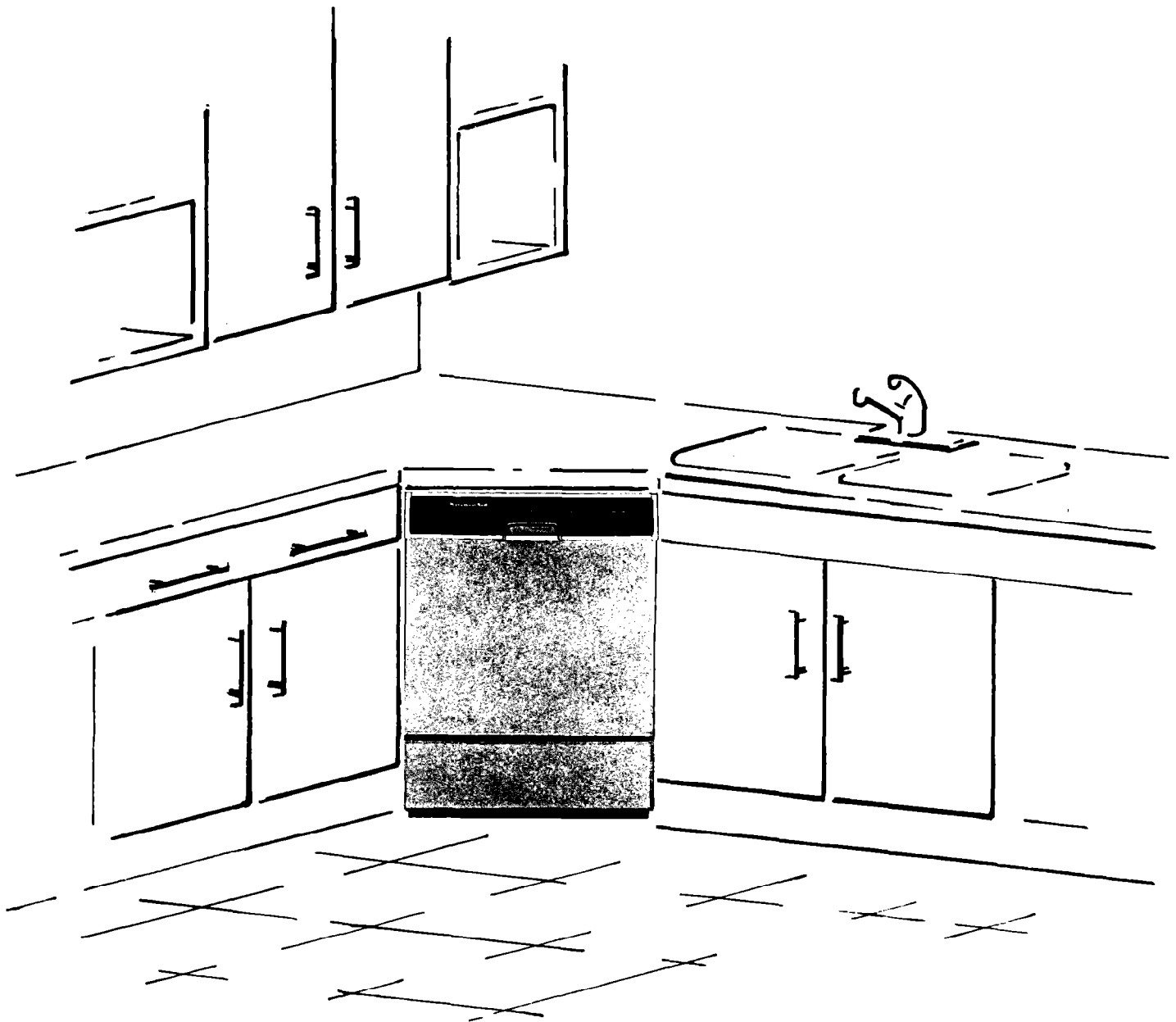


# **KitchenAid®**

## ***KD-21A SERIES DISHWASHERS***



## ***INSTALLATION INSTRUCTIONS***

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## **BEFORE STARTING:**

Please read these installation instructions **COMPLETELY AND CAREFULLY**. They will save you time, work, and help to ensure optimum dishwasher performance.

**For Replacement Installation** — Review these complete instructions to be sure that previous connections are compatible.

**For New Installations** — Plumbing and electrical connections must be provided before the dishwasher is moved into place.

These instructions are intended for use by qualified workers who will observe all local codes and ordinances for plumbing connections as well as local codes and/or the national Electrical Code for electrical connections.

