



WELL COMPLETION / FLOWBACK

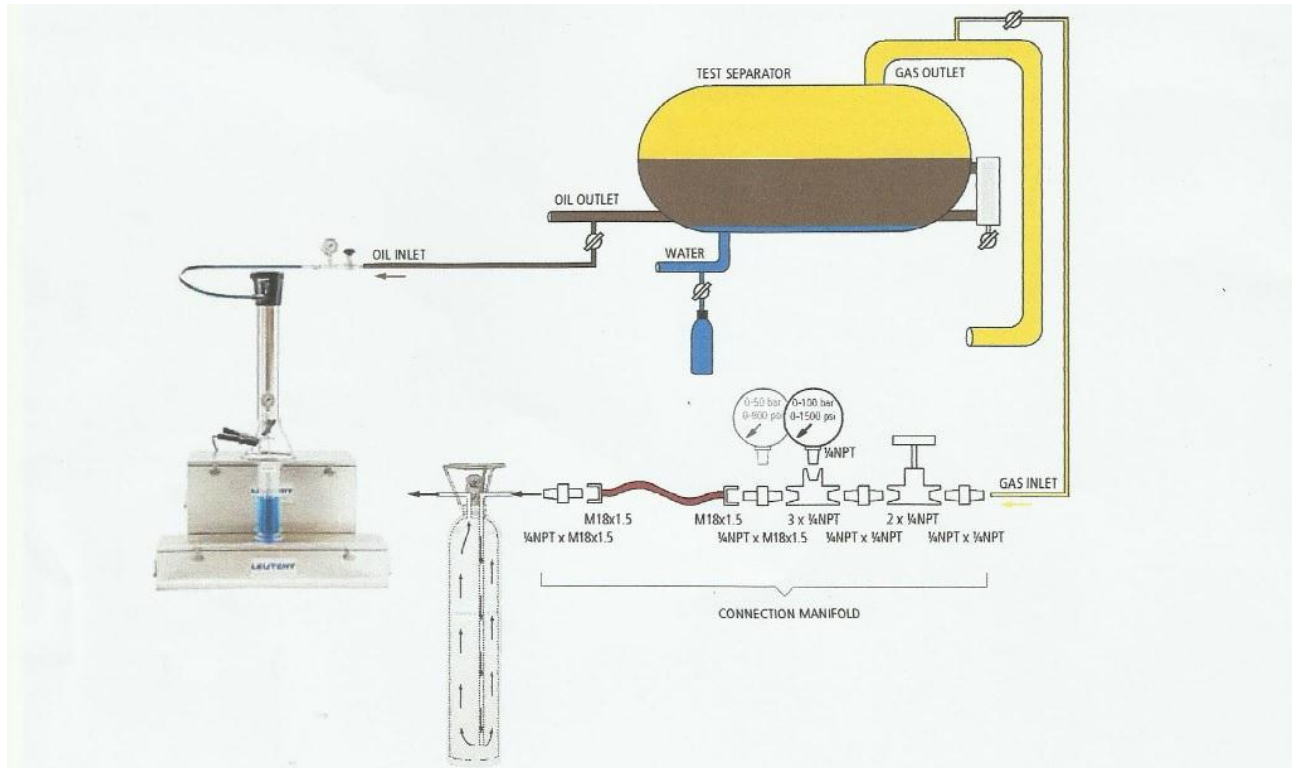


EASTLINE (LEUTERT) GAS & OIL SAMPLE BOTTLES

Oil and Gas Separator (Surface) Sampling:

