Best Practices
Venting Installation Instructions

Addendum to Installation Instructions
Model: 7200 Series

IMPORTANT: Problems caused by improper installations are not covered by the manufacturer's warranty.

IMPORTANT: Undersized and improperly installed duct pipe and/or other ventilation components will cause excessive static pressure (air resistance), that may result in rattling, vibration and air buffeting noises, as well as inadequate ventilation.

1. Building Codes
Kitchen Hood Ventilators should be installed by qualified technicians familiar with state and local building codes.

2. Duct Pipe and Fittings (Elbows, Transitions, Roof & Wall Caps)
a. Use round or rectangular rigid metal duct only. Where possible, use round duct as it creates the least amount of static pressure. DO NOT use flex duct.

b. All duct sections and fittings (EXCEPT DAMPERS, per Section 4), should overlap and be connected with at least 3 – 4 equally spaced screws and wrapped tightly with 2 – 3 layers of Aluminum Foil Metal Duct Tape. This type of duct tape is more durable than traditional cloth duct tape. DO NOT use butt joints.

c. For best air flow, elbows and pipe size transition fittings should not be directly connected to one another. Where possible, always include at least 15 inches of straight pipe between fittings.

3. Duct Pipe and Fitting Sizes
IMPORTANT: No portion of any length of duct pipe or fitting should be smaller than the discharge port of the ventilator. This is very important because any type of restriction anywhere in the ventilation system will cause increased static pressure (air resistance), that may result in rattling, vibration and air buffeting noises, as well as inadequate ventilation. See **Duct Sizing Chart and Area Calculations** section for more detail.

Duct Runs – Length

a. Configure the ventilation duct run to be as short and as direct to the outside as possible. Minimize the number of elbows and transition fittings used. Complex or long runs should be reviewed by a qualified installer.

b. No portion of the ducting should be run so that the exhaust air flows downward. Since exhaust heat rises, forcing the air to flow downward will cause increased static pressure. As previously mentioned, improperly installed duct pipe will cause excessive static pressure (air resistance), that may result in rattling, vibration and air buffeting noises, as well as inadequate ventilation.

c. Duct runs for 1250 CFM ventilator models should not exceed 35 linear feet with two 90-degree elbows and two 45-degree elbows, a damper and a roof or wall cap. Longer runs or additional elbows will result in decreased ventilation performance. Each 90-degree elbow is the equivalent of 6 linear feet of duct pipe; each 45-degree elbow is equivalent to 3 linear feet of duct pipe.

d. Always run ventilator ducts to the outdoors. DO NOT terminate a duct into an attic, basement, garage, crawl space under a house, a chimney, other ducting or an enclosed room.

4. Dampers
IMPORTANT: DO NOT USE SCREWS TO ATTACH ANY TYPE OF DAMPER AS THE SCREWS MAY BLOCK THE DAMPER BLADES.

IMPORTANT: DO NOT USE MORE THAN ONE DAMPER IN THE VENTILATION SYSTEM. **NOTE**: Many styles of roof caps and wall caps have built-in dampers. See **Roof Caps and Wall Caps** section for more detail.

Always use carefully crafted, tightly wrapped Aluminum Foil Metal Duct Tape on all connections and physically view and test the damper blades to make certain they are opening and closing correctly. Make sure that the damper blades do not touch the duct walls and that there is no debris blocking the free movement of the damper mechanism. Common things to look for include screws protruding into the blade's path, overspray of paint, plaster and insulation. If using rectangular duct, be sure that all four sides of the duct are on the outside of the damper's start collar or frame.

Damper in Roof Cap or Wall Cap

In ventilation systems utilizing a roof cap or wall cap ***with*** a built-in damper, do not install an additional in-line damper. Two dampers are unnecessary and will cause increased static pressure (air resistance), that may result in rattling, vibration and air buffeting noises, as well as inadequate ventilation.

