1 SAFETY

1.1 General hazards

Don't use the dishwasher until it is completely installed. When opening the door on an uninstalled dishwasher, carefully open the door while supporting the rear of the unit. Failure to follow this warning can cause the dishwasher to tip over and result in serious injury.

In some conditions, hydrogen gas can form in a hot water system that has not been used for weeks. Hydrogen gas is explosive. Before filling a dishwasher from a system that has been off for weeks, run the water from a nearby faucet in a well ventilated area until there is no sound or evidence of gas.

Temperatures required for soldering and sweating will damage the dishwasher's base and water inlet valve. If plumbing lines are to be soldered or sweated, keep the heat source at least 6 inches (152.4 mm) away from the dishwasher's base and water inlet valve.

Removing any cover or pulling the dishwasher from the cabinet can expose hot water connections, electrical power and sharp edges or points. Handle with care. Always wear gloves and safety glasses.

1.2 Electrical shock / fire hazards

Don't allow electrical and water supply lines to touch. Don't work on an energized circuit. Doing so could result in serious injury or death. Only qualified electricians should perform electrical work. Don't attempt any work on the dishwasher electric supply circuit until you are certain the circuit is de-energized.

Make sure electrical work is properly installed. There should be no loose electrical connections. Ensure all electrical connections are properly made.

The customer has the responsibility of ensuring that the dishwasher electrical installation is in compliance with all national and local electrical codes and ordinances. The dishwasher is designed for an electrical supply of 120VAC, 60 Hz, connected to a dishwasher-dedicated, properly grounded electrical circuit with a fuse or breaker rated for 15 amps. Electrical supply conductors shall be a minimum #14 AWG copper only wire rated at 75°C (167°F) or higher.

This appliance must be connected to a grounded metal, 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. Don't use extension cords.

1.3 Plumbing / scalding hazards

Don't perform any work on a charged hot water line. Serious injury could result. Only qualified plumbers should perform plumbing work. Don't attempt any work on the dishwasher hot water supply plumbing until you are certain the hot water supply is shut off.

Don't over tighten the 90° elbow. Doing so may damage the water inlet valve and cause a water leak. Temperatures required for soldering and sweating will damage the dishwasher's water inlet valve. If plumbing lines are to be soldered or sweated, keep the heat source at least 6 inches (152.4 mm) away from the dishwasher's water inlet valve.

Check local plumbing codes for approved plumbing procedures and accessories. All plumbing should be done in accordance with national and local codes.

These instructions depict an installation method for stainless steel braided hose or PEX hot water supply lines. If using copper tubing or other material for water supply, defer to a licensed plumber for proper installation.

2 INSTALLATION

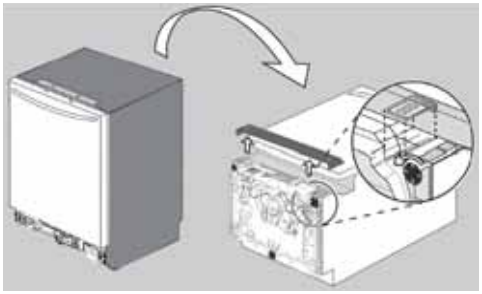
2.1 Pre-Install checklist

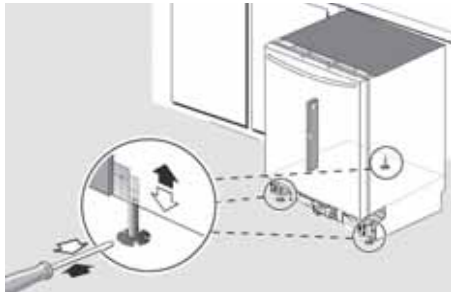
- □ Unpack unit. Retain packing material until installation is successful. Remove packing material from inside the dishwasher.
- □ Inspect parts to ensure you have all the necessary materials.
- □ Flush household hot water supply for at least two minutes.
- □ Measure the enclosure area. The opening must be at least 34" (87 cm) high and 23-5/8" (60-61 cm) wide.
- □ The opening must be close enough to the sink for water line and drain hose plumbing access.
- □ Unit must be installed close enough to the sink so that drain hose length does not exceed 92" (234 cm) and a high loop is raised at least 20" (51 cm) above the floor.
- □ Wooden openings must be sanded smooth and metal openings must be covered by a protective gasket.
- □ Is your water heater set at 120°F (49°C) and does water pressure measure 15-145 psi (1-10 bar)?
- □ If installing in a corner, the dishwasher door must clear cabinet hardware.
- □ Determine mounting method based on dishwasher model and countertop type, whether top or side mount.

2.2 Alignment

Carefully place dishwasher on its back to pre-adjust all three feet -- turn feet clockwise to raise or counter-clockwise to lower. Maximum height with feet fully extended is 34.5”. Place dishwasher upright, then level side to side and front to back. When done, insert leg leveler locking screw in back foot.

Regardless of countertop surface, mounting brackets are attached on the side of dishwashers. They are screwed into screw bosses on the side dishwasher frame, then into the cabinetry.



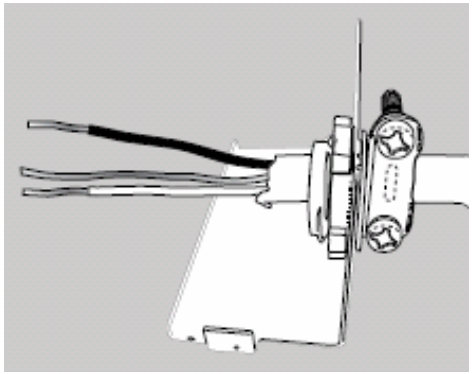


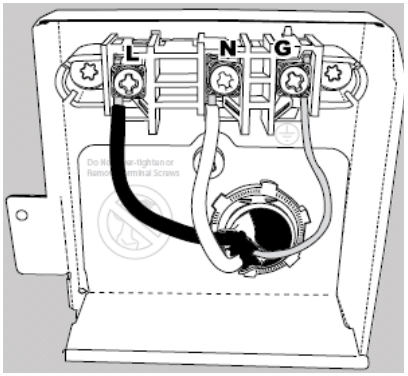
2.3 Electrical connection

Install according to national and local codes.

Carefully place dishwasher on its back to make electrical connections to the terminal block. Turn power off at the fuse box. Extend power cord approximately 21” from the left side of the opening, and 30” from the back wall, making sure the cord doesn’t contact any moving parts.

Strip outer casing of electrical wire to expose 2.5" - 3" (65 - 76 mm) of inner wires, then strip 1/2" (13 mm) casing from each wire. If plugging the dishwasher into an outlet, contact customer service to order approved power cord accessory kit (**SGZPC001UC**). Insert cord through a strain relief (not included) and install to strain relief plate. Attach wires to terminal block (black – **L** (hot), white – **N** (neutral) & green – **G** (ground). Unscrew terminal screws, *but don’t loosen or remove them as they may become damaged*. Attach wires snugly, *but don’t overtighten*.

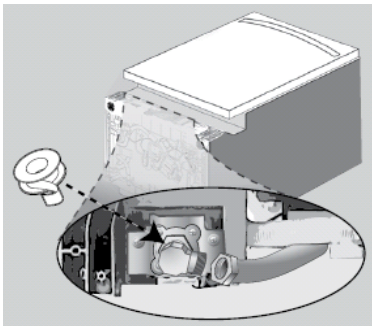




2.4 Water connection

Install according to national and local codes.

Carefully place dishwasher on its back to make water connections to the water inlet valve. Use a 90º elbow fitting with Teflon tape as needed. Don't overtighten.

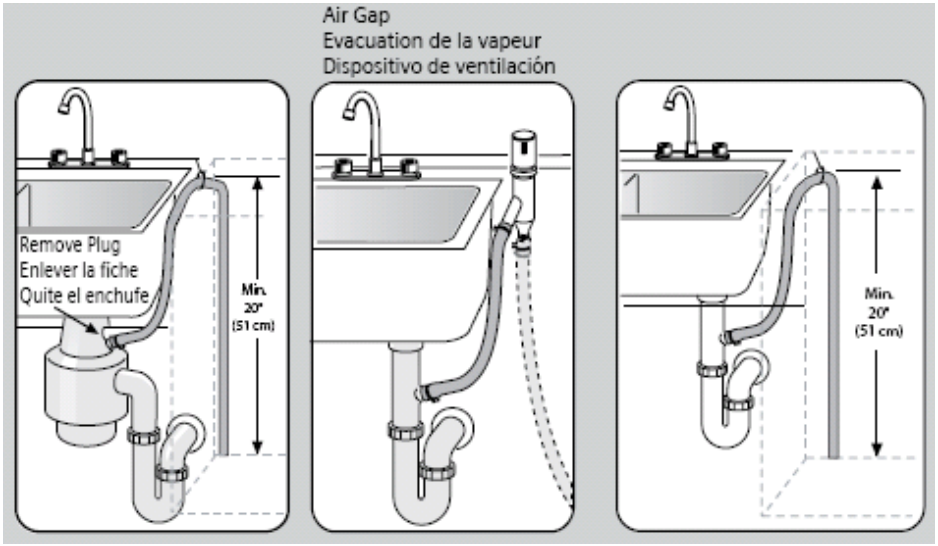


Attach the hot water line to the 90° elbow and route it underneath the unit toward the hot water connection. Make sure the line doesn't contact any moving parts.

