

# PVS6F

## Portable Vacuum Calibration System



The PVS6F provides NIST traceable calibrations over the pressure range from  $10^{-5}$  to 1000 mmHg and can be used to calibrate Baratron® capacitance manometers, thermocouple gauges, Pirani gauges, convection enhanced Pirani gauges, other capacitance manometers and transmitters, and mechanical/dial gauges. Hot or cold cathode ionization gauges can be calibrated over the upper end of their range. The PVS6F consists of up to three AA06A high accuracy absolute Baratron® capacitance manometers as transfer standards and a high vacuum pumping system, mounted in a sturdy transportable cart.

The PVS6F is a CE compliant version of the popular PVS6E. Standard features include a narrow chassis for ease of movement through confined areas, clean room compatibility, dry pumping system, and two-channel display/readout for the unit under test.

The PVS6F pumping system consists of an air-cooled hybrid turbomolecular pump, backed by a dual two stage diaphragm pump. A high vacuum gauge is provided to monitor system performance and base pressure to ensure pressure is low enough for proper zeroing of the transfer standards. The PVS6F provides manual pressure control capability for complete user flexibility. The PVS6F has an uninterruptible power supply with sufficient storage to keep the transfer standards warmed up and ready to use for up to 60 minutes, allowing ample time to transport the PVS6F to the process system.

The PVS6F can perform off-line calibrations (Figure 1) as well as in situ/on chamber calibrations (Figure 2).

### Product Features

- Wide  $10^{-5}$  to 1000 mmHg calibration range for many different types of vacuum gauges
- Calibrates instruments in situ to keep process up and running and to reduce maintenance
- Can be used as a process or instrument diagnostic tool to eliminate unnecessary replacement of functioning instruments
- NIST traceable calibration helps comply with government regulations, ISO 9000 and other QA program requirements

### Key Benefits

- Simple, easy to use system encourages regular instrument calibration resulting in higher process quality and yields
- Uninterruptible power supply keeps the transfer standards ready to use
- Manual operation for flexibility to meet your requirements



## Specifications

### Performance

<b>Transfer Standards</b>	AA06A absolute sensors (NIST traceable); see data sheet for other specifications
<b>Baratron® Pressure Sensor Accuracy (including non-linearity, hysteresis, and non-repeatability)</b>	<ul style="list-style-type: none"> <li>• 0.08% of Reading (<math>\pm</math> temp. coefficients)</li> <li>• Option for 0.05% of Reading (<math>\pm</math> temp. coefficients) for 1, 10, 100, or 1000 mmHg Full Scale</li> <li>• AA06A</li> </ul>
<b>Resolution (of Full Scale)</b>	$1 \times 10^{-6}$
<b>Operating Temperature Range</b>	15° to 40°C
<b>Readout Electronics</b>	<ul style="list-style-type: none"> <li>• MKS 670, 5½-digit LCD (one per standard)</li> <li>• Unit under test readout electronics - PDR2000</li> </ul>
<b>Transfer Standards</b>	
<b>Power Required</b>	110 VAC, 60 Hz; 220 VAC, 50 Hz; 15 Amps
<b>Warm-up Time/Start Time</b>	4 hours. However, use of the internal 500 VA UPS will keep the Transfer Standards warmed up and ready for immediate use for at least 60 minutes.
<b>Pressure Control</b>	Manual needle valve to control gas inlet; manual isolation valve and metering bypass valve for pressure throttle control
<b>Vacuum Pumping System</b>	
<b>Mechanical Pump</b>	<ul style="list-style-type: none"> <li>• Oil free 4 stage diaphragm pump operated as dual two stage diaphragm pumps</li> </ul>
<b>High Vacuum Pump</b>	<ul style="list-style-type: none"> <li>• Hybrid turbo/drag air-cooled</li> </ul>
<b>Normal Base Pressure</b>	<ul style="list-style-type: none"> <li>• <math>&lt;5 \times 10^{-7}</math> mmHg</li> </ul>
<b>High Vacuum Gauge</b>	IMAG ionization gauge and controller provides $1 \times 10^{-3}$ to $1 \times 10^{-9}$ mmHg measurement
<b>Test/Calibration Gas</b>	5-10 psig dry filtered N <sub>2</sub>
<b>Test Gas Inlet Fitting</b>	¼" Swagelok® bulkhead
<b>Test Port Fitting (3)</b>	Swagelok 8 VCR® male (3)
<b>Standby Power</b>	500 V.A. uninterruptible power supply keeps three Transfer Standards warmed up and ready to use for up to 60 min.
<b>Weight</b>	Approximately 250 lbs (110 kg)
<b>Compliance</b>	CE

