

# **DISHWASHER**

## **Installation Manual**



# **FORTÉ**

**Built-In Dishwasher**  
**F18DWS450PR**

# INSTALLATION INSTRUCTIONS

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## SAFETY INSTRUCTIONS

Throughout this manual, you'll see Warning and Caution notes. These warnings, cautions, and the important safety instructions that follow do not cover all possible conditions and situations that may occur. It's your responsibility to use common sense, caution, and care when installing, maintaining, and operating the dishwasher. Forte is not liable for damages resulting from improper use.

## Important Safety Instructions

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What the icons and signs in this installation guide mean:

 WARNING	Hazards or unsafe practices that may result in severe personal injury or death.
 CAUTION	Hazards or unsafe practices that may result in personal injury or property damage.
 CAUTION	To reduce the risk of fire, explosion, electric shock, or personal injury when using the dishwasher, follow these basic safety precautions:
	Make sure the machine is grounded to prevent electric shock.


These warning signs are here to prevent injury to you and others.

Please follow them explicitly.

After reading this section, keep it in a safe place for future reference.

Read all instructions before using the appliance.

Install and store the dishwasher inside, away from exposure to weather.


 Do not install the dishwasher near electrical components. Keep the dishwasher away from open flames.

Do not install the dishwasher on a carpet as this is a fire hazard.

Do not install the dishwasher in a location where the water may freeze (where the temperature falls below 32°F(0°C). Frozen water in the hoses or pipes may damage the dishwasher.

As with all equipment using electricity, water and moving parts, potential hazards exist. To safely operate this appliance, become familiar with its operation and exercise care when using it.

The dishwasher must be properly grounded. Never connect it to an ungrounded outlet.

 Prior to removal of original dishwasher and the installation of your new unit, make sure to switch off your circuit breaker. Do not connect the dishwasher until you have completed the installation. Connecting the power cable is the last step when installing the dishwasher.


All wiring and grounding must be done in accordance with the electrical code applicable to the region.

## GROUNDING INSTRUCTIONS


For a permanently connected appliance:

This appliance must be connected to grounded metal, 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.

The dishwasher is very heavy. Do not attempt to move or carry a dishwasher alone. Two or more people are needed to move a dishwasher and avoid potential injuries.

 If the power cable is damaged, it must be replaced by the manufacturer, a service agent or similarly qualified person in order to avoid a hazard.

 Do not touch the power cable with wet hands.

 Do not connect another appliance to the same power outlet as the dishwasher.

Make sure to use a new water supply line. Old lines are susceptible to breakage because they become hardened and may cause property damage due to a water leakage.

The dishwasher must be connected to a hot water supply with a temperature between 120 °F(49°C)and 149 °F(65°C). This temperature range provides the best washing result and shortest cycle time. Temperature should not exceed 149 °F(65°C) to prevent damage to dishes.

Ensure that the water supplied to the dishwasher does not freeze. Frozen water can damage the hoses, valves, pump, or other components.

For a full list of safety information, please refer to the User Manual.

## Before Installing The Dishwasher

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### WARNING

#### Tip-Over Hazard

- Do not use the dishwasher until it is correctly installed.
- Do not push down on the door when it is open.
- Do not place excessive weight on the open door.



#### Electric Shock Hazard

Failure to follow these instructions can result in death, fire, or electric shock:

- Electrically ground the dishwasher
- Connect the ground wire to the green ground connector in the junction box.
- Do not use an extension cord.

To reduce the risk of electric shock, fire, or injury to persons, the installer must ensure that dishwasher is completely enclosed at the time of installation.

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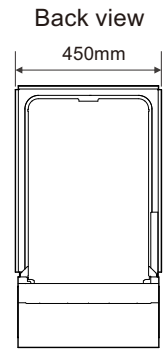
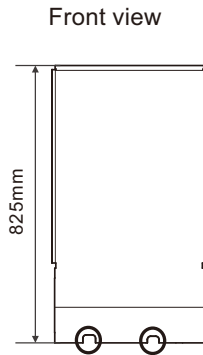
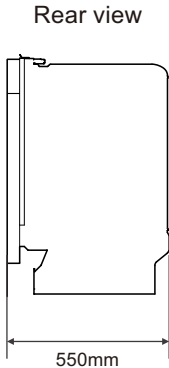
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25 **SPECIFICATIONS**

# PREPARING THE DISHWASHER ENCLOSURE

## Product Dimensions



The water supply line, power cable and drain hose should go through this space behind the dishwasher. Then, the power cable run in channels under the dishwasher to connections in the front.

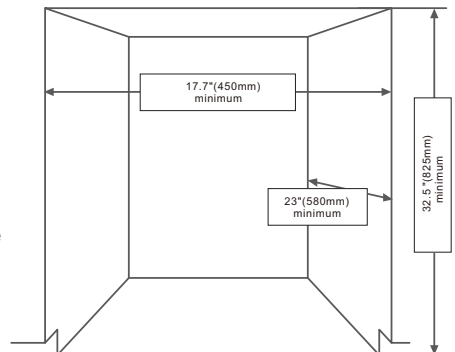
## Enclosure Dimensions

This dishwasher is designed to be enclosed on the top and on both sides by a standard residential kitchen cabinet unit.

The installation enclosure must be clean and free of any obstructions.

The enclosure must be at least 23.6 inches wide 23 inches deep and 32.5 inches high.

For the front door of the dishwasher to be flush with the leading edge of the counter top, the counter top must be at least 23 inches deep.



# INSTALLING THE DISHWASHER

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Be sure that you or your installer follow these instructions closely so that the new dishwasher works properly and that you're not at risk of injury when washing dishes.