2.5 Drain and condensation hose connections

Plumbing installations will vary - refer to local codes. The maximum length of the drain hose, including leading to an air gap (if any) is 150" (381 cm). Make sure a high loop is raised at least 20" (51 cm) above the floor.

Drain hose has its own adapter – connect directly to plumbing connection and secure with supplied hose clamp. Don't connect to condensation hose.



3 OPERATION

3.1 Control layout

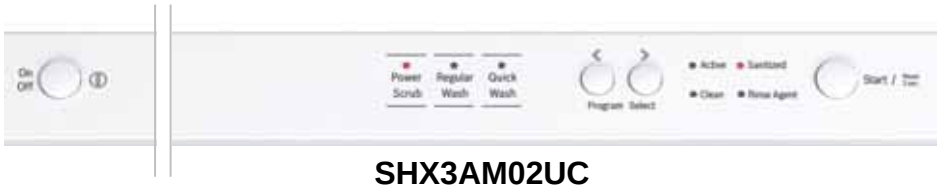
3.1.1 SHE models

SHE4AM02UC

SHE4AM12U

SHE5AM02UC

3.1.2 SHX models



SHX3AM02UC

3.2 Using controls

Wash programs don't have dedicated buttons, but are selected by scrolling with left ("**<**") and right ("**>**") scroll buttons. After turning on dishwashers, scroll left or right to the desired wash program (shown by lit program lights between scroll buttons). To start the desired program, press the ***Start*** button.

3.3 Reset ("Cancel – drain")

To ***reset***, press and hold ***Start*** button until ***Active*** light goes out (SHX3AM / SHE4AM) or when display shows "**0.01**" (SHE5AM) -- for SHX3AM models, open door just enough to expose buttons. Wait about one minute for dishwasher to stop draining -- with SHX3AM models, door must be closed for dishwasher to drain. To reset dishwasher, turn it off after it stops.

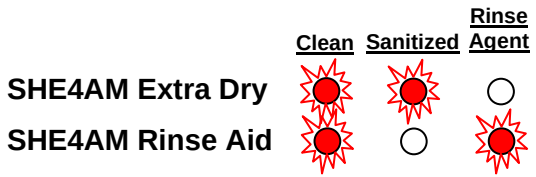
3.4 Changing basic settings

Extra Dry feature can be turned on or off and ***rinse-aid dosage*** can be changed using dishwasher controls. For SHX3AM models, ***End of Cycle tone volume*** can also be changed.

3.4.1 SHE4AM models

Turn dishwasher on, press and hold "**>**" button, then press and hold ***Start*** button. ***Clean*** and ***Sanitized*** lights will be flashing (***Extra Dry*** mode). When lights are flashing, release buttons.

SHE4AM lights



Press "**>**" button to scroll between ***Extra Dry*** and ***Rinse Aid*** modes. Press "**<**" button to scroll to desired setting. Press ***Start*** button to save settings and exit basic settings.

SHE4AM basic settings	SHE4AM program lights
Extra Dry (off)	○ ○ ○ ○
Extra Dry (on)	● ○ ○ ○
Rinse Aid (none)	○ ○ ○ ○
Rinse Aid (low)	● ○ ○ ○
Rinse Aid (medium)	● ● ○ ○
Rinse Aid (high)	● ● ● ○

3.4.2 SHE5AM models

Turn dishwasher on, press and hold "**>**" button, then press and hold ***Start*** button. ***Sanitized*** light will be flashing (***Extra Dry*** mode). When light is flashing, release button.

	SHE5AM lights		
	Clean	Sanitized	Rinse Agent
SHE5AM Extra Dry	○	✹	○

Press "**>**" button to scroll between ***Extra Dry*** and ***Rinse Aid*** modes. Press "**<**" button to scroll to desired setting. Press ***Start*** button to save settings and exit basic settings.

SHE5AM basic settings	SHE5AM digital display
Extra Dry (off)	d:00
Extra Dry (on)	d:01
Rinse Aid (none)	r:00
Rinse Aid (2 seconds)	r:01
Rinse Aid (3 seconds)	r:02
Rinse Aid (4 seconds)	r:03
Rinse Aid (5 seconds)	r:04
Rinse Aid (6 seconds)	r:05
Rinse Aid (7 seconds)	r:06

3.4.3 SHX3AM models

Turn dishwasher on, press and hold "**>**" button, then press and hold ***Start*** button. ***Clean*** and ***Sanitized*** lights will be flashing (***Extra Dry*** mode). When lights are flashing, release buttons.

	SHX3AM lights			
SHX3AM Extra Dry	○ Active	✹ Sanitized	✹ Clean	○ Rinse Aid
SHX3AM Rinse Aid	○ Active	○ Sanitized	✹ Clean	✹ Rinse Aid
SHX3AM Cycle Tone	○ Active	✹ Sanitized	✹ Clean	✹ Rinse Aid

Press "**>**" button to scroll between ***Extra Dry***, ***Rinse Aid*** and ***Cycle Tone Volume*** modes. Press "**<**" button to scroll to desired setting. Press ***Start*** button to save settings and exit basic settings.

SHX3AM basic settings	SHX3AM program lights: Power Scrub	Regular	Quick
Extra Dry (off)	○	○	○
Extra Dry (on)	●	○	○
Rinse Aid (none)	○	○	○
Rinse Aid (low)	●	○	○
Rinse Aid (medium)	●	●	○
Rinse Aid (high)	●	●	●
Tone Volume (off)	○	○	○
Tone Volume (low)	●	○	○
Tone Volume (medium)	●	●	○
Tone Volume (high)	●	●	●

3.5 Special programs (codings)

Controls can run customer service tests, show fault codes, run sales demo programs and run factory tests. The same procedure is used to access all programs – don't run factory tests.

All programs are listed for questions about unknown codes or displays occasionally encountered on dishwashers.

3.5.1 SHE4AM/5AM "Evolution" models

To enter special programs, press and hold "**>**" and ***Delay*** buttons, then turn dishwasher on. When special programs are accessed, left program light will flash and 2nd program light from left will be lit (see below). For SHE5AM models, digital display will show "**P0**".

SHE4AM/5AM special programs	SHE4AM/5AM program lights	SHE5AM digital display
Fault codes* / Functional test+	✸● ○ ○	**P0**
Customer service test*	● ○ ○ ○	**P1**
High voltage test*	○ ● ○ ○	**P2**
Endurance run+	● ● ○ ○	**P3**
UL program*	○ ● ● ○	**P6**
Showroom (sales demo)*	● ● ● ○	**P7**

- To scroll through programs, press "**<**" button.
- To start programs shown with "*****", press "**>**" button.
- **To exit special programs, turn dishwasher off**
- Programs shown with "**+**" are started with the ***Start*** button (**don't** run these programs).
- Run only programs shown in **bold** type (fault codes, customer service & sales demo).

3.5.2 SHX3AM "Integra models

To enter special programs, press and hold "**<**" and "**>**"buttons, then turn dishwasher on. When special programs are accessed, ***Regular Wash*** light will flash and ***Quick Wash*** light will be lit (see below).

SHX3AM special programs	SHX3AM program lights: Power Scrub	Regular	Quick
Fault codes* / Functional test+	○	✸●	●
Customer service test*	●	○	○
High voltage test*	○	●	○
Endurance run+	●	●	○
UL program*	○	●	●
Showroom (sales demo)*	●	●	●

- To scroll through programs, press "**<**" button.
- To start programs shown with "*****", press "**>**" button.
- **To exit special programs, turn dishwasher off.**
- Programs shown with "**+**" are started with the ***Start*** button (**don't** run these programs).
- Run only programs shown in **bold** type (fault codes, customer service & sales demo).

