



TECHNICAL INFORMATION
G600 & G800 Electronic Dishwashers

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1.0 Construction and Design

1.1 Appliance Overview

1.1.1 Appliance Overview – Typical Integrated Model

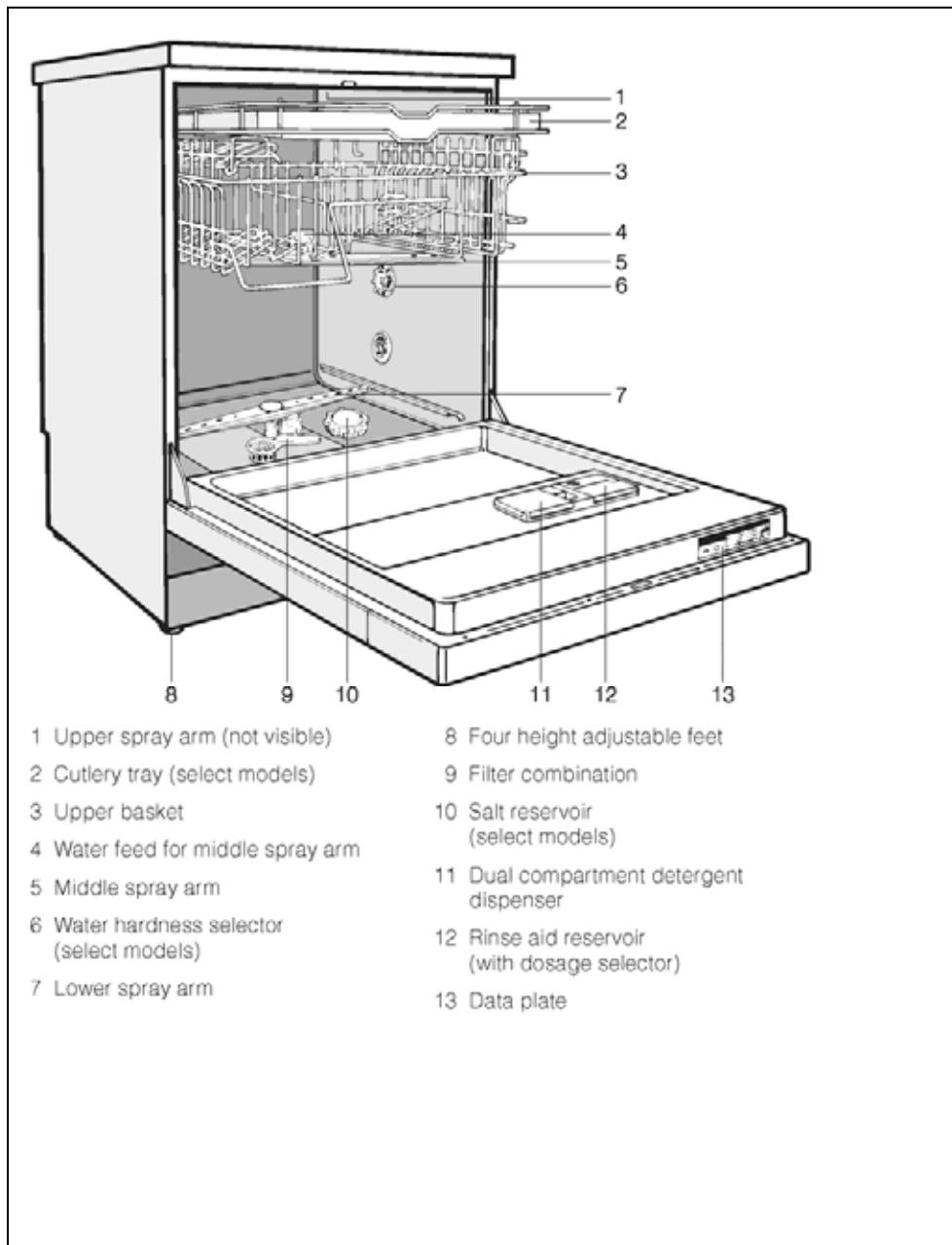
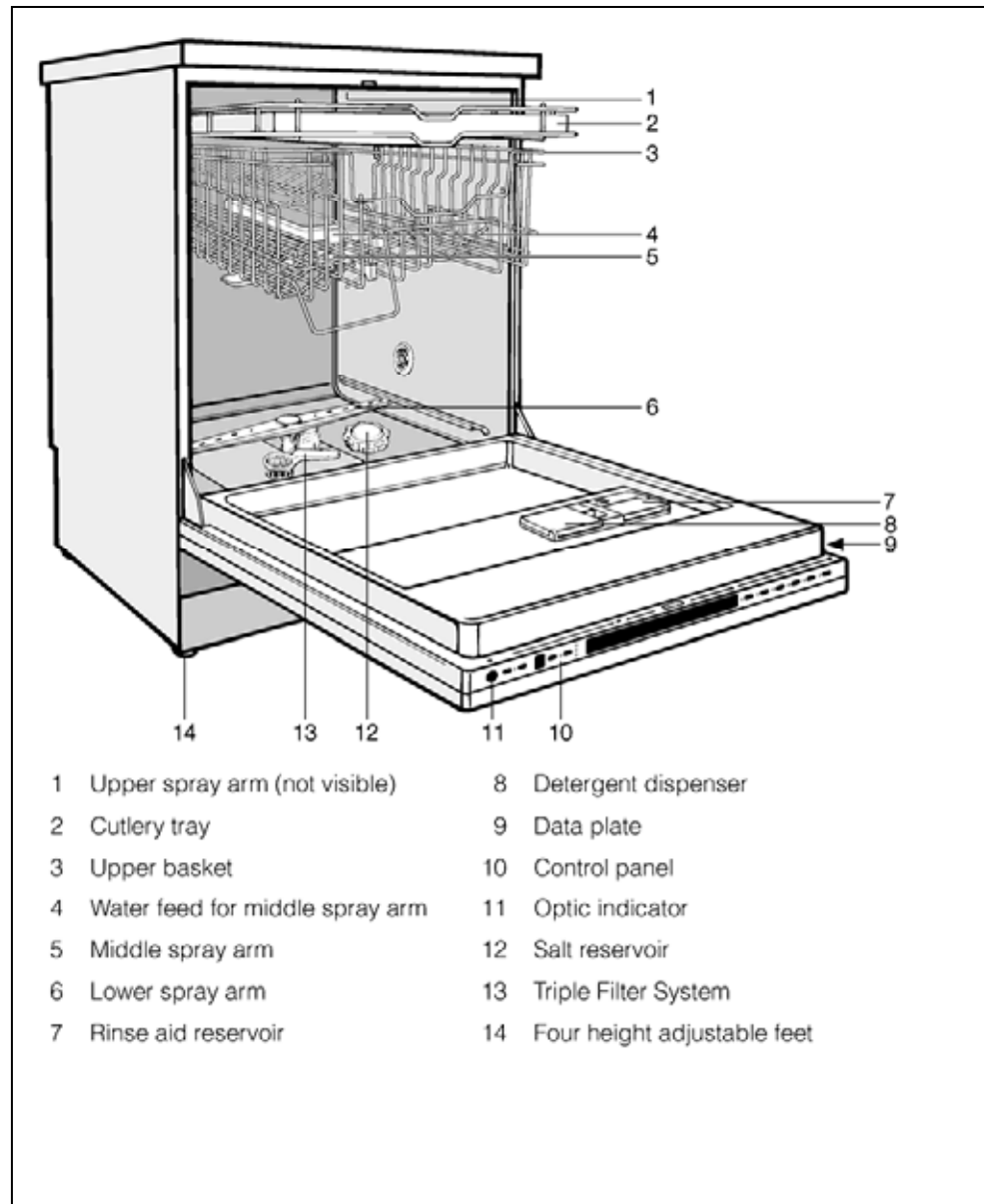


Figure 1-1: Appliance Overview - Typical Integrated Model

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1.1.2 Unit Overview – Typical Fully Integrated Model**Figure 1-2: Appliance Overview – Typical Fully Integrated (Vi) Model**

1.2 Controls Overview

Miele dishwashers are currently categorized into three (3) product series, based on the type of controls.

Novotronic

Each Novotronic model dishwasher can be operated with a single knob. Surface mounted design technology (SMD) allows Miele Novotronic components to be extremely durable and reliable. These controls are capable of performing hundreds of tasks which cannot be handled by mechanical components.



G841 / G841SC PLUS



G851SC



G856SC

Touchtronic

This new series of Miele dishwashers is operated by pushing a single button -- no separate temperature or drying selections -- just turn the machine on, pick a program and Miele does the rest. All models now include a Pots and Pans program and a Water Management System, designed to maximize cleaning results and optimize water and energy conservation.



G832SC (SLIMLINE)



G892 / G892SC



G694SC G894SC



G896SC "ULTRA"



G898SC "PREMIERE PLUS"

Technical Information
Incognito

The Incognito (fully integrated) series dishwashers have the program controls located on the top edge of the door; and are accessed while the door is open. Neither seen nor heard, the Miele Incognito Series OCI (Optical Cycle Indicator) you to see the progress of the dishwasher cycle by way of a red light, which is steady or flashing depending on the status of the cycle.



G818SCVI



G643SCVI, G843VI & G843SCVI



G658SCVI & G858SCVI

1.3 Types of Dishwashers

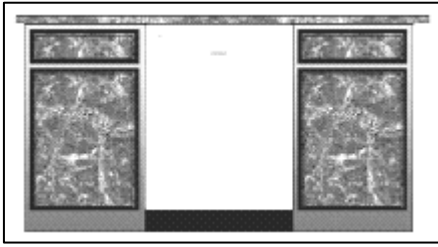


Figure 1-3: Pre-Finished Dishwasher

Pre-Finished: The pre-finished construction consist of a pre-assembled door panel and control panel; making it an ideal replacement unit. Available in white, black or stainless steel.

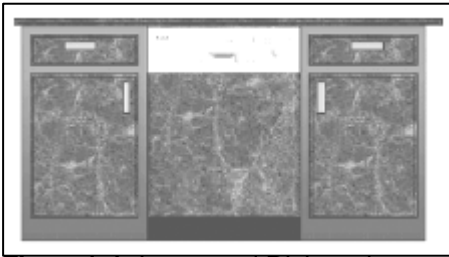


Figure 1-4: Integrated Dishwasher

Integrated: This type of dishwasher is shipped with a separate control panel, and optional GDU (door) panel. Every Integrated dishwasher ships with a bracket for installing a custom cabinet panel. The use of separate components allows for a truly customized installation.

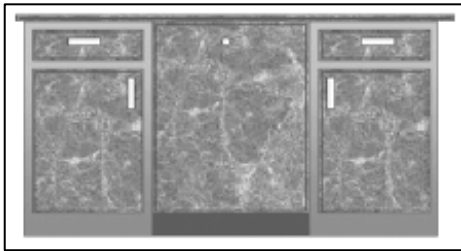
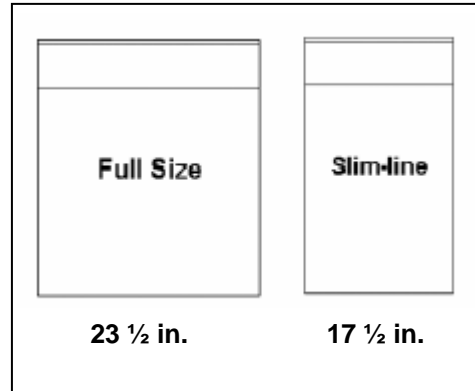
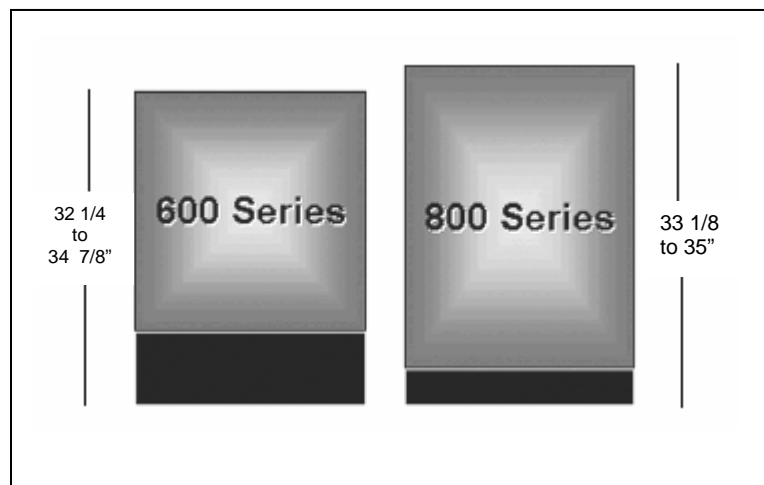


Figure 1-5: Fully Integrated

Fully Integrated: Fully Integrated (Incognito) Dishwashers are designed to blend into the surrounding cabinetry. The operator controls are only available when door is opened. Each dishwasher is shipped with a bracket for securing a custom cabinet panel. An optional Miele stainless steel SCVi panel is also available.

Technical Information

1.4 Technical Data**1.4.1 Dishwasher Width – Fullsize / Slimline****Figure 1-6:** Dishwasher Widths**1.4.2 Dishwasher Height – 600 / 800 Series****Figure 1-7:** Dishwasher Heights

1.4.3 Summary of Dimensions

FULLSIZE	G600 Series	G800 Series
Height	32 1/4" - 34 7/8"	33 1/8" - 35"
Width of Machine	23 1/2"	23 1/2"
Width of Opening	23 5/8"	23 5/8"
Depth	22 1/2"	22 1/2"
Depth w/ door open	45 1/2"	47 1/2"
SLIMLINE	G600 Series	G800 Series
Height	32 1/4" - 34 7/8"	33 1/8" - 35"
Width of Machine	17 1/2"	17 1/2"
Width of Opening	17 3/4"	17 3/4"
Depth	22 1/2"	22 1/2"
Depth w/ door open	45 1/2"	47 1/2"

Table 1-1: Summary of Dimensions

1.4.4 Electrical Information

Power Requirements: 120 VAC, 60 Hz

Rated Load: 12.5 A / 1500 W (typical)

Circuit breaker: 15 AMPS

- The appliance is equipped with a 4 ft power cord and molded NEMA 515 plug; for connection to a NEMA 5-15R receptacle (120VAC, 15 Amp, 3 prong, grounded outlet).
- It is recommended that the power outlet for the appliance be installed on the wall (within the cabinets), adjacent to under counter space where the appliance is installed.
- Ensure the cabinets contain no rough edges that could damage the power cord or drain hose. If metal cabinets are used, ensure a rubber grommet is installed around the opening.
- Always exercise care when sliding the dishwasher in or out, to prevent damaging the power cord and / or hoses.

Technical Information**1.4.5 Hard Wire Electrical Connection**

Connections: L1 (Black) to L on terminal block, N (White) to N on terminal block, GND To ground connector.

- Hard wiring the dishwasher should only be done if required by electrical code.
- Do not cut the plug off the power supply cord / plug and connect it directly to the house wiring under any circumstances. This voids the warranty.
- For hard wiring, the power cord must be removed from the appliance by disconnecting the cord from the terminal box located at the lower left front of the dishwasher, behind the Toekick and Service Panel. Pass the permanent power supply cable through the strain relief and secure it directly to the terminal box.

THIS APPLIANCE MUST BE GROUNDED

1.4.6 Plumbing Connection**1.4.6.1 Intake Connection**

The appliance is equipped with a five (5) foot long Double WaterProof System Intake Hose; equipped with a $\frac{3}{4}$ inch female hose connection; for connection to a $\frac{3}{4}$ inch male hose thread water supply valve.

1.4.6.2 Drain Connection

The appliance is equipped with a five (5) foot long Drain Hose for connection to a $\frac{3}{4}$ inch drain nipple.

1.5 Data Tag

The Data Tag is located on the top edge of the door or on the right side edge of the door (fully integrated models) - as shown.

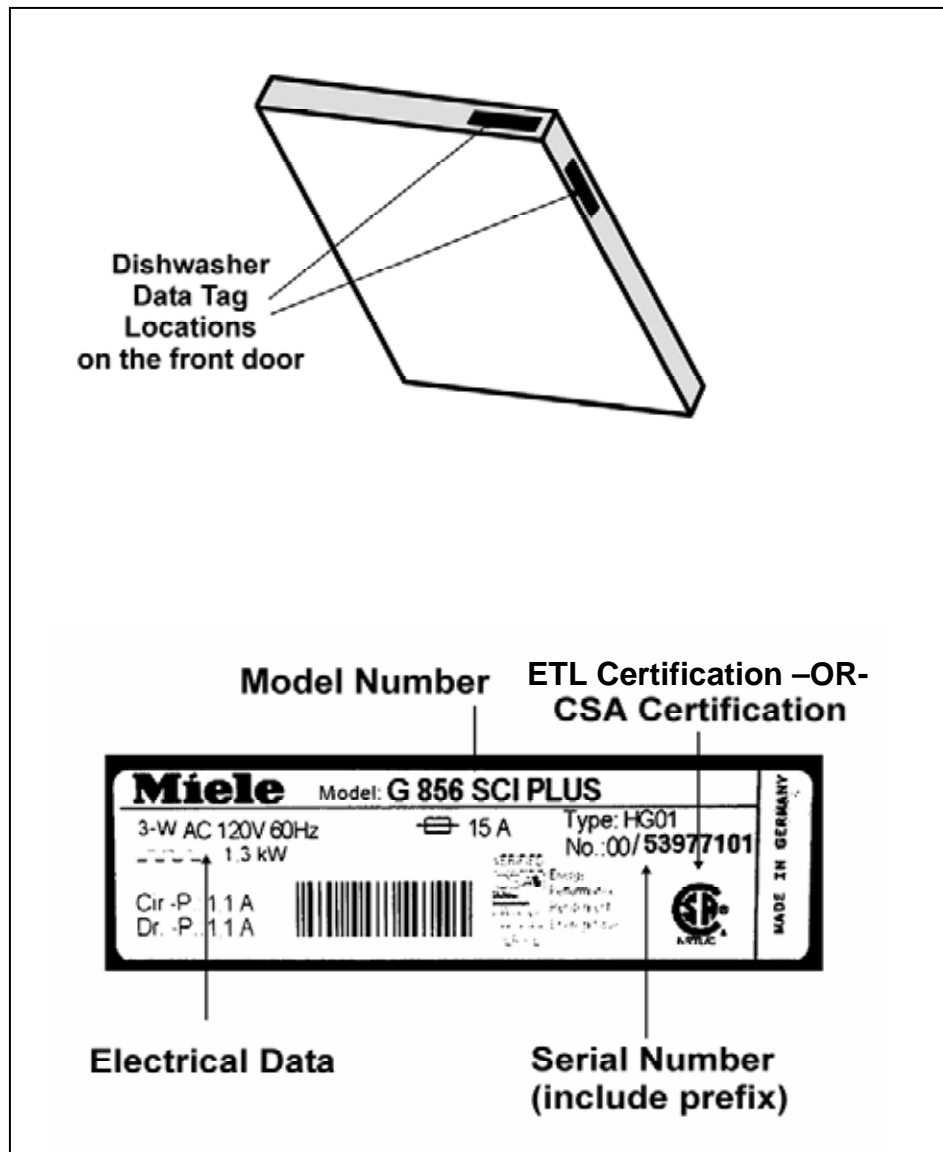


Figure 1-8: Data Tag Locations and Information

Technical Information

1.6 Layout of Components

1.6.1 Novotronic and Touchtronic Series

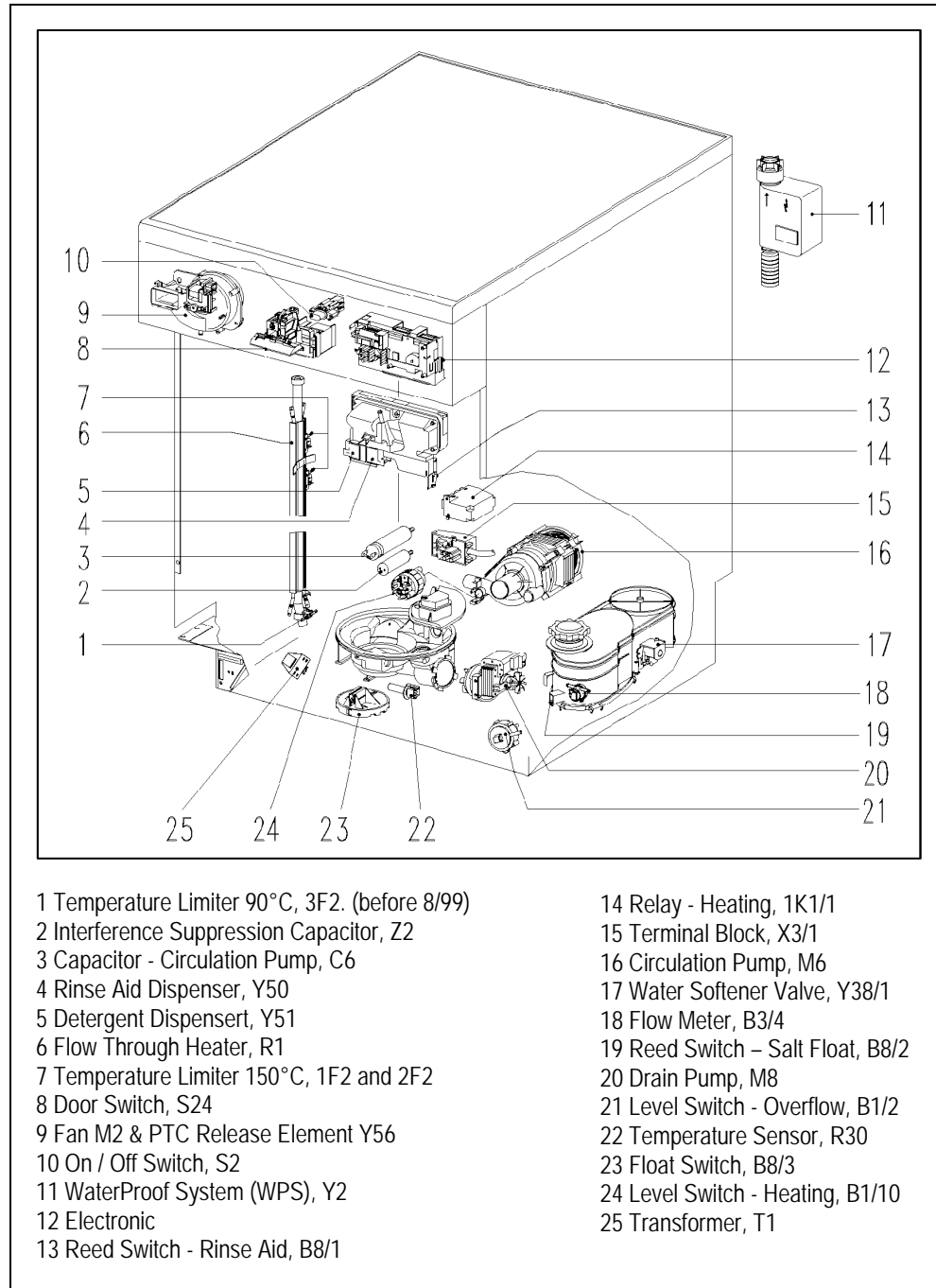
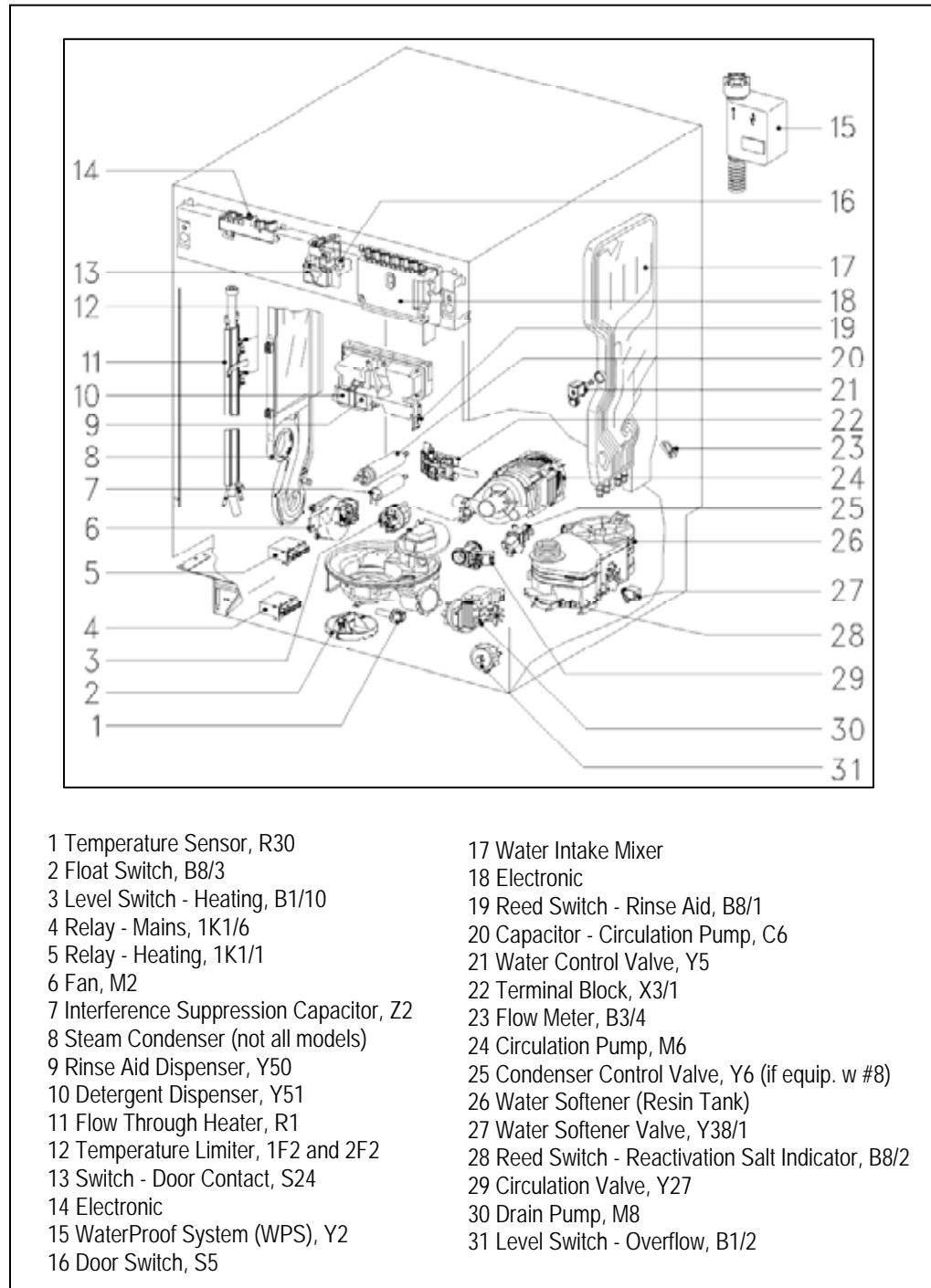


Figure 1-9: Component Overview – Novotronic & Touchtronic Series

1.6.2 Incognito Series**Figure 1-10: Component Overview – Incognito (Vi) Series**

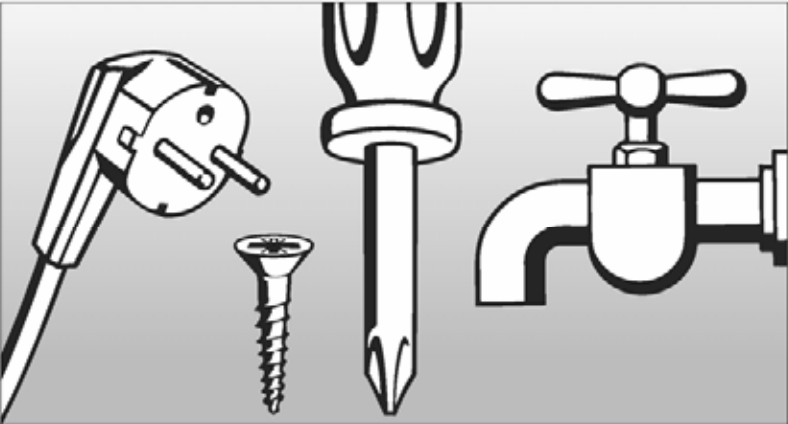
Technical Information

2.0 Installation

Refer to the Appliance Installation Manual.

