

# Model 2470

## High Pressure Gas Piston Gauge

### Technical Data

#### Features

- 0.2 to 3 000 psi gauge
- Accuracy to 0.0025 % of reading
- Gas-operated, gas-lubricated piston/cylinders eliminate potential contamination of device under test

The Model 2470 Gas Piston Gauge is capable of generating gauge pressures from 0.2 to 3 000 psi with an accuracy of 0.0015 % of reading to 200 psi and 0.0025 % of reading to 3 000 psi. Operating beyond the typical upper pressure limits of existing gas-operated piston gauges, the Model 2470 functions easily for this pressure range due to Ruska Instrument's unique ability to manufacture gas-operated/gas-lubricated piston/cylinder assemblies. Since fluid lubrication is not required, you can be assured that calibrations can be performed without the possibility of contaminating the device under test. The Model 2470 is ideal for calibrating digital pressure indicators and controllers, transducers and any other pressure calibration or measuring device where only gauge pressures are required from 0.2 to 3 000 psig. Simple design provides an economical price for a high accuracy laboratory standard.

The Model 2470 has recently been enhanced to allow the use of three different piston/cylinder assemblies. Select one, two or all three piston/cylinders depending on your particular pressure range requirements:

- Low range 0.2 to 50 psi
- Mid range 1.7 to 200 psi
- High range 100 to 3 000 psi



The Model 2470 mass set is machined from nonmagnetic stainless steel and is provided with a trim mass set to allow increments to within the resolution of each piston/cylinder (1 PPM). A storage case is provided to contain the entire mass set and up to three piston/cylinders.

The instrument base requires minimal space and is designed with value in mind. A pressure housing containing the piston/cylinder is mounted on a circular base plate. Three levelling screws and a circular level vial provide easy adjustment of the piston axis to a vertical position.

For calibrations where gauge and absolute mode pressures are required, please refer to Ruska's Model 2465 Gas Piston Gauge which operates from 0.2 to 1 000 psi and provides an uncertainty of 0.0015 % of reading.

The new Model 3990-803 Pressure Control Pack (PCP) provides an easy to use system for introducing pressure from the gas supply source to the Model 2470 and device under test. The PCP includes supply, cutoff and vent valves, a fine tune pressure adjuster and a test port reference gauge.



Model 3990-803  
Pressure Control Pack

## Specifications

<b>General</b>	
Temperature	Operating temperature 15 °C to 28 °C (59 °F to 82 °F) Storage temperature -20 °C to 70 °C (4 °F to 158 °F)
Humidity	Operating humidity: 20 % to 75 % RH, non-condensing Storage humidity: 0 % to 90 % RH, non-condensing
<b>Piston and cylinder</b>	
Low range	Pressure range: 0.2 psi to 50 psi Pressure accuracy: 0.0015 % of reading or 0.000015 psi <sup>b</sup> Material: piston is 440C stainless steel, cylinder is cemented tungsten carbide
Mid range	Pressure range: 1.7 psi to 200 psi Pressure accuracy: 0.0015 % of reading or 0.000075 psi <sup>b</sup> Material: piston and cylinder are cemented tungsten carbide
High range	Pressure range: 100 psi to 3 000 psi Pressure accuracy: 0.0025 % of reading Material: piston and cylinder are cemented tungsten carbide
<b>Mass set</b>	
Total mass	17.7 kg (39 lb)
Max platter mass	2.4 kg (5.3 lb)
Includes trim mass set 1 mg to 20 g (0.00004 oz to 0.7 oz)	
<b>Instrument base</b>	
Pressure range	0 psig to 3000 psig
Includes three point levelling feet, level vial, thermometer, split column and mass adapter for compatibility with low and mid range piston/cylinders or existing 2465 piston/cylinders.	
<b>Performance</b>	
Precision (type A uncertainty)	Better than 3 ppm <sup>a</sup>
Long-term stability	Better than 3 ppm per year <sup>a</sup>
Resolution <sup>c</sup>	1 ppm or 1 mg <sup>b</sup>
<b>Pressure Control Pack (optional)</b>	
Pressure range	0 psi to 3 000 psi
Dimensions (H x W x D)	178 mm x 432 mm x 317.5 mm (7 in x 17 in x 12.5 in)
All supply and test connections are 1/4 NPTF	

<sup>a</sup> Values are reported at the 95 % confidence level (2s)

<sup>b</sup> Whichever is greater

Expression of accuracy (uncertainty) conforms with the recommendations of the ISO Guide to the Expression of Uncertainty in Measurement.

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