

How to choose a central vacuum system for your home

At Grand Central Vac, we know every home is different and every homeowner is unique. That is why we offer a choice, 3 different types of central vacuum power units; cyclonic, filtered, or bag units. Here is some information to help you choose the system that will meet your needs.

Inlet Valves:

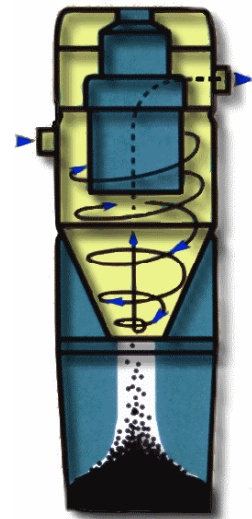
1. You need to decide the number of inlets (where you plug the hose into while vacuuming) throughout your home. We lean towards one inlet for every 500-600 sq. feet. This step is important because regardless of the unit or attachments you select, the rough-in portion of your system will not be affected. If you need assistance in this step, please contact us and we will give you some ideas and suggestions.
2. Now that you have determined the number of inlets, you now need to decide if you are going to install standard or electrical inlets. The type of inlets you choose depends on several variables: New construction or existing; type of flooring (bare floors, carpet, area rugs); animals that shed.
 - a. **Standard Inlets** have no electrical ability to power any attachments that you might use. They do however provide your system the capability to turn the unit on or off from the handle. If you install standard inlets, you can use either pneumatic driven or electrical attachments. The latter would require a hose with a "corded" or "pigtail" end that can be plugged into an electrical receptacle that is normally 4 to 6 feet from the inlet. These types of inlets are installed in both new and existing homes.
 - b. **Electrical Inlets** have the 110 current directly wired to the inlet and when a "direct connect" hose is plugged in for vacuuming, you have no other wires to operate an electrical power head for cleaning your carpets, and these inlets are also wired to turn the unit on and off from the handle. Electrical inlets will require an electrician to hookup the electrical portion of the inlets thereby increasing the cost of the overall system. Normally, these types of inlets are installed in new construction.

The Power Unit:

There are three main types of central vacuum units to choose from:

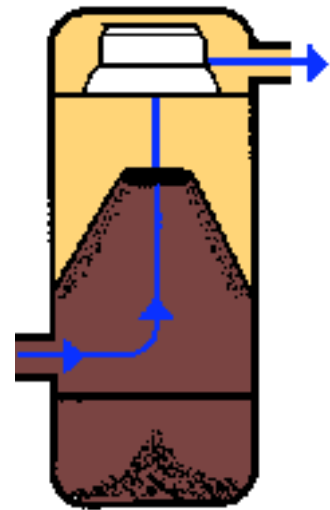
Cyclonic Units (Bagless)

Cyclonic Systems are unique in that there are no bags or filters to contend with. The units are designed to use Cyclonic Separation for the removal of dirt. Up to 98% of the dirt and debris fall into the dirt container. The remaining smaller particles are vented outside. While filtered systems use a bag to catch these particles, a cyclonic system completely removes these particles by venting them outside. Does some of the dirt enter the motor? Yes, but cyclonic units have Ametek motors that are built specifically to withstand dust in the motor fan chamber without affecting the life or function of the system. Ametek makes sure the electrical portion of the motor is completely protected from any dirt entering. The main advantage with Cyclonic Systems is that they maintain airflow because there is no filter or bag to restrict it. This means that the unit has 100% suction capacity for optimum cleaning. Cyclonic units require outside venting.



