



**Do-It-Yourself
Planning and Installation Manual
for your new
BEAM Central Cleaning System**



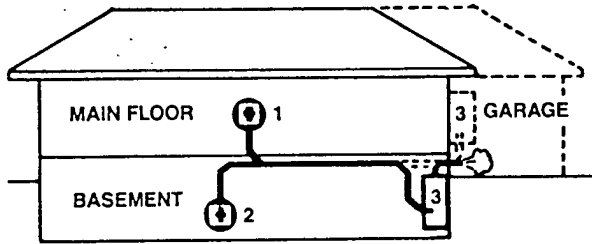
BEAM INDUSTRIES

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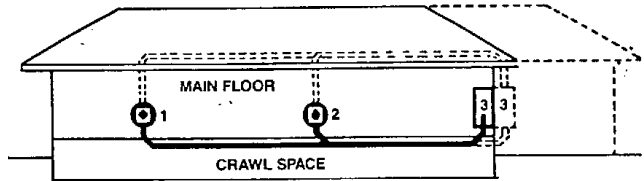
TELEPHONE (515) 832-6659

Typical BEAM Central Cleaning System Installations

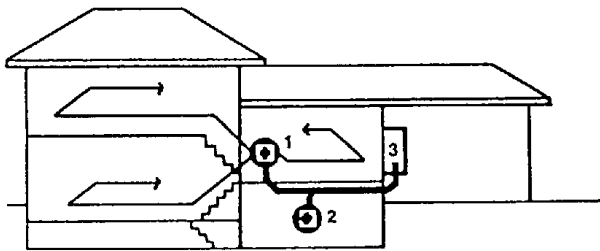
"RANCH" STYLE BUNGALOW



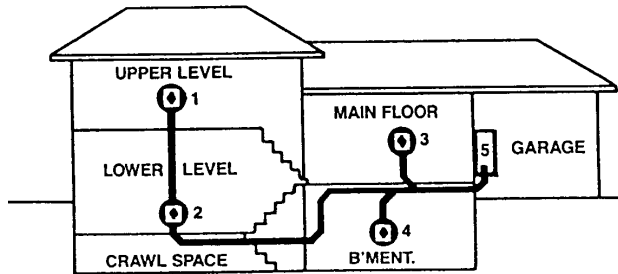
SINGLE STORY ON SLAB / CRAWL SPACE



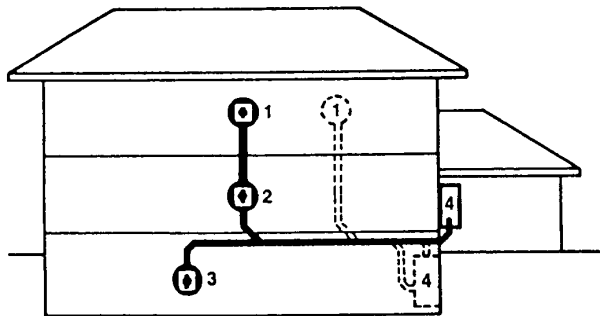
4 - LEVEL SPLIT



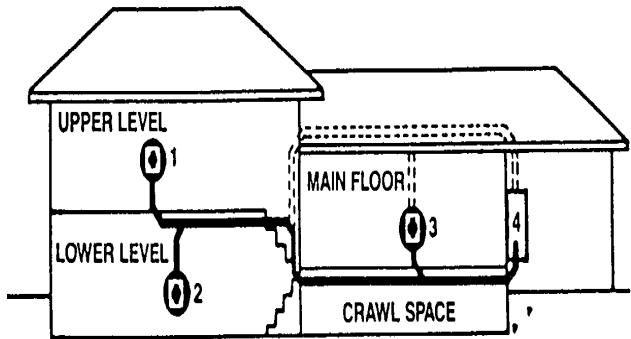
LARGE 4 - LEVEL SPLIT



TWO STORY HOME



LARGE 3 - LEVEL SPLIT



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A. How to Plan Your New Central Cleaning System

Before you start, read these instructions thoroughly. You will be pleased to learn that a central cleaning system is surprisingly easy to install, and will provide you with years of trouble-free enjoyment. All central cleaning systems may be installed in either existing or new construction. In either case, the number of inlets required and their locations must be determined before starting the installation.

STEP 1: Choose the Valve Locations

Choose central locations for inlet valves in order to cover the maximum area with the deluxe 30 foot (9m) length hose. Usually several rooms (or **The Entire Main Floor**) can be serviced from a single inlet valve (Fig. 1).

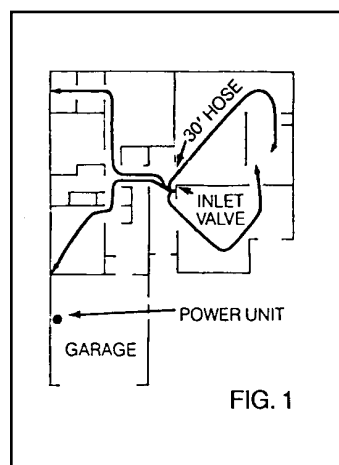


FIG. 1

There is an inlet valve on the power unit itself, and this feature often reduces, by one, the number of inlets required. Since floor plans are normally drawn to 1/4" scale (1 to 50cm), a 7-inch (18cm) piece of string or beaded chain will help to determine inlet valve locations and hose coverage using the floor plans of the construction. If the building is existing or under construction, use a 30 foot (9m) tape or rope. Be sure every inch of floor, wall, closet, and ceiling can be reached, bearing in mind the hose may have to reach around large pieces of furniture. Good locations are centrally located in hallways or closet walls near doorways. Inlets should be installed near an electrical outlet (no more than 6 ft. (1.82m) away). This would allow the use of an electric hose without using a drop cord. **Caution**—Do not place inlet valves where a door slides in the wall, behind possible furniture, or behind open doors. In existing homes, consider whether you will want floor inlets or wall inlets. Floor valves are more easily installed than wall valves and sometimes are the only practical installation. They have some disadvantages as the hose must be inserted at the floor level rather than at a more convenient wall height. Wall height is a matter of individual preference. Some homeowners prefer the inlet at a convenient fingertip height (about 30 inches

(76cm)), while others want it to match the electric outlet height.

