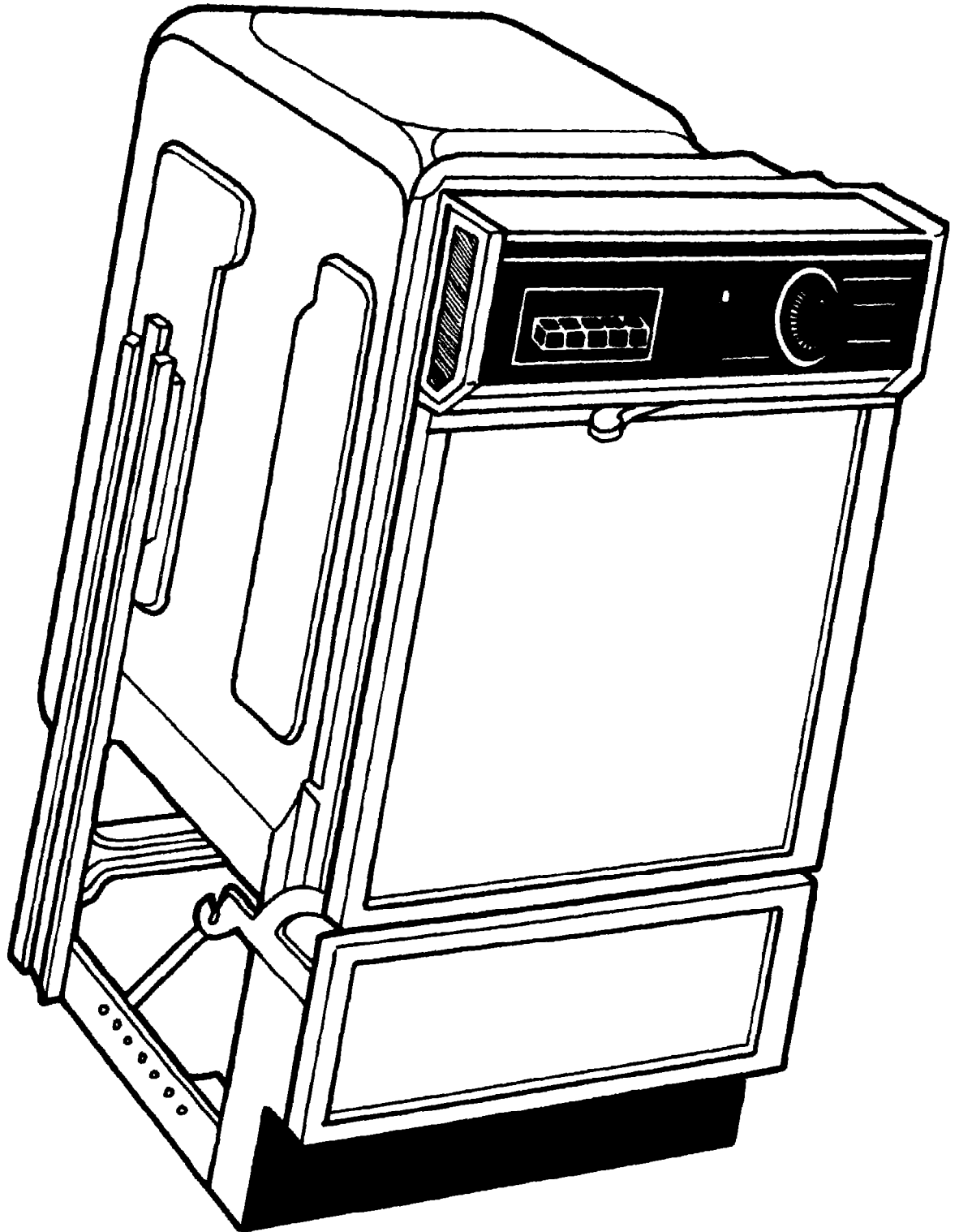


# **Installation Instructions**

For the 18" Built-In Dishwasher and Front Color Panels



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# DO NOT INSTALL DISHWASHER UNTIL YOU HAVE READ ALL INSTRUCTIONS.

## Before You Begin

Please read this book completely **before** you begin. These instructions will help you anticipate water, electrical, and drain connections, and will help you select the best location for your dishwasher. Installation tips are located on the back cover.

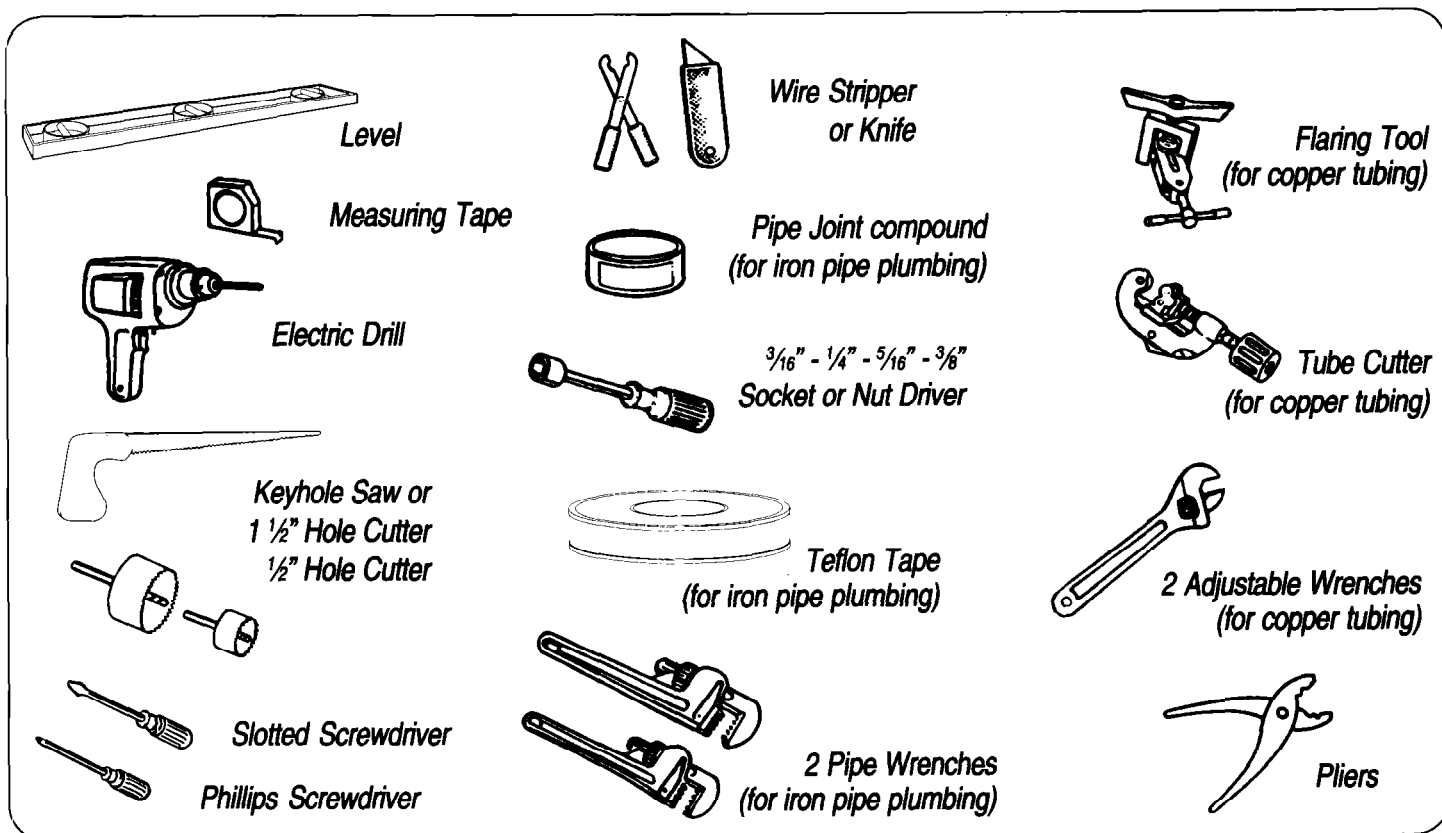
**OBSERVE ALL LOCAL CODES AND ORDINANCES FOR ELECTRICAL AND PLUMBING CONNECTIONS WHEN INSTALLING YOUR NEW DISHWASHER. ALL ELECTRICAL AND PLUMBING WORK SHOULD BE PERFORMED BY QUALIFIED PERSONS.**