Filtered Units

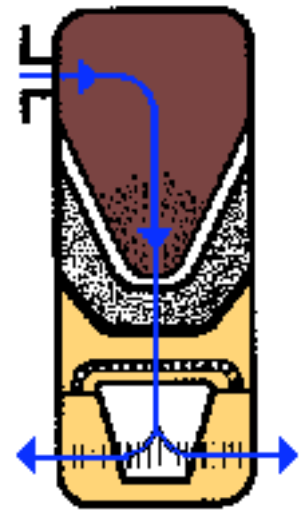
These units are designed with filters (some filtered units can take bags as well) which assist in eliminating the dirt that is not deposited into the dirt canister. If a filtered unit comes equipped with bags, we recommend emptying or replacing the bag when it is about 3/4 full to ensure efficient suction and reduce the strain placed upon the motor. Also, filters must be either replaced or cleaned on a regular basis to ensure proper performance and longevity of the motor. When cleaning or replacing a filter, check your manufacturer's instruction manual beforehand. These units do not require outside venting, but it is still an option that we recommend to reduce odor and noise.



Bag Units

These units are designed with bags located inside the dirt canister where the dirt is deposited after being removed from your home. As the bag fills with debris the unit will begin losing suction. We recommend emptying or replacing the bag when it is about 3/4 full to ensure efficient suction and reduce the strain placed upon the motor. These units do not require outside venting, but it is still an option that we recommend to reduce odor and noise.

Keep in mind that although central vacuum systems are a dust free way to clean, we recommend a unit with a throw away bag if the person responsible for emptying the dirt canister has dust allergies or breathing difficulties.



The Attachments:

1. Now it is time to select a set of attachments for your home. One of the most common misconceptions about attachments is that you need to purchase the same companies attachments that your unit is, but that is not true. The most important requirement for your attachments, regardless of your unit, is the type of inlets that you have installed. So, if you have electrical inlets, you will need attachments with a direct connect hose. If you have standard inlets, you will need to choose either a non-electric hose, or if you require an electrical power head, then you will need a hose with a "corded" or "pigtail" end.
2. Once you have determined if you're going to require a direct connect hose, non-electrical, or pigtail, then you have a choice between any manufacturers that you desire.
3. A few tips:
 - a. If you have none or very little carpet – Standard Caddy Cleaning Set
 - b. If you have low pile and minimal pet hair – Standard or Turbo kit with Pneumatic power brush.
 - c. If you have heavy pile carpet, long haired animals and seek less maintenance cleaning power brush– Electrical Tool Kit

The VacPan vs The Slinky Hose Kit:

- The **VacPan** is for situations where a quick clean up is desired without getting out the longer hose. They are used in conjunction with regular brooms typically desired in mud rooms and kitchens. They are usually installed in the kickboard under the kitchen cabinets or in a baseboard. They offer the convenience of sweeping dirt right up to the VacPan and simply kicking the switch to activate the vacuum and remove the debris. The biggest disadvantage of this accessory is that brooms agitate dirt and dust putting allergens back into the air causing irritations. In addition, brooms do not remove 100% of the dirt from the floor leaving a film or grit on the floor. The cost is \$125-150.
- The **Slinky** hose kit is an expandable hose with a wand set and bare floor tool that stretches out to reach the high traffic areas. The biggest advantage to this accessory is that the dirt and dust is immediately removed from the floor rather than agitated by a broom leaving no grit on the floor or allergens put into the environment. No additional installation cost is involved and it can be used in any inlet valve throughout the home. The cost is \$75

Motor Information



5.7" Tangential (bypass) motor with polymer (plastic) upper fan housing (shown on right):

The airflow from the fan chamber is sealed from the electrical so that none of the airflow from the system passes through the electrical chamber. Cooling air enters from a separate fan located at the top of the motor. The motor has a tangential "horn" which allows for pipe connection to vent the motor exhaust to outside the home thereby removing noise and smells. These motors are typically used with bag or filtered units since the fans

or vanes that produce the vacuum and airflow are backward-curved in design and do not allow any dust particles to enter into the fan chamber. Motor speed typically in the 20-21000 RPM range with brush life averaging 500 hours.

