

WELCOME TO THE WORLD OF EASY•FLO

PLAN AHEAD!

Planning is the key to the successful installation of your new Easy•Flo Central Vacuum. A balance between the best locations for the inlet valves and the practicality of servicing these locations must be obtained. With a little ingenuity most areas of the home can be reached.

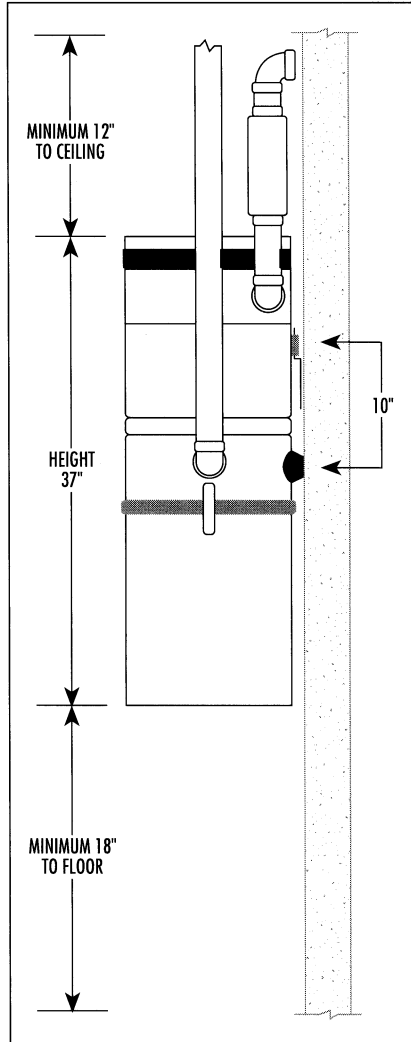
TOOLS YOU'LL NEED:

- 1/2" Right Angle Electric Drill
- 2 1/2" Hole Cutter
- 1/4" Masonry Drill Bit
- 1/8" Drill Bit
- Hack Saw or Small Hand Saw
- Pocket/Utility Knife
- Steel Measuring Tape
- Phillips Screwdriver
- Robertson Screwdriver
- Flat Screwdriver
- Electrician's Tape & Connectors
- Wire Coat Hanger

You can rest assured: you made the right choice when you purchased an Easy•Flo. You'll soon realize the true benefits of using your new central vacuum on a day-to-day basis.

Your kit contains all of the pipe, fittings, wire and glue that you'll need for a successful installation. All of the parts contained in your kit are manufactured according to Easy•Flo's rigid quality control standards. Measurements of fittings and openings are exact in order to prevent loss of power resulting from air leakage.

The project you have undertaken is basically a straightforward job which does not require special skills or tools. Installation is simple, but remember: take your time and consider everything before cutting into a wall or floor, and be sure to check for hidden electrical wires or plumbing and heating equipment.



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LOCATION OF THE POWER UNIT

The power unit can be located in the garage, basement, utility room or any other dry, vented, remote area of the house. The unit must be located within six feet of an electrical outlet for power supply. Electrical specifications of your particular unit should be checked to avoid overloading the circuit. The unit should be mounted out of the way, but should also be accessible enough for emptying. There should be at least 18" of free air space above the unit, and 24" inches of free air space below. Should you choose to exhaust the system outdoors, the power unit should be mounted on an exterior wall, (within 8' of power unit). Exhausting to patios and entrances should be avoided.

REMEMBER: Central vacuum systems must have room to breathe... **DO NOT ENCLOSE!**