3.6 Sales demo (showroom) program

3.6.1 General instructions

Unlike with traditional dishwashers, do **NOT** disconnect drain pumps when using sales demo programs. Dishwasher controls run safety checks – if drain pumps or heat pumps are disconnected, dishwashers will **NOT** run.

No disconnections are needed – just add one (1) gallon of water (with bacteria stat) to dishwasher tanks. Heat pumps will run and lights will light when program buttons are pushed. Drain pumps do not run. It's not necessary to plug drain hoses, but it's a good practice to prevent any possible water leakage.

3.6.2 SHE4AM/5AM "Evolution" models

- *Entering special programs* – Press and hold "**>**" and ***Delay*** buttons, then turn dishwasher on. Left program light will flash and 2nd program light from left will be lit. (on SHE5AM models, digital display will show "**P0**").
- *Selecting sales demo program* - Press "**<**" button to scroll to customer service test program. Left three program lights will be lit (on SHE5AM models, digital display will show "**P7**").
- *Using sale demo program* - Press "**>**" button to start program. ***Active*** and ***Regular Wash*** lights will always be lit (on SHE5AM models, digital display will always show "**1:23**"). Pressing buttons will light corresponding light.
- *Exiting sales demo program* - Press and hold "**>**"and ***Delay*** buttons, then turn dishwasher off to exit program. Pressing on/off button during sales demo program shows how dishwasher resets, but does not reset dishwasher, turn dishwasher off or exit sales demo program.

	SHE4AM/5AM program lights	SHE5AM digital display
SHE4AM/5AM Sales demo pgm*	●●●○	**P7**

3.6.3 SHX3AM "Integra" models

- *Entering special programs* – Press and hold "**<**" and "**>**"buttons, then turn dishwasher on. ***Regular Wash*** light will flash and ***Quick Wash*** light will be lit.
- *Selecting sales demo program* - Press "**<**" button to scroll to customer service test program. All three program lights will be lit.
- *Using sale demo program* - Press "**>**" button to start program. ***Active*** and ***Regular Wash*** lights will always be lit. Pressing buttons will light corresponding light.
- *Exiting sales demo program* - Press and hold "**<**" and "**>**" buttons, then turn dishwasher off to exit program. Pressing on/off button during sales demo program shows how dishwasher resets, but does not reset dishwasher, turn dishwasher off or exit sales demo program.

	SHX3AM program lights		
	Power Scrub	Regular	Quick
SHX3AM Sales demo program *	●	●	●

4 COMPONENTS

4.1 Tank with base and sump

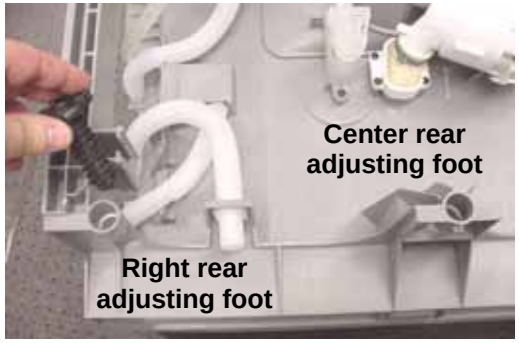
4.1.1 Tank, base and sump assembly

The tank, base and sump are welded together and aren't available as a service part. If plastic cable holders, part holders and screw holes are damaged or stripped, the entire dishwasher must be replaced.

4.1.2 Rear leveling foot

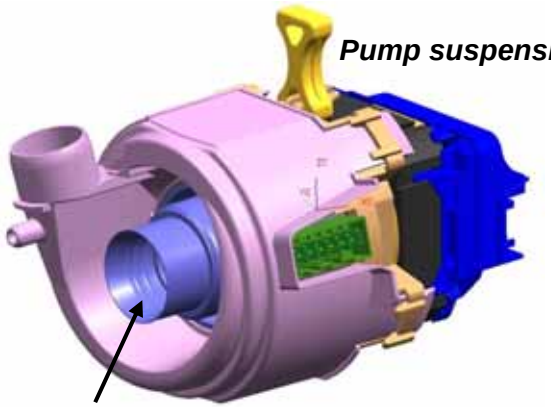
The rear leveling foot can't be adjusted from the front – the rear foot is the same as front feet and is adjusted the same way. The base has provision for two rear feet in the rear corners, but the center foot factory mounting should be used.

Factory feet positions have provisions for set screws (in installation parts bag). Outside rear positions don't have set screw positions and shouldn't be used.



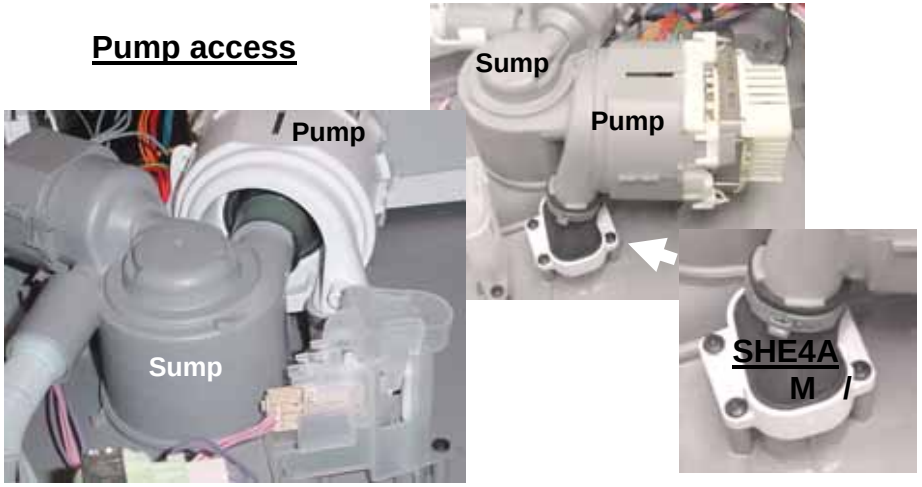
4.2 Heated circulation pump (heat pump)

There's no flow-through heater, flow switch or Hi-Limit cutout – the circulation pump has a flow-through heated cylinder. The 120 VAC, 1200W heater cylinder provides more heating surface area and heats water slightly more quickly than traditional flow-through heating elements (~ 2ºF/minute). The circulation pump (portion) has a 3-pole BLDC motor controlled by the power (control) module. The dishwasher won't run if the heat pump is disconnected or disabled.



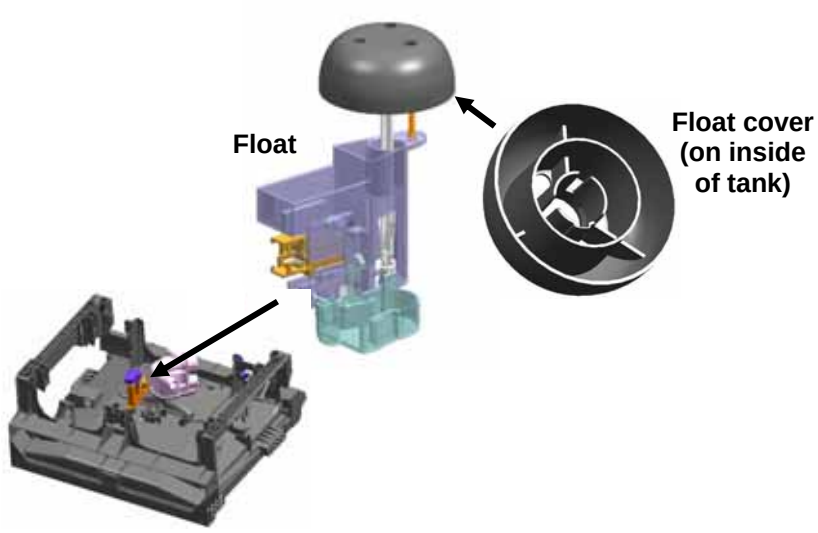
The heat pump is accessible from the bottom or the back, but is best accessed from the bottom.

Pump access



4.3 Float

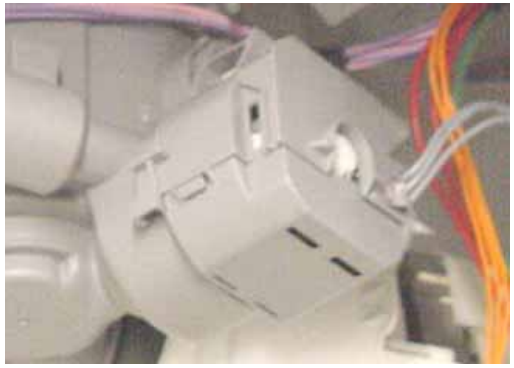
The float is a safety device which starts the drain pump if there's too much water in the tank.