## **YOU WILL NEED THESE TOOLS:**

Phillips Screwdriver  
Flat Blade Screwdriver  
Adjustable Wrenches (2) (if copper fittings are used)  
Pipe Wrenches (2) (if galvanized or iron fittings are used)  
Nut Driver or Socket Set  
Wire Cutters  
Tape Measure  
Spirit/Bubble Level  
Electric Drill  
1" Drill Bit or Hole Saw  
Square

## **. . . AND THESE MATERIALS:**

1/2" OD Copper Tubing (of sufficient length for your installation), Shut-off Valve, and Fittings (for copper water supply line)  
3/8" Pipe (of sufficient length for your installation), Shut-off Valve, and Fittings (for galvanized water supply line)  
3/8" NPT Street Elbow (you will need 2 for galvanized water supply line) or 90° Compression Elbow (3/8" NPT one end, for copper water supply line) See Fig. 13 page. 10.  
9/16" ID Heat and Detergent Resistant Rubber Hose and Clamps or 5/8" OD Copper Tubing and Fittings (of sufficient length to accommodate your drain line)  
10" Length of 5/8" OD Soft Copper Tubing, Formed Into a Semicircle (if high loop drain is required — see page 7)  
115 Volt, 15 Amp, 2 Wire, Properly Grounded, Branch Circuit

# **SPECIFICATIONS**

Electrical	115 volts 60 hertz 1 phase
Operating Load	13.5 amperes
Maximum Protective Device Size	15 amperes
Minimum Circuit Size	15 amperes
Water Temperature	140°F or lower depending on model (refer to Use & Care Guide)
Water Pressure (Flowing)	20 to 120 psi
Cabinet Opening	33 <sup>7</sup> / <sub>16</sub> " to 35" high 24" wide 23 <sup>1</sup> / <sub>2</sub> " deep (min.)

## **HERE ARE THE BASIC STEPS OF INSTALLATION:**

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# 1 CHOOSING THE LOCATION

For easy access to plumbing, it is most convenient to have your dishwasher located near the kitchen sink.

Any built-in dishwasher must be fully enclosed on the top, both sides, and the back. Therefore, the cabinet space below your kitchen counter is probably the best location. If the dishwasher is being installed at the end of a cabinet or free standing then side panels and a wood top can be purchased from your KitchenAid dealer to enclose the dishwasher.

The cabinet opening (Fig. 1) should be square with dimensions as follows: Height —  $33\frac{1}{16}$ " to 35"; Width — 24" minimum; Depth —  $23\frac{1}{2}$ " minimum. If the dishwasher height of  $33\frac{1}{16}$ " is too high, it may be reduced to  $33\frac{7}{16}$ " by removing the leveling feet. If side panels are used, cabinet height should be  $34\frac{1}{2}$ " minimum to 35" maximum using the adjusting legs.

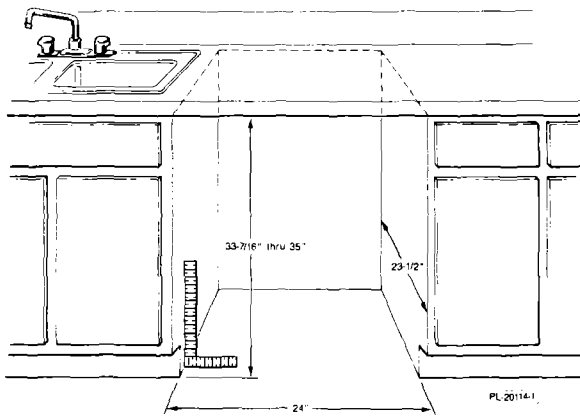


Fig. 1

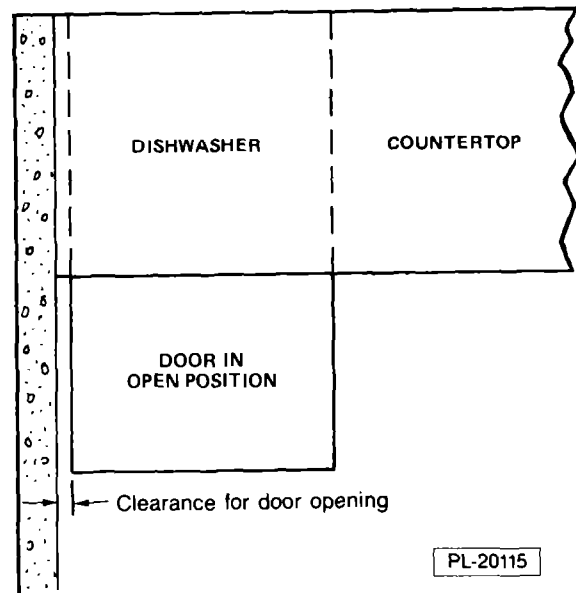


Fig. 2

If the dishwasher is installed in a corner, there must be adequate clearance to open the door (Fig. 2).

## — CAUTION —

To protect against possible rupture of the fill valve, water lines leading to the dishwasher, as well as water lines in the dishwasher **MUST** be protected against freezing. Such ruptures are not covered by the warranty.