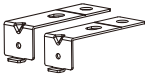
## Step 1 Check The Parts And Tools

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Before starting on the installation, prepare all the necessary tools and parts required to install the dishwasher. This will save installation time and simplify the installation process.

### Parts Required

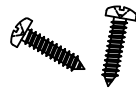
Provided with the dishwasher. Check when you unbox the dishwasher in Step 5.



Installation brackets 1  
X2



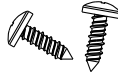
Installation brackets 2  
X2



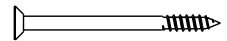
ST3.9\*13 X2  
(for the kick plate)



ST4\*14 X10  
(For installation  
Brackets 1 & 2)



ST3.5\*9 X2  
(For the installation  
bracket)



ST3.5\*45 X4  
(For the decoration  
door)



ST3.5\*25 X2  
(For the decoration  
door hook)



decoration door hook X2



Adjustment cap X2



Cable Tie  
(for the drain hose)

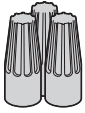


Kick plate



Condensation strip

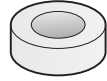
Not provided



Twist on wire connector



Strain relief



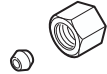
Electrical tape & Standard duct tape



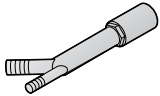
Hot water supply line



90° Elbow



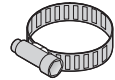
Tube fittings



Air gap



Rubber connector



Hose clamp



Power cable



Teflon tape or sealing compound



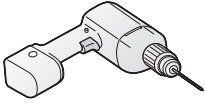
Decoration door

For the hot water supply line ? We strongly recommend using copper tubing with a compression fitting or a flexible stainless steel braided hot water supply line.



Do not use plastic tubing. Plastic tubing can deteriorate over time and cause a leak inside the tube fitting.

Tools required



Electric drill



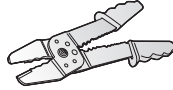
Safety glasses



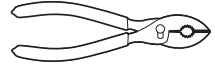
Gloves



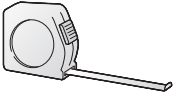
Adjustable wrench



Wire stripper



Pliers



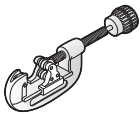
Tape measure



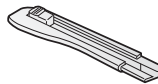
Pencil



Phillips screwdriver



Tubing cutter



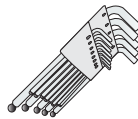
Cutting knife



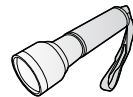
Hole saw



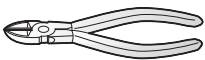
Torx t20



Hex L-wrench



Flashlight



Nipper



Flat screwdriver



Level

# INSTALLING THE DISHWASHER

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## New installation

If the dishwasher is a new installation, most of the installation work must be done before the dishwasher is moved into place.

## Replacement

If the dishwasher is replacing an old dishwasher, you must check the existing dishwasher connections for compatibility with the new dishwasher. Replace the existing connections as necessary.

## Step 2 Select The Best Location For The Dishwasher

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The following criteria are important to ensure the best location for the dishwasher:

- The location must have a solid floor that is able to support the weight of the dishwasher.
- The location must be near a sink with easy access to the water supply, drain, and electrical outlet.

For the drain to operate properly, the dishwasher should be installed within 9.8 ft (3 m) of the sink.

- The location must let you load your dishes into the dishwasher easily.
- The location must have sufficient space for the dishwasher door to open easily and provide enough space between the dishwasher and the cabinet sides (at least 0.1 in (2 mm)).

If the dishwasher is installed in a corner, ensure that the side of the dishwasher is more than 2 in (50 mm) from the wall or cabinet to its right or left.

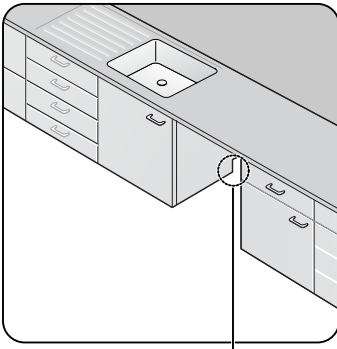
- The wall at the back must be free of obstructions.

If this is a new installation, follow these steps:

1. Using a hole saw, cut a hole into the side of the cabinet that hold the sink as shown in Figure 1-1 below.
2. If the base inside the sink cabinet is raised above the kitchen floor and is higher than the connections on the dishwasher, make a hole in the base inside the cabinet and in the cabinet side as shown in Figure 1-2.

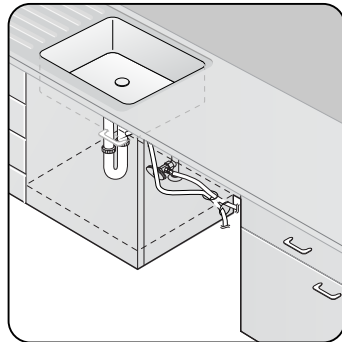
Depending on where your electrical outlet is, you may need to cut a hole in the opposite cabinet side.

<Figure 1-1>



The hole for the water supply line, drain hose and power cables.

