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6 TIPS FOR ACHIEVING EFFECTIVE MACHINERY LUBRICATION

You might already know that machines need the right kind of oil, in the right amounts, to avoid breakdowns. But that's not enough. Your oil could still be operating well under peak efficiency if you don't have a good plan to keep it clean. Following these simple tips can help you upgrade your precision lubrication program from minimally effective to world-class.

FILTER YOUR NEW OIL

When we hear "new," we think of products that are crisp and fresh—like a car just off the lot or a laptop computer still in the box. But that's not what your new oil is like. The manufacturer's process of blending and packaging can introduce significant amount of abrasive material, making your oil more like a pesticide-laden supermarket apple that needs to be cleaned before use. Testing a sample of the oil will reveal how much filtration it needs to reach your target levels; you can then clean it by attaching a filter cart or drum topper to your storage drums.

FOLLOW BASIC RULES OF THUMB TO SET CLEANLINESS GOALS

Not sure what your target cleanliness levels are? If you don't have goals right now, follow these rules of thumb: For moisture, aim for below 150 or 100 parts per million for low criticality machinery, and below 50 ppm for highly critical machinery. For particles, filter to a size of 6 microns for gearboxes, and 3 microns for hydraulics, bearings, and circulating systems, following the standards of ISO code 4406:99 to determine how many particles is acceptable. Base filtration times on the rule that each pass through a filter takes oil down 2 ISO codes. Maintenance should be based around end results—with these rules, you'll have a goal to aim for.

STORE YOUR OIL IN THE RIGHT PLACE

Once your oil is filtered to the correct level, the battle to keep it that way begins immediately. One overlooked source of contamination is

storing oil in the wrong place. Space inside a facility is often at a premium, but when you store oil outside, changes in surrounding temperature cause air to enter and exit the drum—and with it, moisture. If the drum is uncovered, dirt can settle on it, and small particles can enter the drum along with the air. Move oil storage to a temperature-controlled area, or if that's not practical, use drum covers and desiccant breathers to protect the interior.

USE VISUAL OIL ANALYSIS

When you start your car, the key warning lights are on the dashboard right in front of you—few of us would remember to check them often if they were under the hood. The same principle can help you achieve better machinery lubrication. Outfit your machines with 3D sight glasses; they show easily if oil levels are too high or low, and are easy to inspect from a variety of angles. Sight glasses also make it easy to see if oil is changing color or losing clarity, an obvious indicator that something is wrong (you can check clarity by shining a laser pointer through the glass). Visual inspection can't show you everything that might be wrong, but as with your engine lights, it's a great failsafe for catching big problems you might otherwise miss.

SAMPLE IN MORE THAN ONE SPOT

Oil sampling helps you determine whether your filtration system is working as planned to help you reach your target levels. But not all sampling spots produce the same results. Most machines come from the factory with a port for taking oil samples, usually attached to a main line that feeds into the reservoir. This sample gives you an indication of average oil quality throughout the machine. But if more contaminants are appearing than expected, that single sample doesn't tell you where they're coming from. Installing more ports just downstream of specific elements (such as pumps) lets you know if one of them is generating contamination and needs to be replaced.

REMEMBER THE RULE OF 10

When should you invest in upgrades like desiccant breathers and quick connects that keep contaminants out of your gearboxes? Keep the number 10 in mind: It's generally 10 times more expensive to remove contaminants that are already present than it is to keep them

out. That means that you should prevent ingress whenever possible, and use after-the-fact filtration only for contaminants that can't be excluded in any other way. By the same token, filtering out oil is up to 10 times cheaper than replacing machines damaged by contamination—so always consider machines' cost and overall importance when making buying decisions.

Effective lubrication is clean lubrication. For more on finding the best ways to keep your oil clean, download our whitepaper, How to Select a Filter Cart for Maximum Value.

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