## Configurations

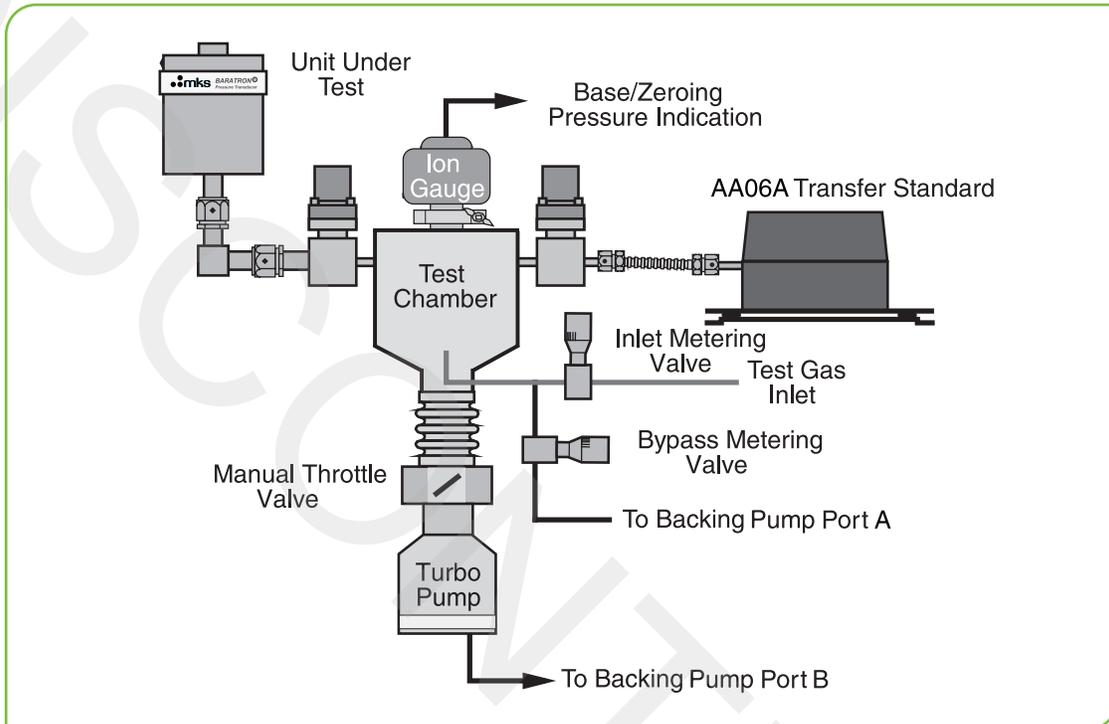


Figure 1 - Configuration for off-line calibration.