<Figure 1-2>

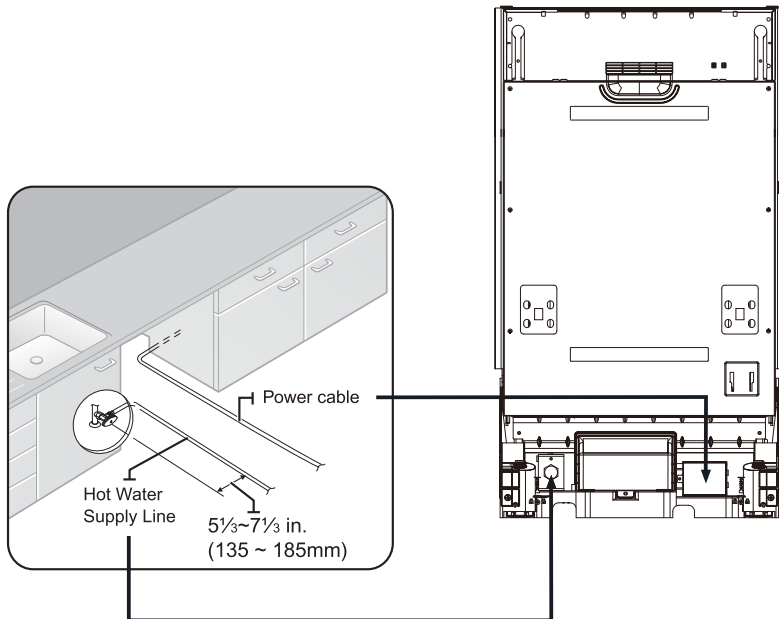


## STEP 3 CHECK WATER SUPPLY REQUIREMENTS AND CAUTIONS

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- The hot water supply line pressure must be between 0.04-1MPa.
- Adjust the water heater to deliver water between 120 °F(49°C)~149 °F(65°C).
- The dishwasher must be connected to a hot water supply between 120 °F(49°C)~149 °F(65°C). This temperature range provides the best washing result and shortest cycle time. Temperature should not exceed 149 °F(65°C) to prevent damage to dishes.
- Ensure that the water supply valve is turned off before connecting the hot water supply line to the dishwasher.
- Seal the hot water supply line connections using teflon tape or sealing compound to stop any water leakage.
- When you install the dishwasher, ensure there is nothing on the drain hose and be careful not to tear it during the installation process.

<Figure 2>



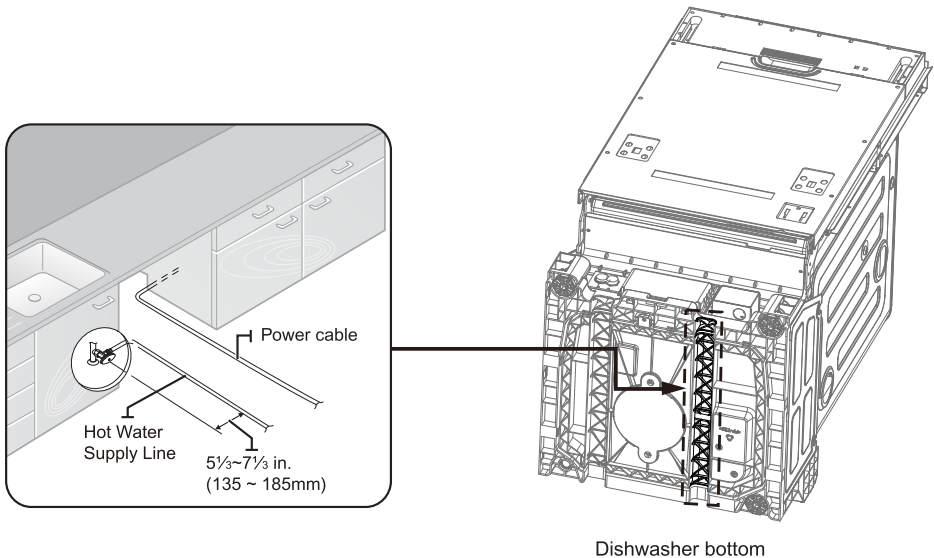
# INSTALLING THE DISHWASHER

## Step 4 Check The Electrical Requirements And Cautions

The electrical requirements for the dishwasher are as follows:

- In the United States, install in accordance with the National Electric Code/State and Municipal codes and/or local codes.
- In Canada, install in accordance with the Canadian Electric Code C22.1-latest edition/Provincial and Municipal codes and/or local codes.
- For cable direct connections.
- Use flexible, armored or non-metallic sheathed, copper wire with a grounding wire that meets the wiring requirements for your local codes and ordinances.
- Use the strain relief method provided with the wiring junction box or install a U.L.-listed/CSA-certified clamp connector to the wiring junction box. If using conduit, use a U.L.-listed/CSA-certified conduit connector.

<Figure 3>



## Step 5 Unpacking And Inspecting The Dishwasher

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unbox the dishwasher in an open area free of obstruction both around the carton and overhead. We recommend that you retain the carton and all of the packing materials until the dishwasher is fully installed and operational to ensure you have removed all the product's components from the carton prior to disposal.

### Unboxing

1. Unbuckle or cut the four straps securing the carton top.
2. Lift the top of the telescoping carton clear of the carton tray and the contents, and then turn it over and place it on the floor.
3. Put the straps and all of the packing materials from around the dishwasher inside the carton top, inspecting them for any signs of damage.
4. Lift the dishwasher from the carton tray, and then place it on the floor. Put the tray into the carton top.
5. Remove the bag that protects the dishwasher during shipping.



**ALWAYS LIFT THE Dishwasher TO MOVE IT.**

Sliding it over rough surfaces can damage the dishwasher's feet and sliding the feet over finished surfaces can, in some cases, damage that finish or the underlying surface.

6. There is also packing inside the dishwasher that you may want to leave in place until the dishwasher is installed.
7. DO not, under any circumstances, remove the sound-absorbent padding that surrounds the exterior of the tub of the dishwasher.