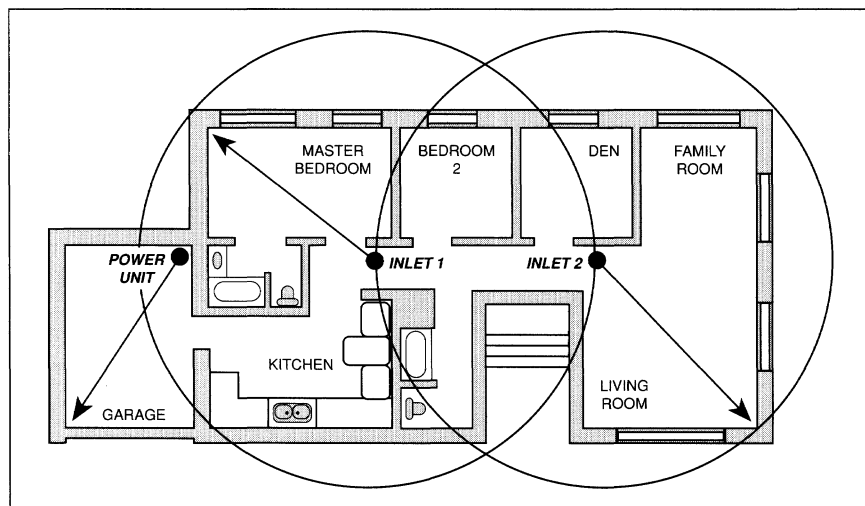
If the unit is to be located inside of a small closet or utility room, the space must be vented. Louvered doors often fulfill this purpose. A muffler can be added to reduce noise.

LOCATING INLET VALVES

Correctly positioned inlet valves will ensure trouble-free vacuuming from your new EASY•FLO central vacuum system. The hose must be able to reach every corner of the house and go around furniture and appliances to in order to do so. Drapes, closets and ceiling corners all must be easily reached. Central locations such as hallways, beside doors and adjacent to staircase bottoms are ideal locations. Areas behind furniture and doors should be avoided.

A 28' string or even the hose itself can be used to plan the layout. Assemble wands from your accessory kit and attach to hose to be sure of reaching high ceiling corners etcetera.

If you use 1/4" ruled paper, a seven inch piece of string may be used to represent the vacuum hose. If an electric powerhead will be used (now or in the future) valves should be located within six feet of an electrical outlet. An air driven powerhead provides flexibility where electrical outlet locations are a problem.



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Planning the Tubing System

The amount of airflow that reaches the business end of the hose is dependent on the efficiency of the tubing system layout. Lines are to be kept as straight as possible. Sharp 90° fittings are used only at inlet valve locations. Sweep 90° fittings used in all other applications.

#1. THE MAIN LINE

The main line connects the furthest inlet valve to the power unit. All other inlet valves will be serviced by branch lines flowing into the main line. If the basement is unfinished, the main line is best run beneath the joists in the basement ceiling. The upper floors can be serviced through closets, cold air return ducts or in partition walls. The location of the main line will greatly depend on the construction of the house and the location of the power unit.

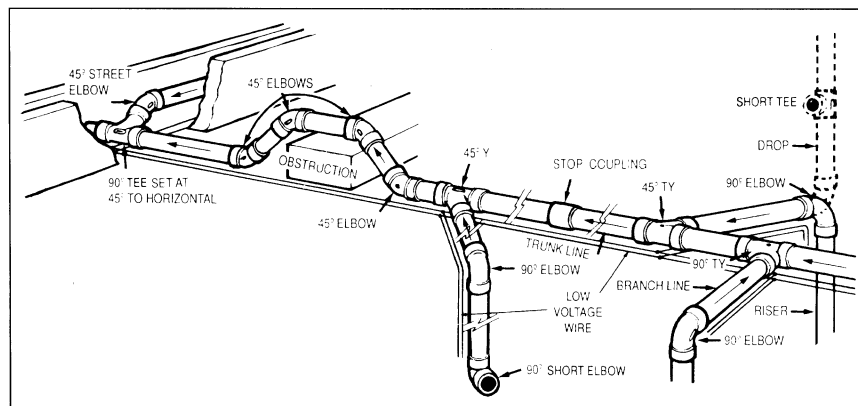
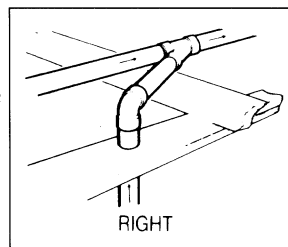
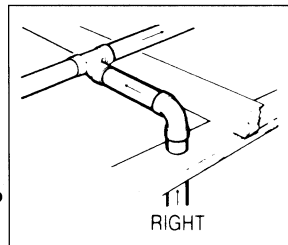
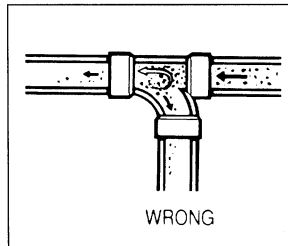
#2. BRANCH LINES

