



## OPERATING MANUAL

### Vacuum Pycnometers SG-16A & SG-18A

ASTM D2041; AASHTO T 209, T 283

#### FEATURES:

- Aluminum Volumeter with Standard Lid\*
- Vacuum Plastic Lid with Vacuum Fitting and Pressure-Release Valve
- Sink Aspirator with Faucet Adaptor
- Vacuum Hose
- Hose Clamps (2)

\*These Pycnometers may also be used as volumeters for determination of specific gravity of compacted bituminous mixes.

#### ASSEMBLY INSTRUCTIONS:

1. Attach Sink Aspirator to water faucet, using supplied adaptor, if necessary.

**NOTE:** Sink Aspirators require a water supply that produces a constant, high flow-rate. If local water supply is not adequate for this purpose, use of a separate vacuum pump is recommended. Gilson model MA-27A Vacuum Pump is suitable for this application.

2. Place one of the supplied Hose Clamps over one end of the Vacuum Hose and push the end of the hose onto the hose barb of the Aspirator or vacuum supply. Tighten the clamp to secure the connection. (Use of Hose Clamps on barb-type fittings is optional, but may reduce the incidence of leakage).
3. If the Sink Aspirator is used, the other end of the Vacuum Hose may be connected directly to the side hose barb on the vacuum lid. Put the remaining clamp over the hose, push the hose onto the barb and tighten the clamp as above.
4. When a vacuum pump is used, ASTM D2041 requires a moisture trap of one or more 1L filter flasks (3 is common) in-line between the Pycnometer and vacuum source. Heavy-wall 1L Filter Flasks are available from Gilson as GW-74. Vacuum Hose is available as WT-4B. SGA-105 Drierite Compound aids in the reduction of water vapor in the flasks.
5. ASTM D2041 also requires use of Residual Pressure Manometers such as Gilson's MA-170 or MA-166, or Vacuum Gauges, connected directly to both the pycnometer and vacuum source. The hose barb in the top of the Vacuum Plastic Lid is used to connect a manometer or gauge at the pycnometer. An additional manometer or gauge must be connected directly to, or in-line close to the vacuum source.



SG-16A

**NOTE:** These instructions are a general guide for operation of this device. Please refer to ASTM D2041 or other test methods for specific test procedures.

#### OPERATING INSTRUCTIONS:

1. Place the Vacuum Plastic Lid on the Pycnometer, checking seating of the O-Ring gasket. Close the pressure release valve on the Vacuum fitting.
2. Start the vacuum source and observe the Manometer. Inconsistent or low vacuum may indicate leaks at connections and at the lid seal. Press gently on the lid and observe the Manometer. A variation indicates the lid seal may be leaking. Remove and clean as needed. If no leaks are found, problem may be at the vacuum source. If the Sink Aspirator is being used, a higher water flow-rate may be required. If a pump is being used, check that all connections are tight and operating valves are closed. The pump can be tested by connecting it directly to a vacuum gauge or Manometer.
3. At completion of test, release the vacuum by slowly opening the pressure release valve on the vacuum fitting. Remove the O-Ring from the lid and clean the ring and the lid as needed.

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