Miele

Installation instructions



Dishwasher

To prevent accidents and machine damage, read these instructions **before** installation or use.

HG01
HG02

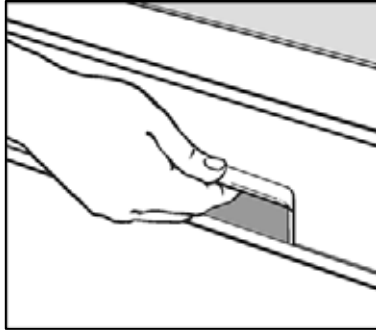
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3.0 Commission and Operation

3.1 Door Handle and Door Lock (Novotronic and Touchtronic Series)

Press the release catch inside the Door Grip.



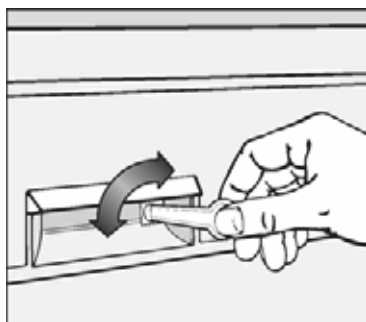
Note

If the door is opened during operation, the dishwasher will stop running. Once the door is closed the program will restart.

3.2 Closing the Dishwasher Door

1. Push the baskets in.
2. Lift the door and push it closed until it locks into the closed position.

3.3 Child Safety Lock



Horizontal:
the door is locked



Vertical:
the door can be opened

Technical Information

3.4 Water Softener

If your tap water hardness is above 8 grains per gallon (140 ppm), the water should be softened.

A Water Hardness Test Strip is used to determine the water hardness.

If the Water Softener is needed:

- The dishwasher must be programmed to “with Water Softener” (ON).
- The Water Softener reservoir is filled with softener salt.
- The water hardness level is programmed into the dishwasher electronic.

If the Water Softener is not needed:

- The dishwasher must be programmed to “without Water Softener” (OFF); however the hardness level is not programmed into the electronic
- Salt is not needed and should not be installed.

Water Softener Salt

Only use water softener salt specially formulated for dishwashers. Other salts may contain insoluble additives that impair the Water Softener. The proper salt can be purchased from the Miele Technical Service Department.

To add salt:

1. Remove the Lower Basket.
2. Unscrew and remove the Salt Reservoir Cap located on the floor of the Wash Cabinet.
3. If this is the first time salt is installed; add 2 quarts water.
4. Place a funnel over the Salt Reservoir. Carefully fill with salt.

Note

The Salt Reservoir holds approximately 4.5 lbs (2 kg) of salt.

5. Clean any excess salt from the threads of the reservoir opening; and screw the cap on firmly.
6. Run the "Rinse & Hold" program to remove any traces of salt from inside the Wash Cabinet.

3.5 General Operation – Novotronic Series

1. Make sure the Spray Arms are not blocked.
2. Close the door.
3. Turn on the dishwasher. The "Start" Indicator will flash.
4. Select a wash program by turning the Program Selector to the left or right.
5. Press the "Start" button.

3.6 General Operation – Touchtronic Series

1. Make sure the Spray Arms are not blocked.
2. Close the door.
3. Turn on the dishwasher. The "Start/Stop" Indicator will flash and a Program Indicator will light.
4. Select a wash program using the Program Selection Buttons. The Selected Program Indicator will light.
5. Select "Top Solo" if desired.
6. Press the "Start/Stop" button.

3.7 General Operation – Incognito Series

1. Open the door.
2. Make sure the Spray Arms are not blocked.
3. Turn on the dishwasher using the "On" button.
4. Select a wash program using the Program Selection Buttons. The Selected Program Indicator will light.
5. Close the door. The Optic Indicator illuminates and the program begins.

Note

For specific program details and further information on operating the dishwasher refer to the model specific Operating Manual.

Technical Information

4.0 Description of Function

4.1 Cabinet Construction

The inner cabinet is constructed of stainless steel (1.4301) welded onto four (4) vertical U-section sub-frames. The cabinet is sound and heat-insulated with bitumen and/or mineral wool matting.

4.2 Fan Assembly

(Units equipped with Turbothermic Fan)

The fan assembly consists of the Fan Motor (M2) and a PTC Release Element (Y56), which opens the air outlet flap. The 120VAC fan operates in the drying stage, after a brief delay. The PTC Release Element is activated, and the Air Outlet Flap is partially opened. A bypass channel behind the air outlet is also opened and ensures that the moist air from the cabinet is mixed with dry air from the door interior. This measure prevents condensation from developing. After about a minute, the electronic switches off the Release Element, however the Air Outlet Flap remains partially open. After a few minutes the Release Element is activated again, which completely opens the Air Outlet Flap. The fan operates constantly throughout this period until the program ends.. The Air Outlet Flap remains open at program end and closes when the dishwasher door is opened.

4.2.1 PTC Release Element

(Units equipped with Turbothermic Fan)

When 120VAC is applied to the Release Element, the PTC Resistor heats a small grease-filled capsule. As the grease expands it pushes a piston upward and slides the Air Outlet Flap to a partially open position. When the Release Element is activated the second time, the piston slides the Air Outlet Flap to a fully open position.

4.3 Combination Dispenser

4.3.1 Construction

Two individual solenoids control detergent and rinse aid dispensing.

The Rinse Aid Reservoir has a capacity of about 130 ml. When the Rinse Aid level drops to about 25 ml. the Magnetic Float activates a Reed Switch on the edge of the dispenser and the Rinse Aid LED illuminates.

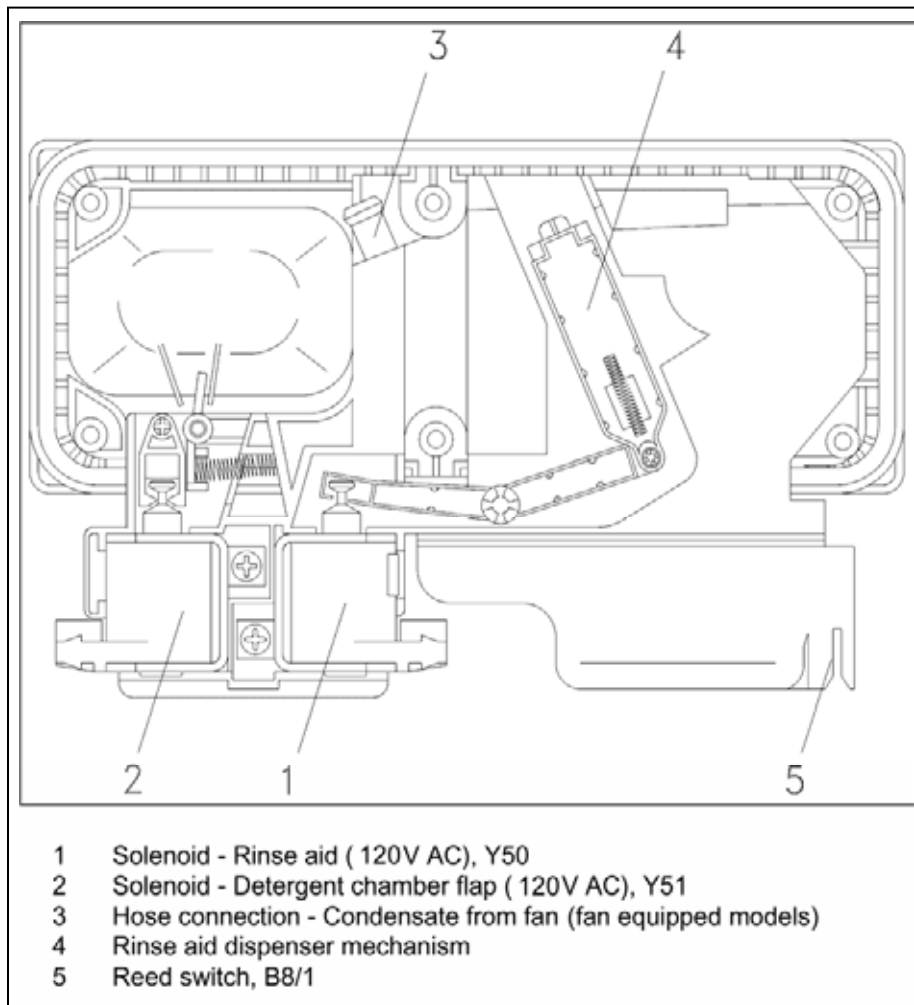


Figure 4-1: Dispenser Assembly

Technical Information

4.3.2 Dispensing

During the main wash, the Detergent Solenoid (Y51) is energized (120VAC), to open the Detergent Dispenser Flap. The water jet from the Middle Spray Arm flushes detergent out of the dispenser.

Detergent quantity		
Model	Pre-wash compartment (cm ³)	Main wash compartment (cm ³)
C2.06	25	80
C2.09	20	70

Table 4-1: Detergent quantity in Combination Dispensers C2.06 and C2.09.

During the final rinse the Rinse Aid Solenoid (Y50) is energized (120VAC), to open the dispenser chamber and allow Rinse Aid to be dispensed into the cabinet.

Note

The Rinse Aid only flows from the reservoir into the dispenser chamber when the front door is fully opened at the end of a program.

The quantity taken into the dispenser chamber depends on the dispenser selector setting.

Rinse aid quantity			
Dispenser selector setting	Rated quantity (ml)	Lower limit (ml)	Upper limit (ml)
1	1	0.8	1.8
2	2	1.8	2.8
3	3	2.8	3.8
4	4	3.8	4.8
5	5	4.5	5.5
6	6	4.5	7.0

Table 4-2: Rinse Aid Dispensing (Combination Dispensers C2.06 and C2.09).

When the Rinse Aid Light turns on, an additional 2 to 5 dispensings (at setting 2) remain available.

Note

To allow proper filling of the Rinse Aid Dispenser; Rinse Aid should only be added with the door in the fully open position.

4.4 Heaters

During the main wash and final rinse portions of a wash cycle, the water is heated to the programs specified temperature before advancing to the next step in the program (i.e. Thermal Stop). The water is heated using one of two systems:

4.4.1 Wash Cavity Heating Element

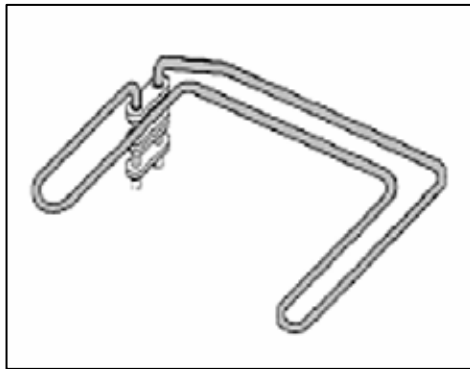


Figure 4-2: Cavity Style Heater Element

The Heating Element is mounted just off the floor of the wash cavity. When powered (120 VAC) the element radiates heat thereby heating the surrounding and circulating water. The temperature of the water is monitored by the Temperature Sensor, mounted in the Sump.

Heating Element switching is performed by the electronic via a Relay. The relay (when energized) closes contacts to provide the Heater Element with 120VAC. A Temperature Limiter mounted with the element provides protection by opening up the circuit should the temperature become too high.

Technical Information**4.4.2 Flow Through Heater:**

The Flow Through Heater Assembly is mounted on the (left side) exterior of the wash cabinet. The Flow Through Heater is plumbed into the water path between the Circulation Pump Output and the Middle Spray Arm.

The Flow Through Heater Consist of a Heater Element mounted parallel to a metal tube that water passes through when the dishwasher is circulating.

As water flows through the metal tube; the water is heated and exits through the Middle Spray-Arm. As the water falls to the bottom of the wash cavity, it passes through the filter and re-enters the Circulation Pump - the process then repeats. The Temperature Sensor monitors the water temperature until the programs specified temperature is reached. Generally the water heats about 2° per minute.

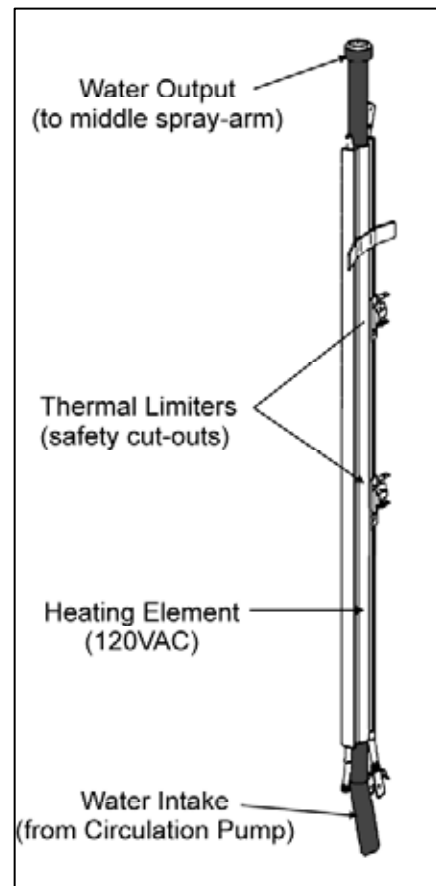


Figure 4-3: Flow Through Heater

Heating Element switching is performed by the electronic via a Relay. The relay (when energized) closes contacts to provide the Heater Element with 120VAC. Two Temperature Limiters are mounted along the element and provides protection by opening up the circuit should the temperature become to high.

4.4.2.1 Flow Through Heater Electrical Data

120VAC
1.5kW
9.6 k.Ohms

4.5 Heater Circuit - Operation

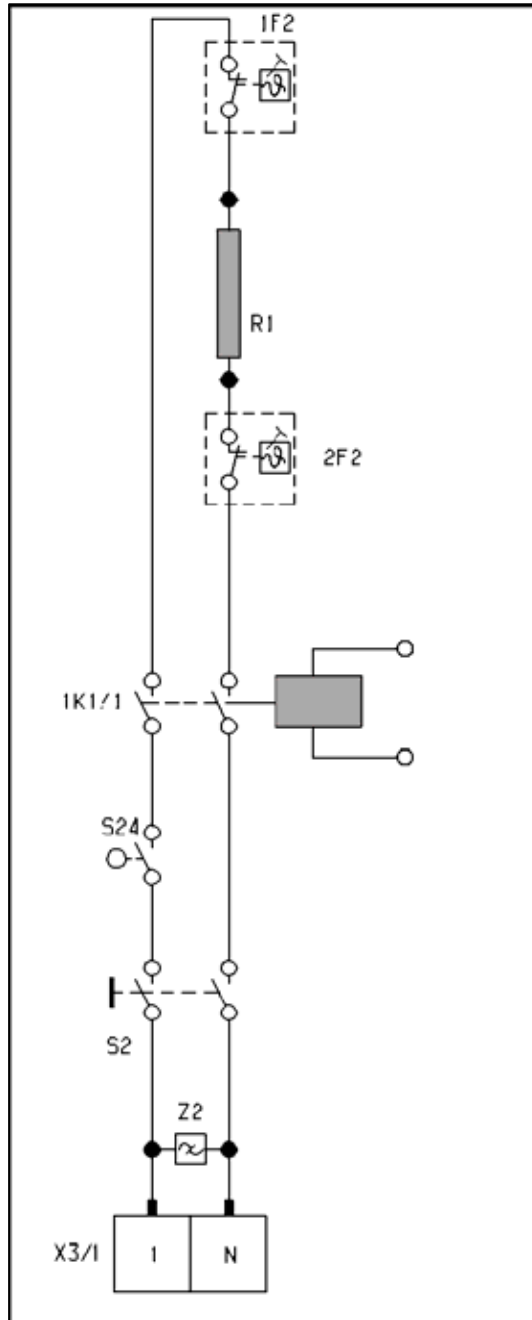


Figure 4-4: Heater Circuit

Technical Information

4.6 Pulsed Heating - Operation

In certain programs the heating may be operated at full power until a water temperature of 77°F is reached; then power is applied in pulses. This extends the heating time and allows enzyme-containing detergents to develop their full cleaning potential.

The pulsed heating operates as follows:

- 1 min heater element on.
- 1 min heater element off.

The number of pulse cycles is limited to a maximum of 11. If the programs specified temperature has not been reached, the heating resumes using full power. Once the programs temperature has been reached, the electronic unit advances to the next step in the program. If the temperature cannot be reached (i.e. heater failure) within a specified time, the program will advance; and a heating fault is stored in the electronic.

4.7 Temperature Protection

The Flow-through Heater uses two (2) Temperature Limiters (2F2) mounted on the body of the Flow-Through Heater. The Temperature Limiters are designed to open the circuit should the temperature become too high. When the temperature falls, the Temperature Limiters do not reset automatically and must be reset manually (via the red button on the back of the device).

Additional protection is provided by the Electronic, which switches the appliance off and stores an F4 fault code, should the temperature exceed 194°F (90°C) – as determined by the Temperature Sensor.

4.8 Static Drying

The Static Drying System uses no electrical and / or mechanical components to assist in drying. With this system the final rinse water is heated to 154°F (68°C) (not the usual 150°F / 67°C). The dishwasher cabinet is made of stainless steel; and conducts the heat generated during the final rinse. As the final rinse ends this stored thermal energy radiates and assists in the drying.

4.9 Spray Arms

The circulation pump (M6) moves the wash water from the sump through the Filter Assembly and to the Spray Arms. The water pressure causes a propulsion effect causing the Spray Arms to rotate.

4.9.1 Spray Arms - Rotation Data

Top Spray Arm: 30 to 55 rpm
Middle Spray Arm: 16 to 40 rpm
Bottom Spray Arm: 24 to 50 rpm

4.10 Filter Assembly

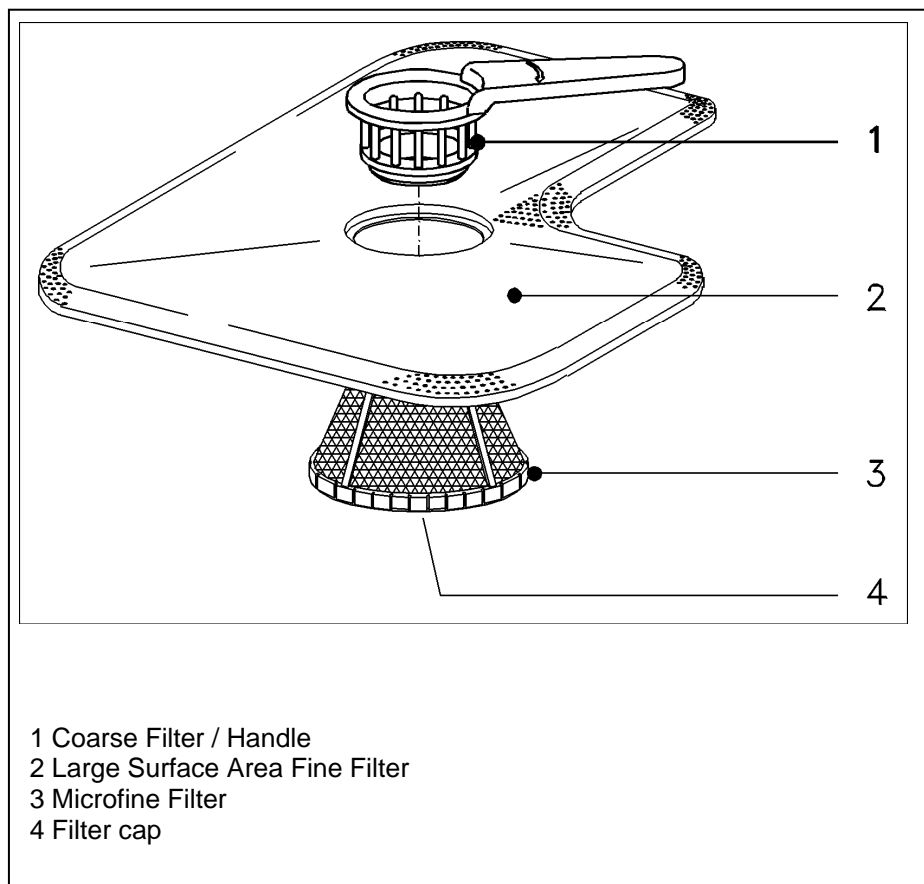


Figure 4-5: Filter Assembly

Circulating wash water is filtered via 2 parallel paths. A portion of the water flows through the center opening of the Coarse Filter and passes through the Microfine Filter. The remaining water passes through the Large Surface Area Fine Filter. The Coarse Filter, is attached to the Filter Combination Handle. If dispensed powder

Technical Information

detergent should fall into the Microfine Filter, it remains on the Filter Cap, where it can dissolve, instead of collecting in the drain outlet. Foreign bodies which pass the Coarse Filter to the Microfine Filter collect on the Filter Cap and so they don't clog the drain outlet.

4.11 Water Intake – Technical Data

Solenoid valve electrical connection	Flow pressure (bar)	Flow rate (l/min)		Connection lead length (m) ¹⁾	Threaded union	Cutout dimensions for valve assembly housing (cm)
		60 cm model	45 cm model			
120 V AC (60Hz)	1 - 10	4.9	4.1	1.5	3/4 in. hose	2 x 4 in.

Table 1: Technical data - WaterProof system

¹⁾ The standard WaterProof system can be exchanged for a 4.5 m long version. With dishwashers from index 24 (additional seal under both solenoid valves), a metal hose (1.5 m) can be connected to the WPS valve unit as an extension.

