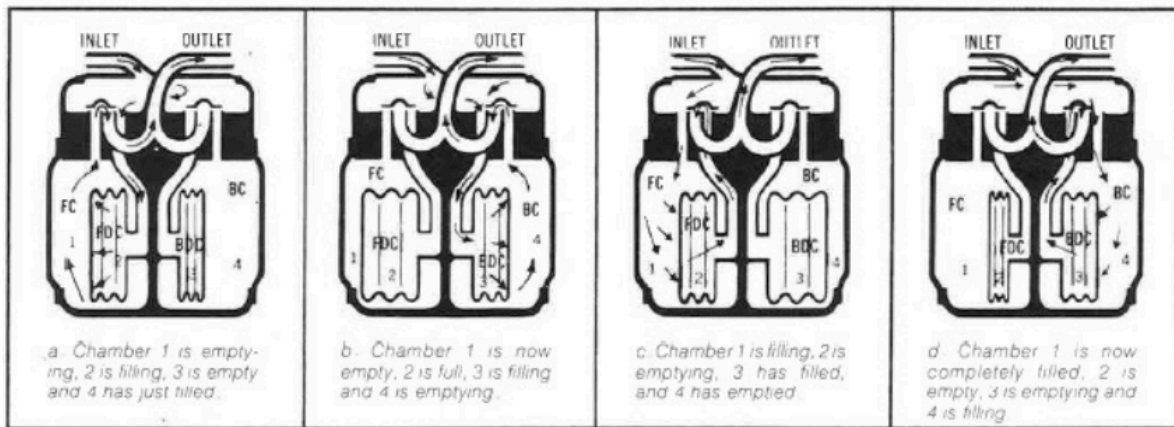


## A Guide to Diaphragm Gas Meters

### I. Introduction

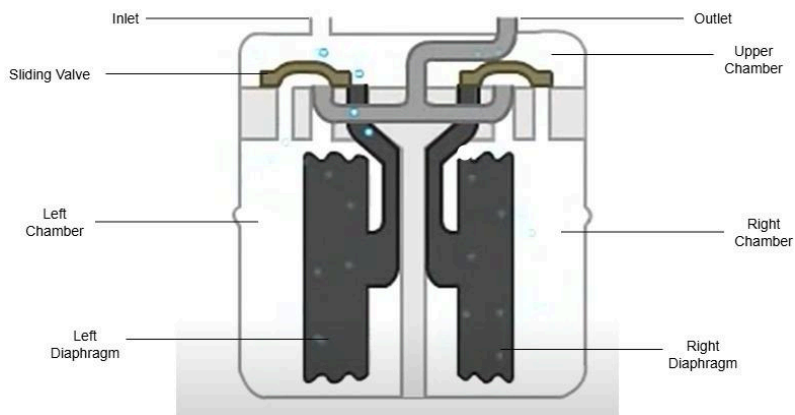
The diaphragm gas meter is the most common type of gas meter in use today. It works by passing gas through two diaphragms, or flexible compartments, and two chambers that house the diaphragms. By recording the expansion and contraction of these diaphragms, the meter can calculate the quantity of gas that has passed through the meter. This quantity is displayed on the meter's index in cubic feet.

### II. How it operates



In a properly installed gas meter, gas flows from the inlet through the upper chamber to one of four lower chambers and diaphragms. The gas then exits the meter through the outlet. Sliding valves control the flow of gas from the upper chamber to the lower chambers. The valves fill the diaphragms and chambers in a continuously repeated cycle: left diaphragm → right diaphragm → left chamber → right chamber. When a chamber is being filled, gas from its corresponding diaphragm is pushed out the outlet. When a diaphragm is being filled, gas from its corresponding chamber is pushed out the outlet. These cycles are counted by a mechanical or electronic index. This allows the meter to precisely measure the amount of gas that passes through it.

### III. Key components

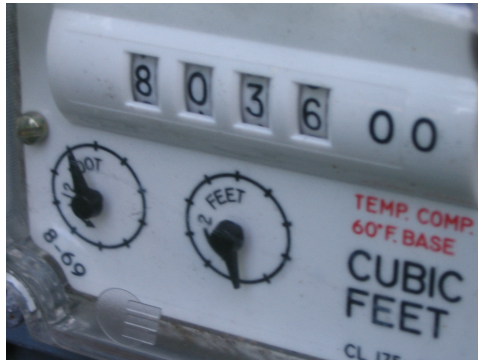


- A. *Inlet*: Located on the top left of most gas meters. Gas enters the meter through the inlet and passes into the upper chamber.
- B. *Upper chamber*: The upper chamber receives gas from the inlet and releases into the lower chambers and diaphragms.
- C. *Sliding Valves*: There are two sliding valves in every meter. They alternately prevent and allow gas to move from the upper chamber into the lower chambers and diaphragms. The valves also regulate the outflow of gas from the lower chambers and diaphragm to the outlet. Differences in pressure between the chambers cause the valves to slide into the appropriate position.
- D. *Chambers*: The left and right chambers receive gas from the upper chamber and release it into the outlet. Whether they are receiving or releasing gas depends on the position of the sliding valves.
- E. *Diaphragms*: The diaphragms are located within the chambers. Like the lower chambers, they receive gas from the upper chamber and release it into the outlet, depending on the position of the sliding valve.
- F. *Outlet*: Located on the top right of most meters, the outlet releases gas to the house line.
- G. *Gas Meter Index*: The index is a panel located on the outside of the meter that records the quantity of gas that has passed through the meter, typically in cubic feet. Indexes can be analog or digital.

#### IV. How to read an Index

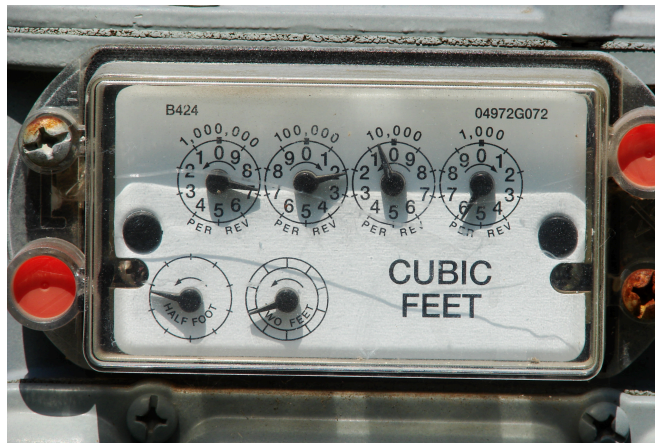
The index is located on the outside of the meter, and displays the total amount of gas that has passed through the meter. In the U.S. this number is typically shown in cubic feet, though in other countries it may be displayed as cubic meters. A monthly meter reading is taken by subtracting the previous month's total from the current total. There are two types of indexes, digital and analog.

##### A. Reading a digital index



Reading a digital index is a straightforward process. The numbers at the top of the panel display the current meter reading. In the image above, the meter reads 8036.

##### B. Reading an analog index



To read an analog gas meter, locate the top four dials, which are numbered in opposite directions, and read from left to right. Any unnumbered dials can be ignored. If a pointer is between two numbers, record the lower number, except when it's between 9 and 0, where you should record 9. If the pointer is on or near a number, record that number if the dial to the right is at 0, 1 or 2, record the number below it if the dial to the right is at 8 or 9. The meter in the figure above reads 7205.