Central vacuum system installation

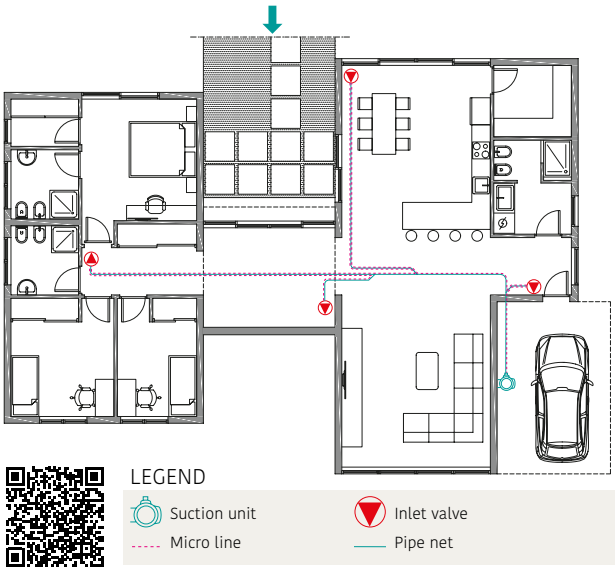
Setting up a central vacuum system is extremely simple, but requires some basic precautions to ensure performance over time. The golden rule of a **perfect central vacuum system is that it must guarantee a vacuum**.

A condition that is only fulfilled if:

1. correct dimensioning has been designed
2. the dedicated central hoover system is used
3. the right central vacuum cleaner is chosen for the room to be cleaned
4. the inlet valves are chosen correctly

Designing and dimensioning the system

This phase defines the positioning of the central vacuum cleaner and its inlet points so that there is the best performance in terms of surface coverage and ease of use of the hoover system. It is possible to choose between two types of system, which are equivalent to each other.



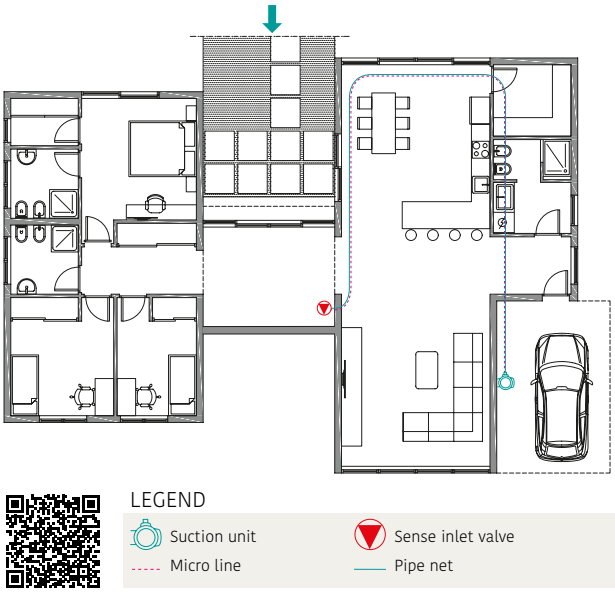
A Traditional plant

The traditional system involves the flush-to-wall installation of one or more inlet valves. To use the system, the 7m or 9m long hose must be connected.

Position inlet valves at strategic points in the home by drawing circles on the floor plan, with a radius of 7m or 9m to scale, which simulate the length of the hose that will be used for cleaning.

Consider any inlet points near stairs or outdoor areas that you wish to clean and take into account any obstacles that might reduce the reach.

Typically, one inlet valve can cover about 35m2 of floor space. Therefore, it is not necessary to provide a inlet point in every room.



B Plant with retractable pipe

The Sense system provides for the flush installation of one or more inlet valves. The cleaning hose is integrated into the system and only needs to be pulled out to use it.

Position Sense at a central point in the home for best performance by drawing circles on the floor plan, with a radius of 9m, 12m or 15m to scale, which simulate the length of the hose you will use for cleaning.

Again, consider positioning near stairs or outdoor areas that you wish to clean and take into account obstacles that may reduce the radius of action.

In most cases, one Sense is sufficient to cover the entire surface of the property.

Technical knowledge

The following are the basic principles for setting up the central vacuum system, the correct use of the necessary equipment and the laying of the pipework.