STEP 2: Choose Power Unit Location

The power unit can be mounted on almost any wall. It should be out of the way, yet accessible, so the dirt receptacle may be emptied. If you plan to exhaust the power unit, locate it so piping can be run outside conveniently. Venting over 10 ft. (3m) is not recommended. You will need to plug your power unit into an electric outlet with no other loads on the circuit or you may want to run a separate 15 amp. circuit.

STEP 3: Plan the Tube System

Plan the entire tubing installation from the power unit to the desired location of the valve(s) (Fig. 2). It is

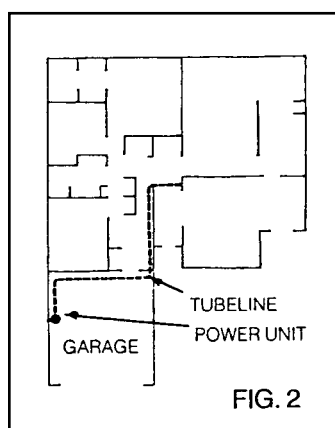


FIG. 2

best to run tubing under the floor in structures with basements or adequate crawl space. In locations with no under-floor access, tubing may be run "up" to the attic and over to the power unit using the same precautions and basic procedures as with a "down" system.

In 2- or 3-story existing structures, tubing can be run to upper levels, through clothes chutes, back corners of closets, under stairways, beside soil pipes, beside chimneys, or in partition walls before the drywall goes on. The system that uses the least amount of bends and tubing should be used.

STEP 4: Tools Required

- 1/2" (1.3cm) Electric Drill
- 2-1/4" (5.7cm) Hole Saw or Cutter
- Steel Tape Measure
- Screwdriver (Phillips)
- Screwdriver (Common Blade)
- Wire Cutters
- Common Hacksaw or Small Handsaw
- Hammer
- Masonry Drill Bit
- Chisel
- Pocket Knife
- Metal Coat Hanger
- Electrical Tape
- Razor Knife

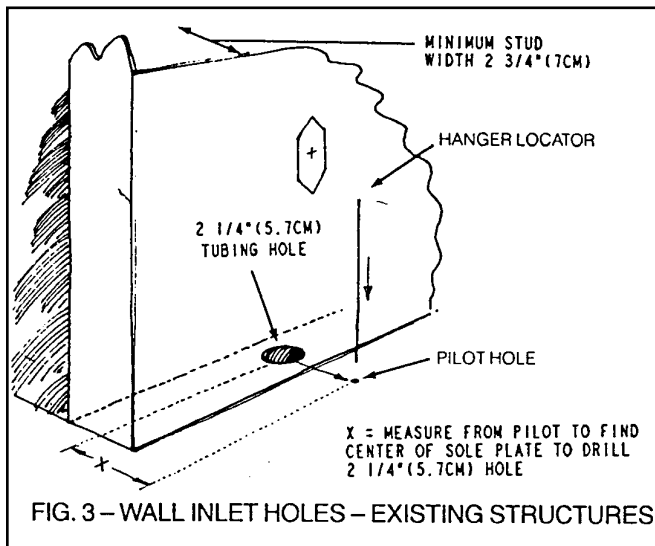
B. How to Install Your New Central Vacuum System

STEP 1: Installing Inlet Valves

a) Wall Valves in Existing Structure

Determine as closely as possible desired location of inlet valve. Drill a small pilot hole in the floor directly below the proposed valve location. A straight length of coat hanger wire, cut at an angle, makes a good pilot hole drill bit, but, be careful not to snag carpeting. Leave straightened length of coat hanger wire through this pilot hole to serve as locator and guide point (Fig. 3).

From beneath floor, measure over from pilot hole to locate the center of the sole plate.



NOTE: You may want to drill a 3/4" (1.9cm) inspection hole to avoid drilling into the bottom of a stud or other "inner-wall" obstruction. Drill a 2-1/4" (5.7cm) diameter hole through the center of the sole plate. Using a flashlight or probe, inspect the interior of the wall to be sure there are no obstructions.

NOTE: The opening you are going to cut in the wall for the inlet valve should be located between studs, clear of obstructions such as plumbing, wiring, heat ducts, etc. Minimum stud width for sufficient clearance for inner-wall mounting- bracket assembly is 2-3/4" (7cm). (See Fig. 3 above.)

b) Using METAL Stud-Mounting Bracket

Centered at the desired height above floor level, cut an almost square opening 2-3/4" (7cm) wide by 2-1/2" (6.35cm) high in the wall

directly above the 2-1/4" (5.7cm) sole plate hole. Cut or file two 3/4" (1.9cm) high triangular pieces above and below the almost square opening so that your wall opening exactly resembles (Fig. 4).

