

# *iCentral*

Intelligent Central Systems

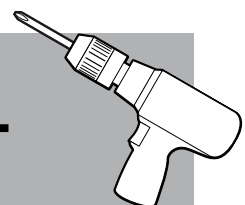
Quality by 



## iCentral Vacuum Systems

### INSTALLATION MANUAL

Rev 1





**Intelligent Central Systems**




**Central Vacuum  
Intercom  
Security  
Automation**

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# iCentral Vacuum Installer's Manual

Intended only for Household and Light Commercial Use

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## **IMPORTANT SAFETY INSTRUCTIONS**

### **BEFORE INSTALLATION OR USE PLEASE PROCEED TO:**

- Read the Installation Manual and ensure correct Installation
- Read the User Manual and ensure correct use of the product/s at all times
- Check and empty the dust bag or bin regularly
  
- Do not install outside unless proper weather protection is in place
- Do not connect to a non grounded supply or a no approved supply
- Do not service the Motor Unit unless it has been disconnected from the supply
- Do not use with a damaged electrical lead or plug
- Keep electrical lead away from heated or sharp objects
- Keep inflammable objects or liquids away from the Motor Unit
- Do not place or store anything on top of the Motor Unit
- Do not place or store anything that may restrict the air flow of the Motor Unit
- Do not vent the Motor Unit into a wall, a ceiling, or any enclosed space
- Do not vacuum on any wet surfaces
- Do not vacuum any liquids, including any fuels
- Do not vacuum anything that is hot, burning or smoking
- Do not vacuum any ash, even it appears dormant
- Avoid vacuuming plaster dust or talcum powder, which can cause clogging and bursting of vac bags
- Do not obstruct, block or impede the hose or wall valve inlets
- Keep hair, all parts of the body and loose clothing away from the hose or wall inlets
- Do not use non recommended attachments or accessories
- Pay close attention to children while the system is being used
- Do not allow children to use the system as a toy

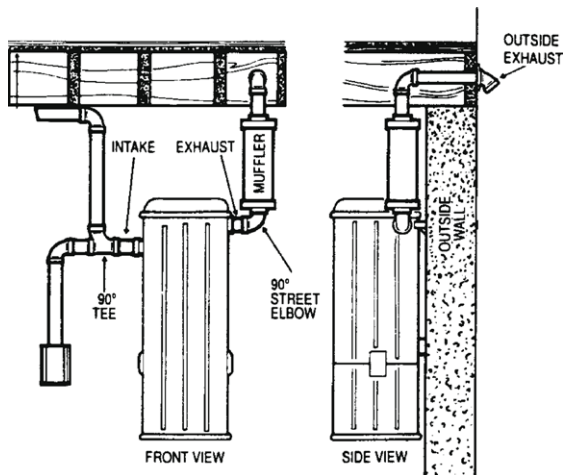
**WARNING**  
**IMPROPER USE MAY CAUSE FIRE,**  
**ELECTRIC SHOCK OR INJURY**

# CENTRAL VACUUM INSTALLATION GUIDE

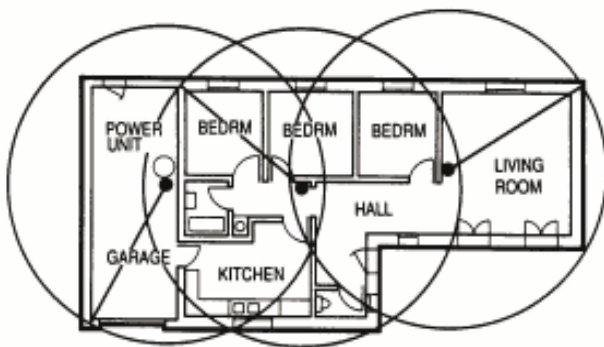
## PLAN AHEAD

Planning is the key to a successful Central Vacuum installation. Essentially, the plan will come down to determining the best location for the wall inlet valves and the power unit.

From there, the pathway for the PVC ducting should, wherever possible follow the most direct and shortest run.



**i** TIP Do not glue the PVC connector nearest to the Power Unit, to provide easier future service.



**i** Lay out your inlet locations on a plan of the premises.

## THREE EASY STEPS TO INSTALLATION

### STEP 1

#### THE POWER UNIT

The power unit can usually be installed in a garage, basement or utility room. If it needs to be located externally, proper weatherproofing is essential and the correct model must be used.

It is generally best to choose a location near an exterior wall to minimize the length of the exhaust run.

The unit will require a 240 Volt electrical outlet within a metre, and should not be boxed in or enclosed. The motor must be able to freely draw fresh air and blow exhaust air.