4.4 Drain pump

The BLDC 9-vane drain pump has variable speed and direction. The power control module controls speed and direction, detects end of draining and blocked rotor and corrects locked rotor conditions. The dishwasher won't run if the drain pump is disconnected or disabled.

To remove the drain pump, rotate it clockwise and pull it out.



4.5 Water inlet / condensation system

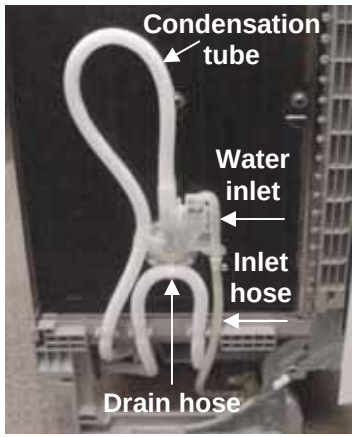
Unlike prior dishwashers, Ascenta dishwashers use a common water inlet and condensation system. Instead of feeding water into the bottom of the tank, dishwashers fill into the left side of the tank. Instead of condensation exiting from the right side of the tank, it exits the left side of the tank through the water inlet.

There are three hoses connected to the water inlet system, the water inlet hose (from the water inlet valve), condensation (breather) hose and internal drain hose. The internal drain hose has a factory made high loop (~ 15" above the floor) and connects to the external customer drain hose.

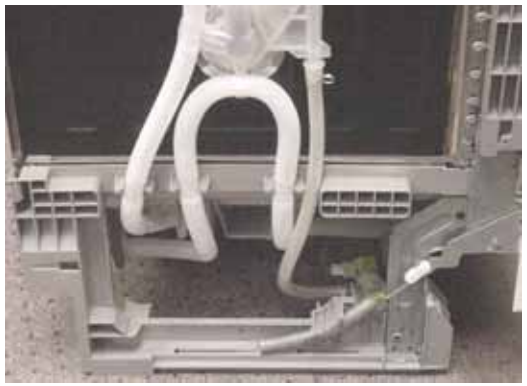
Ascenta dishwashers use a time-fill.

Maximum customer (external) drain hose length is 92”.

Water inlet system and hoses are shown below.



Drain hose high loop and left side condensation exit are shown below.



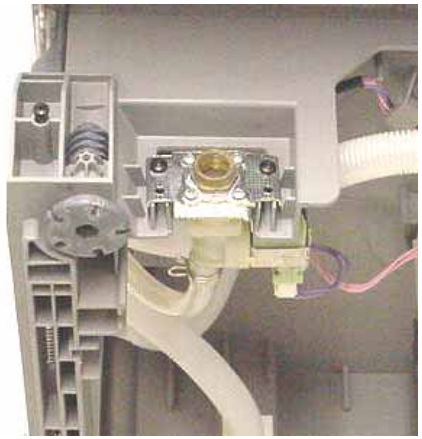
4.6 Door spring

The door spring mechanism is simple, requiring no pulleys or cords. A long narrow spring connects between the base and hinge lever (using a plastic connector) to provide proper tension.

The spring has loops at both ends and connects to a long slot in the base. Springs are color coded for specific tensions.

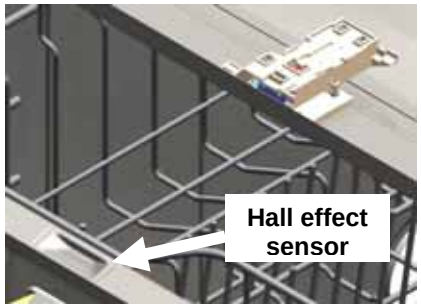
4.7 Water inlet valve

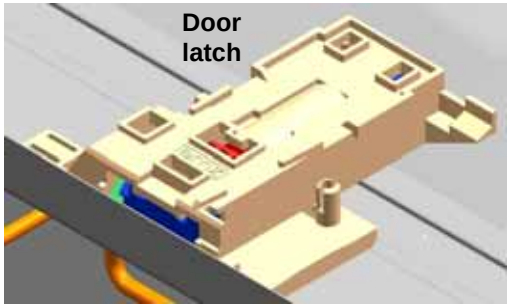
Ascenta dishwashers use standard horizontal coil water inlet valve with (Rast 5) connector. The valve nestles in the left side of the base on base tabs and is held into place with two screws.



4.8 Door latch

The door latch is mounted on top of the tank and doesn't contain a microswitch. It uses a Hall-effect sensor in the door to sense when the door is open or closed. The Hall-effect sensor is held by two T-10 Torx screws. The door latch is held by one T-20 Torx screw and two tank tabs.



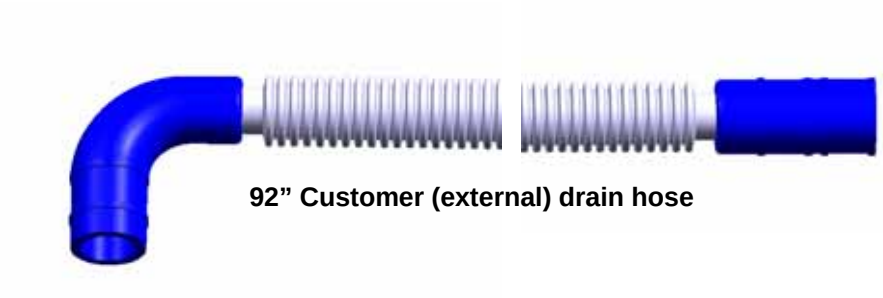


4.9 Terminal block

Terminal blocks clearly show line (L), neutral (N) & ground (G) connections.

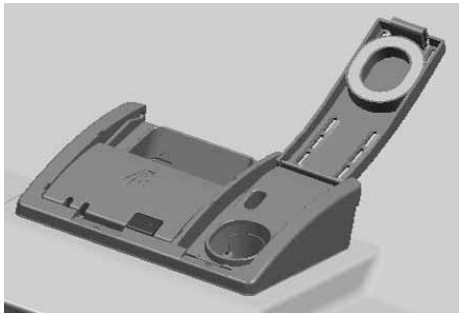
4.10 Drain hose

Ascenta dishwashers use a two-hose (internal / external) drain hose system. A customer (external) drain hose (during installation) is connected to the internal drain hose, with the 90º elbow pointing toward the customer drain. The external drain hose connects directly to the customer drain system without an adapter.



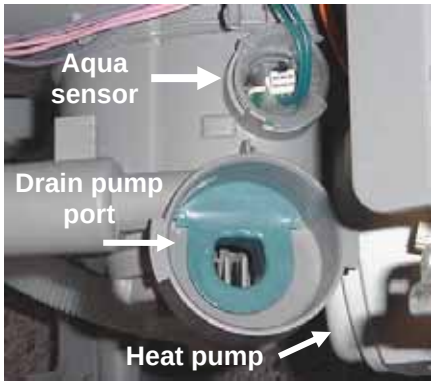
4.11 Dispenser

The dispenser is located in the middle of the inner door and reliably dispenses detergent and rinse-aid.



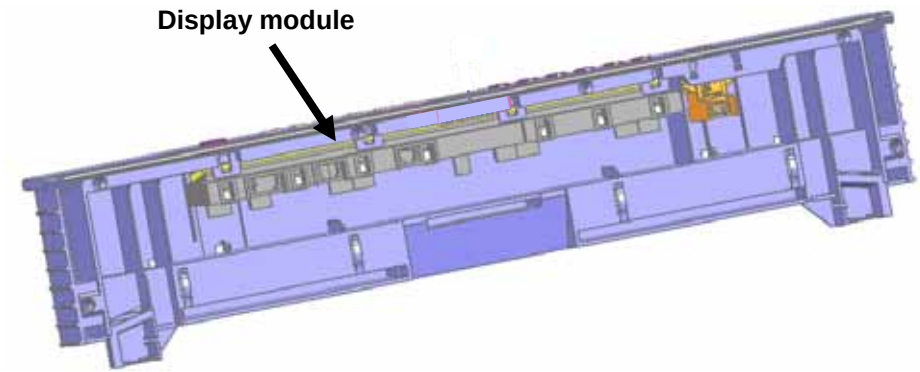
4.12 Aqua sensor

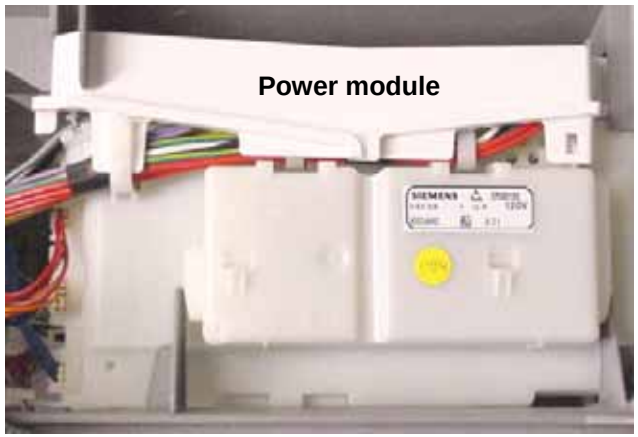
The aqua sensor is located above the drain pump. It's a one-piece assembly (i.e. not a small circuit board pulled out of a plastic housing). It senses water cleanliness and allows the dishwasher control to determine removing cycles to save energy.