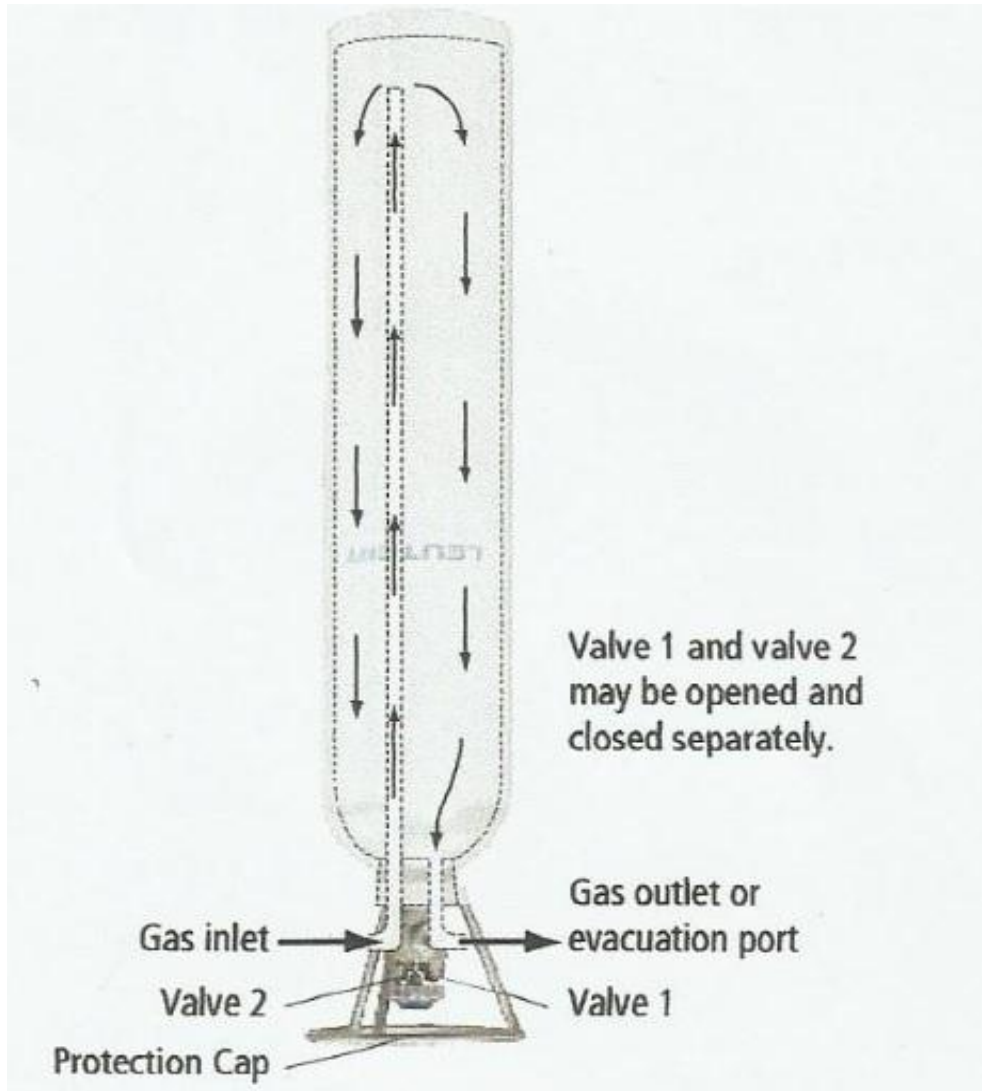
The aim of Eastline's Separator (surface) sampling is to collect a set of oil and gas samples in a state of equilibrium, while conducting accurate of oil and gas production rates. In the laboratory, these samples will be recombined in the same proportion as the measured rates. The oil is collected in a piston type sample cylinder while the gas may be collected in a gas cylinder.

The separator sampling kit includes a set of tools, pressure pump and accessories which allow the operator to perform liquid and gas sampling at the separator.



Gas Sampling Cylinder:

The gas sampling cylinder (GSC) is used for sampling from the well test separator where no bottomhole sampler may be used. For every PVT analysis, a true representative sample is required. One way of collecting such samples is employing the use of bottomhole samplers. Where that is impossible, samples may be taken from the well test separator during production testing operations. Gas, oil or condensate is collected separately at the same separator conditions. Later, they are recombined for PVT analysis in the laboratory.