## 2 PREPARING THE LOCATION

Access holes in the cabinets, floor, or rear wall for the hot water supply line, drain line, and electrical supply must be located within the shaded area in Fig. 3 in order to avoid interference with the dishwasher frame or other components.

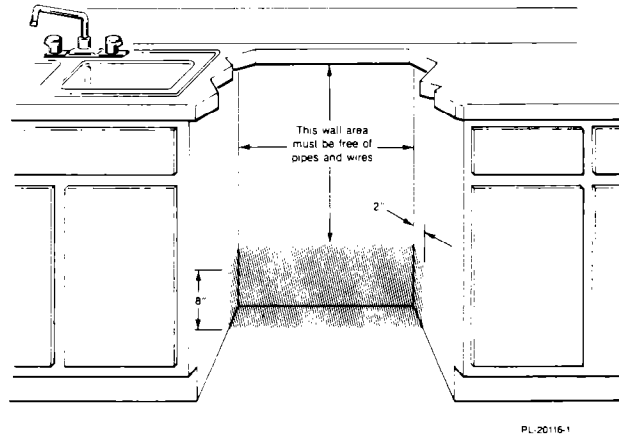


Fig. 3

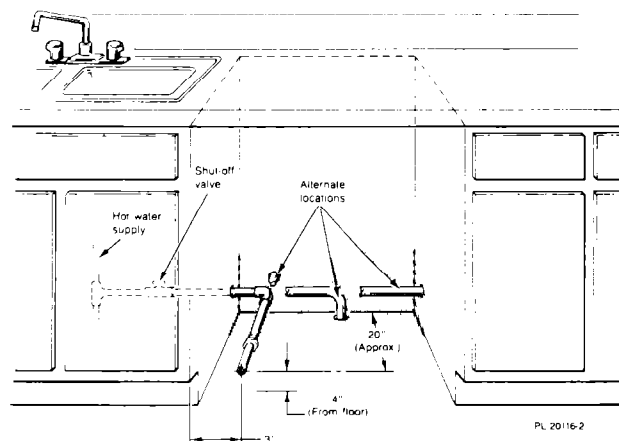
### HOT WATER SUPPLY LINE

**WARNING:** PLUMBING CONNECTIONS MUST COMPLY WITH APPLICABLE SANITARY, SAFETY, AND PLUMBING CODES.

Water supply should be 140°F or lower depending on model (refer to Use and Care Guide).

The hot water supply line should be 1/2" OD copper tubing or 3/8" galvanized pipe. The dishwasher fill valve has a 3/8" NPT female connection.

After determining where the water supply line will enter the dishwasher opening, drill a 1" access hole and run the line to the approximate fill valve location as shown in Fig. 4.



For service convenience, a shut-off valve (not supplied) should be installed in the supply line in a readily accessible location (such as beneath the sink) and a union (not supplied) should be installed in the supply line near the dishwasher fill valve.

## — CAUTION —

To prevent heat damage to the fill valve, **ALL** solder connections must be made **BEFORE** the water line is connected to the dishwasher.

### DRAIN LINE

The drain line should be  $\frac{9}{16}$ " ID (minimum) flexible hose or  $\frac{5}{8}$ " OD copper tubing. Flexible hose must be resistant to heat and detergent and may be obtained from a plumbing, hardware, or automotive supply outlet. **DO NOT** use any fittings anywhere in the drain line that are less than  $\frac{1}{2}$ " ID. The access hole for the drain line should be 1".

If drain line is copper, clamp a 12" length of  $\frac{9}{16}$ " ID flexible hose (heat and detergent resistant) to the end of the copper tubing. This will facilitate connection of the drain line to dishwasher check valve.

If the drain line is going to be connected to a food waste disposer, **BE SURE** to remove the knockout or plug from the fitting on the disposer before connecting drain line. Rubber adapter fitting may be required. (KitchenAid part number 115739 or available from local hardware or plumbing stores.)

Typical drain connections to sink plumbing are shown in Fig. 5 & 6.

