

# Hydrim L110W



# Training Manual

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## Description & Cycle Times



The Hydrim L110W Instrument Washer is designed to help you achieve an exceptional level of cleanliness while providing a simplified method of washing dental instruments. There is no need to pre-soak items but cement and composites still need to be removed from instruments. **Note: Burs and handpieces should not be placed in the Hydrim.**

### Cycle Times

Program	Wash Temperature	Time*	Water Usage
<b>P0-Rinse and Hold</b>	50°C/122°F	10 Minutes	2 Gallons
<b>P1-Regular Wash</b>	50°C/122°F	20 Minutes	3 Gallons
<b>P2-Regular Wash with Dry</b>	50°C/122°F	30 Minutes	3 Gallons
<b>P3-Heavy Duty Wash</b>	50°C/122°F	30 Minutes	4 Gallons
<b>P4-Heavy Duty Wash with Dry</b>	50°C/122°F	40 Minutes	4 Gallons

\*Actual cycle time will vary depending on incoming water temperature. SciCan recommends setting hot water supply temperatures to 60°C/140°F.

The Hydrim cleaning solution is HIP (Hydrim Instrument Protection), which coats the instruments during the Rinse and Hold cycle and during prewash and final rinse portions of the Regular and Heavy Duty Wash cycles, to protect the instruments.

**A box of soap will last approximately 45 cycles.**

# Hydrim® L110w Quick Reference Guide

## For best results:

Use Stat-Dri Plus rinse aid (part number 8OZPLUS) to prevent spotting.

P0 should be used to keep instruments moist when they will not be washed within one hour.

P1 and P2 should be used to wash instruments in baskets.

P3 and P4 should be used to wash instruments in cassettes and heavily soiled instruments.

## Caution:

1. Hydrim Cleaning Solution is compatible with solid stainless steel instruments that are resistant to heat and alkalinity.
2. Carbon steel, aluminum, nickel and rhodium-plated instruments may corrode in Hydrim Cleaning Solution. Do not process burrs or endfiles in the Hydrim.
3. Do not process stainless steel and carbon steel instruments at the same time.

Shines when cleaning solution needs changing  
Flashes when rinse-aid needs filling

Indicator	Function	Time
CHEMICAL	P0 Rinse and hold	8 min.*
	P1 Regular wash	20 min.*
	P2 Regular wash and dry	30 min.*
SALT	P3 Heavy duty wash	30 min.*
	P4 Heavy duty wash and dry	40 min.*

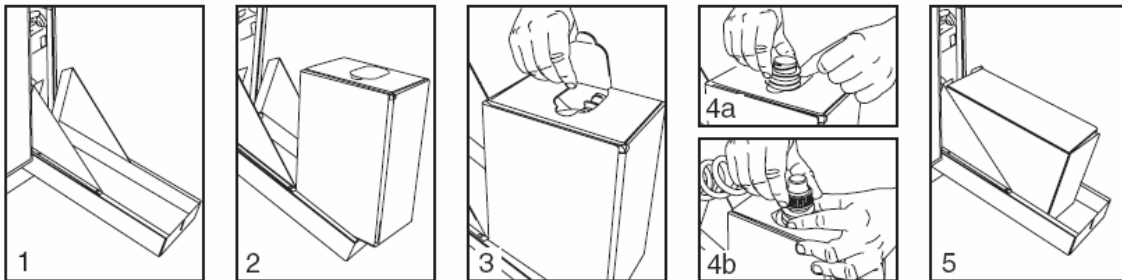
Shines when salt needs refilling

\*Actual cycle time will vary depending on incoming water temperature and pressure

## Replacing the Hydrim Cleaning Solution:

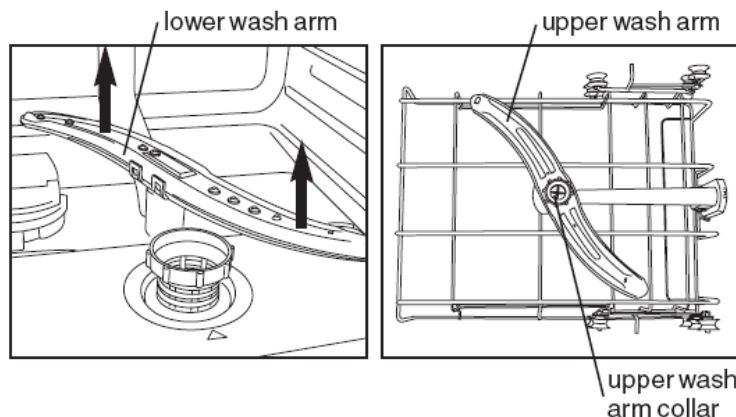
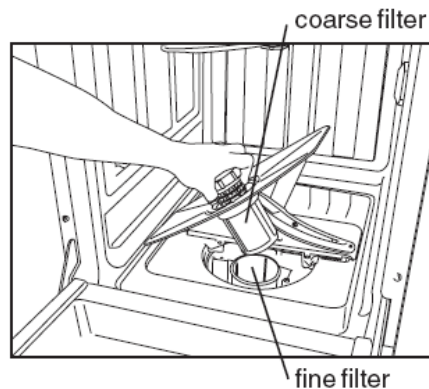
When the chemical indicator light shines continuously, and Ed appears on the display, the solution level is low and the container is in need of replacement.

1. Open the cleaning solution door.
2. Put a new cleaning solution box into the drawer upside down.
3. Tear open the tab.
- 4a. Pull out the spout and remove the protective cap.
- 4b. Attach the hose tightly to the connector on the cleaning solution box.
5. Place the box in the cleaning solution drawer and then close.



## Filter Maintenance:

1. Check the filters daily for debris and remove if necessary.
2. After undoing the coarse filter, the fine filter can be removed. Remove any debris from the filter cavity and rinse the filters under running water.
3. Insert the filter units and tighten the coarse filter.