Table 4-3: WaterProof System Data

^{1:} An optional 4.5 meter version can be installed.

Flow Restrictor - Data

Green	4.1 ⁽¹⁾ liters per minute
Grey	4.9 ⁽²⁾ liters per minute
White	5.25 liters per minute
Blue	6.0 liters per minute

Table 4-4: Flow Restrictor Data

⁽¹⁾ Standard with slimline models

⁽²⁾ Standard with 60cm (fullsize) models

Water Inlet Mixer – Data

Water Inlet mixer	
Solenoid valve (Y5) wash water hardness	120VAC 60Hz
Water reservoir - Softener reactivation	400 ml with 60 cm model
	340 ml with 45 cm model
Flow meter	Approx. 200 - 220 pulses / litre

Table 4-5: Water Inlet Mixer Data

4.12 WaterProof System (WPS)

The Water Inlet Valve (Y2) consists of two (2) electro-mechanical valves mounted within a waterproof box located at the water connection (end of the water intake hose).

The valves are mounted in physically and electrically in series to ensure that if one valve should fail (e.g. due to blockage caused by a foreign body) the water flow will still be switched off by the other valve.

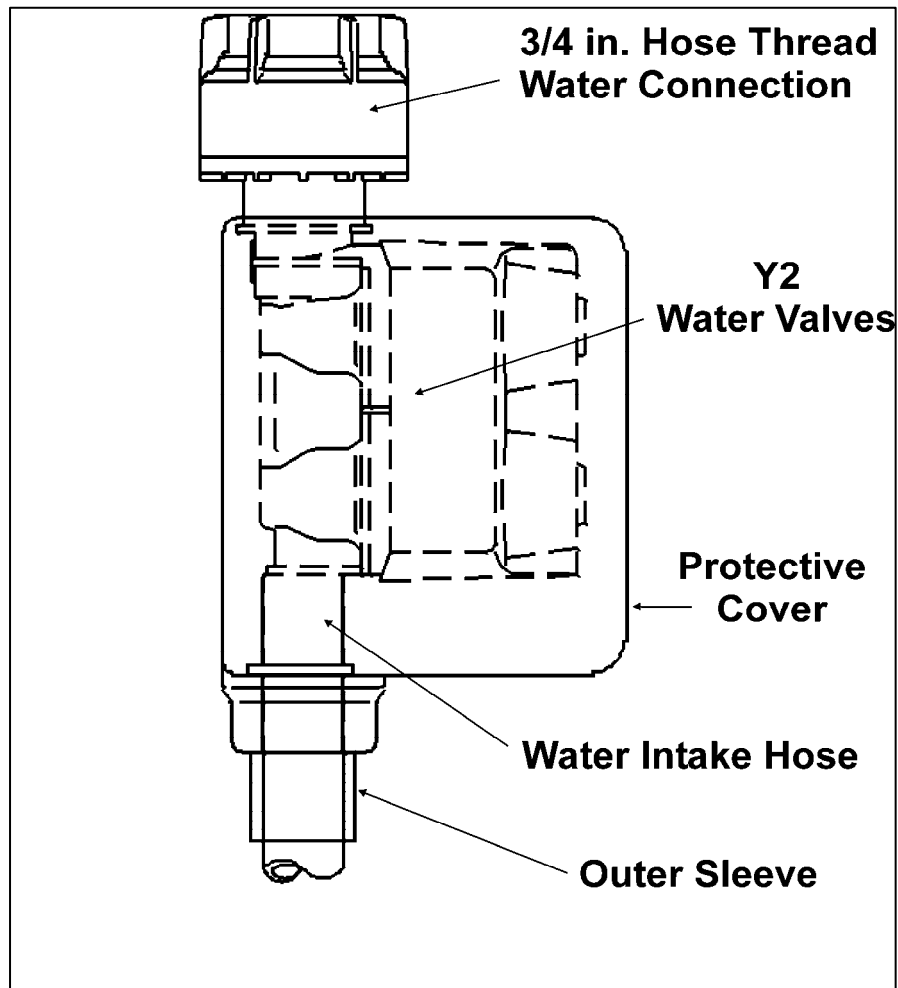


Figure 4-6: WaterProof System Connection

The water inlet system is protected by WPS (WaterProof System) which uses an outer sleeve protecting the water inlet hose and valves. In the event a valve or the hose should leak, the leaking water will flow along the outer sleeve to the drip tray in the bottom of the unit. When a quantity of water collects in the drip tray, the Float Switch (B8/3) is actuated.

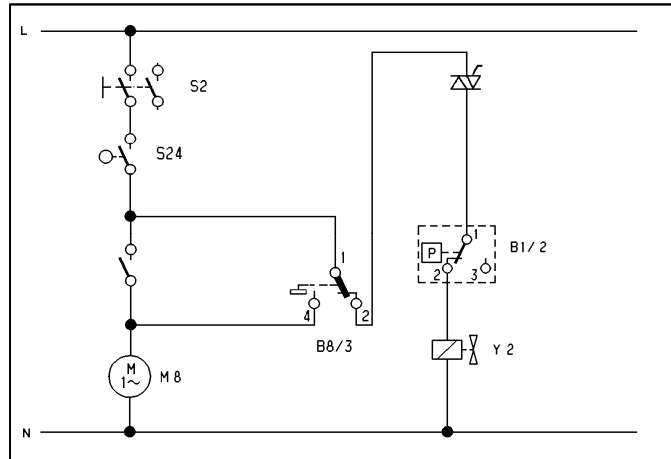
Technical Information

With the Float Switch actuated; power that is normally distributed throughout the appliance is re-directed to the Drain Pump. The Drain Pump will continuously operate when the unit is turned on and the door is closed. Normal operation and Program Selection is not possible during this time.

Warning!

- If the WPS is replaced, always ensure the correct flow restrictor is installed
- The WaterProof system only operates with the door closed and the dishwasher switched on.
- To ensure optimal protection, the water connection should be at least 20 cm higher than the floor on which the dishwasher is standing.
- The connection hose must be routed so that no point is higher than the connection housing.

For further details, refer to the model specific Operating and Installation Manual.



WaterProof System Circuit – normal operating position

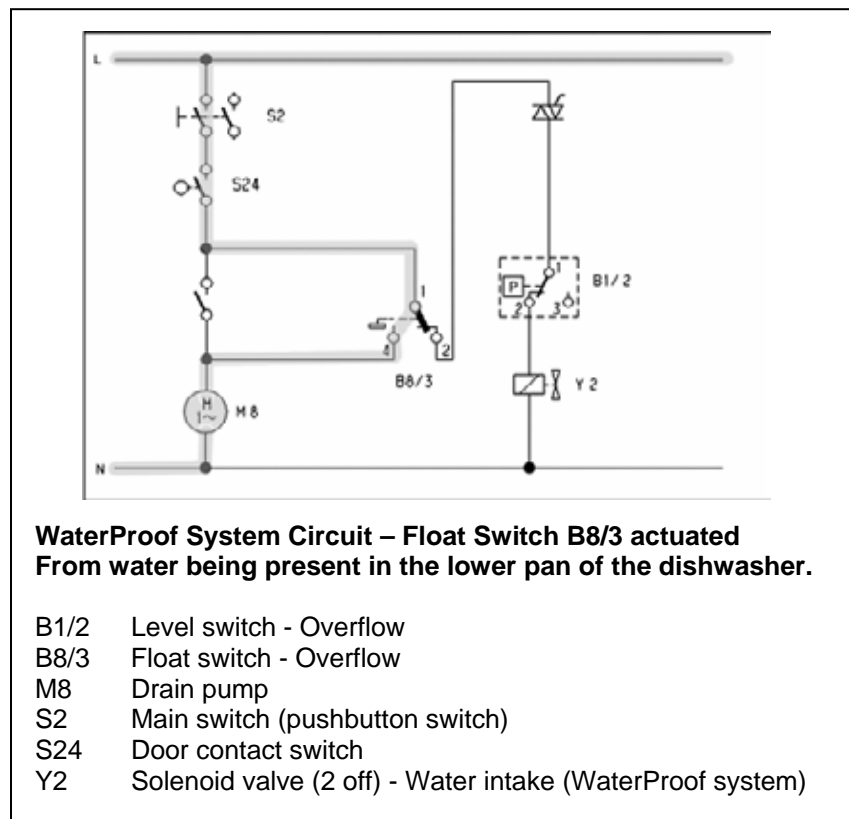


Figure 4-7: Water Intake Circuit

Technical Information

4.13 Flowmeter - Operation

The incoming water turns an impeller that contains a magnet located in the Flow Meter Axle. As the impeller turns, an external Reed Switch is switched on / off by the effect of the magnet. The electronic monitors the number of pulses to determine the volume of incoming water. Approximately 200 pulses = 1 liter.

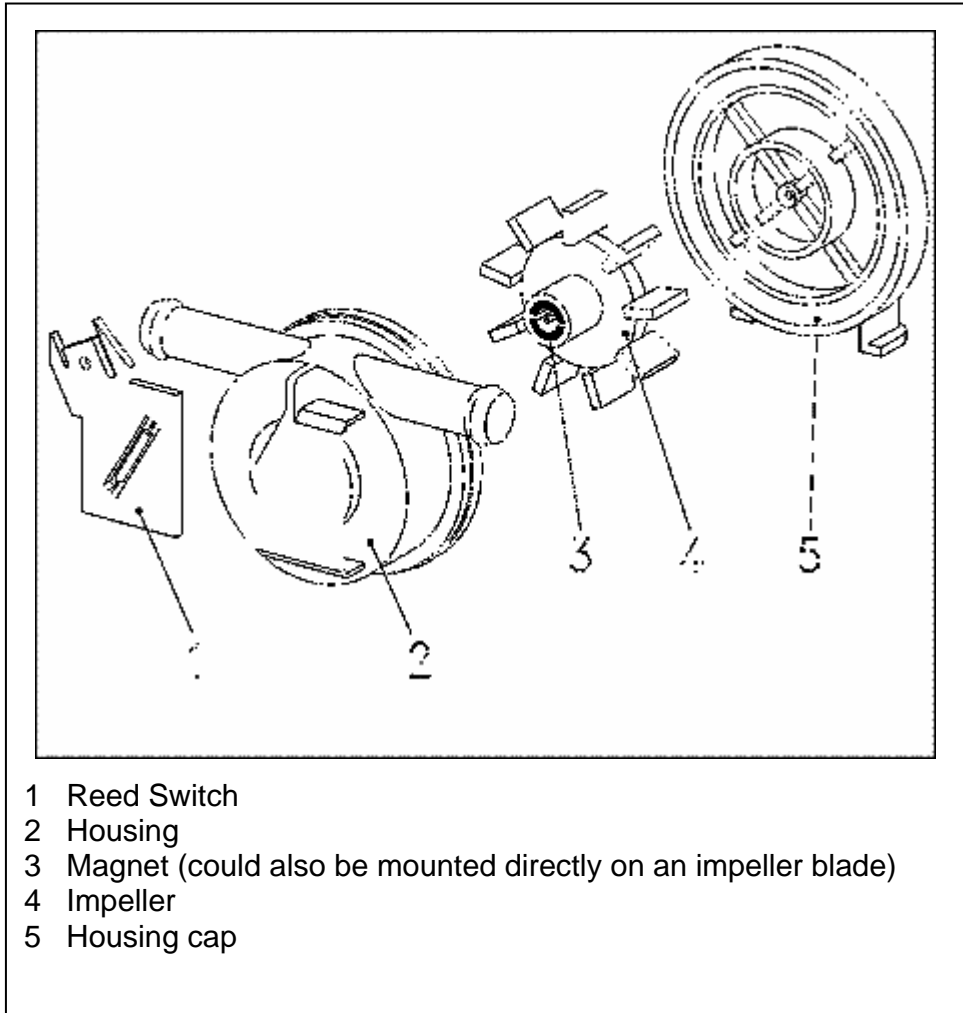


Figure 4-8: Flowmeter Assembly Components (External Flowmeter Shown)

4.14 Water Intake

If the water pressure is low, the electronic can be programmed to increase the allotted intake duration from 2 minutes, to up to 4 minutes.

For further information refer to the section 6 Fault Diagnosis.

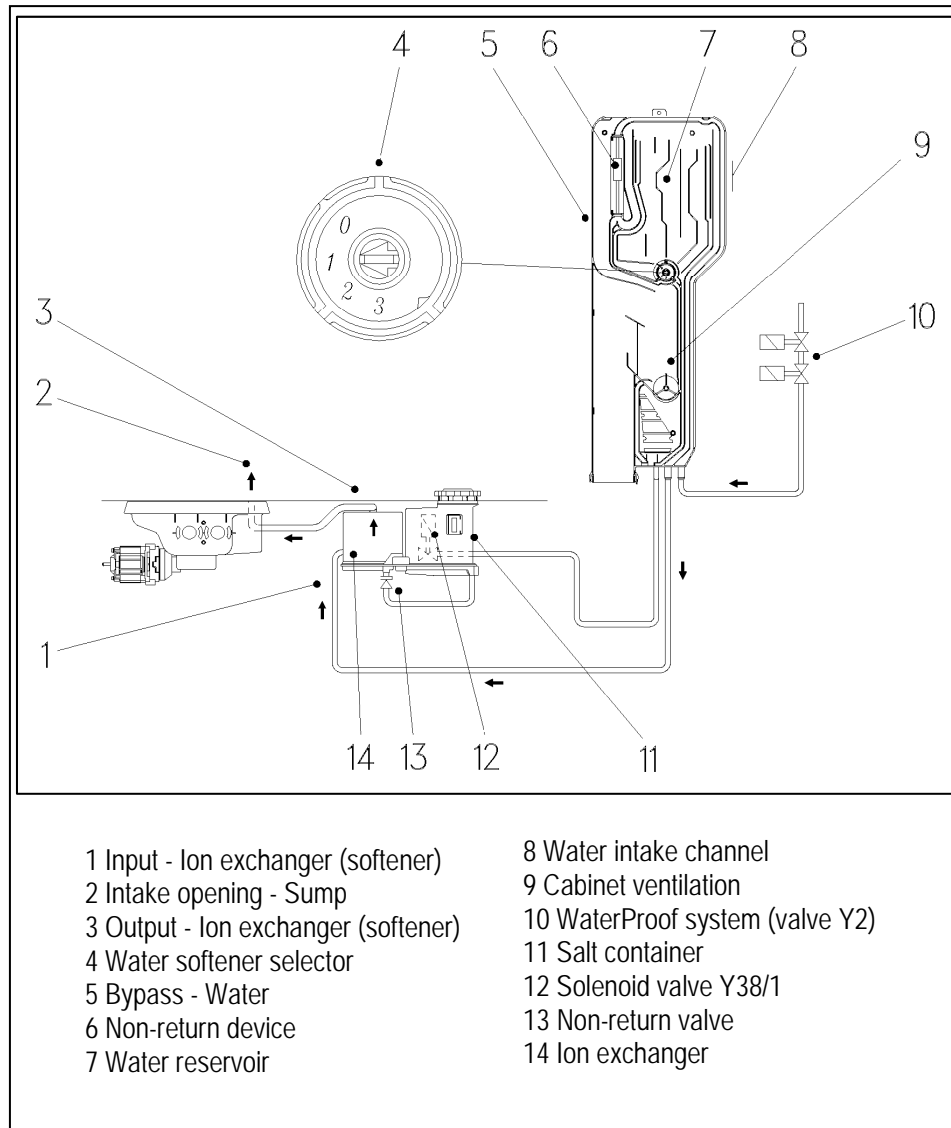


Figure 4-9: Water Intake System Equipped With Integrated Flowmeter

Technical Information

4.15 Water Mixing**4.15.1 Water Mixing - External Flowmeter**

Refer to figure 4-9.

The main water flows into the Waterproof system (Item 10), to the Water Intake Assembly where it passes a Non-Return Device (Item 6). The Non Return Valve prevents a reflux of water from the machine into the supply should a vacuum develop in the system.

The water path is then divided at the bypass (Item 5), and up to 5% of the water flows directly into the cabinet without passing through the Water Softener. Depending on the Water Hardness Selector Setting (Item 4), a proportion of the water flows directly into the cabinet via the Cabinet Ventilation, (Item 9). The remaining water fills the reservoir in the Water Inlet (Item 7), for later reactivation of the softener. When the reservoir is full, water flows through the Ion Exchanger (Item 14), and the intake opening in the sump (Item 2), to enter the cabinet.

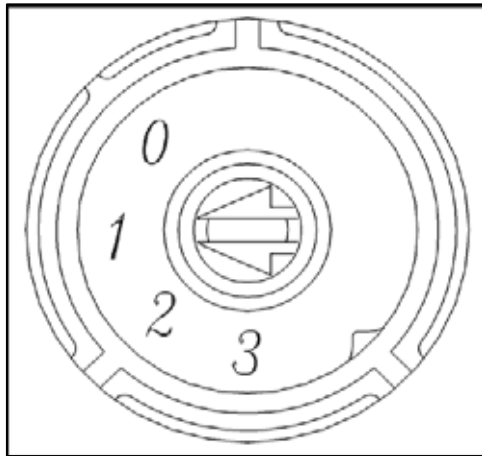
Mains water mixing (External Flowmeter)

Figure 4-10: Water Hardness Selector

With correct programming and operation the water softener should supply water with a hardness level $< 4^\circ$ in all wash programs. With certain types of glass it may be necessary to set the wash water hardness individually to avoid possible glass corrosion. Depending on the water hardness, the selector at the Water Intake (Non Plus Models Only) must be set to between 0 - 3. This sets the quantity of mains water flowing directly into the cabinet without passing the Water Softener. For details, see the model specific operating manual.

4.15.2 Water Mixing - Integrated Flowmeter

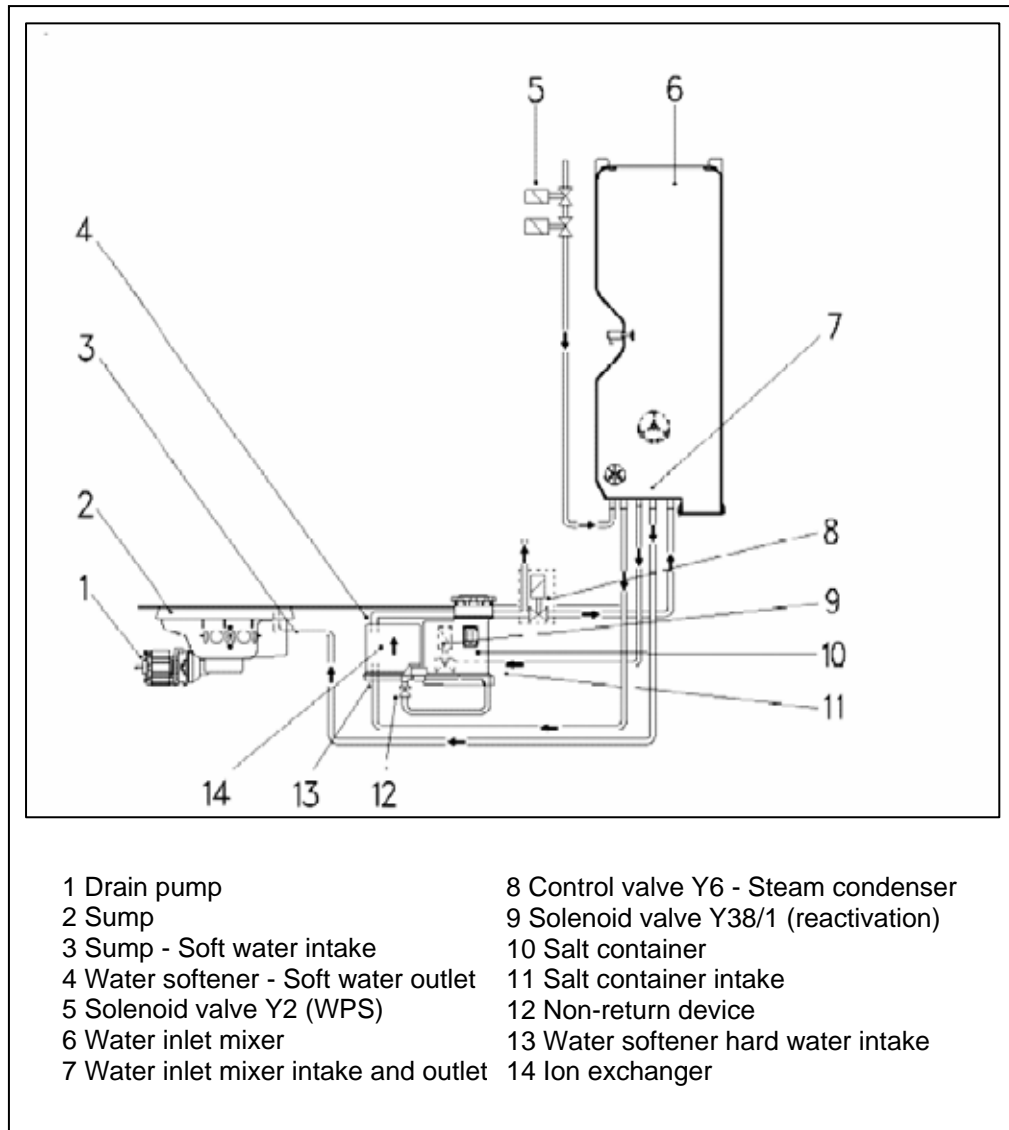


Figure 4-11: Water Path with Integrated Flowmeter

Technical Information

Refer to the figure 4-12.

The water intake hose from the WaterProof System (WPS) is connected to the Water Inlet Mixer (Item 6). Hard water flows through the Integrated Flow Meter (Item 1), and into the Intake Channel (Item 3), to Solenoid Valve Y5 (Item 4).

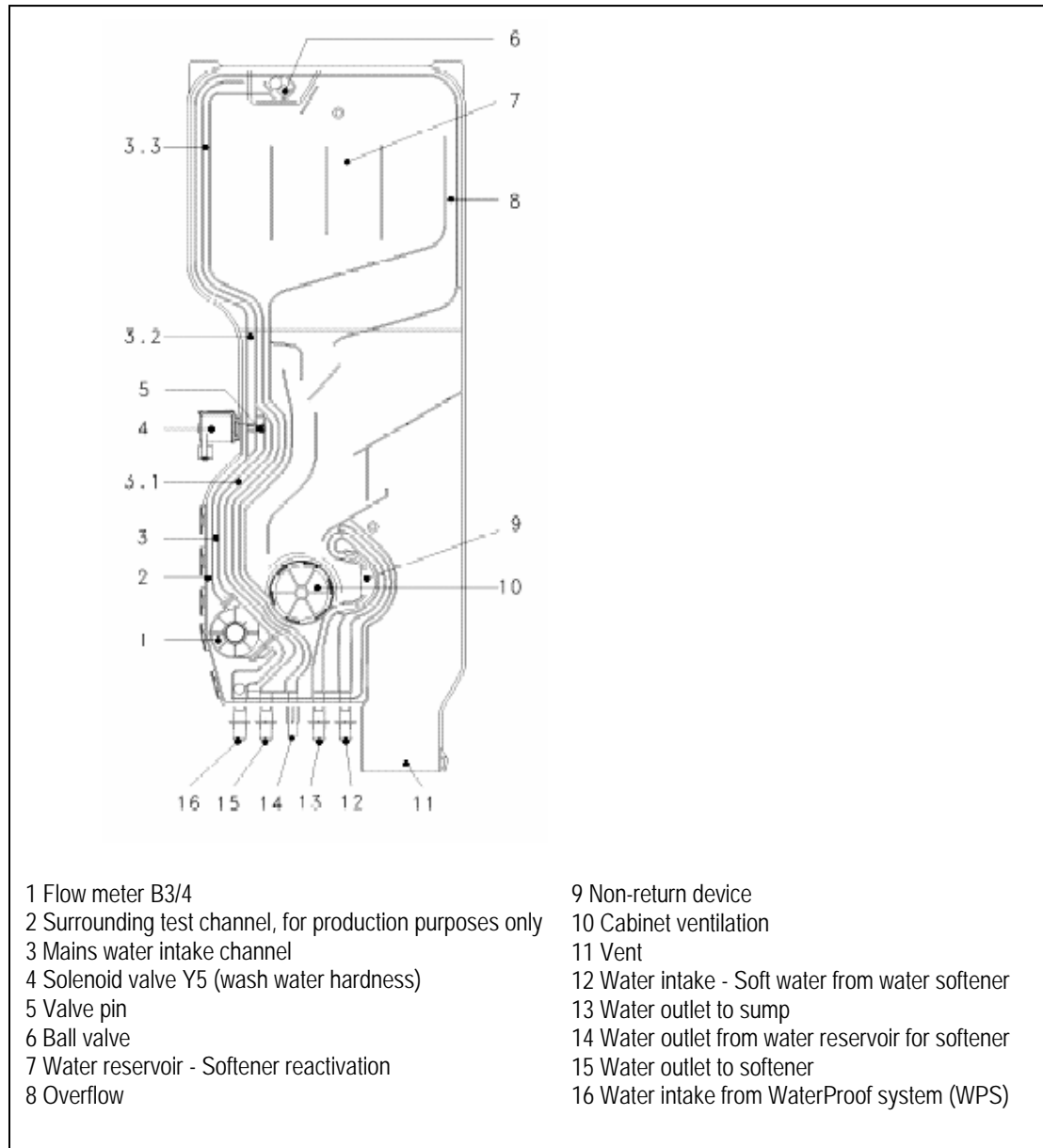


Figure 4-12: Water Inlet Mixer

4.15.3 Solenoid Valve (Y5) - Operating (Plus Models Only)

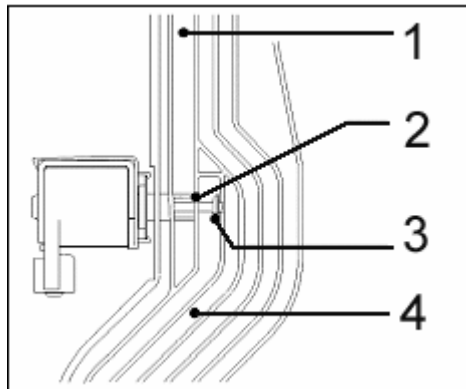


Figure 4-13: Water Hardness Mixer Solenoid

Refer to figure 4-12.