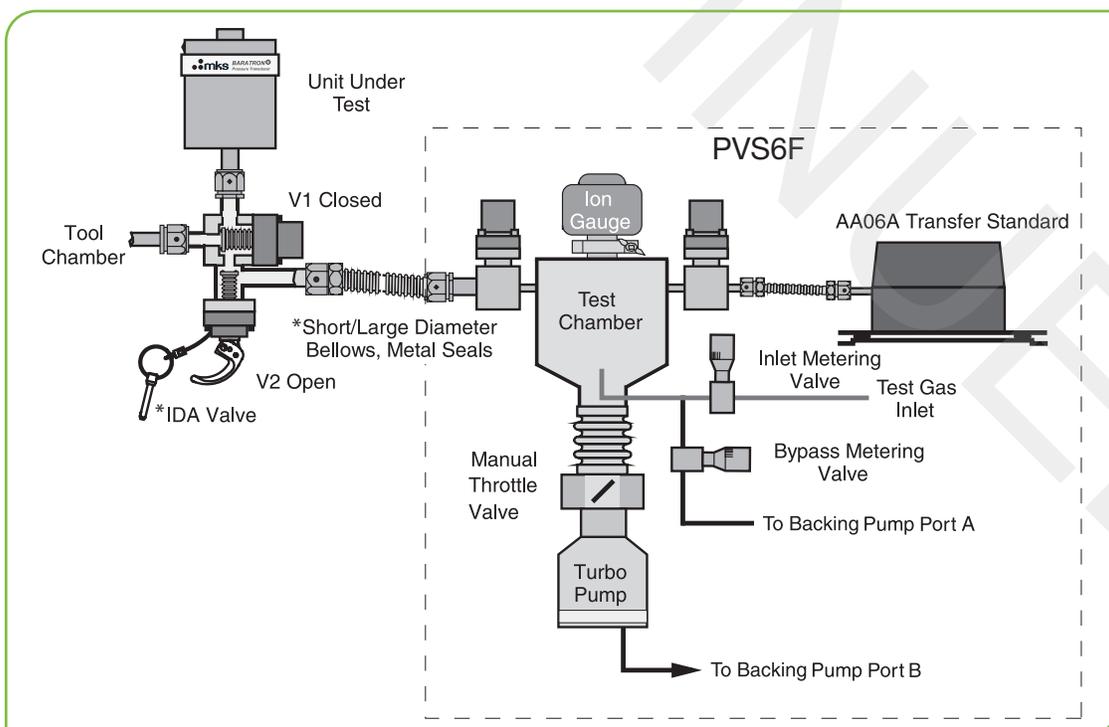
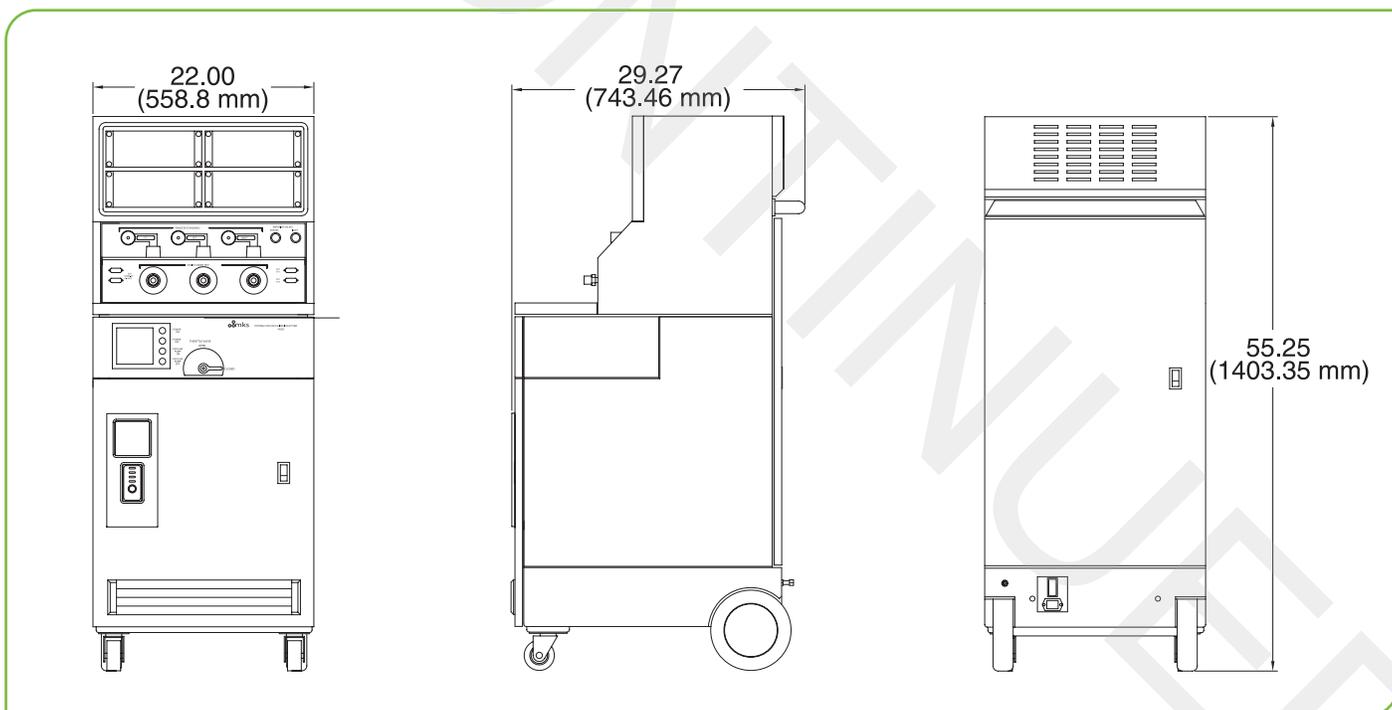


Figure 2 - Configuration for on chamber calibration (\*Available from MKS).

Ordering Code Example: PVS6FXXXYZ	Code	Configuration
<b>Model</b>		
PVS6F Portable Vacuum Calibration System	PVS6F	PVS6F
<b>Full Scale Pressure Ranges in mmHg (XXX)</b>		
0.1	A	CDO
1	B	
10	C	
100	D	
1000	E	
Vacant channel	O	
<b>Input Power (Y)</b>		
Standard USA & Canada input power 110 VAC, 60 Hz	U	U
220 VAC, 50 Hz	F	
<b>Accuracy (Z)</b>		
Best Available	A	A
±0.08% of Reading	B	



Dimensional Drawing - Unless otherwise specified, dimensions are nominal values in inches (mm referenced).