In-line Damper (for ventilation systems utilizing a roof cap or wall cap ***without*** a built-in damper)

In cold weather areas, installing an "in-line" damper may be the preferred type of installation. This is because in-line dampers installed just above the perimeter of the heated space (the ceiling) will reduce the amount of cold air traveling down the duct into the heated space and into the kitchen through the ventilator. In-line dampers must be installed so that the exhaust air flow will open the butterfly blades.

For **horizontal duct runs**, the damper must be installed so that the hinge between the two butterfly blades is **vertical**—the hinge pin must point up and down. Otherwise, because of gravity, the damper's blades will not close and the damper will not prevent backdrafts.

For **vertical duct runs**, the in-line damper's hinge will be **horizontal** (sideways), which is correct for vertical duct runs. Gravity will help close the damper blades after each use.

For **upward slanted duct runs**, the in-line damper's hinge must point to the top and bottom sides of the duct. In his position, gravity will help close the damper blades after each use. Otherwise, because of gravity, the damper's blades will not close and the damper will not prevent backdrafts.

5. Roof Caps and Wall Caps

The roof cap or wall cap is the termination point of the venting system that allows the exhaust air to exit to the outdoors. All sections of this fitting must have an equal or greater air path area than the ventilator's discharge port. If any section of the roof cap or wall cap is smaller than the ventilator's discharge port, the entire ventilation system will lose efficiency and the restriction will cause increased static pressure and decrease performance.

IMPORTANT: Even though the intake side of the roof cap or wall cap may be properly sized, roof caps or wall caps with built-in dampers must be made so that when the damper is fully open, the actual open area of the final air path is equal to or greater than the discharge port of the ventilator. Any undersized portion of a roof cap or wall cap will cause excessive static pressure that may result in rattling, vibration and air buffeting noises, as well as inadequate ventilation.

Do Not use "goose-neck style" caps as they significantly restrict natural, heated air-flow. **Do Not** use caps with dampers for BBQ Hoods.

6.

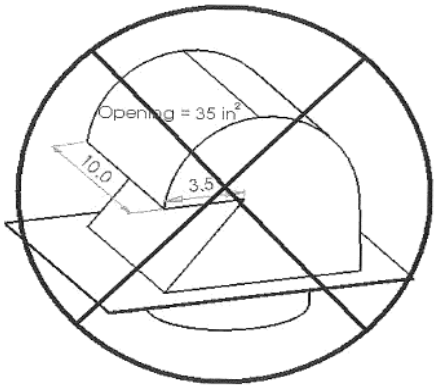


Fig. 1

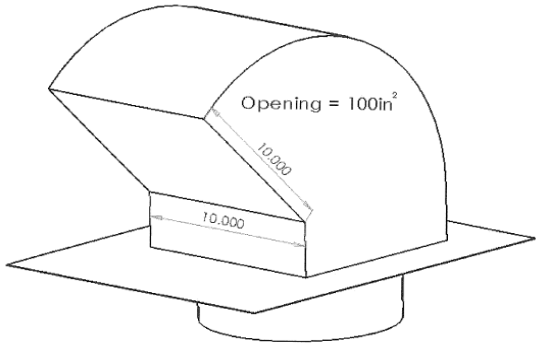


Fig. 2

The air exit opening on the roof cap used needs to be at or above 78.5 square inches. See illustrations above. **Never** use a roof cap like the one shown in Figure 1. Instead use a style similar to the one shown in Figure 2.

7. Attaching Duct to House Framework

The ventilation system should be attached to the framework in such a manner that the weight of the duct and fittings is supported with no stress on the duct joints, fittings or on the ventilator. All ducting should be attached so as to avoid any possible duct vibration from being transferred to the house's framework.

8. Hoods with Optional Top or Back Venting

IMPORTANT: On all models, the open holes/slots around the unused venting port **MUST BE SEALED with Aluminum Foil Metal Duct Tape**. Otherwise, exhaust air and smoke will be vented through the unused Vent Knockout's holes/slots. **UNUSED PORTS SHOULD BE TAPED BEFORE THE RANGE HOOD IS MOUNTED TO THE WALL OR CABINET**.