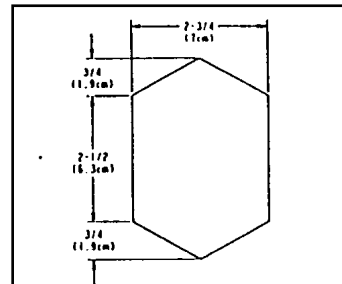
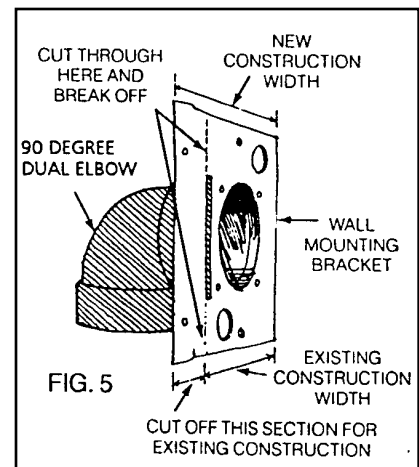


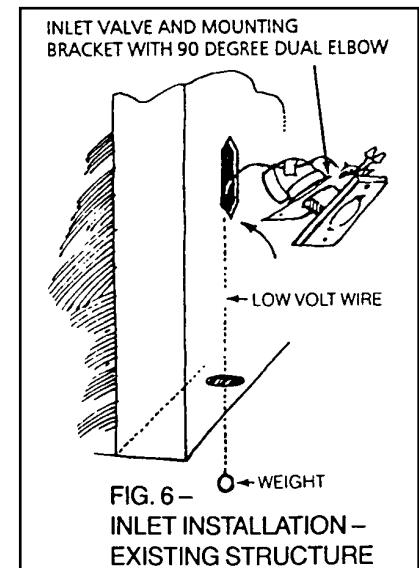
FIG. 4 - WALL

Now cut or break off "New Construction" section from metal wall mounting bracket and glue a 90 degree dual elbow to the pre-rieveted adaptor ring (Fig. 5).

Insert top screw only through inlet valve and gently squeeze inlet valve stem into bracket assembly until you are able to just start top screw threads in bracket assembly hole.

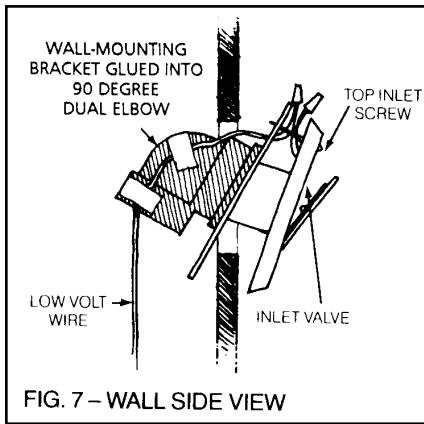


Strip the low-volt wire and tape it to the 90 degree dual elbow with approximately 6 inches (15.3cm) sticking through wire guide hole. Join two inlet valve wires with wire connectors supplied. Attach a small weight to the other end of the low-volt wire and drop the weighted wire through the opening in wall.



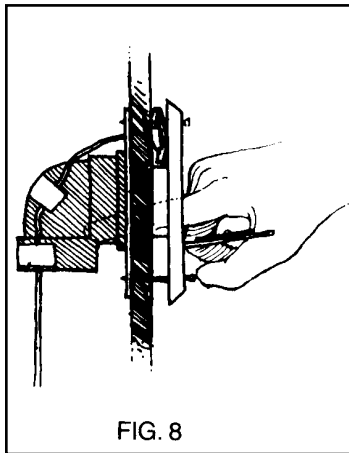
Allow wire and weight to hang through sole plate (Fig. 6).

Insert assembled 90 degree dual elbow and wall-bracket assembly through wall cutout hole as illustrated (Fig. 7).



Once metal mounting bracket is completely inside wall cavity, slide the entire assembly upwards so metal plate is flush with inner wall surface and inlet valve is flush with

outer wall surface. You can insert index finger through inlet valve opening and gently squeeze inlet valve stem further into inner wall assembly (Fig. 8).



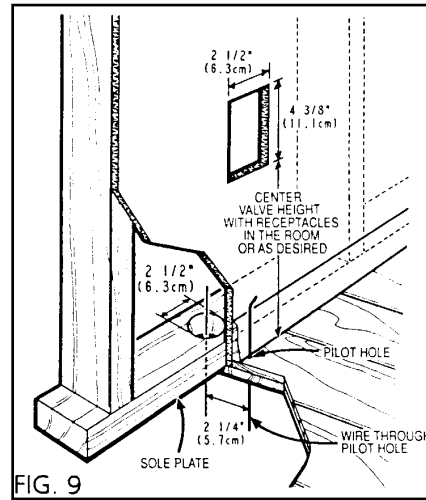
NOTE: Mount inlet valve so lid pulls down to open.

Now, insert and partially tighten bottom inlet valve screw. Tuck low-voltage wires and connectors under sides of wall inlet valve. Adjust inlet valve for perfect vertical alignment and tighten both inlet valve mounting

screws. Be sure the inlet valve lid operates freely. Apply glue to an adequate length of tubing and aim it upwards through the hole and into the 90 degree dual elbow fitting on the back of the mounting plate. Join this branch line to the trunk line using a 90 degree sweep tee.

If the inlet valve is to be serviced from the attic, shorter pieces of tubing joined by couplings may be required due to overhead space restrictions. Precut 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.