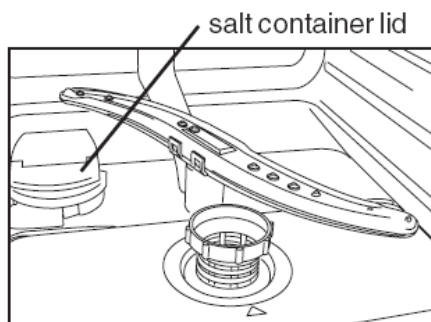
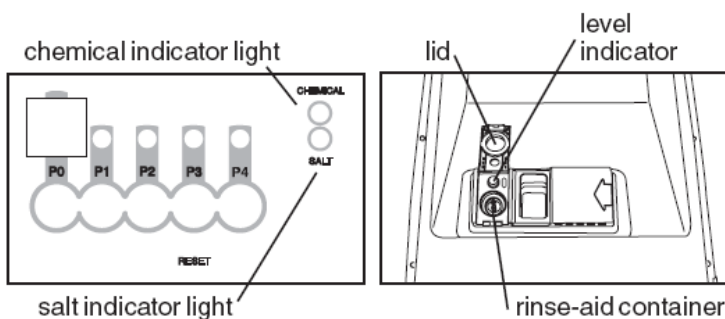
## Wash Arm Maintenance:

1. Inspect the nozzles and wash arms weekly for blocked holes due to debris.
2. Pull the lower arm upwards and lift off.
3. Unscrew the upper wash arm collar and remove the upper wash arm.
4. Clean both wash arms under running water.
5. Refit the wash arms. Ensure that the lower wash arm has locked into place and the upper one is screwed tight.

## Refilling the Rinse Aid:

When the chemical indicator light flashes, you will need to refill the rinse-aid container with Stat-Dri Plus.

1. Fold back the lid of the rinse aid container.
2. Pour the rinse-aid into the rinse-aid container until the level indicator darkens.
3. Close the lid ensuring you that you hear it snap.



## Refilling the Water Softener:

If you have set the water softener to any setting above 0, the SALT indicator flashes when you need to refill the salt container.

1. Open the salt container lid.
2. Upon first use of the Hydrim L1 10w, pour approximately 1 litre (1 quart) of water into the salt container. It is not necessary to add water during subsequent refills of the salt container.
3. Using the accompanying salt jug, fill the salt container to the top (maximum of 1kg / 2.2 lbs.)
4. Close the salt container lid.

### For all service and repair inquiries:

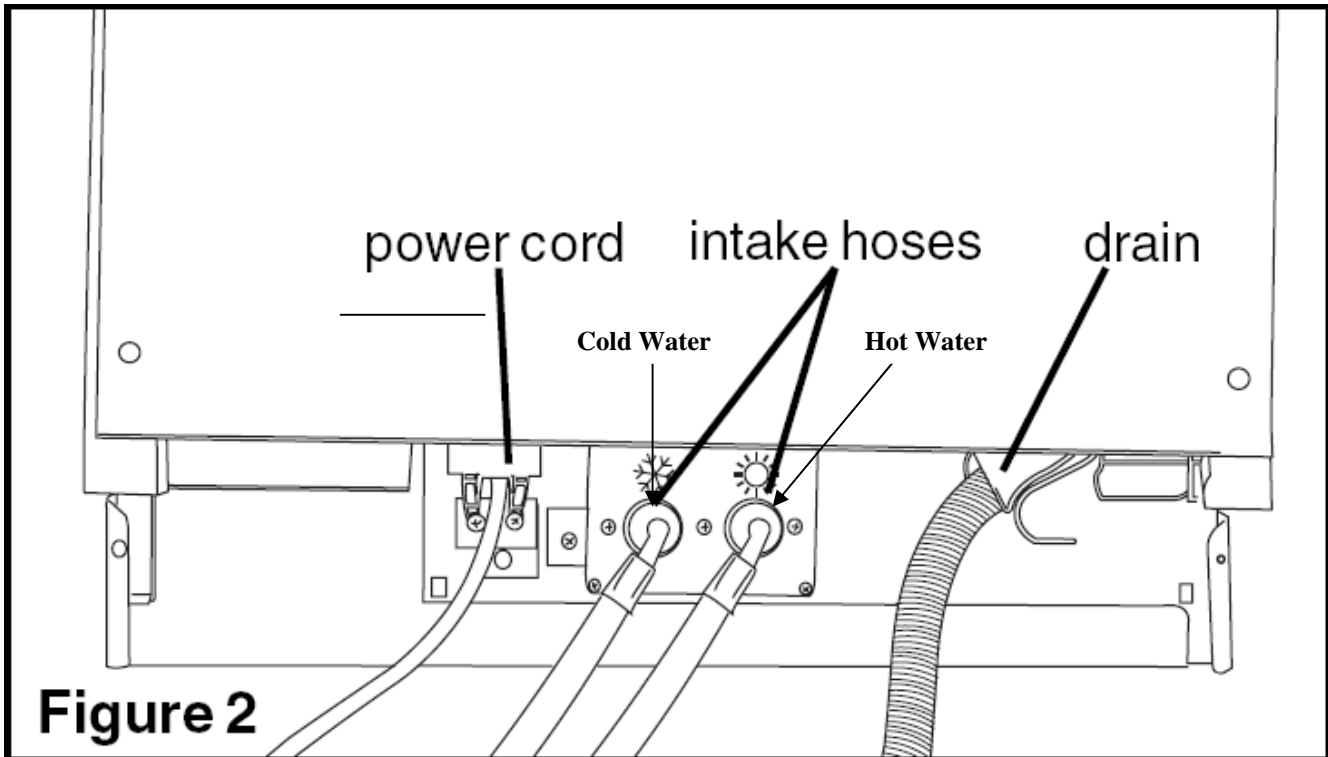
United States: 1-800-572-1211, Canada: 1-800-870-7777, International: (416) 446-4500

Email: [techservice.ca@scican.com](mailto:techservice.ca@scican.com)

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Note: Rinse Aid is not required when using HIP solution with revision 2.02 software. See Checking & Programming Control Module to check software revision.

