

## **Tips for Taking an Engine-Oil Sample**

Obtaining a good oil sample is an important first step when starting oil analysis. Engine oil touches a number of moving components during operation and can hold a great deal of information if taken properly. On the other hand, taking a bad sample from the wrong location, taking a sample of cold fluid or using contaminated sampling tools can lead to altered results that do not represent the engine or lubricant in operation, leading to unnecessary maintenance. Follow these steps to obtain a good engine-oil sample that will ensure your results are as accurate as possible.

When taking a sample with a vacuum hand pump, be sure the pump is clean and use a new piece of tubing. Re-using sample tubing increases the chances of cross contamination. In addition, be sure the sample bottle is clean and dry. Resist using an empty soda or water bottle to catch or store the sample. Your used-oil sample should reflect what is happening in the engine, not what electrolyte water you drank to stay hydrated.

On an engine, a sample can be taken through the dipstick tube or from the sump. Taking samples from the dipstick tube is highly preferred as it reduces the likelihood of contaminants entering the sample. If taking a sample from the sump or drain plug, wait a couple seconds for some fluid to clear the drain before collecting it. The initial flow of oil from the pan will typically contain sediment that has settled at the bottom. Collecting this oil can skew your sample results as it is not a good representation of the actual oil circulating in the engine. The goal is to collect the sample from the middle of the sump, whether it's obtained from the drain plug or with a vacuum pump through the dipstick tube.

Another tip for taking a good sample is to collect it when the oil is warm or at operating temperature. This allows any condensation or contaminants to evaporate. It also makes taking the sample easier if using a vacuum hand pump as warm oil flows through the tubing easier than cold oil.

After taking the sample, immediately fill out the associated paperwork. Be sure to fill it out completely and accurately. Waiting to fill out paperwork can lead to misidentified samples or forgetting important information. Missing or incorrect information can cause issues with how the data is flagged (or not flagged) on the report. For example, an engine-oil sample incorrectly identified as a differential sample could mean the difference between a normal and abnormal report because the components wear at much different levels. Once the paperwork is complete, ship the sample as soon as possible. Allowing a sample to sit for an extended period can cause degradation, affecting analysis results.

By following these simple steps, you'll increase the value of your oil analysis and achieve the most accurate sample results possible.

In Summary:

1. Use clean and dry sampling tools.
2. Take a sample while the engine is still warm, preferably through the dipstick tube.
3. If taking a sample from the sump, allow some fluid to clear the drain before taking the sample.
4. Fill out sample paperwork immediately, completely and accurately.
5. Ship the sample as soon as possible.