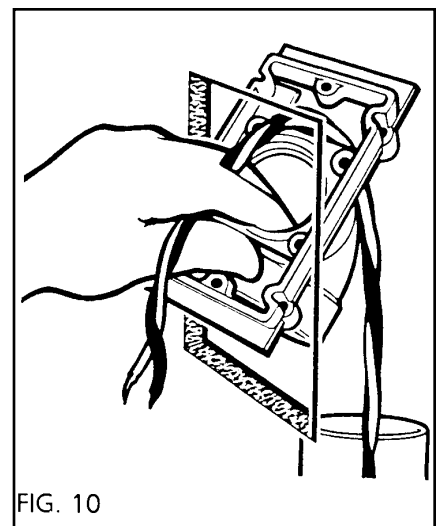
c) Using PLASTIC Stud-Mounting Bracket
Having determined the location is suitable, cut a 2-1/2" (6.35cm) x 4-3/8" (11cm) hole in the wall at the desired inlet valve location (See Fig. 9).



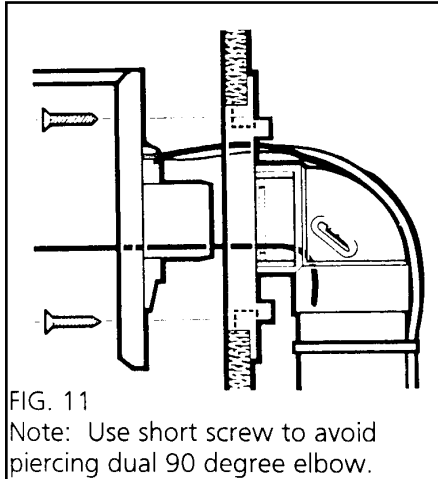
Now cut or break off "new construction" section from plastic wall mounting bracket. Tape low-voltage wire to the end of a sufficiently long piece of tubing and pass it up from beneath. If the trunk line is in the attic,

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.

Apply cement to the flange on the back of the mounting plate and attach a 90 degree dual elbow fitting oriented in the appropriate direction. Tilt the mounting plate forward and angle it into the hole in the wall. Center the mounting plate in the hole and pull outward (See Fig. 10).



Hold the mounting plate in place with a bent coat hanger. Open the valve lid and slide the valve flange first over the end of the coat hanger. Keep tension on the coat hanger while inserting the valve into the mounting plate with a twisting motion (See Fig. 11).



Do not use glue; the built-in mounting plate gas-ket 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

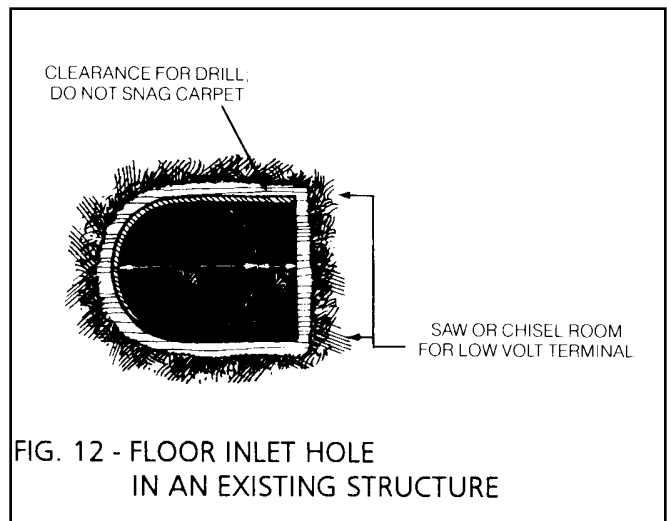
place. Use the extra short screw if the longer screw is going to interfere with the tubing behind. Do not over tighten.

Apply glue to an adequate length of tubing and aim it upwards through the hole and into the 90 degree dual elbow fitting on the back of the mounting plate. Join this branch line to the trunk line using a 90 degree sweep tee.

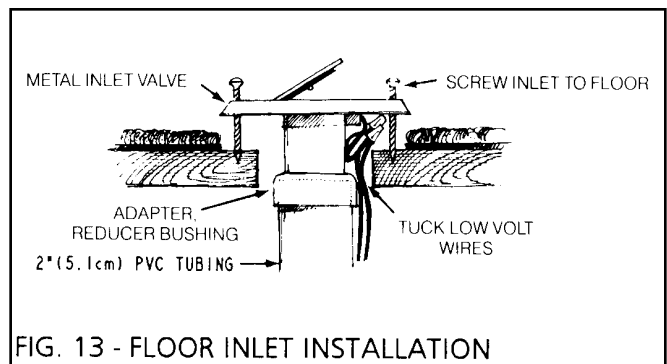
If the inlet valve is to be serviced from the attic, shorter pieces of tubing joined by couplings may be required due to overhead space restrictions. Precut these pieces and work quickly to prevent the cement on the end of the tubing from drying before it reaches the fitting at the valve below.

d) Floor Valves

To install a floor inlet, drill a pilot hole with a coat hanger and check the location as previously described. When you are sure that the proposed location will not be blocked by a joist or other obstruction, cut a hole in the carpet slightly larger than your 2-1/4" (5.7cm) drill bit. Drill a 2-1/4" (5.7cm) hole in the floor. Chisel or saw this hole larger to accommodate the inlet valve low-volt connections (Fig. 12).

