TECHNI/TIPS

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A LUBRICATION PROGRAM CAN HELP AVOID EQUIPMENT FAILURE AND HIGH MAINTENANCE COSTS

The best defense against equipment failure and high maintenance costs is to have a sound lubrication pro-gram. A good program will accomplish the following:

- Decide what needs to be done.
- Set up a schedule to do it.
- Make sure the schedule is carried out on time.

To deviate from the program would lessen its overall effectiveness

Different kinds of lubrication programs are in use today. They are as varied as there are industries in which they are used. But all lubrication programs have one common denominator. They should get regular attention and continuing support. The following 12 steps provide a guideline for a good lubrication program.

Make One Person Responsible for Equipment Lubrication

Questionable responsibility for lubrication contributes to almost all lubrication errors. Without proper guidance, lubrication may become haphazard. The right amount and the right lubricant may not get to the right place at the right time. A knowledgeable maintenance supervisor must have the ability to direct all lubrication activities. He must understand the equipment in the plant and must be aware of how his decisions can affect production.

Properly Survey Equipment Lubrication Requirements

A workable lubrication schedule should be developed, after the job of a lubricant is defined. How much, where and when? Time and effort is required to adequately cover all areas of the equipment to determine lubrication needs. A physical survey is the only way to establish a complete schedule for an lubrication points on each machine. Check the OEM (Original Equipment Manufacturer) manual for lubrication requirements such as type and frequency of service, number of lubrication points and recommended lubricant.

Limit the Number of Lubricants Used Whenever Possible

An important job of the maintenance supervisor is to decide the least number of lubricants to meet all the plant's lubrication requirements. Often, it is not practical to buy and store too many different lubricants. In addition, fewer lubricants minimize lubricant misapplication. Quality lubricant suppliers and manufacturers have lubricants containing specially formulated additive packages that widen a lubricant's field of application. Some of the multipurpose lubricants, as manufactured by Lubrication Engineers, Inc., replace several grades and types of

commercial grade lubricating oils or greases. Quality multipurpose lubricants are more expensive initially, but storage and labor costs generally run three to five times the cost of the lubricant. Multipurpose lubricants are less expensive in the long run.

Schedule Lubrication Properly

The lack of planned lubrication often results in "hit or miss" methods. It is not unusual to find different maintenance personnel using different lubricants and frequencies for the same application in plants where no planned lubrication program exists. Equipment serviced in such a manner may appear to be properly lubricated, but the real cost of such "hit or miss" lubrication is hidden in unscheduled production downtime, increased maintenance costs and shorter equipment life. Regardless of the system used, the maintenance department's daily activities should be organized. Responsibility should be assigned for each lubrication function.

Keep Proper Records

Operating records give the lubrication supervisor the means to check compliance with the lubrication schedule and to help spot excessive use of lubricants. A simple way is to keep a record of the cost of lubricants used by each department or section. If any unusual changes in lubricant consumption are noticed (consumption above a set optimum usage) it should be looked into through a close check of comparative records. Increased usage can result from increased production time, excessive oil leaks or over lubrication. A sharp drop in consumption can result from refusal to shut down the equipment for lubrication, or designated maintenance personnel are marking their schedule sheets without actually performing the required lubrication.

Prevent Lubricant Contamination

Less than 10% of equipment failures are actually the fault of the lubricants. Misapplication, over lubrication and contamination are the major causes of all machinery breakdowns blamed on lubrication. Contamination is the greatest single cause of lubricant malfunction. Lubricant contamination can be prevented by proper storage and handling. Any information deemed necessary by the maintenance supervisor should be clearly marked on the container's sides and top as soon as received at the plant, if not already marked. Complete identification reduces chances of misapplication and simplified preparation of usage reports.

Use the Right Lubricant

In an effort to consolidate lubricants and to reduce inventory, lubricants may be misapplied. Consolidation is worthwhile, but the maintenance supervisor should not become overzealous in a standardization program. Selection of the right lubricant for each application should always be based on the following:

- Type or part to be lubricated.
- Speed and load.
- Hours of expected use per day.
- Age and condition of equipment.
- Importance of equipment to the production process.
- Recommendations of the OEM.
- Current lubrication procedures.

By using high quality lubricants, a critical piece of production equipment can be kept in production without danger of premature breakdown due to lubricant failure. Premium, special purpose lubricants should be used, particularly where operating conditions are severe. They can't cure all lubrication problems, but when properly applied, they reduce wear and maintain lubrication under severe operating conditions.

Investigate All Mechanical Malfunctions

A prime function of a lubricant is to extend the life expectancy of machinery. When equipment fails in service the unit should be inspected when disassembled to determine if lubrication is a contributing factor. Often, a change in type of lubricant, viscosity or frequency of service can prevent breakdowns. Inspection may reveal that improper lubrication or misapplication was the cause. The maintenance personnel responsible may need additional training or supervision to prevent recurrence. Failure to investigate every equipment failure invites further trouble.

Prevent Unauthorized Personnel From Lubricating Equipment

This can be a problem in plants where access to lubricant storage is not controlled. When lubricants are accessible to all employees, lubrication problems may develop. Inexperienced personnel may use whatever is handy to refill a leaking gearbox or to quiet a squealing hydraulic pump. Spindle oil may wind up in a gearbox, hydraulic oil added to an air compressor, or automatic transmission fluid dumped into a hydraulic system.

Hire Capable Personnel and Train Them for the Job

Maintenance managers agree that lubrication is an important part of their operation. But, too many plants set up a good lubrication program and then entrust it to unskilled and untrained personnel. Many times the position of lubricator is an entry level position. This can make them the least trained and most overlooked group in the maintenance department. A lubrication program is no better than the least qualified person involved. The manner in which lubricants are applied determines proper or improper equipment lubrication and decides the success or failure of the entire operation. It makes good sense to employ capable personnel, to give them thorough training and to pay them accordingly.

Respond to Feedback From the Person Servicing Equipment

Maintenance personnel work daily with equipment and can often detect impending troubles before an actual breakdown occurs. If management fails to respond promptly to information received from the maintenance personnel servicing the equipment, feedback might be shut off and higher maintenance costs will result. Action should be taken on reports of potential problem areas received from maintenance personnel's equipment lubrication reports. Feedback to the specific maintenance person responsible for that particular piece of equipment is also important so that he knows what was found or what is to be done. Keeping vital information flowing can save substantial amounts of costly maintenance dollars annually.

Update and Refine Your Lubrication Program

Regardless of how well such a Lubrication Program is organized and operated, it should be reviewed regularly to meet the changing needs of the operation. Equipment may be added, removed or rearranged to keep pace with advancing technology. As an operation grows, improves processes and adds better equipment, the lubrication

program must also grow to meet changing lubrication requirements and to include the latest lubricant technology available. New lubricants are constantly being introduced that may do a better job than last year's product. Better lubricants, as provided by Lubrication Engineers, Inc., and better ways of lubricating existing equipment can usually be found. There is always something that can improve any program, such as Lubrication Engineers' Lube Survey or computerized LUBEMAN. These will detail your facility's lubrication needs, and, in the case of LUBEMAN, provide timely reminders of equipment needing lubrication, as well as how much of the specified lubricant to use.

A good way to ensure efficient lubricant drain intervals as well as monitor the overall condition of equipment is to utilize a good oil analysis service, such as Lubrication Engineers' Analysis Program (LEAP).

Quality lubricants as manufactured by Lubrication Engineers and better ways of lubricating existing equipment will reduce downtime, lower maintenance costs, lower lubricant consumption, consolidate lubricant inventory and save your company money.

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