Remember that the unit should be accessible for easy replacement of the bag or emptying the dust bin.

### STEP 2

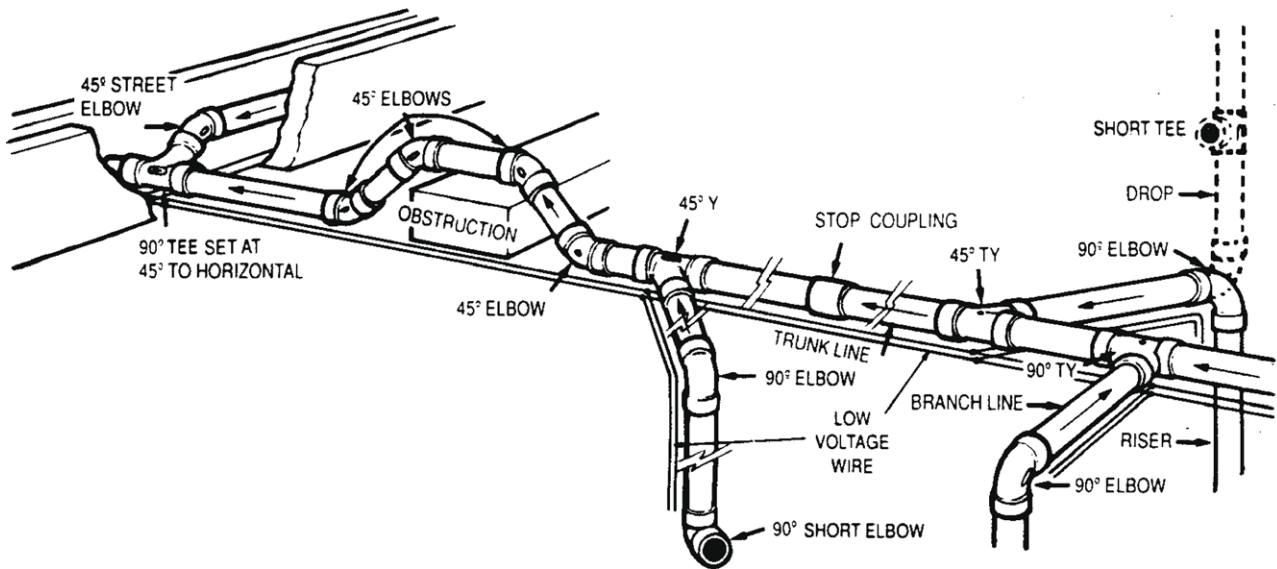
#### INLET VALVE LOCATIONS

Inlet valves are usually placed on interior walls, in hallways, near doorways or close to the bottom of stairways. Potential furniture placement should be considered when determining valve locations.

The objective is to use as few inlet valves as possible to achieve maximum use of the 9 metre hose, while providing whole house coverage.

Inlet valves can be situated between studs, clear of obstructions like plumbing, wiring, heating ducts, etc. They are typically positioned level with the height of electrical outlets.

In new home installations, the system should be installed at "frame" stage.



### STEP 3

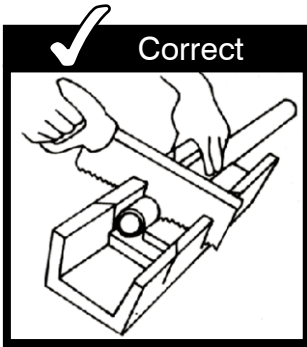
#### PVC DUCTING AND LOW VOLTAGE WIRING

Ducting and low voltage wiring are run together from the Power Unit to each valve location, in the most direct line possible. The wiring can be looped or terminated at each inlet valve

The amount of airflow that is achieved at the hose is dependent on the efficiency of the layout of the PVC ducting.

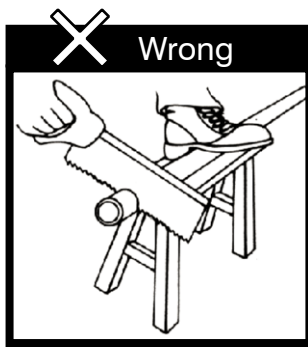
Keep the line as straight as possible and avoid using tight 90° fittings and try to use 90° sweeps wherever possible.

# GOOD INSTALLATION STANDARDS



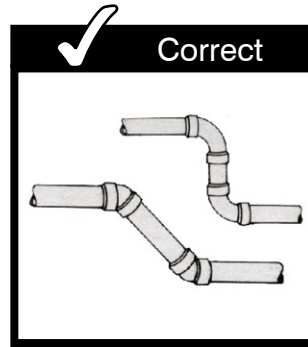
Correct

Cut PVC with a Mitre Box or Tube Cutter and deburr the cut ends with sandpaper or a de-burring tool.