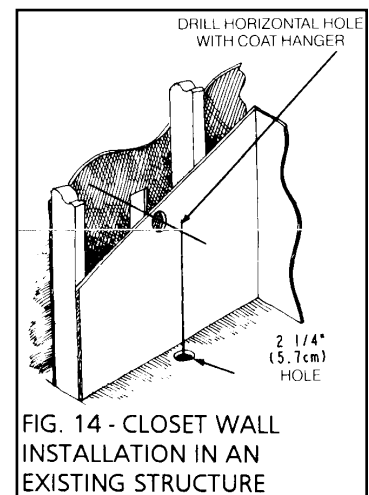


Assemble an adapter reducer bushing and some low-volt wire to an inlet valve. Screw the valve to the floor. Repeat until all inlets are installed (Fig. 13).



e) Closet Wall Installation—Existing Structure

Often it is only practical to install your system with the line coming up through the floor inside a closet and then through both sides of the wall. To use this method, select suitable inlet valve location, exercising same precautions as for normal wall installation. Using a length of coat hanger, pierce a hole through both walls (Fig. 14).



Be sure to hold wire perfectly horizontal so that both interior and exterior holes line up with one another. Check for inner wall obstructions by bending short length of coat hanger wire at a right angle and twirling this right angle piece inside the wall.

Drill a 2-1/4" (5.7cm) hole horizontally through both sides of wall.

Make the hole in the exterior wall surface into the same shape opening as described previously in **STEP 1 - (Installing Inlet Valves) (Fig. 4)**.

From inside closet, cut 2-1/4" (5.7cm) hole through floor, either directly below opening in wall or at convenient spot. (**Caution:** - Make pilot hole as in STEP 1 previously.) Run low-voltage wire through 2-1/4" (5.7cm) hole in floor, and through wall to exterior of closet.

Pass low-voltage wire through the wire guide hole of the **inner wall closet assembly** (Fig. 15) and tape low-voltage wire to this assembly immediately behind the metal bracket.

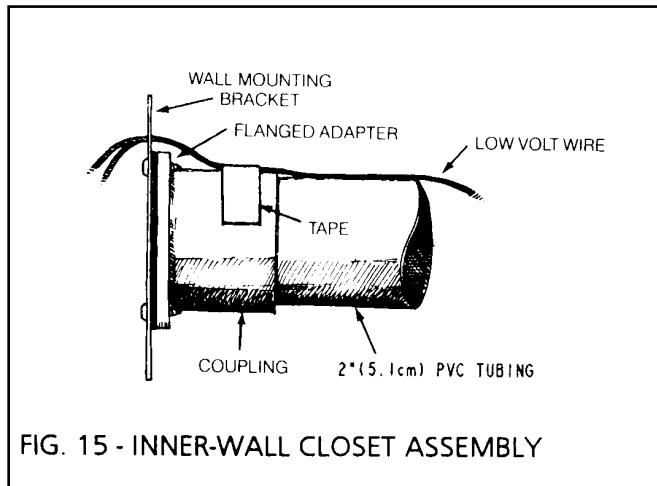


FIG. 15 - INNER-WALL CLOSET ASSEMBLY

Attach wires to low-voltage terminals at rear of inlet valve.

Place **inner wall assembly** lengthwise through wall opening and arrange assembly so that metal bracket is flush with inside surface of wall. Screw inlet to wall as described previously in STEP 1, then complete as per (Fig. 16).

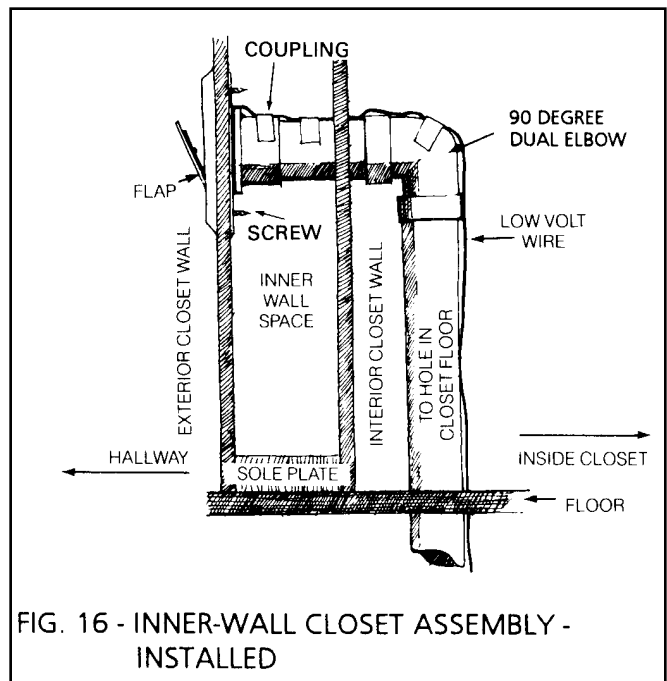


FIG. 16 - INNER-WALL CLOSET ASSEMBLY - INSTALLED

f) Wall Valve Installation—New Construction

Select a probable location for inlet valve and drill a pilot hole in the floor. Go below to check that tubing path is clear of present, **or future**, obstructions such as floor joists, heating ducts, plumbing, wires, etc.

At intended inlet valve location, drill a 2-1/4" (5.7cm) diameter hole through sole plate. To pinpoint center of hole, measure over 2" (5.1cm) from side of stud and 2" (5.1cm) from front of sole plate (Fig. 17).