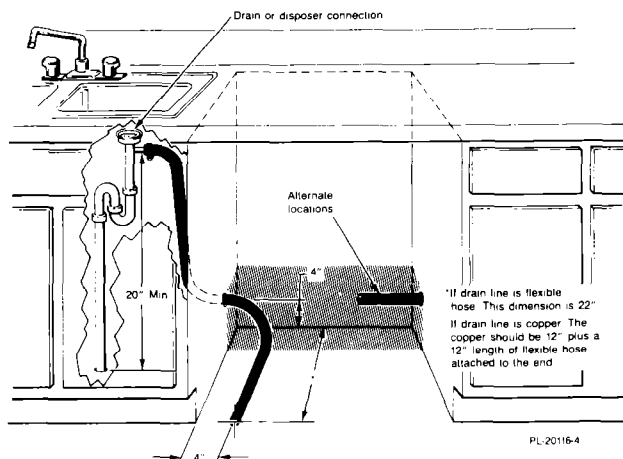


Fig. 5

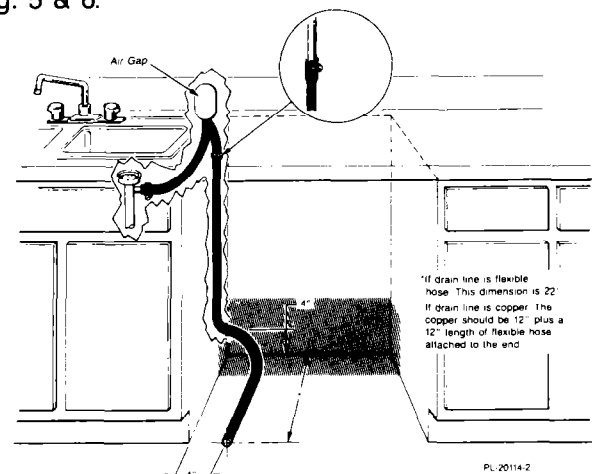


Fig. 6

Typical drain connection to an air gap (if required by local code) are shown in Fig. 6.

If drain is routed to a connection point less than 20" above the floor, the drain line **MUST** be made to form a high loop tube (shown in Fig. 7).

**CAUTION:** Failure to provide either the proper drain connection height (20" above floor level) or a 20" high loop will result in improper draining of the machine which may cause damage to the machine.

To form the high loop tube, see inset on Fig. 7. Make sure that no kinks develop in the hose or copper tubing.

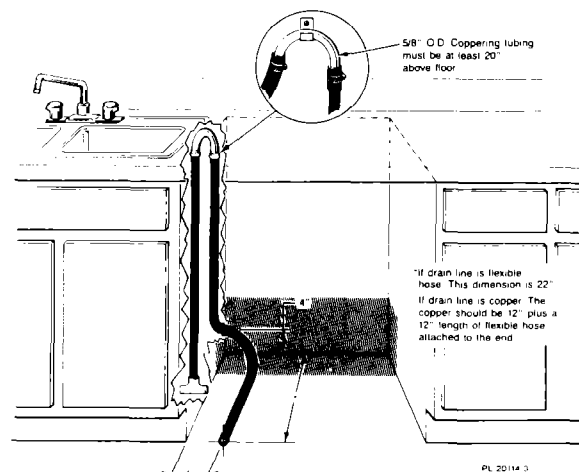


Fig. 7

## ELECTRICAL SUPPLY

**WARNING:** ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL CODES.

**WARNING:** DISCONNECT ELECTRICAL POWER SUPPLY.

The electrical supply must be a 115 volt, 15 amp, properly grounded, positioned as shown in Fig. 8, and should be installed by a qualified electrician. No other appliances or outlets should be on this circuit.

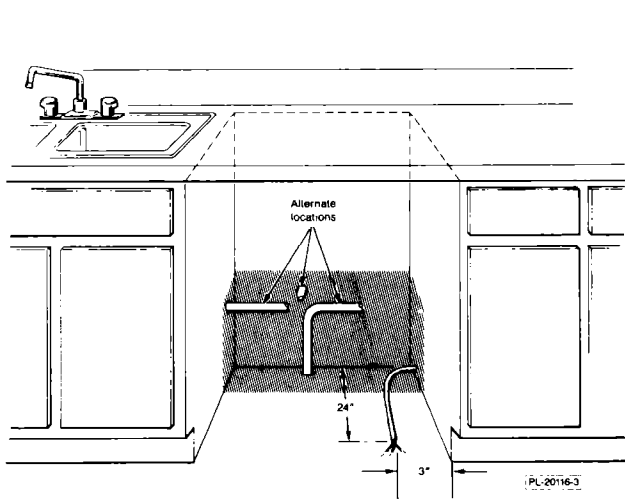


Fig. 8

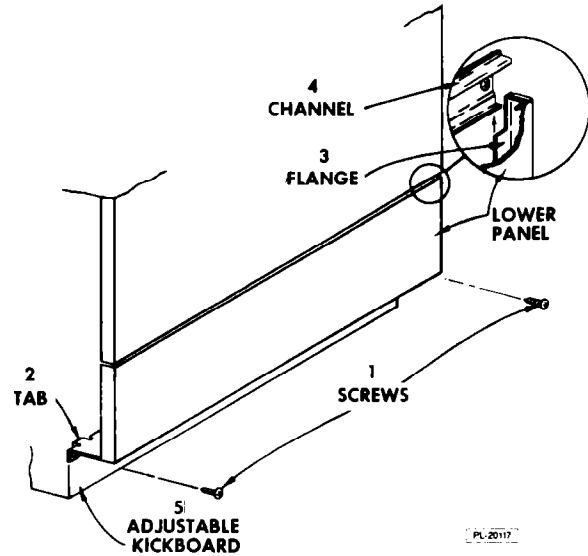


Fig. 9



### 3 PLACING THE DISHWASHER IN ITS LOCATION

The adjustable kickboard and lower panel (Fig. 9) must be removed for access to dishwasher connections. Remove the kickboard (5) by removing the two screws (one with lock washer) that secure it. Remove two screws (1) and pull out the bottom of lower panel to unhook tabs (2) from frame. Remove the lower panel by pulling it downward to slide panel flanges (3) from behind the support channel (4).