With no voltage to Y5

The Valve Pin (Item 5) closes the channel for cabinet ventilation. The non-softened water then flows behind the Valve Pin (Item 5.1), through an opening in the Water Channel (Item 3.2). From here it flows upwards to the Ball Valve (Item 6), where a small proportion of the water passes through a small bypass in the Ball Valve to the Water Reservoir (Item 7), for later use during softener reactivation.

Note

After softener reactivation, the reservoir is filled again by the time the third water intake has taken place.

The majority of the water, blocked by the Ball Valve at the Water Reservoir Inlet, flows through the Water Channel (Item 3.3), to the Water Mixer Outlet and then to the Water Softener, (Item 5). After passing through the Water Softener, the now soft water flows via the Soft Water Intake (Item 12), back into the Water Inlet Mixer. It then flows past the Non-Return Device (Item 9), into the Sump, (Item 13).

With voltage applied to Y5

The Valve Pin is drawn back and a portion of the hard water flows through the hole into the channel (Item 3.1), via the Cabinet Ventilation Port. This mixing of hard water with the soft water allows the wash water hardness to be adjusted more precisely.

4.16 Electronic Controlled Water Hardness (EGS)

To avoid possible glass corrosion, the wash water hardness level should not exceed or fall below

- 45 ppm in programs with heating
- 71 ppm in program without heating

With water hardness below 286 ppm (in heating steps under 232 ppm) the Solenoid Valve Y5 is activated to add a proportion of hard water to the cabinet. The proportion added in this way is fixed and depends on the mains water hardness level programmed into the electronic.

The EGS system is not active in all wash programs, however it can be programmed if required. The additional function Top Solo has no influence on the EGS system.

The EGS system is not active in the following cases:

- In programs Universal Plus 55°, Universal Plus 65° or Economy (standard setting).
- If the programmed water hardness is above 286 ppm.
- In the program when the softener is being reactivated.
- When flushing the Water Softener after reactivation.
- If no Water Softener is fitted.
- If the function "Without Softener" has been programmed

Note

If a water softener is fitted but has been deactivated (programmed to "without water softener"), then the incoming water flows directly into the cabinet via the Solenoid Valve only. However a small quantity (approximately 1 liter) of water still flows through the Water Softener System to prevent mold from forming.

4.17 Water Softener

The Water Softener consists of 2 compartments - a Salt Container and an Ion Chamber. In addition it also has a mechanical Non-Return Valve, a Solenoid Valve and a Reed Switch / Magnetic Float Switch.

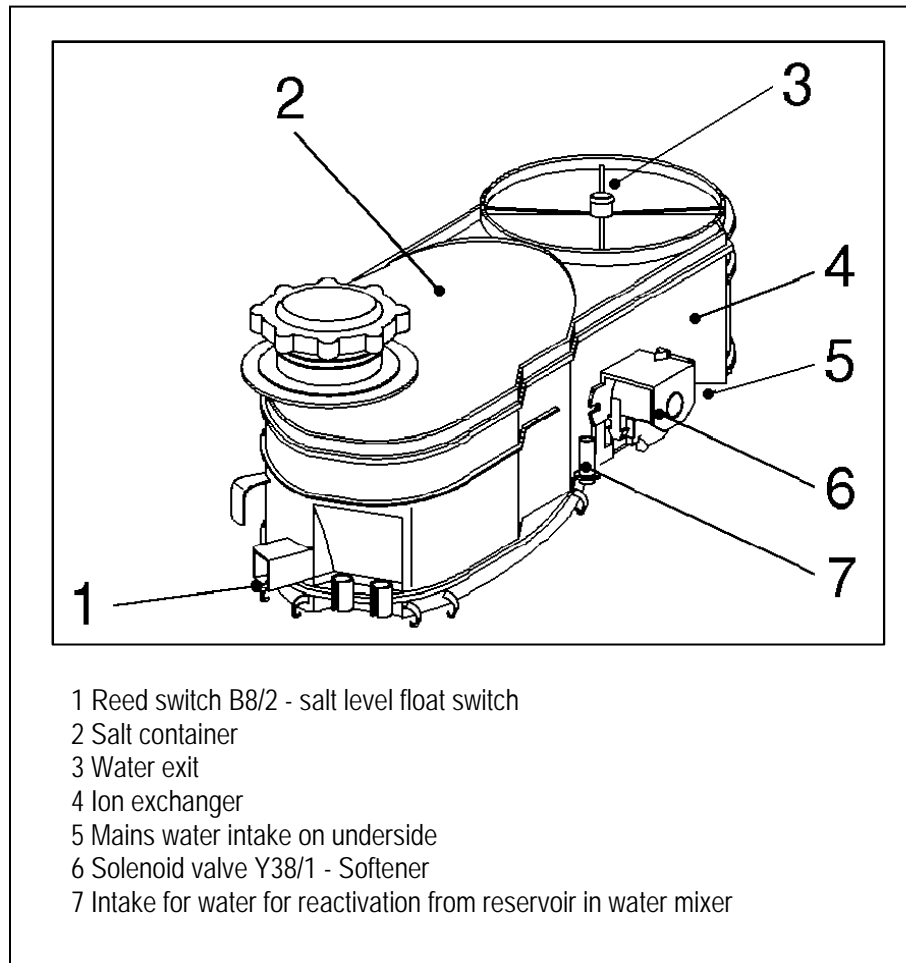


Figure 4-14: Water Softener

Incoming water flows through the Intake Assembly and into the Ion Exchanger. When the water flows through the Softener, the calcium and magnesium ions are exchanged for sodium ions which soften the water. The softened water flows into the cabinet via a port in the Sump.

Technical Information**4.17.1 Reactivation**

The electronic unit activates the Softener Valve (Y38/1) and water from the Water Intake Assembly flows into the Salt Container, where it dissolves a quantity of salt to become a brine mixture.

The saturation point, above which the water cannot dissolve any more salt, is approximately 40%. The brine then flows past a mechanical Non-Return Valve into the Ion Exchanger and flushes the existing water into the Sump. The built-in Non-Return Valve in the Softener prevents the brine mixing with the incoming water during normal operation.

The brine flushes the resin in the Ion Exchanger, and replaces the retained calcium and magnesium ions, with sodium ions. At the next program start, the incoming water flushes out the remaining brine and hardness minerals before the actual dishwashing program begins.

4.17.2 Reactivation Cycles

Water Hardness		Number of Program sequences before reactivation (Universal 650C)	
Parts per Million	Grains per Gallon	Normal Water Quantity	Increased Water Quantity
18 to 71	1 to 4.1	18	12
89 to 107	5.2 to 6.2	13	8
125	7.3	12	8
143 to 179	8.3 to 10.4	7	5
196 to 214	11.4 to 12.4	6	4
232 to 250	13.5 to 14.5	5	3
268 to 304	15.5 to 17.6	4	2
321 to 375	18.6 to 21.8	3	1
393 to 625	22.8 to 36.3	2	1
643 to 1250	37.3 to 72.5	1	1

Table 4-6: Reactivation Cycles Timing

The salt in the Salt Container is sufficient for several reactivation cycles as it is not dissolved all at once. As the quantity of salt in the Salt Container reduces, the concentration of the brine decreases. When a specific concentration is reached, the Float (containing a magnet) activates the Float Switch. The Salt Indicator is then illuminated to advise the operator the softener system needs salt added.

The dishwasher operates with consumption-linked reactivation. After a certain number of programs (Refer to Table 4-6), the Electronic activates the Solenoid Valve (Y38/1) at the end of the Final Rinse Cycle and starts the reactivation process. If several other programs are operated between two Universal 65°C programs such as Economy, the electronic unit calculates the probable quantity of water used and the approximate number of equivalent Universal 65°C programs. Therefore the figures provided in Table 4-6 can only be considered as a guide only.

Technical Information

4.18 Condenser Drying (UKT)

Does not apply to all dishwasher models

4.18.1 Operation

An air inlet port is located on the back / left area of the cavity ceiling. An air duct is fitted to the port and attaches to the Condenser Assembly.

During the Drying portion of a program, moist air within the cabinet is drawn through the Condenser Assembly via the Condenser Fan (M2). As the cabinet air passes the Cold Water Reservoir (inside the condenser) water vapor forms and exits the condenser (as water) via the port on the left wall of the cabinet.

The cooling bank within the Condenser Assembly utilizes water from the intake / softening system controlled by the electronic via the Condenser Control Valve (Y6).

4.18.2 Technical Data

Control valve (Y6) AC 120 Hz

Cold Water Reservoir 750 ml

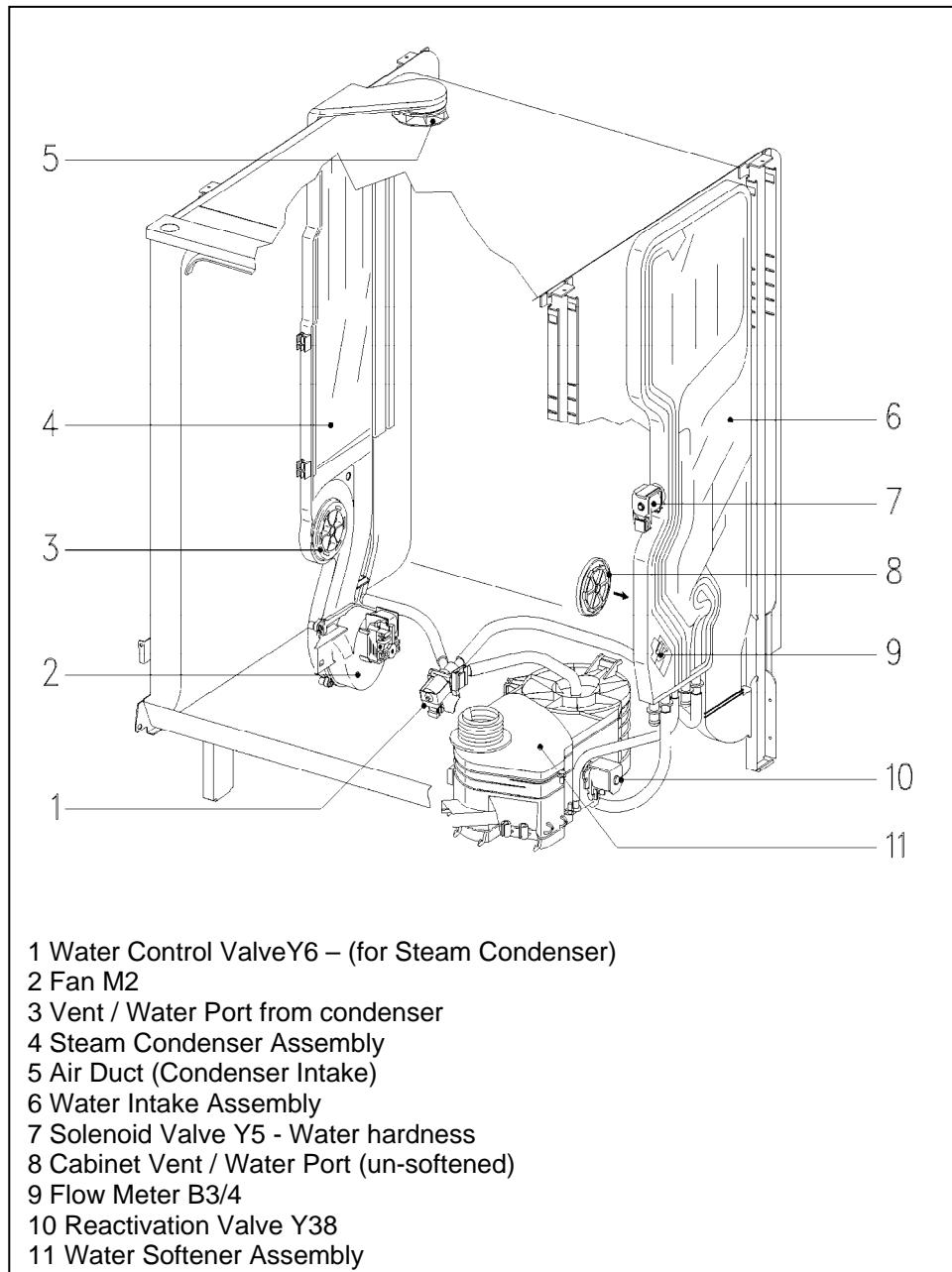


Figure 4-15: Components for the Condenser Drying System

Technical Information

4.18.3 Control Valve

Refer to figure 4-15...

The Miele Circulation Condenser Drying System consists of a Steam Condenser (Item 4), with Circulation Fan. The Steam Condenser contains a Cold Water Reservoir over which an air duct passes and moist air from the cabinet is passed through this air duct. The cold water and the air duct are separated by a 0.5 mm thick membrane which provides the condensing surface. The Fan (Item 2), takes in moist air from the top of the cabinet (Item 5), and passes it over the condensing surface where it is cooled then blows it back into the cabinet via the opening in the lower area of the Side Panel (Item 3). The water vapor that is condensed out during cooling flows down and enters the cabinet via the opening in the lower area of the Side Panel. Some vapor may condense out in the Fan and this flows out via a hole in the bottom of the Fan Housing to the Drip Tray where it evaporates

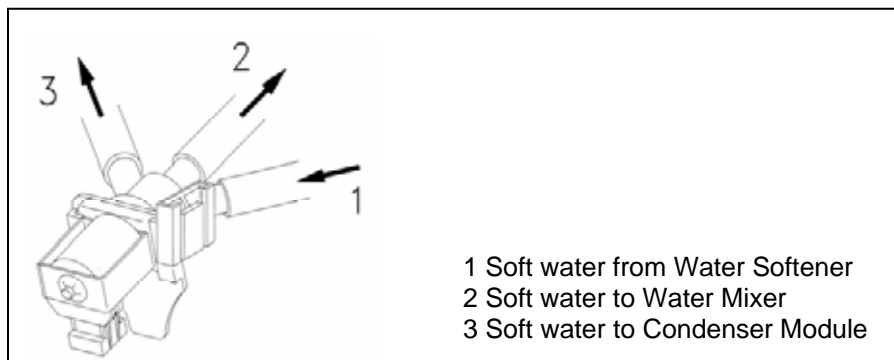


Figure 4-16: Control Valve Y6

Refer to figure 4-16.

No voltage applied to Control Valve Y6

The path between positions 1 and 3 is always open so during every water intake the Cold Water Reservoir in the Steam Condenser is filled with water from the Water Softener. If the Reservoir is full, excess water overflows at its top edge and flows down then enters the cabinet via the opening in the lower area of the Side Panel.

Voltage applied to Control Valve Y6

If voltage is applied to the Control Valve during water intake stages, the path between 1 and 2 is also open (this is marked with **+K** in the Program Timing Chart). In this way soft water flows to the Water Mixer and then into the cabinet.

4.19 Drain Pump, Circulation Pump

The Drain Pump (M8) is located below the cabinet and connects to the right / front of the Sump. The Pump removes the wash water through the Non-Return Valve and Drain Hose to the on-site drain. The Drain Pump is controlled / powered by the electronic.

Note

If the on-site drain is below the level of the guides for the bottom basket, the drain must be vented to prevent siphoning. See the appropriate operating/ installation instructions or call Technical Support for assistance.

During dishwashing, the Circulation Pump (M6) takes in the wash water from the side of the Sump through the Microfine Filter and the Large Surface Area Filter and pumps it to the Spray Arms. During drainage, the Drain Pump removes water out from below the Microfine Filter. This change of direction in the water flow assist in flushing out any residues that may have been retained within the Filter. Water passing through the Non-Return Valve and then to the on-site drain.

A Bimetallic Switch is integrated in the Circulation Pump Motor Windings and serves as a safety cut-off should the temperature exceed 150°C (302°F). After a cooling-down phase, which can be between 10 min - 1 hour the Switch resets automatically. If the Switch is faulty, the Motor Assembly must be exchanged.

Type	Voltage	Rated Power	Pump Pressure	Flow Rate	Maximum Head Height	Maximum Hose Length (Meters)
Circulation Pump	120 VAC	120 W	3.6 psi	18.2 gallons / minute	-	-
Drain Pump	120 VAC	65 W	-	4.2 gallons / minute	39 inches	13 feet

Table 4-7: Circulation and Drain Pump Data

4.20 Level Switch – Heater (Heater Pressure Switch)

The Level Switch – Heating (Heater Pressure Switch) (B1/10) is located directly on the Circulation Pump and actuates when water is present and circulating (producing pressure). The switch is monitored by the Electronic and is electrically in series with the Heater Relay.

Technical Information

If sufficient water and circulation is not present the switch is not actuated; this keeps the Heater Relay circuit interrupted, the appliance malfunctions and a fault is stored in the Electronic.

Should the switch be faulty and remain constantly actuated, the appliance malfunctions and a fault is stored in the Electronic.

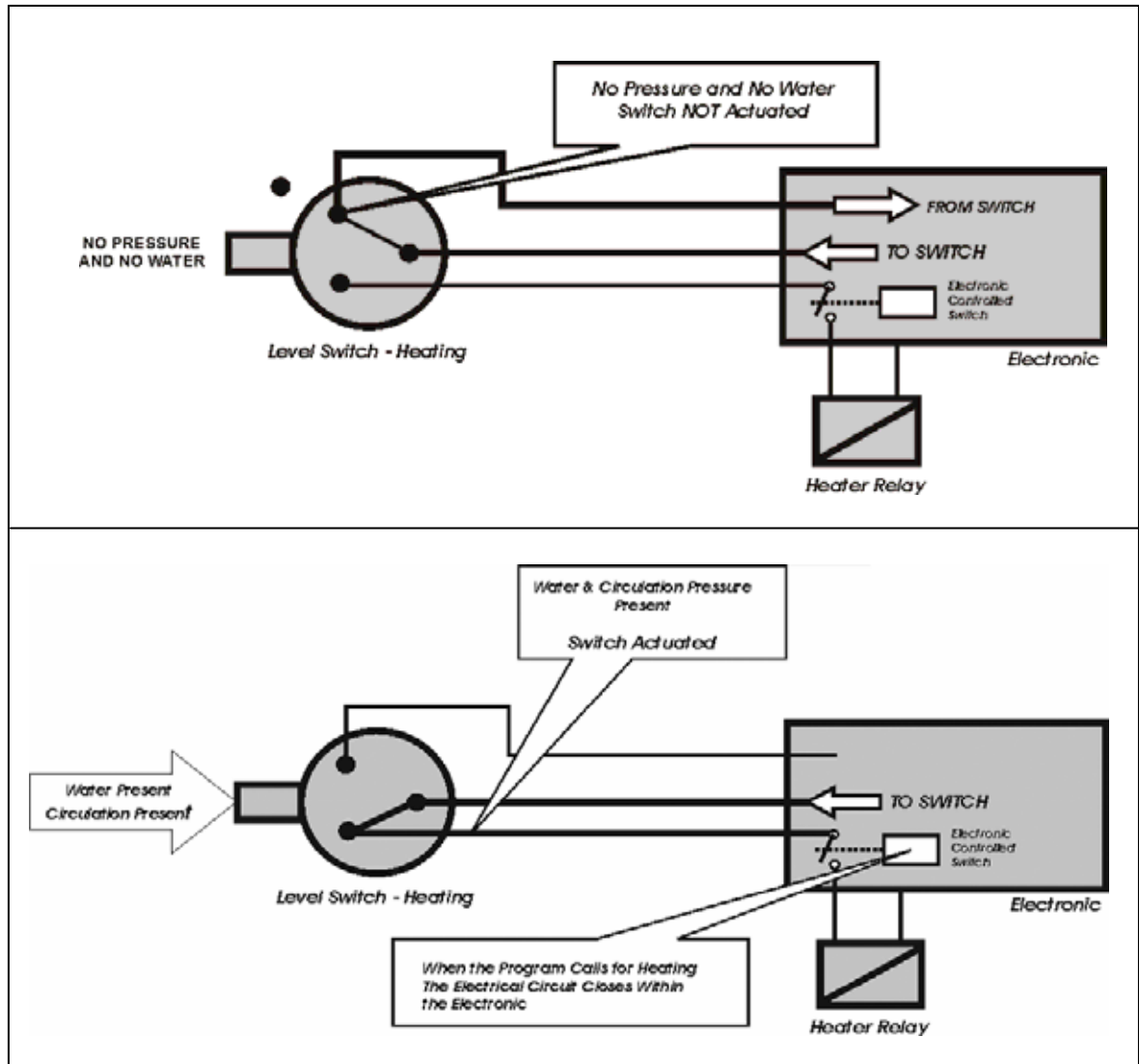


Figure 4-17: Heater Pressure Switch – Contact Positions and Current Paths

4.21 Level Switch (Intake Overflow)

As an additional safety measure, the Overflow Level Switch (B1/2) is electrically in series to the Water Inlet Valves (Y2). The Level Switch interrupts power should the water level become too high inside the cabinet.

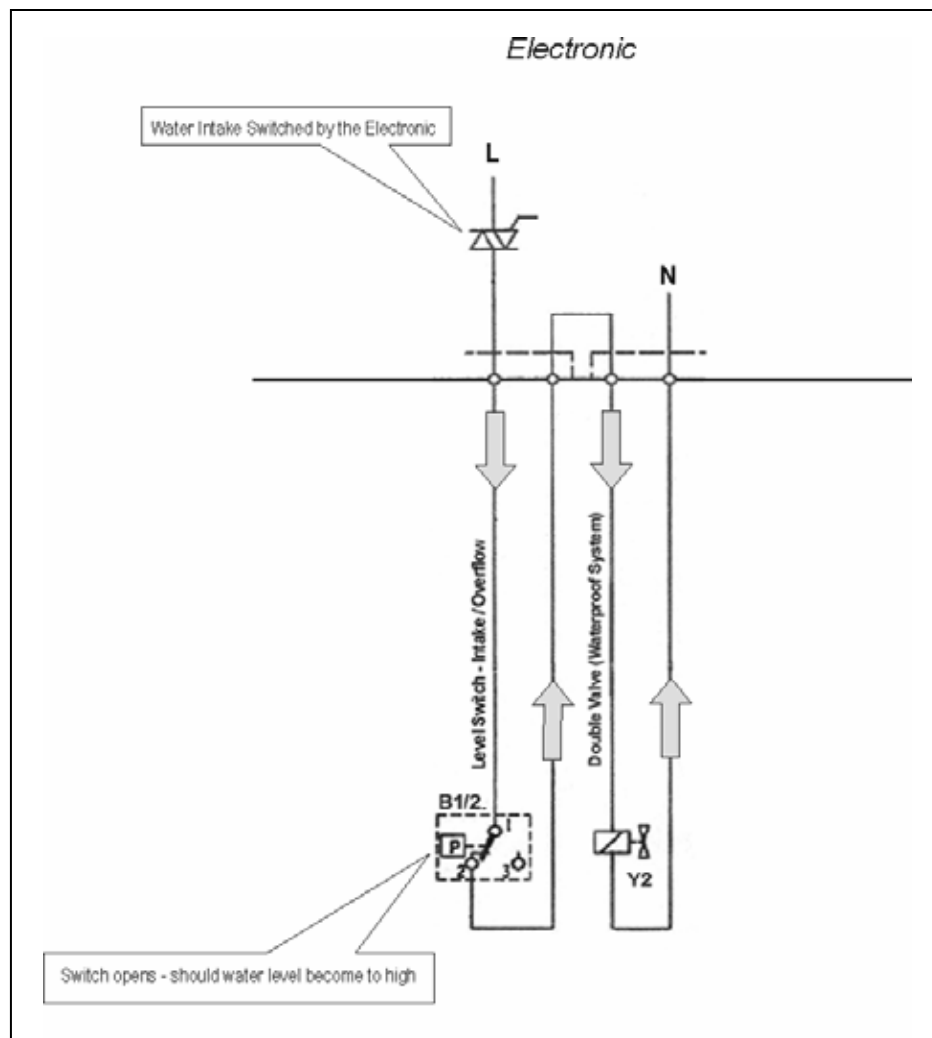


Figure 4-18: Water Intake / Level Switch Circuit

Technical Information

4.22 Temperature Sensor

The Temperature Sensor R30 (NTC resistor) is located in the bottom area of the Sump. The Electronic Unit constantly monitors the water temperature using the resistance value of the sensor. If the resistance is less than 14.9 kilo-ohms ± 750 ohm at 68°, a fault is registered.