4.13 Display and power modules

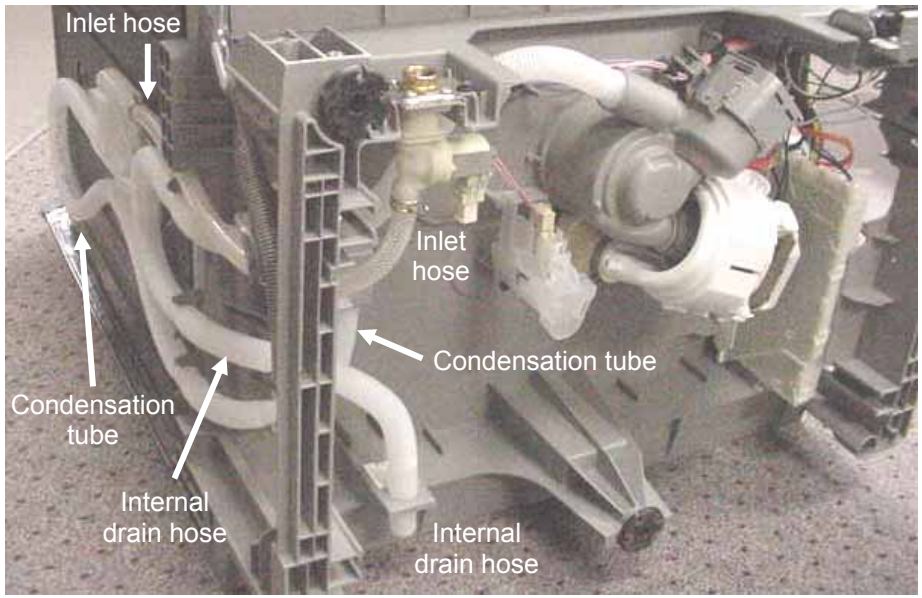
Ascenta dishwashers have two control modules, a display module (with display, lights & buttons) in the fascia (control) panel and a power module in the base on the right side. The power module controls the BLDC drain pump and heat pump.



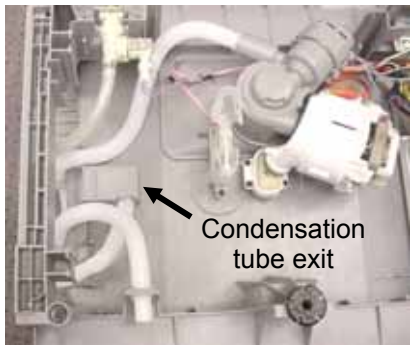


4.14 Hose system

Several hoses run underneath dishwasher bases: internal drain hose, condensation tube and water inlet hose. The internal drain hose connects to the sump and the other hoses connect to the water inlet / condensation system.



The condensation tube attaches to the base – don't connect it to a drain.

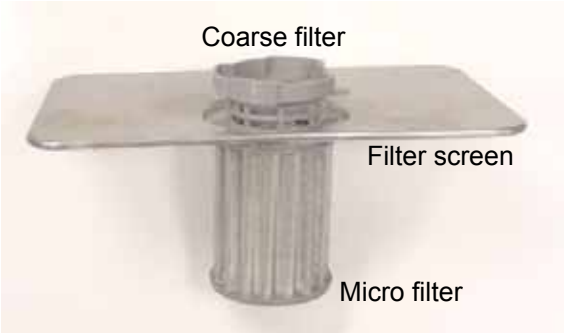


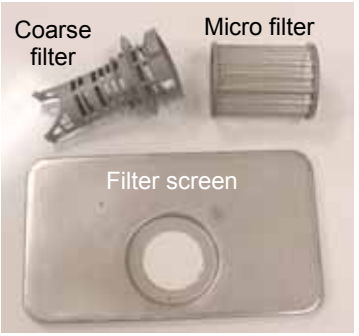
4.15 Backflow valve

The backflow valve is located inside the sump at the internal drain hose inlet. It prevents waste water from entering the sump.

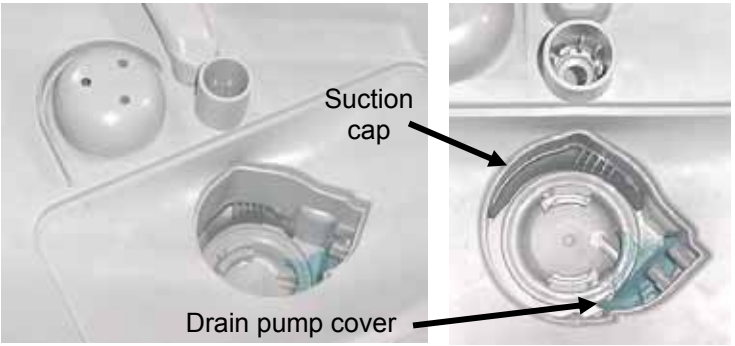
4.16 Sump parts

The sump contains a filter screen, coarse filter and micro filter.



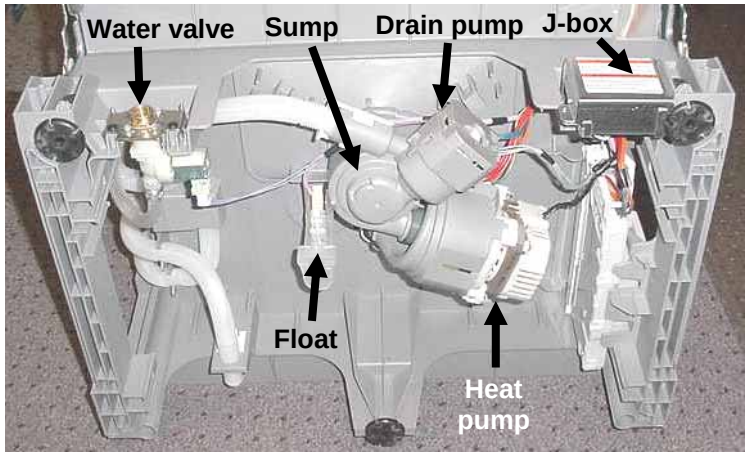


The sump holds the drain pump cover and suction cap. The suction cap provides a proper flow rate of water through the sump.



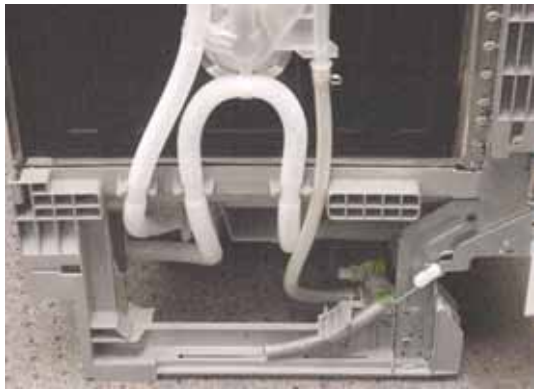
5 REPAIR

5.1 Front & bottom access



The heat pump, drain pump, water inlet valve, junction box, aqua sensor and float are accessible from the front & bottom.

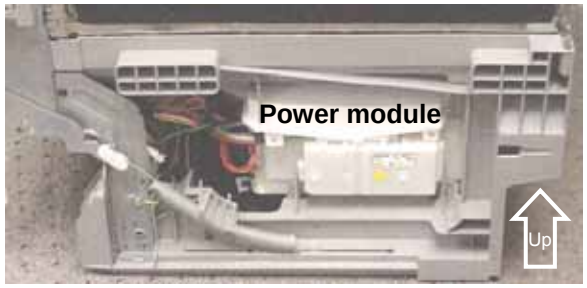
5.2 Left side access

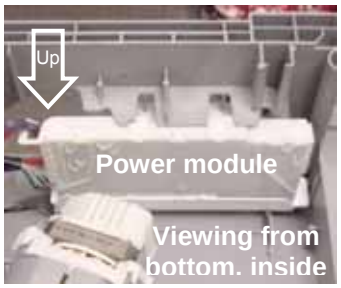


The water inlet system, condensation (breather) hose, water inlet hose and internal drain hose are accessible from the left side.

