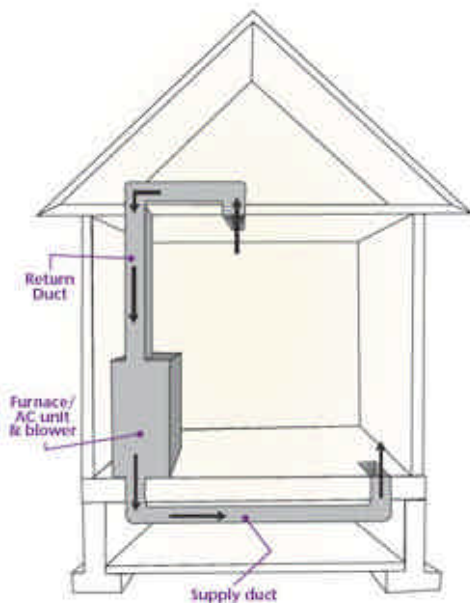


Whole House Mechanical, LLC



Have you ever wondered how the furnace in one area of the home can heat (or cool) an area on the opposite end of the home? The furnace is part of what is known as a forced-air system - which is the most common heating and cooling system used in homes today. The term “forced-air system” simply means conditioned air is distributed through ductwork to heat or cool the home. The system works as the air in the home is drawn into the furnace to be heated or cooled (conditioned). The conditioned air is then “forced” by the furnace blower into the ductwork, distributing the air throughout the home. The ductwork, made of either galvanized metal or flexible plastic, has two main sections of duct connected to the furnace. The “supply air duct” carries the air away from the furnace and the “return air duct” carries the air back to the furnace.



The supply air duct carries the conditioned air “supplied” by the furnace in a large main duct. Smaller ducts are connected to the main duct – like spider legs – and distribute the air to different areas of the house.

The return air duct transports air being drawn back to the furnace to be heated or cooled. A filter is installed in the return air duct to collect dirt, dust, pet hair, and particles in the air before entering the furnace. This not only keeps your furnace clean but also filters the air you breathe.

The supply and return air ducts are hidden in the walls, ceiling, attic, or floor joists with the openings covered with registers which disperse the air and also keep objects out of the ducts. If you are not sure which is a supply or a return air register, hold a tissue up to the register when the blower on the furnace is running. If the tissue is blown outward, it is a supply air register. If the tissue is drawn inward, it is a return air register. Most supply air registers have an adjustable damper to direct, reduce, or close the airflow from the register whereas a return air register is not adjustable. This test will also determine if there is adequate airflow from the supply duct. Inadequate airflow will not heat or cool the room properly making the room uncomfortable.

The furnace needs adequate airflow to operate properly. Because air into the furnace equals air out of the furnace it is important not to block or cover the return air registers with furniture or objects. Reduced airflow due to covered registers or a dirty filter will cause the furnace to overwork attempting to compensate for the lack of airflow. This results in decreased efficiency, higher utility costs, and premature failure of furnace components.

Although you may not see the ductwork, it is a vital part in keeping your home comfortable. Inadequately sized or improperly installed ductwork will leave you feeling uncomfortable due to hot or cold rooms, lack of airflow, or temperature differentials between floors. If this sounds like your home, speak to a Whole House Mechanical Project Engineer who will help you resolve the issue so you can live comfortably in every room of your home.