

INSTALLATION

Proper fan installation is necessary to optimize performance. The following points outline installation techniques to help achieve optimum performance. For existing construction, depending on the building's structure and the ability to access the ducts, you may not be able to use all of these techniques, however, the more techniques used, the better the performance you can expect from your ventilation fan. In new construction where the walls and ceilings are open, with proper planning, applying these techniques can be relatively easy.

IMPORTANT:

In order to reduce elbows and optimize fan performance, install the fan with the exhaust port pointed in the direction of the termination point. Be sure to use the duct diameter size specified for the selected fan. Reducing the duct diameter (at any point in the duct run) may create substantial static pressure and reduce the fan's performance by as much as 90%.

Selecting Duct:

A smooth surface duct allows for optimum airflow. For best results, use galvanized sheet metal or PVC. Flexible aluminum duct is durable, easy to install and often used. However, the ridges in aluminum flexible duct increase static pressure and can reduce air flow and fan performance. This results in lower CFMs, higher noise levels and greater energy consumption. The degree to which performance is affected depends on the length of duct, number and degree of elbows.

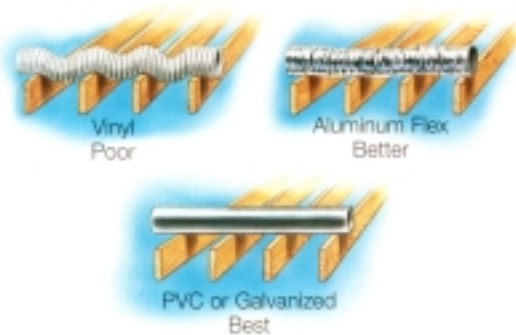


FIG. F

Sagging or weaving a fan duct will also increase static pressure and reduce a fan's performance. When using a flexible aluminum duct, support the entire length of the duct with braces or hangers to keep it as straight as possible for the entire run. If the duct lies across the attic, do not allow it to sag between each joist. Also, avoid weaving serpentine through trusses.

Using a flexible duct made of nylon or vinyl is not recommended due to high static pressure caused by its ridges and curvature.

Elbows:

Rule number one is to avoid elbows and bends as much as possible. However, the fact is that many installations require at least one elbow, as shown in Figure G. There are two precautions you can take when installing elbows to achieve optimum airflow.

First, allow a 2 - 3 foot straight run out of the fan before the first elbow. This allows airflow momentum to build before passing through the first elbow. An installation that has a 90-degree elbow immediately after the fan exhaust port will cause air to flow back into the fan. This will reduce fan performance and increase noise.

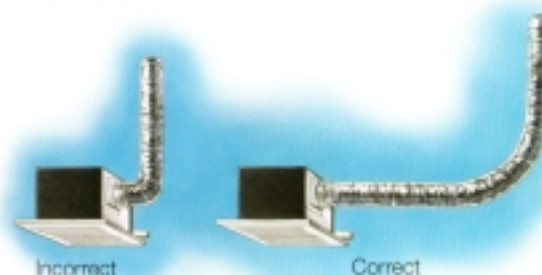


FIG. G

Second, use a long radius angle to help ensure optimum airflow and minimum airflow noise.