## Installation



### Water, Drain & Power Connections

The unit is supplied with two water intake hoses, which are 6.5 ft. long, and they connect to  $\frac{3}{4}$ " garden hose fittings.

The unit is supplied with a 5ft. flexible drain hose with an inner diameter of  $\frac{3}{4}$ ". It should be connected to a drain point no more than 14" above the floor.

The power cord is 6ft. long with a 6-15 NEMA plug. A power outlet of 208-240V is required.

## Water Flow & Backflow Protection

### Water Inlet

When the hot or cold-water inlet valve is open, the water flows to Water Inlet Channel 1 of the Sidebag. From there it flows up to the Air Gap. The Air Gap 3 is between Channel 1 and 2. The water under pressure shoots over the Air Gap. Channel 2 takes water down to the Water Softener 4.

From the Water Softener, water flows to Channel 5. Channel 5 is connected with the Sidebag 8 and they fill simultaneously. When water reaches the top of Channel 5 (Sidebag is full) it overflows, filling Regeneration Channel 6 and Overflow Channel 7.

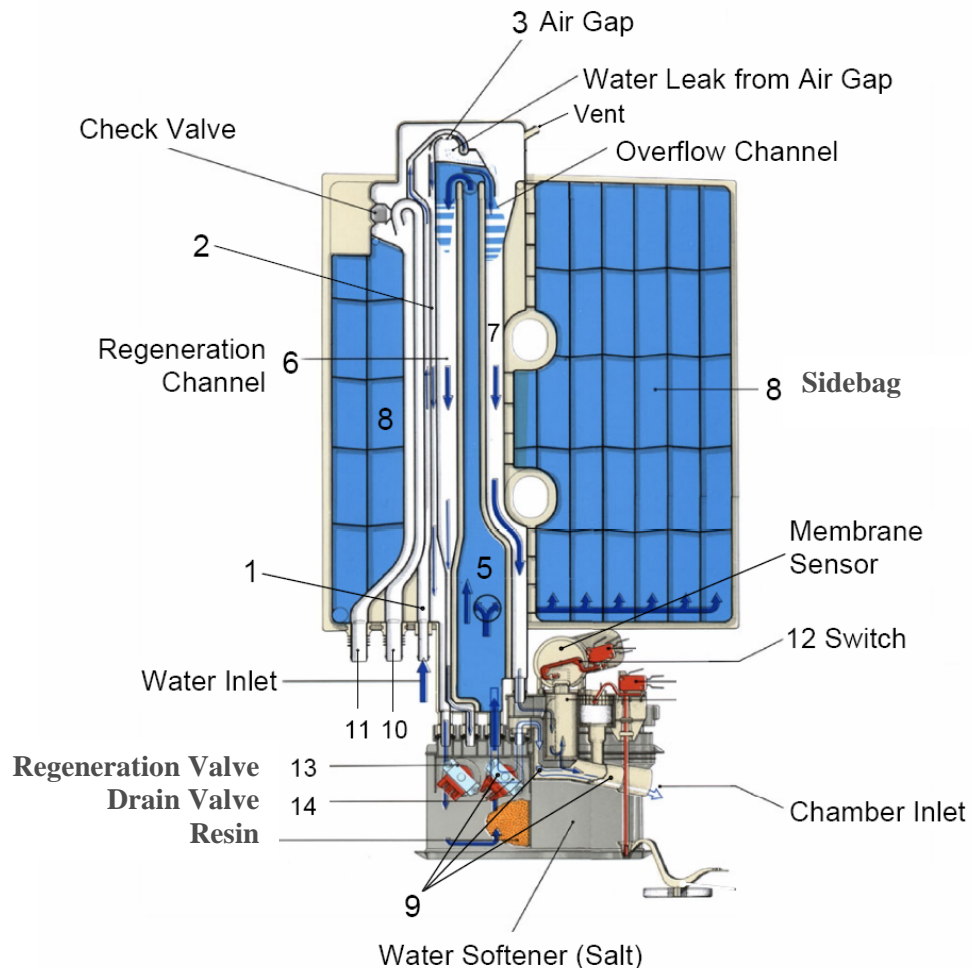
Regeneration Channel 6 takes water to the Salt Reservoir. Regeneration Valve 13 controls filling the Salt Reservoir.

Overflow Channel 7 takes water to the Membrane Sensor that activates Switch 12.

At that time the Controller opens Drain Valve 14, releasing water from Channel 5 and the Sidebag through Channel 9 and the Chamber Inlet into the Wash Chamber.

### Water Exhaust

The Drain Pump, pumps water to Channel 10. Channel 10 leads to Channel 11 that is connected to the exhaust hose and to the drain.



## Hydrim L110W P0 Cycle with Revision 2.02 Software

### 1. Preparation drain pump runs

When the P0 cycle button is pressed the drain pump turns ON. The Hydrim will drain the wash chamber and the sidebag. If the previous cycle was interrupted when the cycle is started the drain pump will run for 80 seconds. If the previous cycle was a complete cycle the drain pump will run for 20 seconds. If the unit fails to drain an **E4 code** will appear on the display.

### 2. Sidebag fills with cold water target temperature 28°C/82.4°F

Turn ON Y1 cold water valve. Start timer whenever valve is open to calculate the Water Debit Constant and Error Timer for filling sidebag. If water does not close pressure switch B1 within 130 seconds Hydrim fails with an **E2 code**. When the pressure switch closes calculate the Water Debit Constant time for filling up 2.7 liters.

