



## ***GAS LINE SIZING PROCEDURE***

The *Uniform Plumbing Code* (UPC) requires gas lines meeting the following criteria be sized using the procedures contained in UPC Section 1217.0:

- gas lines having up to a maximum length of piping between the meter and the most distant outlet (equipment) of 250 feet and
- gas line systems having a maximum gas demand not exceeding 275,000 Btu/hr total for the total of all gas-fired equipment (250 cubic feet per hour).

These same UPC procedures, or an engineering design, may be used for gas piping systems exceeding these criteria. If an engineering design is used, it must be prepared by and signed and stamped by a California registered mechanical engineer.

The procedures contained in this guide are applicable for gas piping systems meeting the following criteria:

- Assume PG&E natural gas provides 1100 Btu/cu.ft.
- Where a specific gas-fired appliance is not selected yet, use the minimum demand values provided in *Uniform Plumbing Code* (UPC) Table 12-1.

## ***Step-by-Step Sizing Procedure***

Using the attached UPC example as a guide:

- 1) Draw a single-line diagram of the piping system,
  - a) For each segment of pipe between each elbow and/or branch, provide the pipe length in feet.
  - b) Label the meter connection point.
  - c) Label each of the **Outlets** as A, B, C, etc. An **outlet** is defined as one or more pipe segments that supply gas to a single piece of equipment.
  - d) Label each **section** of pipe as Sections 1, 2, 3, etc. A **section** is defined as one or more segments of pipe that supply gas to two or more **outlets**.
- 2) From the pipe segment lengths, determine the length of the pipe from the meter location to the most remote **outlet**, including the **outlet** length itself.
- 3) In UPC Table 12-3, select the column showing that distance, or the next larger distance if the table does not give the exact length.
- 4) Starting at the most remote **outlet**, find in the vertical column just selected the gas demand for that **outlet**. If the exact figure of demand is not shown, choose the next larger figure below in the column.
- 5) Opposite this demand figure, in the first column at the left in UPC Table 12-3 will be found the correct size of pipe.

- 6) Using this same vertical column, proceed in a similar manner for each *section* of pipe serving this *outlet*. For each *section* of pipe, determine the total gas demand supplied by that *section*.
- 7) Size each *section* of branch piping not previously sized by measuring the distance from the gas meter location to the most remote *outlet* in that branch and follow the procedures of steps 2, 3, 4, and 5 above. Note: Size branch piping in the order of their distance from the meter location, beginning with the most distant *outlet* not previously sized.