5.7" Tangential (bypass) motor with cast aluminum upper fan housing (shown on left):

Same as above except for the critical fact that the cast aluminum fan housing allows for larger shaft and bearing assembly along with better heat dissipation. To allow this type of motor to be used within a brand of central vac power unit which has no bags or filters requires a special "radial or non-loading" fan design so that any micron size particles entering the sealed fan chamber can be thrown off the blades and vented outside. Motor speed is typically in the 20-21,000 RPM range with brush life averaging 750 hours. Since the smaller motor spins at higher RPM and the fan is spinning faster, it generates more motor noise than the 7.2" motor.

The 5.7" Thru-flow motor (shown on right):

This is where the airflow from the system ("working air") can pass through the motor chamber (armature and windings) for cooling purposes. Typically used in the least expensive systems incorporating primary and secondary paper bags and filters. Motor speed typically in the 20-21000 RPM range with brush life averaging 500 hours

5.7" Peripheral motor (shown on left):

The airflow from the fan chamber is sealed from the electrical



so that none of the airflow from the system passes through the electrical chamber. Cooling air enters from a separate fan located at the top of the motor. The motor's exhaust is vented through the sides of the motor (notice small vent holes around housing). These motors are only used inside bag or filtered units and not vented to outside the home. Motor speed typically in the 20-21000 RPM range with brush life averaging 500 hours.



7.2" Tangential (bypass) motor with cast aluminum upper fan housing (shown on right with 5.7" motor for comparison):

Same benefits as the other motors except the larger 7.2" fan housing allows for slower fan speed of approximately 17,000 RPM while producing equal or better vacuum and airflow ratings. This slower motor speed also means less motor brush wear such that average brush life is closer to 1500 hours. Another significant advantage is the larger physical mass allows for even better heat dissipation thereby not requiring a separate cooling fan on top of the motor thereby generating lower noise level.

Glossary of Central Vac Terms

Airflow

When a vacuum cleaner is started, it creates a vacuum or an area of low pressure. Outside air rushes in to fill this vacuum. This rush of air or AIRFLOW is controlled and directed for maximum cleaning efficiency.

Air Watts

Represents the air power delivered by the power unit at various orifice sizes. The calculation is: Air Watts = Water lift X CFM/ 8.5 Maximum Air Watts is used by many in the vacuum industry to measure the amount of air power available to power air-driven power nozzles.

Amperage

Represents the amount of electrical current consumed by the motor during use. Ampere is to electricity, as gallon is to water; a measure of quantity.

CFM

A common unit of the measure of air moved by the vacuum fans.

Electric Power Nozzle

Power head that cleans your carpet with an electrically driven motor that rotates the roller to loosen embedded dust and debris enabling the suction to capture the dirt and discard it into the dirt container.

Fans

The fan is the combination of blades that spin around to create the airflow to produce the vacuuming action. Units with two fans are called two-stage motors and units with three fans are called three-stage motors.

PVC

A common plastic polymer. The same material is used for both vacuum PVC pipe and plumbing PVC pipe.

Sealed Suction

Measures the maximum suction generated by the motor without airflow.

Stage

This indicates the number of sets of fan blades in a vacuum motor. Each fan - set of blades - increases the vacuum, or speed at which air is drawn through the system. The first fan starts air movement; the second increases it, and if there is a third fan it increases airflow still more. Thus the greater the number of fans the more powerful the vacuum.

Suction

The actual vacuum or water lift created by the fans in the vacuum motor.

Turbine (Pneumatic) Brushes

Air driven head that cleans carpet by using the powerful suction of a central vacuum which rotates the roller to loosen dust and debris enabling the suction to capture the dirt and discard it into the dirt container.