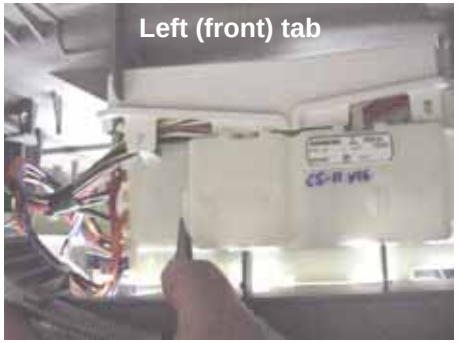
5.3 Right side access (power module)

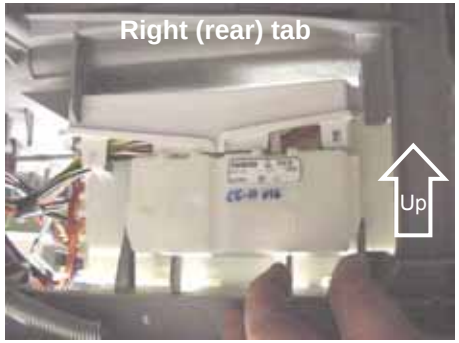
The power module is accessible from the right side.

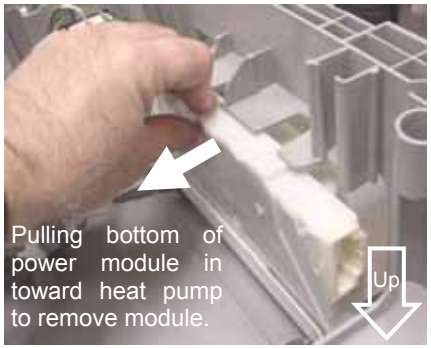




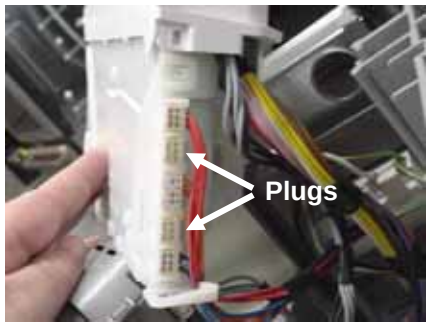
Two plastic base tabs hold the power module in place. To remove power module, gently bend tabs until they clear module, move bottom of module (in toward heat pump) until it clears base and pull module from base.





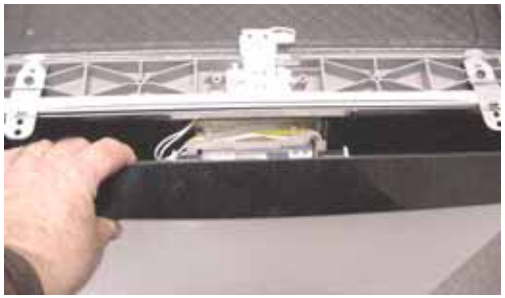


Not all terminals are used. To protect power modules, two plugs are used to cover unused terminals.

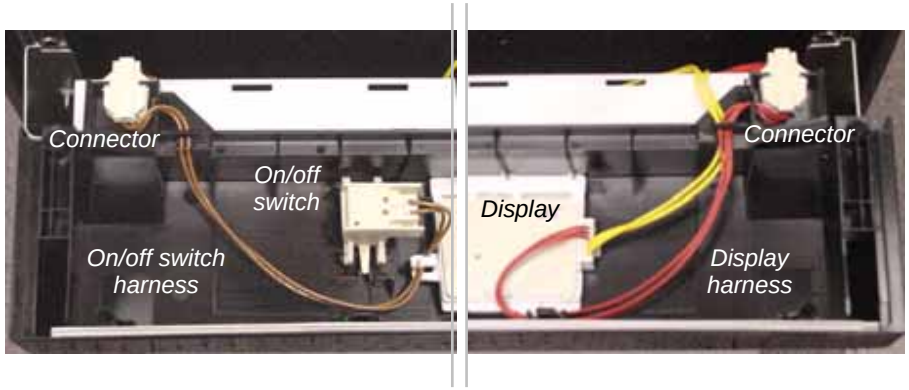


5.4 Fascia panel disassembly

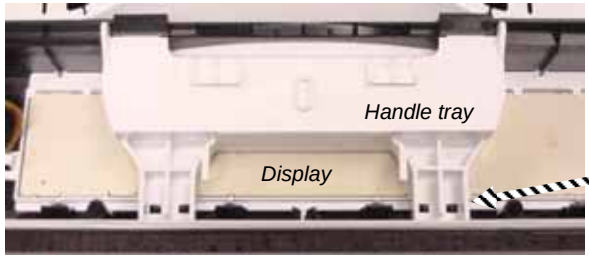
Remove six (6) long fascia panel screws from top of inner door, then lift fascia panel out from door. Be careful to not damage wire harnesses. Six (6) inner door screws are different, so don't mix screws when removing fascia panel and inner door.



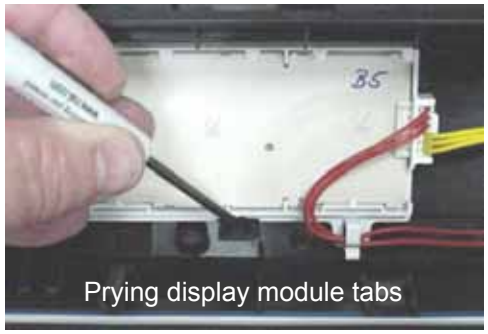
Dishwashers have separate (short) on/off switch and display module wire harnesses held in fascia panels by connectors. To remove connectors, pull up from fascia panel.

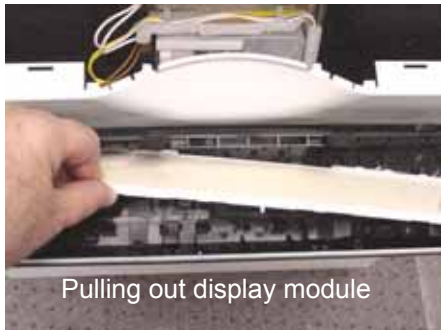


Remove handle trays (SHE models) before removing display modules. To remove both, carefully pry in plastic clips.



For display module, start prying clips from one side and gently lift display as you pry clips from one side to the other.

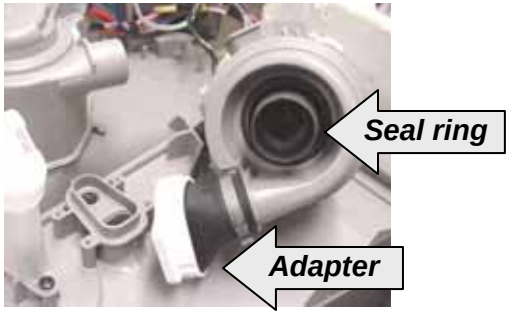




When reassembling fascia panels to doors, make sure fascia panel tabs insert outer door slots.

5.5 Heat pump disassembly

Disconnect support strap and wire harnesses. Either unscrew (4) screws to separate adapter from base or remove hose clamp to separate pump from adapter. The seal ring can't be field removed from the heat pump. To remove pump, slide pump off sump at seal ring.



Replacement heat pump comes with motor, pump, seal ring and hose clamp.

Motor can't be separated from pump and seal ring can't be field installed.

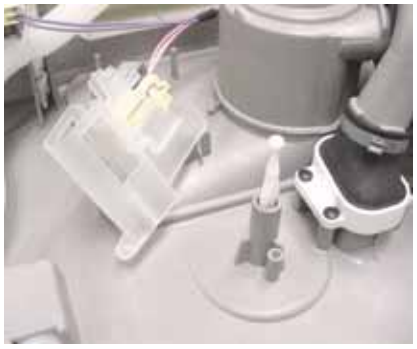
5.6 Float (safety system)

The float is best accessed from the bottom. Several plastic pieces snap into place and must be carefully removed in sequence.

Unscrew the one housing screw, then squeeze cover tabs to lift up cover from float assembly. Cover can be snapped from hinge on float assembly.