Set the dishwasher in front of the prepared cabinet opening and evenly adjust the four leveling feet to the desired height.

Slide the dishwasher into the cabinet opening, being careful to avoid damage to the floor or interference with water, drain, and electrical lines. DO NOT remove the rear cross channel.

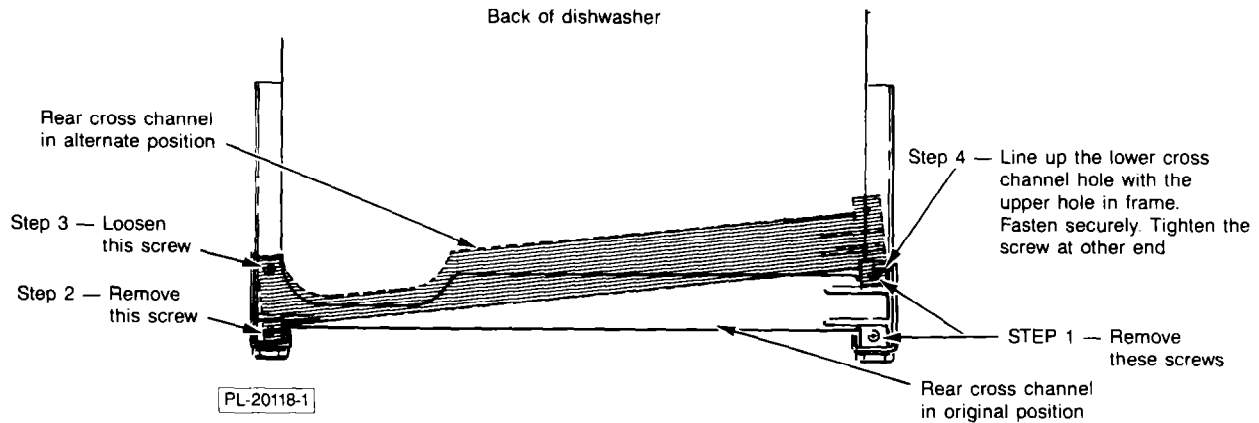


Fig. 10

Unlatch and open the door and remove the foam shipping cushions from upper corners of the door. Check to assure that cabinet clearance is equal on both sides of the dishwasher and that cabinet interference does not distort dishwasher tank.

With the door still open, place a spirit/bubble level against the front tank flange (Fig. 11) and level the dishwasher front-to-back and side-to-side by adjusting the leveling legs (Fig. 12) in or out as necessary.

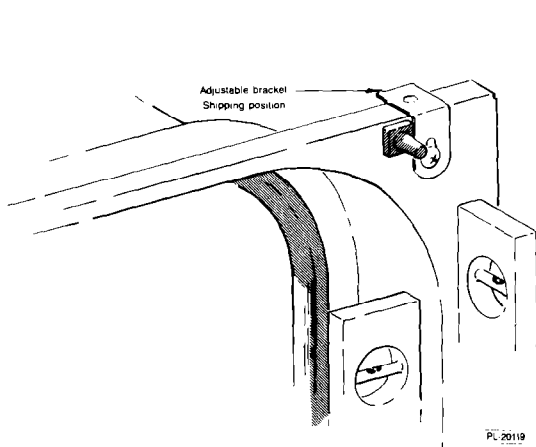


Fig. 11

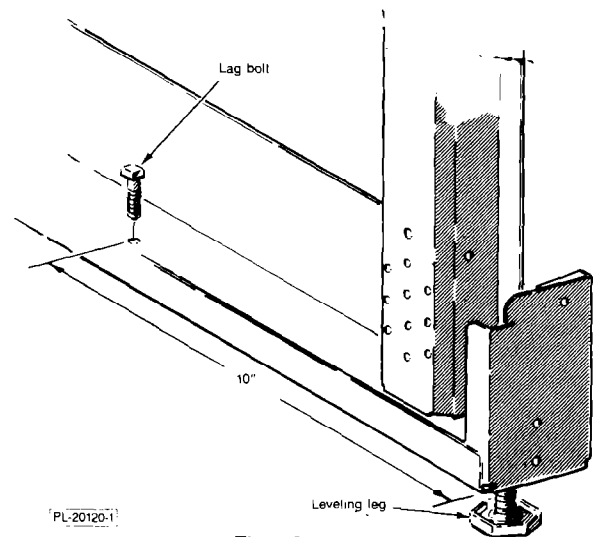


Fig. 12

If the dishwasher is not properly leveled or if it is distorted by cabinet interference, the door may not seal properly and may leak. If necessary, the leveling leg may be further adjusted to correct any distortion and align tank for equal clearance on both sides (Fig. 12).