## Plan the Installation

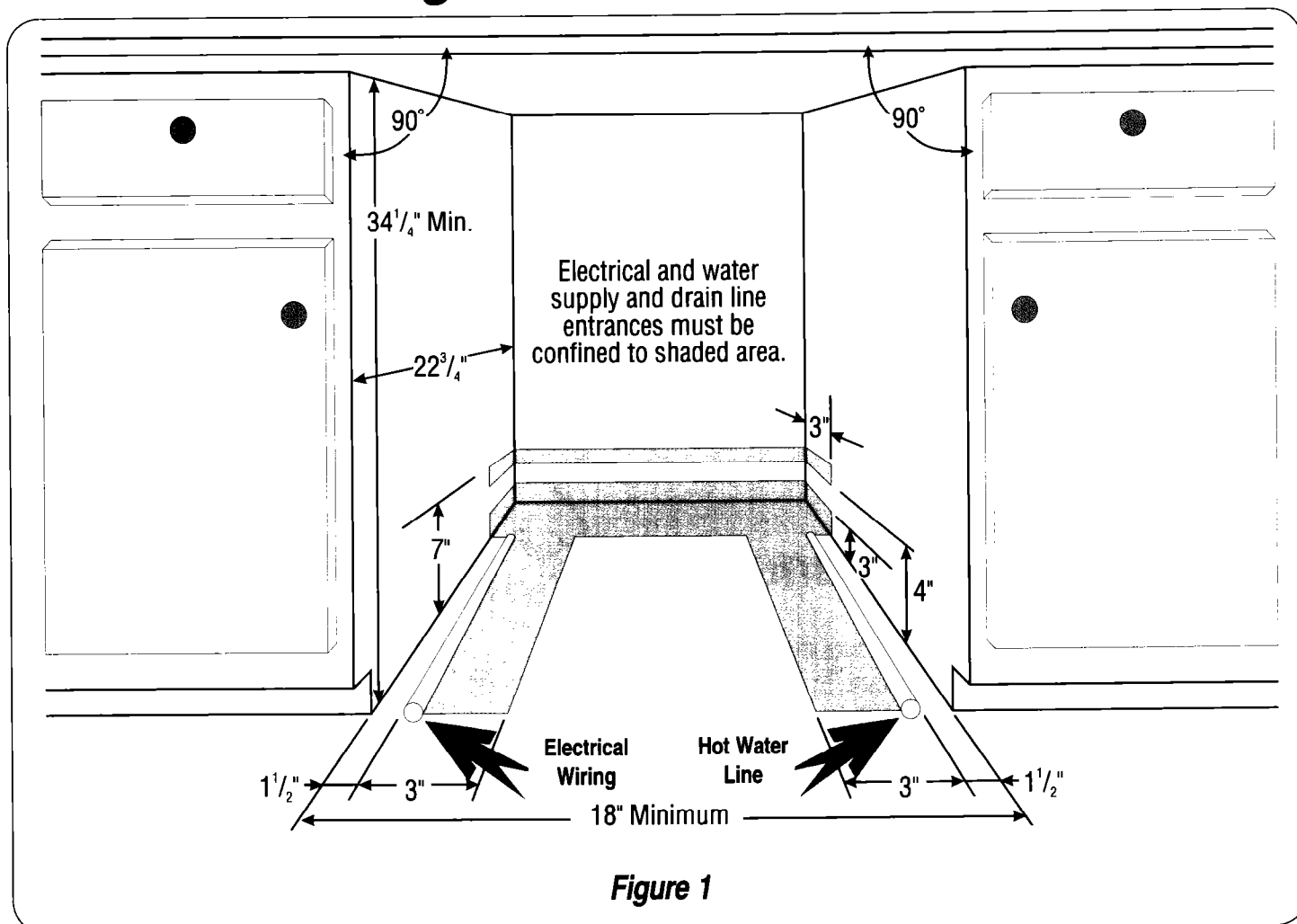
Locate the dishwasher where there is easy access to existing water, drain, and electrical lines. Be sure the water inlet valve will be protected from freezing temperatures. If the valve freezes, flooding may occur.

The best location for your dishwasher is on either side of the kitchen sink. This position should provide easy access to existing plumbing and will be convenient for loading items into the dishwasher once your dishwasher is installed.

## Tools You Will Need

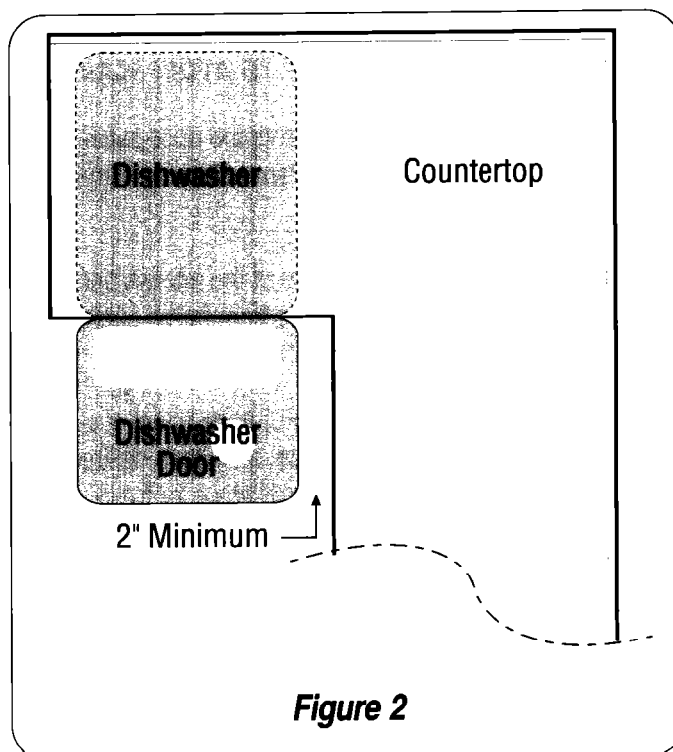


# Location and Rough-In



Most of the installation work should be done before the dishwasher is moved into place. First, select a location as close to the sink as possible for ready access to water and drain lines. For proper operation and appearance of the dishwasher, the cabinet opening should be square and have dimensions as shown in Figure 1. If the dishwasher is to be installed in a corner, there must be sufficient clearance to open the door as shown in Figure 2. A *minimum* clearance of 2" is recommended.

Rough-in the water, electrical, and drain lines before proceeding with the installation. The lines should run straight to their connections on the dishwasher. Make sure that the lines do not cross in front of the dishwasher motor or its legs.



## Preparing for Installation

1. Remove the two bottom attach screws in the access panel/toeplate (see Figure 3).
2. Open the dishwasher door and remove the two top attach screws.
3. Close the door. The access panel can now be removed by pulling it forward.
4. Remove four screws to remove the toeplate (see Figure 3).
5. If required, install a 90° elbow into the water valve. Use teflon tape to seal the elbow into the valve fitting. Valve fitting is  $\frac{3}{8}$ " National Pipe Thread.

## Changing Color Panels

Select models are equipped with reversible door and access panel inserts that offer three decorative colors. To change exposed color panel, proceed as follows. **It is best to change color panels before installing dishwasher.**

### WARNING:

- **DISCONNECT POWER SUPPLY FROM DISHWASHER BEFORE CHANGING COLOR PANELS TO PREVENT ELECTRICAL SHOCK.**

- **HANDLE PANELS CAREFULLY TO AVOID INJURY.**

1. Remove frame strip from one side of the door panel. Loosen, but do not remove screws from frame strips on remaining sides (see Figure 4).
2. Remove frame strip from one side of the access panel. Loosen, but do not remove screws from frame strips on remaining sides (see Figure 4).
3. Slide insert panels out of frame. Put color panel of choice to outside and replace panel in frame. If white is desired, completely remove color panels and store for future use.
4. Be sure edges of insert panels are under frame strips on opposite side. Press strips tightly against panels before securing screws. Replace frame strips.

*For best appearance, remove the protective film covering the frame strips after installing your dishwasher.*

