

Application Profile

Subject: Improved Bearing Lubrication

Application: NID Candy Mogul

Manual Method: A large US candy producer experienced high operating costs in their basic production area. Cooked candy flows to a mogul that uses starch filled molding boards that form the final distinct shape of the final product. Each mogul has a capacity of 30 chain fed boards per minute with each holding two to six pounds of candy.

The plant maintenance department was responsible for daily lubrication of over 200 bearings. The moguls were sanitized daily. Washdown chemicals and starch contributed to bearing failure. 135 bearings were not easily accessible and required daily greasing. These 135 bearings were selected for an automated system application. Bearing failure averaged five per week and all 200 bearings were replaced during an annual rebuild.

Automated Methods: A Lincoln Centro-Matic system was installed to automate the greasing process of the 135 critical bearings. The system eliminated the need for maintenance to lubricate daily, reduced downtime and tripled bearing life. According to the maintenance staff, "The lube system saved our plant a considerable amount of money and the equipment performs better than ever. We are targeting additional installations and plan to include the remaining mogul bearings in a system upgrade". The annual rebuild was eliminated and bearing life improved to three years.



Labor to lubricate, bearing replacement and downtime were identified as major cost factors.

Return on Investment

Daily labor to lubricate bearings (4 hr/day) (\$40/hr. X 4 hr./day X 250 days)	=	\$ 40,000
Annual bearing replacement (\$100/brg. X 250 brgs.)	=	\$ 25,000
Annual rebuild cost	=	\$ 40,000
Unscheduled downtime cost (\$450/hr. X 350 hrs.)	=	<u>\$140,000</u>
TOTAL COST	=	<u>\$245,000</u>

Annual savings - Labor to lubricate (\$40,000 X 90%)	=	\$ 36,000
Annual savings – Bearing replacement (\$25,000 X 75%)	=	\$ 18,750
Annual savings – Annual rebuild	=	\$ 40,000
Annual savings - Downtime (\$140,000 X 75%)	=	<u>\$105,000</u>
TOTAL SAVINGS	=	<u>\$199,750</u>

Investment – Lincoln Centro-Matic system (Installed)	=	\$ 40,000
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INVESTMENT RETURNED IN 2 MONTHS