Installation equipment

Pipe cutting tool

art. 4163.0 - for pipe up to Ø63mm

Special glue

art. 9225.1 - format 250 gr

art. 9225.2 - format 500 gr

Vacuum gauge

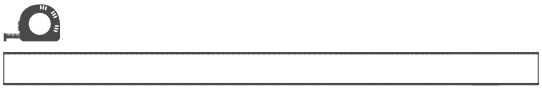
art. 4001.0

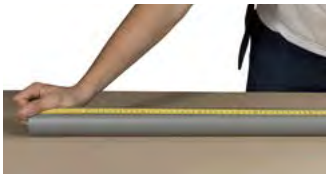
Pipe cutting

TOOLS REQUIRED

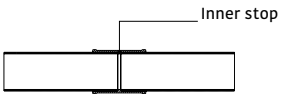
ART. 4163.0

1 Measure the length of the pvc pipe to define the cutting point as required, taking into account the rebate of the fitting.

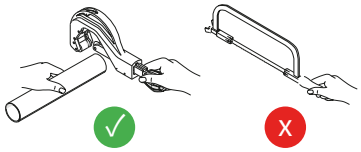




2 Measure the inside of the fitting up to the stop and add it to the previous measurement of the pipe to determine the actual cut measurement.



3 Cut the pipe using only the pipe cutting tool. This ensures a perfect fit between the fittings with a precise, linear and burr-free cut.

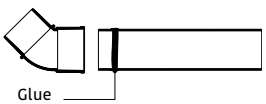


Union of connections

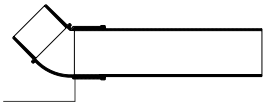
TOOLS REQUIRED

ART. 9225.1 e/o ART. 9225.2

4 Spread adhesive only on the pipe or the male part of the fitting, taking care to use only the dedicated Sistem Air glue.



5 This allows excess glue to escape when the pipe is inserted into the fitting, creating an additional sealing ring.

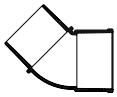


Curved fittings

TOOLS REQUIRED

ART. 9225.1 e/o ART. 9225.2

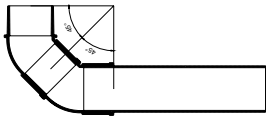
6 Bends in a centralised system must necessarily be made with 45° type fittings.



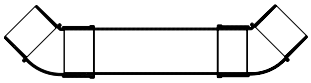
7 A 90° bend can be performed in two different ways:

A - with an MF curved fitting and an FF curved fitting;

B - with an FF curved fitting, a pipe section and another FF curved fitting.



A



B

The fewer curved fittings installed, the higher the speed of the air sucked in and the higher the performance of the system.

TOOLS REQUIRED

ART. 9225.1 e/o ART. 9225.2

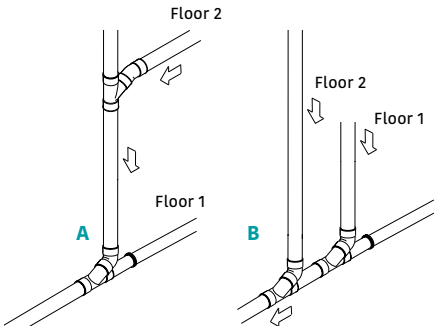
Diverting the plant and respect the suction direction

8 In order to create several inlet points, it is necessary to branch the main line of the system. This is done using 45° FF or MF branch connections.

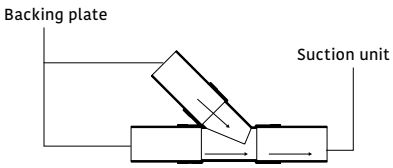
Branching allows the system to be split horizontally for the creation of several outlet points on the same level or to make risers for branching on several levels.

9 Only in multi-storey buildings, it is possible to choose whether to develop a single riser vertically and then branch off to the individual floors horizontally (A) or to create several system lines and connect them into a single manifold at the base of the central vacuum unit (B).

The number of derivation to be installed in a system is always one less than the number of inlet valves (e.g. 5 inlet valves = 4 outlets).



10 It is essential that the bypass is always installed correctly with respect to the suction direction of the system. Incorrect installation of the bypass will result in inevitable clogging of the system.