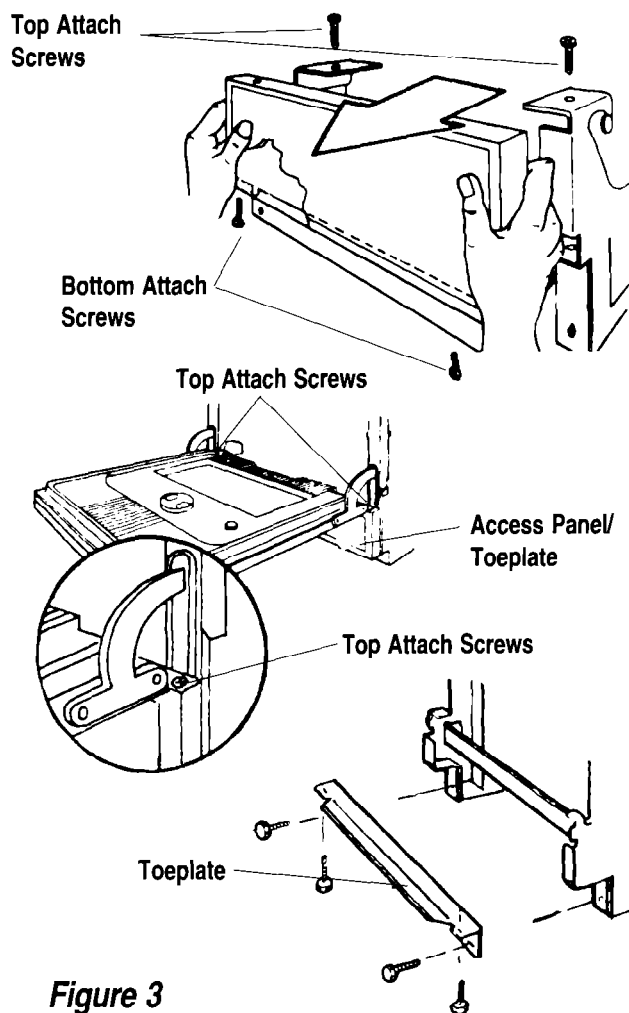


Figure 3

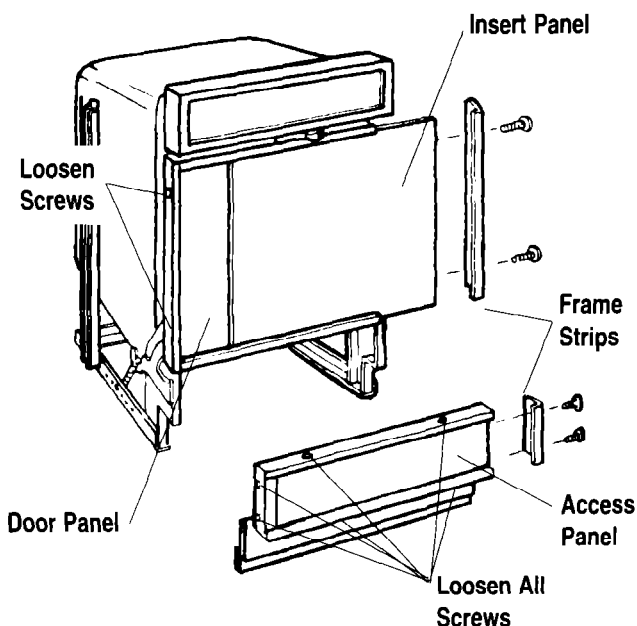


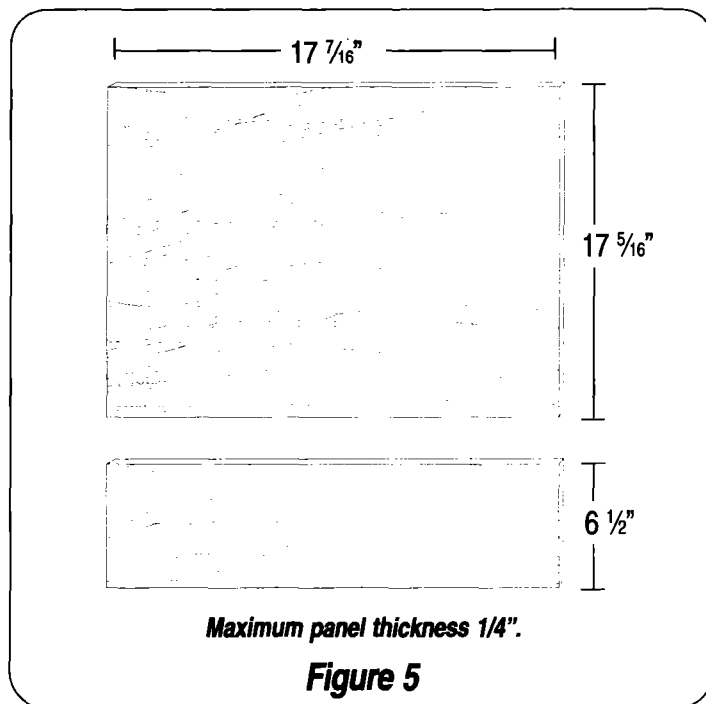
Figure 4

## Wooden Door Panels

A panel of up to  $\frac{1}{4}$ " thickness may be used in place of the aluminum insert panels furnished with your dishwasher. Wooden door panels require the Wood Door Decorator Trim Kit, (not furnished). This kit is available from your dealer or distributor.

Cut wooden panels of your choice to match the dimensions shown in Figure 5. ***If panels thicker than  $\frac{1}{4}$ " are used, damage to the trim can result.***

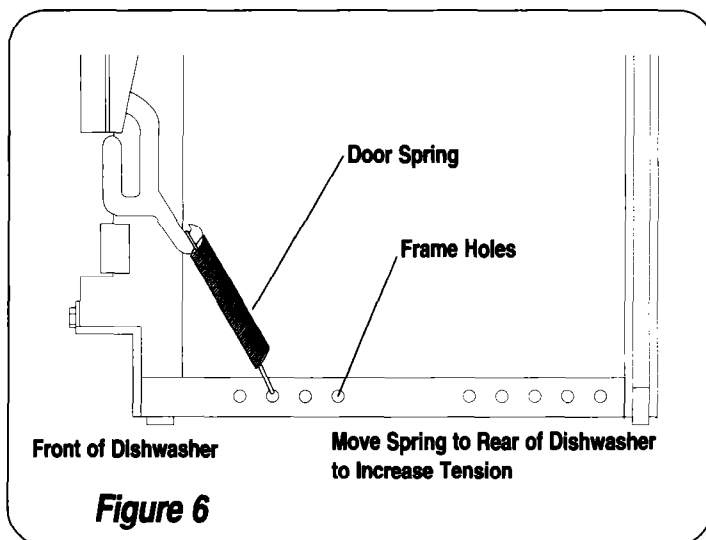
In order to balance the weight of the wooden panel, the door springs will need to be adjusted (*see below*).



## Adjusting Door Spring Tension

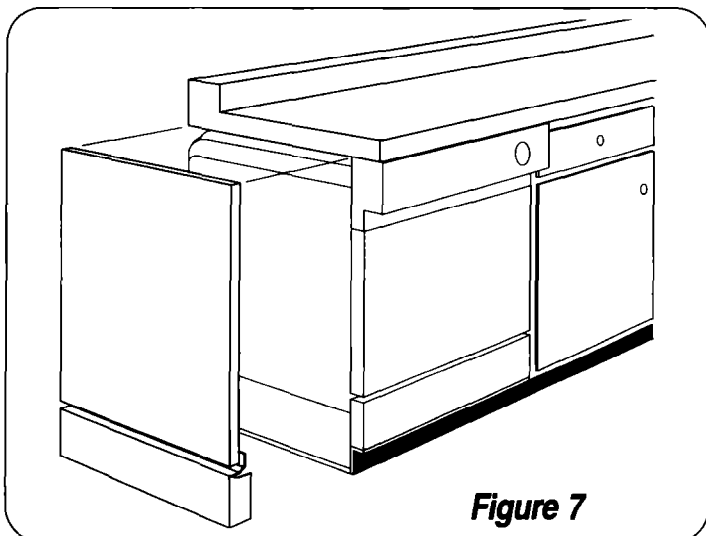
The door springs are set at the factory to the proper tension for use with the installed insert panels. If wooden door panels are installed (*see above*), you will have to adjust the door spring tension. Adjust the spring tension by hooking the springs in a frame hole forward of their original settings (*see Figure 6*).

Door spring tension is correct when the door remains horizontal in the fully opened position, yet rises to a close with the slight lift of a finger.



## Side Panel Kit

The dishwasher is not provided with a complete enclosure. If the dishwasher is to be installed at the end of a cabinet line, be certain that the sides and back are fully enclosed (*see Figure 7*). Side panel kits are available from your dealer or distributor.

