

How Central Vacuum Systems Work



Cleaning the house may not be your idea of a very fun activity, however, while vacuuming may never be fun, there is a way to make the job a little easier.

Most of us vacuum with the standard portable unit, but have you ever thought of installing a central vacuum system in your home? Central vacuum systems have become more common. According to statistics, a central vacuum system can cost less than a high-end moveable vacuum and can add over \$2,000 to your home's resale value.

In this article, you will learn what a central vacuum system is, you will learn about different types of systems and how each works, the benefits of central vacuum versus portable units, and how to choose the central vacuum system that is right for your cleaning needs.

How Central Vacuums Clean Up

The best thing about central vacuum systems is that they don't require you to carry a heavy unit from room to room or up and down the stairs. Central vacuum systems are designed to remove all the dirt and debris from your house and send it through tubing located in the walls to a receptacle in an out-of-the-way location like a garage or basement. With central vacuums, you only carry a lightweight hose and power brush unit around the house. The power unit is permanent and out of the way.

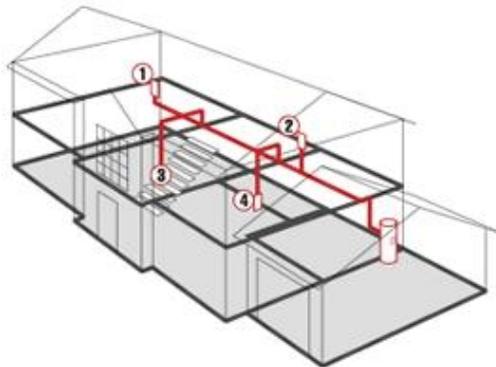
With a central vacuum system, you place inlets around your home at convenient locations. Instead of plugging a portable vacuum into pre-determined electrical outlets and hoping the cord reaches around your home, you can move the central vacuum hose from inlet to inlet. Where you put the inlets is up to you. You can even install an automatic dustpan that lets you quickly sweep debris into a wall vent using a regular broom.



If you decide to have a central vacuum system installed in your house, there are several things that will happen.

First, place the central power unit in an out-of-the-way area such as the basement, garage or utility room. Then, you install wall inlet valves in various locations throughout the house. The valves are connected to the power unit through tubing. The tubing can be run through the attic, basement or cold air returns in the house.

In other words, the tubing that carries the dirt you vacuum is behind your walls. You don't have to see the dirt until you have to empty the holding canister.



Example of a four inlet install.



Once you have chosen the location for the power unit, you need to decide where you want your wall inlets. These inlets are where you will plug in the "power brush" or unit that you will be using to clean your home. How many inlets you want in your home is based on your own needs. For example, inlets can be based on the number of square feet. There is usually one inlet for every 600 square feet of a home. If you have more than one story in your home, you will need at least one inlet per story. If you decide on professional installation, the installer can help you determine the best inlet placement.

After installation, the system is used by plugging the lightweight hose and power brush unit into a wall inlet. The power button is located on the handle on most systems, so it is totally controlled by you. In other words, you don't have to go to the power unit and turn the system on. You simply put the hose unit in the inlet and begin vacuuming. The system then carries the dirt, dust and debris out of the room, through the in-wall tubing, to the main power unit, where it is deposited in a canister or bag. Central vacuum bags and canisters only need to be emptied an average of once every three months.

Types of Systems

As central vacuum systems have become more popular, options have become more plentiful, with a wide variety of manufacturers and models on the market. There are two main product decisions you will make in the purchase of your central vacuum system: the **power unit** and the **power brush**.

The two main types of central vacuum systems are **cyclonic** and **filtered**. The type of system plays a major role in the efficiency and longevity of your central vacuum unit. Whenever you have an appliance (like a vacuum) that collects dirt, some sort of filtration system is needed to clean out the debris. What makes a system good is its ability to minimize the debris, while maximizing airflow for vacuum power. The build-up of dirt in the bag or filter over time can be a contributing factor to the eventual breakdown of the machine. You will want to clean the system according to the manufacturer's instructions.