NTC sensor resistance values		
Temperature (°C)	Resistance (k Ω)	Tolerance (Ω) = $\pm 5\%$
0	38.000	± 1900
5	29.700	± 1490
10	23.400	± 1170
15	18.600	± 930
20	14.900	± 750
25	12.000	± 600
30	9.750	± 490
35	7.800	± 390
40	6.600	± 330
45	5.400	± 270
50	4.500	± 230
55	3.800	± 190
60	3.200	± 10
65	2.700	± 140
70	2.300	± 120
75	2.000	± 100
80	1.700	± 85
85	1.500	± 75
90	1.300	± 65
93	1.160	± 58
95	1.090	± 55

Table 4-8: NTC Sensor resistance values

4.23 Top Solo Valve

Refer to figure 4-19.

If the Top Solo option is selected, water is directed to the Top and Middle Spray Arms only. The Top Solo Valve (Y27) is located between the Circulation Pump and the Sump within the plumbing circuit to the Bottom Spray Arm. When Top Solo is selected an electromagnet (Item 3), releases a plastic ball in the water intake, wash and / or rinse stages into the valve body (Item 2). This ball is now unlocked and the water pressure pulls it free of the bottom part of the valve and presses it against the output opening (Item 4). This almost completely closes the channel to the Bottom Spray Arm. A bypass opening (a small square cutout in the output opening) allows a minimal quantity of water to flow to the Bottom Spray Arm so keeping the jets free of food residue deposits.

Note

The Top Solo Valve is activated after 2.5 liters of water is present inside the appliance.

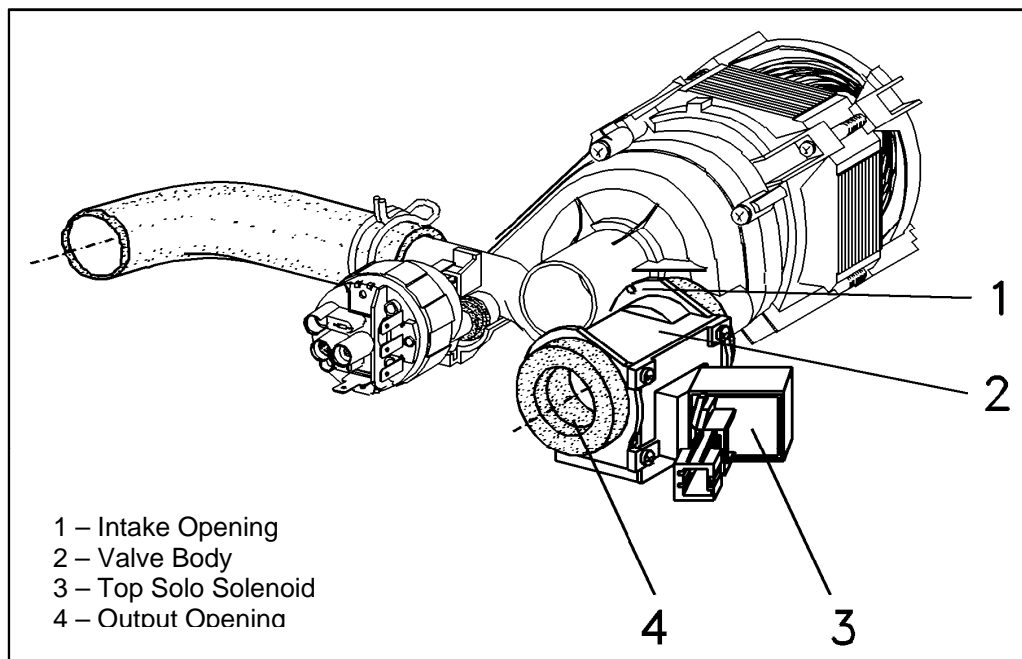


Figure 4-19: Circulation Pump; highlighting components for the Top Solo feature.

Technical Information

4.24 Turbidity Sensor (ECO Sensor)

Certain model dishwashers are equipped with a Turbidity (ECO) Sensor. The Sensor is comprised of a Phototransistor that emits a beam of light through the water path. On the opposite side of the sensor is a Photoelectric Switch (receiver). The amount of light capable of passing through the water is based on the turbidity (transparency) of the water. The amount of light received, effects the current flow of the sensor, and is used by the Electronic to calculate the condition of the water.

If clean water is present, the light flow is near 100%. As the water becomes dirty the amount of light received is reduced.

During certain steps of the program (refer to the model specific Timing Chart) the Sensor is monitored to determine the condition of the water.

Example

At the end of the Pre-Wash the water is checked via the Turbidity Sensor. If the water is clean enough, the program will change by eliminating the drain at the end of the Pre-Wash and fill at the beginning of the Main Wash. The same water will continue to be used to reduce water consumption.

If the Turbidity Sensor and electronic determine the water to be "dirty". Then the program will continue with a drain at the end of the Pre-Wash, and a fill during the Main Wash.

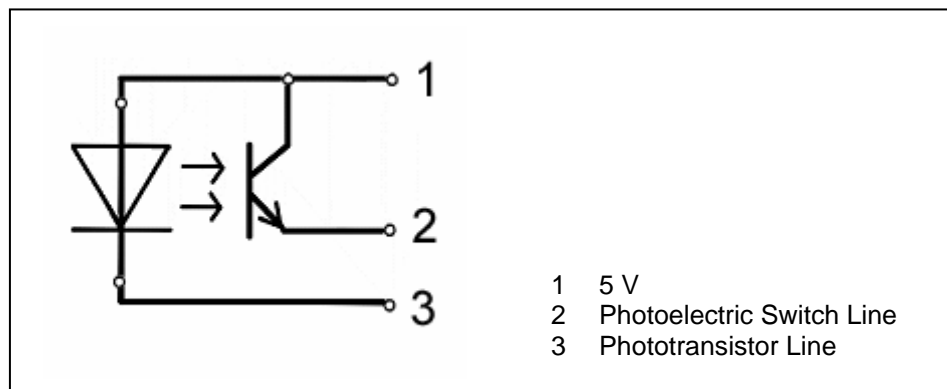


Figure 4-20: Turbidity Sensor (ECO Sensor)

The sensor is located within the plumbing connection between the Circulation Pump and Top Spray Arm. In order to compensate for residues on the sensor and ageing of the optical system, the Turbidity Sensor is re-calibrated automatically every time the dishwasher runs a program (the steps on the Timing Chart are marked with a "T"). To prevent residues drying on the sensor surface, the sensor remains in water after the drainage cycle.

4.25 Electronic Unit - Power Outputs

The Electronic Unit controls all components within the dishwasher. The activation of components requiring 120VAC power is handled by Thyristors and Relays within the Electronic. The individual components of the Electronic are not replaceable. Should the Electronic require replacement; the Electronic is replaced as one assembled component.

Component part	Activation
Circulation pump M6	Relay
Drain pump M8	Relay
Heating relay 1K/1 solenoid	Thyristor
Mains relay 1K/6 solenoid	Via switch S2 (EWZ 548)
Solenoid valves - WaterProof system	Thyristor
Solenoid valve - Reactivation	Thyristor
Detergent dispenser Y51 solenoid	Thyristor
Rinse aid dispenser Y50 solenoid	Thyristor

Table 4-9: Activation of components

Technical Information**4.25.1 Programming After Replacing the Electronic**

In addition to Intake Duration and Water Softener Settings certain dishwasher Electronics need to be programmed for the width of the dishwasher (45 cm or 60 cm).

For further information refer to the model specific programming and service mode(s) information.

4.25.2 Electronic Modes

The electronic modes are divided into 3 levels:

- The Programming Mode
- Service Mode 1
- Service Mode 2

The Programming Mode is intended for user access. Service Mode 1 and Service Mode 2 are designed to be accessed only by qualified service personnel.

Note - While in Service or Programming Modes...

If the dishwasher is switched off; or the door is opened the dishwasher automatically exits the current mode and returns to the operational mode.

5.0 Service and Maintenance

5.1 Locking Plate - Adjustment

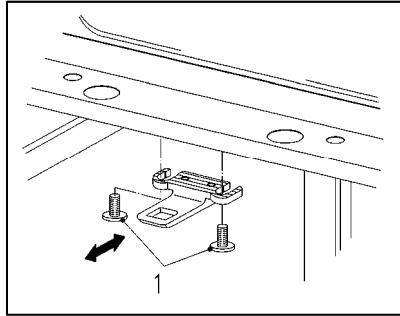


Figure 5-1: Locking Plate

1. Loosen the two Screws (Item 1).
2. Adjust the Locking Plate in the direction of the arrow as required
3. Tighten the Screws.

5.2 Cabinet Seal - Replacement

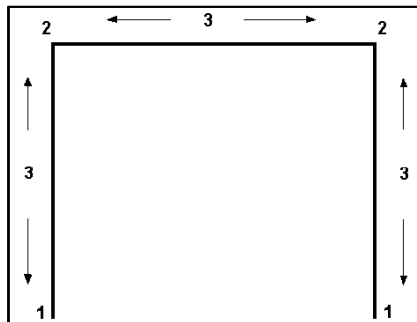


Figure 5-2: Seal Fitting Plan

Refer to figure 5-2.

1. Open the Door.
2. Remove the Old Seal.
3. Clean the groove around the cabinet.
4. Press the appropriate Sealing Compound, into the corners of the Door Seal Groove.
5. Fit the new Seal in accordance with the figure 2; first at the ends and corners of the groove. The Seal Lip should point inwards.
6. Press the mid points of the Seal on the edges (Item 3). Work towards the corners and ends, press the Seal into its groove.

5.3 Side Panel - Removal

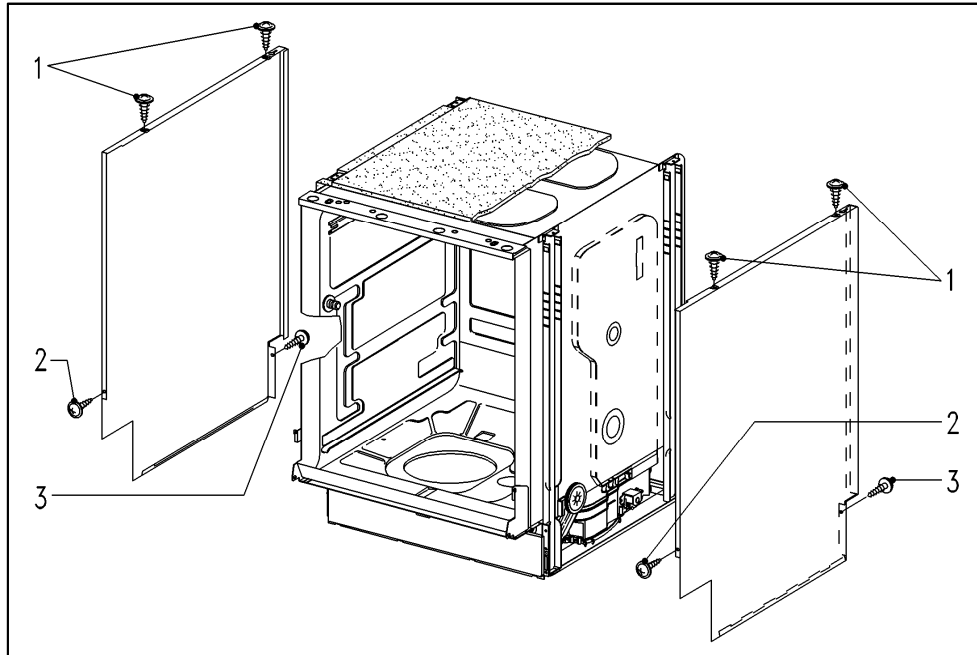


Figure 5-3: Side Panels and Cabinet

Refer to figure 5-3

With the appliance removed from its installation location

2. Remove the raised head screws (Items 1 and 3).

3. Open the Door.

4. Remove the Raised Head Screws, (Item 2).

5. Remove the Side Panels.

Service Tip

When reinstalling the Side Covers; fit the bottom lip of the panel into the edge of the Drip Tray.

5.4 Spring Bracket - Replacement

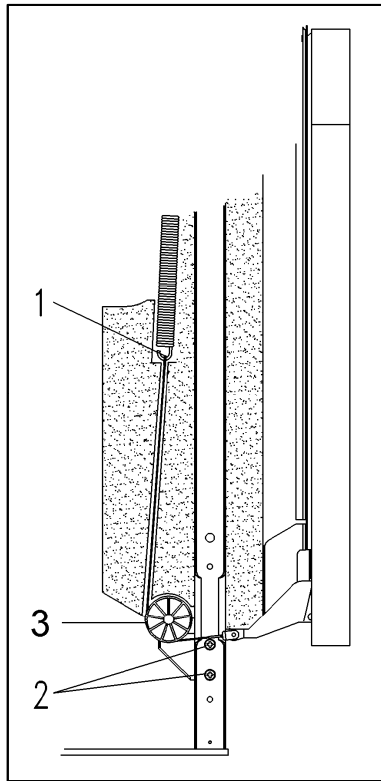


Figure 5-4: Side View, Door with Bracket

1. Remove the Side Panels (5.3)
2. Fold up the Mineral Wool Matting (depending on model).
3. Hold the Spring with one hand and pull it down.
4. Release the Cable from the Bracket (Figure 5-4 – Item 3).
5. Unhook the Spring (Figure 5-4 – Item 1).
6. Remove the Raised Head Screws (Figure 5-4 – Item 2).
7. Remove the Bracket.

Caution

With the Springs removed from the Door; the Door has no tension.

5.5 Cover Plate - Removal

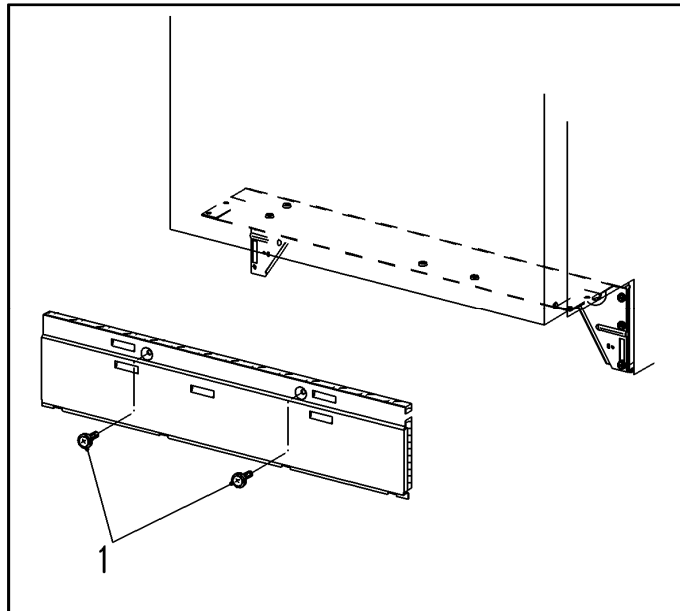


Figure 5-5: Cover Plate

1. Remove the two Screws and the Plinth (Toekick).
2. Remove the Raised Head Screws, (Figure5-5 – Item 1).
3. Tilt the Cover Plate forwards slightly and lift its bottom edge out of the Drip Tray.
4. Remove the Cover Plate.

Service Tip

When reinstalling the Side Covers; fit the bottom lip of the panel into the edge of the Drip Tray.

5.6 Connecting Strip - Removal

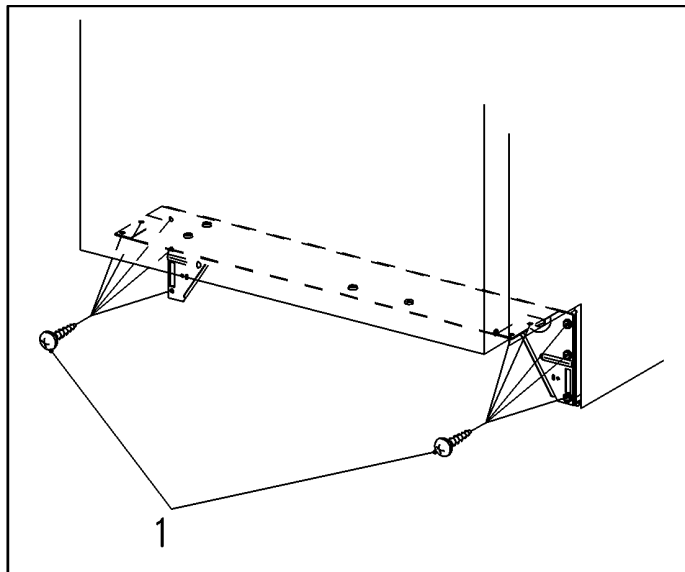


Figure 5-6: Plinth area with Connecting Strip

1. Remove the Cover Plate (5.5).
1. Remove the Raised Head and Countersunk Screws (Figure 5-6 – Item 1).
2. Remove components from the Connecting Strip.
4. Remove the Connecting Strip.

5.7 Basket Support Rollers – Replacement

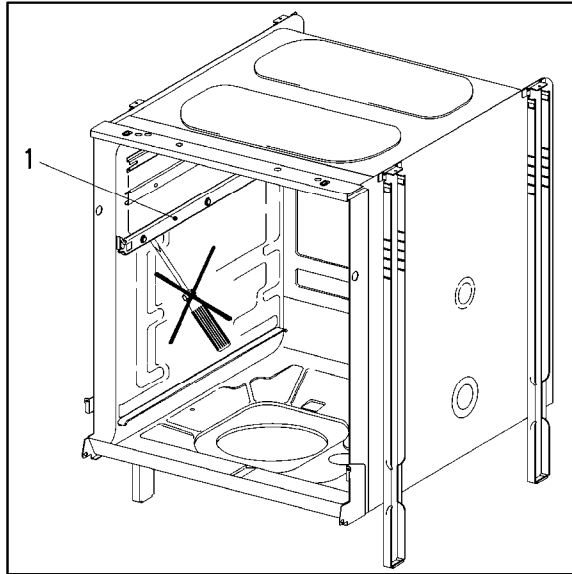


Figure 5-7: Basket Guide

Warning!

Do not attempt to pry the Basket Guides free with a screwdriver; this will result in irreversible damage to the cabinet walls.

1. Slide out the Basket Guide (Figure 5-7 – Item 1), until the Clip, between the Bolt on the cabinet wall and the Basket Guide is visible.

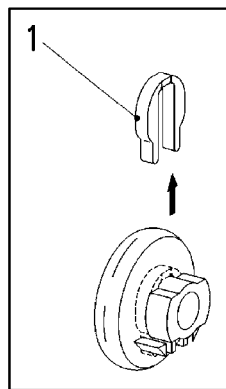


Figure 5-8: Bolt and Retaining Clip

2. Insert a small screwdriver under the Clip between the Bolt on the cabinet wall and the Basket Guide and remove the Clip upwards.
3. Remove the Basket Guide.

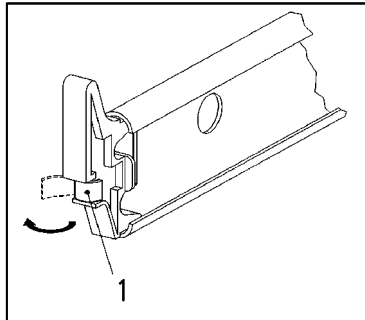


Figure 5-9: Basket Guide Stopper

4. Bend open the Holder Tag for the Rear Stopper in the direction of the arrow (Figure 9 – Item 1).

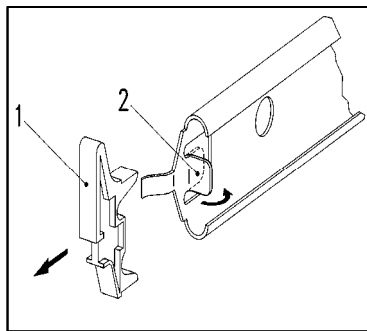


Figure 5-10: Stopper removal

5. Remove the Rear Stopper in the direction of the arrow (Figure 10 – Item 1).
6. Bend the other Holder Tag in the direction of the arrow (Figure 10 – Item 2).
7. Remove the old Support Rollers.
8. Slide the Clips onto the new Support Rollers.
9. Insert 2 new Support Rollers in the Basket Guide.
10. Reinstall the Stopper.
11. Bend the Holder Tags back into position.
12. Reinstall the Clips on the 2 new Support Rollers. Align the Rollers with the Bolts. Press the Basket Guide with the new Support Rollers firmly onto the Bolts until the Rollers clip into place.

5.8 Combination Dispenser - Removal

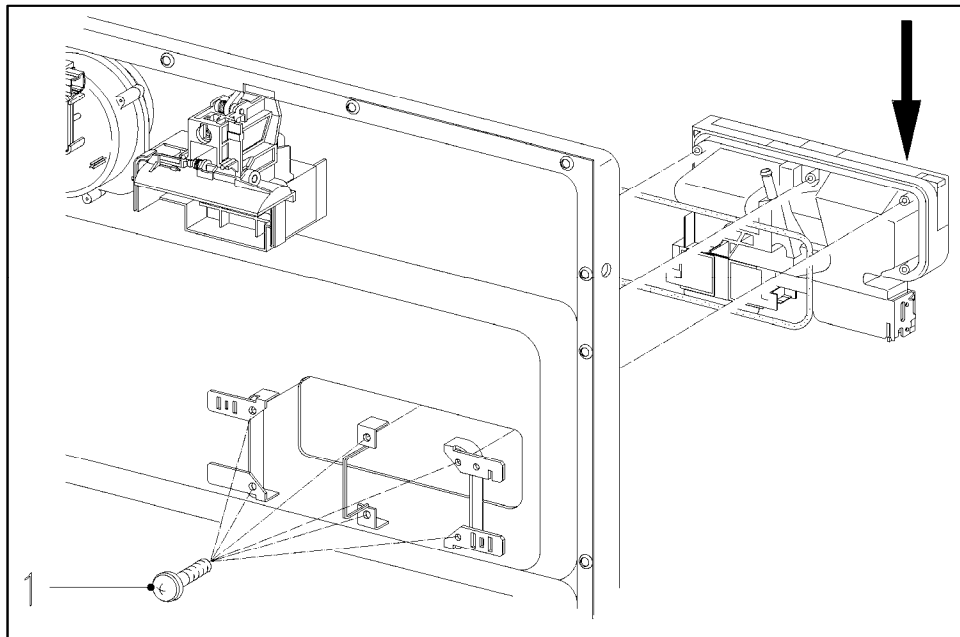


Figure 5-11: Exterior view of the Inner Door Panel

1. Remove the Outer Door Panel (5.10).
2. Disconnect all Electrical Plugs; and Hose – if fitted with a Fan.

Service Tip

To help avoid incorrect connection, the plug connection leads are of different lengths.

3. Remove the Raised Head Screws (Figure 11 – Item 1).
4. Press the Retaining Clips downwards in the direction of the arrow (Figure 11), and remove the Combination Dispenser Unit.
5. Fit a new Combination Dispenser Unit.
6. On models without a Fan, fit a stopper in the connection for the Condensate Hose.
7. Check for proper operation.