Installation of wall or plasterboard backplate

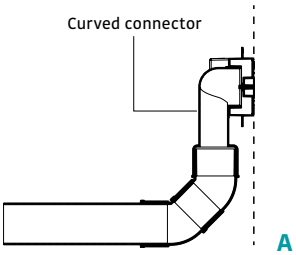
TOOLS REQUIRED

ART. 9225.1
e/o ART. 9225.2

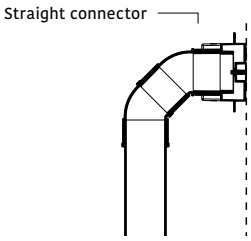
11 The backplate must be installed flush with the plaster and only glued to the pipework. Do not glue the backing plate to the fitting. You can choose between two types:

A - universal with elbow coupling. It can be installed in any type of wall. The fitting rotates 360° to engage it wherever it is located;

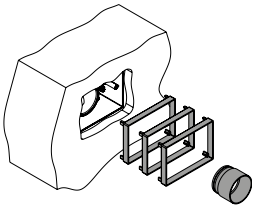
B - universal with straight connector, for installation in special constructions such as renovations, counter walls, furniture, movable walls, etc.



A



B

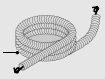


C

If the backplates are set back with respect to the plaster line, it is possible to use the socket extension kit (img. C) art. 1450.8 or art. 1450.9 (see section on backing plates).

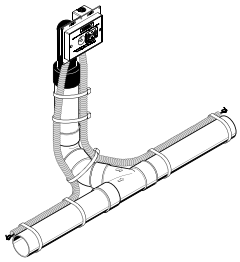
Micro line connection

TOOLS REQUIRED



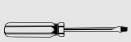
12 The system is supplied with low voltage 12v via a 2x1mm2 pre-threaded electrical conduit that connects the inlet valves in parallel.

The microswitch line connects the central vacuum cleaner with the inlet valves of the system.

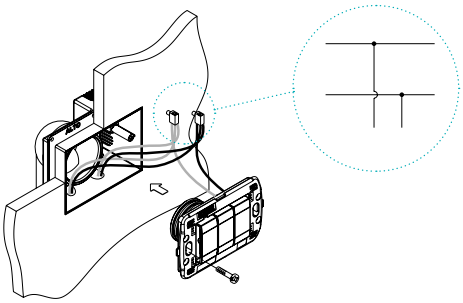


Connection of inlet valves

TOOLS REQUIRED



13 Connect the terminals to the micro line and connect the inlet valves to the backing plate, fastening it with the screws provided.



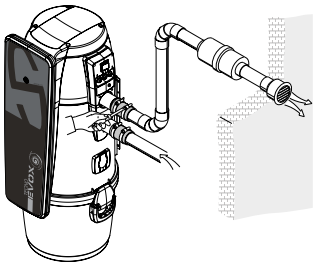
Connecting the central vacuum cleaner

TOOLS REQUIRED

ART. 9225.1 e/o ART. 9225.2

14 The connection of the central vacuum cleaner to the pipe net is made by means of the vibration-damping sleeves and clamps supplied, while the connection to the micro line is made by means of the 12V cable.

The central vacuum cleaner is powered by the 230V AC line.



Air outlet sizing

TOOLS REQUIRED

ART. 9225.1
ART. 9225.2

ART. 4163.0

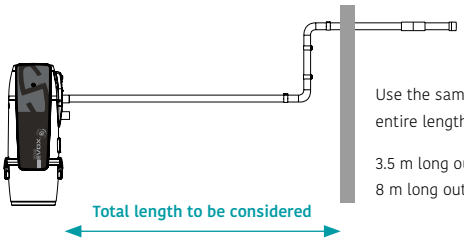
15 The air outlet must be dimensioned according to the length of development, strictly adhering to the indications given in the table, in order to create optimal conditions for the expulsion of air.

