

# The Mechanic's Corner

## REDUCE COSTS THROUGH LUBRICATION ENGINEERING

**M**anagers are daily trying to improve the profit picture. Rarely do large-scale improvements come about without large capital investment, yet the lubrication engineers can help affect these improvements with little cost. This same effect can affect energy savings, many times reducing plant operating costs.

Correct lubrication, coupled with improved maintenance practices, are now providing savings in five figures in a typical mid-sized industrial plant in the American Midwest. Many of these savings are of a recurring nature resulting in savings year after year.

The following items all take advantage of new lubricant technology or new technology developed in lubrication application. These and other similar examples are shown with possible cost reductions or savings.

### (1) Longer Anti-friction Bearing Life

Anti-friction bearing fatigue life was extended by a factor of seven as a result of oil additive technology developed for the Concorde SST. This technology is now available in certain oils commonly used in this plant for anti-friction bearings and gears in about 50 lathes, turret lathes, six spindle automatics, and 12 N/C machines. Longer anti-friction bearing life results. Lower maintenance cost and downtime are also a bonus.

◆ *savings per year: 1984 - \$3,000*

### (2) New Synthetic Engine Oils

New synthetic engine oils have increased internal combustion engine life and extended oil drain periods. Engines start easily at -30°F.

◆ *savings per year: 1984 - \$3,000*

### (3) Longer Life on Variable Speed Drive Bushings

Many milling machines which have variable speed drives utilize nylon bushings 1" diameter x 1/64" and check and crumble after a few year's service. New non-metallic bushings of compounded PTFE have now been in service for some time and no replacements have been necessary. This is important considering the number of machines in service and downtime for replacement,

◆ *approximate savings per year: 1984 - \$900*

### (4) Big Savings by Correct Internal Cleaning of Machines

Many machines which use oil in crank cases, gear boxes, hydraulic systems with valves, or have slide mechanisms that periodically need cleaning to prevent sticking or wear. A fairly new type of gum solvent which will dissolve lacquers and gums can be added to old oil before draining and will remove deposits.

◆ *savings per year: 1984 - \$6,000*

### (5) Savings in Air Compressor Operation

The use of proper synthetic air compressor oil coupled with clean

intake air (air filters) is producing large savings. The new synthetic compressor oil keeps valves clean, extending cleaning periods, and preventing air line fires. Well placed air filters give more compressor efficiency.

◆ *savings per year: 1984 - \$1,200*

### (6) Reduction in Oil Inventory

Oil inventory covering all petroleum products used for lubrication and metal cutting was reduced from 45 to only seven main lubricants used. This not only releases space in the oil room but also allows less chance for application error. At the same time, better lubrication products are being employed. Cost of writing and following purchase orders is approximately \$20 each. This move will eliminate 15 purchase orders per year and reduces oil handling and allows purchase discounts.

◆ *savings per year - (Discounts only): 1984 - \$800*

### (7) Changing Grease

The use of a special molybdenum grease to replace a special costly grease in chucks on machines is working well and is already in the plant.

◆ *substantial savings are realized*

### (8) Solvent Change

Hi-flash point petroleum replaced chlorinated solvent for much cleaning of parts and machines.

◆ *savings per year: 1984 - \$300*

### (9) Electrical Discharge Fluid

Substantial savings are possible by purchasing fluid from oil suppliers instead of from machine builders (Savings \$97/bbl.).

◆ *savings per year: 1984 - \$300*

### (10) Eliminating Air Line Filter Bowl Problems

With the use of di-ester lubricant on air tools (eliminates gummy deposits), we found that air filter bowls crack or even explode so we now use stainless steel or glass bowls.

The above are results of a study on actual cost savings that was conducted by Crane Packing Company, Morton Grove, Illinois. They represent a typical American factory in 1984. ◆

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