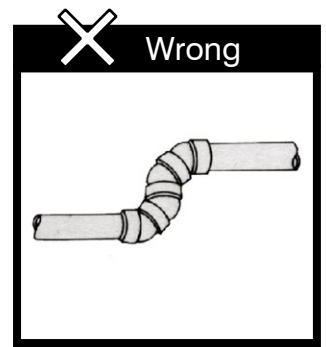
Wrong

Improper cutting will not give a clean or square end.



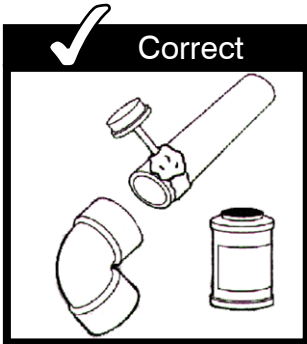
Correct

Efficient air flow.



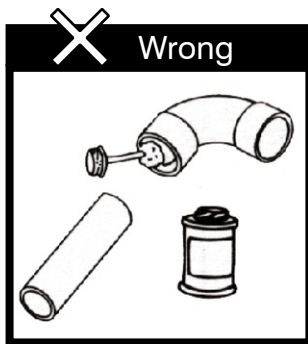
Wrong

Poor air flow.



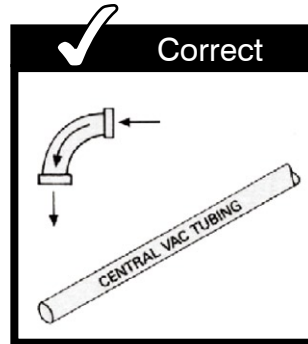
Correct

Apply glue to the outside of pipe only.



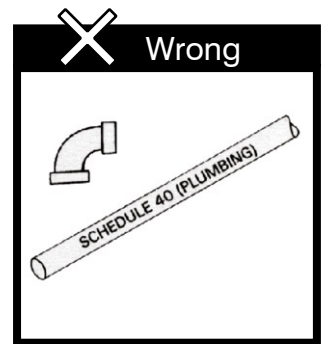
Wrong

Glue applied to the inside may accumulate and cause blockages.



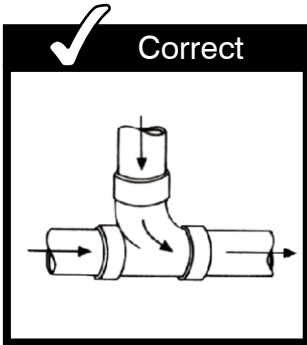
Correct

Only use approved Vacuum PVC.



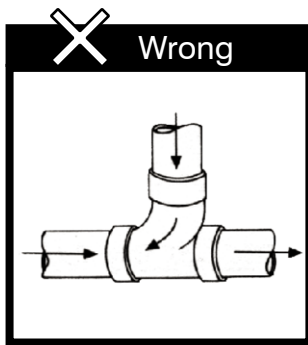
Wrong

Plumbing fittings are not designed for efficient air flow.



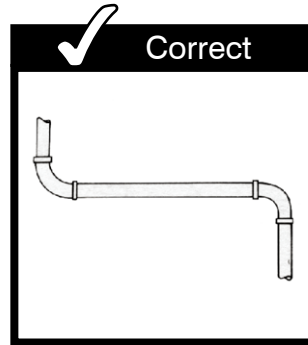
Correct

TY in the right direction.



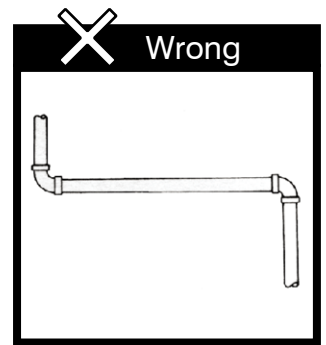
Wrong

TY in the wrong direction.



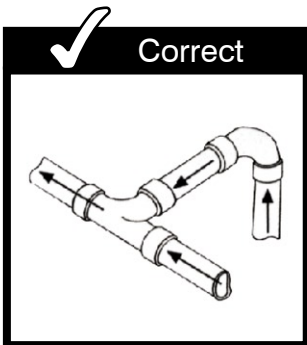
Correct

90° sweeps provide best efficiency.



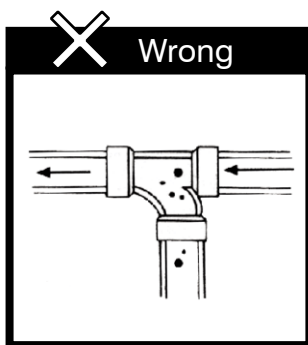
Wrong

90° short elbows reduce efficiency.