GAS SAMPLE BOTTLE

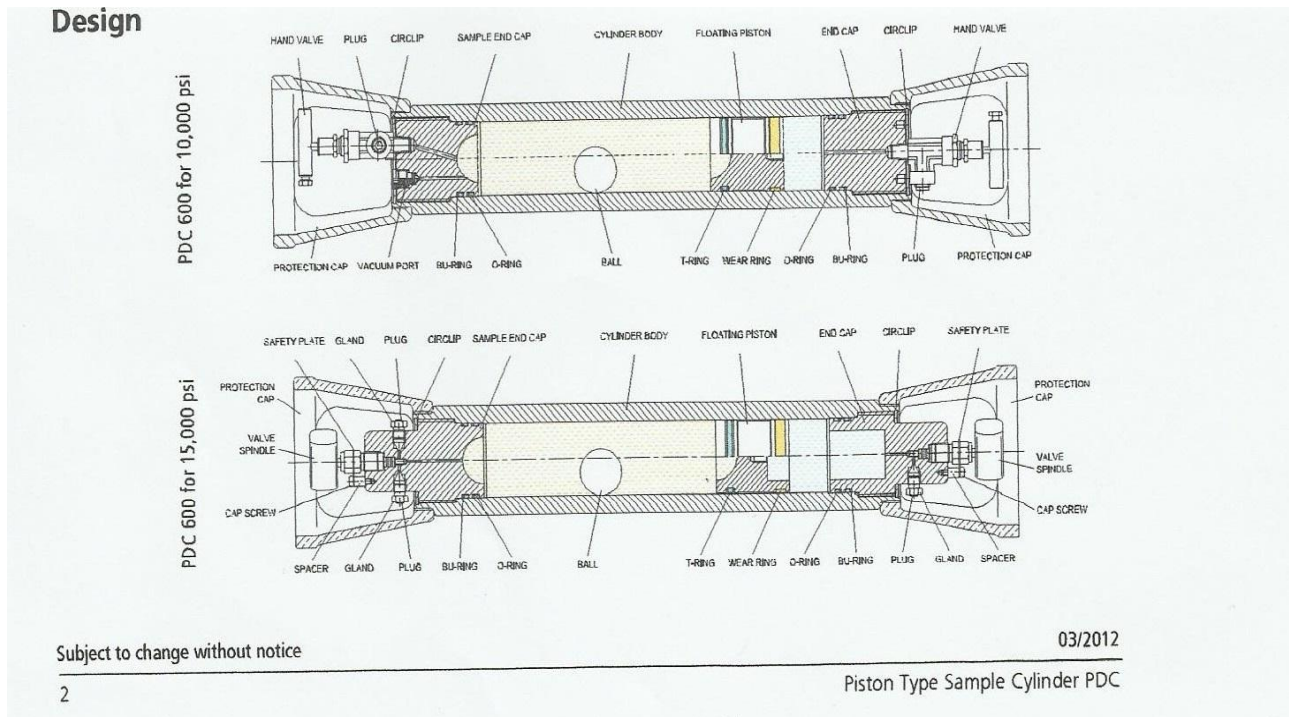
For such situations, Eastline's Leutert Gas Sample Cylinder (GSC) with a large capacity of 20 liters ensures sufficient gas from a single sample for a complete PVT recombination study.

The GSC is made is made from aluminum for strength, corrosion resistant and metal fatigue resistance. It is also lighter than comparable steel cylinders making it easy to handle and more efficient in transportation.



Piston Type (Oil) Sample Cylinder:

The piston type sample cylinder PDC is a shipping bottle designed to transport and store pressureized samples, especially hydrocarbon samples. To separate the sample fluid from a secondary driving fluid, the bottles are equipped with a floating piston. The piston has a single o-ring seal and a wear ring and is designed to minimize friction and reduce pressure load. A mixing ball is incorporated. The bottles are designed with a minimum of dead volume. The two end caps are sealed with double o-ring seals and back up ring. Both end caps are held in place by strong cyclips. Valve protectors on both ends protect the valves during handling and transportation. An aluminum transportation box is provided.



Right angle needle valves with $\frac{1}{4}$ "NPT female port connections are fitted to 10,000-psi cylinders. A special is fit into the sample side which allows for evacuation of the cylinder.