5.9 Turbothermic Fan - Removal

1. Remove the Outer Door Panel (5.10).
2. Remove the Control Panel.
3. Remove the Fixing Bracket. Components can remain on the Fixing Bracket (i.e. Electronic Unit, Handle)

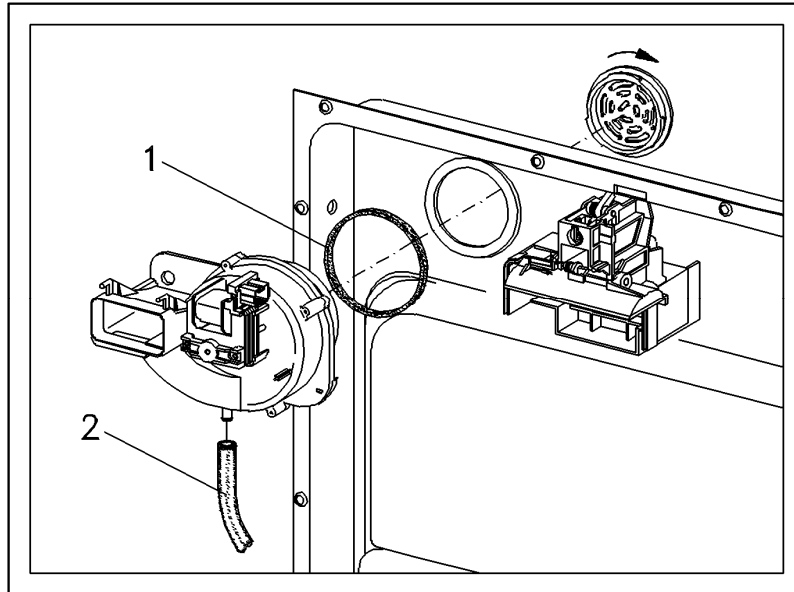


Figure 5-12: Fan Removal

4. Disconnect the Connection Plugs and the Drain Hose, to the Combination Dispenser (Figure 5-12 - Item 2).
5. Open the Door.
6. Using needle-nose pliers, turn the Fan Cover (Filter) on the Door Inner Panel in the direction of the arrow to release it from the Bayonet Fitting.
7. Remove the Fan and Seal.

Service Tip

When refitting, insert the two lugs on the Fan in the holes provided.

5.10 Door Panel (Outer and Inner) - Removal

Note

This procedure does NOT apply to Pre-Finished models.

To Remove the Outer Door Panel

1. Remove the GDU or Custom Panel
2. Open the front door.
3. While supporting the Outer Door Panel; remove the six (6) screws from the inside edge of the panel.
4. Lower the panel to remove.

To Remove the Inner Door Panel

1. Remove the Control Panel (5.47).
2. Remove the Fixing Bracket. Components can remain on the Fixing Bracket (i.e. Electronic Unit, Handle) (5.48).
3. Remove the Insulated Matting between the Inner and Outer Door Panels.
4. Remove the Dispenser (5.8).
5. Remove the Lock Assembly (5.12).
6. Remove the Fan (if applicable) (5.9)

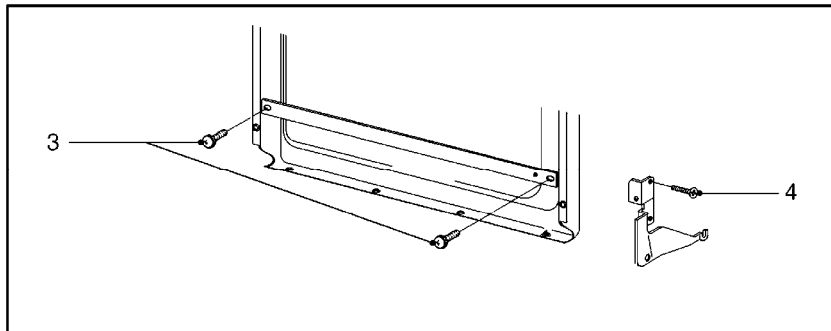


Figure 5-13: Inner Door Panel Removal

7. Disconnect the Ground Wire.
8. Remove the Screws (Figure 5-13 – Item 3).
9. Open the Door. Remove the Raised Head Screws (Figure 5-13 – Item 4).
10. Remove the Inner Door Panel in an upward direction.

5.11 Cable Holder - Removal

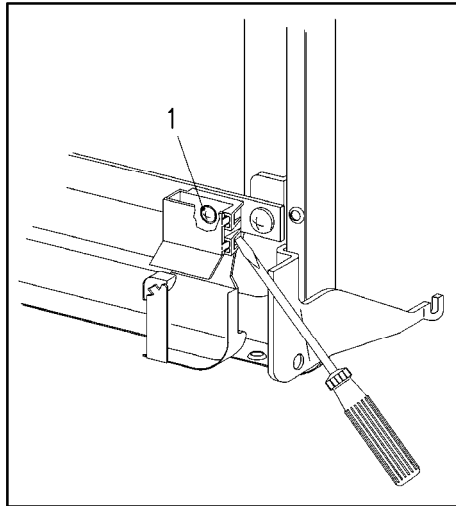


Figure 5-14: Cable Holder Removal

Refer to figure 5-14.

1. Remove the Outer Door Panel (5.10).
2. Open the Cable Holder Cover with a screwdriver.
3. Remove the Raised Head Screw (Figure 5-14 – Item 1).
4. Remove the Cable Holder.

Technical Information

5.12 Lock / Handle Assembly – Removal

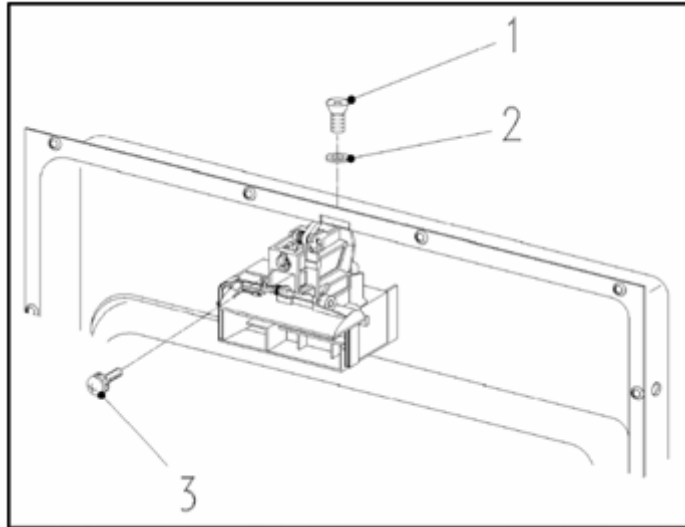


Figure 5-15: Lock Removal

Caution

Ensure the power is disconnected at the wall outlet; by shutting off the appropriate circuit breaker

1. Remove the Outer Door Panel (5.10).
2. Remove the Control Panel (5.47).
3. Open the Door and remove the Screw (Figure 5-15 – Item 3).

Service Tip

A Sealing Ring (Figure 5-15 – Item 3) is located under the Countersunk Screw. This Sealing Ring must be refitted during reassembly.

4. Remove the Lock and Cover.
5. Disconnect the Plug Contacts from the Switch.
6. Dismantle the Lock and Cover.
7. When refitting, ensure the two lugs on the Switch engage in the holes provided.

5.13 Door Hinge - Removal

Refer to Figure 5-16.

1. Remove the Side Panel (5.3).
2. Remove the Outer Door Panel (5.10).
3. Remove the Tensioning Spring (5.4).

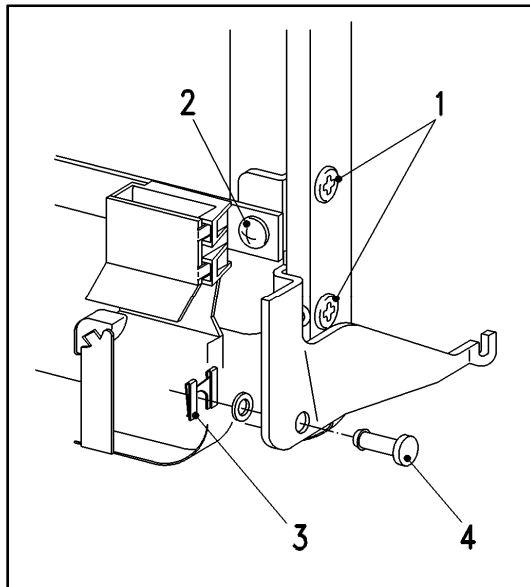


Figure 5-16: Hinge Removal

Warning!

Ensure the Door is held in position; and supported while opening it.

4. Open the Door. Remove the Raised Screws (Item 1).
5. Close the Door. Remove the Screw (Item 2).
6. Remove the Hinge Bolt Retainer (Item 3).
7. Remove the Hinge Bolt (Item 4).
8. Remove the Hinge.

Service Tip

When reassembling, lightly coat all moving parts with acid-free grease

Technical Information

5.14 Door Tension - Adjustment

1. Open the Door.
2. Locate the Spring Adjustment Screw on the left side of the dishwasher at the top front edge – as shown in Figure 5-17.
3. Use a Torx 20 screwdriver to adjust the Screw as follows:
 - *Clockwise – Tighten.*
 - *Counterclockwise – Loosen.*

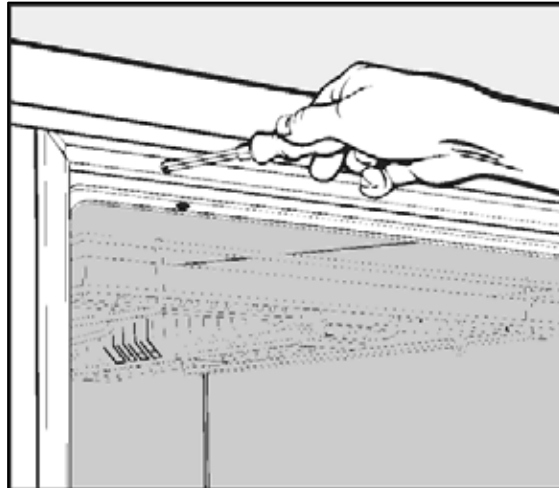


Figure 5-17: Door Tension Adjustment Screw

4. Adjust the Door as follows:
 - With the Door opened to a 45° position, it remains stationary (does not continue to open OR close on it's own tension)
 - Repeat step 3 – as needed.

Warning!

Replacement of Door Tension Springs and / or the Door Panel requires readjustment of the Door Tension.

5.15 Top Spray Arm - Removal

1. Open the Door.
2. Press the Top Spray Arm upwards to engage it.
3. Unscrew clockwise.

5.16 Middle Spray Arm - Removal

1. Open the Door.
2. Remove the Upper Basket.
3. Press the Middle Spray Arm upwards to engage it.
4. Unscrew clockwise.

5.17 Bottom Spray Arm - Removal

1. Open the Door.
2. Remove the Lower Basket.
3. Lift up on the Spray Arm to remove it.

5.18 Top Spray Arm Feed Pipe - Removal

1. Remove the left Side Panel (5.3).
2. Remove the Top Spray Arm (5.15).
3. Unscrew the Counter Nut at the Spray Arm Mount.
4. Loosen the Bottom Hose Clip on the Feed Pipe; pull off the Hose.
5. Remove the Feed Pipe from it's Fixing Bracket by lifting upward.

5.19 Middle Spray Arm Cover - Removal

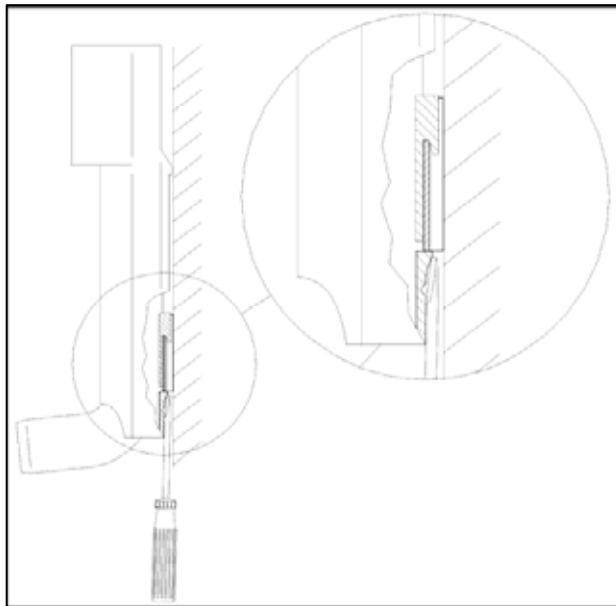


Figure 5-18: Middle Spray Arm Cover Removal

1. Insert a large screwdriver between the Cover Retainer and the Metal Holder on the rear of the cabinet wall – see figure 5-18.
2. Unclip the Spray Arm Cover and slide it upwards.
3. Remove the cover by pulling it down and outward.

5.20 Middle Spray Arm Feed Pipe - Removal

1. Remove the Spray Arm Cover (5.19).
2. Remove the Left Side Panel (5.3).
3. Remove the Spring Clip located at the top of the Feed Pipe near the Flow-Through Heater.
4. Lift upward on the Feed Pipe to remove.

Service Tip

When refitting, ensure the Seal is fitted on the Feed Pipe before re-installation.

5.21 Flow-Through Heater - Removal

Refer to figure 5-19.

1. Remove the Left Side Panel (5.3).
2. Fold up the insulation – as needed.

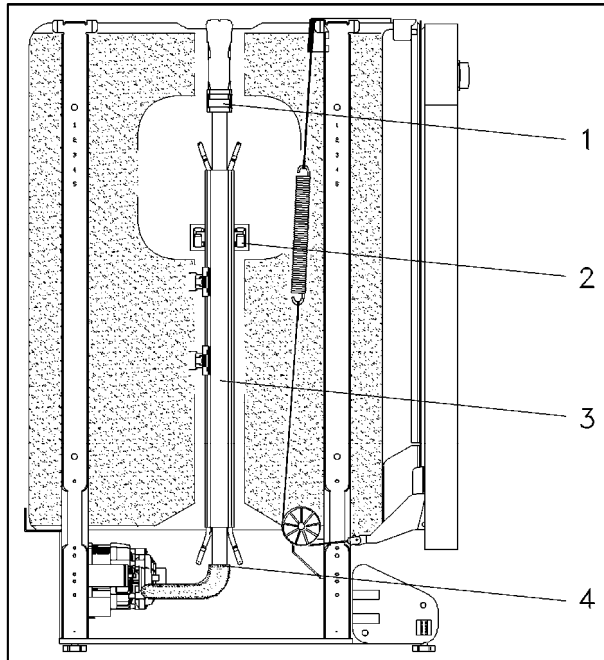


Figure 5-19: Dishwasher with Flow-Through Heater

3. Disconnect the Electrical Connections.
4. Disconnect the Top and Bottom Hose Connections (Items 1&4).
5. Lift upwards on the Flow-Through Heater Assembly to release it from the Retainer (Item 2).

Service Tip

When replacing a Flow-Through Heater, the old Seal should be replaced with a new part. See Figure 5-20 – Item 1.

Technical Information

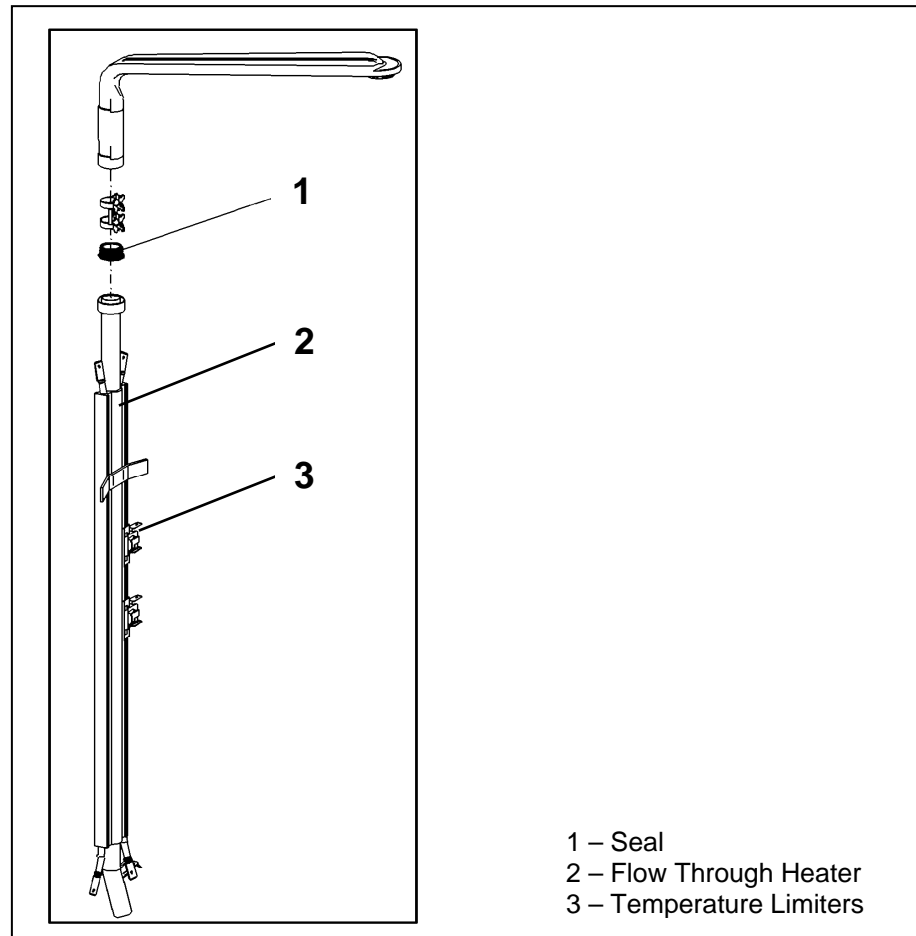


Figure 5-20: Flow-Through Heater with Seal (Item 1).

5.22 Temperature Limiter - Replacement

1. Remove the Left Side Panel (5.3).
2. Disconnect the Temperature Limiter Electrical Connections.
3. Loosen the Clamp from the Temperature Limiter using a screwdriver.
4. Fit a new Temperature Limiter in the same position and secure it with the Retaining Clamp.
5. Ensure the Retaining Clamp is seated correctly.
6. Connect the Plug Contacts.

5.23 Microfine Filter – Exchange

Refer to figure 5-21.

1. Open the Door.
2. Remove the Filter Assembly from the dishwasher.

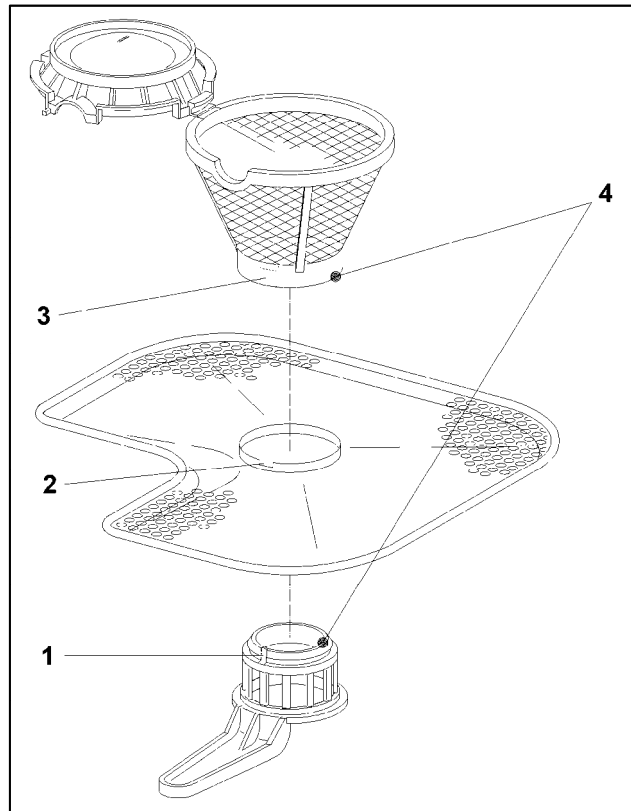


Figure 5- 21: Microfine Filter – Replacement

3. Cut the old Filter combination apart at the Snap Fitting between the Handle and Microfine Filter (Item 4).
4. Open the Filter Cap on the new Microfine Filter.
5. Place the Handle and Microfine Filter together as shown in Figure 5-21.

Service Tip

- Ensure the cutout on the Handle (Item 1), must align with the cutout on the large surface area fine Filter (Item 2).
- Ensure the The retaining lug on the new Microfine Filter (Item 3), aligns with the cutout on the Handle (Item 1).

Technical Information

6. Apply a small amount of Rinse Aid to act as a lubricant while snapping the new Microfine Filter into place.
7. Apply pressure with both thumbs inside the Microfine Filter and press it onto the Handle (Figure 5-22), so that the parts lock together.

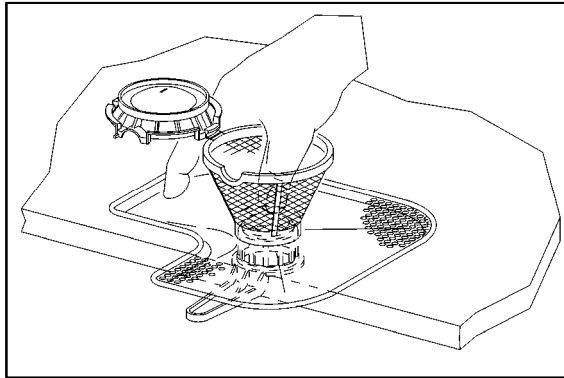


Figure 5-22: Pressing and Locking the Filter Assembly.

Service Tip

Use caution to ensure the Filter is not damaged during re-assembly.

8. Re-install Filter.

5.24 Waterproof System (WPS) - Removal

1. Remove the Drip Tray (5.29).
2. Release the Hose Clamp Tension and remove the Intake Hose from the Flowmeter (or Water Intake Assembly).
3. Disconnect the Electrical Connection to the Solenoid Valve (Y2) (located near the front of the water softener salt tank).
4. Release the Locking Collar Tension on the back of the dishwasher and remove the WPS by pulling outwards.

Service Tip

The new WPS is supplied with various Flow Restrictors. Ensure the correct Flow Restrictor (coded by color) is installed into the new part (5.25).

5.25 WaterProof System (WPS) Restrictor - Exchange

1. Shut off the water supply.
2. Disconnect the WPS at the plumbing supply connection.
3. Remove the Sealing Washer and Filter from inside the WPS connection
4. Using a 5mm nut-driver; press and tilt the Restrictor to the side; as shown in figure 5-23.

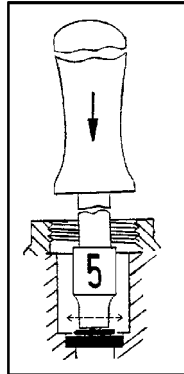


Figure 5-23: Tilting the Flow Restrictor

5. Remove the Restrictor with needle-nose pliers; as shown in figure 5-24.

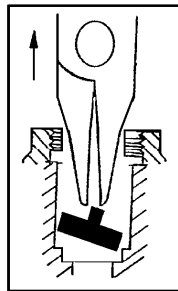


Figure 5-24: Removing the Flow Restrictor.

6. Fit the new Restrictor using a suitable 5 mm socket spanner.

Service Tip

Use care when installing a new Flow Restrictor, a damaged Restrictor should never be used.

Technical Information

5.26 Water Inlet (Diverter) - Removal

1. Open the Door.
2. Unscrew the connections securing the Water Intake to the inside of the cabinet; as shown in Figure 5-25.

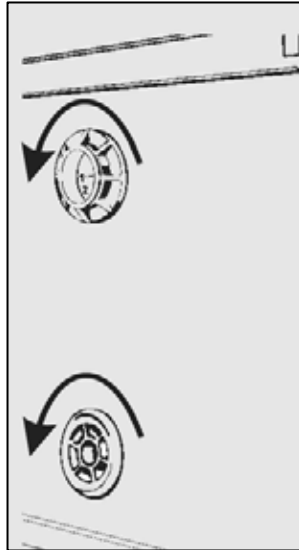


Figure 5-25: Water Inlet - Removal

3. Remove the Right Side Panel (5.3).

Service Tip

Be prepared as residual water remains in the Water Intake. Water will flow from the Water Intake upon disconnecting the hoses.

4. Disconnect all Connection Hoses.
5. Remove the Water Inlet.

5.27 Water Softener – Operational Check

Service Tip

Ensure the Electronic is programmed “with Water Softener” before performing the following procedure.

1. Refer to the model specific Operating Manual; Program the Electronic to the 643 ppm (parts per million) – 1,250 ppm (parts per million) softener setting.
2. Remove the Filter Assembly.
3. Access Service Mode 1. (refer to section 6 – Fault Diagnosis for model specific instructions)
4. Proceed to a water intake step.
5. Proceed to a drain step and drain the appliance.
6. Open the Door.
7. “Cheat” the Door Switch into the “closed position” by using a Door Switch Bypass Tool P/N 05057670.
8. Turn off the water supply to the dishwasher.
9. Access Service Mode 1.
10. Refer to the model specific Timing Chart and Select a program and proceed to a step that is marked “E-REG” (Softener Reactivation).

The Electronic Unit activates the Softener Solenoid Valve (Y38/1)

- If water flows through the intake opening in the Sump, the Water Softener is operating correctly.
- If water does not flow through the intake opening in the Sump, - check the following:
 - The activation of the Solenoid Valve Y38/1.
 - The Water Softener Salt Cap for leaks and/or damage.
 - The Water Softener Hoses and Connections.

Service Tip

The Softener Solenoid Valve (Y38/1) is activated for 2 minutes during reactivation. The Water Intake is emptied in approximately 60 seconds.

