Easy-VOC™

Operators' Manual

Version 1.1

October 2011

1. Introduction

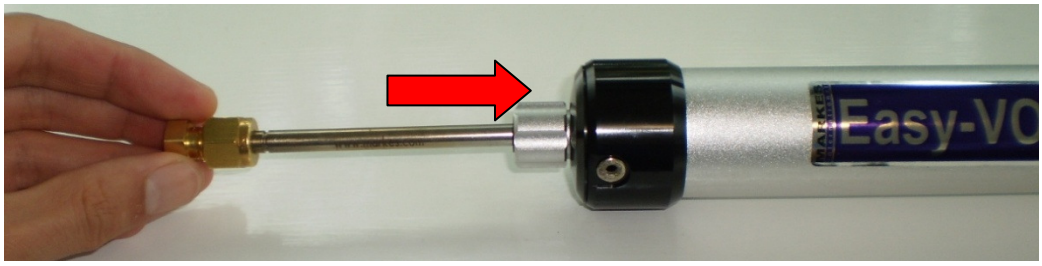
Markes International's Easy-VOC facilitates the rapid, "grab" sample collection of a small volumes (<500 mL) of air/gas directly onto sorbent tubes without the need for calibrated pumps. Using Easy-VOC also reduces risk of analyte breakthrough, extends the application range of sorbent tubes to even more volatile compounds and minimises water management issues.

2. Operation

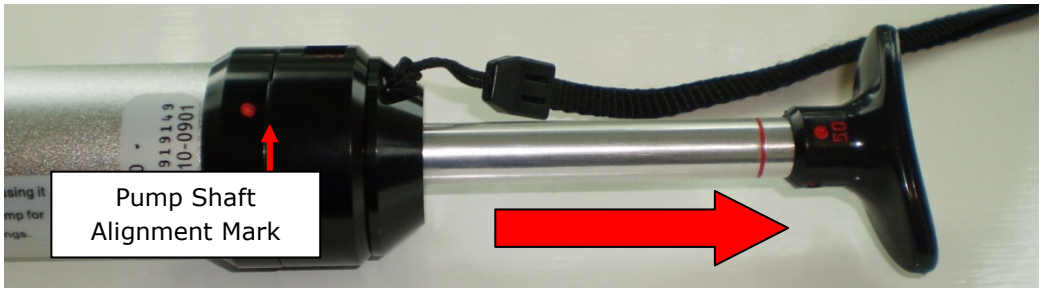
2.1 Leak checking

The pump should be leak tested before use to ensure the volume taken is accurate. Fit the sampling end of a TD tube with a leak tight cap.

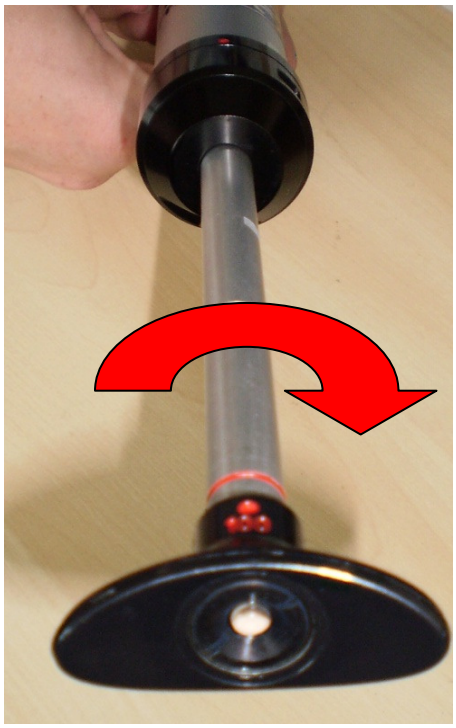
a) Place the tube snugly, non sampling end first, into the rubber inlet of the Easy-VOC. The tube should seal against the rubber without tightening the pump inlet nut.



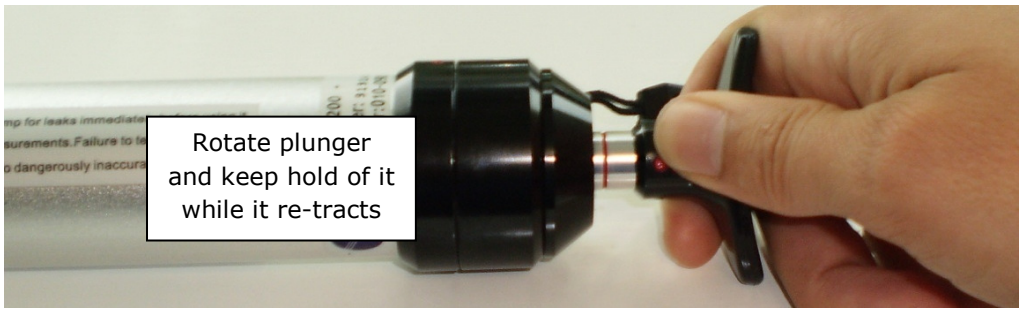
b) Align the red dot on the pump shaft with the 50 mL or 100 mL sample volume red dot on the plunger. Pull the plunger one full stroke and wait 2 minutes. The plunger should still be held during this period.



c) Rotate the plunger dot away from the pump-shaft alignment mark a ¼ turn to the right for 100 mL sample volume or to the left for 50 mL sample volume.

