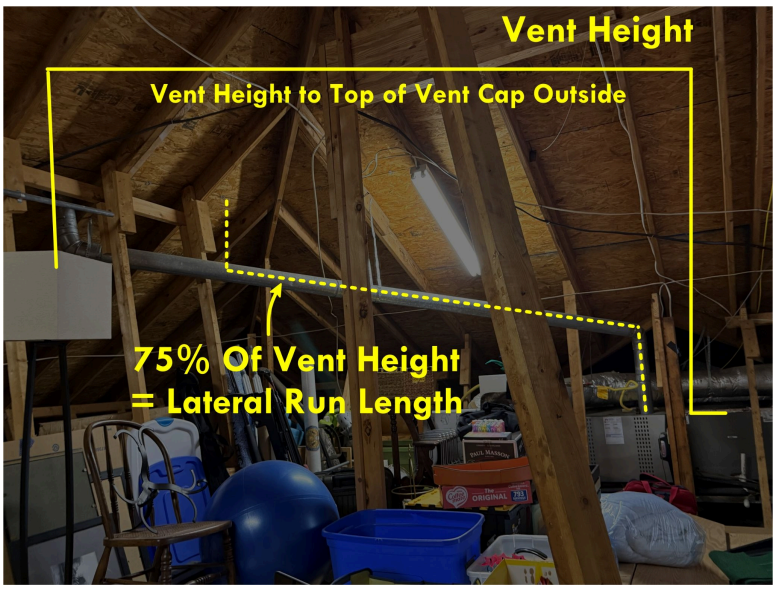
4-inch & 5-inch B-Vent Sizing Chart for Fan-Assisted Furnaces

This chart provides general guidelines for 4-inch and 5-inch diameter B-vent pipes used with a standard forced-air gas furnace with a fan-assisted vent system. The "Estimated Total Vent Height" can be approximated by adding approximately 3 feet to the vertical height from the top of the furnace to the roof decking.



Note on Elbows: Standard vent sizing tables often assume a typical installation already includes a minimal number of elbows (e.g., two 90-degree elbows). The columns below account for *additional* 90-degree elbows beyond that baseline, each causing an approximate 10% reduction in effective vent capacity, which is reflected as a reduction in the maximum permissible lateral length.

Measure Vent Height (feet)	Max Lateral Length)	Max Lateral (1 Extra 90° Elbow)	Max Lateral (2 Extra 90° Elbows)	5-inch Pipe: Max Lateral
6	4.5	4.1	3.6	5.4
7	5.3	4.7	4.2	6.3
8	6	5.4	4.8	7.2
9	6.8	6.1	5.4	8.1
10	7.5	6.8	6	9
11	8.3	7.4	6.6	9.9
12	9	8.1	7.2	10.8
13	9.8	8.8	7.8	11.7
14	10.5	9.5	8.4	12.6
15	11.3	10.1	9	13.5
16	12	10.8	9.6	14.4
17	12.8	11.5	10.2	15.3
18	13.5	12.2	10.8	16.2
19	14.3	12.8	11.4	17.1
20	15	13.5	12	18

Important Notes

Rule of Thumb: This chart is a practical rule of thumb for quick assessment in the field.

- For 4-inch pipe, the maximum lateral length is **75%** of the total vent height.
- For 5-inch pipe, the maximum lateral length is estimated at **90%** of the total vent height. This higher percentage reflects the increased capacity of a larger diameter pipe.

Code Compliance: Always emphasize that the ultimate authority for proper sizing is the appliance manufacturer's installation instructions and the National Fuel Gas Code (NFPA 54 / ANSI Z223.1) or local building codes in Mississippi.

Elbows: Remember that each 90-degree elbow significantly reduces the effective vent length and capacity. This chart provides an estimate of that reduction.

Slope: Ensure the lateral connector maintains a minimum upward slope of 1/4 inch per foot towards the vertical vent.

Condensation: Excessively long lateral runs, even within this guideline, can increase the risk of condensation, especially in unconditioned spaces like attics.

Vertically Installed Vent Pipe: If a vent pipe is installed vertically with no lateral run (e.g., directly above the furnace and straight through the roof), this is generally the most efficient configuration and maximizes the vent's capacity. This setup typically offers the best performance and lowest risk of issues.