To maintain dishwasher position and alignment, locate the adjustable brackets at the upper tank corners as shown in Fig. 13 and secure them to the counter top with self drilling flat head wood screws (supplied). **CAUTION :Make sure screw heads will not interfere with the top of the door.** If these brackets are not compatible with your countertop, the dishwasher may be anchored to the floor with a 1/4" lag bolt (not supplied) through the hole in each side of the dishwasher frame as shown in Fig. 12.

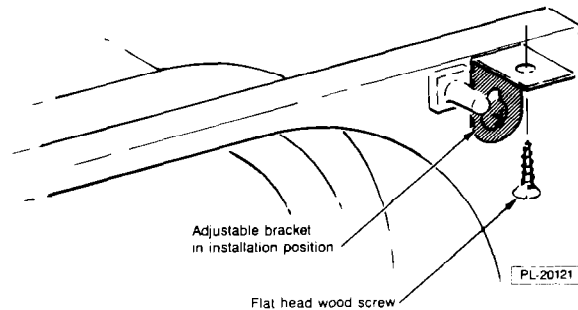


Fig. 13

## 4 CONNECTING THE WATER SUPPLY LINE

The water supply line should be flushed to clear any foreign material BEFORE connecting to dishwasher.

Make sure there are no sharp bends or kinks which might restrict water flow.

To facilitate connection of the water line from the rear of the dishwasher, it is recommended that a 3/8" NPT street elbow be connected to the fill valve and a 90° compression elbow (3/8" NPT one end) be connected to the street elbow. The supply line can then be connected to the compression elbow (see Fig. 14). **NOTE:** If galvanized pipe is used, substitute a second 3/8" street elbow for the compression elbow.

Turn on water supply and check for leaks.

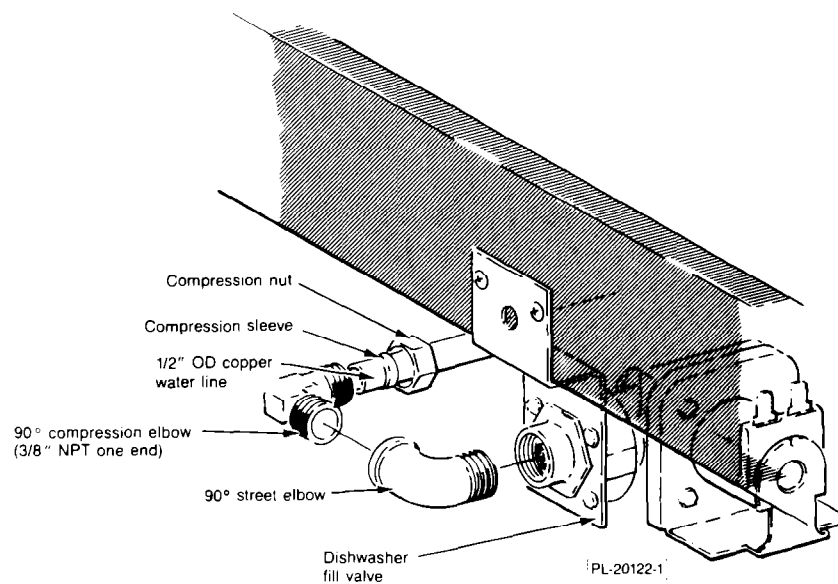


Fig. 14

## 5 CONNECTING THE DRAIN LINE

Remove the red plug from the dishwasher check valve and use a hose clamp (not supplied) to connect the prepared drain line directly to the dishwasher check valve (Fig. 15).

Make sure there are no sharp bends or kinks anywhere in the drain line which might restrict water flow.

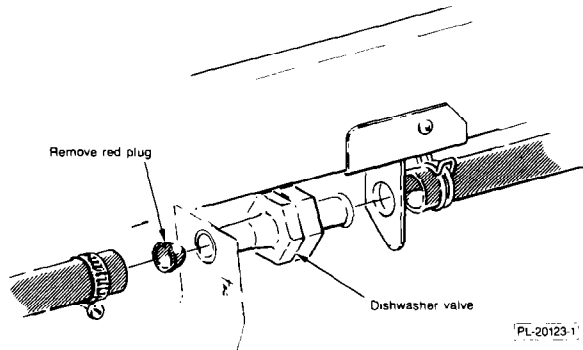


Fig. 15



Fig. 16

## 6 CONNECTING THE ELECTRICAL SUPPLY

**WARNING:** BE SURE ELECTRICAL POWER IS TURNED OFF AT CIRCUIT BREAKER OR FUSE BOX.

The dishwasher must be properly grounded before operating by connecting to a suitable ground in compliance with the National Electrical Code and/or local electrical codes.

