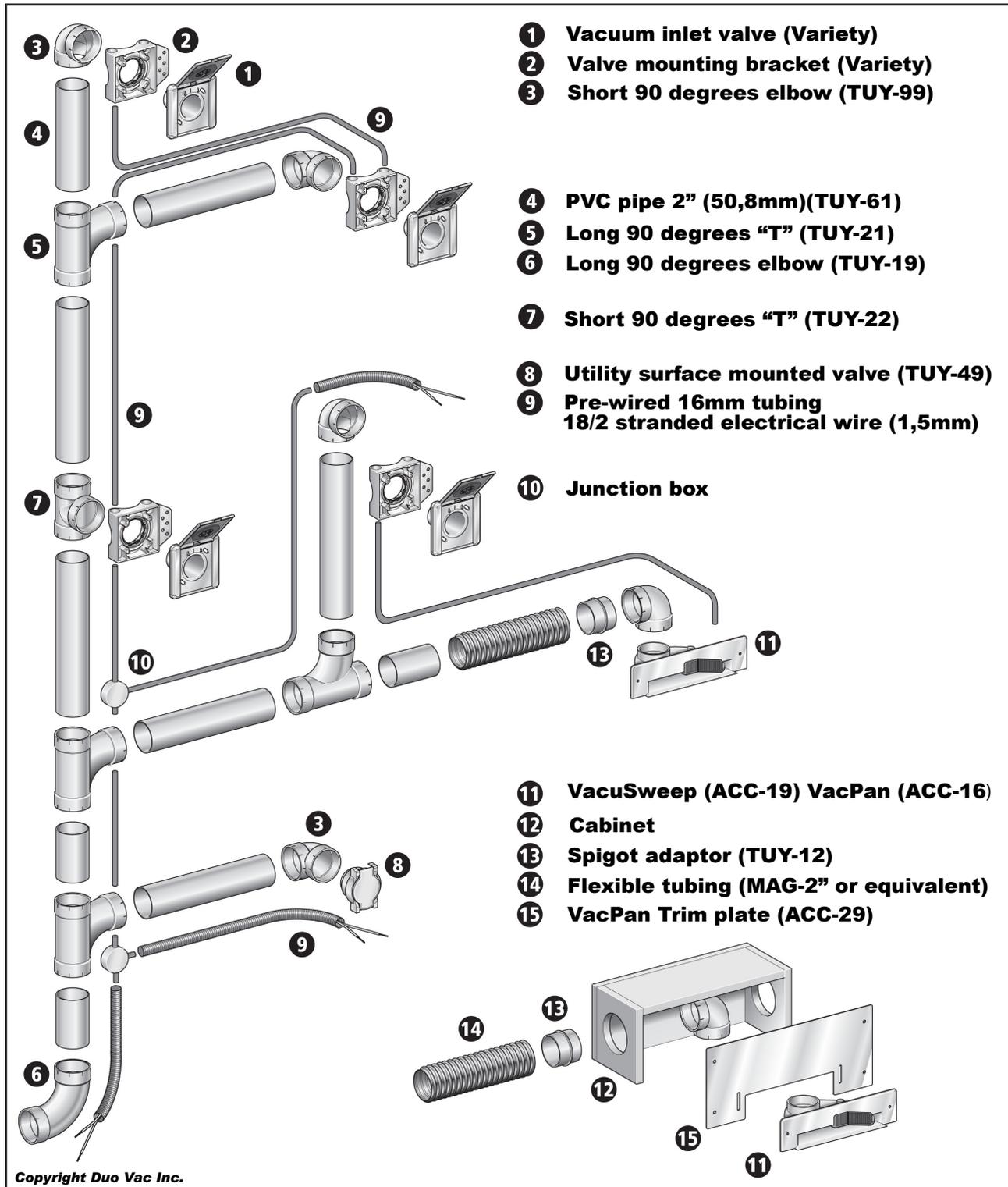


Central Vacuum System Piping Installation Instructions & Terms of Warranty



Warranty

Details of warranty's coverage period

- Duo Vac Inc. Warrants its pipe, fittings and wall inlets for a five (5) year period against all manufacturing defects as long as the installation was done in accordance with the manufacturer's instructions. The cleaning accessories and the flexible hoses are warranted for a period of two (2) years.

Warranty - refers to:

- The Duo Vac warranty is only applicable for those correct & adequate installations, the installation must also be in accordance with all appropriate and applicable local codes and regulations.
- The piping system is designed and is suitable for installation handling normal household dust application, it is illegal for use with combustible and explosive dust.
- In the case of commercial use beyond normal household dust, any warranty or warranty claims expire.

Exception:

Commercial use with written authorization from Duo Vac Inc. together with written respective terms of warranty as well as respective warranty period.

- Should the product fail or manufacturing defect arise during the warranty period, Duo Vac Inc. will repair or supply, free of charge, substitution of the concerned defective material.

Restrictions:

- Warranty will only be provided for those claims submitted accompanied with a dated proof a purchase.
- This warranty is invalidated if the piping system is not properly installed.
- Warranty coverage is denied when:
 - Circumstances and damage, to which Duo Vac Inc. does not have to answer for.
 - Service or parts,
Which are necessary by lack,
from the use of parts and accessories, which are not supplied by Duo Vac Inc.,
or results from modifications.
 - Damage, by foreign effect
 - with the installation on the building site
 - or in installation
 - or in installation in an unsuitable location.
 - As well as damage
 - Those by accident
 - Intentional or inadvertent installation
 - Neglect
 - Inappropriate maintenance
 - Developed by inappropriate use under unusual or inappropriate conditions .

• Duo Vac Inc. commits itself with this declaration of warranty to repair or to free replacement of parts upon receipt of a lodged and justified reclamation.

- Duo Vac Inc. can not be claimed for payment for damages or expenditures from damages,
 - from the purchase
 - due to the installation
 - due to the utilisation
 - or from the unsatisfactory operation of parts to be sent back, independently of the cause of the damage.