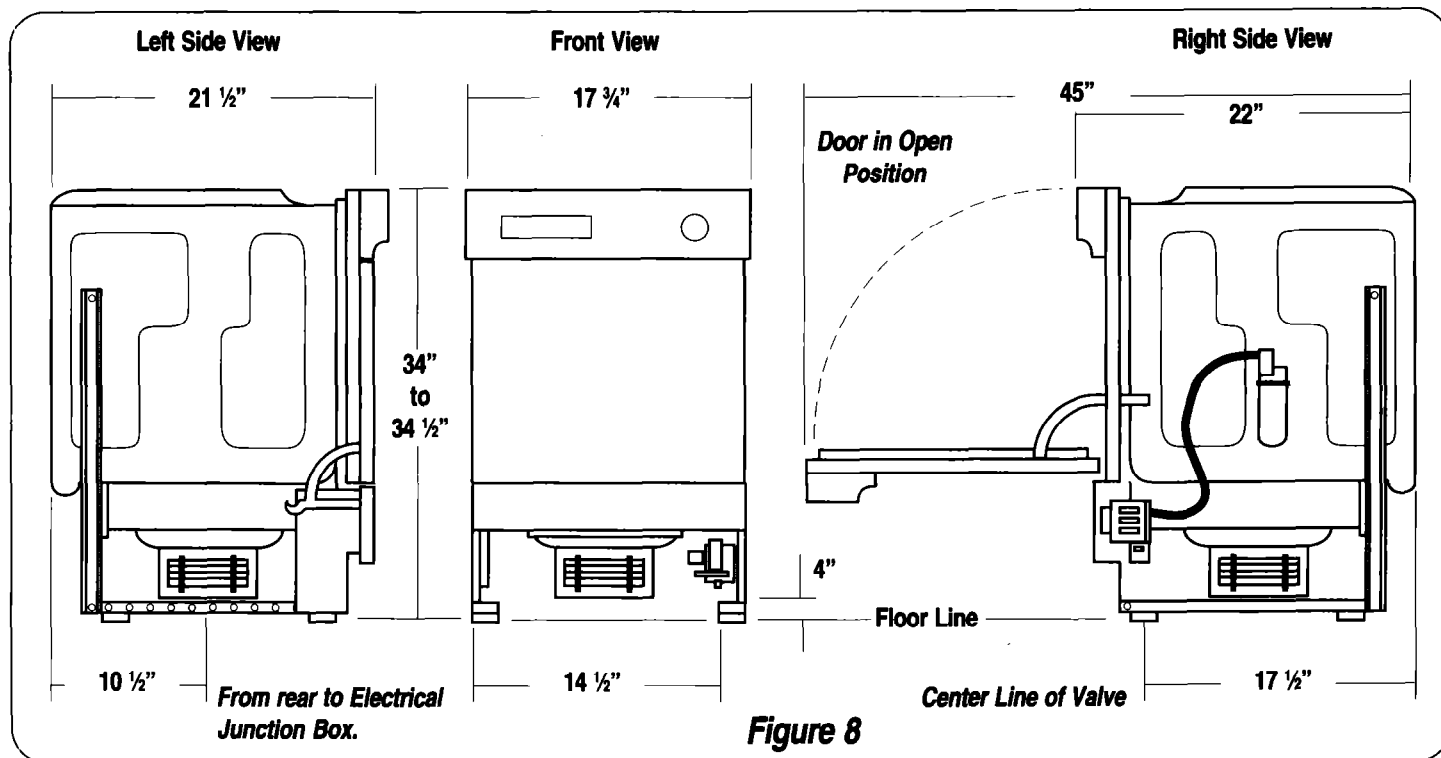


# Locating Drain, Water, and Electrical Supplies

Before you begin, review this section in detail. Check your location to make sure you have the right drain, water, and electrical supplies to make these connections.

Refer to the dimensional details in Figure 8 to help you decide where to run the drain, water, and electrical lines. All connections must be made in the shaded area as shown in Figure 1 on page 3.

**CAUTION: MAKE SURE THAT NO LINES CROSS IN FRONT OF THE DISHWASHER'S MOTOR OR LEGS.**



## Drain

Review Figures 9 and 10 to determine where you will connect the dishwasher to the drain system. Cut a 2" diameter drain hose hole in the shaded area shown in Figure 1 on page 3. Check both sides of the area **BEFORE** cutting to avoid interference. If the cabinet wall is wooden, sand the edges of the hole until it is smooth and rounded. If the cabinet wall is metal, all sharp edges **MUST** be covered by a protective material such as electrical tape or duct tape to avoid cutting the drain hose.

Local codes may require the drain line to be connected to house plumbing with a drain air gap. If the drain hose is to be connected to a separate drain trap, the trap must be vented with a drain air gap to prevent siphoning.

A drain loop must be fixed (with a suitable clamp or support) at a minimum height of 32" from the floor. When routing the drain hose, be sure there are no sharp bends or kinks that might restrict drain flow. Proceed as follows:

1. Route the hose from the dishwasher cabinet through the 2" drain hose hole you have cut for it.
2. Support or clamp the drain hose so that the loop is at a minimum height of 32".
3. Connect the hose to the sink drain or disposer. **Do not connect the hose to the horizontal pipe between the sink drain and the garbage disposer. Entry into sink drain must be above trap. Be careful not to over tighten the clamp or you may damage the end of the hose.**

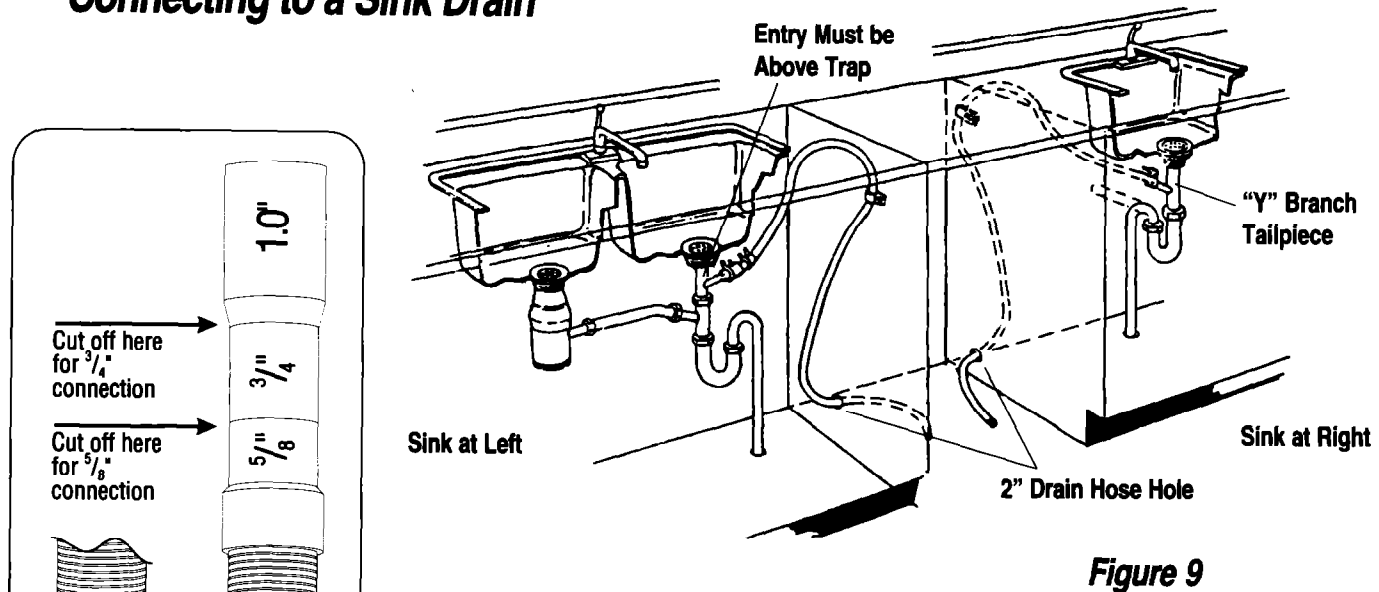
- If you connect to a sink drain, using the "Y" Branch Tailpiece and Connector Kit will make this connection easier. The kit includes all of the necessary fittings and complete installation instructions.
- If you connect to a disposer, use the larger end of the corrugated hose which has been designed to fit the disposer without any special connectors (see inset of Figure 9).

**NOTE: Be sure to remove the knock-out plug from inside the disposer inlet fitting before attaching the drain hose.**

If the drain hose is to be routed through the floor to a separate trap, the trap must be vented to prevent siphoning. To provide proper venting, install the Air Gap Kit into the countertop. Route the drain hose up to the inlet side of the air gap. Continue drain line from outlet side of air gap down through floor to separate trap (see Figure 10).

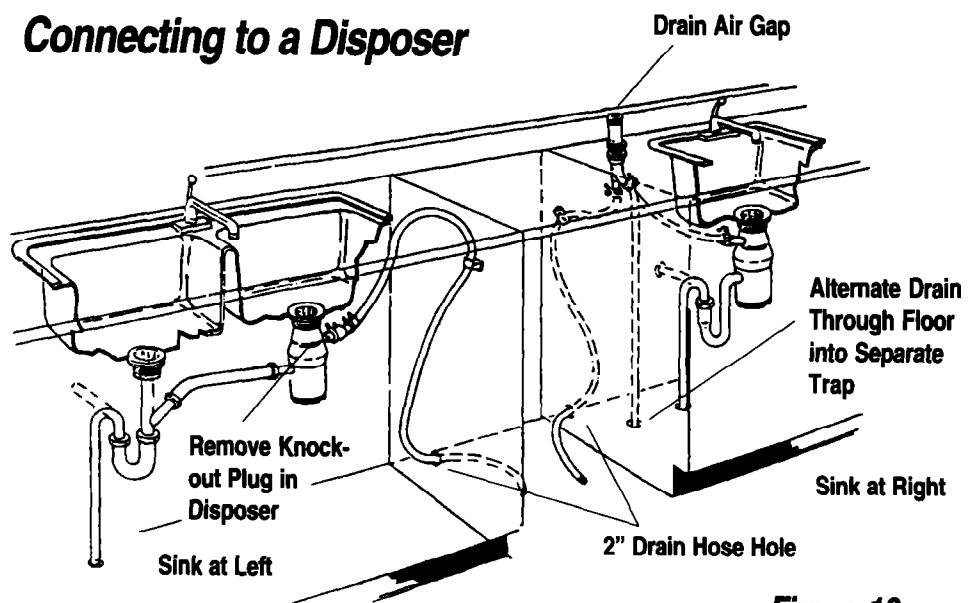
Do not cut the corrugated drain hose. Excess corrugated hose should be placed flat on the floor in the dishwasher cabinet. **Make sure the hose does not come into contact with any sharp edges.**

## Connecting to a Sink Drain



**Figure 9**

## Connecting to a Disposer



**Figure 10**

# Water

Determine where you will connect the dishwasher to the hot water supply. Review Figure 8 on page 6 and note the location of the water valve. Incoming water temperature should be approximately 140°F (60°C). Water temperature limits are 120°F minimum and 160°F maximum (49°C - 71°C).

