



Gas Meter Selection and Installation

With the cost of fuel on the increase, many bakers are finding it beneficial to install gas meters on individual pieces of equipment, instead of just having one master plant-wide meter. This enables them to determine precisely how the fuel is being used and where efficiencies can be gained by making equipment and/or process changes. For information on efficiency considerations see information on SmartBake™ and TOC™ (Banner-Day Systems) or the following Technical Briefs on our website:

Banner-Day Systems Save Energy
SmartBake™ Modular System

The typical bakery oven uses more fuel than just about any other piece of equipment in the plant. As such, this is frequently one of the first and best places to install an individual meter. However, the typical oven has operational features that must be considered when installing a meter to ensure that the meter functions correctly and doesn't impede the proper operation and performance of the oven. The guidelines below will assist the bakery owner in the correct installation of a standard in-line gas meter.

Selection Guidelines:

- **KNOW YOUR METER!!!!** Some meters automatically compensate for the line pressure when they measure the gas usage, others do not. If you have a non-pressure compensated meter, know its "standard" pressure, and your line pressure. With that information in hand, converting the meter measurements to the actual standardized gas usage is a very simple task. Some meters are also temperature compensated. While this is a nice feature, it typically isn't necessary for indoor installations. Temperature has a VERY minor impact on standardizing the gas usage, especially indoors.
- **CHOOSE THE RIGHT METER!** All meters are not created equal. Your meter must be properly chosen for line size, operating pressure, fuel type, etc. If the inlet pressure to your new meter varies, you should definitely consider one that's pressure compensated. If you need any assistance, advice or guidance, please give us a call.

Installation Guidelines:

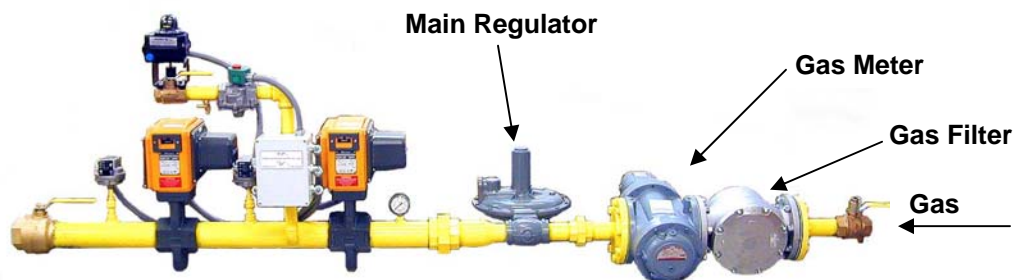
- The meter MUST be installed upstream of the oven main regulator. A standard gas meter is designed to operate at pressures usually measured in PSI. Typically, the pressure after the main regulator is in the 8 – 12"WC range, which is less than 0.5 PSI. Installing a meter here may actually impede the flow of fuel, causing operational issues with the oven.

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- **DO NOT** install standard in-line meters after the zero governors in the gas line drops. There have been cases where a bakery wanted to know how much fuel each oven zone was using. In an attempt to gather this information, meters were installed in each gas line drop. Since the gas line drops run at **ZERO (0.0) inches WC**, the meters did not function and, in addition, caused a serious blockage to the gas flow, severely impeding the oven operation. If you find it necessary to gather this information, you **MUST** use a meter that does not rely on positive displacement or any technology that requires line pressure to do so. A non-intrusive technology would be best, such as ultrasonic.
- There should always be a filter in the gas line upstream of the gas meter, especially when using a gear-type positive displacement meter. This style of meter is popular due to its simple design, exceptional accuracy and precision. However, due to the close tolerances inherent to its design, it can be easily damaged by contaminants in the gas flow. This once again reiterates the importance of including a filter in the gas line. Additionally, current codes require the use of a filter or strainer upstream of the gas train whether a meter is used or not.
- **READ, UNDERSTAND and FOLLOW the manufacturer's instructions!!!** Can the meter be installed vertically, or only horizontally? Can it be installed near any fittings, valves, etc., or should there be a length of straight pipe before and/or after it? Did the meter ship with lubricating oil that must be put in the meter after it's installed? Is there more than one place that it has to have oil?

Read the manual that comes with the meter to make sure it gets installed and maintained properly. This will ensure a long life and proper operation.



Typical Gas Train with Properly Installed Gas Meter

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