Branch lines join the remaining inlet valves to the main line. As with the main line, these lines should be kept as straight as possible. Forty-five degree

fittings should be used to avoid sharp corners when possible. Airflow direction should always be considered when installing branch lines. □

AVOID GRAVITY DROPS!

A branch line located directly below an overhead main line will accumulate dirt due to the effects of gravity. The result will be a pile of dirt at the base of the inlet valve every time it is opened. To avoid this situation, the techniques shown (See figures at right) should be used.



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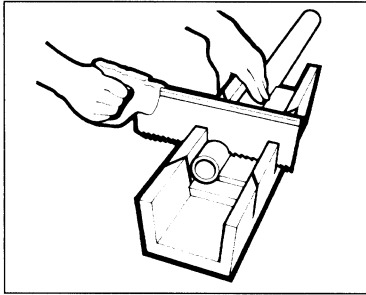
Cutting and Gluing Tubes & Fittings

MEASURING

When sizing tubing, measurements should be taken from the base of the pipe stop located on the inside of the fitting hub. As each section of tubing is cut, it should be dry fitted before the next measurement is taken.

CUTTING THE TUBING

The tubing should be cut as straight and square as possible (a miter box should be used) Rough edges must be removed with a utility knife or sand paper.



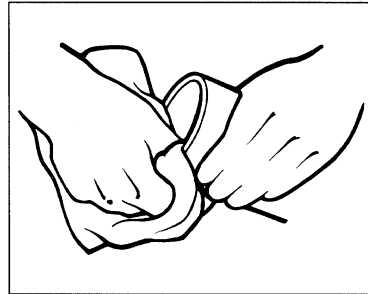
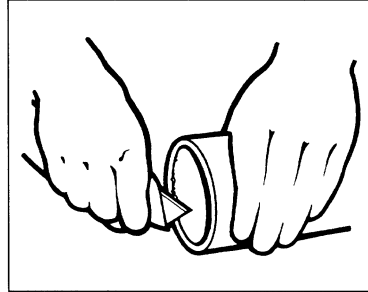
DRY FITTING

Once all the pieces have been cut they should be dry fitted to check for correct fit and measure. the markings on each fitting can be used for alignment.

GLUING

PVC solvent cement actually welds the fittings to the tubing. A chemical reaction permanently joins the molecules from each surface to produce an airtight seal.

Before cementing, both tubing and fitting must be absolutely free of PVC burrs, dirt and grime. Components should be wiped with a clean cloth when necessary. Cement should be applied liberally, but to the TUBING ONLY. Cement applied to the fitting will be pushed ahead and create a rough bead on the inside of the fitting. Beads reduce air flow and could cause clogs.



The tubing should be inserted ALL THE WAY into the fitting and twisted a quarter of a turn to distribute glue evenly. Excess cement should be wiped away with a rag. Glue should be allowed several hours to set before the vacuum system is used for the first time.

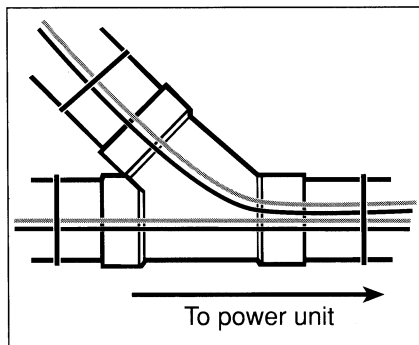
IF YOU HAVE ANY PROBLEMS, CALL YOUR DEALER IMMEDIATELY.