In the following cases of damage, however not only in these,

Duo Vac Inc. will not be held accountable for:

- Loss of profit or income
- Loss by down-time
- Costs due to the non serviceability of the central system's power unit, mechanisms, companies and services.
- Demand of payment for damage & interest from a third party.
- Depending on your geographical location some of these restrictions or exclusions may not apply to you.
- The claim for damage is protected by product liability laws and respective consumer's rights remain unaffected.

Intended usage

- The piping system is suitable for household dust application and is expressly illegal for highly combustible types of dust.
- The warranty only applies to those systems correctly and adequately installed, assembled and used as per this guide.
- The adherence to the (safety regulations for piping systems for central vacuum power unit) as well as (safety regulation for central vacuum) are mandatory and prescribed!
- The Duo Vac piping systems meets the

ASTM standard # F 2159



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Safety regulations On piping installation for Central Vacuum System

• This Duo Vac central vacuum system together with the installation material and accessories were design and built according to the latest sate of the art.

Nevertheless danger may occur with this central vacuum system if basic safety regulations are not followed!

Piping Installation

Death Hazard



• Caution must be exercised when working inside panels / walls which may hide / contain water or gas pipe lines or electrical components!

Safety Equipment



- To prepare walls or pierce through floors, the worker should be wearing recommended safety equipment such as a Helmet, gloves and eye protector (goggles).
- Breaking through or creating recess inside a wall is only allowable if its stability or integrity is not compromised.
- Recesses and slots should be milled.
- If the piping is crossing fire compartments, the appropriate fire protection regulations must be considered.
- In walls with fire protection requirement, metal piping and metal vacuum inlet valves should be used.
- Basic construction elements must not be impaired in their stability & integrity by the path of the pipe network and by the floor piercing.

24-VAC- Remote Control

Death Hazard



• The 24 VAC is exclusively supplied by the central vacuum power unit when it is under tension.

The remote control line must never enter in contact with other power sources. An electrical shock may result and mortal danger may occur!

• There is no need for an electrical specialist to work with the 24 VAC remote control lines.

Inspection



Of power unit

• The power unit and all connections should be inspected before star-up and at regular intervals for normal condition and working reliability.

Warning!



- Only take possession of a central vacuum power unit which is in normal conditions.
- A defective central vacuum power unit must be unplugged / disconnected from the power source!
- Defective components must be replaced only with original genuine parts.

Fire and Explosion Hazard!



Never suck up:

- Liquids
- Explosive liquids
- Solvents
- Paint solvents
- Gasoline
- Diesel fuel
- Combustible gases
- Explosive type dust
- Burning material or hot cinders

• Working in highly combustible area is forbidden!

Injury Hazard!



- Care must be exercised when handling the long hoses around other people, because they may not be aware of the working conditions!
- Only transport the hose in a rolled up condition!
- Never leave the switched-on suction unattended!

Warning!



Disregard of safety regulation may result in danger for life or threats to your health!

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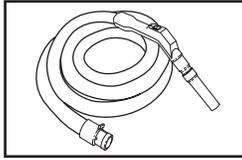
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Tips for Planning

Flexible hose length:

• In a new construction, plan to use a flexible hose that is 7,6 m and / or 9,1 m long, this to achieve optimal performances of your system.



• Sometimes the 7,6 m, hose length is not the best choice. If you are always short 30 cm to reach a particular corner of a room, it is better to go back and make a change, – Life time decision!

In this case go for a 9,1 m flexible hose length.

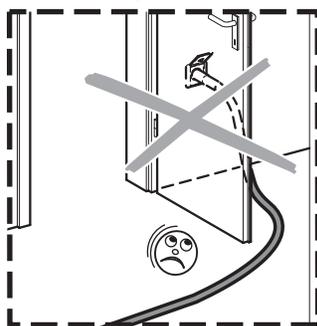
• If you are renovating an existing construction and it is impossible for you to install further vacuum inlet valves, then go for a 10,6 m flexible hose length

• For more difficult cases, there are longer hoses. In the commercial range (e.g. hotel) you can normally find standard 10 - 15 hose length.

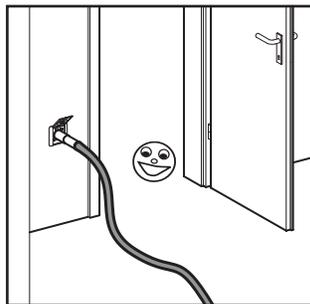
Where to locate vacuum inlet valves:

• The vacuum inlet valve is part of your daily life just like your light switch or electrical socket, therefore similar consideration apply to where you will choose

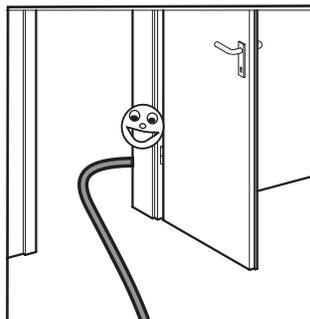
Never install a vacuum inlet valve hinge-side behind a door, you could then only use it when the door is closed or it will be hard to maneuver.



The alternate three other sides of the door are recommended and much more practical.



Do not install vacuum inlet valves in the middle of a straight wall or far in a corner!



First consider:

- where the furniture will be
- where the telephone table will be
- if there will be a flower vase there
- will this be the place of your favorite armchair.

All the locations where a vacuum inlet valve would not achieve its potential or would be a nuisance.

TIPS

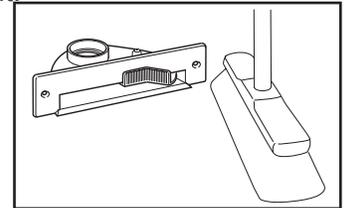
It is a good idea to install vacuum inlet valves near the areas, which are often vacuumed, i.e. the bedrooms, kitchen or dining room.

The vacuum inlet valves are installed where “things happens” where it is fast & convenient to insert the flexible cleaning hose.

This also applies near a fire place or stove. A foot activated valve is very convenient.

A hose with swivel handle also works great.

–Multiple use accessories are very handy, you will not want to part with them, ever.



