

PLANNING FANS and DUCTS

GENERAL INFORMATION: The fan is the most important part of a hood. In the past, due to improper bearings and design, the fans were mechanically noisy. It was reasonable, therefore, to move the fan to the outside of the house, either to the wall or on to the roof. Fans used by RangeCraft are quiet because of special rubber suspension and fan blade design. Their mechanical noise level is lower than that of a refrigerator.

- The air noise, which is independent from the location of the fan motor, is created by the ripping of the air stream from the filter or duct surfaces. Air noise has to be taken care of by specially designing the ducting. No sharp bends in the ductwork. Only 45 degree angles. No protrusions into the air stream. No rectangular ducts, only round ducts are acceptable for low noise installations.
- RangeCraft offers both 600cfm fans and 1200cfm fans. It is recommended that any cook top 48” and larger use a 1200cfm fan. The 600cfm fans require an 8” round duct, and the 1200cfm fans require a 10” round duct.
- The ducting must always be made of galvanized steel without ribs. Elbows should be a maximum of 45 degrees.
- Transition of the ducts to elbows, openings in the wall or the roof, should be smooth and without sharp edges. Anything that protrudes in to the air stream will produce noise and hinder the flow of air. Self tapping screws used for the connection of ducts should be of the right length in order to make the air flow as smooth as possible.
- Round or oval shaped ducts are always preferable to square ducts. In case a duct has to be longer than usual, install a larger diameter duct or increase the duct diameter beyond the standard length.
- **CAUTION – DO NOT VENT** into any concealed space of a building such as an attic, crawl space, garage, wall or ceiling. This can cause grease build up and can pose a potential fire hazard.
- Always select the most direct route for the ducts. Fewer turns means better performance.
- Never use flexible ducting and always install galvanized smooth ducts.
- Tape all joints to prevent air, odors or smoke from leaking into the house.
- In regions with extremely cold weather, low temperature conducting should be prevented with the installation of a short length of non conducting material installed close to the wall cap.
- **DO NOT** squeeze ducts through walls, etc. Tight squeezed ducts reduce air flow.
- Reducing the recommended duct size severely impedes hood performance, raises the fire hazard potential, increases the noise level and **VOIDS** the manufacturer’s warranty.



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- Transition of the duct to the outside should be designed according to the particular construction situation. Some examples include the following. A wall transition should be covered with a “dryer vent.” A sloped roof transition requires a cover like a duct with a sloped hat. A flat roof transition needs a goose neck shape that blows the fumes directly onto the roof.
- No matter what transition the fumes have to pass through before they are released into the atmosphere, they **MUST** always pass a back draft damper. This prevents the cold winter air from entering the kitchen through the ventilation ducts when the hood fan is not running. Units with lighter smaller louvers work better than those with a large closure.



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