### Inspecting

#### Mechanical

1. Check the plastic base assembly to ensure that it is intact
2. Check the dishwasher's feet to ensure they are in place and can be adjusted so you can level and secure the dishwasher.
3. Check all the visible components on the bottom of the dishwasher to ensure they are intact and secure.
4. Check the door latch, the operation of the hinges, and confirm the door is properly secured to the dishwasher.

# INSTALLING THE DISHWASHER

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## Plumbing

1. Check the hot water connection on the front left-side of the base of the dishwasher. The mountingplate should be secured to the front of the base, the threads inside the connection should be smooth and shiny, and the area should be clean and free of any debris.
2. Check the plastic Brake and Sensor cases to ensure these assemblies are not cracked and that all nconnections are secure.
3. Check the drain hose for any holes or deformities that could allow a water leak during draining.

## Electrical

1. Confirm the junction box cover is secured to the junction box on the front right-side of the base of the dishwasher.
2. Confirm the electrical box was not damaged during shipping and that it is secured to the base of the dishwasher.

## Appearance

1. Confirm there are no dents or scratches on the front of the dishwasher
2. Check the edges of the doors for any roughness or cracking
3. Check the control panel to ensure it is clear and unscratched, and that all the control markers are in their proper places.

## Parts

1. Confirm you have all the parts listed in Step 1 an page 6.

## Step 6 Preparing The Dishwasher

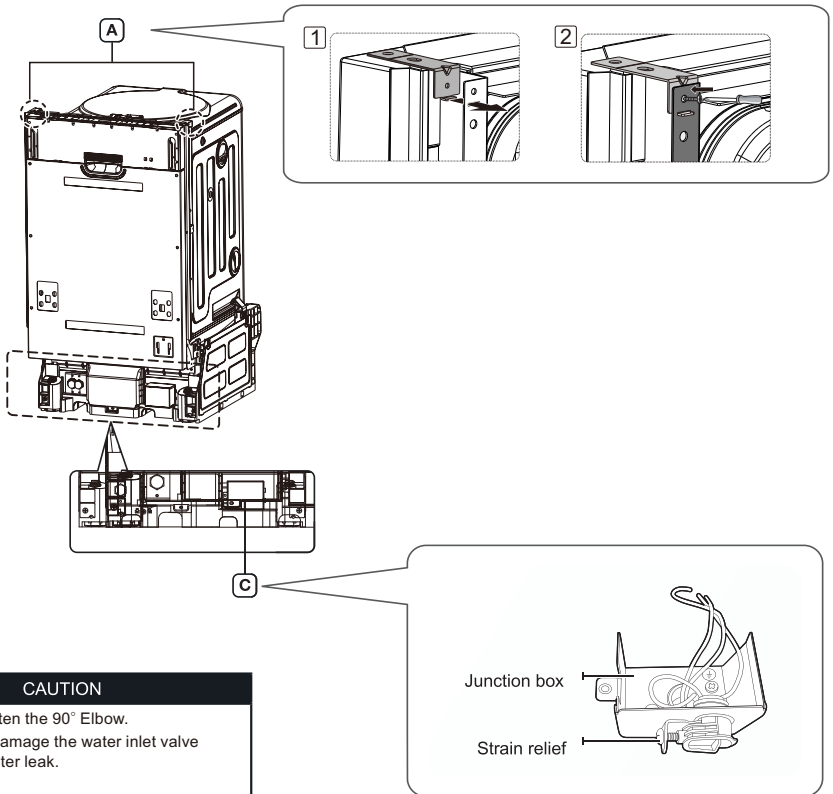
1. Ensure that the circuit breaker and water supply valve are turned off before proceeding with the following steps.



Before you move or lay down the dishwasher for installation, make sure to adjust the height of the legs so the legs are as short as possible. This prevents the legs from breaking. Level the dishwasher by adjusting the height of the legs after you have the dishwasher in place.

2. Make sure there are no kinks and that the hose is not bent at any extreme angles that could constrict the flow of water.
3. Remove the junction box cover located at the bottom front right of the dishwasher using a screwdriver, and then install the strain relief (Figure 4 - C). Make sure to keep the junction box cover you removed. It is used in Step 11, Wiring Connections.
4. If the countertop is made of wood or a material that is not damaged by drilling, attach the two installation brackets that were supplied with the dishwasher using the supplied screws (Figure 4 - A). They will be used in Step 9. Securing the Dishwasher.


<Figure 4>



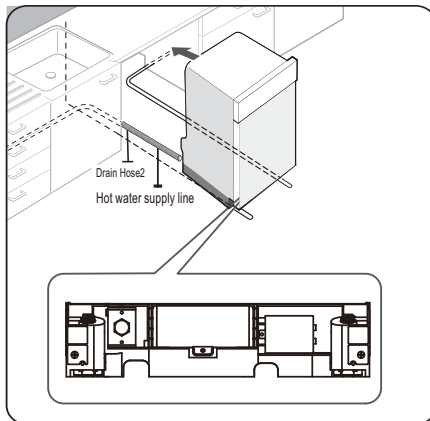
# INSTALLING THE DISHWASHER

## Step 7 placing The Dishwasher And Connecting The Hot Water Supply Line

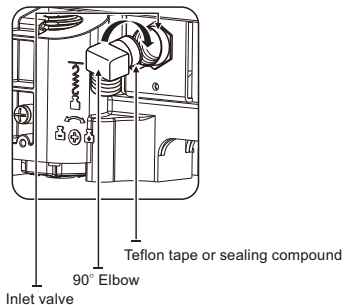
1. Adjust the three leveling legs at the bottom of the dishwasher after measuring the height of the cabinet opening from under the countertop to the floor. (See Step 8, Leveling the Dishwasher.)
2. Locate the hot water supply line and the power cable.
3. Place the dishwasher so that the power cable is in the right channel of the base of the dishwasher. Use standard duct tape or cable ties to secure the electrical cable to their adjacent channels in the base. This can prevent the electrical cable from being squeezed when you push the dishwasher into place.
4. Pull the drain hose through the hole in the sink cabinet side wall. Keep it free of kinks.
5. Make sure the hot water supply line is not twisted, and then connect the hot water supply line to the elbow joint.
6. Slide the dishwasher carefully into the installation space. If possible, gently pull any excess lengths of water supply line, drain hose, or power cable back as you move the dishwasher. Get a second or third person to help you do this if necessary.