A — Remove junction box from dishwasher. B — Install a UL Listed connector or strain relief bushing. C — Connect white lead to white lead and back lead to black lead with wire nuts, and secure ground wire under the green ground screw (Fig. 16). D — Reinstall junction box.

When house wiring is aluminum, use UL listed aluminum to copper connectors.

**WARNING:** MAKE SURE THAT WATER SUPPLY LINE, DRAIN LINE, AND WIRING DO NOT TOUCH ANY EXPOSED TERMINALS OF DISHWASHER WIRING.

## 7 FINAL CHECK LIST

Open the dishwasher door and remove all cardboard, and literature. DO NOT remove the white plastic plug buttons (Fig. 17) from sides of door or the white plastic bumpers on front corners of the lower rack. DO NOT remove the two spring retainers (Fig. 18) attached to the tank water heater if dishwasher is so equipped.

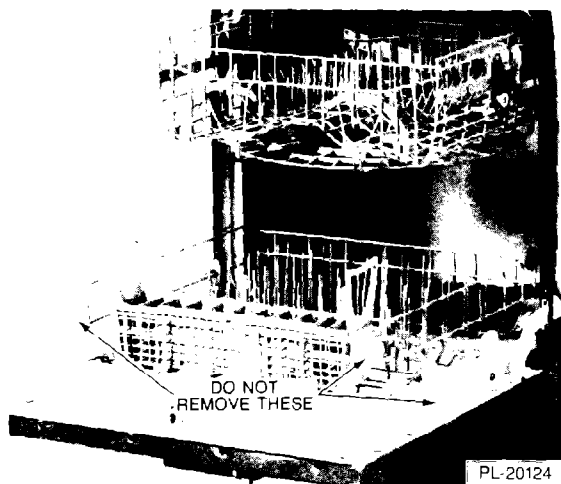


Fig. 17

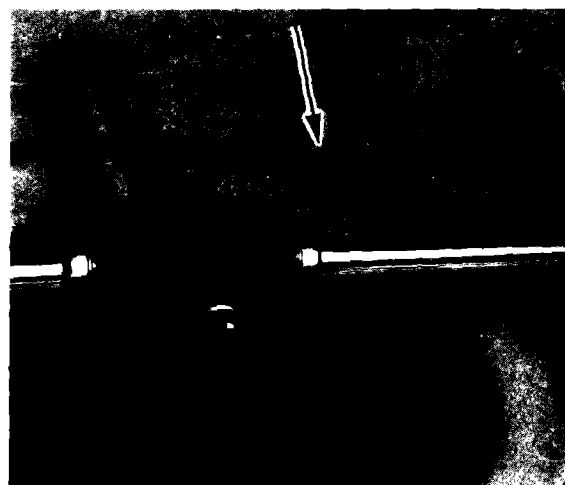


Fig. 18

Turn on the electrical power supply.

Test dishwasher operation:

1. **Push button** models — Close and latch the door. Press **Cancel Cycle** button, timer will automatically advance to off. Lift the door handle and allow several seconds for the timer to reset. Latch the door handle, press **Normal Wash** button, and allow the dishwasher to run through a complete cycle.
2. **Cycle Selection Dial Models** — Close and latch the door. Turn the dial clockwise until it clicks into the **Normal Wash** position. Press **Start or Normal Wash** button and allow the dishwasher to run through a complete cycle.
3. **Solid State Models** — Close and latch door. **PF** appears in display. Press Cancel

Turn off the electrical power and check for leaks under the dishwasher. Make sure that no kinks have developed in the fill or drain lines.

The lower panel and adjustable kickboard (Fig. 19) must be replaced. Line up panel flanges (3) to fit under lip of channel (4). Slide panel up until it stops and then push up tabs (2) to hook over the frame. Secure the lower panel with two screws (1). Replace the kickboard using two screws (one with lock washer). Check to assure that the opening at the bottom of the kickboard is not obstructed (e.g., by carpet, molding, etc.). This area must be open to provide air circulation to cool the motor.

This completes dishwasher installation. For more information about the dishwasher, please refer to your *Use and Care Guide*.