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Low Voltage Wire

One of the greatest benefits of a central vacuum system is that the power is turned on and off automatically. Every power unit has an on/off switch that is activated by completing a circuit at the inlet valves. The unit is turned on when the hose is inserted into the valves.

To facilitate this, low voltage wire must follow the main line. The wires must be joined together at **each inlet** to avoid splicing. They then flow back down the branch lines to the main line and to the system unit.



Each inlet valve must be able to operate the machine independently of the other valves, so there must be an uninterrupted route from each inlet to the power unit. Wire should be attached to tubing using the wire ties or electrician's tape. □

Always check for electrical wires and avoid splicing whenever possible!

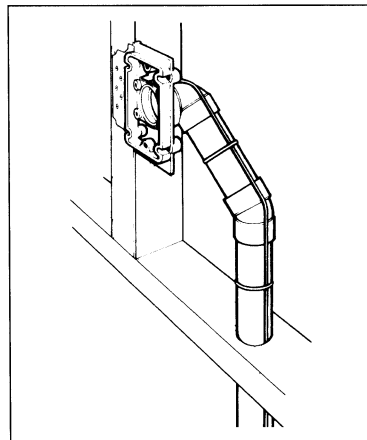
Installation

NEW CONSTRUCTION

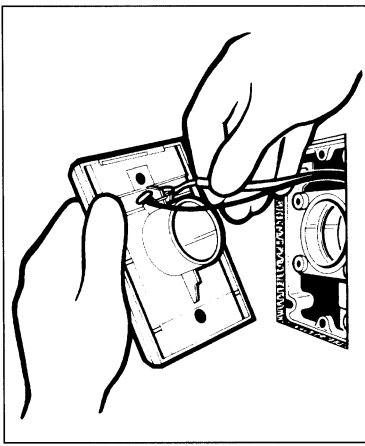
The best time to rough-in central vacuum tubing is after the house has been wired and plumbed, but before the dry wall is installed. Locate the inlet valve locations and nail the mounting plate to the nearest stud. Make sure the middle of the mounting plate is at the same height as the middle of adjacent electrical outlets which must be close by. Make sure inlet and electrical outlets are accessible, (not behind chairs, cabinets, etcetera).

Depending on the location of the main line, drill a 2 1/2" hole in the centre of the top or sole plate. All the piping needs to be completed first, then run the low voltage wire from inlet to inlet to vacuum location.

Once the house is completed, the inlet valves must be installed. Bare a half inch of the low voltage wire leads and wrap them in a clockwise direction around the lugs on the back of the valve. Tighten the lugs with a screw driver. Using a twisting motion, insert the valve into the hole with the hinge

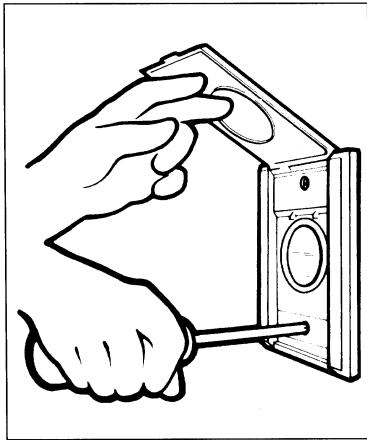


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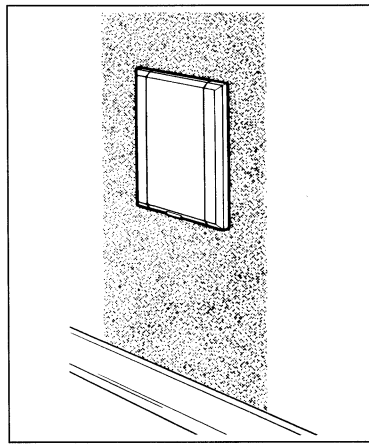


at the top of the valve. Do not apply glue; the gasket in the mounting plate will provide a positive seal. If the valve will not reach the mounting plate, ask your dealer for an inlet valve extension. Using the screws supplied, attach the inlet valve to the mounting plate. Use the extra short screw if the longer version is going to penetrate the tubing behind. □

NOTE: Do Not Over-tighten. Should a whistling noise develop during operation, slightly loosen the screws.