 **CAUTION** Do not place the dishwasher on the water supply line, drain hose, or power cable. Also, make sure they are not folded or twisted.

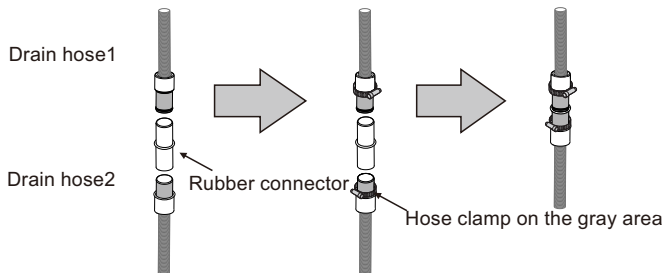
<Figure 6>



<Figure 7>

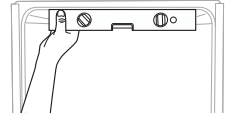


**CAUTION**  
Do not overtighten the 90° Elbow. Doing so may damage the water inlet valve and cause a water leak.

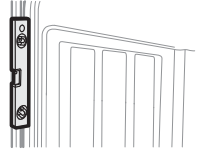


## Step 8 Leveling The Dishwasher

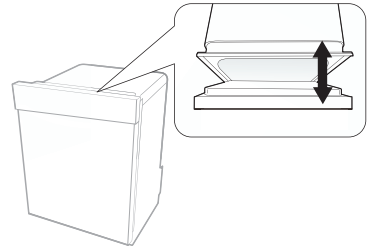
1. Open the door and place the level against the top of the tub on the inside and check if the dishwasher is level. If it is not level, rotate the leveling legs at the bottom front of the dishwasher until the dishwasher is level. See the first note below for instructions on adjusting the height of the front legs.



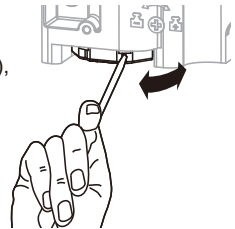
2. Use the level to check if the dishwasher is level front to back, as shown in the figure to the right. If the dishwasher is not level front to back, adjust the height of the rear leg until the dishwasher is level. See the second note below for instructions on adjusting the rear leg.



3. Open the door of the dishwasher and check if both the tub and door clearances are correct. If not, rotate the leveling legs on the bottom front of the dishwasher. You can also check this by placing a level against an inside front vertical surface of the tub.

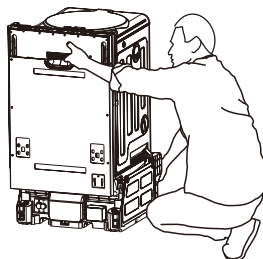


If the leveling legs are rotated to the right (counter clockwise), they are loosened and the front of the dishwasher is raised. And the maximum height be raised is about 50mm. If they are rotated to the left (clockwise), they are tightened and the front of the dishwasher is lowered.



Before you move the dishwasher for installation, make sure to adjust the height of the legs so the legs are as short as possible. This prevents the legs from breaking. Level the dishwasher by adjusting the height of the legs after you have the dishwasher in place.

When you prepare to move the dishwasher for installation, you should put your hand under the basement, this prevents your hand from injuring.



# INSTALLING THE DISHWASHER

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## Step 9 Securing The Dishwasher

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You must fix the dishwasher to the countertop or cabinet side walls for additional stability and safety.

1. If the countertop is made of wood or the material will not be damaged by drilling, follow the instructions in 2-1 below.

If the countertop is made of granite, marble, or any other material that can be damaged by drilling, follow the Instructions in 2-2 below.

- 2-1. Put a large towel into the bottom of the dishwasher to prevent wood shavings or a dropped screw from falling into the dishwasher.

Carefully drill screw holes into the counter top bottom by passing the drill bit through a screw hole in each bracket, and then drilling into the counter top bottom beneath.

Make sure the hole you drill is smaller than the diameter of the screw.

Firstly, put the installation bracket into the slot of the side plane and tighten to the dishwasher with screw ST3.5\*9. Secondly, insert the provided screws into the brackets, and then tighten to secure the dishwasher to the counter top.

- 2-2. Put a large towel into the bottom of the dishwasher to prevent wood shavings or a dropped screw from falling into the dishwasher. Remove the adjustment cap with the tip of a screwdriver. The caps are just inside the tub near the middle of the tub on both sides (Figure 9 on the next page).

Drill a hole into the sides of the kitchen cabinet on both sides by carefully passing a drill bit through the screw holes exposed by the removal of the spacer caps, and then drilling into the cabinet side beneath.

Make sure the hole you drill is smaller than the diameter of the screw.