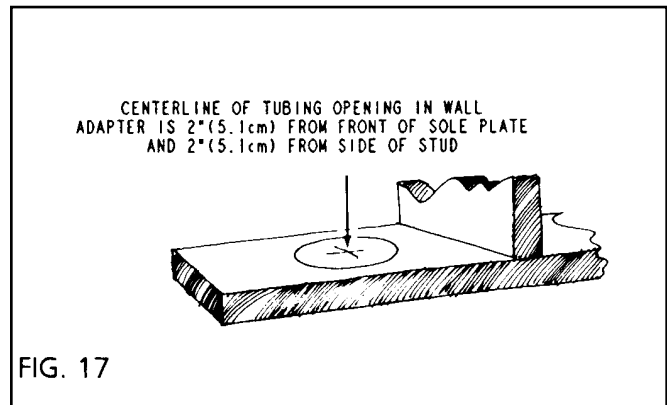


FIG. 17

Glue a length of tubing into a **stud-mounting bracket assembly**. Cut a length of low-voltage wiring, bring approximately 6" (15.24cm) through top wire guide hole in stud bracket assembly and double it back into elbow hole. Tape wire to tubing at assembly elbow and again close to end, and tuck remaining wire into bottom of tubing.

Screw plaster guard onto face of assembly (See Fig. 18).

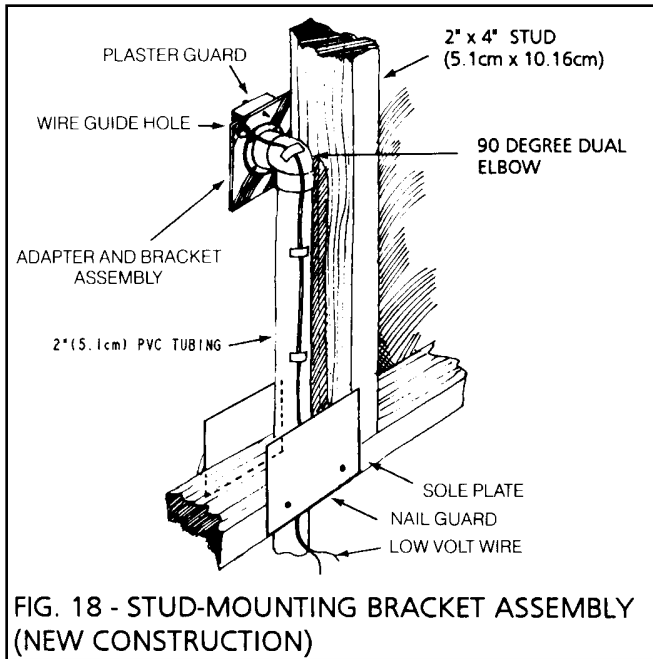


FIG. 18 - STUD-MOUNTING BRACKET ASSEMBLY (NEW CONSTRUCTION)

Drop bottom of tubing through 2-1/4" (5.7cm) hole and nail **stud mounting bracket assembly** to stud. Make sure center of inlet hole is at the correct height above floor level and tubing extends below subflooring.

Be sure to install a nail guard when holes are drilled through the sole or top plates. This is to prevent a nail or screw from penetrating the vacuum tubing. Go to STEP 2 "Installation of Tube System" and complete tubing system as much as possible

After the walls are finished and painted, the plaster guards will be removed and inlet valves installed. The tubing system may be completed at that time and the power unit installed.

STEP 2: Installation of Tube System (New or Existing Structure)

Starting at the inlet furthest from the power unit, temporarily fasten the main line in position. (Good idea: - From a nail or overhead pipe, etc., make two loops of string or low-voltage wire to pass PVC tubing through, to hold it in position while you work.)

Push a length of PVC tubing up into bottom of inlet valve assembly. Bear in mind, tube enters all fittings approximately 3/4" (1.9cm). Measure, cut, and slip-fit this vertical line to main horizontal line with a 90 degree sweep elbow.

To avoid potential clogging problems when installing tubing and fittings, here are some recommendations:

- Always make straight cuts on tubing.
- Always remove burrs from end of tubing.
- Be sure tubing fits against shoulder of fitting with no gaps.
- Glue tubing side only before assembly into fittings.

Connect additional inlet valves to main trunk line with the 90 degree sweep tee (Fig. 19).

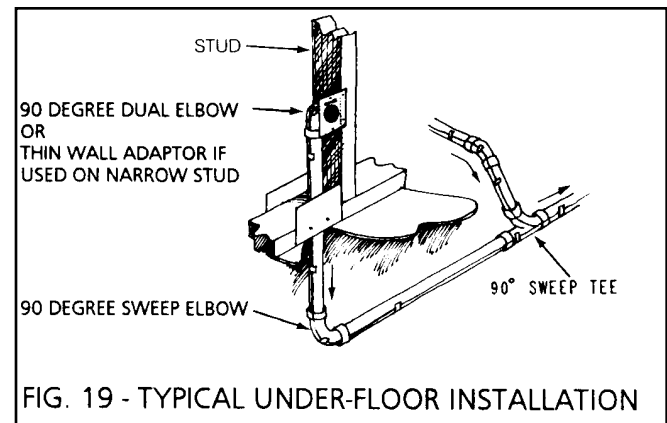


FIG. 19 - TYPICAL UNDER-FLOOR INSTALLATION

Be sure to install sweep tee fittings so sweep is towards power unit (Fig. 20).