### 3. Fill wash chamber target temperature 28°C/82.4°F

When sidebag is full and pressure switch B1 activates (blue arm moves out) turn ON Y6 sidebag drain valve to allow sidebag to drain into the chamber. Pressure switch will deactivate when sidebag starts draining into chamber. After approximately 45 seconds turn ON circulation pump M1 and Y1 cold-water valve. The on time for the cold water inlet valve depends on the “Water Debit Constant” that was calculated previously. The chamber capacity is 4 liters, 2.7 liters from the sidebag and 1.3 liters from the cold water inlet valve, resulting valve Y6 is on for approximately 75 seconds and valve Y1 is on for 1.3/Water Debit Constant. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6 before closing. Failure to fill chamber will cause an **E2 code**.

### 4. Circulation

Turn ON circulation pump M1 for 180 seconds/3 minutes. Fill sidebag bag with water target temperature 80°C/176°F.

### 5. Circulation and evacuation 10 seconds

Circulation pump M1 remains ON. Turn ON drain pump M2.

### 6. Evacuation 20 seconds

Circulation pump M1 turns OFF. Drain pump M2 remains ON for 20 seconds.

### 7. Wait until sidebag is full target temperature 80°C/176°F

### 8. Fill wash chamber target temperature 80°C/176°F

When sidebag is full and pressure switch B1 activates turn ON Y6 sidebag drain valve to allow sidebag to drain into the chamber. Pressure switch will deactivate when sidebag starts draining into chamber. After approximately 45 seconds turn ON circulation pump M1 and Y7 hot water valve. The on time for the hot water inlet valve depends on the “Water Debit Constant” that was calculated previously. The chamber capacity is 4 liters, 2.7 liters from the sidebag and 1.3 liters from the hot water inlet valve, resulting valve Y6 is on for approximately 75 seconds and valve Y7 is on for 1.3/Water Debit Constant. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6 before closing. Failure to fill chamber will cause an **E2 code**.

### 9. Circulation, heating and dosing

Start circulation pump M1, dosing pump M4 and turn ON water heater R1 if water temperature in chamber is below target temperature. Start heating and dosing error timers. Dosing pump runs for 5 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.

### 10. Circulation and heating target temperature 50°C/122°F

Circulation pump continues to run and water heater remains turned ON. If the heating error timer ends and the chamber water temperature is below the target temperature, the Hydrim fails with an **E1 code**.



## Hydrim L110W P0 Cycle with Revision 2.02 Software (Cond.)

**11. Circulation**

Circulation pump M1 remains ON for 60 seconds/1 minute.

**12. Circulation and evacuation 10 seconds**

Circulation pump M1 remains ON. Turn ON drain pump M2.

**13. Evacuation 20 seconds**

Circulation pump M1 turns OFF. Drain pump M2 remains ON for 20 seconds.

## Hydrim L110W P1 & P2 Cycle with Revision 2.02 Software

- 1. Preparation drain pump runs**

When the P1 or P2 cycle button is pressed the drain pump turns ON. The Hydrim will drain the wash chamber and the sidebag. If the previous cycle was interrupted when the cycle is started the drain pump will run for 80 seconds. If the previous cycle was a complete cycle the drain pump will run for 20 seconds. If the unit fails to drain an **E4 code** will appear on the display.
- 2. Sidebag fills with hot water target temperature 50°C/122°F**

Turn ON Y7 hot water valve. Start timer whenever valve is open to calculate the Water Debit Constant and Error Timer for filling sidebag. If water does not close pressure switch B1 within 130 seconds declare “no hot water” and use just cold water. If pressure switch does not close after another 130 seconds Hydrim fails with an **E2 code**. When the pressure switch closes calculate the Water Debit Constant time for filling up 2.7 liters.
- 3. Fill wash chamber target temperature 28°C/82.4°F**

When sidebag is full and pressure switch B1 activates (blue arm moves out) turning ON Y6 sidebag drain valve to allow sidebag to drain into the chamber. Pressure switch will deactivate when sidebag starts draining into chamber. After approximately 45 seconds turn ON circulation pump M1 and Y7 hot water valve. The on time for the hot water inlet valve depends on the “Water Debit Constant” that was calculated previously. The chamber capacity is 4 liters, 2.7 liters from the sidebag and 1.3 liters from the hot water inlet valve, resulting valve Y6 is on for approximately 75 seconds and valve Y7 is on for 1.3/Water Debit Constant. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6 before closing. Failure to fill chamber will cause an **E2 code**.
- 4. Circulation, heating and dosing**

Start circulation pump M1, dosing pump M4 and turn ON water heater R1 if water temperature in chamber is below target temperature. Start heating and dosing error timers. Dosing pump runs for 7 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.
- 5. Circulation and heating target temperature 50°C/122°F**

Circulation pump continues to run and water heater remains turned ON. If the heating error timer ends and the chamber water temperature is below the target temperature, the Hydrim fails with an **E1 code**.
- 6. Circulation, heating and dosing target temperature 50°C/122°F**

Circulation pump continues to run, and water heater remains turned ON. When water temperature in chamber reaches target temperature start dosing error timer. The dosing pump runs for 7 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.
- 7. Circulation**

Circulation pump M1 remains ON for 300 seconds/5 minutes.
- 8. Circulation and evacuation 10 seconds**

Circulation pump M1 remains ON. Turn ON drain pump M2.
- 9. Evacuation 20 seconds**

Circulation pump M1 turns OFF. Drain pump M2 remains ON for 20 seconds.
- 10. Fill wash chamber target temperature 40°C/104°F without filling sidebag**

Turn ON valve Y6 and valve Y7 target temperature 40°C/104°F. The ON time for the water inlet valve depends on the “Water Debit Constant” that was calculated previously. Turn valve Y7 ON for 3/Water Debit Constant and Y6 for 3/Water Debit Constant + 10 seconds. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6.

