)

After nearly 13,000 hours, South African mine finds no measurable wear on loader bucket hinge

The extreme operating environment at the Glisa colliery near Belfast, South Africa left Exxaro Resources and their equipment operator B&E International facing a tough challenge: find a new high performance lubricant (HPL) or allow their Volvo Front End Loader L150G to undergo frequent refitting, thereby endangering production quotas and the operating budget.

Replacing only the bucket hinge based on the OEM recommend pin/bushing life cycle (8,000-10,000 hrs), led to maintenance costs in excess of USD $3,300 (ZAR 52514.16). This cost includes downtime, parts and labor.

Designed for real world abuse

Whitmore's Caliber XR 2 lithium-based HPL was recommended for its superior characteristics as a robust NGLI grade 2 extreme pressure grease. Caliber XR 2 is manufactured for applications such as steel mill roll stands, slew rings on mining and forestry equipment, as well as heavily loaded industrial equipment such as mills, grinders, etc. This HPL is specifically designed to pro-actively block dust entry while eliminating abrasive wear.

Equipment at the Glisa mine site is expected to function 20 hours a day, despite seasonal temperature swings between 17.6°F (-8°C) and 100°F (40°F) and aggressive dust conditions. Exxaro's Volvo L150G would test the limits of Caliber XR 2 in an abrasive real world scenario.

Measurements taken before and after Caliber XR 2 was applied:

Bucket pin was measured at 3.536 inches (89.82mm).

Bucket pin bushing was measured at 3.5555 inches (90.32mm).

Pin and bushing were subsequently examined at 10,397 hours and 12,856 hours with no signs of wear or measurable change in dimension.

All grades of Whitmore's Caliber XR incorporate high fluid viscosity, effective extreme pressure and anti-wear additives, plus solid lubricants. Its characteristics include:

- Water/wash out resistance – high-density polymer composition adheres to metal surface even under direct spray
- Sealing – forms a protective collar around the pin, rebuffing dirt and moisture
- Mechanical stability – robust load bearing capacity
- Pumpability – excellent shear-stability, while remaining workable in below freezing conditions
- Safe – contains no hazardous components
- Versatile performance — available in NLGI grades 0, 1 and 2

The Glisa colliery experience illustrates the value Caliber XR 2 delivers under the most punishing conditions. Demanding environments with extreme weather conditions can rely on this HPL to excel, keeping equipment running to reduce repair costs and downtime.