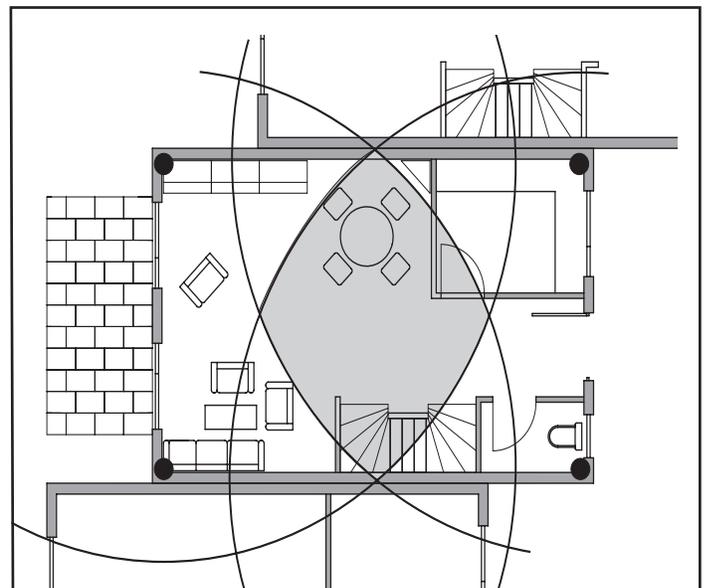
Vacuum inlet valve placement - Construction plans strategy

Rough planning takes place at the best on 1:100 scale construction drawings.

The doors should already be located and the use of each room already defined.

Draw circles on the plans from each furthest corner of each of all the floors (with a pencil) with a full scale 7,6 or 9,1 cm (optimal hose lengths). Within the range, in which all circles overlap, you may install a vacuum inlet valve.

Then, you may now decide where each vacuum inlet valve can be installed adequately.

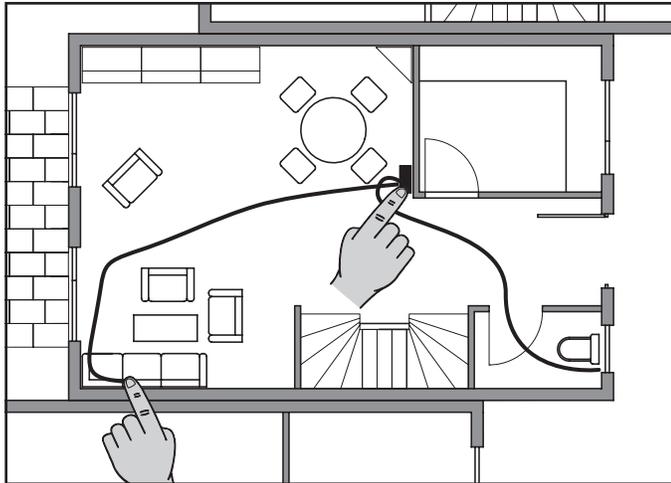


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TIPS

To go over surely and make certain that all is OK:

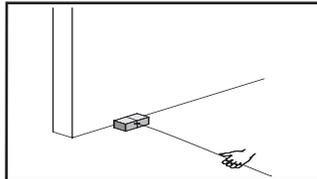
Cut a piece of thread or thin wire to scale of the flexible vacuum hose and simulate the cleaning of each room.

Important: Calculate later obstacles such as furniture, appliances additional wall etc..

You should be able to reach your complete (100%) dwelling or house comfortably with the flexible hose including the highest corner at ceiling height, have easy access to stairways, you should not be using a portable vacuum to do this, it would be mad!

Vacuum inlet valve – Planning in an existing building is very simple:

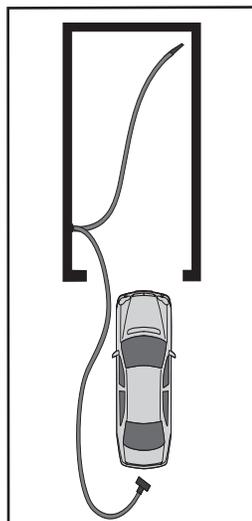
Test the range of your flexible hose by using a measuring tape or a string with a standard length of 7,6 or 9,1 m and then select the proper mounting placement for your vacuum inlet valves.



Do not forget the car(s)!

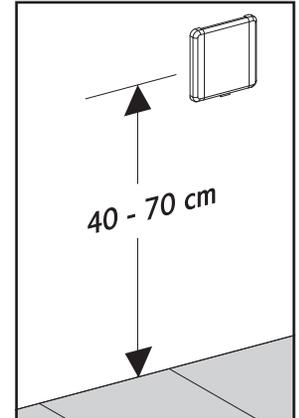
If it is structurally possible, install a vacuum inlet valve, near the main entry door(s) so that you can also reach outside during the summer months.

Without a garage? You have a carport or just a parking bay near the house; you do not have to do without your Central Vacuum System!
– Install a vacuum inlet valve on the outside wall.



Installation height of the vacuum inlet valves

We recommend, that you install them at a height which suits your personal needs on conception. Normally you would install the vacuum inlet valves at the same height as the electrical sockets to keep an even look. We recommend a height of approximately 40 to 70 cm from the finished floor.



Before you start the Installation!

• Locate the exact path of your pipe network.

• Apply those principles:

Network of pipe as short as possible

– as short and direct as necessary

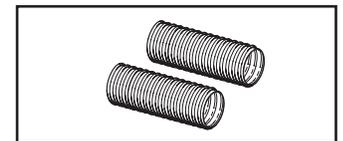
– reasonably short, but not just to save money.

A Duo Vac high performance Central Vacuum System rarely has problems, even if you make a simpler installation variant with a meter more pipe or one or two additional elbows select!

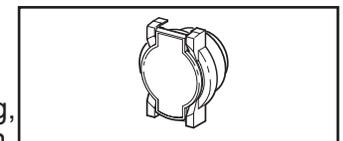
• Consider the possibility of installing an exhaust piping from your power unit!

Depending on the unit model the intake or exhaust lines maybe on the top the right or the left.

• You may use two short length of flexible tubing to connect the power unit to the network of pipe, thus allowing for installation tolerances and oscillation.



• In the scope of your of your Central Vacuum System installation planning, you may also find a location for a useful utility valve (furnace room, tool shed, etc..)