## Hydrim L110W P1 & P2 Cycle with Revision 2.02 Software (Cond.)

- 11. Evacuation 30 seconds fill sidebag target temperature 45°C/113°F**  
Drain pump remains ON and sidebag starts filling target temperature 45°C/113°F.
- 12. Wait until sidebag is full target temperature 45°C/113°F**
- 13. Fill wash chamber target temperature 45°C/113°F**
- 14. Circulation 60 seconds/1 minute target temperature 45°C/113°F fill sidebag**
- 15. Circulation and evacuation 10 seconds**
- 16. Evacuation 20 seconds**
- 17. Wait until sidebag is full target temperature 80°C/176°F**
- 18. Fill wash chamber target temperature 80°C/176°F**
- 19. Circulation, heating and dosing**  
Start circulation pump M1, dosing pump M4 and turn ON water heater R1 if water temperature in chamber is below target temperature. Start heating and dosing error timers. Dosing pump runs for 5 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.
- 20. Circulation and heating target temperature 65°C/149°F**  
Circulation pump continues to run and water heater remains turned ON. If the heating error timer ends and the chamber water temperature is below the target temperature, the Hydrim fails with an **E1 code**.
- 21. Circulation 180 seconds/3 minutes**
- 22. Circulation and evacuation 10 seconds**
- 23. Evacuation 20 seconds**
- 24. Drying (P2 cycle only)**  
Dryer time factory set to 10 minutes. May be increased to 20 minutes in 1-minute increments. Dryer will run at slower speed for 1 minute then increase to high speed.

## Hydrim L110W P3 & P4 Cycle with Revision 2.02 Software

- 1. Preparation drain pump runs**

When the P3 or P4 cycle button is pressed the drain pump turns ON. The Hydrim will drain the wash chamber and the sidebag. If the previous cycle was interrupted when the cycle is started the drain pump will run for 80 seconds. If the previous cycle was a complete cycle the drain pump will run for 20 seconds. If the unit fails to drain an **E4 code** will appear on the display.
- 2. Sidebag fills with cold water target temperature 28°C/82.4°F**

Turn ON Y1 cold water valve. Start timer whenever valve is open to calculate the Water Debit Constant and Error Timer for filling sidebag. If water does not close pressure switch B1 within 130 seconds Hydrim fails with an **E2 code**. When the pressure switch closes calculate the Water Debit Constant time for filling up 2.7 liters.
- 3. Fill wash chamber target temperature 28°C/82.4°F**

When sidebag is full and pressure switch B1 activates (blue arm moves out) turning ON Y6 sidebag drain valve to allow sidebag to drain into the chamber. Pressure switch will deactivate when sidebag starts draining into chamber. After approximately 45 seconds turn ON circulation pump M1 and Y1 cold-water valve. The on time for the cold water inlet valve depends on the “Water Debit Constant” that was calculated previously. The chamber capacity is 4 liters, 2.7 liters from the sidebag and 1.3 liters from the cold water inlet valve, resulting valve Y6 is on for approximately 75 seconds and valve Y1 is on for 1.3/Water Debit Constant. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6 before closing. Failure to fill chamber will cause an **E2 code**.
- 4. Circulation, heating and dosing target temperature 28°C/82.4°F**

Start circulation pump M1, dosing pump M4 and turn ON water heater R1 if water temperature in chamber is below target temperature. Start heating and dosing error timers. Dosing pump runs for 2 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.
- 5. Circulation**

Circulation pump M1 remains ON for 240 seconds/4 minutes. Turn ON Y7 hot water valve and fill sidebag, target temperature 50°C/122°F.
- 6. Circulation and evacuation 10 seconds**

Circulation pump M1 remains ON. Turn ON drain pump M2.
- 7. Evacuation 20 seconds**

Circulation pump M1 turns OFF. Drain pump M2 remains ON for 20 seconds.
- 8. Wait until sidebag is full target temperature 50°C/122°F**

Y7 the hot water valve remains ON. If water temperature is higher than the target temperature then turn ON Y1 cold-water valve. Start timer whenever valve is open to calculate the Water Debit Constant and Error Timer for filling sidebag. If water does not close pressure switch B1 within 130 seconds declare “no hot water” and use just cold water. If pressure switch does not close after another 130 seconds Hydrim fails with an **E2 code**. When the pressure switch closes calculate the Water Debit Constant time for filling up 2.7 liters.

## Hydrim L110W P3 & P4 Cycle with Revision 2.02 Software (Cond.)

- 9. Fill wash chamber target temperature 50°C/122°F**  
When sidebag is full and pressure switch B1 activates turn ON Y6 sidebag drain valve to allow sidebag to drain into the chamber. Pressure switch will deactivate when sidebag starts draining into chamber. After approximately 45 seconds turn ON circulation pump M1 and Y7 hot water valve. The on time for the hot water inlet valve depends on the “Water Debit Constant” that was calculated previously. The chamber capacity is 4 liters, 2.7 liters from the sidebag and 1.3 liters from the hot water inlet valve, resulting valve Y6 is on for approximately 75 seconds and valve Y7 is on for 1.3/Water Debit Constant. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6 before closing. Failure to fill chamber will cause an **E2 code**.
- 10. Circulation, heating and dosing target temperature 50°C/122°F**  
Start circulation pump M1, dosing pump M4 and turn ON water heater R1 if water temperature in chamber is below target temperature. Start heating and dosing error timers. Dosing pump runs for 7 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.
- 11. Circulation and heating target temperature 50°C/122°F**  
Circulation pump continues to run and water heater remains turned ON. If the heating error timer ends and the chamber water temperature is below the target temperature, the Hydrim fails with an **E1 code**.
- 12. Circulation, heating and dosing**  
Circulation pump continues to run, and water heater remains turned ON. When water temperature in chamber reaches target temperature start dosing error timer. The dosing pump runs for 7 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.
- 13. Circulation**  
Circulation pump M1 remains ON for 360 seconds/6 minutes.
- 14. Circulation and evacuation 10 seconds**  
Circulation pump M1 remains ON. Turn ON drain pump M2.
- 15. Evacuation 20 seconds**  
Circulation pump M1 turns OFF. Drain pump M2 remains ON for 20 seconds.
- 16. Fill wash chamber target temperature 40°C/104°F without filling sidebag**  
Turn ON valve Y6 and valve Y1 or Y7 (depending on water inlet temperature and the target temperature). The ON time for the water inlet valve depends on the “Water Debit Constant” that was calculated previously. Turn valve Y1 or Y7 ON for 3/Water Debit Constant and Y6 for 3/Water Debit Constant + 10 seconds. When water inlet valves timer expires add 10 seconds to the sidebag drain valve Y6.
- 17. Evacuation 30 seconds fill sidebag**  
Drain pump remains ON and sidebag starts filling target temperature 45°C/113°F.
- 18. Wait until sidebag is full target temperature 45°C/113°F**
- 19. Fill wash chamber target temperature 45°C/113°F**
- 20. Circulation 60 seconds/1 minute target temperature 45°C/113°F fill sidebag**
- 21. Circulation and evacuation 10 seconds**
- 22. Evacuation 20 seconds**
- 23. Wait until sidebag is full target temperature 80°C/176°F**
- 24. Fill wash chamber target temperature 80°C/176°F**

