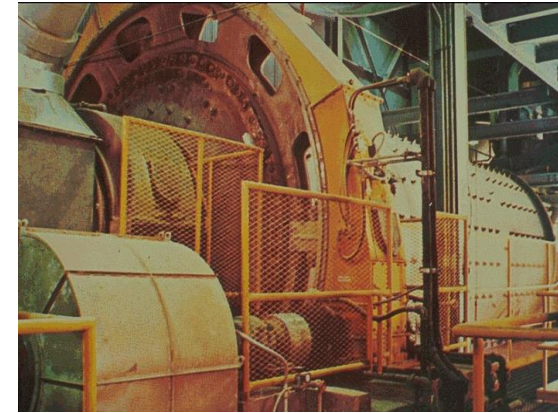


CEMENT (USA)

OPEN GEAR LUBRICATION

Castrol Molub-Alloy® OG 8031/3000-00*

ANNUAL SAVINGS: \$50,000



THE SITUATION

A major cement manufacturer was using a Farval SS 2200 automatic lube system to apply asphaltic-type lubricant to cement raw mill open gears (high alloy bull gears, 30 Rockwell through-hardened, pinion surface hardened to 44 Rockwell). Spray nozzles were clogged 2 to 3 times per week.

Excessive buildup of lubricant packed in the teeth roots causing stress against the pinion shaft & bearings and combined with the cement dust to make an abrasive paste. Abrasive scars were apparent after only three weeks on the new gear set.

One drum of lubricant was used every three weeks to maintain proper lube coverage.

BEFORE

1. Lubricant costs: \$11,440 for 17 drums/year
2. Gear costs: \$125,000/gear set (average life of 6 years).
3. Production delay: 1080 tons (six days to replace gears at 45 tons/hr, annualized over 6-year period).

AFTER

1. Lubricant cost savings: \$8,116 (\$3,324 cost for 3 drums/year)
2. Gear cost savings: \$42,000 (cost reduced due to additional life of 2 years).
3. Production delay: No lost production for 6 years.

THE SOLUTION

- After conversion to Molub-Alloy OG 8031/3000 open gear lubricant, the following advantages have been achieved:
 - » Flushed away contaminants from pressure flanks, preventing abrasive mixture and eliminating build-up in tooth roots.
 - » Scar marks healed without spalling.
 - » Temperature dropped by 15°F.
 - » Spray nozzles no longer clogging.
 - » One drum lasts in excess of 4 months (projected to be 4.5 months).
 - » Gear life extended by 2 years.

RECOMMENDATIONS

The customer was using an old technology, solvent-containing open gear compound. These lubricants are very tacky but do not provide optimum lubrication of the gears. Cement dust was building up in the compound and leading to heavy abrasive wear.

Castrol engineers introduced Molub-Alloy OG 8031/3000 and optimized the application rate to provide excellent lubrication while reducing usage and flushing the cement dust away from the gears.

CONCLUSION

The correct lubricant along with the proper support from Castrol provided over 5 times usage reduction, extended gear life for 2 more years, and completely eliminated unexpected downtime and lost production

Total Annual Savings = \$50,000
Plus an additional 1080 production tons per mill.



Summary of Features/Benefits/Customer Value

FEATURE	BENEFIT	VALUE
High Viscosity Base Oil Gel (3000 cSt at 40° C) Molub-Alloy Solid Film Technology (no polymers used)	- Sufficient film thickness to separate metal surfaces under high loads	- Extended gear life - Reduced usage
	- Resist rupture under shock loads. - Resist fling-off	- Extended gear life
Semi-Fluid Lubricant (NLGI # 00)	- Flush away contaminants from pressure flanks - Eliminate build-up in tooth root	- Extended gear life
Translucent Film	- Easy condition monitoring	- Reduced labor

OTHER POTENTIAL APPLICATIONS

- Molub-Alloy OG 8031 Open Gear Lube is designed for heavily loaded, low speed open gear applications such as ball mills, kilns, and bushings.
- Excellent for open gear drives using centralized lubrication (spray)
- Works well in sump applications (idler immersion)
- Allows the use of a “less grease, more often” approach to lubrication

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