Quantity of vacuum inlet valves:

Too many vacuum inlet valve does not make sense!
Most of them would never be used anyway - the flexible hose is long enough.

Our experience shows that from 1-3 vacuum inlet valve, you can reach everywhere on a floor of 80 m².

Central Vacuum System

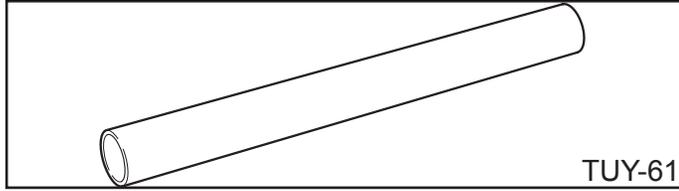
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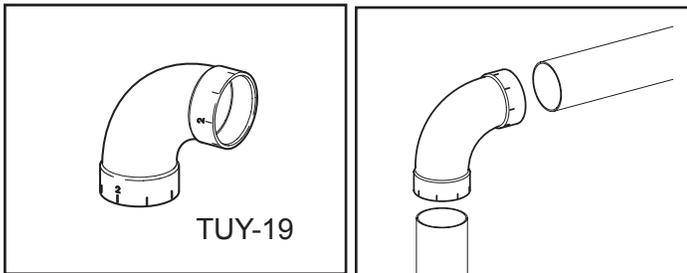
Vacuum system pipe network components

Pipe -



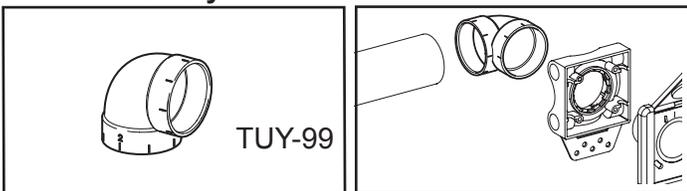
The Duo Vac vacuum piping system can be installed horizontally, diagonally, vacuuming up or down.

Rising intake: If you plan your central vacuum system to vacuum upward, please orient the vacuum inlet valves to also aim upward.



Within the circuit of pipe you will only use TUY-19, long sweep 90° and never short ones.

Short 90° safety elbow -



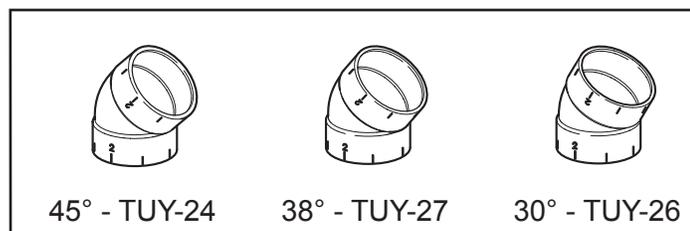
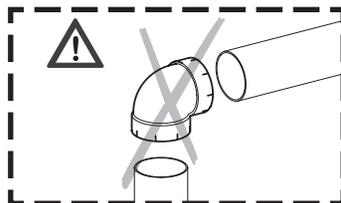
The short 90° elbow must only be used at the vacuum inlet valve and never anywhere else!

! Important!

The short 90° elbow is forbidden in the piping system.

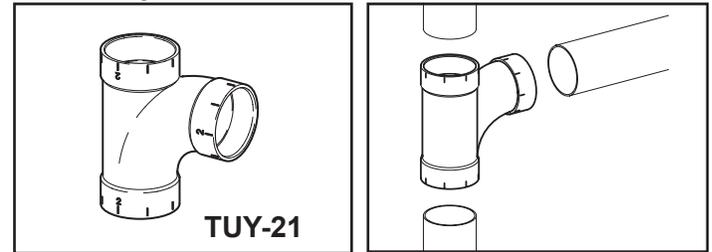
If you need 45°, 38° or 30° elbows, you should use

45°, 38° or 30° ones.



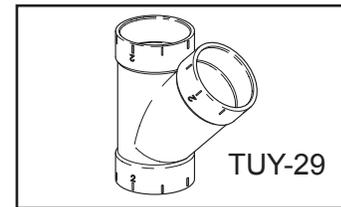
Junctions

90° Sweep tee



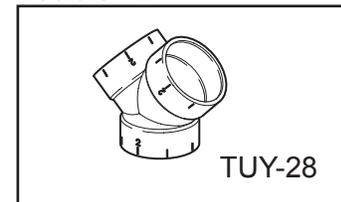
The sweep 90° tee is the one most commonly used.

45° "Y" Junction

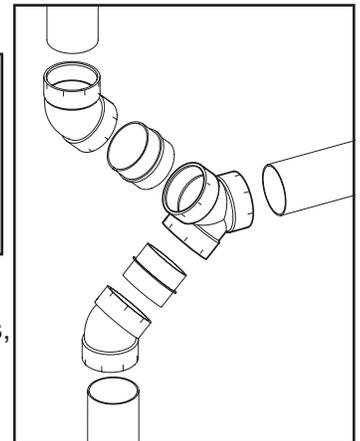


When installation requires it - a 45° "Y" junction is very useful.

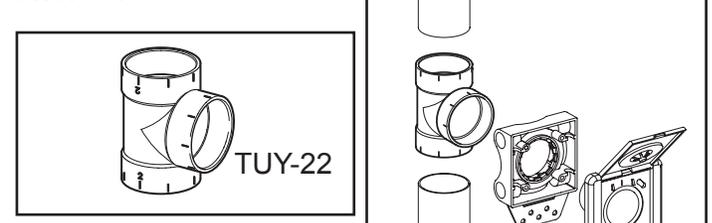
Double "Y"



This double "Y" is very useful with two 45° elbows, in order to provide two 90° branches on either side.



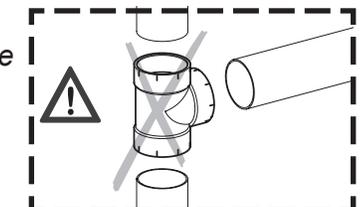
Short "T" -



The short "T" is only to be used for the direct installation of a vacuum inlet valve in a continuous pipe..