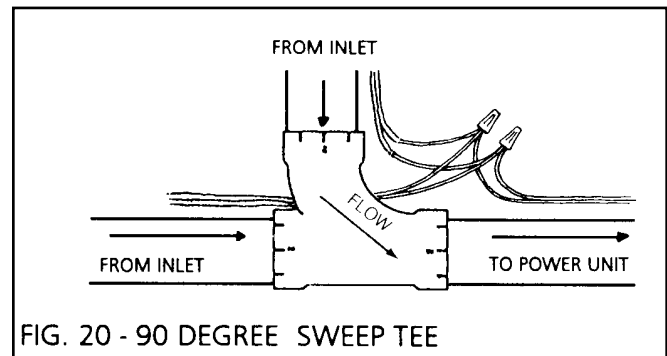
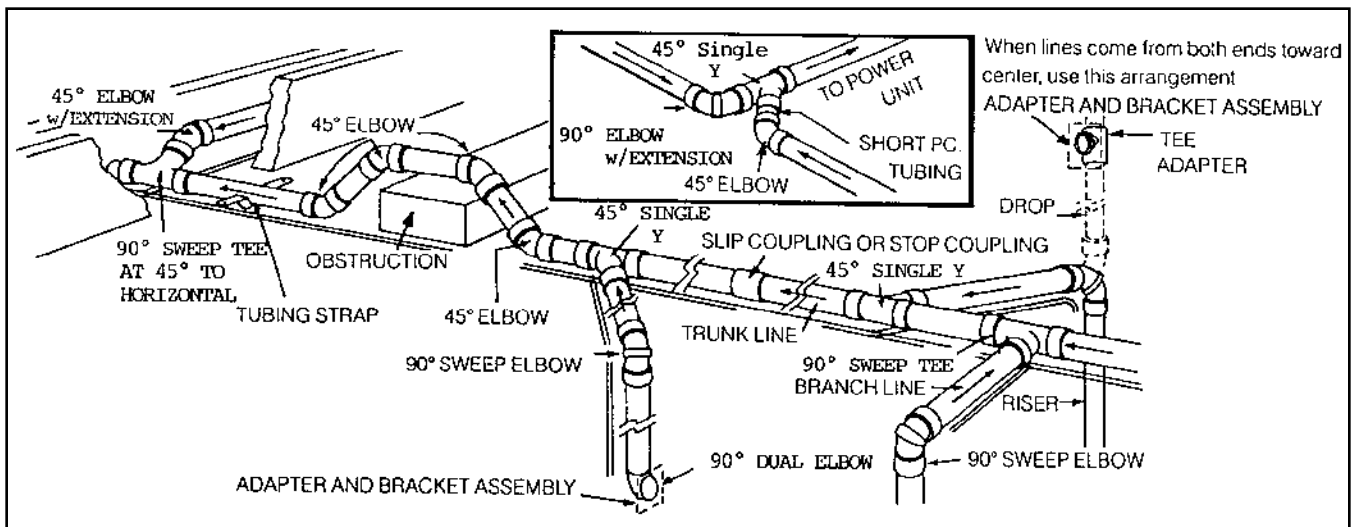


FIG. 20 - 90 DEGREE SWEEP TEE

Always run branch lines, from sides or top of main trunk line, never out of the bottom, as this will create a trap for dirt to fall into.

Bring low-voltage wire along as you assemble tubing. Join or splice wire with wire connectors at each branch or junction in the tubing. Neatly tape wire to tube. Proceed until the tubing system is complete.



STEP 3: Installation of Power Unit

The power unit is screwed to the wall with the bottom screws of the mounting bracket located 48" (1.2m) up from the floor to allow convenient removal of the dirt canister. For proper motor cooling, there must be at least 12" (30.5cm) between the unit and the ceiling.

If mounting on plaster or panel walls, be sure mounting bolts enter studs.

If mounting on concrete wall, drill the wall with a masonry bit and insert plastic or lead anchors. As an alternate mounting on concrete walls, 2" x 4" (5.1 x 10.16cm) studs or plywood may be suspended from overhead.

With the power unit mounted, strip the low-voltage wire and crimp into the two "slip-on" terminals provided. Connect main tube line to left side of power unit, with connector and clamp provided. Do not cement this connection to the power unit in case you wish to remove at some future date. Do not install power unit where the ambient temperature exceeds 120 degrees Fahrenheit (48.9 degrees C).

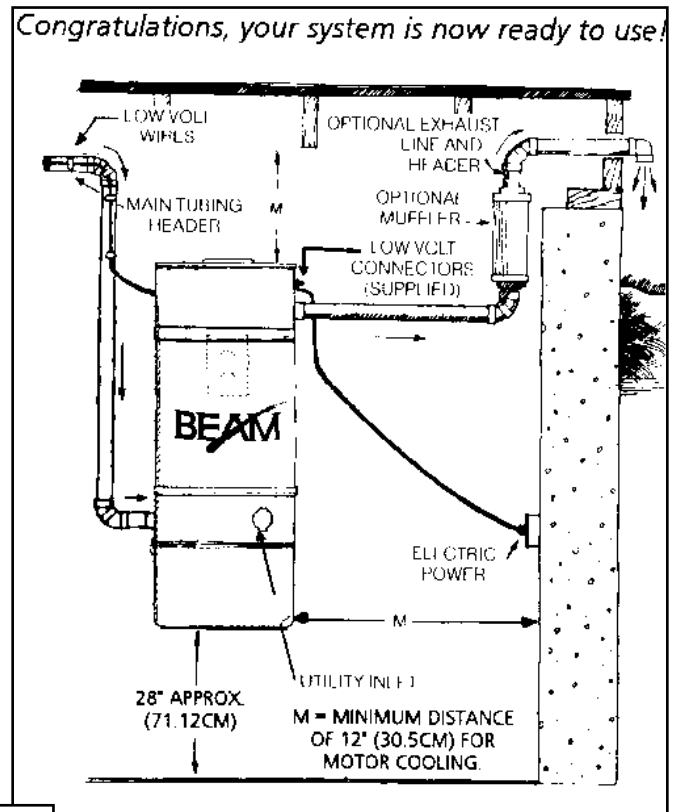
NOTE: For top-loading units, follow directions provided with unit.