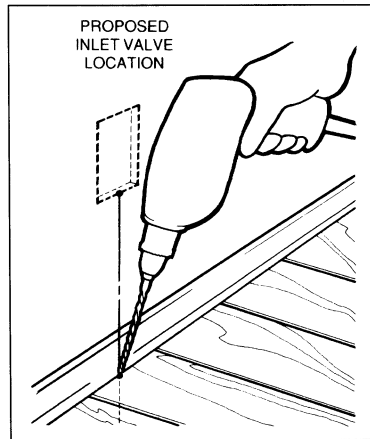


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INSTALLATION FOR EXISTING HOMES IN A PARTITION WALL

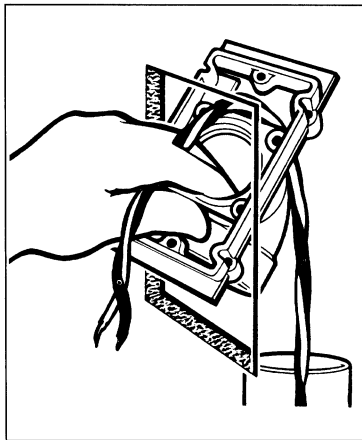
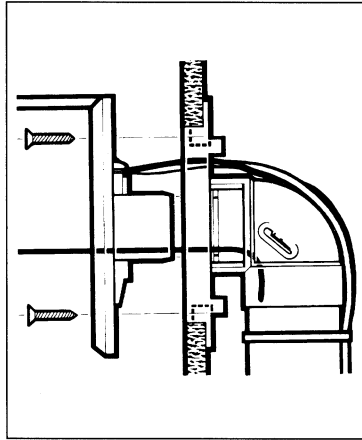
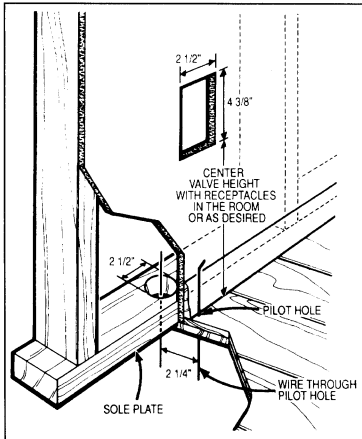
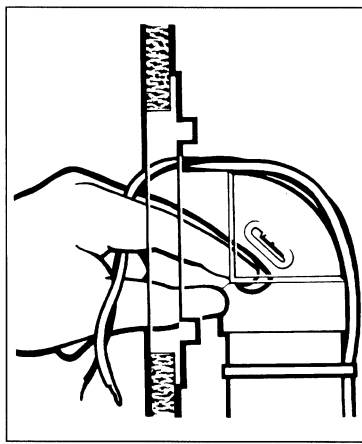
Determine the desired location of the inlet valve and locate a point directly below the centre of the proposed location. Hold the drill vertical and as close to the wall as possible. Next, drill a small pilot hole through the floor and sub-floor, preferably behind a molding which can be removed and replaced later. A length of the bottom section of a heavy wire coat hanger (cut at an angle) makes a good pilot hole drill bit.



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(Be careful not to snag carpeting.) Undo chuck and leave coat hanger bit in place so it will be easier to find from below. Locate this pilot hole from beneath and measure over approximately 2 1/4" (1/2" for drywall plus 1 3/4" to centre of the sole plate) adding extra for the thickness of any base boards. Using a 2 1/2" hole cutter, drill upwards through the flooring and the sole plate. Using a flashlight inspect the interior of the wall to make sure there are no obstructions or electrical wires. A piece of tubing can also be used to probe for obstructions.