! Important

The short "T" must never be used as a junction!



Central Vacuum System

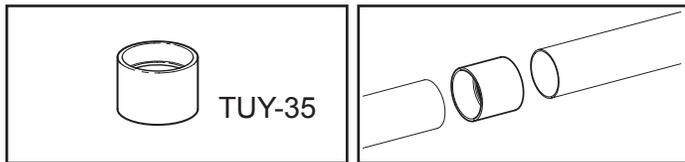
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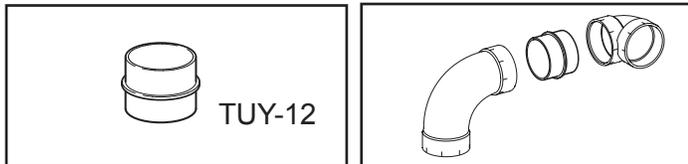
Couplings

Stop coupling



Used for connecting pipes.

Spigot coupling



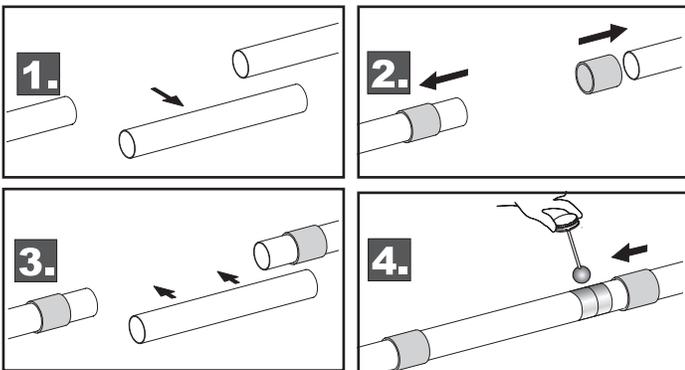
Used to directly connect fittings or junctions together.

Slip coupling



i Important

The slip coupling is only to be used for repairs!



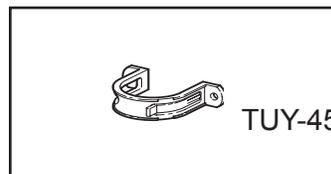
1. Cut out the defective pipe section,
2. Slide over the existing pipe a pair of slip couplings,
3. Insert the new pipe section in position,
4. Apply PVC solvent and slide back into position the two slip couplings,
– You're done!

TIPS

Practice this procedure several times without adhesive so that when you apply the PVC solvent, this procedure will be problem free.

Use this procedure if you later to decide to expand into your existing network.

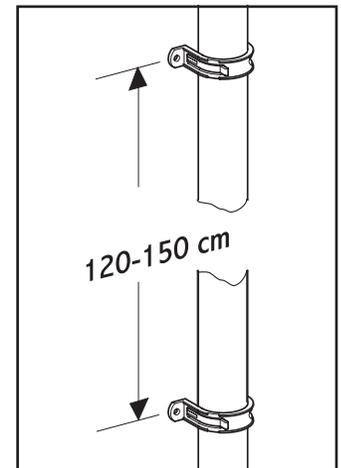
Pipe strap



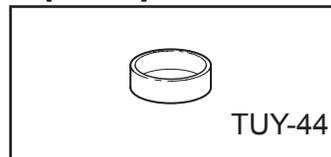
Used to secure the pipe.

TIPS

Set tubing at each elbow, and for straight pipe, use a pipe strap at every 120 – 150 cm.



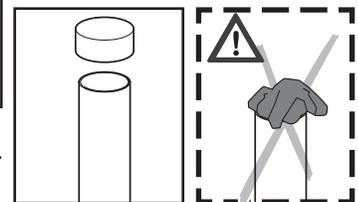
Pipe cap



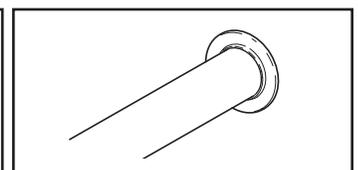
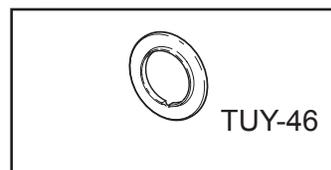
To close the end of a pipe.

i Important

To close off a pipe only use the pipe cap. If you use a plastic bag or other means for plugging, damages may result to the power unit when you start it up or it may create a clog in the network!

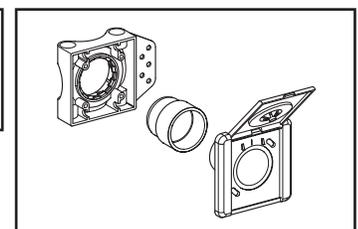
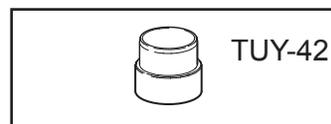


Pipe collar



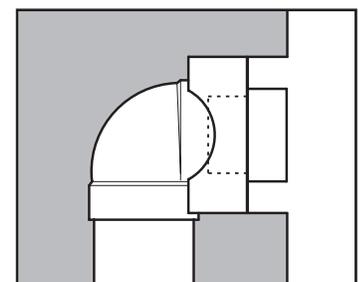
For a clean conclusion with pipe / wall lead-in.

Vacuum inlet valve extension



This is used when the mounting bracket sits too deeply inside the wall.

- Plaster is too thick
- Addition of new wallboards or panelling.



Is it necessary to insulate the central vacuum system's pipe network?

No:

The impact of the noise caused by the air movement- is reduced by the aerodynamics of this special 50.8 mm vacuum pipe (contrary some other pipes and waste water pipes, in which air velocity can generate loud noises!).

Yes:

1. For mechanical protection of the pipe when casting in concrete or screed.
2. To avoid the impact of sound where pipe is accessible.
3. To avoid cooling bridges with installation in the foundation of a basement.

Low voltage-remote control Copyright©

- Each vacuum valve must be supplied with a low voltage remote control wire, in order to have a power control connection to the central vacuum cleaner.