This unit may be exhausted to exterior to expel fumes, germs, and some noise. Use the same tubing and fittings as before. If vented, the exhaust air should not be vented into a wall, ceiling, or concealed space of a building. Venting over 10 ft. (3m) is not recommended.

NOTE: On/Off switch on power unit is for the inlet on power unit only. All other inlets operate automatically when the hose end is inserted into the inlet valve or when the switch, which is located on the hose handle, is turned on.

WIRING

Check local codes but use not less than #14-3 wire. Plug power unit cord into appropriate 120/220/230/240V - 50/60 cycle electrical outlet. Be sure line voltage is sufficient to handle a 15 amp. load.



WARNING: ELECTRIC SHOCK COULD OCCUR IF USED ON WET SURFACES.

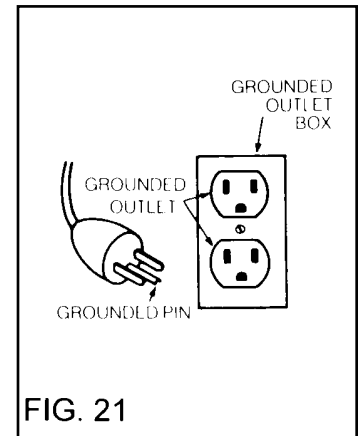
GROUNDING INSTRUCTIONS

This appliance must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance—if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This appliance is for use on a nominal 120-volt circuit and has a ground plug that looks like the plug illustrated in figure 21 for North American units. For 220/230/240 volt units, consult your local building code/electrician.



Make sure that the appliance is connected to an outlet having the same configuration as the plug. No adapter should be used with this appliance.

Check power unit **On/Off** switch and all inlet valves for operation. This power unit is intended for household and commercial use.

Important Safety Instructions

When using electrical appliances, basic safety precautions should always be followed, including the following:

Read all instructions before using this vacuum.



NOTE: Your Beam Central Cleaning System is U.L. listed and C.U.L. listed for dry pick-up only. To reduce the risk of electric shock, DO NOT USE outdoors or on wet surfaces.
















DANGER— Always unplug power unit from the electrical outlet before servicing and cleaning.

WARNING— To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Keep cord away from heated surfaces.
2. Do not allow to be used as a toy. Close supervision is necessary when this vacuum is used by or near children.

3. Use this vacuum only for its intended use as described in this manual. (Use of attachments not recommended by the manufacturer may cause fire, electric shock, or injury.)
4. Never operate this vacuum if it has a damaged cord or plug, if it is not working properly, if it has been dropped, or damaged. Return to service center or have service person examine and repair.
5. Do not pull or carry this power unit by supply cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners.
6. Never disconnect plug by pulling on cord. To disconnect from outlet, grasp the plug, not the cord.
7. Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
8. Keep hair, face, fingers, and loose clothing away from any openings.
9. Do not pick up cigarettes, live hot ashes, matches or similar materials.
10. Never operate vacuum without dustbag and/or filter in place.
11. To disconnect, turn all controls to the OFF position; then remove plug from outlet.
12. Never handle plug, cord, or power unit with wet hands.
13. Electric shock could occur if used on wet surfaces.
14. Use extra care when cleaning on stairs.
15. Do not use to pick up flammable or combustible liquids such as gasoline or use in areas where they may be present.
16. For a grounded appliance: "Connect to a properly grounded outlet only. See grounding instructions."

SAVE THESE INSTRUCTIONS

QUICK CHECK TABLE OF COMMON AND SPECIAL USE PARTS		
 <p>AUTOMATIC INLET VALVE (plastic or optional metal)</p>	 <p>ADAPTER & BRACKET ASSEMBLY (new or old structure)</p>	 <p>PLASTIC PLASTER GUARD (for new structure)</p>
 <p>INLET VALVE EXTENSION (for thick walls metal)</p>	 <p>90 DEGREE DUAL ELBOW (Use w/above assembly or as first bend in line. Never elsewhere.)</p>	 <p>COUPLINGS (joins PVC tubing)</p>
 <p>45 DEGREE Y</p>	 <p>90 DEGREE SWEEP TEE</p>	 <p>45 DEGREE ELBOW</p>
 <p>PLASTIC EXHAUST MUFFLER</p>	 <p>90 DEGREE SWEEP ELBOW</p>	 <p>45 DEGREE ELBOW with extension</p>
 <p>ADAPTER, REDUCER BUSHING (for pipe-to-floor mounted inlet valve)</p>	 <p>T-ADAPTER (for two-story) (for two inlets in same wall) Use only w/adapter and bracket assemblies.</p>	 <p>NAIL GUARD</p>
<p><i>The Beam organization has developed and produced fine industrial and household appliances since 1957. Pioneers in the central vacuum industry. Beam currently devotes its major effort to the improvement of engineering, design, and manufacture of vacuum cleaning equipment.</i></p>		
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<p>No. 075020-3/95</p>		