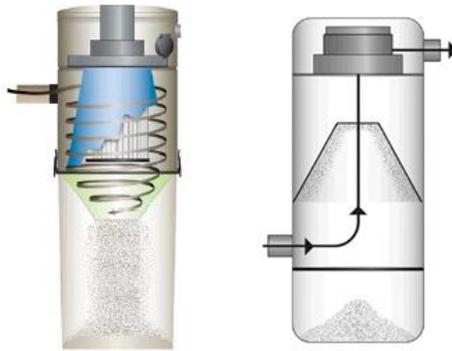


Image courtesy [H-P Products, Inc.](#)

Typical configurations: Cyclonic system (left) and filtered system (right)

Filtered systems can use a variety of filters such as screen, cloth, foam or paper to clean the air taken in by the vacuum. In some filtered system, filters need to be cleaned and replaced others have self cleaning filters that never need cleaning or replacement. A **cyclonic** system uses centrifugal, tornado-like force and gravity to separate the impurities from the air being taken in by the vacuum, and typically deposits the dirt into a canister (although some systems may use a bag).

For the power unit, there are two main things you should consider:

- How much power do you need?
- Do you want a bag or canister unit?

Homes of less than 5,000 square feet require a power unit of 20 amps or less. If you have a larger home, you'll need a more powerful unit.

The other decision you need to make is whether you would like a bag or canister unit. When you go to empty the dirt receptacle, it will be either a plastic canister or a replaceable bag. Both systems are efficient - it is simply a personal decision. Would you rather dump and clean the canister or toss a replaceable bag into the garbage? Either way, chances are you will be disposing of debris a lot less often than with traditional portable vacuums.

Finally, for the **power brush** unit, you can decide between an electrical power brush or an air-driven power brush. This is the part of the vacuum that actually will be cleaning the house. The type of power unit you choose probably will depend on personal preference. For instance, air-driven (turbine) systems may cost less to install because you don't need electricity wired into all the wall inlets. The fun part is choosing the vacuum accessories, such as automatic dustpans and upholstery attachments.

Central vacuum systems can be pricey. In fact, they can cost upwards of \$2,000. This price usually includes installation, power unit and attachments. A properly installed system can add over \$2,000 to your home's resale value.

Central vs. Portable Vacuums

As the technology of portable vacuums has evolved, they have in turn become more expensive. As the difference in price between central vacuum systems and portable vacuums has lessened, central vacuum systems have become a more practical and cost-effective solution to cleaning your home. There are several benefits to central vacuum systems:

- **Healthier Air** - Central vacuum systems eliminate the re-circulation of dirty air inside your living area because the dust and debris is carried through the walls to an out-of-the-way receptacle.
- **Power** - Central vacuums have three to five times more power than traditional vacuums. Because the power unit is not meant to be portable, it can contain a more powerful motor than traditional vacuums.
- **Convenience** - Central vacuums eliminate the need to carry a heavy unit from room to room or up and down the stairs. There are no cords to trip over, and your power brush can be inserted right into the wall inlet locations that you choose, instead of into pre-determined electrical outlets.
- **Home Value** - Investing in any permanent appliance in your home should help increase the value when you decide to sell. Central vacuums can be installed in existing homes or in homes that are under construction.
- **Noise** - Generally, central vacuum systems are quieter than traditional vacuums. Remember that the power unit is located elsewhere (garage, basement, etc.), so the noise will probably be insulated.
- **Versatility** - Central vacuums offer the same range of attachments and accessories that portable vacuums offer.
- **Cost** - Central vacuum dealers claim that central vacuums save you money by prolonging the life of your carpeting, drapes and furniture through deeper cleaning.
- **Allergy Relief** - A major benefit that central vacuum owners don't realize, until they've owned a system, is how much cleaner the air is in their own home. Allergy sufferers always notice a reduction in their symptoms after using a central vac system. Central vacuums pick up allergy causing dust and remove them from the living area, unlike common portable vacuums. Modern science has proven that central vacuums relieve allergy symptoms in the home. No upright vacuum in the world can promise the same results, because they do not filter the dust to the outside of the living environment. **What is the cost of NOT owning a central vacuum?** The science behind these claims validates the purchase.

- Happy Cleaning