! Important

- The wire network must be totally protected against humidity. Use the recommended wire supplied by Duo Vac.
- The cable can be wired in from valve to valve «in a continuous loop» or «umbrella like» to a central connection.
- Polarity on the cable connection should normally be respected but is not so important because we have alternative current..

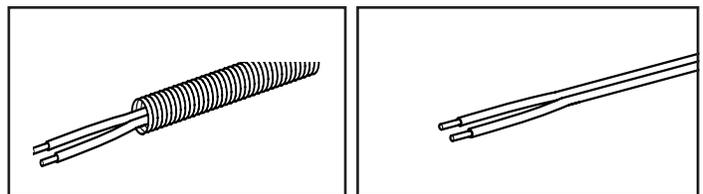
Exception:

With all the SILENTIUM series power units special attention must be paid to the polarity of all connections! It is compellingly necessary to attach e.g. all poles of the vacuum valves to the respective pole on the power unit. The LED light at the hose handle will otherwise transmit incorrect information - the electronic module in the equipment can possibly be destroyed!

Attention!

- *A detached wire or a loose terminal on a connection may lead to erroneous switching or to the loss of function!*
- *The remote control lines must never come into contact with other power sources - an electrical shock can be the result and may mean mortal danger!*

Remote control wire in flexible conduit?



Wire conduit is always recommended.

The conduit offers a mechanical protection for the wire.

The wire can be pulled in afterwards if necessary.

Prescribed wire conduit!

Within the wall, in concrete or in screed.

Wire conduit not compulsory!

When placing the wire along an exposed pipe installation, the wire conduit is not necessary.

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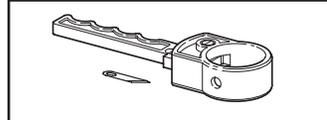
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5 important basic installation rules:

Rule # 1:

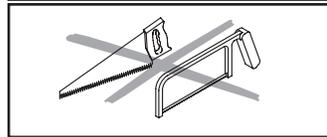
• Always cut the pipe at a 90° angle with:

- A Duo Vac pipe cutter or
- Electric radial saw or
- Mitre box / saw



❶ Important

• Not with a wood, metal or hand saw

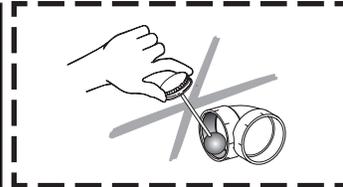
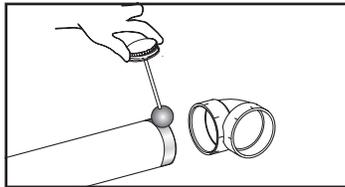


Rule # 2:

- Always completely debur all cuts!
 - Clean off all the burs inside & out.
 - Professionals use a special tool.
- Danger - take special care not to cut your fingers!**
- A medium grit sandpaper also does a good job.

Rule # 3:

• Always spread the solvent around the pipe and never in the fittings!

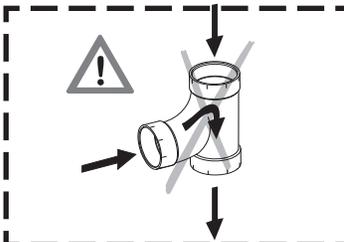
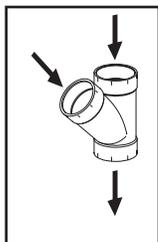
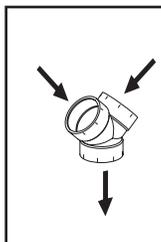
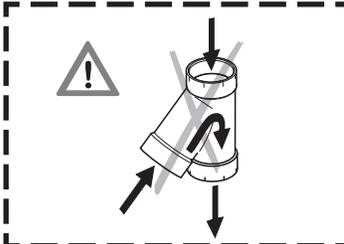
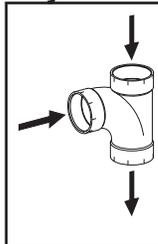


❶ Important

If you paint the adhesive into the sleeve, the pipe pushes the adhesive excess in to a bulge inside the pipe or the sleeve. This will disturb the rapid airflow in the piping system and may cause a clog!

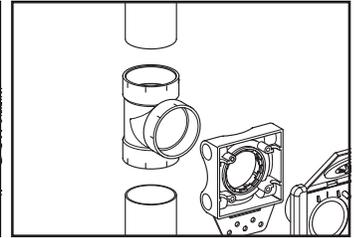
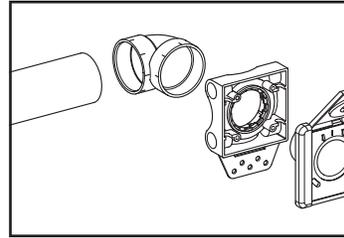
Rule # 4:

• Branch-out only into the direction of airflow!



Rule # 5:

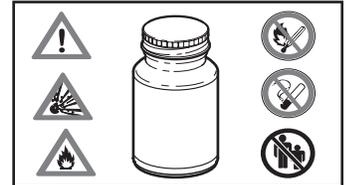
- Always install a universal short elbow at the inlet mounting bracket in order to prevent entry of bulky items.
- For an in-line installation of a valve use a short tee.



• If the vacuum valve connection runs straight through a wall, eliminate the worry with a universal short elbow «behind» the wall. (Although improbable) a foreign item can still be removed from there.

Glue

PVC solvent composition:
Tetrahydrofurane and methyl ethyl acetone

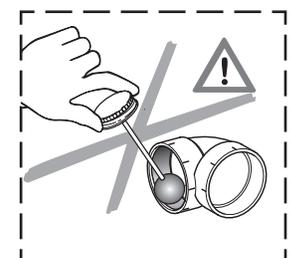
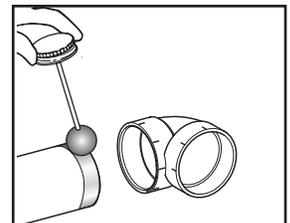


Safety regulations - When using glue

Warning!

- During the gluing process provide for good aeration - Do not smoke!
- Keep this solvent away from children and other persons
- Keep solvents away from sources of ignition!
- Solvents can form combustible peroxides!
- Solvents should never get in contact with your eyes!
- Solvents vapors provoke eyes and respiratory organs irritation!
- Never swallow solvents!
- Immediately wash away solvents from skin!