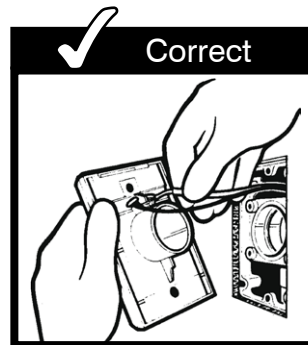
Correct

Dirt should flow from the side or top of PVC ducting.



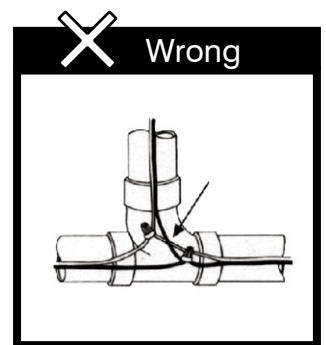
Wrong

Gravity can cause dirt to fall down the wrong line.



Correct

Loop wire at inlet points so connection is available for service.



Wrong

Connections joined at junctions may be difficult to access later for service.

# INSTALLATION

No doubt you will have planned the Installation, understood the Good Installation Standards, and are prepared for a smooth Installation.

Check that you have the correct material and proper tools to complete the job without disruption.

Ideally, you will have already completed some training or at least been involved with another Central Vacuum Installation, so you will have picked up some valuable knowledge.

In any event, the following tips may help you:



## ① PVC DUCTING

The international standard size for PVC Ducting is 2 Inches OD (50.8mm), so in Australia, the ducting is generally only available from dedicated Central Vacuum suppliers and installers.

As quality will vary, it is recommended that you avoid poor quality PVC which may frustrate you with too loose or too tight assembly with the fittings.

Accurate cutting, proper cleaning, and gluing is critical to avoid leaks and possible future blockages.

Care is required when installing in new home constructions so that the ducting is not damaged or fixed in locations that may interfere with other trades. Any resulting leak after the ducting is covered by a wall may prove difficult to repair.



## ② PVC FITTINGS

Similarly to the PVC Ducting, the international standard size for PVC fittings is 2 inches ID (50.8mm), and are generally only available from dedicated Central Vacuum Suppliers and Installers.

Poor quality fittings should absolutely be avoided. Loose fitting may leak and tight fittings will slow down the installation time, and will have a tendency to crack.

Always use the most appropriate fitting that will provide the most efficiency in air flow, rather than use the fitting that you may be on hand at that time.

Do not apply glue to the fitting, as glue applied to the inside of a fitting may be pushed ahead and create a rough bead which will reduce airflow and may cause a blockage.

The ducting should be inserted all the way into the fitting and turned a quarter of a turn to distribute the glue evenly.





### 3 LOW VOLTAGE WIRING

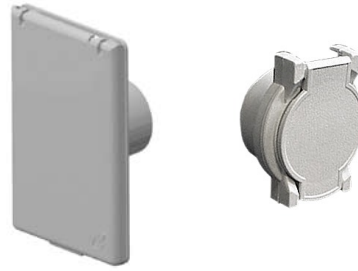
Figure 8 low voltage wiring/cable is readily available throughout Australia, generally in 14/0.20 or 24/0.20 gauges.

It is recommended that you always use good quality cable, and be careful to run and secure the cable in a manner that will provide the best protection from future damage. The cable is usually best run together with the PVC ducting, and can usually be strapped to the ducting.

The cable will run from the motor to the first inlet valve, loop, and then to the next inlet valve and so on. It is recommended that the connections are made at the inlet valves so they are accessible in the future, rather than join the cable at PVC junctions that may be difficult to access and to service in the future.

Leave a certain amount of cable slack - Too little can be a problem with not enough cable to work with or not enough for future rework of the connection but also too much can be difficult to push back into the wall.

Future damage or failure in the cable, which is rare, can be substituted by wireless switching devices if absolutely necessary.



### 4 WALL VALVES

There are different shapes, colour, and quality wall valves, so you will no doubt want to choose the most attractive, but also a well made valve that will not leak, and of course last.

The valves are generally available with either a "pin jack" arrangement, where, on inserting the hose, the pins are shorted and the Vac is switched on, or instead will have a micro switch in the valve where the hose will simply make contact with the switch and turn the Vac on.

Most wall valves are internationally compatible with most hoses although there may be exceptions.

For best fit and ease of installation please use the recommended back plate for wall valves.

