How to Submit a Fluid Sample for Analysis

The enclosed MTS Hydraulic Fluid Analysis Kit contains a pre-labeled shipping container, the sample bottle, and a peel & stick data entry label.

**Taking and submitting samples:**

**Step 1: Draw the sample**
Use a sampling valve to draw an in-line sample representative of the fluid in-route to the servovalve.

![Sampling valve and sample bottle](image)

**Step 2: Complete label**
Complete the peel & stick data entry label and attach it to the sample bottle.

![Labeling sample bottle](image)

**Step 3: Mail it!**
Simply place sample bottle into the larger pre-labeled shipping container, add postage and mail.

![Shipping container and sample bottle](image)

When we receive your sample, we’ll register your site information within the trending database, analyze your sample and email a report to you.

Let MTS help you extend equipment lifecycles. Find out more about your MTS Fluid Care Program options at www.mts.com/fluidcare.
**MTS FLUID ANALYSIS**

**Precision solutions for hydraulic health**
Protect your investment in high-performance servohydraulic equipment by monitoring and maintaining your hydraulic fluid. MTS Fluid Analysis helps you to properly identify fluid contamination and deterioration. You may use the analysis results to determine corrective actions to keep your hydraulic system in optimum condition. MTS has partnered with ExxonMobil Oil Corporation to customize the Mobil Serv Lubricant Analysis services to MTS requirements for analysis, alert thresholds, information notification and trending.

**Why is fluid care important?**
High-performance test systems rely on close-tolerance servovalves that operate thousands of cycles a minute and millions of cycles per test. These high-duty cycles punish hydraulic fluids. System valves can “slice” base oil and additive molecules apart during operation.

**Fluid contamination & deterioration**
Hydraulic fluid contamination and deterioration are normal operating consequences for most hydraulic systems; however, failure to adequately remove contaminants as they build up or to change hydraulic fluid before severe fluid breakdown occurs, will lead to poor system performance with potential for costly repairs.

**Three-body abrasion**
Hydraulic pumps and servovalves can be damaged by fluid contaminated with hard particles larger than the clearance between lubricated surfaces. This occurrence is known as three-body abrasion, and causes scoring and heavy wear of sliding surfaces. Hard particles abrade the two surfaces that they come in contact with, and because the hard particle itself experiences wear, it is considered the third abraded surface. Hard particles create more wear contaminants by continually scraping off softer metals, like copper, to further accelerate component failures.

**Deterioration**
Fluid deterioration starts as “additive deterioration.” Additives give the oil its particular characteristics—and because these additives are most susceptible to chemical and physical change, their deterioration is what leads to fluid breakdown. Fluid deterioration is often caused by operation at high temperatures. Reservoir temperatures are best kept below 60° C (140° F).

**How to Take a Fluid Sample**
Consider the following guidelines prior to taking a sample to help ensure that the particle analysis represents true contamination levels and has not been influenced by the sampling method.

1. The fluid sample can be taken from several locations in the system and in various ways. Pressure line sampling is the preferred method.
2. Use MTS Sampling Kit (P/N 055-589-601) equipped with full pressure quick connects for installation at various sample points on your test machine(s).
3. Operate the system for 30 minutes prior to taking a sample to allow the fluid to reach its normal operating temperature.
4. Keep the sample bottle in the provided enclosure prior to taking a fluid sample. Do not remove the cap from the bottle until just before taking the sample. Do not set the cap down on a dirty surface or where airborne dust is prone to settle.
5. Open the valve and allow 5 minutes to flush the sample line into the reservoir fill cap or container.
6. Fill and flush bottle three times before drawing final sample.
7. Once flushed, place the bottle below the valve to draw the sample. Do not place the sample line in the bottle or touch the mouth of the bottle with the sample line. Hold line steady.