The dishwasher water inlet valve has a 3/8" National Pipe Thread female fitting. Determine how much copper tubing will be required. Copper tubing must have a minimum outside diameter of 3/8". High-pressure rated plastic tubing with a minimum inner diameter of 1/4" may be used where local plumbing codes permit.

It is recommended that a shut-off valve be installed outside the dishwasher cabinet. Water pressure should be between 15 and 120 PSI (pound per square inch).

Cut the water access hole in the shaded area as shown in Figure 1 on page 3. Complete the plumbing rough-in **before** putting the dishwasher into place.

**CAUTION: THE FURNISHED DRAIN HOSE MUST NOT BE USED AS A WATER SUPPLY LINE. DO NOT USE A RUBBER GARDEN HOSE FOR WATER SUPPLY LINE. EITHER ONE OF THESE HOSES WILL BURST.**

# Electrical Power Supply

The dishwasher operates on a 120VAC 60Hz fused electrical supply. Provide a separate circuit with a fuse or circuit breaker rated for at least 15 amps, 20 amps if connected with disposer, but not more than 20 amps. **DO NOT USE AN EXTENSION CORD.**

## GROUNDING INSTRUCTIONS

This appliance must be connected to a grounded metal fixture or to a permanent wiring system, or an equipment grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the appliance. Do not connect the dishwasher to the electrical supply until the appliance is permanently grounded. Grounding must be in accordance with the National Electrical Code and local codes and ordinances.

**CAUTION: THE JOINING OF ALUMINUM BUILDING WIRE TO STRANDED COPPER WIRE LEADS INVOLVES SPECIAL PROBLEMS AND SHOULD BE PERFORMED BY A QUALIFIED ELECTRICIAN USING MATERIALS RECOGNIZED BY UL/CSA AND LOCAL CODES AS SUITABLE.**

Determine where you will connect to the electrical supply. Note the location of the electrical junction box in Figure 8 on page 6. Cut the access hole in the shaded area shown in Figure 1. Pull electrical cable through into the cabinet area through the access hole.

After the dishwasher has been positioned inside the cabinet, the electrical connections can be made.



# Factory-Installed Power Cord

Some models have a factory-installed power cord. Be sure the following requirements are met during installation:

- The receptacle **must** be located in a cabinet or on a wall adjacent to, but not in, the undercounter space in which the dishwasher is to be installed.
- Use the dimensions in Figure 11 to locate the receptacle within either dotted line area. Do not use an extension cord. Check both sides of the area before cutting to avoid interference.
- Cut a hole in the side of the lower rear corner of the cabinet opening. See Figure 1 on page 3 for installation dimensions. The hole should be large enough for the attachment plug to pass through. The longest dimension of the opening should not be more than 1½".
- If the cabinet wall is wooden, sand the edges of the hole until it is smooth and rounded. If the cabinet wall is metal, cover the edges with the plastic grommet included in the parts bag. Cut length of the grommet so that it fits the opening with no sharp edges uncovered.
- Be careful not to damage the power cord when installing or removing the dishwasher.

**GROUNDING INSTRUCTIONS:** This appliance must be grounded. In the event of a malfunction or breakdown, grounding reduces the risk of electrical shock by providing the electric current a path of least resistance. The power cord for this appliance features an equipment-grounding conductor and a grounding plug. The grounding plug must be inserted into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.

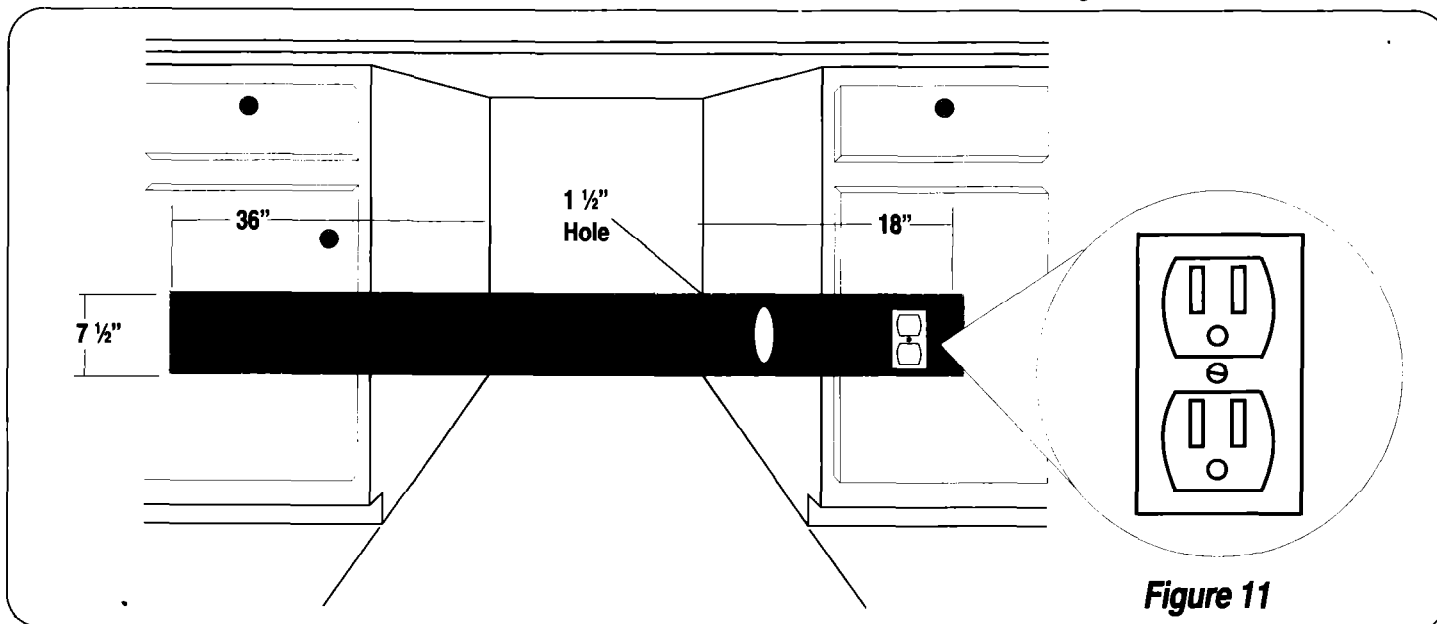
**DANGER: IMPROPER CONNECTION OF THE EQUIPMENT-GROUNDING CONDUCTOR CAN RESULT IN A RISK OF ELECTRIC SHOCK. CHECK WITH A QUALIFIED ELECTRICIAN OR SERVICE PERSON IF YOU HAVE ANY DOUBTS WHETHER OR NOT THE APPLIANCE IS PROPERLY GROUNDED. DO NOT MODIFY THE PLUG PROVIDED WITH THE APPLIANCE. IF IT DOES NOT FIT THE OUTLET, HAVE A PROPER OUTLET INSTALLED BY A QUALIFIED ELECTRICIAN.**

If you choose to have the dishwasher permanently connected to the house wiring, the power cord assembly must be removed as follows:

- Remove the junction box cover.
- Disconnect the green wire ground terminal from the grounding screw.

- Remove the electrical tape and wire nuts from the white and black wires.
- Use pliers to squeeze together the two halves of the power cord strain relief grommet so that it and the cord can be removed from the junction box bracket.

Now follow the instructions on page 8 to connect the dishwasher to the house wiring.



**Figure 11**

# Position, Align, and Level the Dishwasher

Remember, if you wish to change the door and access panel color inserts, they should be changed before installing the dishwasher into the cabinet. Refer to page 4 for more information on this subject.

Before moving the dishwasher into the opening:

- Adjust the front levelers so the top of the machine is 1/4" below the underside of the countertop (see Figure 12).
- Adjust rear levelers to level the dishwasher from front to back.
- Cut away carpeting (if necessary) to provide the dishwasher's motor adequate clearance for ventilation.

You can now move the dishwasher into the opening and align it with the cabinets. Use caution when moving the appliance to prevent damage to floor coverings and adjacent cabinets.

- Align the front of the dishwasher as flush as possible with front of the cabinets.
- Align the dishwasher so that the amount of space is the same on each side and the same from top to bottom.

