

How To Take A Reference Sample

Ensuring Health and Safety conditions

Always observe safety rules. Take particular care with high-pressure piping and thermal systems and any sampling close to electrical equipment or when sampling from a drain line. If in doubt, please contact your Supervisor.

Drawing a sample with a sample pump

1. Using a sample bottle; remove the cap and screw into the pump body.
2. Using a new length of tube for each sample, push the tube through the top of the pump until it appears half way down the sample bottle. Please make sure to tighten the thumbscrew to secure the tube.
3. Place the end of the tube into the sampling point.
4. Ensure that the sample bottle is vertical throughout the sampling operation and that it is not overfilled.
5. Unscrew the bottle and immediately screw on the cap to avoid any contamination.
6. Complete the sample information card and send the sample and sample information card to the laboratory.

Sampling from circulation systems

For circulating systems one of the best sampling locations is a live zone upstream of filters where contaminants and wear debris are the most concentrated. Usually, this means sampling from fluid return lines or drain lines. For systems where oil drains back to a sump without being directed through a line (such as engines), draw from the pressure line down-stream of the pump (before the filter). Permanent sampling points should be at elbows in pipe runs in preference to straight sections. This will help to ensure that the flow regime at the sample point is turbulent and that wear and contaminant particles do not 'drop out' of suspension.

Sampling from reservoirs, sumps and tanks

Avoid sampling from dead zones of static tanks and reservoirs. In particular, sampling from the bottoms of sumps should be avoided because the wear debris and contaminants collected are likely to be the results of build up over time and may not represent current operating conditions. The sample point should be near the mid-point between the surface of the oil and the floor of the tank/sump and away from walls.

Why correct oil sampling is important

Most lubricant condition monitoring services use an oil sample of only 100ml(3 oz) to represent a system that may hold hundreds or thousands of liters of oil. The importance of taking a representative sample cannot be over-emphasized. From the very first sample you begin investing in a valuable condition monitoring program. But this will only be achieved if every sample contributes to building an accurate history from which trends in wear, contamination, and degradation can be determined.

Ensuring the quality of the sample

We recommend a consistent method of taking a sample. Always take the sample at the same point, in the same way and after the same amount of time. For example, if you previously took the sample half an hour after the machine has been started, please make sure that the next sample is taken half an hour after the start of the machine as well. We recommend that you sample a component while it is running (if it is safe to do so) or within 30 minutes after shutdown. Always keep in mind to refrain from sampling right after a large volume of lubricant has been added. Always be sure to draw sufficient of the sample to fill the bottle. 80% full is a good level to aim for as this will ensure that there is adequate sample to complete all tests.

Avoiding contamination of the sample

Areas where lubricant flow is restricted or where contaminants and wear products tend to settle/collect should be avoided as sampling points. Always take the sample in the most hygienic of conditions. In this way, you can avoid contaminating the sample, which could lead to an incorrect analysis. Always use the right sampling equipment and the bottles supplied and make sure that they are unopened, unused and clean. Always clean the sampling kit immediately after use. After taking the samples, check to make sure that the bottles are tightly closed. It is important that the gun/bottle assembly is kept upright while in use to prevent oil entering the gun. Should this occur, disassemble it immediately and flush thoroughly with mineral spirit or kerosene. Dry before reassembling. **DO NOT FLUSH GUN WITH DIESEL FUEL OR DEGREASING FLUID.**