Float lever has tabs which lock onto the knob of the push rod. Carefully pry the tabs away from the push rod knob, lift up the lever and pry the lever from its hinge.


Lift up float housing with microswitch from base.

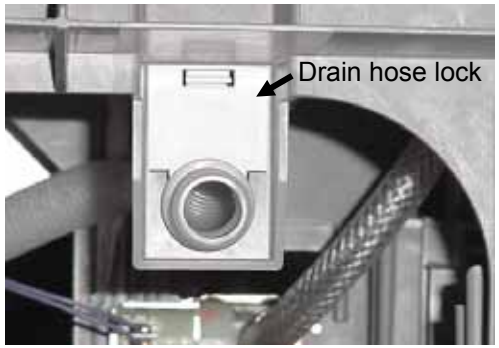
5.7 2-piece drain hose connection

Drain hoses come in two pieces, an external (customer) drain hose and an internal drain hose. The 90º elbow of the external hose is connected to the outlet of the internal hose (pointing toward the drain) and is held in place by a hose clamp.

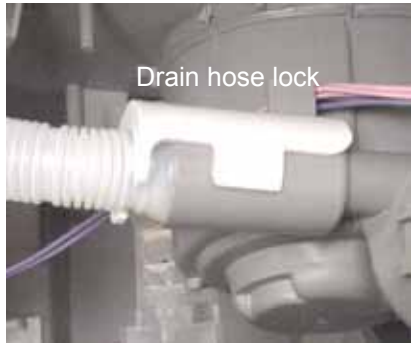


To remove the internal drain hose, two white plastic hose locks must be removed.

At the outlet where the external drain hose connects to it.



At the inlet where it connects to the sump.

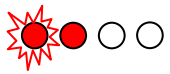
6 FAULT DIAGNOSTICS

6.1 Fault codes (service / customer)

6.1.1 Entering fault code program

6.1.1.1 SHE4AM/5AM “Evolution” models

Press and hold “**>**” and ***Delay*** buttons, then turn dishwasher on. Left program light will flash and 2nd program light from left will be lit. (on SHE5AM models, digital display will show “**P0**”). Press “**>**” button to start program. Last 8 fault codes will show. Press “**>**” button to scroll through fault codes. Turn dishwasher off to exit program.

	SHE4AM/5AM program lights	SHE5AM digital display
SHE4AM/5AM Fault code program*		**P0**

6.1.1.2 SHX3AM “Integra“ models

Press and hold “**<**” and “**>**”buttons, then turn dishwasher on. ***Regular Wash*** light will flash and ***Quick Wash*** light will be lit. Press “**>**” button to start program. Only highest priority fault code will show. Turn dishwasher off to exit program.

	SHX3AM program lights		
	Power Scrub	Regular	Quick
SHX3AM Fault code program *	○		●

6.1.2 Fault code displays

2.1 Display failure memory

			Customer Service Failure display			Customer Failure display	
Component	Fail-ure Bit's	short failure description	7-seg. Display	LED Display Active ○ Clean ○ Sanitized ○		Failure State	7-seg. Display Only Stop/End
general	31	overload drain pump					
	30	overload circulation pump					
	29	overvoltage					
	28	reserved					
aquasensor	27	calibration failure	E:28			Run	
drain pump	24	blockade	E:25	●	●	End	E:25
	23	no drain flow possible	E:24			End	E:24
	22	coil error (FS)	E:23			End	E:23
	21	reserved	E:22			---	
circulation pump	20	blockade	E:21	●	●	End	E:21
	19	coil error (FS)	E:20			End	E:20
	18	reserved	E:19				
filling	17	volume flow too low	E:18	●	○	Wait/Abort	
	16	volume flow too high	E:17			Abort	E:17
	15	volume flow without activation	E:16			End/O.d.	E:16
	14	water in base carrier	E:15			End/O.d.	E:15
	13	Flow meter error	E:14			Abort	E:14
heating	12	boil protect (75°C) (FS)	E:13	○	●	Run	
	11	centre resistance not in symmetry	E:12			Run	
	10	NTC1 NTC2 failure (absolute, symmetry) (FS)	E:11			Run	E:11
	9	resistance too high	E:10			Run	
	8	burn through / safety relay error	E:09			Run	E:09
	7	no load in circulation pump	E:08			Run	
	6	reserved	E:07			---	
door	5	sensor error (FS)	E:06	○	●	Stop	E:06
Power module	4	impulses without activation (WW - Triac)	E:05	○	○	Abort	E:05
	3	reserved	E:04			---	
	2	working and safety relay error (FS)	E:03			End	E:03
	1	working relay error	E:02			Run	E:02
	0	BLDC – Control (FS)	E:01			End	E:01
No failure			E:00	○	●		

Priority

○ LED off ● LED on LED flash

6.1.3 Digital and LED fault code displays

Digital error codes **only** show on SHE5AM dishwashers with digital displays. SHE4AM / SHX3AM dishwashers show the same LED display for many error codes, so it's **not** possible to determine which specific error code occurred.

For example, LED display ○ ○ ● shows for any power module failure causing digital error codes E:01, E:02, E:03 and E:05.

Digital display (SHE5AM)

- *E:01 BLDC - control*
- *E:02 working relay error*
- *E:03 working and safety relay errors*
- *E:05 impulses without activation*

= **LED display** (SHE4AM / SHX3AM) ○○●

LED legend:

○ = LED off

● = LED on

✸ = LED flashing

Active	Clean	Sanitized
○	●	✸

SHE4AM

○ Active ✸ Sanitized

● Clean

SHX3AM

Rinse Agent, Half Load & ***Child Lock*** LED's aren't used for error codes

6.1.4 Fault code troubleshooting

6.1.4.1 No failures

SHE5AM digital display

- **E:00 No failures**

SHE4AM / SHX3AM LED display

○ ● ✸

6.1.4.2 Power module

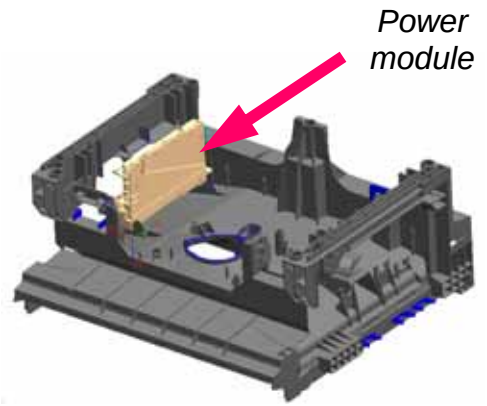
SHE5AM digital display

- **E:01 BLDC control**
  - Power module BLDC controller failed, functional safety error.
    - Replace power module
- **E:02 Working relay error**
  - Power module working (primary) relay failed, safety (backup) relay running dishwasher.
    - Replace power module
- **E:03 Working and safety relay error**
  - Working (primary) relay and safety (backup) relays failed.
    - Replace power module
- **E:05 Impulses without activation**
  - Code not used

SHE4AM / SHX3AM LED display

○ ○ ●

Same LED display shows for error codes E:01 – E:05.



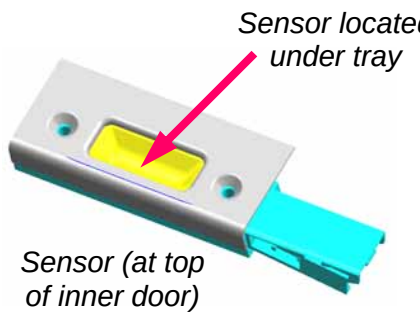
6.1.4.3 Door latch

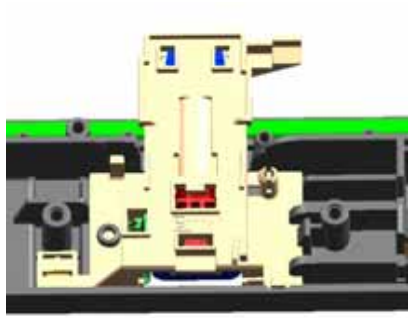
SHE5AM digital display

- **E:06 Sensor error**
  - Door latch sensor not detected, functional safety error.
    - Align door latch above sensor (located inside inner door).