## Hydrim L110W P3 & P4 Cycle with Revision 2.02 Software (Cond.)

**25. Circulation, heating and dosing**

Start circulation pump M1, dosing pump M4 and turn ON water heater R1 if water temperature in chamber is below target temperature. Start heating and dosing error timers. Dosing pump runs for 5 seconds. If flow switch does not detect dosing before the dosing error timer ends (30 seconds), the Hydrim fails with an **ED code**. Once selected dosing time is achieved the dosing pump will turn OFF.

**26. Circulation and heating target temperature 65°C/149°F**

Circulation pump continues to run and water heater remains turned ON. If the heating error timer ends and the chamber water temperature is below the target temperature, the Hydrim fails with an **E1 code**.

**27. Circulation 180 seconds/3 minutes**

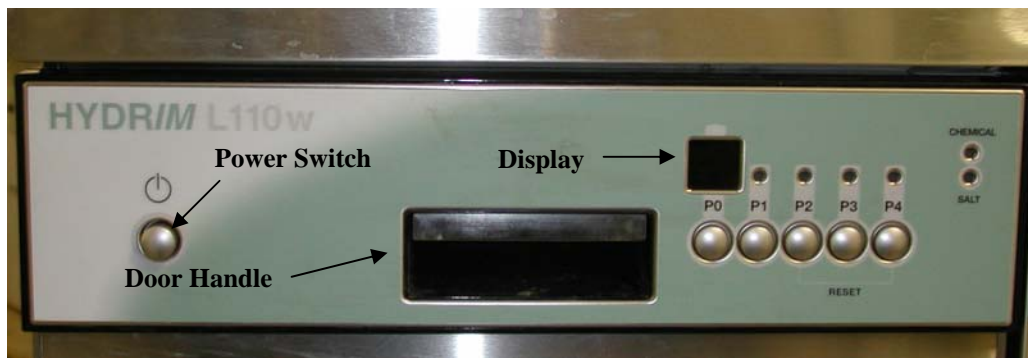
**28. Circulation and evacuation 10 seconds**

**29. Evacuation 20 seconds**

**30. Drying (P4 cycle only)**

Dryer time factory set to 10 minutes. May be increased to 20 minutes in 1-minute increments. Dryer will run at slower speed for 1 minute then increase to high speed.

## Control Panel



**Check software revision:** With unit OFF hold in buttons P3 & P4 turn the unit ON and release all buttons. The display shows “r” in the first digit followed by the first digit of the revision number and then the last two digits. (For ex. If the revision is 2.01 then it will display r2 followed by 01)

**Water softener:** With the unit OFF hold in buttons P1 & P2, turn the unit ON and release all buttons. The display shows the actual water softener setting value. Default value is 0. Adjust by pressing P0 to decrease and P1 to increase. Turn the power OFF to save the selected setting.

**Set drying time:** With the unit OFF hold in buttons P0 & P3, turn the unit ON and release all buttons. The display shows “tl” followed by the wash time 5 minutes. Press P3 and the display shows “tE” followed by the wash temperature 50°C. Press P3 and the display shows “dt” followed by the drying time 10 minutes. Drying time can be adjusted from 10 to 20 minutes by pressing P0 to decrease and P1 to increase. Turn the power OFF to save the selected drying time.

**Device test cycle:** With the unit OFF hold in buttons P2 & P3 turn the unit ON and release all buttons. The unit starts filling the chamber then the dosing pump runs for 20 seconds.

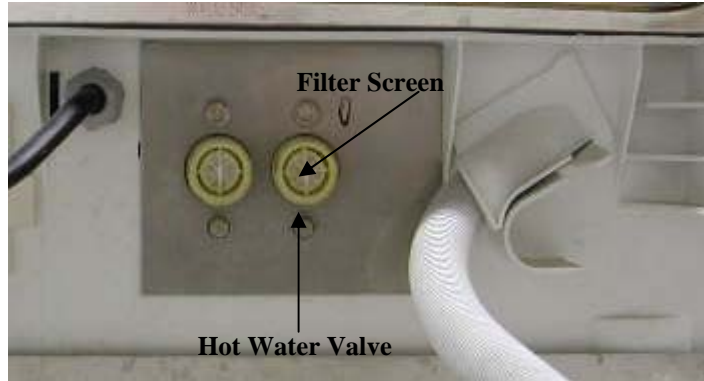
## Fault Codes

Fault #	Problem	Description
E1	Water heating failure	Water temperature < set point after timeout during “Circulation and heating” phase. See E1 explanation.
E2	Filling failure	Timeout on filling up the chamber. See E2 explanation.
E3	Chamber temperature reading failure	Chamber temperature reading outside range
E4	Water evacuation failure	Timeout on water evacuation from chamber (60 seconds). See E4 explanation.
E6	Serial transmission failure	Control modules not communicating. Check wiring to controllers. Replace Master Controller & Slave Controller if needed.
E8	Water inlet temperature reading failure	Water inlet temperature reading outside range. Check water inlet temperature sensor (3.6KΩ).
E9	Program timeout	Timeout on finalizing the cycle. Check wash & drying time. Call SciCan Technical Support
E0	Sidebag filling failure- full pressure switch blocked into ON position	Timeout on filling the heat exchanger (5 minutes). Check pressure switch on Emitter Housing.
ED	Dosing system failure	Timeout on dosing. See ED explanation
EF	Flow error	Detergent flow switch defective. See EF explanation.
Chemical Light	On steady cannot start cycle	Check long green plug on Slave Controller.