Having determined that the location is suitable, cut a 2 1/2" x 4 3/8" vertical



hole in the wall at the desired inlet valve location. Remove the metal portion of the mounting plate by cutting off the plastic rivets with side cutters. Tape low voltage wire to the end of a sufficiently long piece of tubing and pass it up from beneath. If the main line is in the attic, tie a weight to the end of the low voltage wire and lower it through the opening. Remove the wire and pass it through the upper hole in the trimmed mounting plate. Bare an inch of both wire leads and wrap them around the lugs on the back of the valve in a clockwise direction. Tighten the lugs with a Phillips screw driver.

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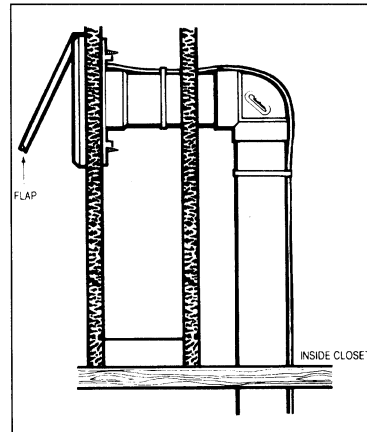
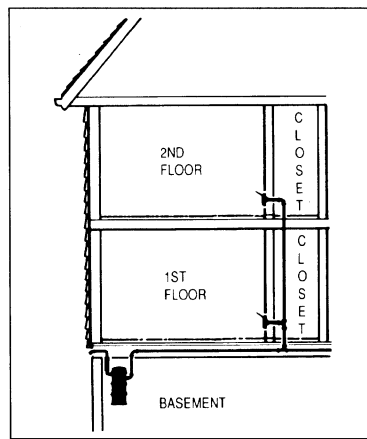
Apply cement to the spigot on the back of the mounting plate and attach a short 90° fitting oriented in the appropriate direction. Tilt the mounting plate forward and angle it into the hole in the wall. Centre the mounting plate in the hole and pull outward.

Hold the mounting plate in place with a bent coat hanger. Open the valve lid and slide the valve spigot over the end of the coat hanger first. Keep tension on the coat hanger while inserting the valve into the mounting plate. Use a twisting motion. Do not glue; the built-in mounting plate gasket will provide a positive seal. Align the screw holes in the valve with those in the mounting plate. Using the screws provided, secure the valve in place. Use the extra short screw if the longer screw is going to interfere with the tubing behind. Do not over tighten. On the floor below, apply glue liberally to an adequate length of tubing and aim it upwards through the hole and into the short 90° fitting on the back of the mounting plate. Join this branch line to the main line using a sweep-tee fitting.

If the inlet valve is to be serviced from the attic, shorter pieces of tubing joined by coupling may be required due to overhead space restrictions. Pre-cut these pieces and work quickly to prevent the cement on the end of the tubing from drying before it reaches the fitting at the valve below.

THROUGH A CLOSET

If obstructions make it impossible to run vertical tube lines through partition walls, the best and easiest alternative is to go through the insides of closets, particularly where a closet on the upper floor is directly above the closet on the lower floor.

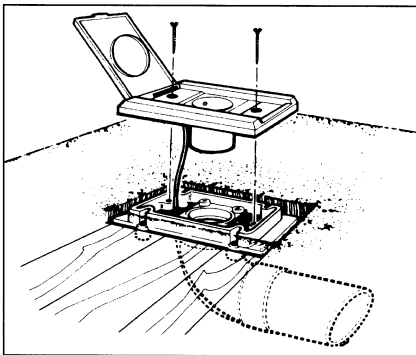
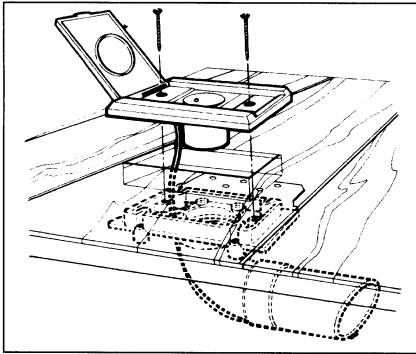


Drill a horizontal pilot hole through the centre of a suitable inlet valve location. Probe for hidden obstructions with a bent piece of coat hanger. With the pilot hole as a centre, drill a 2 1/2" hole through both sides of the wall. Using a keyhole saw cut a 2 1/2" x 4 3/8" hole in the outside wall. Look out for wires!