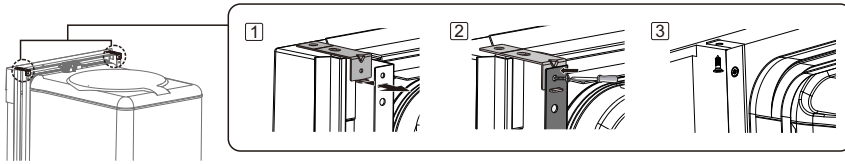
Also make sure the drill bit does not strike the sides of the spacer cap holes. Firstly, put the installation bracket into the slot of the side plane and tighten to the dishwasher with screw ST3.5\*9. Secondly, insert the provided screws into the holes, and then tighten to secure the dishwasher to the cabinet. Make sure the tub is not distorted by pressure from the screws.

If the tub is distorted, loosen the screws a little.

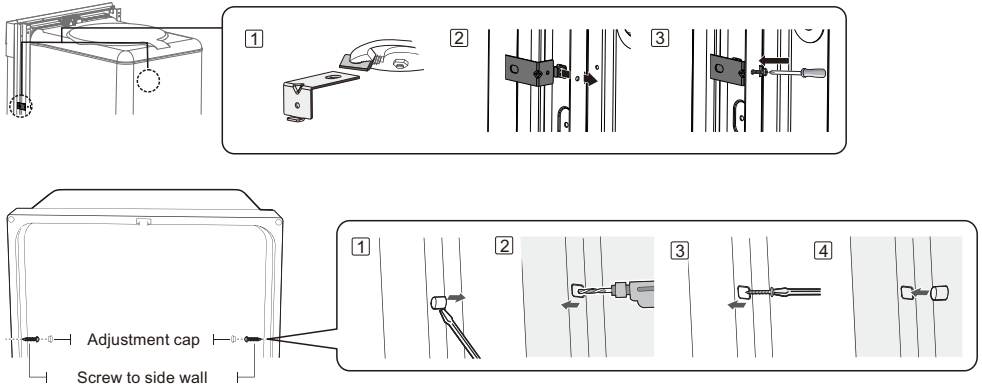
Replace the tub spacer caps.

- The screws or tub spacer cap may fall into the dishwasher while you are working with the door open. Cover the interior of the dishwasher with a towel to prevent any screws from falling into the dishwasher. If any foreign items such as a screw get into the dishwasher, it may cause noise, an abnormal operation, damage, or a malfunction.
- Use a magnetic screwdriver to help prevent screws from falling into the dishwasher.
- If a foreign item such as a screw gets into the dishwasher and you are unable to remove it, the dishwasher needs to be disassembled. Contact a qualified service technician for this.

<Figure 8>



<Figure 9>

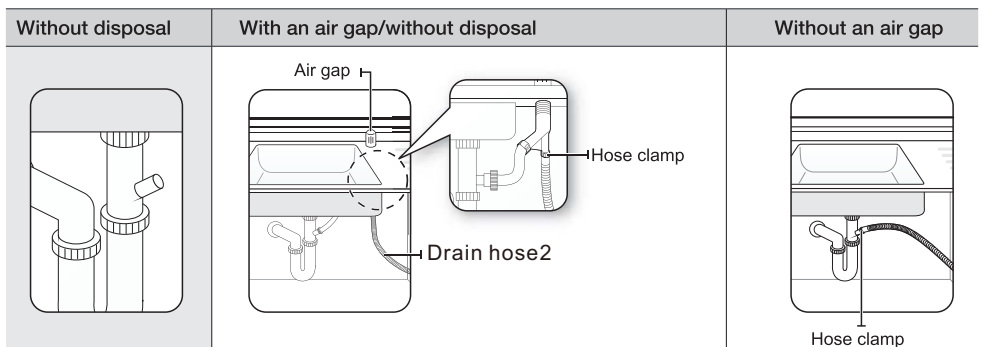


## Step 10 Connecting The Drain Hose

1. Check the parts on the sink to which the drain hose will be connected.
2. There are several ways to insert the drain hose into the drain hose connector of the sink, as shown in the following figures. You must connect the drain hose in accordance with the water pipe installation regulations in your region.

