

CALCULATION WORKSHEET: PIPE SIZING, LONGEST LENGTH METHOD

Step 1:

- Draw a sketch of a piping system in the space to the right. Use the back of this page or a separate sheet if more space is needed.

Step 2:

- Enter the system information. Note that demand is the amount of gas flowing through a section of pipe.
- Use total Btu/hr rating/1000 (ft³/hr) for natural gas.
- Use total Btu/hr for propane.

Step 3:

- Determine the gas used and system pressure, and enter it to the right.
- Determine the piping material and enter it to the right.
- Select the appropriate pipe sizing table from Chapter 6 and enter it to the right.

Pipe system sketch

Gas: _____

System pressure: _____

Piping material: _____

Table used: _____

Pressure drop: _____

Step 4:

- On the sketch, label the section of pipe from the point of delivery (meter or regulator) to the first tee as Section 1.
- Label the section from the first tee to the second tee as Section 3. Use similar section numbers for additional sections.

Table 1 Piping System Table

Section	Demand	Section length	Size
1			
2			
3			
4			
5			

Step 5:

- Determine the longest length of piping from the point of delivery to the most remote appliance. Enter this length for all pipe sections in Table 1.

Step 6:

- Enter the input rating for each appliance in Table 2. For natural gas appliances, enter the input rating in Btu/hr/1000 (ft³/hr). For propane appliances, enter the input rating in Btu/hr.

Table 2 Appliances Table

Appliance	Demand	Section length	Size
Furnace			
Furnace			
Water heater			
Water heater			
Range			
Oven			
Dryer			
Other			
Other			
Other			
Other			
Total			

Step 7:

- From the table, determine the length of each pipe section using the appropriate table, using only the row with the longest length. Round up to the lengths in the table. Read across until a capacity equal to or greater than the required demand for the section is found. Read up to find the size. Repeat for each section of piping. Enter this size in Table 2.

Job: _____ **Prepared by:** _____ **Date:** _____