**NOTE: DOUBLE CHECK THE LEVELERS TO MAKE SURE THEY SET FIRMLY AGAINST THE FLOOR. LEVELING IS NECESSARY FOR PROPER FUNCTION OF THE DISHWASHER.**

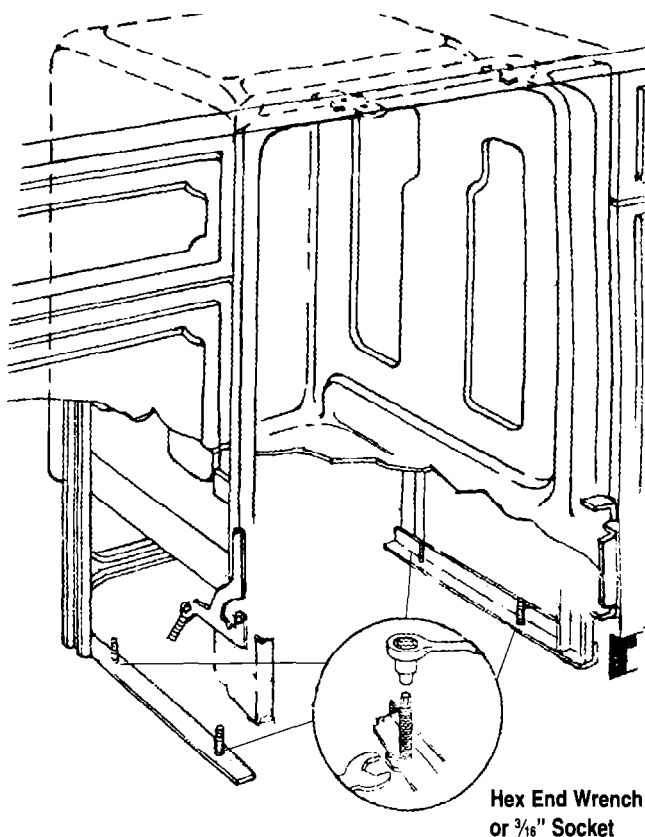
You are now ready to proceed with the final drain, water, and electrical connections.

## Drain Hose Routing

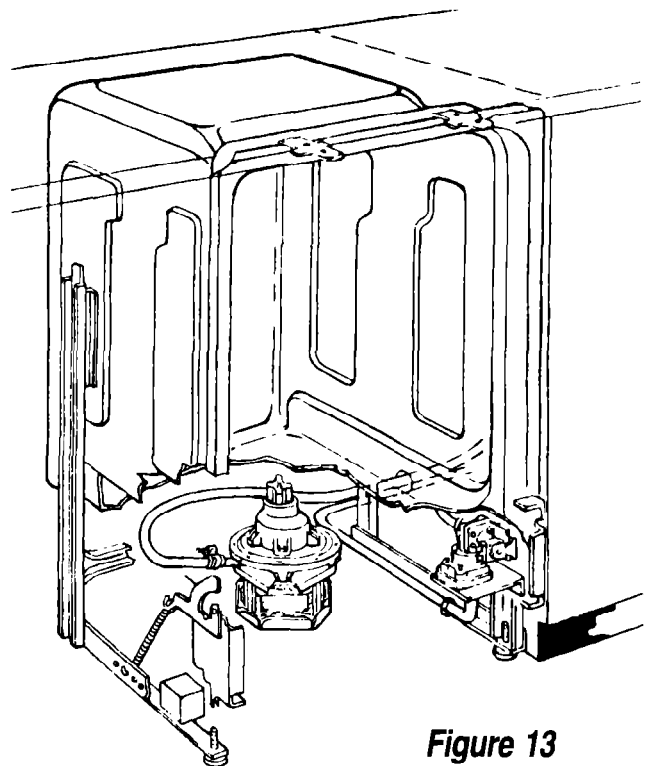
Be sure the hose is routed behind the dishwasher motor and legs (see Figure 13). Place the excess hose flat on the floor in the dishwasher opening.

**BE SURE THERE ARE NO SHARP BENDS, KINKS, OR TWISTS IN THE DRAIN HOSE.**

**WARNING: REGARDLESS OF THE TYPE OF PLUMBING MATERIAL, PLUMBING AND DRAIN HOSE MUST NOT CONTACT WIRING OR ELECTRICAL COMPONENTS.**



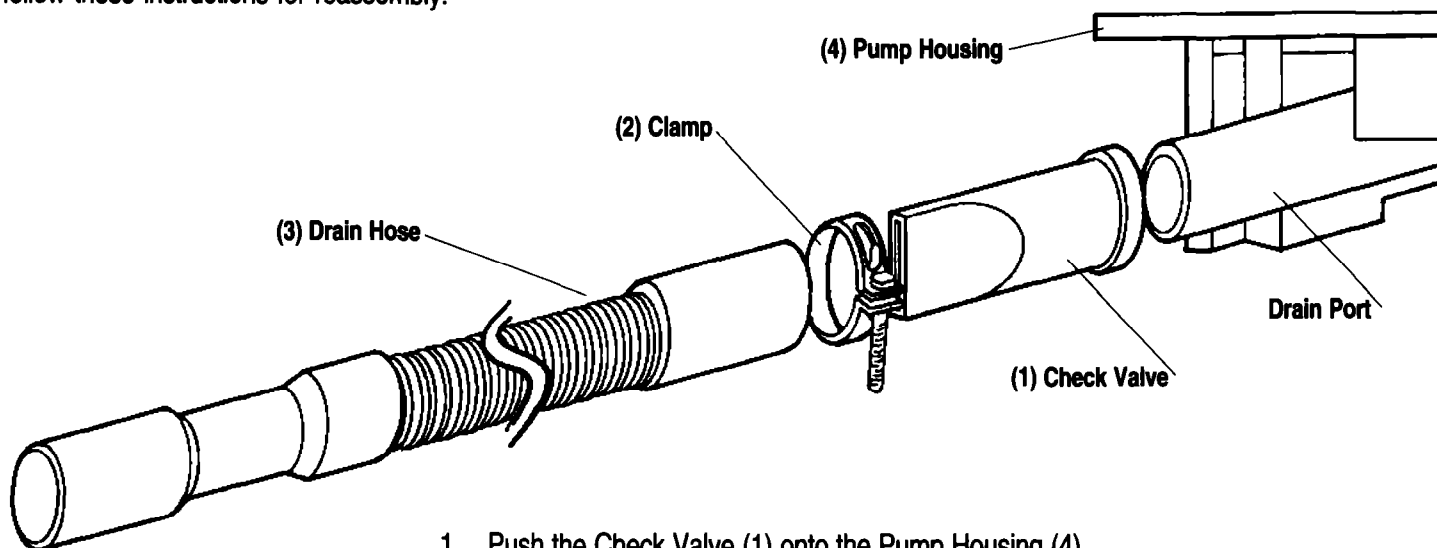
**Figure 12**



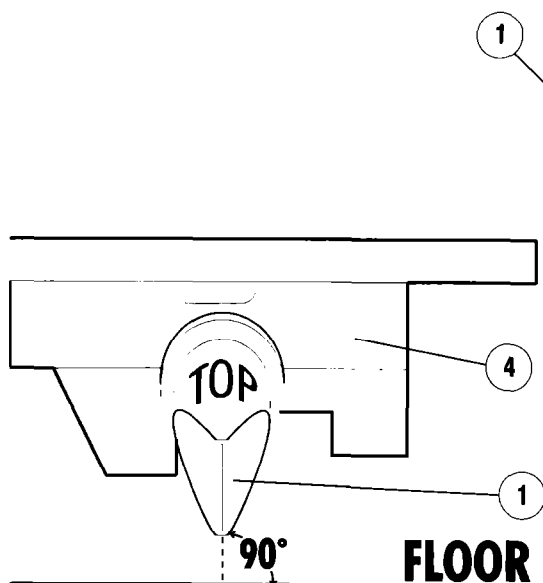
**Figure 13**

# Drain Hose and Check Valve

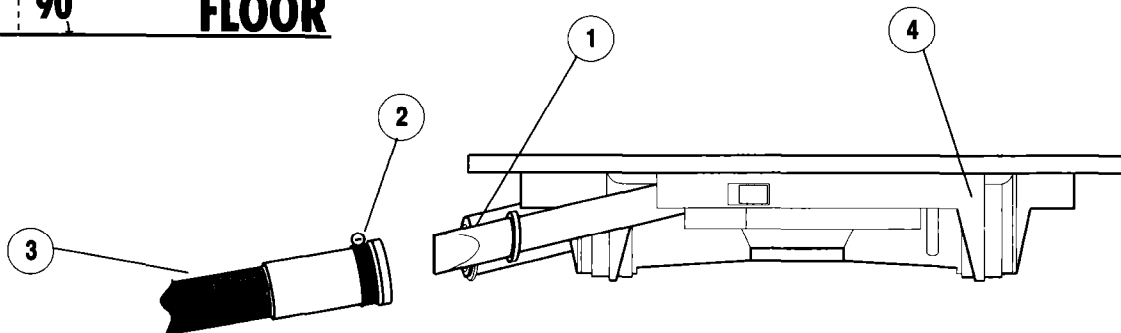
The drain hose of your dishwasher is equipped with a factory-installed check valve. If removal of the drain hose is necessary, follow these instructions for reassembly.