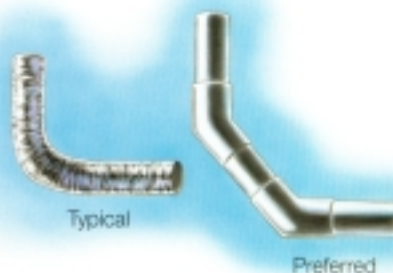
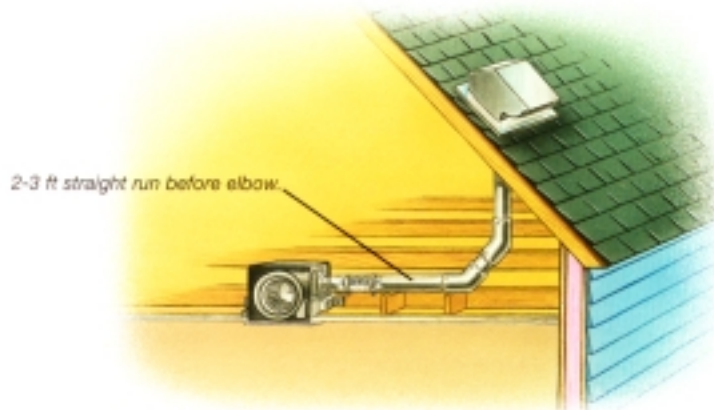
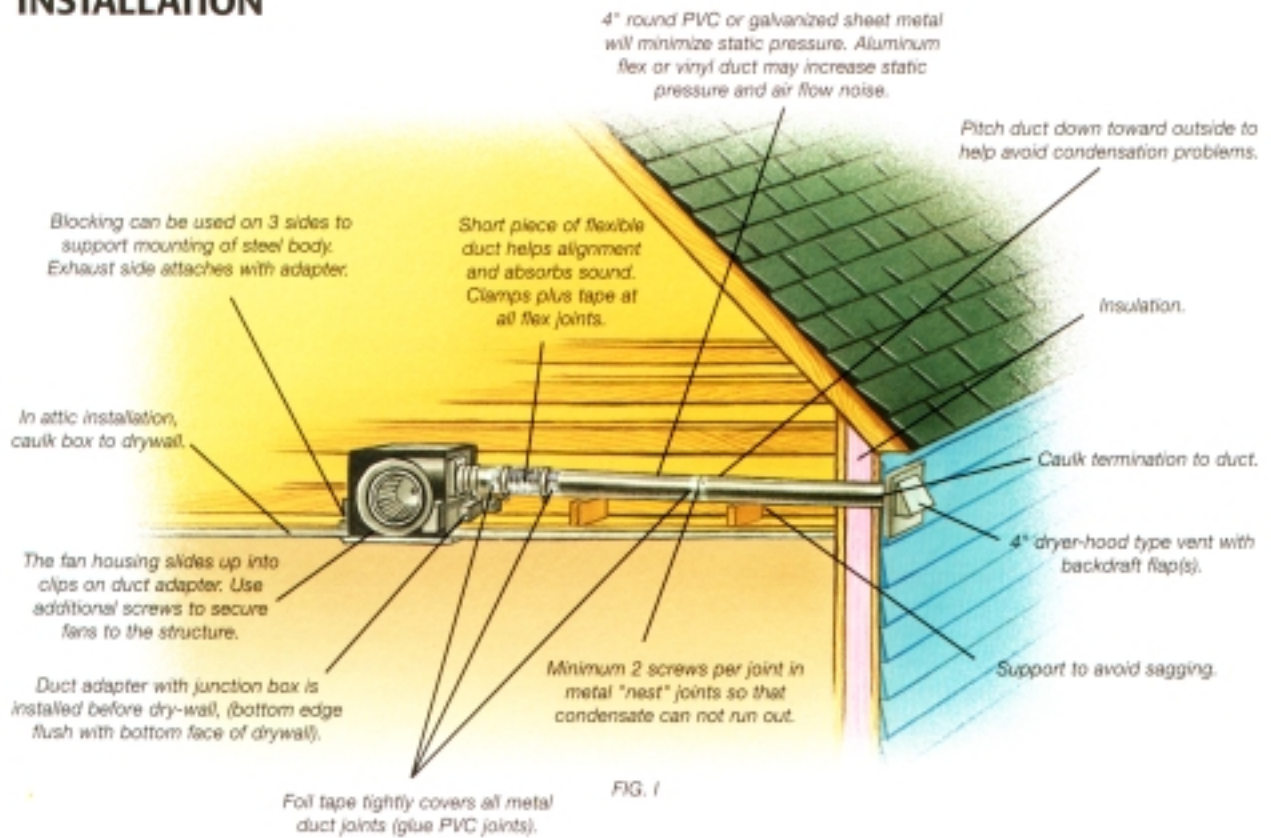


FIG. H

The shortest smooth, inner surface duct with the least number of elbows will provide optimum fan performance.

PRACTICAL GUIDE TO PANASONIC FAN INSTALLATION



Note: If duct is in the attic, to avoid possible condensation problems, be sure it is either under loose fill insulation or it is fully insulated to minimum of R-5 with duct wrap.