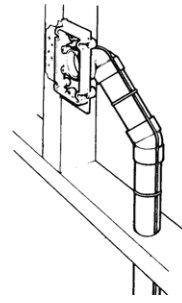
Wall valves are usually mounted on internal walls and generally at the same height as power points for consistency, however you can choose your own height if needed. You can also consider installing a power point next to the valve if you are planning to use a high voltage hose and turbo style cleaning head.

In some cases, you may need to mount the Wall Valve on the floor, particularly in homes that are already built and access to the wall space is difficult.

Take time and pay attention to finding the best location for the wall valves so that they cover the greatest area of cleaning, reducing the need to move the hose too often from valve to valve. A standard hose is 9 metres and is a good manageable size, however, if absolutely necessary, longer hoses are available.



- Clean surfaces before gluing.
- Apply glue to pipe not fittings.



## 5 GLUE

The PVC glue is actually a solvent which melts the pipe and fitting together. There are different qualities of glue and different glues dependant on the application.

In Australia, you should use the Blue version, or if Green is the only one on hand, that can be used as it has greater strength than the Blue. Do not use clear glue which is made for non pressure applications.

Ensure that the ducting and fittings are free of dirt, grime and burrs. Always wipe both surfaces with a clean cloth and if there is excess grime or foreign matter you should clean the areas with a pink PVC primer before applying the glue.

Only apply the glue to the ducting, as glue applied to the inside of a fitting may be pushed ahead and create a rough bead which will reduce airflow and may cause a blockage. The ducting should be inserted all the way into the fitting and turned a quarter of a turn to distribute the glue evenly.

## 6 EXISTING HOMES

Installation of a central vacuum system in existing constructions is often dismissed as too difficult.

While there can be extra challenges to installing in some existing houses, often the installation is much easier than anticipated.

Many houses may only require two or three wall valves, and access to these may sometimes be made underfloor, or through a cupboard as an example.

## 7 NEW INSTALLATIONS

Double brick or concrete constructions will require greater planning and expertise, and often may involve the assistance of the builder. This guide is not intended to address those types of installations or applications.

In relation to the standard timber frame construction, the PVC ducting will be installed at “frame stage”.

Once the Inlet Valve location has been decided, the mounting plate can be fixed to the stud by way of nails or screws. Ensure you have chosen the best height, which may often be at the same height as power points for consistency.

To avoid the mounting screws possibly damaging the PVC duct, it is best to offset the duct so it is not directly above or below the mounting plate. The PVC duct, together with the low voltage wiring will run through to the bottom plate, or up through the nogging and top plate.

Once the home is completed, the inlet valves can be installed, preferably after the walls have been painted. The two lugs on the wall valve will be connected to the cable, or 2 cables if the wiring at that valve is looped to the next wall valve.

Hold the wall valve with the hinge at the bottom, and with a twisting motion, slide the rear of the valve into the mounting plate. Do not use glue as the gasket in the mounting plate will provide a positive seal. If the valve does not reach the mounting plate an inlet valve extension can be used.

Flaps up or down? Many people prefer to install wall valves with the flap hinging downwards for easy access to the inlet. There is no correct way - hinge up or hinge down is up to your personal preference.

Simply screw the wall valve to the mounting plate to complete the task. If the PVC ducting is directly behind the screw locations be sure to use short screws that will not reach and puncture the duct.



## 8 VACUUM HOSE

There are a variety of Vacuum hoses that include, standard hose, switched hose, speed control hose, wireless switched hose and high voltage hose.

Generally these are interchangeable, although it is always best to decide which hose is to be used in advance of the installation process.

Importantly, the standard hose length of 9 metres is a good manageable size, however, if absolutely necessary, longer hoses are available.



## 9 CLEANING TOOLS & ACCESSORIES

There is generally no need to decide on the variety of cleaning tools, brushes and accessories that will be used, as these are readily available and future development will always result in new innovative products.

While they are considered disposable items as they will wear, it is advised that quality tools are used that will not only provide for a longer life cycle, but will often produce and better and more efficient cleaning.

If it is envisaged that a high voltage hose and high voltage turbo head floor tool may be used in the future, consider installing a power point next to the wall valve.

## 10 SPECIAL APPLICATIONS

There will be many special applications that may require greater knowledge, expertise or assistance. It is not recommended that you attempt difficult installations without seeking advice or assistance which is readily available.

For example, homes with flat roofs and slab floors may require external ducting, or ducting that may be best trenched around the home.

Similarly, double brick or concrete constructions will require greater planning and, and often may involve the builder. This guide is not intended to address those type of installations or applications.

ICENTRAL VACUUM INSTALLATION MANUAL  
REV 1, September 2009

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