Technical Information

5.28 Water Softener Assembly- Removal

1. Open the Door; remove the Salt Container Cap and Sealing Ring. Remove any excess water / brine as necessary.
2. Remove the Right Side Panel (5.3).
3. Note the location of the Hoses on the Water Intake Assembly; disconnect the Hoses and drain the remaining water.
4. Lay the dishwasher on its back.
5. Remove the Drip Tray (5.29).
6. Note the location of the Hoses on the Water Softener; disconnect the Hoses and drain remaining water.
7. Unplug the Electrical Connections and remove the Reed Switch.
8. Release the wires from the holders on the Water Softener.
9. Remove the Water Softener.

5.29 Drip Tray - Removal

1. Lay the dishwasher on its back.
2. Remove four (4) screws from the corners of the Drip Tray.
3. Pull the Drip Tray from the appliance to remove.

5.30 Float Switch Housing - Removal

1. Remove the Drip Tray (5.29)
2. Pull the Float Switch to the front.
3. Disconnect the Plug.

5.31 Float Switch (B8/3) – Removal

Refer to figure 5-26.

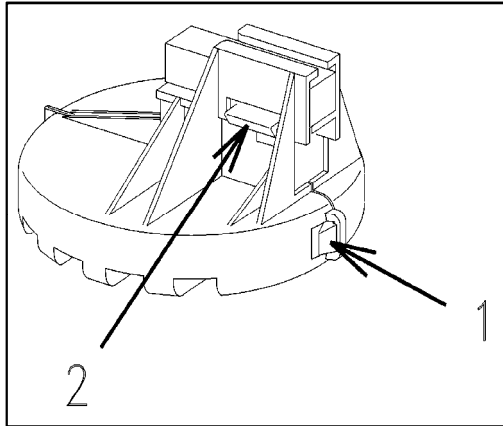


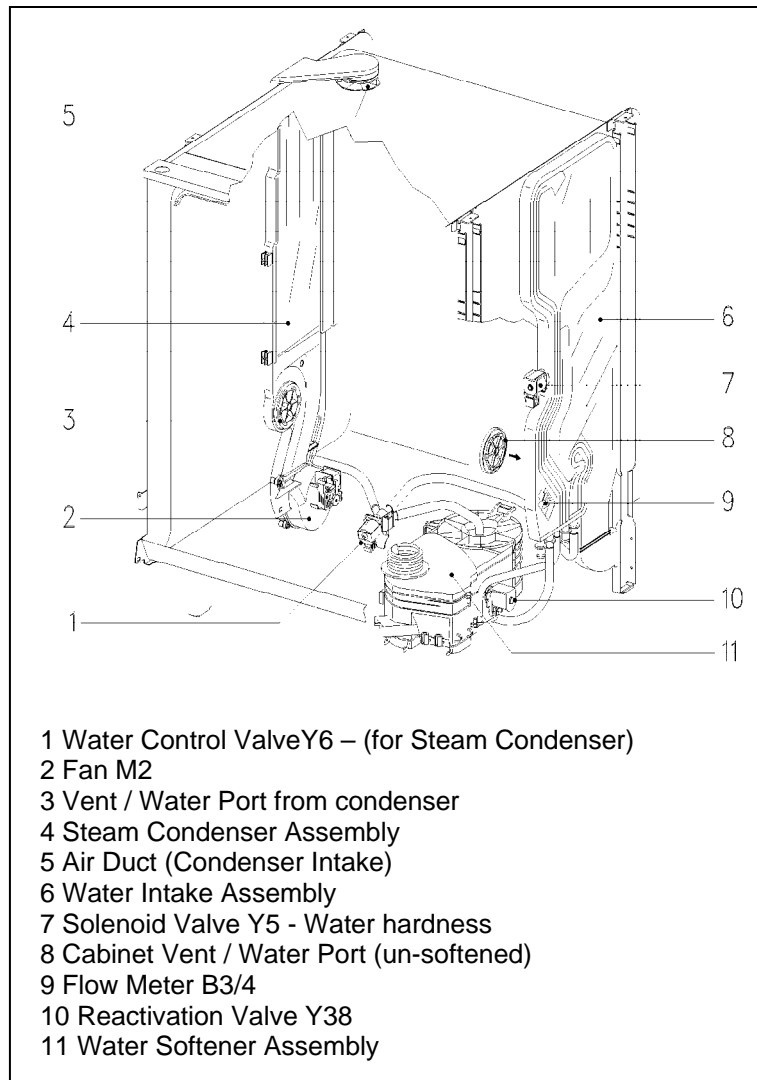
Figure 5-26: Float Switch Housing

1. Remove the Float Switch Housing (5.30).
2. Unclip the Top and Side Retainers (Items 1 and 2).
3. Open the Float Switch Housing.
4. Remove the Switch.

Technical Information

5.32 Steam Condenser - Removal

1. Remove the Left Side Panel (5.3).
2. Open the Door.
3. Unscrew the Top Air Duct Cap (Intake Connection).
4. Unscrew the Bottom Air Duct Cap from the Steam Condenser (Bayonet Connection).
5. Remove the Top Air Duct.
6. Unclip the Steam Condenser from the frame.
7. Disconnect the Hose Connections.
8. Disconnect the Fan Plug.
9. Unscrew the Heating Relay Fixing Screw. Remove the Heating Relay.

**Figure 5-27: Steam Condenser Components**

5.33 Control Valve (Y6) - Removal

1. Lay the dishwasher on it's back.
2. Remove the Drip Tray (5.29).
3. Disconnect the Electrical Connection to the Valve.
4. Note position of all Hoses. Disconnect the Hose Connections.
5. Remove the Control Valve.

Warning!**To prevent the possibility of a flooding condition:**

Ensure all hoses to the Control Valve get connected correctly and are not crushed, kinked or stretched.

5.34 Temperature Sensor (NTC) - Removal

1. Remove as much water as possible from the Sump.
2. Disconnect the Plug Connection from the Temperature Sensor.
3. Pull the Sensor outward to remove from the Sump.

Service Tip

During re-installation the Seal should be positioned within the Sump assembly before installing the Temperature Sensor.

5.35 Circulation Pump (M6) - Removal

Refer to figure 5-28

1. Remove all water from the Sump.
2. Remove the Fixing Bolt (Item 5), from the Casing Rear Panel (Item 4).

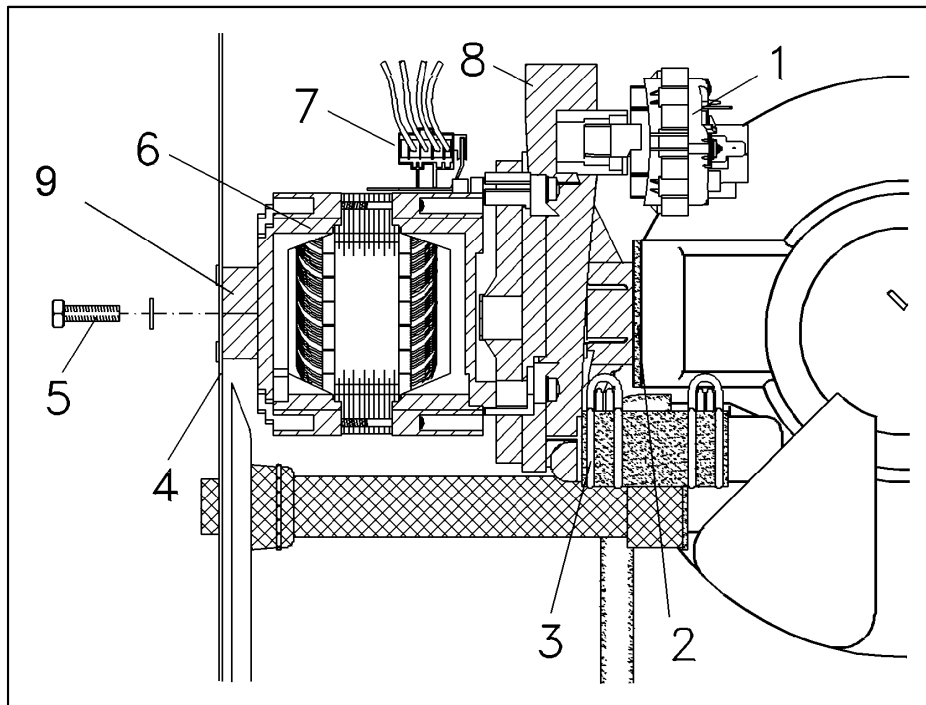


Figure 5-28: Circulation Pump – Removal

3. Lay the dishwasher on its back.
4. Remove the Drip Tray (5.30).
5. Disconnect the Connection Plug (Item 7).
6. Remove the Heating Level Switch (5.39).
7. Release the Hose Clips (Items 3 and 8).
8. Press the Rear Casing out slightly, to remove the Spacer (Item 9).
9. Loosen the Circulation Pump (Item 6), and remove it.
10. When refitting, ensure the Seal (Item 2), is seated correctly.

Service Tip

The use of a small amount of Rinse Aid may assist in getting the seal positioned correctly. Do not use liquid detergent, this will cause an oversudsing condition.

5.36 Circulation Pump - Partition & Impeller Replacement

Warning!

To avoid the risk of leaks; all parts included in the Partition / Impeller Kit should be installed during this procedure.

Refer to figure 5-29.

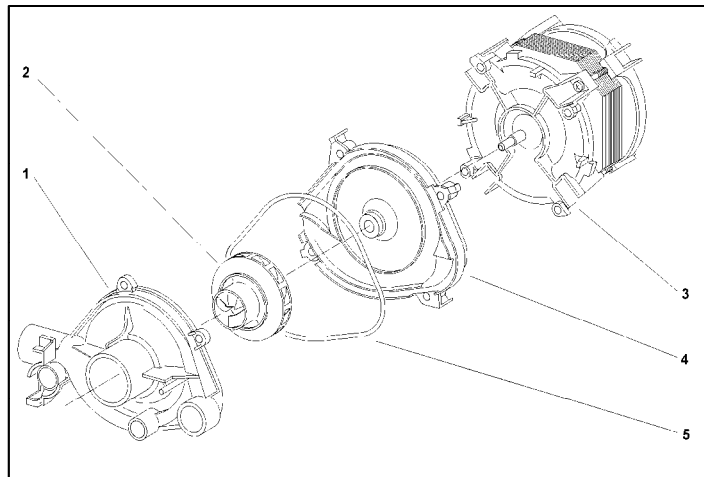


Figure 5-29: Components within the Circulation Pump

1. Remove the Circulation Pump (5.35).
2. Remove the 4 Screws from the Pump Housing (Item 1).
3. Open the Pump Housing.
4. Use a large screwdriver to block the Motor at the Cooling Vanes at the rear of the Motor Block (Item 3). Take care not to damage the Motor Winding Insulation!
5. Unscrew the Impeller (Item 2) - left-hand thread!
6. Remove the Partition (Item 4) from the Motor Block.
7. Fit the new Partition (Item 4) and Impeller (Item 2).
8. Reassemble the Pump Housing. Always use a new O-ring.

Technical Information

5.37 Circulation Pump Housing - Exchange

1. Remove the Circulation Pump (5.35).
2. Remove the four (4) Screws from the pump housing.
3. Fit the new Pump Housing and O-ring.

5.38 Circulation Pump – Release with Tool

1. Open the Door.
2. Remove the Bottom Spray Arm (5.17) and the Filter Assembly.
3. Slide the releasing tool prongs horizontally into the Circulation Pump Intake opening as far as possible.

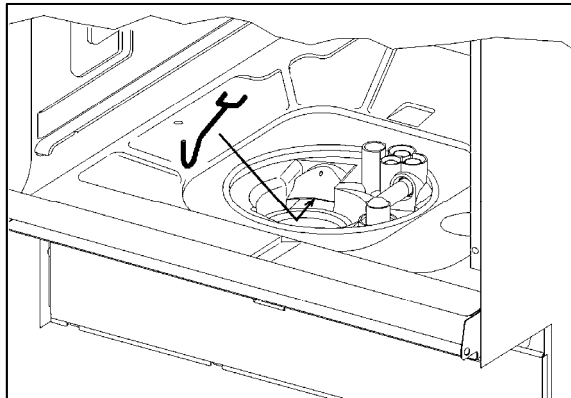


Figure 5-30: Placing the Circulation Pump Tool into the Circulation Pump Intake Port

4. Ensure that the prongs engage in the Circulation Pump Impeller,

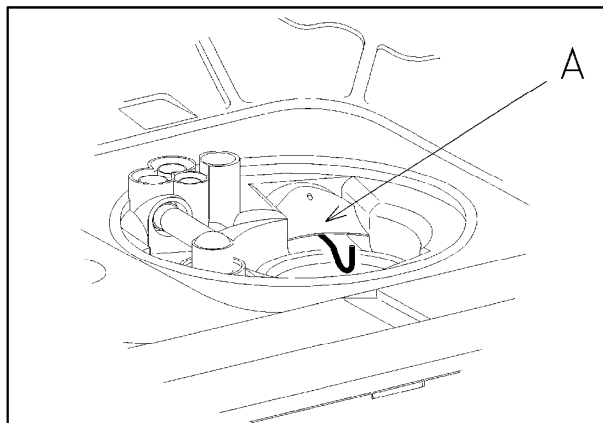


Figure 5-31: Engaging the tool prongs into the Circulation Pumps Impellers.

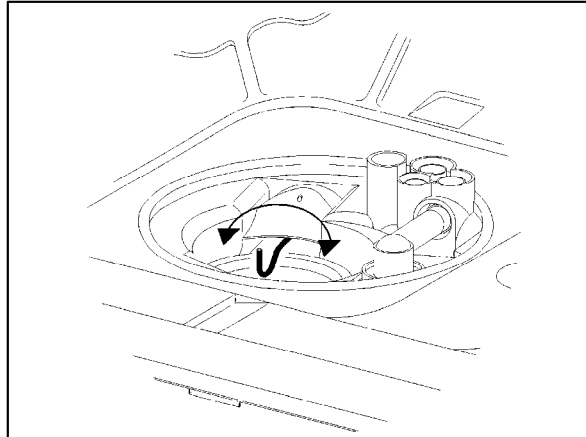


Figure 5-32: Turning the Circulation Pump Tool

5. Carefully turn the Releasing Tool back and forth about its axis to release the Pump Impeller.

Service Tip

The Circulation Pump Releasing Tool (P/N 05585740) can be obtained by contacting the Miele Technical Support Center at 1-800-999-1360.

5.39 Heater Level Switch (B1/10) – Removal

Refer to figure 5-33.

1. Remove as much water as possible from the Sump.
2. Lay the Dishwasher on it's back.
3. Remove the Drip Tray (5.30).
4. Disconnect the Electrical Connection.
5. Unlock the Heater Level Switch by turning it approx. 90° Counterclockwise (Item 1) then remove it (Item 2).

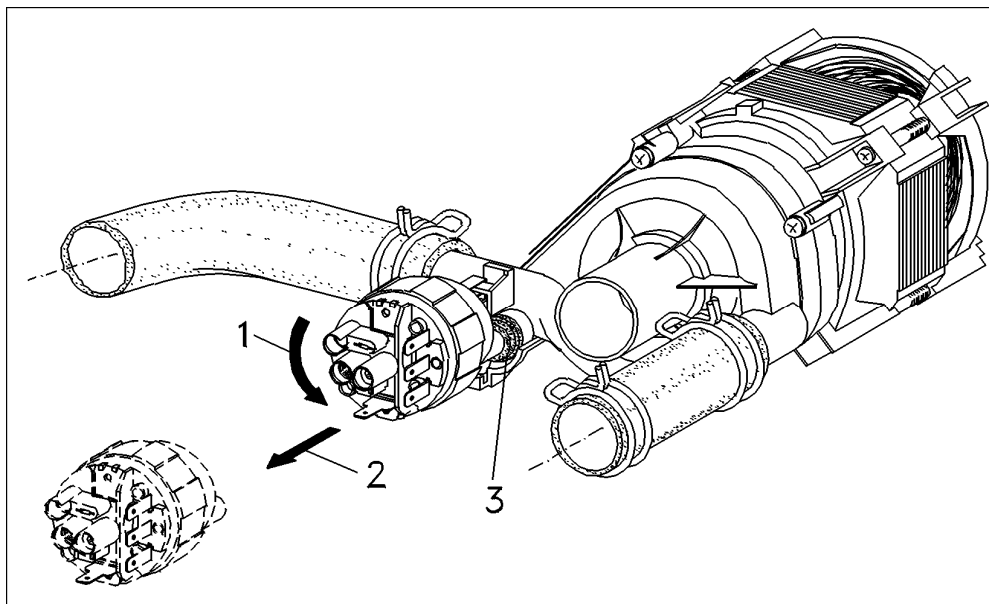


Figure 5-33: Heater Level Switch and Circulation Pump

Service Tip

When re-installing the Heater Level Switch; ensure both tabs on the Switch are engaged to the Circulation Pump Housing. Also ensure the Seal (Figure 33, Item 3) is not pinched or kinked.

5.40 Drain Pump (M8) – Removal

Refer to figure 5-34.

1. Remove as much water as possible from the Sump.
2. Remove the Cover Plate (5.5).
3. Disconnect the Electrical Connection (Item 1).
4. Release the Locking Retainer (Item 4).
5. Turn the Drain Pump about 90° counterclockwise (Item 3), to release it from its mounting.

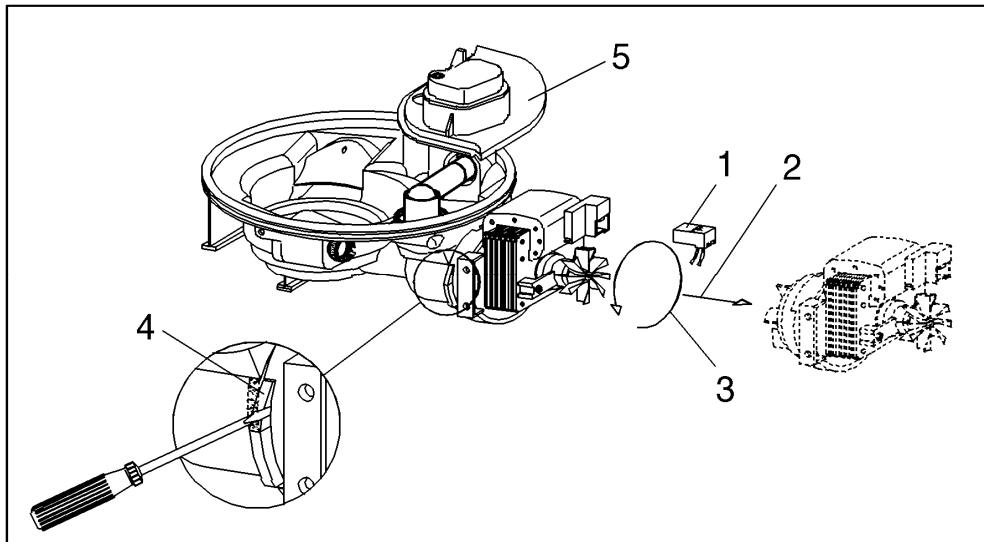


Figure 5-34: Drain Pump - Replacement

Technical Information

5.41 Top Solo Valve - Removal

1. Remove the Circulation Pump (5.35).
2. Disconnect the Electrical Connection.

Warning

It is essential to note correct position of the Valve before removal.
(The direction of flow is marked by an arrow on the Valve Housing)

3. Pull the valve away from the circulation pump.

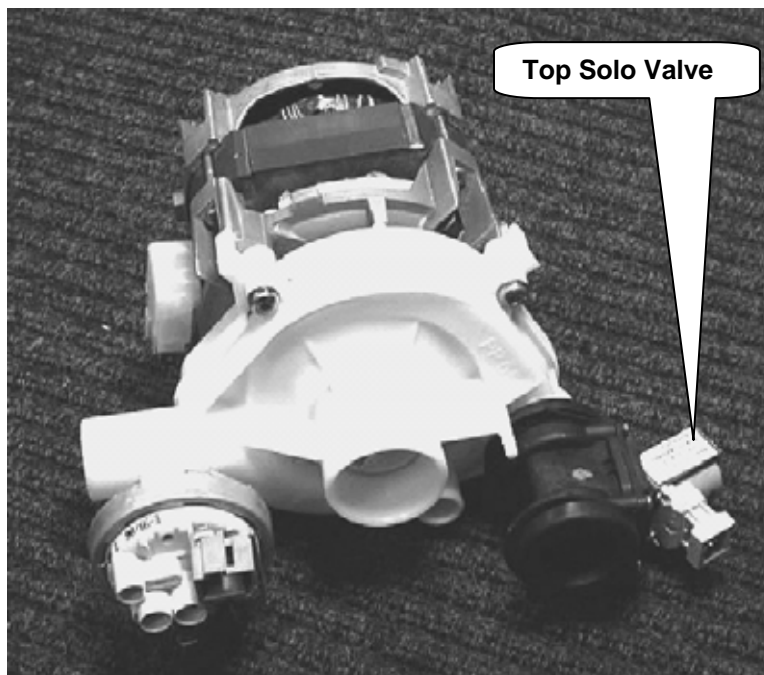


Figure 5-35: Circulation Pump with Top Solo Valve attached.

Service Tip

During re-installation of the Top Solo Valve ensure the cutout on the Valve Housing engages with the lug on the Circulation Pump Housing.

5.42 Overflow Level Switch - Removal

Refer to figure 5-36

1. Remove as much water as possible from the Sump.
2. Remove the Cover Plate (5.5)
3. Locate the Overflow Level Switch mounted on the right / rear side of the Connecting Strip.
4. Press the Retaining Clips toward each other (A); push in to release it from the frame (B).
5. Disconnect the Electrical Connection and Hose.

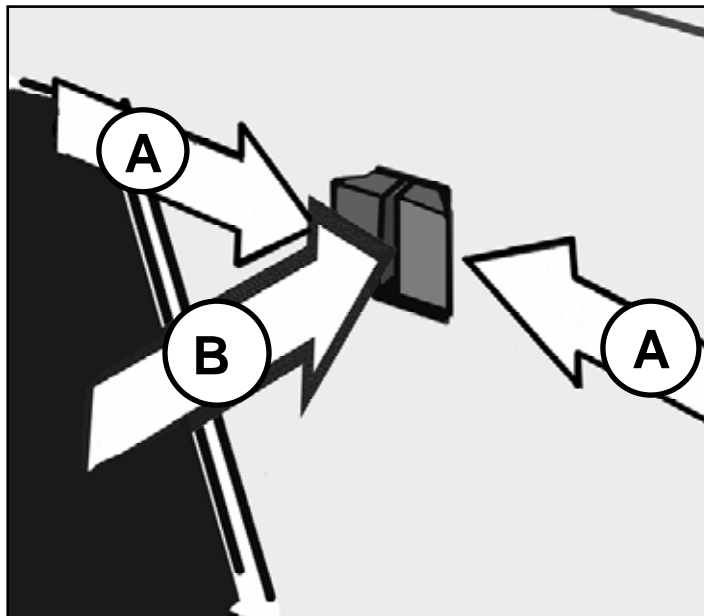


Figure 5-36: Releasing the Overflow Level Switch from the Connecting Strip

Technical Information

5.43 Sump - Removal

1. Remove as much water as possible from the Sump.
2. Open the door; remove the Bottom Spray Arm (5.17) and Filter Assembly.
3. Lay the dishwasher on its back.
4. Remove the Drip Tray (5.30)
5. Remove the Circulation Pump (5.35).
6. Remove the Drain Pump (5.40).
7. Remove the Float Switch Assembly (5.31)
8. Remove the NTC Temperature Sensor (5.34)
9. Disconnect all Hoses to/from the Sump.
10. Unclip the Wiring Harness from the Retainers.
11. Unscrew and remove the Clamp surrounding the Sump Seal.
12. Lift the Sump from the cabinet.

Re-Installation Service Tip

- Apply Rinse Aid to the inner surface of the seal.
- Fit the Sealing Ring on the cabinet.
- Align the Sump with the drain connection.

Warning!

To avoid leaks on units without the Self Tensioning Clamp. The Clamp should be tightened to a gap of approximately 22 mm. See figure 37.

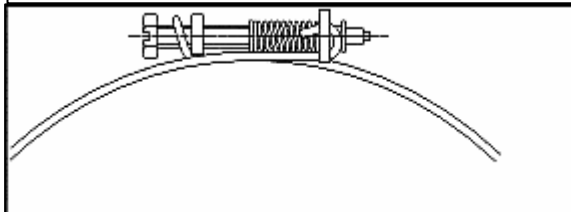


Figure 5-37: Self Tensioning Sump Clamp

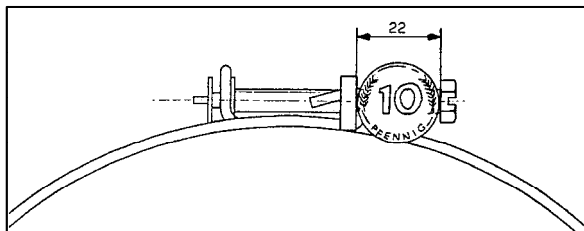


Figure 5-38: Sump Clamp without the self tensioning; should be tightened to a gap of about 22mm.