## Troubleshooting E1 Error Code

**Error Code 1 indicates water temperature is below a set point after timeout during heating phase of the cycle.**

1. Remove hot water inlet hose and check for hot water to Hydrim.
2. Check inlet filter screen is clean on hot water valve.



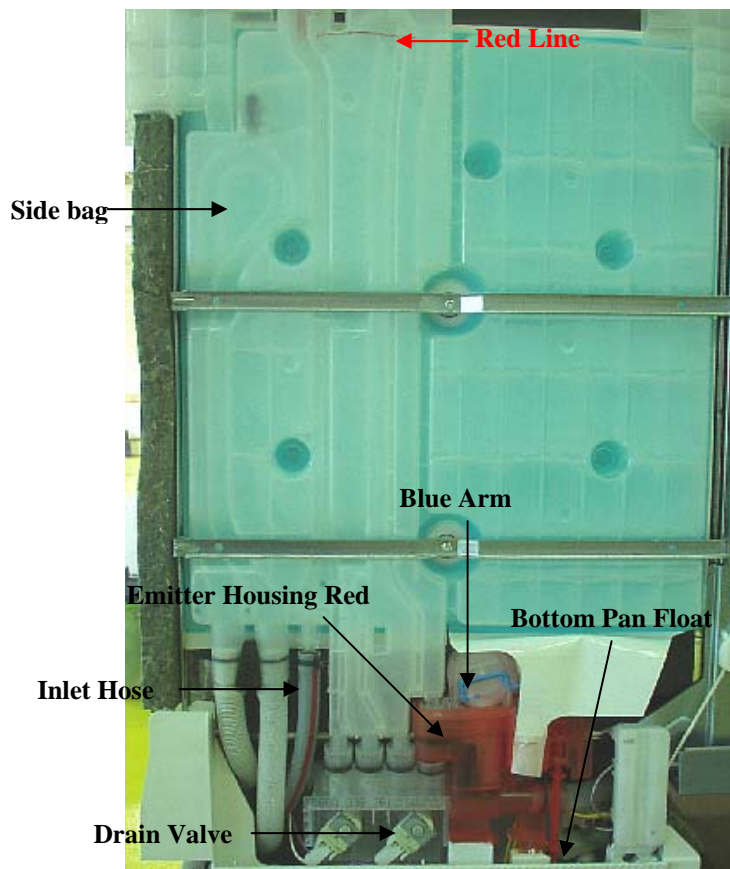
3. Turn OFF the cold water valve and start a P1 cycle. If the unit does not fill with water E2 appears, the hot water valve is defective.
4. Start a P1 cycle, when you hear the wash arms start turning stop the cycle and check the water temperature in the chamber with a thermometer. Suggested hot water temperature to the unit is 60°C/140°F. If water is cold, cycle time will be extended until wash temperature reaches 50°C/122°F. The heater will increase the water temperature approximately 2°C every minute. If wash temperature is not reached in 25 minutes the cycle will timeout and E1 will appear.



## Troubleshooting E2 Error Code

**Error Code E2 indicates a timeout before the chamber is filled with water.**

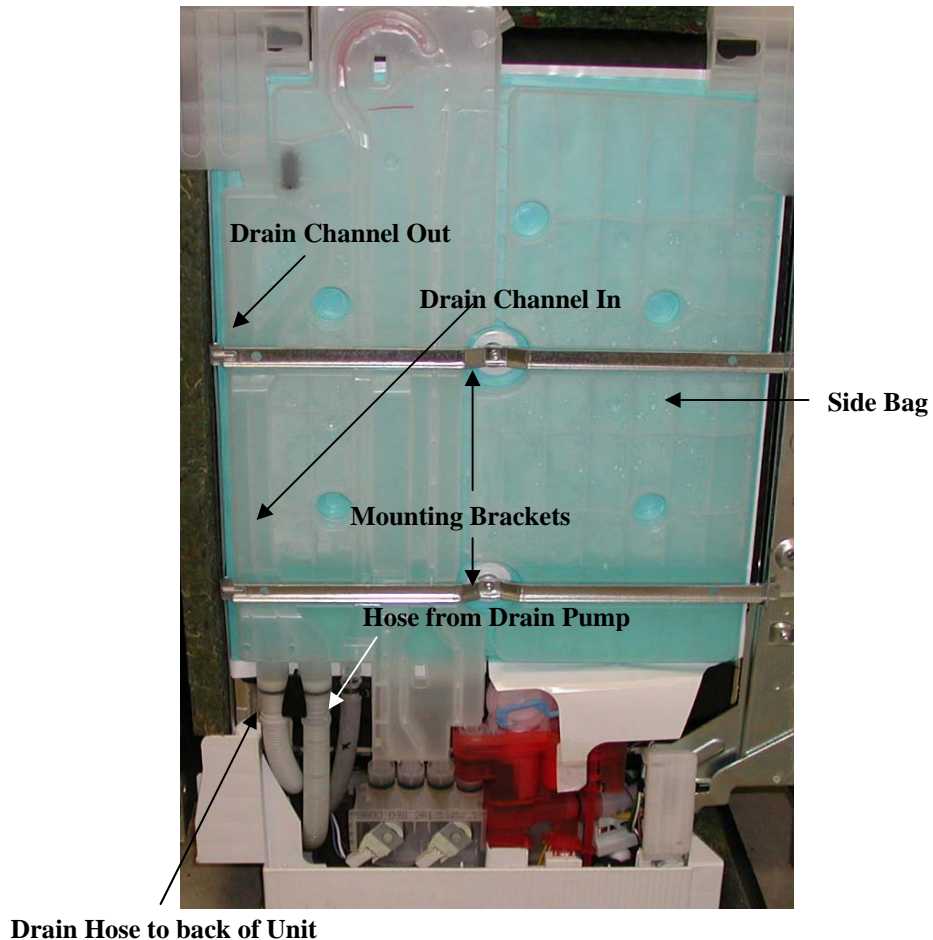
1. Remove left and right side covers from unit.
2. Check flow switch on right side of unit. If cleaning solution is leaking around wires of flow switch disconnect flow switch wires and start a P0 cycle. If unit fills with water and fails with an ED error code replace flow switch (#01-111568S).
3. Check for water in the bottom pan by the float. If water is in the bottom pan siphon water out of pan and start a P0 cycle. Sidebag should fill with cold water through water inlet hose. If sidebag does not fill check cold-water inlet valve. If sidebag fills water will rise to red line at top of sidebag then flow over and down channel to emitter housing. When the emitter housing is full the pressure switch will activate and the blue arm will be pushed out activating the electrical switch. If the blue arm does not activate the electrical switch replace the emitter housing (#13447.01 Red or #13447.00 Clear). When the electrical switch activates the drain solenoid should open and the sidebag should empty into the chamber. The blue arm should go back in once the drain valve opens. If the electrical switch activates check for line voltage (208-240VAC) to the drain solenoid (#13614.00). If the drain solenoid needs to be replaced and the sidebag is full of water loosen the 2 screws holding the drain solenoid, **do not remove them**, and pull out on the drain solenoid until the water in the sidebag flows by the solenoid and into the chamber.