9. Duct Sizing Chart and Area Calculations

Ventilator Discharge Port Types & Sizes	Duct Type Required	Minimum Duct Size (in Square Inches)	Minimum Discharge Size of Roofcap or Wallcap Outside Opening
10" Diameter, Round (Area is 78.5 Square Inches)	10" Round Metal Duct or	78.5"	78.5"
	8" x 10" Rectangular Duct	80"	80"

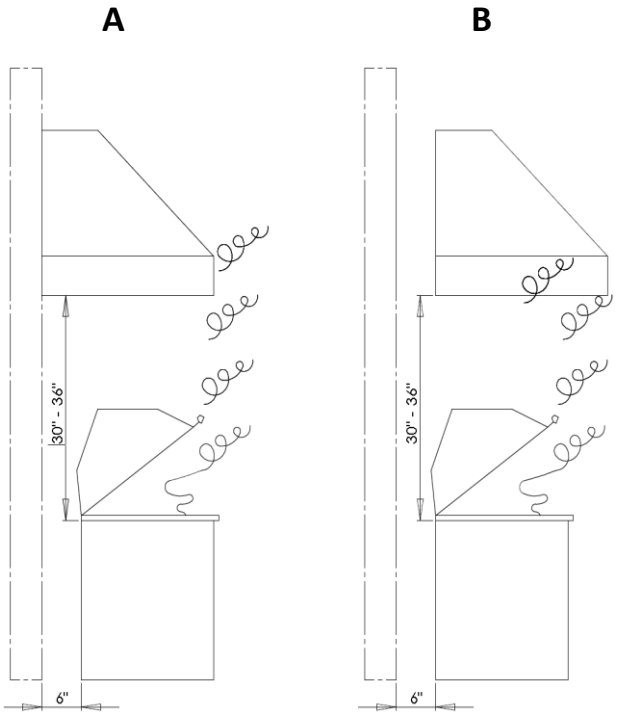
Formulas for Calculating Square Inches of Various Duct Sizes & Types

ROUND DUCT						
Radius	x	Radius	x	3.1416	=	Area (Sq. Inches)
The "radius" is one-half the diameter of a round duct, e.g., ½ of a 10" round duct is 5". 3.1416 is "Pi", the "constant" used when calculating the area of a circle.						

RECTANGULAR DUCT				
Width	x	Depth	=	Area (Sq. Inches)

10. Best Smoke Capture Recommendations

Smoke and hot air from an Outdoor BBQ Grill rises quickly, especially as the BBQ lid is opened. Not only does the smoke rise fast, but it is usually deflected forward (toward the cook) beyond the range hood's capture area by the shape and position of the BBQ lid itself. Heavy, fast rising smoke is a challenge even for high-performance range hoods, but there are some things you can do to enhance your outdoor range hood's performance.



a. Install the hood at least 30", but no more than 36" above the cooking surface. If the hood is installed more than 36" above the cooking surface, its' smoke capture ability declines rapidly. See Drawing A.

b. Since smoke also expands as it rises, the hood's sides and front edge should extend 3" – 6" beyond the front and sides of the cooking surface—see Drawing B. In this example, the hood is attached to a built-out section of the wall or to a chase.

   It is unlikely that smoke rising past the bottom of the range hood will be captured by the hood. Smoke escaping the hood's capture area will typically remain against the ceiling until it is blown out by natural air currents or until it dissipates.

c. Turn the hood on high 2 -3 minutes prior to placing food on the grill. If there is no wind or wind drafts, an upward flowing air "curtain" will be created by the hood's suction that moves air up the sides and front of the cooking surface. This upward moving air curtain will help capture much of the smoke.

d. Wind and wind drafts will also negatively affect the capture ability of high-performance outdoor range hoods. If the BBQ grill is located in a consistently windy area, e.g., near oceans, large lakes or on hillside properties, for best range hood performance, a wind-break may be required.