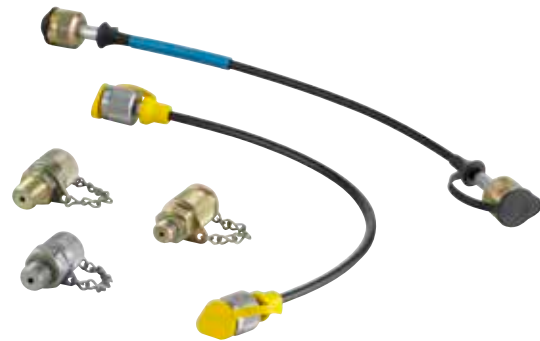


How to Take Representative Oil or Fuel Samples

“The way a sample is collected; the frequency, the accessories used and the procedures followed all dictate how informative the oil samples will be and, subsequently, dictates how beneficial the results will be.”¹ Without properly taken representative samples, test results will be inconsistent and inaccurate. Below are some of the most important factors to consider. For more information, visit www.noria.com for recommendations and resources.

Location

To measure filter performance, samples must be taken at the filter head or manifold immediately before and after filtration. Samples taken farther downstream may have picked up additional contamination passing through pipes or hose reels, especially when they are older. Sampling at the dispenser is critical for determining fluid cleanliness as delivered into equipment, but may not accurately reflect filter efficiency.



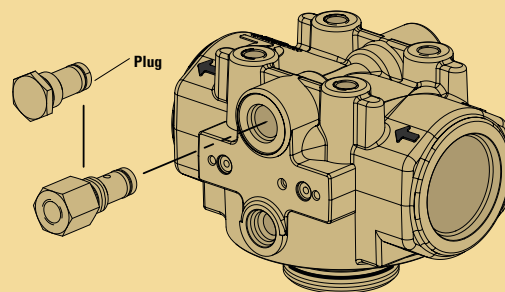
Tools

Appropriate sample ports and equipment are critical to taking a representative sample. Use of a properly located mini-mess sample valve is recommended. Similar to a check valve, it is closed and capped while not in use, minimizing contamination.

Downstream Sampling From Clean Solutions Single or Dual Heads

Procedure

1. Power off pump or isolate head with valve
2. Relieve pressure by pressing nozzle
3. Remove electronic indicator plug from head with 11/16" wrench or socket set
4. Install port adapter, then sample port, then hose
5. Turn on pump or turn off isolation valve
6. Begin flow by depressing nozzle (filling vehicle or bucket)
7. Adjust hose connection to start or stop sampling
8. For best results, take sample while fuel is flowing



Parts

P573415	P563224	P563251
Indicator Port Adapter Assembly Downstream (SAE)	Mini-mess sample port to use with P573415	Mini-mess sample hose to use with P563224

Sampling port adapters for Clean Solutions filter heads are available for both upstream (P573414) and downstream (P573415) sampling. They are easily installed with hand tools, even in existing systems. Simply remove the plug in the indicator port and replace with the adapter. Select a sampling valve that fits directly onto the adapter's 7/16-20 UNF SAE-4 threads (P563224, for example).

See Donaldson's Hydraulics Product Guide for a variety of sampling accessories. Checkfluid sampling valves are also often recommended (www.checkfluid.com). Be sure to take into account system pressure to select appropriate sampling accessories.

Pre-Flush

The rule of thumb is to pre-flush six to 10 times the total volume of static oil in a sample tube, port, port adapter and any dead legs of pipe in the systems upstream of the sample port location. For best results and to facilitate flushing, install the sample connection as close as possible to the main line flow. All testing equipment must be thoroughly cleaned prior to use. Mineral spirits are recommended for offline cleaning of tools and supplies.



Bottle Cleanliness

Most bottles are not certified to any particular cleanliness level. "Clean" bottles generally have less than 10,000 particles greater than 10 μ per 100ml and may be unsuitable for critical applications.² Be sure to thoroughly rinse (install cap and shake) the sample bottle 2 to 3 times with the fluid from the sampling port before taking the final sample. **Note: Just removing the cap from the sample bottle in a dusty/windy environment may make the bottle unsuitable for use.**

Document Procedures

To achieve consistent results that can be meaningfully compared over time, test procedures must be documented and enforced without exception.

¹"World-Class Oil Sampling - It is Possible," Noria Corporation, ²ibid



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