



Taking Oil Sample From Power Transformers

Dissolved gases [ASTM D 3612](#), ([IEC 60567](#)), Dissolved water [ASTM D 1533](#), ([IEC 60814](#))

The following is one of the procedures to collect transformer oil sample:

SAMPLING PROCEDURE

Before Taking Sample:

1. Transformer oil reservoir must be under positive pressure.
2. All connection areas between the transformer side and the glass syringe, including the drain valve, must be super clean.
3. Use the transformers' main drain valve for oil collection for the best results.
4. Flush approximately 2 to 3 liters of oil before taking the sample.
5. Adjust the valve for the smooth flow of oil through the tubing, to minimize air bubbles.

Taking Sample with [Glass Syringe](#):

1. Make sure that the [nylon stopcock](#) is securely tightened on the [glass syringe](#) luer lock before taking the sample.
2. Connect the [glass syringe](#) to the [tygon tubing](#) with the luer lock connector, while the side port of the nylon stopcock is open; this allow the flushing of oil (*The handle of the nylon stopcock has off position printing with an arrow indicating the closed port, while the other two open*).
3. Slowly turn the stopcock handle toward the side port to open the syringe port; this will fill the glass syringe with oil 30- 50 cc (mL). Quickly close the front port by moving the nylon stopcock handle toward the tygon tube (or the transformer side) and position the glass syringe in the vertical position.
4. While the glass syringe is in vertical position and the front port is in off position (or the nylon stopcock handle is facing the transformer side), empty the oil and purge any air bubbles until all of the oil has been cleared from the syringe.

5. Turn the nylon stopcock handle toward the side port (or the flushing port) and repeat this flushing procedure 2 to 3 more times before taking the final sample.
6. To take the final sample, slowly close the side port (or move the nylon stopcock handle toward the flushing port) and allow the transformer reservoir pressure to push the glass syringe piston until the glass syringe is filled up to 40 cc/ml mark. Do not pull the glass syringe piston manually because it will result in air bubble formation.

Note:

- 50-cc syringes should be filled up to approximately the 40-cc mark.
- 30-cc syringes should be filled up to approximately the 25-cc mark.

7. Turn the nylon stopcock handle to off position (or toward the glass syringe) and separate the glass syringe from the tygon tubing; inspect for air bubbles. If you detect any air bubbles, discharge the air quickly while the glass syringe is in vertical position. To close the syringe, turn the nylon stopcock handle to off position (or toward the glass syringe). If there are more than a few air bubbles, empty the syringe and repeat the process until a proper sample has been taken. The final sample should contain no air. The syringe should be packaged in a carrying case as soon as possible in order to protect it from light.

Note:

- Few bubbles may form after taking the final sampling.
- Please do not try to remove the air bubbles, because they are part of the final sample.

To purchase Glass Syringes, Nylon Valves, or Syringe Carrying Cases, please visit our website at:
[DGA SAMPLING KIT](#)

This article is intended for preliminary information and preparation only and it should not be used for actual sample taking. Furthermore, The Transformer Oil sampling must be conducted by a qualified and well trained field technician who is familiar with the electrical power equipment. To improve this article, please don't hesitate to contact us at <mailto:sales@glasssyringes.com>. We will be glad to incorporate your opinion on this article.