SHE4AM / SHX3AM LED display

○ ● ○





Door latch (on tank)

6.1.4.4 Heating (heat pump)

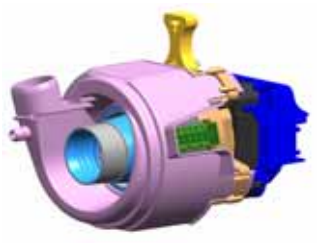
SHE5AM digital display

- **E:08 No load in heat pump**
  - No water in heat pump
    - Check water supply
- **E:09 Burn through / safety relay error**
  - Power module controlling relay not switching / stuck closed
    - Replace power module
- **E:10 Resistance too high**
  - Heater resistance too high
    - Replace heat pump
- **E:11 NTC1 / NTC 2 failure (absolute / symmetry)**
  - NTC1 to NTC 2 internal check failed, functional safety error.
    - Replace heat pump
- **E:12 Heater NTC's comparison check failed**
  - Heater NTC's have different resistances
    - Replace heat pump
- **E:13 Water temperature too high**
  - Boil protect level (75ºC / 167ºF) exceeded, functional safety error.
    - Replace heat pump

SHE4AM / SHX3AM LED display

○ ● ●

Same LED display shows for error codes E:08 – E:13.



Digital error codes E:08 – E:13 are shown with one LED display: ○ ● ● They have different causes, such as faulty heat pump, faulty power module or insufficient water supply.

Troubleshooting is needed to determine the cause.

6.1.4.5 Filling

SHE5AM digital display

- **E:14 Flow meter error**
  - Code not used (no flow meter)
- **E:15 Water in base**
  - Code not used (bases are open)
- **E:16 Volume flow without activation**
  - Code not used (no flow meter)
- **E:17 Volume flow too high**
  - Water volume too high, safety float activated
- **E:18 Volume flow too low**
  - Water volume too low, heat pump motor load too low.
    - Check water supply

SHE4AM / SHX3AM LED display

● ○ ○

Same LED display shows for error codes E:14 – E:18.

6.1.4.6 Circulating (heat pump)

SHE5AM digital display

- **E:20 Heater error**
  - Heater system check failed, functional safety error.
    - Replace heat pump
- **E:21 Blockage**
  - Heat pump unable to circulate and clear blockage.
    - Replace heat pump

SHE4AM / SHX3AM LED display

● ○ ●

Same LED display shows for error codes E:20 – E:21.

6.1.4.7 Drain pump

SHE5AM digital display

SHE4AM / SHX3AM LED display

- **E:23 Coil error**
  - System check of drain pump motor coil failed, functional safety error.
    - Replace drain pump
- **E:24 No drain flow possible**
  - Drain pump is running but unable to remove the water, drain system blockage.
    - Check for blockage of drain hose
- **E:25 Blockage**
  - Drain pump unable to rotate, attempts to clear failed.
    - Check for debris at drain pump

Same LED display shows for error codes E:23 – E:25.

6.1.4.8 Water switch

SHE5AM digital display

SHE4AM / SHX3AM LED display

- **E:26 Reference cam not detected**
  - Code not used (no water switch)

6.1.4.9 Aqua sensor

SHE5AM digital display

SHE4AM / SHX3AM LED display

- **E:28 Calibration failure**
  - Aqua sensor failed to calibrate

6.1.5 Customer fault codes (SHE5AM digital display only)

SHE5AM dishwashers have fault codes seen by *customers*. Viewing the fault code *(Display Failure Memory)* chart, the last two columns (under *"Customer Failure display"*) show fault codes seen by customers in the digital display. The first two columns (under *"Customer Service Failure display"*) show fault codes seen in the fault code program. Fault code displays are identical – the only difference being some service fault codes (e.g. E:08, E:16) can't be seen by customers.

6.1.6 Clearing fault codes

To clear fault codes, run the customer service test program.

6.2 Customer service test program

6.2.1 Entering customer service test program

6.2.1.1 SHE4AM/5AM "Evolution" models

Press and hold "**>**" and ***Delay*** buttons, then turn dishwasher on. Left program light will flash and 2nd program light from left will be lit (on SHE5AM models, digital display will show "**P0**"). Press "**<**" button **once** to scroll to customer service test program. Left program light will be lit (on SHE5AM models, digital display will

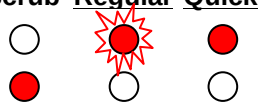
show “**P1**”). Press “**>**” button to start program. Turn dishwasher off to exit program.

SHE4AM/5AM special programs	**SHE4AM/5AM program lights**	**SHE5AM digital display**
Fault codes* / Functional test+		**P0**
Customer service test*		**P1**

Running customer service test program clears fault codes.

6.2.1.2 SHX3AM “Integra” models

Press and hold “**<**” and “**>**”buttons, then turn dishwasher on. ***Regular Wash*** light will flash and ***Quick Wash*** light will be lit (see below). Press “**<**” button **once** to scroll to customer service test program. Left program light will be lit. Press “**>**” button to start program. Turn dishwasher off to exit program.

	SHX3AM program lights		
SHX3AM special programs	**Power Scrub**	**Regular**	**Quick**
Fault codes* / Functional test+			
Customer service test*			

Running customer service test program clears fault codes.

6.2.2 Viewing customer service program

Customer Service Program

Step	Displayed step	Action	Can advance step	Time	Temperature	Water amount	Remarks
0	0	Check Coil	no	--			Checks pumps and other components (when switched on)
1	0	Drain Pump		15s			Drain pump OK
2	1,2	Filling	partly	72s		3.0 L	Checks if water level above filter level
3	3,4	Pause	yes	10s			Checks water level
4	5,6,10,11	Drain Pump	yes	20s		empty	Sump base completely empty
5	12,13,14	Filling + Main Pump	no	96s		4.0 L	Checks if water level at top of coarse filter - main pump starts at displayed step 13
6	15	Main Pump + Soap Dispenser	yes	10s			
7	16	Main Pump + Aqua Sensor Calibration	partly	110s			
8	17	Main Pump + Heating			104°F		
9	18	Pause	yes	5s			
10	19	Main Pump	yes	5s			Start main pump
11	20	Main Pump + Rinse Agent + Heating	yes	60s			# of dispenser coil impulses = rinse agent setting
12	21	Main Pump + Heating	yes		149° F		About 2.5°F/min
13	22	Main Pump	yes	15s			
14	24	Drain Pump	no	--			Displays "0" when done

Hint: If a failure occurs the program goes on, stops or ends according to the failure handling.

Remark: Filling can not be stepped over

6.3 Troubleshooting

6.3.1 Protection of heater if there's no water

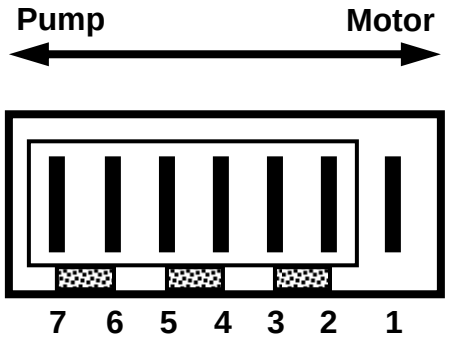
Two NTC's protect the heater. Both NTC's are checked by the control – if they overheat, the control shuts down the dishwasher (**E:08** fault code). The dishwasher shuts down if only one NTC returns a signal (**E:12** fault code) or if they show different values (**E:11** fault code).

6.3.2 Heat pump terminal measurements

There are two connectors, 7-pin and 3-pin.

6.3.2.1 7-pin connector (heater / NTC's / pump ground)

The 7-pin connector connects to the heat pump heater, NTC's and ground.



7 – NTC 1
6 – NTC common
5 – NTC 2
4 – Line (hot)
3 – X1 (heater common)
2 – Neutral
1 – Ground

6.3.2.2 3-pin connector (3-pole BLDC motor)

The 3-pin connector connects to the 3-pole BLDC motor. The power control module controls motor speed, starting and stopping.

6.3.3 Drain pump

There is a single 3-pin connector, connecting to the 3-pole BLDC pump motor.

Resistances as follows:

1 – 2: 89.6 Ω (@ 68 ºF)
2 – 3: 89.6 Ω (@ 68 ºF)
3 – 1: 89.6 Ω (@ 68 ºF)

7 TECHNICAL SPECIFICATIONS

Dishwasher ratings – **120 VAC**, **60 Hz**, **12 A**, **1450 W**

Heater ratings – **120 VAC**, **1200 W**

Circulation pump – **120 VAC, 80 W, 3-pole BLDC, class F insulation**

Drain pump – **3-pole BLDC**, **35-65 Hz, 0.19A, 20W, class F insulation**

Max drain hose length – **92”** (no extension kit available)

Heating rate – **2°F/minute 1200 W** (same as current dw’s)

Noise ratings – **53 dB** (SHX3AM / SHE5AM) or **57 dB** (SHE4AM)