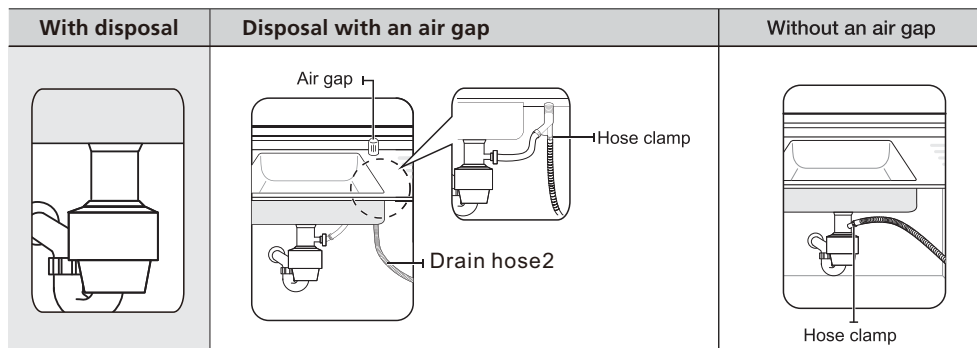
<Figure 10>

Case 1. Without disposal



# INSTALLING THE DISHWASHER

## Case 2. With disposal



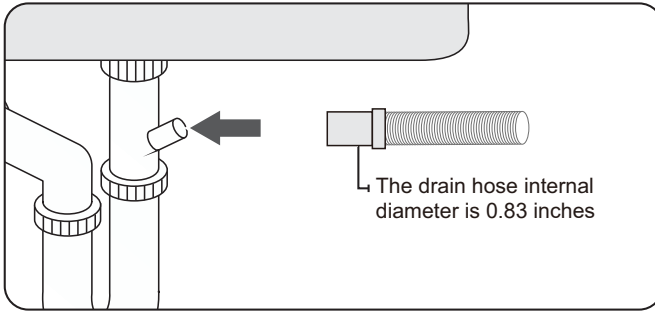
3. Check the size of the sink's drain hose connector(21mm- as shown in Figure 11 below). If the end of the drain hose does not fit onto the drain hose connector of the sink, use an adaptor purchasable at a plumbing/hardware supply store.
4. Slide a hose clamp over the end of the drain hose. Attach the drain hose to the sink connector, slide the hose clamp to the end of the hose, and then tighten the hose clamp.  
Note : You must use a hose clamp. Failure to do so may cause water leakage.
5. If there is no air gap, make sure to hang the middle of the drain hose well above the sink cabinet base to prevent backflow (see Figure 13 on the next page).
6. When drilling a hole for the drain hose on the cabinet wall, take caution not to damage the drain hose by sharp edges of the hole. On wooden walls, use sand paper to soften the edges. On metal walls, use insulation tape or duct tape to cover the sharp edges around the hole.
7. Take caution not to damage the drain hose when installing the dishwasher on the floor, wall, or cabinet.  

To prevent leaks or drainage problems, make sure the drain hose is not damaged, kinked, or twisted.
8. Do not cut the wrinkled area of the drain hose to fit the size. When arranging the drain hose, take caution not to contact on sharp edges of the cabinet or under-sink.

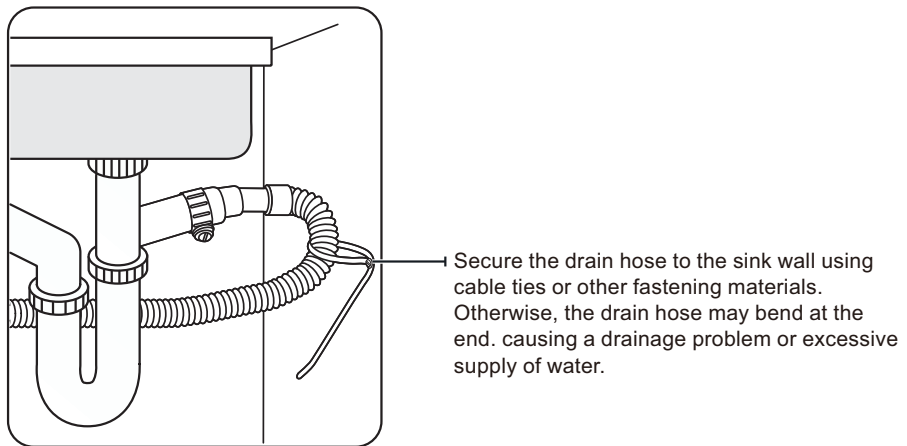


- Be careful when cutting off the end of the drain hose as there is a risk of injury. Clean around the sink's drain connection so that it does not damage the hose. Check for any foreign items in the drain hose and remove them.
- When arranging the drain hose, make sure the drain hose is not cut, torn, or broken by any sharp edges of the floor, the product itself, or the cabinet. A damaged drain hose causes a leak.

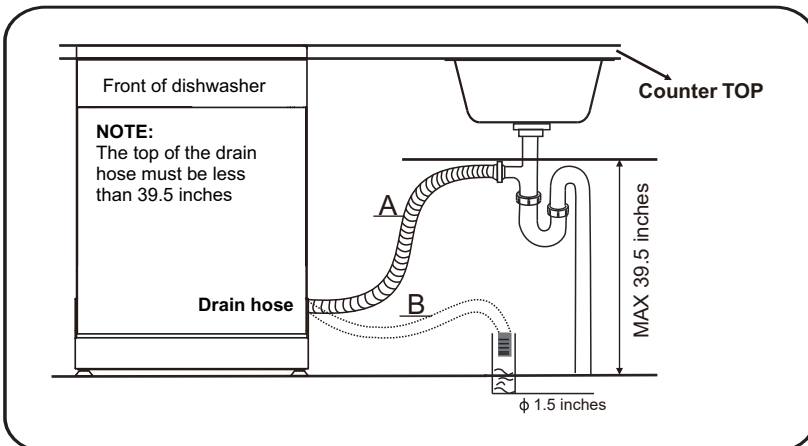
<Figure 11>



<Figure 12>



<Figure 13>

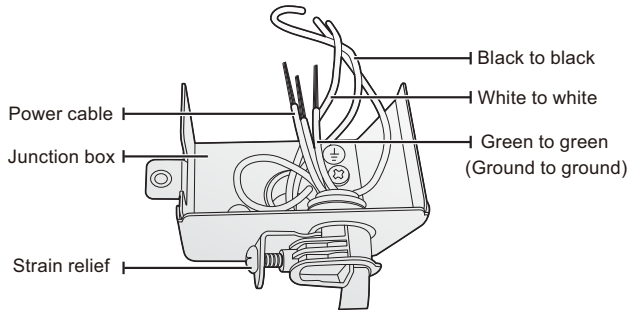


# INSTALLING THE DISHWASHER

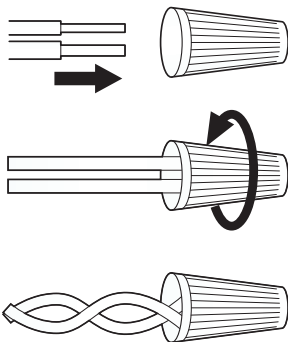
## Step 11 Wiring Connections

1. Before connecting the power cable to the dishwasher, make sure the circuit breaker is off.
2. In the junction box located at the front bottom right of the dishwasher, find the three power wires from the dishwasher including the grounding line.
3. Pass the power cable through the strain relief, and then into the junction box (Figure 14).
4. Connect the black wire of the dishwasher to the black wire of the power cable by inserting both into a wire nut and then rotating the wire connector as shown in Figure 15.  
Connect the white wire to the white wire and the green to the green in the same manner.
5. Recheck each wire to ensure it is connected correctly and securely.  
Each colored wire should be connected to the corresponding wire of the same color.  
White should be connected to white, black to black, and green to green.
6. Replace the junction box cover on the dishwasher.