For all domestic suction units

Air outlet line length	Diameter Ø
max 4 m	50 mm
over 4 m	63 mm

Only for Tecno Star Dual Power suction unit

Air outlet line length	Diameter Ø
max 4 m	63 mm
over 6 m	80 mm



Use the same diameter along the entire length of the drain. Example:

3.5 m long outlet = all Ø 50 mm
8 m long outlet = all Ø 63 mm

Final verification of plant tightness

TOOLS REQUIRED

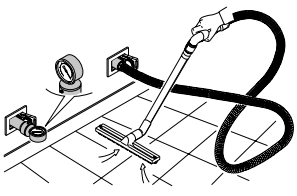
ART. 4001.0

KIT PULIZIA

16 Before laying the flooring, a leak test of the pipe network can be carried out using the vacuum gauge. Specifically for central vacuum systems, it is able to detect

- the maximum vacuum of the central vacuum cleaner
- the operating vacuum of the system
- the correct installation of the system

The values measured by the vacuum gauge are variable and depend on the power of the central vacuum cleaner, ambient temperature, relative humidity and altitude.



If the central vacuum cleaner has not yet been installed, it is still possible to test the tightness of the pipework using the Sistem Test portable instrument Art. 4300.1 complete with vacuum gauge.

Special situations

There are situations in which it is necessary to adopt dedicated installation solutions in order to ensure that the piping network is properly constructed and sealed throughout its development.

Overcoming obstacles

TOOLS REQUIRED

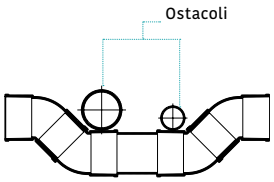
ART. 9225.1 e/o ART. 9225.2

A

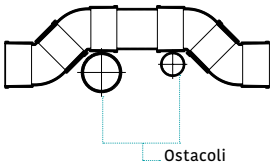
If obstacles are encountered that cannot be overcome due to the lack of subgrade level, a subway must be created.

The subway is created by joining the following connections:

45° elbow coupling MF	+
45° elbow coupling FF	+
Pipe section	+
Elbow fitting 45° MF	+
Elbow fitting 45° FF	=
SUBWAY	



Realizzazione del sottopassaggio



This operation should be carried out as few times as possible on the same system, as it would create a major strain on the speed of the sucked air.

Passage of pipe sections outside

TOOLS REQUIRED

ART. 9225.1 e/o ART. 9225.2

B

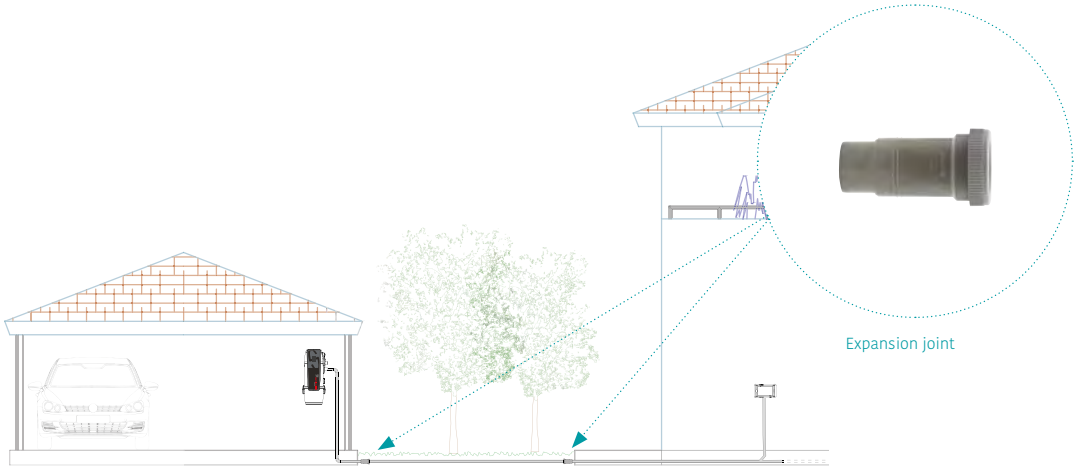
If it is necessary to run a section of pipework outdoors, in order to connect two different properties (e.g. garage detached from the main body in which the central vacuum cleaner to be connected to the house is located), it is essential to pay attention to the expansion of the ground.

For this it is necessary to use the appropriate expansion joints to be installed as follows:

- one at the pipe outlet of the first property

- one before the entrance of the second property.

The pipe net that crosses the ground must be insulated in order to minimise condensation inside it, which on contact with sucked-in dust could create deposits.



Expansion joint