1. Joints must be grease-free.
2. Only apply a thin coat of solvent on the outside of the pipe, never inside the fittings or sleeves!
3. Place pipe and fitting rapidly in final position - Setting time for the solvent is very short!
4. Do not load for one minute. Full load after three minutes only.



Central Vacuum System

Simply more convenient™

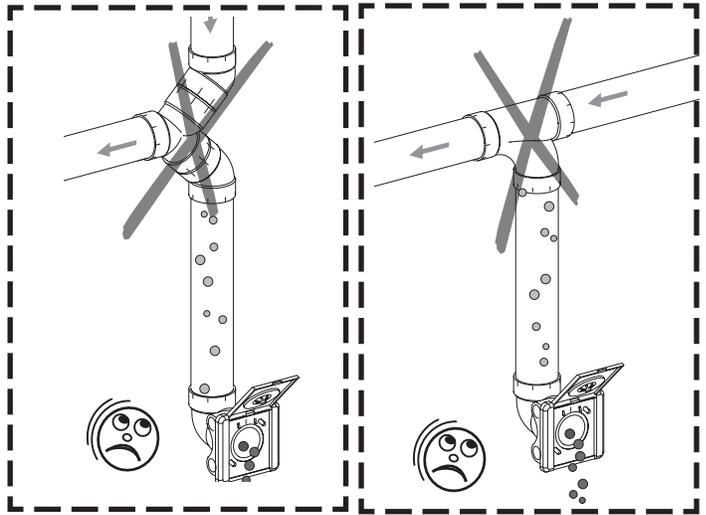
DUO Vac

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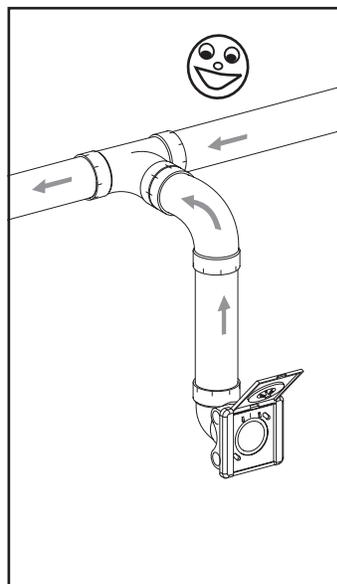
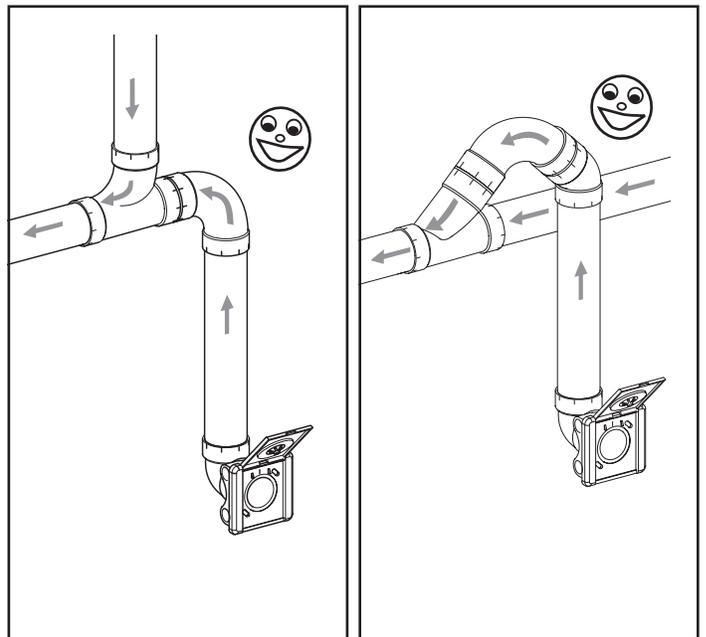
 **Avoid the following installation variations!**

These unwise methods trap dirt

Also, this will slow down the airflow and accumulate debris fallen by gravity into vacuum valves installed lower than the main line.



 **Much better like this:**



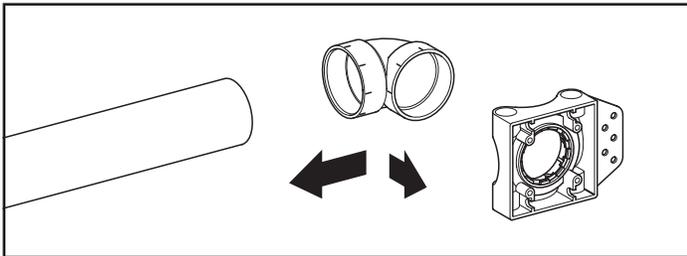
Central Vacuum System

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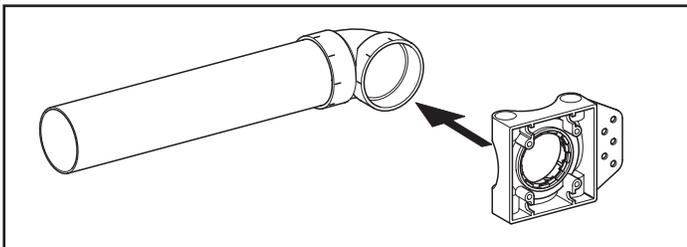
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Installation of mounting bracket



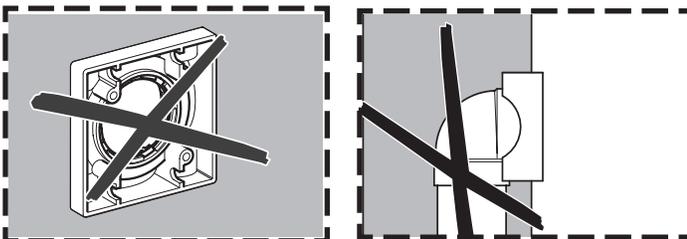
i Important

The longer side of the universal 90° elbow usually installs on the pipe and the short end on the bracket.