Feed the low voltage wire through from the inside, thread it through the top hole of a trimmed mounting plate and attach it to the lugs on the back of the valve. Instead of a 90° fitting, glue a coupling on the spigot of the mounting plate. Attach this assembly to the wall as described above.

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From inside the closet insert a short piece of tubing into the coupling. Dry fit a tight 90° fitting pointed in the direction of the trunk line. Cut a 2 1/2" hole directly below the fitting and feed a length of tubing through to the floor below. When you are satisfied with the fit, permanently glue the fittings in place.



drill to make sure the location is clear of obstructions below. Cut a hole that is 2 1/2" x 4 3/8" in the floor. In the case of linoleum or uncovered floors, the mounting plate will be installed from below. If the floor is carpeted cut a hole in the carpet with a utility knife and slip the un-trimmed mounting plate under the carpet. Fasten the mounting plate to the floor with screws. A coupling and a short piece of tubing may be required as a spacer between the mounting plate and the 90° fitting below. □

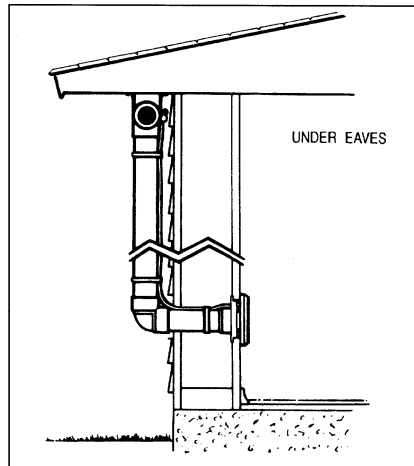
SPECIAL APPLICATIONS

HOUSES WITH SLAB FLOORS AND FLAT ROOFS

Houses with flat roofs and slab floors require all inlet valves to be installed in exterior walls, and branch lines to be run outside of the house. The tubing system can be run underground or under the eaves of the house. If the power unit is to be mounted outside it must be housed in a weather-proof cabinet that has adequate air vents.

FLOOR MOUNTED INLET VALVES

While the normal installation of inlet valves is in partition walls, occasionally one must be installed in the floor. In this case the location for the inlet valve should be about two inches from the wall and not in a high traffic area. As with wall installations, use a pilot hole

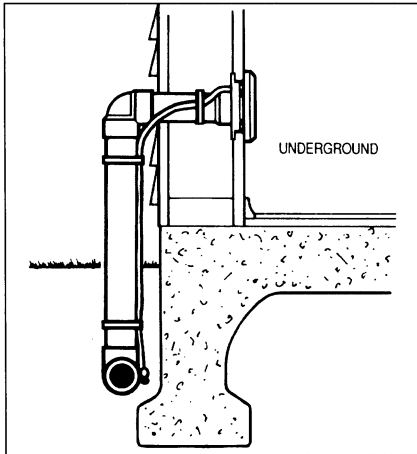


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Locate and install the inlet valves in much the same way as for closet installations. Use a tight 90° fitting to keep the tubing close to the exterior wall. Seal the edges of the hole in the exterior wall with caulking.

If the tubing system is to run under the eaves, the tubing must be supported by pipe straps at least every 6 feet. On vertical sections, carefully snap-tie the low voltage wire behind the tubing.