1. Push the Check Valve (1) onto the Pump Housing (4) Drain Port making sure the letters "TOP" are showing on top. This position locates the valve such that the slit end is perpendicular to the floor.



2. Push the Drain Hose (3) and Clamp (2) assembly over the Drain Port and Check Valve (1). Fasten the Clamp (2) securely.



# Water Line Connection

Route the water pipe or tubing as shown (see Figure 14), straight forward from the back to the inlet valve.

Pipe or tubing must not be kinked. It must be free of scale, ships, lubricants, etc. before it is connected to the inlet valve.

**Flush the water line before connecting it to the valve.**

If the water valve clogs with foreign material, turn off the water supply, then remove the four (4) screws at the inlet end of the valve for access to the filter screen.

## CAUTION:

- **DO NOT SOLDER TOO CLOSE TO THE WATER VALVE. OVERHEATING OF THE VALVE WILL DAMAGE PLASTIC PARTS IN THE VALVE.**
- **USE CARE THAT NO SEALER, DIRT OR FOREIGN MATERIAL CAN ENTER VALVE.**
- **THE FURNISHED DRAIN HOSE MUST NOT BE USED AS A WATER SUPPLY LINE.**
- **BE SURE THE DISHWASHER IS PLACED WHERE THE WATER VALVE IS PROTECTED FROM FREEZING TEMPERATURES. IF THE VALVE FREEZES, FLOODING MAY OCCUR.**

# Connect Dishwasher to Electrical Supply

The appliance **MUST** be permanently grounded in accordance with the National Electrical Code and local codes and ordinances.

**WARNING: DISCONNECT POWER TO FUSE BOX OR CIRCUIT BREAKER BEFORE CONNECTING DISHWASHER TO ELECTRICAL SUPPLY.**

1. Remove the junction box cover (see Figure 15).
2. Pull the house wiring in the cabinet area forward to the junction box. Be sure the electrical cable is behind the dishwasher motor and rear legs. Use a strain relief (not included) at the box.
3. In the junction box, connect the incoming black lead to the dishwasher's black lead with wire nuts or suitable connectors (not included). Next, connect the incoming white lead to the dishwasher's white lead with wire nuts or suitable connectors (not included).
4. Attach grounding wire under head of green grounding screw and tighten screw.
5. Replace the junction box cover.

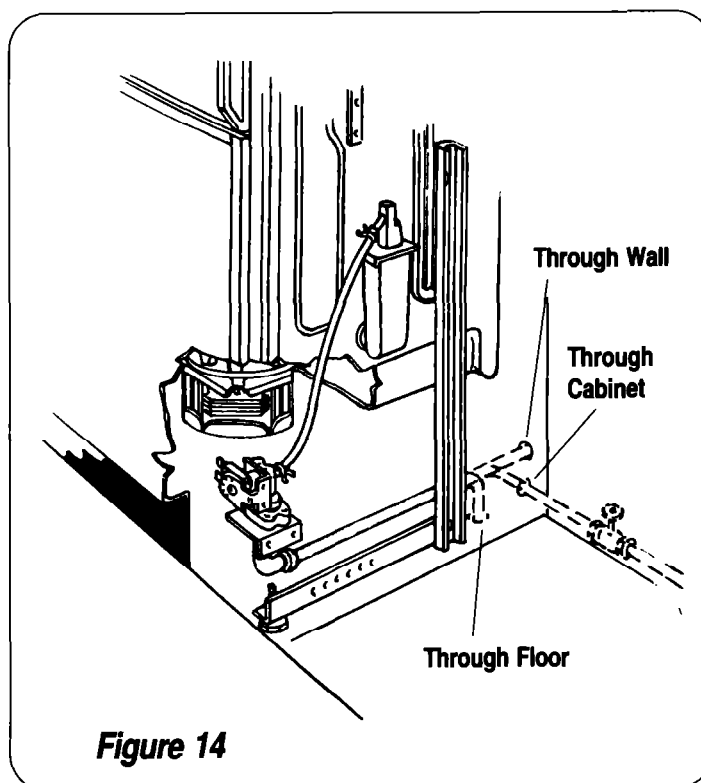
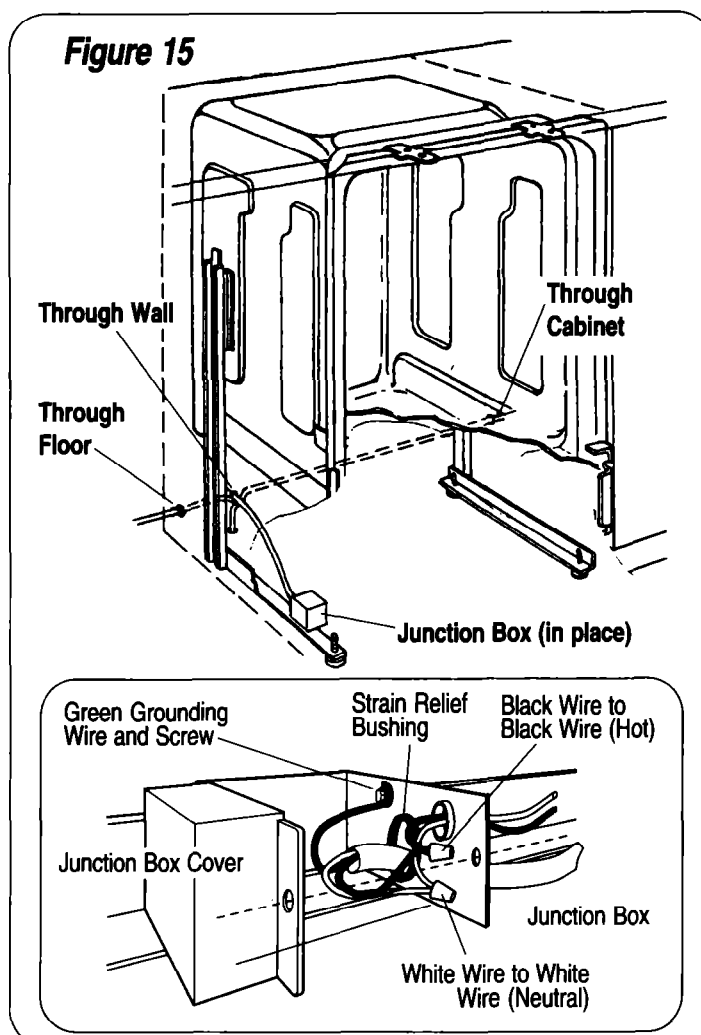


Figure 14



# Secure Dishwasher in Opening

The dishwasher must be secured to keep it from tilting when the door is opened. Choose one of the two methods described below for securing the dishwasher.

