



**THE PMI  
AUTOMATED  
GAS/HELIUM  
PYCNOMETER  
PYC-G100A**

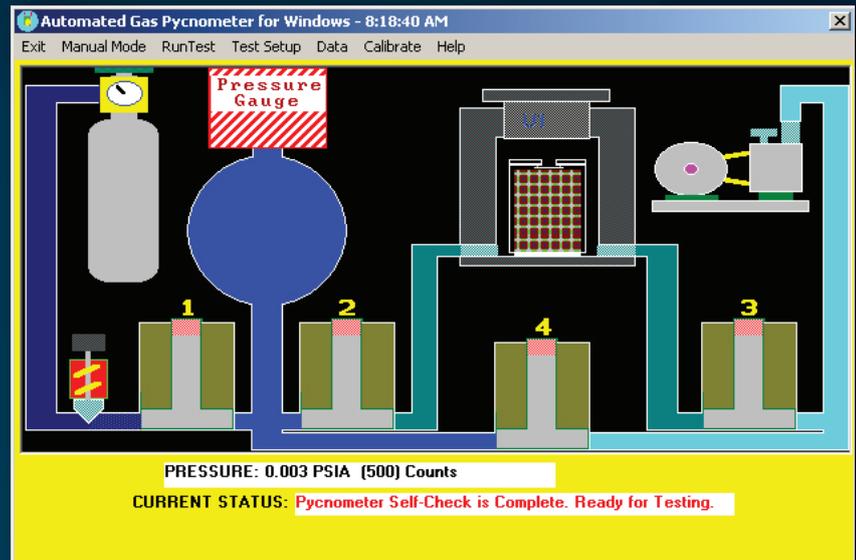
**Not just products...solutions!**

## Applications

Gas/Helium pycnometry measures the true volume and density of samples like coal, char and ash particles, etc.

## Operating Procedure

PMI's Automated Gas/Helium Pycnometer is used to determine the true volume and true density of powders and bulk solids using high-precision volume measurements and density calculations. The true volume of a solid is calculated from the measured drop in pressure when a known amount of gas is allowed to expand into a chamber containing the sample. Thus, the true volume obtained by pycnometry includes any pore volume accessible to the gas. Helium is the preferred gas, because it exhibits ideal gas behavior. The Gas/helium pycnometer measures the true volume and density of solid powders such as calcinated petroleum coke.



## Operating Mode

PMI Automated Gas/Helium Pycnometer can be operated via personal computer (PC) in either automatic or manual modes.

## Data Acquisition

Gas/Helium pycnometer provides data display acquisition analysis

## Accessories

- User Manuals: hard copy included
- Computer, printer and operating program

# Features

- Automated Control
- No need for liquid nitrogen
- Stainless steel embodiment
- Non-destructive measurement
- Confirms to EN 15150 Standards
- Fully automated and simple to use
- Highly reproducible & accurate results
- Option to purge by a suitable method
- Weight: 30 kg
- Resolution: 1 in 60,000
- Accuracy: +/- 0.05%
- Repeatability : upto 0.02 %
- Pressure Range: Between 1-20 psig
- Number of sample chambers: 1-5
- Power Requirements: 240 VAC, 50-60 Hz
- Total Analysis Time: Less than 5 min
- Sample Volume: Between 0.1-135 cm cube
- Flow Rate: User selectable with precision needle
- Sample size: 100 cc standard, other sample size are available
- Low required pressures; works with compressed air
- Mercury-free, non-toxic wetting liquids reduces disposal related costs
- Compatible PC & software to be supplied along with the machine
- Samples are conditioned to remove any trapped air and contaminants
- Sample Cells: 3 aluminum sample cells of different sizes
  - 1 large sample cell (135 cm cube)
  - 1 medium sample cell (50 cm cube)
  - 1 small sample cell (10 cm cube )
- Gas System:
  - Gas regulator assembly provided with two stage stainless steel diaphragm with CGA fitting, isolation valve & 1/8" swagelok output connection
  - Capable to control inert gases between 3-20 psig
- Physical utilities:
  - Pycnometer with 2 ref. chambers & supplied with 4 calibration spheres (1 large , 1 medium, & 2 small spheres).
  - Interface with configurable analytical balance for automatic transfer of transcription error (for this purpose balance provided separately)

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GAS PYCNOMETRY ANALYSIS

Test Type: VACUUM  
 Test Date: 06-22-2001

Sample ID: Polypropylene resin  
 Mass: 10.481 gm

Reference Volume: 11.31 cc  
 Sample Chamber Volume: 24.96 cc

PFO PSIA	PIO PSIA	PI PSIA	PF PSIA	VOLUME (cc)	DENSITY (gm/cc)
00.003	00.003	09.798	04.399	11.073	00.947
-00.003	-00.002	09.802	04.394	11.051	00.948
-00.003	-00.002	09.796	04.392	11.055	00.948
-00.003	-00.003	09.792	04.394	11.076	00.946
-00.003	-00.003	09.796	04.393	11.060	00.948
				Average Volume : 11.063 cc	
				Average Density : 0.947 +/- 0.001	

## Software Features

- Automatic repeat measurements
- Data acquisition under user selected tolerances
- Graphic presentation of the data for quick data viewing
- Graphic files export to window based word / excel processing files
- Provision for off-line data processing
- Integrated detailed help system
- **Software & Report Generation:** A compatible software which can generate several reports such as SUMMARY REPORT, VOLUME VS. CYCLE NO. , DENSITY VS. TEMPRATURE, TOTAL PORE VOLUME VS. TIME, DENSITY VS. CYCLE, EQUILIBRATION REPORT, SAMPLE LOG ETC.



## Sales & Services



Our sales team is dedicated to helping our customers find which machine is right for their situation. We also offer custom machines for customers with unique needs. To find out what we can do for you, contact us. We are committed to customer support including specific service products, short response times & customer specific solutions. To quickly & flexibly meet our customer's requirement, we offer a comprehensive range of services.

*Customize your machine today!*

The most advanced, accurate, easy to use  
and reproducible porometers in the world.

*Celebrating*



*of solutions*



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