If the tubing is to be buried underground, dig a trench 12 to 18 inches deep along the side of the house. Fully assemble and test the tubing and low voltage wire before filling in the trench. It is recommended that the low voltage wire installed outside be encased in conduit which is available at most hardware stores. □



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









**Thank
you for
installing
your
central
vacuum
system
the
Easy•Flo
way.**



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INSTALLATION KIT CONTENTS

PART NO.	DESCRIPTION	PRODUCT	QUANTITY PER KIT			
			IK-1	IK-2	IK-3	IK-4
#5510	90° SWEEP ELBOW		3	6	9	12
#5506	90° SHORT ELBOW		1	2	3	4
#5501	90° SWEEP TEE		1	1	2	3
#5517	45° ELBOW		2	4	6	8
#5529	COUPLER		2	4	6	8
#2013	END CAPS		1	1	1	1
#5545	PIPE STRAP		2	4	6	8
#5566	MOUNTING PLATE		1	2	3	4
#3550	LOW VOLTAGE WIRE		25'	50'	75'	100'
#3560	CABLE TIES		5	10	15	20
#3500	P.V.C. CEMENT		60 ml.	60 ml.	125 ml.	125 ml.
P.V.C. PIPE LENGTHS			20'	40'	60'	80'
INLET VALVES (See dealer for selection)			1	2	3	4

Please quote part number and description when ordering extra fittings.

~ INSTALLATION TIPS ~

1. Always use a sharp drill bit.
2. Where will kitchen cabinets, laundry fixtures, or bathroom vanity be located? What about pocket doors?
3. Are there skylights in the ceiling and/or is there an attic opening?
4. Also, think about what the hose must pass around: tables and chairs, beds, cabinets and counters (ie: islands), or an open door.
5. Distance from the inlet to the farthest reach of the hose, should not be more than 27.5 feet for a standard 30' hose. Exceptions to the rule: a) Sometimes a longer (35') hose is necessary — which is okay in an house with lots of open space; b) Some people may prefer a shorter (25') hose.
6. Heating systems, (especially forced air) require extra consideration. Check where ducts and wires run.
7. Never install an inlet in the middle of a wall, with the exception of hallways, and never in a corner. These areas are often used for placement of furniture (sofa, chair, hutch, etc.). This is important because inlets need to be easily accessible.
8. Always remember that a stereo or wall unit may be placed against a wall.
9. Electrical outlets need to be near to, and at the same height as vacuum inlets. Some electricians like to hide outlets behind furniture, etc., but electric power-heads require power within five feet of each inlet.
10. Low voltage 18/2 wire always runs from inlet to inlet to power unit... NEVER SPLICE.
11. Never install 3-way or 90°-Tee's downward.
12. When installing inlet valves, make sure inlets and backing plates are straight.
13. Always keep pipes at least 6" away from hot water tanks and furnace heat exhausts, and NEVER locate pipes against hot water lines and hot air ducts.
14. Use only 'sharp' drill bits, and never drill through beams or trusses.
15. Drilling floor joists: a) Silent floor joists; drill between notches only. Please check specifications. b) Regular floor joists; only drill in the middle. Ask a building inspector.
16. Place one inlet so it will reach most high traffic areas, such as: dining room, kitchen, hallway, stairs, entrances, etc.
17. Even if inlets are close together, or if one inlet does only one room, make sure that the hose will not be s-t-r-e-t-c-h-e-d.
18. It is acceptable to pass through cold air ducts to properly position an inlet.
19. To insure proper fit: a) de-burr pipe cuts. b) glue pipe liberally, and twist (1/4 turn) while pushing all the way into the fitting.
20. Use 90°-short fittings behind backing plates and nowhere else. This helps eliminate chance of small items plugging the line.
21. Before drilling, check for unseen obstacles (ie: studs, floor joists, electric wires, etc.)
22. To reduce noise, mount power unit on a cement wall or a very solid (2"x6") outside wall. The best location for the power unit is the garage. Some systems have a utility valve on the power unit... handy for cleaning the garage, vehicle, workshop, etc.
23. If you exhaust to the outdoors, the pipe running from the power unit to the vent should be as straight as possible, and never more than 8 feet in total length.
24. DIFFICULTIES YOU MAY RUN INTO:
 - a) 2"x3" Walls: Smaller 90°-Short fittings and Tee's are available.
 - b) Thick walls or floors: use valve extension.
 - c) Extending a line later: An 'end cap' is supplied to close off a line.
 - d) Where two lines meet: 3-way Tee's may be used, but in most cases, regular 90°-Tee's are utilized.