5.44 Turbidity Sensor - Calibration

After installing a new Electronic and / or Turbidity Sensor the dishwasher must be run through a complete program without any dishes.

Service Tip

If the above procedure is carried out with dirty dishes; the ECO System will only be activated after approximately six (6) wash programs are completed.

5.45 Turbidity Sensor - Removal

1. Remove as much water as possible from the Sump.
2. Lay the dishwasher on it's back.
3. Remove the Drip Tray (5.30).
4. Disconnect the Electrical Connection to the Turbidity Sensor.
5. Loosen the Hose Clips and remove the Hoses from the Sensor.

Re-Installation Service Tip

Ensure the Turbidity Sensor is fitted with the arrow (on the bottom of the Sensor) in the direction of water flow.

Technical Information

5.46 Fully Integrated (Vi) Control Panel - Removal

Refer to figure 5-39.

1. Open the Door.
2. Hold the Fascia Panel (Item 9) while removing the interior Screws (Item 10).
3. Lift the Fascia Panel (Item 9) from the appliance.

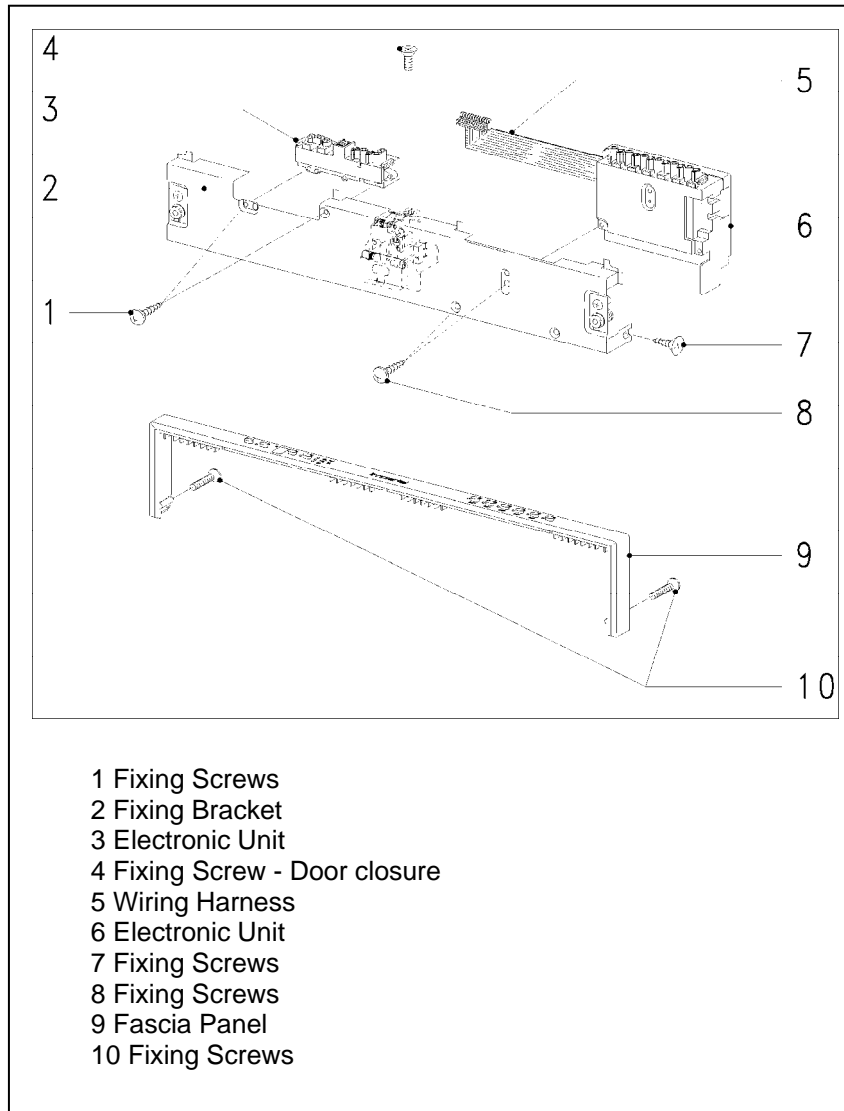


Figure 5-39: Fully Integrated (Vi) Control Panel

5.47 Novotronic & Touchtronic Control Panel – Removal

Refer to figure 5-40.

Note

On Novotronic Dishwashers, the Program Knob (Item 1) must be removed before the Fascia (Item 4) and Control Panel (Item 3). Pull the Knob outward to remove it from the appliance.

1. Open the Door.
2. Hold the Fascia (Item 4) and Control Panel (Item 3) while removing the interior Screws (Item 14).
3. Lift the Fascia (Item 4) and Control Panel (Item 3) from the appliance.

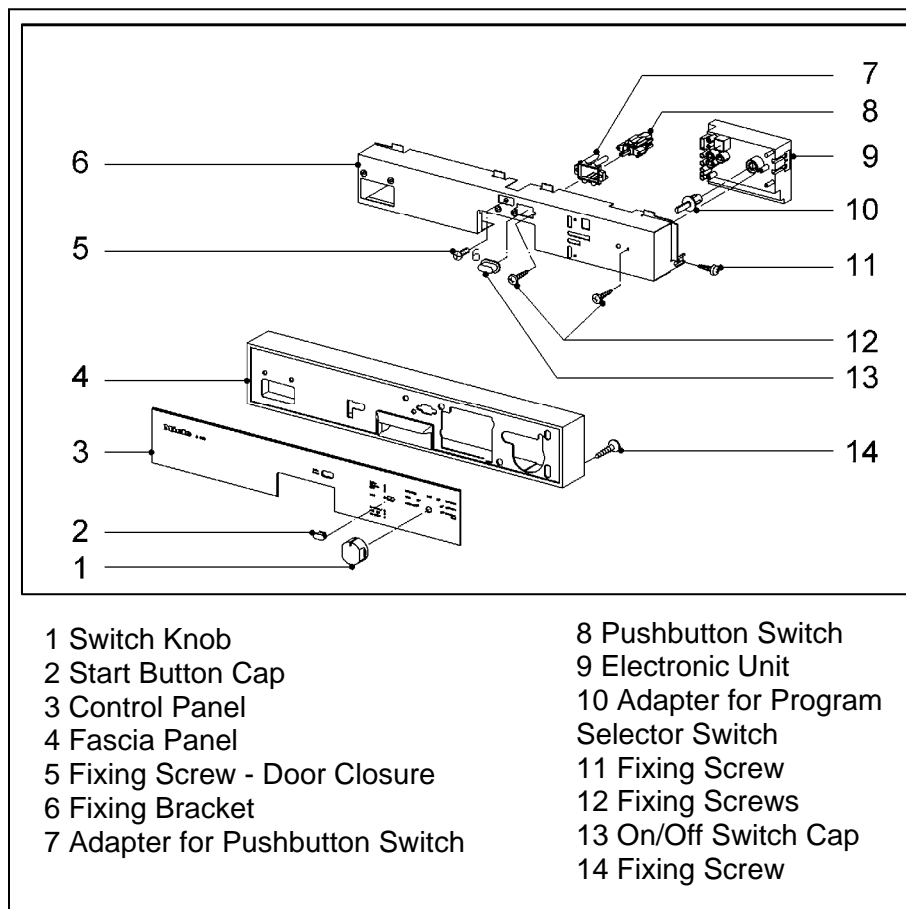


Figure 5-40: Control Panel (Novotronic and Touchtronic Dishwashers)

5.48 Fixing Bracket – Removal

Service Tip

The Fixing Bracket is removed to access to the following components:

- Turbothermic Fan / PTC Release
- On / Off Button
- Door Handle / Lock Assembly
- Electronic(s)

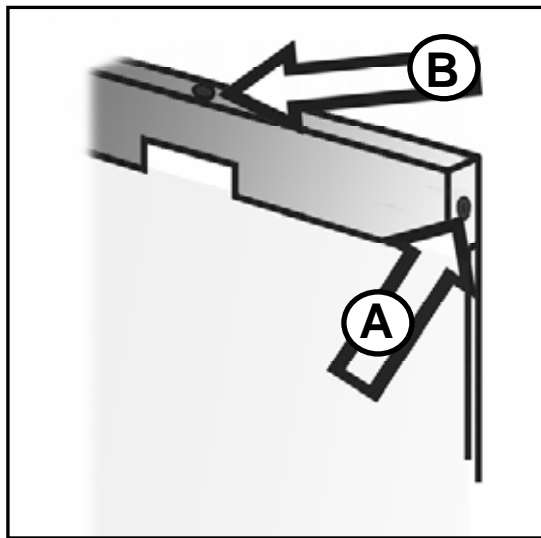


Figure 5-41: Removing the Fixing Bracket

Refer to figure 5-41.

1. Remove the Control Panel (5.46 or 5.47)
2. Remove one Screw from each side of the Door (A)
3. Support the Fixing Bracket; remove the upper Screw (B)
4. Carefully lower the Fixing Bracket away from the Door.

5.49 Heating Relay & Power Relay – Removal

Service Tip

Make note of wiring position for re-installation.

1. Remove the Left Side Panel (5.3).
2. Locate the Relay (location varies by model number).
3. Remove the Relay Bracket Screw and Bracket (as applicable).
4. Note / Disconnect the Electrical Connections.
5. Slide the Relay to remove it from its Bracket.

6.0 Fault Diagnosis

6.1 General Information

Every electronic controlled Miele dishwasher has three modes accessible for services purposes:

- Programming Mode
- Service Mode One
- Service Mode Two

6.2 Programming and Service Mode - Features

6.2.1 Water Hardness Programming

Note

The Water Hardness Value can only be programmed if the dishwasher is programmed to the "With Water Softener" setting.

For entering the water hardness (grains per gallon / parts per million) of the incoming water. Refer to the model specific Operating Manual for further details.

6.2.2 Drying Options (As Applicable)

Accessed by the customer in the Programming Mode for extending the duration the Turbothermic Fan is on, during drying.

An additional amount of time can also be programmed by a technician using Service Mode 2. Refer to the model specific Timing Chart for details.

6.2.3 Water Intake Duration

This setting adjusts the maximum duration the dishwasher has to fill with the proper amount of water. The default setting is two minutes. An extended value of four minutes can be programmed for low pressure conditions.

Note

Since water volume is determined by the Flowmeter, the dishwasher may fill in less time than the actual programmed duration.

6.2.4 Buzzer (As Applicable)

Applies only to fully integrated (Vi) dishwashers (except Plus series).
Can be used to add an audible alarm at the end of the program.

6.2.5 Fault Code (Retrieval)

Stores the last fault registered, to assist in troubleshooting.

Note

Any stored fault code must be cleared prior to performing any troubleshooting.

6.2.6 Increase Temperature

Enables a higher temperature setting during heating. Refer to the model specific Timing Chart for details.

6.2.7 With OR Without Water Softener

Used to enable or disable the Water Softener System.

- “With Water Softener” = Water Softener is ON
- “Without Water Softener” = Water Softener is OFF

Note

If the Water Softener is not needed, the Electronic should be programmed “Without Water Softener”

If the Electronic is programmed “With Water Softener” the hardness value (gph / ppm) must be programmed. See the model specific Operating Manual for further information.

6.2.8 2nd Interim Rinse

An additional rinse between the first rinse and the final rinses can be added. Refer to the model specific Programming / Service Mode Section for further details.

Technical Information**6.2.9 Width of Unit (As Applicable)**

Some Electronic Units can be installed in more than one specific model number; and therefore require programming the width of the dishwasher it is being installed in. Refer to the model Specific Programming / Service Modes Section for further details.

Note

To ensure proper appliance operation...The Electronic must be programmed for the width of the dishwasher (Fullsize / Slimline) it is installed in.

6.2.10 Flowmeter Count

Stores the "numeric value" marked on the side of the Flowmeter to ensure proper operating conditions.

Note

To ensure proper appliance operation...The Flowmeter count must be re-programmed after installation of a new Flowmeter and / or Electronic.

6.2.11 Operating Hours

Records the duration (in hours) the appliance has been operated.

6.3 Programming / Service Modes - Access Procedures (Model Specific)

Refer to the Dishwasher Service Modes Guide; included at the rear of this section.

Technical Information

A Timer Steps

Run along the left and right side of the chart numbered 1-50. All fifty steps do not apply to every program, refer to E and F for further information.

B The component names and Wiring Diagram Legends are listed here. Below this area each Timer Step indicates activation of a component based on the location of the text. Refer to the example below...

Water Inlet Valves (Y2)

Whenever the Y2 valve is activated an "E" is present in the same column

Example: The Water Inlet Valves are activated in steps 3 and 6.

TIMER STEP	FUNCTION	Y2	Y38	M8	M6	R/R/C	Y51
		WATER INLET	WATER INLET REACTIVATION	DRAIN	CIRCULATION	HEATING	DETERGENT DISPENSER
0	STARTVORWAHL						
1	A						
2	+A						
3	F	E					
4	◇A +SPL◇						
5	A						
6	> +SPL <	E					
7	SPL						
8	A +SPL						

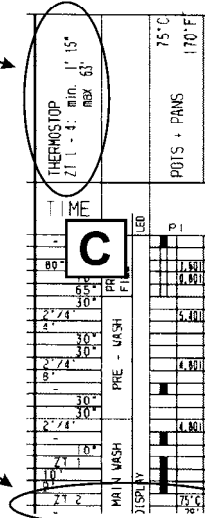
Note
Refer to the Timing Chart's Legend for symbol descriptions.

C

Time Column, indicates the length in time the step occurs. Minutes are on the left side of the column, while seconds are displayed on the right side of the column. "ZT #" refers to a Thermal-Stop, see details below...

The minimum and maximum amount of time a Thermal-stop can have.

The "ZT" in the Time Column indicates a Thermal-stop and is not a specified length of time



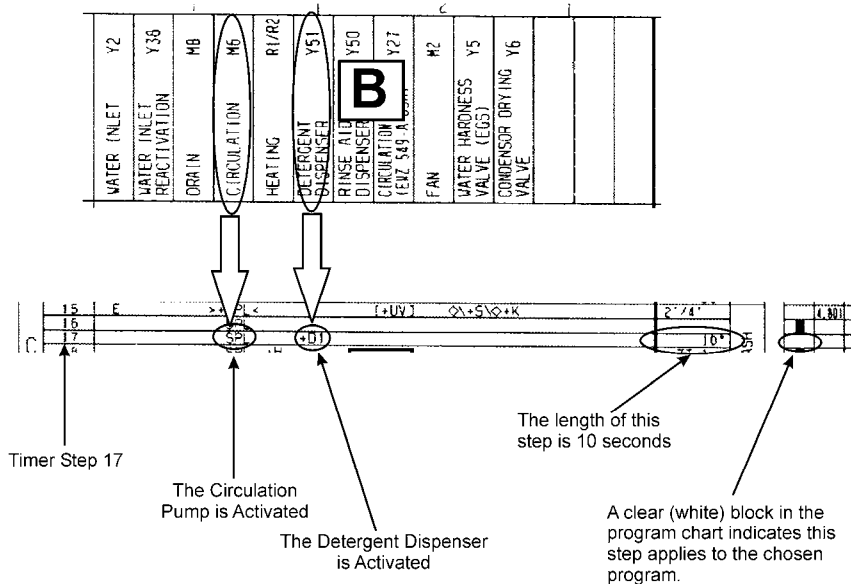
Water continues to circulate and is heated about 2 degrees Fahrenheit per minute.

The heating and circulation continue till the program temperature is reached.

Example: In the Pots & Pans program Thermal-stop (Zt2) needs to reach 75 degrees celsius.

D

Timer Step Explained...



Timer Step 17

The Circulation Pump is Activated

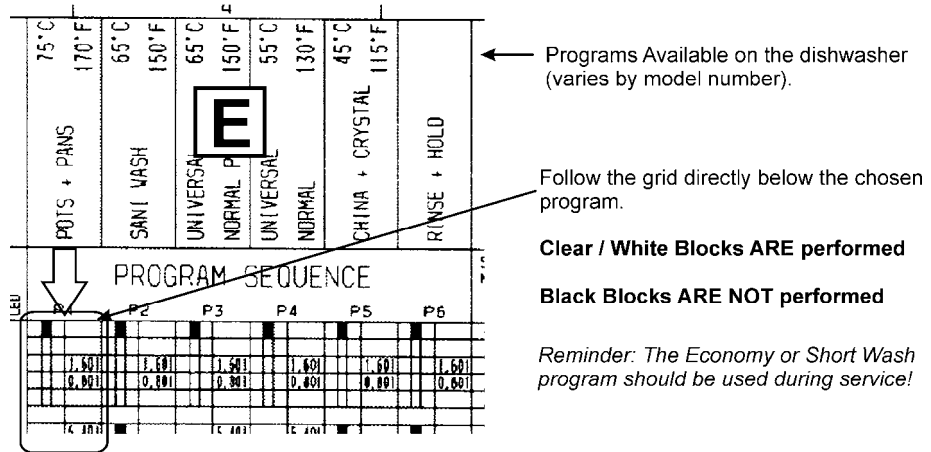
The Detergent Dispenser is Activated

The length of this step is 10 seconds

A clear (white) block in the program chart indicates this step applies to the chosen program.

Technical Information

E Program Choices and steps performed...

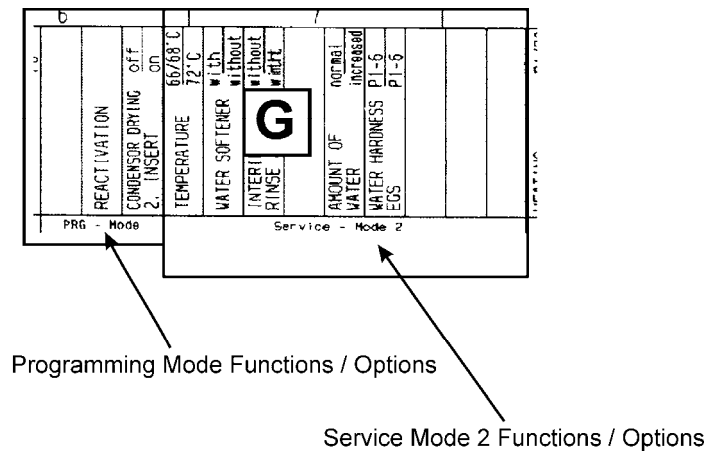


Understanding the steps performed

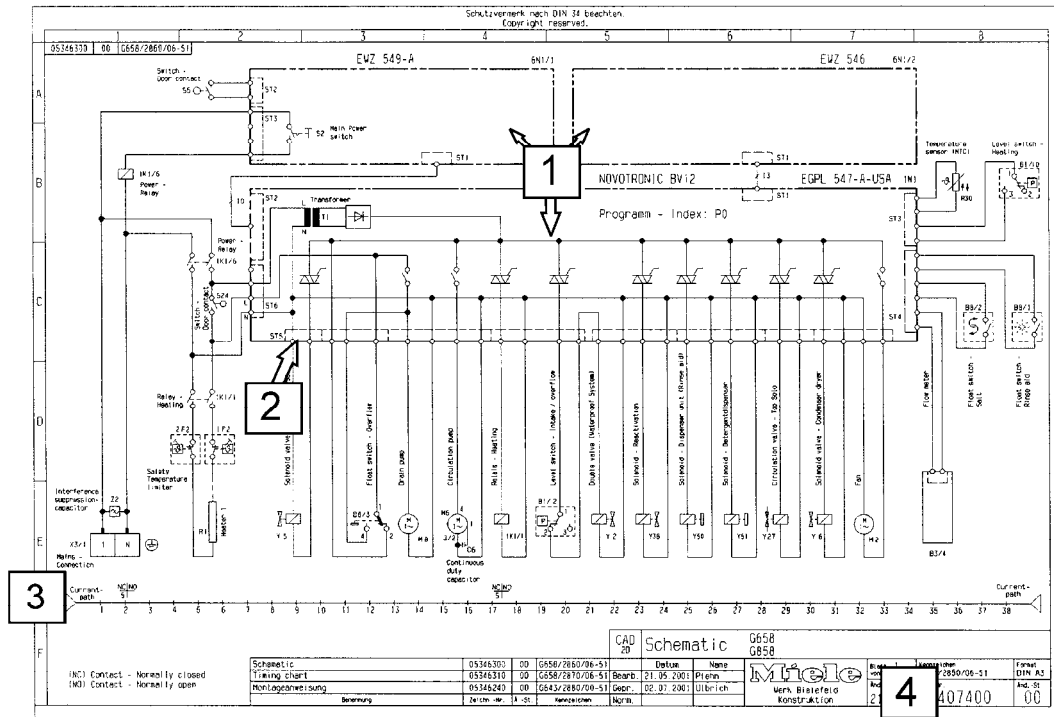
- Clear (White) Blocks indicate the step is performed.
- Black Blocks indicate the step is not performed.

Additional details on step can be found at the bottom of the chart listed under "Additional Functions".

G Additional Functions provides model specific information on what additional functions are available and under which mode.



6.5 Wiring Diagrams – General Information



- 1** Electronic Assembly (Circuit Boards)
- 2** Molex Plug Connectors (framed by dotted lines)
- 3** “Current Path” to identify the location of the component along a numbered line. (Example: Water Inlet Valve Y2 is positioned at current path 22)
- 4** Wire diagram number and applicable model number(s)

6.6 Timing Charts & Wire Diagrams (Model Specific)

Refer to the Timing Charts & Wire Diagrams Guide; included at the rear of this section.

6.7 Fault Repair

Door does not close correctly

- Incorrectly fitted Stopper at end of Top Basket Guide.
 - Remove the Stopper and fit it correctly (5.7).
- Door Seal incorrectly fitted and protrudes forwards.
 - Remove the Door Seal and fit it correctly (5.2).
- Damaged Door Hinges
 - Inspect and replace Hinges – as necessary (5.13)
- Mains Relay 1K1/6 not activated (Vi Models Only).
 - Check the Main Switch (S2) circuit.

Excess foaming

- Too much (or improper type) of detergent and / or rinse aid is being used
 - Use the correct type and amount of detergent
 - Reduce the setting on the Rinse Aid Dispenser
 - If rinse aid spills while filling the Dispenser, wipe it away
- Detergent added to Rinse Aid Dispenser
 - Remove the Dispenser (5.8) and thoroughly flush the dispenser

Note

If the Dispenser cannot be flushed completely; replace the Dispenser Assembly (5.8)

Detergent not released

- Basket incorrectly loaded
 - Load the Basket in accordance with the operating instructions.
- Middle Spray Arm is blocked
 - Inspect the Spray Arm and check rotation

Water leaks from the Turbothermic Fan Grille

- Hose between Fan and Dispenser is blocked
 - Inspect Hose and replace as necessary (5.9)
- The PTC Flap is not closing correctly
 - Inspect Flap – replace the Turbothermic Fan as necessary (5.9)

Poor drying results

- Incorrect Dispenser setting.
 - Adjust setting as necessary
- Rinse Aid Dispenser Flap not properly closed. The Rinse Aid Container filled with water during program operation.
 - Flush the Dispenser, refill with new Rinse Aid
 - Replace Dispenser assembly – as necessary (5.8).
- Rinse Aid not being dispensed released.
 - Ensure Dispenser is operating.

Note

Rinse aid should only be added' with **the door fully open so it can** flow properly into the Reservoir. Ensure the Flap is closed and locked.

No drying or drying too slow

- Fan run-on time too short. (if applicable)
 - Extend the Fan run-on time (6.2.2).
- Fan not functioning.
 - Check circuit, perform service as necessary.
- Air Outlet does not open.
 - Check the Release Element and related circuit
- Drying option – not enabled
 - Enable the Drying Option (6.2.2)

Technical Information**Water not heating**

- One of the Temperature Limiters is not functioning
 - Check the Temperature Limiters

Warning!

Before resetting the Temperature Limiter, it is essential to check **why** it has cut-out!

- Flow-Through Heater not functioning
 - Check the Through Flow Heater electrical circuit
- Heater Relay 1K1/1 not functioning
 - Check the Heating Relay electrical circuit
- Heater Level Switch not functioning
 - Check the Heater Level Switch electrical circuit

Circulation Pump does not start

- Circulation Pump Motor Winding too hot and the Winding Protection device has tripped. Foreign objects may have blocking the Pump.
 - Check for foreign bodies, jammed motor, etc.
- Operating Capacitor C6 defective.
 - Check the Capacitor, and the electrical circuit
- If the dishwasher has not been used for an extended period, the Axial Face Seal of the Circulation Pump can stick; preventing the Circulation Pump from starting.
 - Pour approximately 1 liter of hot water with 3 - 5 drops of rinse aid into the sump and wait for 3 - 5 min. Restart the dishwasher.
 - Use the Rinse Pump tool to manually turn the Circulation Pump (refer to 5.38 "Circulation Pump – Release with Tool")

End of Document