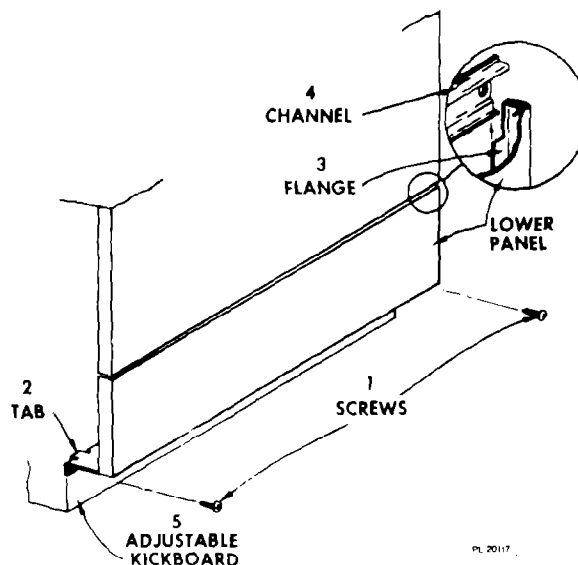


Fig. 19

## 8 FRONT PANEL VARIATIONS

Vari-Front Panel Pack — All KitchenAid dishwashers are equipped with reversible front panels. If you wish to change the color of your dishwasher panels, consult your *Use and Care Guide* for instructions on how to reverse these panels.

Custom Panels — If custom wood or decorator front panels are to be used, they should be  $\frac{1}{4}$ " thick. Length and width dimensions should be the same as the Vari-Front panel inserts. If wood panels are less than  $\frac{1}{4}$ " thick, they must be shimmed up to the required  $\frac{1}{4}$ " with appropriately sized back up board (corrugated cardboard, masonite, etc.). If wood panels are thicker than  $\frac{1}{4}$ ", the edges will have to be trimmed down on all four sides as shown in Fig. 20. **CAUTION: The finish applied to custom wood panels should be applied to the front, back, and all edges, and must be waterproof since a certain amount of moist air is discharged from the machine.**

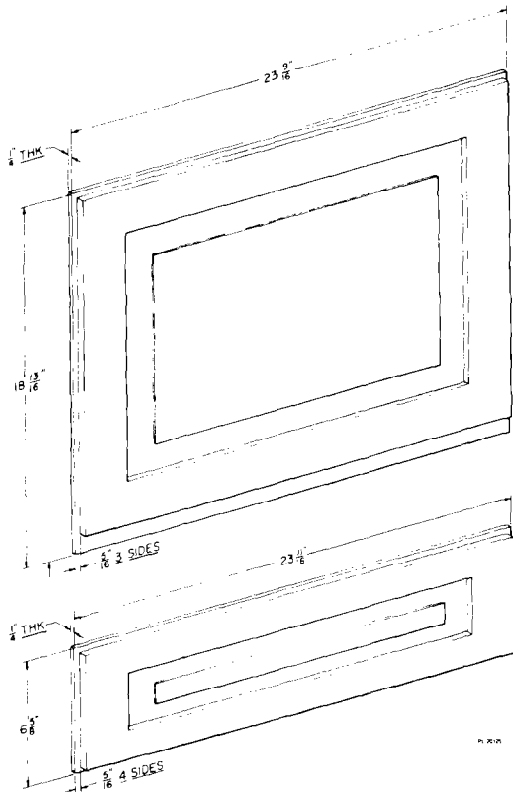


Fig. 20

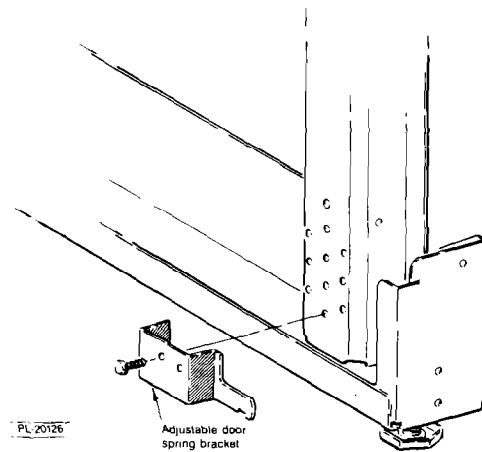


Fig. 21

The use of custom panels may necessitate adjustment of the door tension. The door should be counterbalanced (i.e. doesn't fall open when unlatched or pull itself closed from the open position).

If the door pulls itself closed from the open (horizontal) position, close the door and adjust the door springs by moving the adjustable door spring brackets (Fig. 21) upward to alternate holes. Move brackets downward if the door falls open too quickly.

If the custom panels are too heavy and the door still falls open when unlatched, heavy duty door springs should be ordered from your KitchenAid dealer.

## 9 SEASONAL STORAGE

### — CAUTION —

To protect against possible rupture of the fill valve, water lines leading to the dishwasher, as well as water lines in the dishwasher **MUST BE PROTECTED AGAINST FREEZING**. Such ruptures are not covered by the warranty.

For installation where the dishwasher is to be left unused and subjected to freezing temperatures, it must be prepared as outlined in your *Use and Care Guide*.

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**Major Appliances**



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