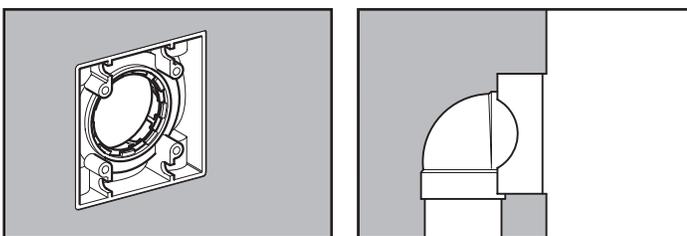
i Important

Make certain that you select the proper vacuum valve for the proper mounting bracket and the proper setting place! The mounting bracket is firmly glued to the short universal 90° elbow.



i Important

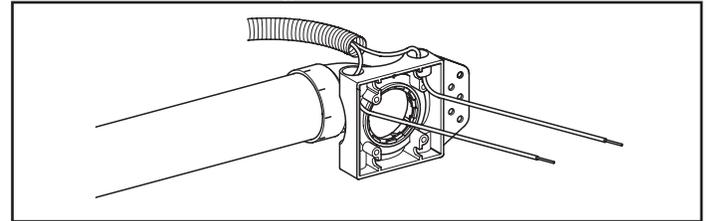
The front edge of the mounting bracket must not extend out of the finished wall!



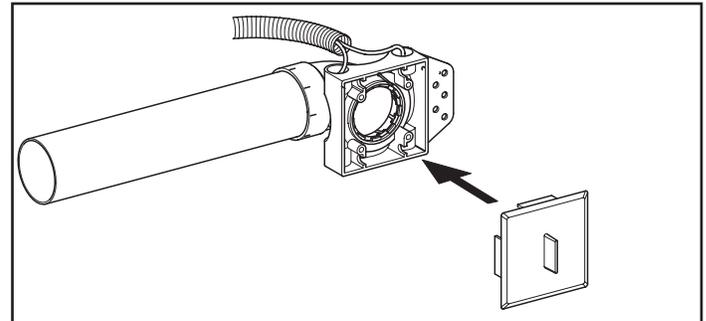
i Important

The front edge of the mounting bracket must lay just a few millimetres inside the finished wall.

Preparing the connections at the mounting bracket

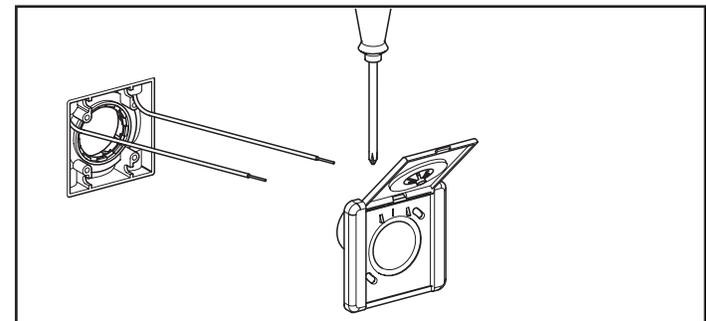


The low voltage control wire must pass through the mounting bracket, leaving about 15-20 cm sticking outside the wall.



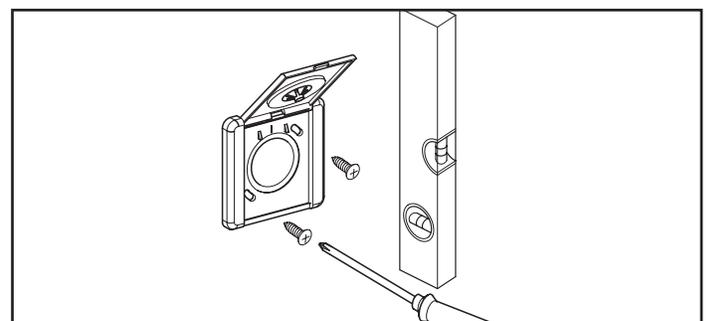
TIP Install plaster guard to protect when plastering. (Supplied with VacuValve ES and Palstiflex VEX)

Connections of the control wire at the vacuum inlet valve



At the final assembly connect the wires on the 2 poles at the back of the vacuum valve. Polarity is only essential with the SILENTIUM series installation.

Installation of the vacuum inlet valve



In vertical position, tighten the screws. Do not glue!

Last but not the least: Still some important auxiliary information

Fire protection

- In a normal, single family house there is no special consideration.
- Otherwise any installation must meet with the local and/or the provincial and/or the federal building or fire codes.
- In public or commercial buildings, when going through fire walls, appropriate codes and techniques must be applied.

Flexible sections

- It might be rendered necessary to use flexible conduit where wall may move or expansion joints are necessary or just to prevent the transmission of vibration.

Solid wood, log homes

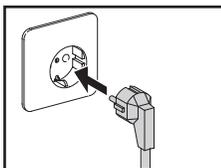
- In some portions of walls where vertical compression will set, it might be necessary to install flexible pipe.



Vacuum leakage test

- If the installation is done professionally, and all these procedures duly followed, it should not be necessary to run a vacuum leakage test.

- Use a piece of wire to short-circuit the low voltage connectors at the power unit's side.

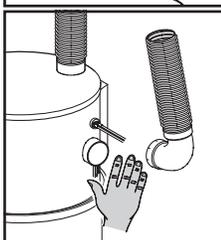
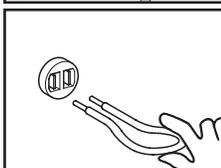


- When all pipes are capped, and all the vacuum valves are closed, there should be no air coming out after 10 -15 seconds.



-If there is still lots of air coming out, there is a leakage!

-Make repairs and retest until no more air leaks during the 10 - 15 seconds test.



i ***Important***



- The power unit may overheat if the pipe is clogged for more than 30 seconds!

Cleaning & Maintenance

- When properly installed, the pipe network is maintenance free.
- The vacuum inlet valves may be cleaned with a damp cloth and soft soap.
- Do not use solvents or abrasive cleaners to clean the vacuum inlet valves or you will damage them.

Thank you!

**And we hope you to enjoy your
Duo Vac Central Vacuum System.**

Duo Vac Inc.

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