Vacuum Inches of Water

Same as Water Lift

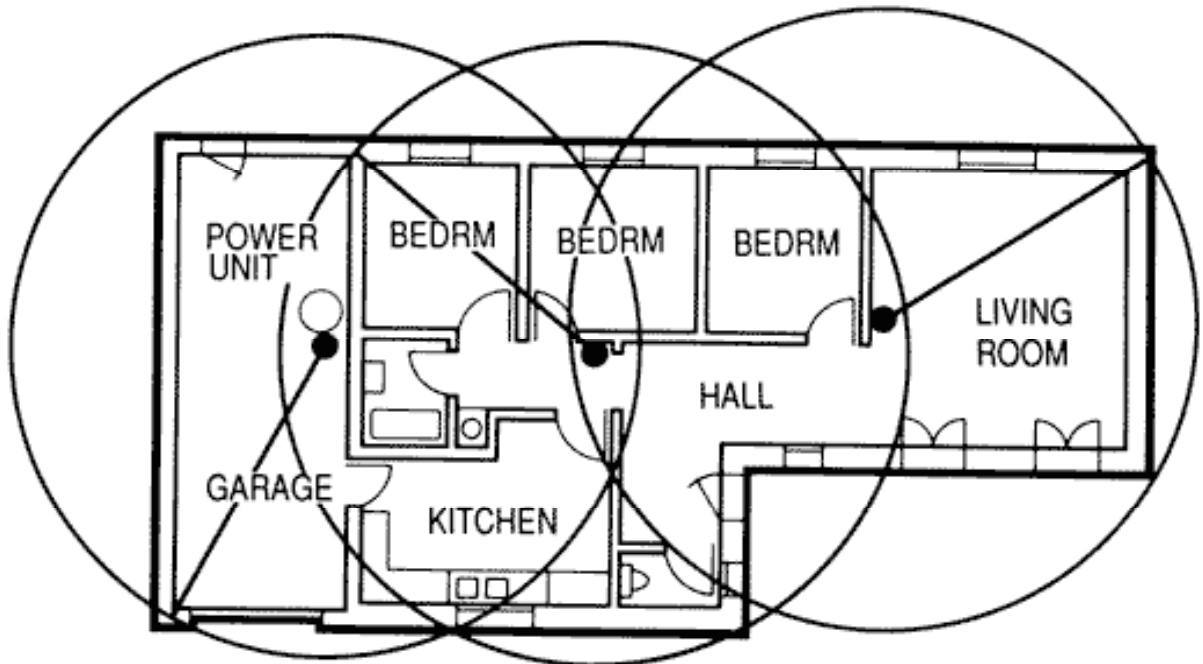
Voltage (Volts)

A measure of the electrical potential employed by a vacuum motor.

Water Lift

A classic measure of vacuum suction. The height to which water can be raised by a vacuum motor.

Installation Tips

**Installation**

Whatever your home layout, whether multi-level, two-story or ranch, a Central Cleaning System can be planned to meet your needs. As few as two or three inlets can take care of an average size home - and

some Power Units feature a convenient inlet on the Power Unit as well (one can be added to the pipe run for those units that have no inlet located on the unit)

ProVac Systems offers all the installation components needed for your Central Cleaning System. The components are made of the highest quality materials, engineered to insure that each Central Cleaning System installation is long-lasting and maintenance free.

New Construction

In new homes under construction, installation is simple! Just plan the location of the Power Unit and Automatic Inlets with your builder or contractor. Tubing and Inlets are installed and electrical hook-up for the Power Unit is made before drywall, plaster or finished flooring is in place. That's all.

For those trying to stretch their home building dollars, A home can be conveniently pre-tubed, with the power unit selected and installed at a later date.

Existing Construction

Installation is easy in existing homes as well. Cutting through drywall, plaster or flooring can be kept to a minimum and is determined by the number and location of the Inlets. Tubing can be run through cold air returns, closets and stairwells.

Each Inlet Kit comes with an installation instructions. There's no mystery, really. A successful installation simply requires understanding how the system works, knowing what your particular cleaning needs demand and how your house is constructed.

The do-it yourself homeowner with some knowledge of electricity can install a Central Cleaning System. A typical installation can usually be accomplished in a day or less. And one final bit of advice.....Call us!

We have more experience planning, installing and servicing built in central vacuum cleaning systems than any other dealer in the area. Our reputation and referrals of satisfied customers is beyond comparison.

So if you want the best system for your home installed with the finest care and consideration, then take our advice and call us now. We look forward to working with you!



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