AQL TEST KIT

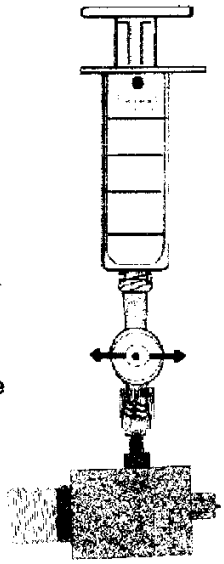
SPECIFIC SAMPLE COLLECTION INSTRUCTIONS

Before sampling begins you must determine your sampling objectives. For example; do you want to know the quality of air stored within a cascade system, the current output air quality of a compressor, or maybe the quality of air produced from a compressor after purification filter maintenance. When sampling a compressor it is most common to first purge the system, perform any desire maintenance, such as filter replacement, then collect the sample. The compressor should be allowed to run for a short period to warm up before sampling and remember safety glasses should be used when working with compressors.

Sampling is an easy 2 step procedure: First, you will collect a sample of the air from your source into a sample syringe for the testing of component gases - then you will filter a measured volume of air through a filter cassette for determination of condensed oil mist.

COLLECTION OF GASES INTO A SAMPLE SYRINGE

1) Clean the compressor fill station discharge line by briefly purging with air.
2) Connect the sampling block to the discharge fill line. Hand tighten.
3) The 20 mL source syringe, with the sample ID beginning with "S", is received with the 1-way valve in the OFF position (arrows perpendicular to the syringe).
4) Place the syringe onto the top sample port of the block. The luer fitting requires only a 1/4 clockwise turn. Do not over tighten.



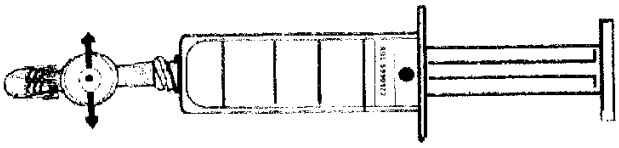
5) Slowly open your fill valve and pressurize the discharge fill line to about 500 psi. Then turn the 1-way valve on the syringe until the valve arrows are parallel (in line) with the syringe as shown below.

SYRINGE VALVE OPEN

TO COMPRESSOR

6) Slowly increase the pressure of the discharge fill line to 1000 psi. At about 900 - 1000 psi the plunger of the syringe will open and move to the upper stop.
7) Grip the syringe with your thumb on the plunger and depress the plunger completely back into the syringe. Release the plunger and allow it to again completely open. Repeat the syringe purge once more. The syringe plunger will again open.
8) Slowly increase the pressure of the discharge fill line to 1500 psi and while holding the base of the valve, turn the valve OFF position back to the syringe as shown below. Close the valve immediately after reaching 1500 psi and DON'T EXCEED 1500 psi.

SYRINGE VALVE CLOSED



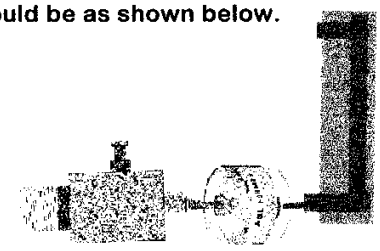
9) While gripping the base or body of the valve (not the syringe) rotate 1/4 turn counter clockwise to remove the valve/syringe assembly. Close the compressor discharge line at your fill station valve. The source syringe sampling is complete.

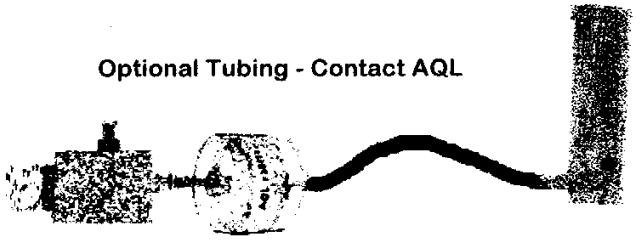
10) An optional ambient atmospheric sample can be collected for comparison to the compressor source sample. If this option was discussed with the laboratory, the smaller 10 mL syringe is used. The sample identification on this syringe will begin with "A". Get as close to the compressor intake as possible and open the syringe 1-way valve until the valve arrows are parallel (in line) with the syringe. Pull the plunger completely open and fully depress to expel the air. Again pull open the plunger completely and rotate the syringe valve back to the OFF position (arrows perpendicular to the syringe). The ambient sampling is now complete.

FILTRATION OF SAMPLE THROUGH FILTER CASSETTE

1) Remove the two caps from both ends of the filter cassette. When received, the intake side of the filter will have a red cap. This side can also be identified by the white female luer fitting. This intake side of the filter is connected to the side sample port of the block with a 1/4 clockwise turn. Do not over tighten. Do not remove the clear shrink wrap from the filter.

2) Connect the flowmeter into the other side of the filter with a firm twisting motion. The flowmeter needs to be in a straight up & down vertical position. The completed assembly should be as shown below.





(Depending on your sampling situation and compressor / fill station configuration you may need tubing to connect the flowmeter to the filter. The yellow tubing is available from AQL. Simply remove the fitting on the flowmeter and replace with the threaded fitting on the tubing. When using the tubing ensure that the flowmeter is place on a level surface and is in a vertical position).

3) Slowly open your fill valve and increase the pressure until you reach an optimum flow of 50 LPM (liters per minute) on the flowmeter. A flow between 25 - 75 LPM is acceptable. Read the flowmeter at eye level by noting the position of the middle of the ball. Allow air to flow through the filter for a minimum of 10 minutes. The flow rate will depend on the capacity of your compressor and the pressure you have set. Generally a pressure of about 2000 psi will produce a flow rate of about 50 LPM. The flowmeter ball should remain steady during the testing. If necessary read an average ball position.

Note: DO NOT EXCEED 2500 psi. For smaller capacity compressor systems you should be able to get at least 20 LPM. If necessary, you can increase the amount of air filtered by extending the length of filter time. 10 minutes is the minimum time. The objective is to filter 500 liters of air. The top port in the brass block should remain open during filtering and acts as a vent. Blocking this port could result in the rupture of the filter cassette. If a filter ruptures do not try to put back together and reuse. Use a new filter cassette.

4) After the filtration period close your system valve and disconnect the filter and flowmeter. Replace the caps on the filter. Record the flow rate and minutes filtered on the Field Data Record.

FIELD DATA RECORD AND SAMPLE SHIPPING

1) Complete all the information on the Field Data Record including the description and identification of the compressor system (model and serial number), the filter flow rate and time sampled, and the sample identification numbers from the syringe (Sxxxxx) and filter (Fxxxxx). Also record the odor of the air using the information on the Field Data Record.

2) Place the syringe and filter back in the kit or in a shipping container if you have purchased the kit and return immediately to AQL. The pressure in the syringe is below DOT regulations and can be shipped via US Mail or by other parcel carriers.

IF YOU HAVE QUESTIONS CALL AQL AT (630) 830-4018