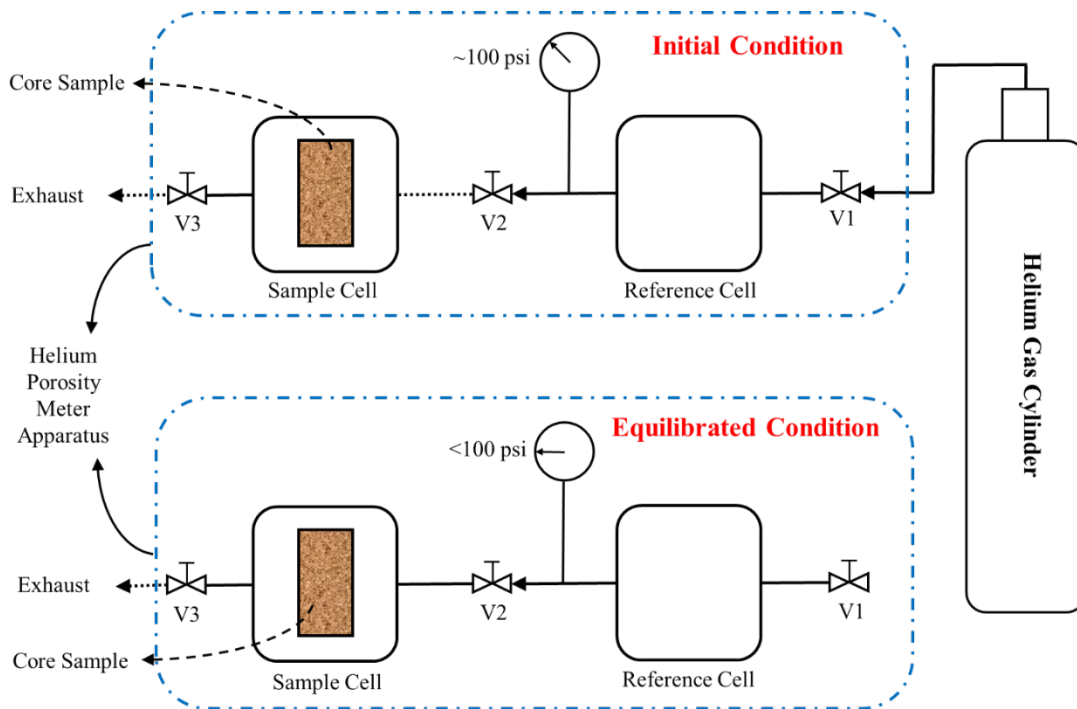




OPERATING MANUAL for POROSITY MEASUREMENT with HELIUM

PERM-POM500



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1. PURPOSE

Porosity-meter is a useful apparatus for Routine Core Analysis (RCAL) in which the effective porosity (interconnect porosity) and grain density of a particular core plug is determined using an inert gas with the small molecular size, such as Helium gas. As Helium has the smallest molecular size among other inert gases, it can easily penetrate into very small pores of core plug. Therefore, Helium gas is always employed in porosity-meter apparatus for a broad range of porosity of various cores to obtain the best results. The basic of porosity calculation in Helium porosity-meter comes from Boyle's Law for isothermal ideal gas systems.

2. SCOPE

According to the fundamental of Boyle's law which is employed in porosity calculation of core plug, the size of core holder (i.e., Sample Cell) should be very close to the size of the core plug; otherwise, the measurement accuracy will be affected to some extent. The unique design of Helium porosity-meter by PERM Inc. Instruments enables operators to measure the porosity for various size of core plugs with a broad range of porosity under the overburden pressure.