<Figure 14>



<Figure 15>



### WARNING

#### Electrical Shock Hazard

To avoid electrical shock, do not work on an energized circuit. Doing so could result in serious injury or death. Only qualified electricians should perform electrical work. Do not attempt any work on the dishwasher electric supply circuit until you are certain the circuit is de-energized.

### WARNING

#### Fire Hazard

To avoid a fire hazard, make sure electrical work is properly installed. Only qualified electricians should perform electrical work.

Recheck each wire to ensure it is connected correctly and securely.


Each colored wire should be connected to the corresponding wire of the same color.

## Step 12 Completing The Installation

1. Open the door and remove all foam, paper packaging, and unnecessary parts.
2. Turn on the circuit breaker you turned off before you began the installation.
3. Open the water supply valve to supply water to the dishwasher.
4. Turn on the dishwasher, and then select and run a cycle.

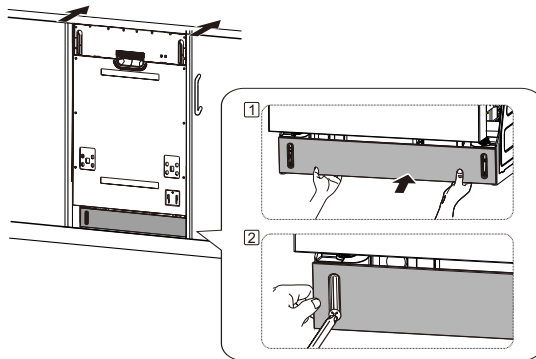
Check if the power turns on correctly and if there is any water leakage while the dishwasher is operating. If no errors occur while it is operating, turn off the dishwasher, and then go to Step 5,6,7 below.

If an error has occurred, turn off the dishwasher, close the water supply valve, and then refer to the user manual or contact local service center.

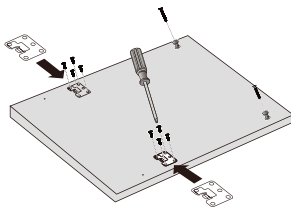
 **CAUTION** Make sure to check for water leakage on both ends of the water supply line and drain hose connector.

5. Confirm that the kick plate gasket is on the bottom of the kick plate. To install the kick plate with screw ST3.9\*13, refer to the figure 16.

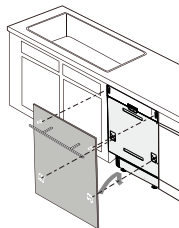
<Figure 16>



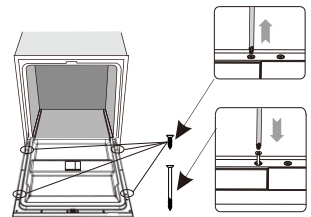
6. Install the decoration door to the outer door of the dishwasher.
  - 1) Install the hook and brackets on the decoration door, see the figure 17
  - 2) Put the hook into the slot of the outer door, for the positioning, see the figure 18
  - 3) Fix the decoration door onto the outer door by screws and bolts, see the figure 19



<Figure 17>



<Figure 18>



<Figure 19>

## Step 12 Completing The Installation

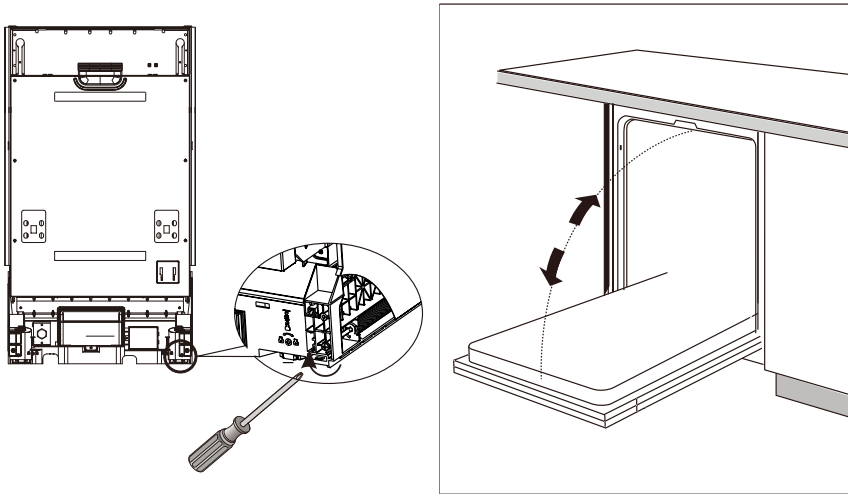
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### 7. Tension adjustment of the door spring.

The door springs are set at the factory to the proper tension for the outer door. If the decoration door is installed, you will have to adjust the door spring tension.

Rotate the adjusting screw to drive the adjustor to strain or relax the steel cable, see figure 20.

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.



<Figure 20>

# SPECIFICATIONS

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Power supply	120 V 60 Hz
Water pressure	0.04 - 1 MPa
Dimensions (Width x Depth x Height)	17.6 x 22.44 x 32.4 inches
Nominal inlet water temperature	120 °F(49°C)

Specifications are subject to change without notice for quality improvement purposes.  
The actual appearance of the dishwasher may differ from the illustrations in this manual.