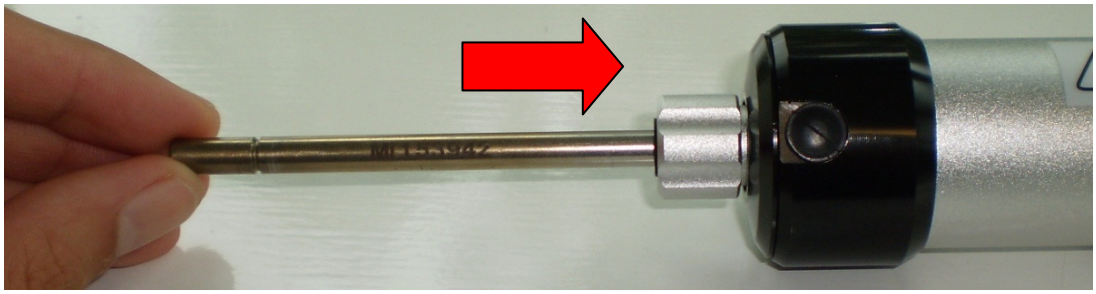


d) While keeping your hand on the shaft to keep it from springing back too suddenly, allow the plunger to be drawn back into the pump shaft. If there are no leaks then the plunger will return to within 3 mm of its original position.



2.2 Taking a sample

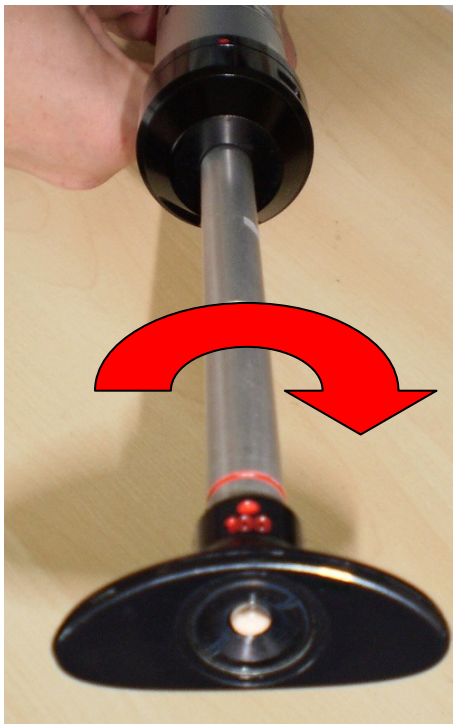
a) Place the sample tube snugly, non sampling end first, into the rubber inlet of the Easy-VOC



b) Select the sample volume required by aligning the red dot on the plunger with the pump shaft alignment mark.

c) Pull the handle quickly until it latches at ½ or full stroke (50 or 100 mL) and wait, until the flow through the tube has stopped (typically 30 seconds).

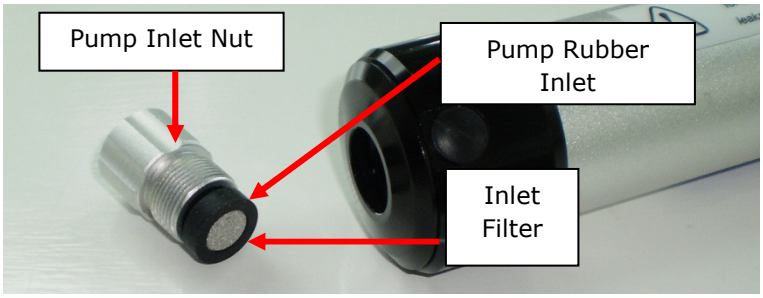
d) When the flow has stopped, rotate the plunger dot away from the pump-shaft alignment mark a ¼ turn either to the right for 100 mL sample volume or to the left for 50 mL sample volume.



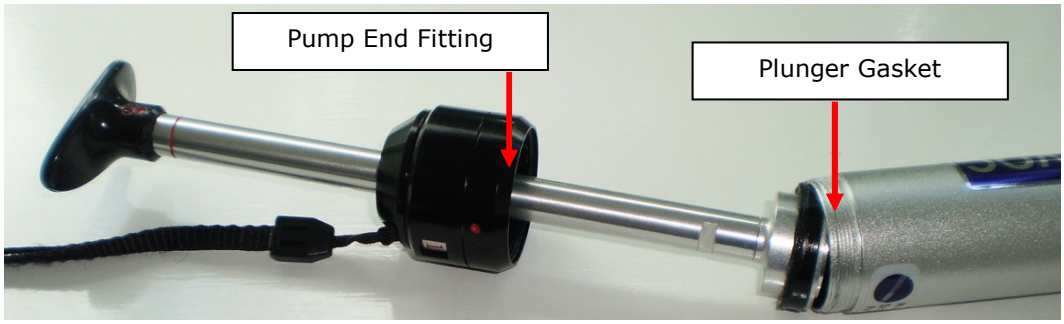
e) For additional pump strokes, push the handle back fully without removing the tube from the pump then repeat steps c and d. The number of strokes taken can be recorded by rotating the counter on the pump.

3. Maintenance

Pump inlet
The rubber pump inlet can become worn with use, resulting in leaks. Unscrew the pump inlet nut and inspect / replace the rubber inlet. If the inlet is not replaced, inspect the inlet filter and clean / replace as necessary.



Pump mechanism
The plunger gasket may leak if worn or not well lubricated. To access the gasket, unscrew the pump end fitting on the handle side and pull the plunger out of the pump shaft.



Inspect / replace the gasket then carefully push the plunger back into the shaft; use a fine screwdriver or tweezers to help ease the gasket into the shaft. Lubricate the inside of the shaft with vacuum grease to ensure a good seal. Note – do not over tighten the plunger gasket.

The inlet check valve may cause leaks if worn or not well lubricated. Unscrew the end fitting on the inlet side and pull out the disk-shaped rubber-inlet check valve. Replace as necessary adding a light coat of grease around the hole. Inspect the gasket ring in the inlet end fitting and replace if damaged before screwing the end fitting back on.