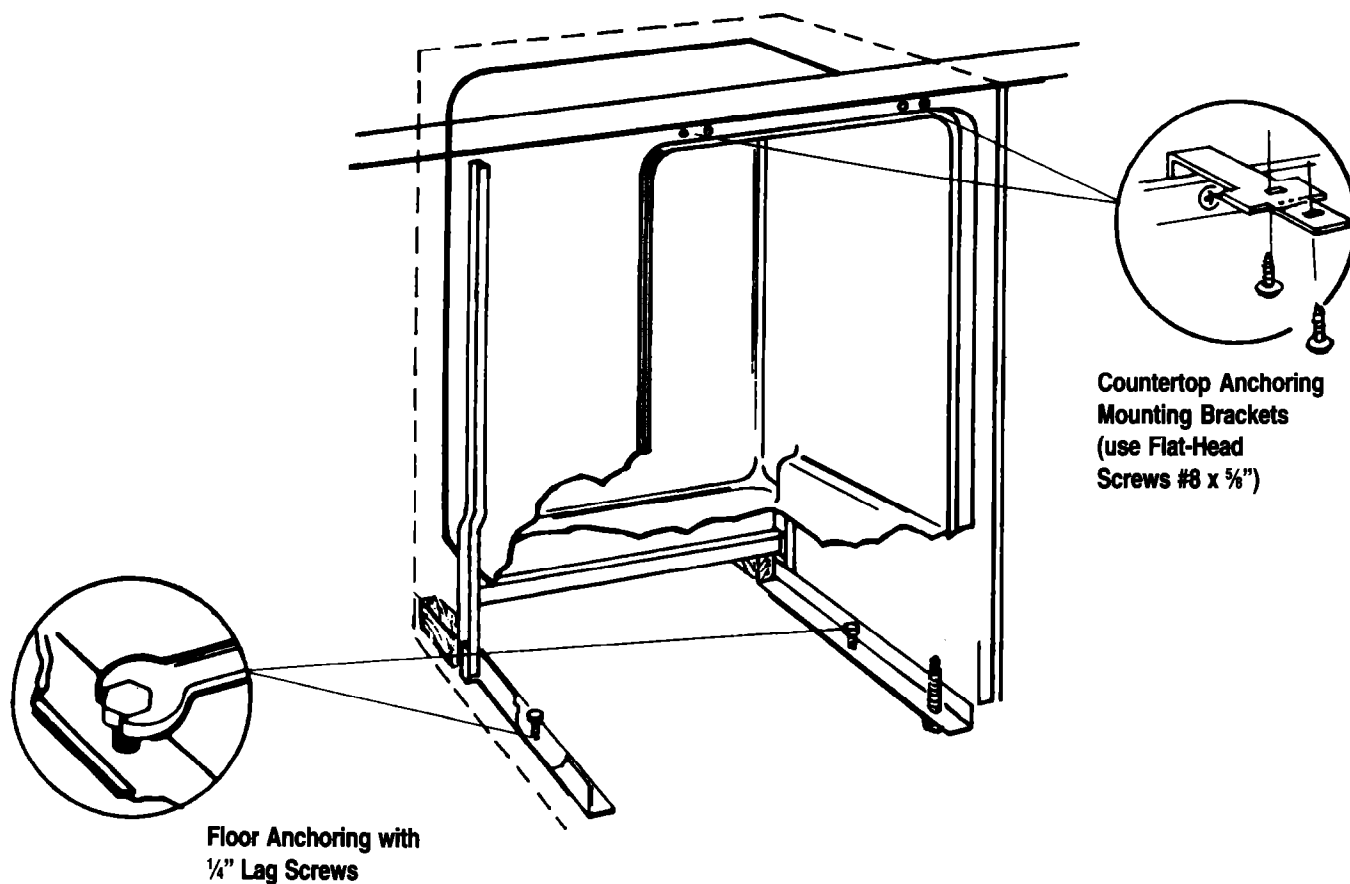
## Countertop Anchoring:

1. If necessary, adjust leveling screws so mounting brackets touch the underside of the countertop (see Figure 16).
2. Screw the mounting brackets firmly to the countertop using flat head screws (#8 x  $\frac{5}{8}$ " ).
3. Open and close the dishwasher door slowly. If the door hits the mounting bracket screw heads, adjust front leveling legs.

## Floor Anchoring:

This is a difficult procedure. Use only where the countertop mounting brackets cannot be used.

1. Screw  $\frac{1}{4}$ " lag screws (not included) through the holes provided in the frame rail (see Figure 16).
2. Use expansion fasteners if the floor is concrete.



**Figure 16**

# Operate the Dishwasher

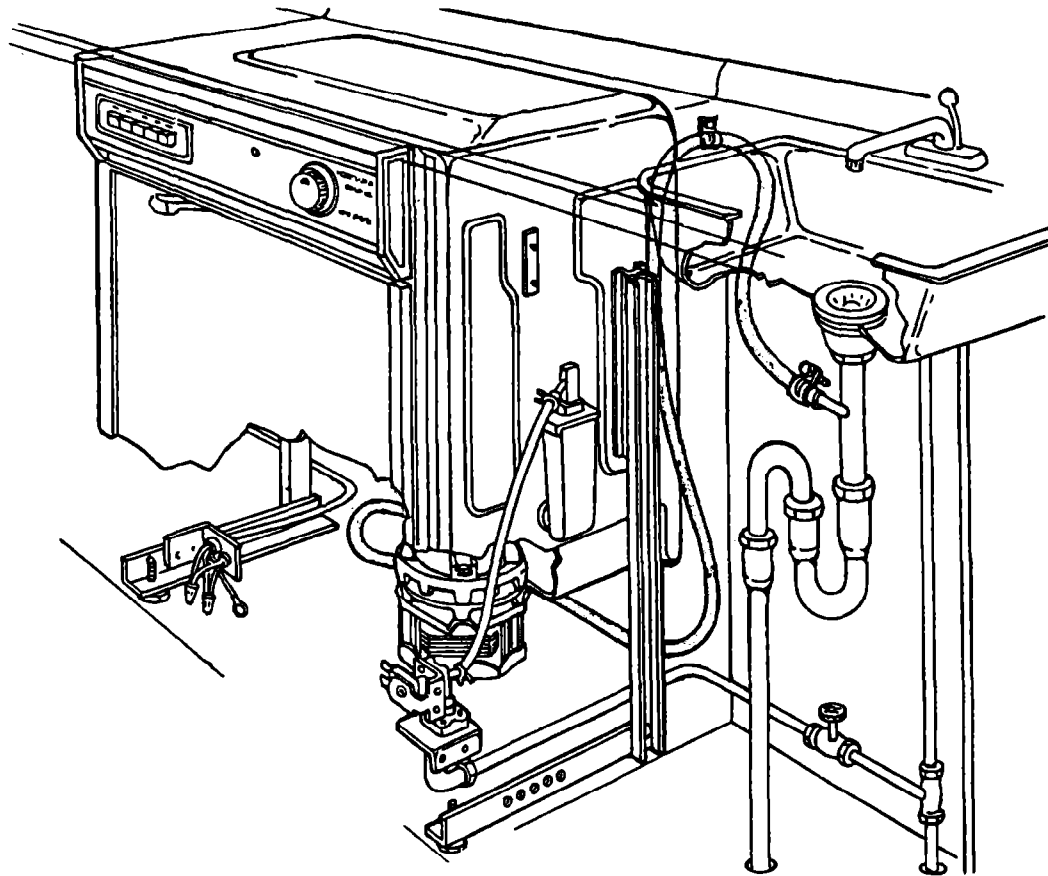
Before you start your dishwasher, check the following:

- Dishwasher is level and securely fastened in place.
- Water supply is turned on.
- No leaking from joints.
- All wire connections are tight.
- Electricity is turned on.
- No kinks in water or drain lines.
- All packing material and customer literature have been taken out of the dishwasher.

Operate the machine through at least one fill and pump-out.

- Check water level after dishwasher has filled completely. Water should fill to the heating element.
- Check for satisfactory pump-out at end of pump-out. A small amount of water in the bottom of the tub is normal.
- Check for leaks.

If operation is satisfactory, replace the access panel/toeplate.



**NOTE to INSTALLER:** Put installation instructions back in the literature packet and leave with dishwasher so all information will be readily available to user.

**NOTE to OWNER:** Please read the dishwasher Owner's Guide. It contains important safety information for those operating the appliance. It also contains many suggestions for obtaining the best results from your dishwasher.

# Installation Tips

## ***Read all instructions prior to installation***

- Water, electric, and drain connections are not the same for all **age, brand, or models** of dishwashers. Check and compare the location and length of your current utilities so you can plan your new installation (*refer to pages 3 and 7*).
- Each home installation is different and some parts may be needed to meet your individual installation needs. You ***will need*** a ¾" National Pipe Thread "Street L" or compatible right angle fittings to make the final water connections to the dishwasher valve (*refer to page 8*).
- Clean dishes require an adequate supply of hot water. A water temperature of **140°F (60°C)** is desirable, 120°F (49°C) is minimum, 160°F (71°C) is maximum. ***A minimum water supply line of ¾" (outside diameter) copper tubing is recommended.*** Reasonable water pressure is needed (15-120 PSI [pounds-per-square-inch] flow rate minimum 2 gallons/minute). *Refer to page 8.*
- A separate 15-20 amp, grounded 120V AC electrical supply is required for your new dishwasher. ***You may need a strain relief bushing and wire nuts or suitable connectors for connecting house wiring to the dishwasher*** (*refer to page 8*).
- If the dishwasher drain hose is connected to a garbage disposer for the first time, remember to knock out the plug in the disposer inlet. This plug is inside the inlet and you may not see the plug from the outside (*refer to page 7*).
- The dishwasher drain hose to the house drain must have a 32" loop above the floor or a suitable air gap must be used to prevent water from siphoning out of the dishwasher and causing washing problems (*refer to page 6*).
- Kinked water or drain lines can cause problems. Run lines with generous curves. Make sure lines are long enough to allow for generous curves.
- Flush the water line prior to making final connections. A bunched towel over the end of the line can help prevent splashing. Open the valve for a few seconds and let water drain into a bucket or pan. This will prevent premature clogging of the filter screen in the inlet valve.
- There must be an air space between the bottom of the motor and the floor. If the floor is carpeted, it will be necessary to cut away the carpeting underneath the motor to allow ventilation for the motor (*refer to page 10*).
- The dishwasher will look, sound, and work better if it is properly leveled. Take time to adjust the leveling legs so that all of them touch the floor and the dishwasher is level. Use #8 x 5/8" flat head screws to anchor dishwasher to countertop (*refer to pages 10 and 13*).