## Troubleshooting E4 Error Code

**Error Code 4 indicates failure of water evacuation from chamber before 60-second timeout.**

1. If the chamber is empty remove the filters from inside the chamber and pour some water into the base of the chamber. Turn the unit ON and select P0. The drain pump should turn ON and evacuate the water from the chamber. If you do not hear the drain pump running call SciCan for technical support. If the drain pump runs but the water does not evacuate proceed to step 2.
2. Remove the left side panel from the unit.
3. Check for debris in the sidebag (#13462.00) drain channels between the two drain tube connections. Remove both metal mounting brackets to check channel behind brackets. If channel is clean proceed to step 4.
4. Remove hose from drain pump where it connects to the side bag. Place hose in a bucket. Remove the filters from inside the chamber and pour some water into the base of the chamber. Turn the unit ON and select P0. The water in the chamber should pump into the bucket. If water does not evacuate from chamber call SciCan for technical support.



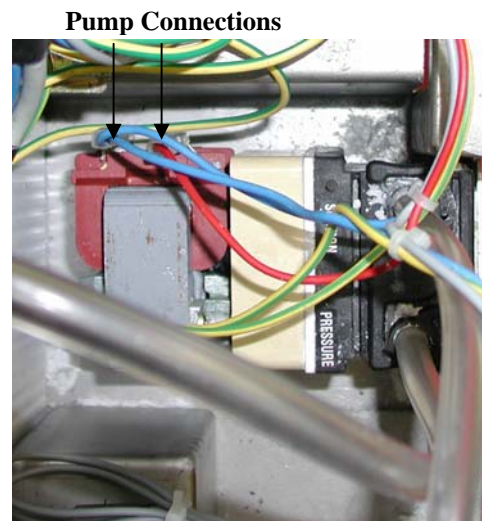
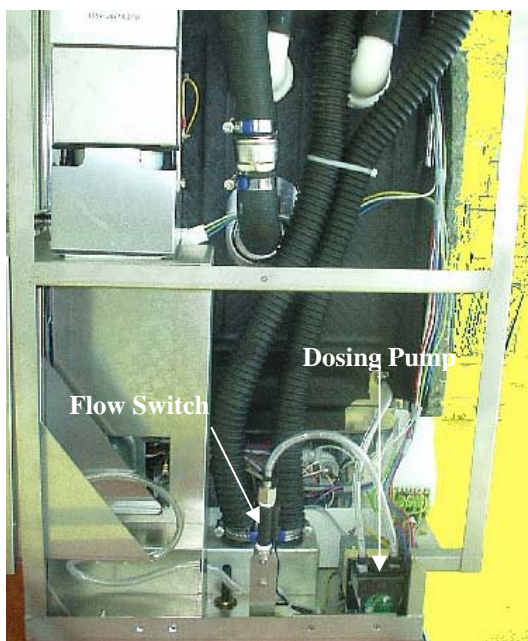
## Hydrim L110W Troubleshooting ED & EF Error Codes

### Error code ED indicates a dosing system failure.

1. Check cleaning solution box for solution and check for a kinked tubing.
2. Remove the right side cover.
3. Disconnect tubing connected to suction side of dosing pump. Verify that cleaning solution is flowing to the dosing pump. Flush lines or flow switch as needed.
4. Connect a voltmeter to the red & blue wires connected to the dosing pump. Set the meter to read line voltage (208-240VAC). Start a device test cycle, with the unit OFF hold in P2 & P3 and turn the power switch ON and release all buttons. The display should read P5 & 8. The unit will fill the chamber with water then the dosing pump should run for 20 seconds. While the dosing pump is running the meter will read line voltage. If the meter reads line voltage and the dosing pump does not turn, replace the dosing pump (#13634.00). **Note: Dosing Pump motor should read approximately 60 ohms resistance.** If the meter does not read line voltage replace the Slave Controller (#13475.04) first then the Master Controller (#13475.03) if needed.
5. If the Dosing Pump runs and ED still appears follow the instructions below for error code EF.
6. If the Flow Switch tests good and ED still appears with the Dosing Pump running, replace the Dosing Pump (#13634.00) low output.

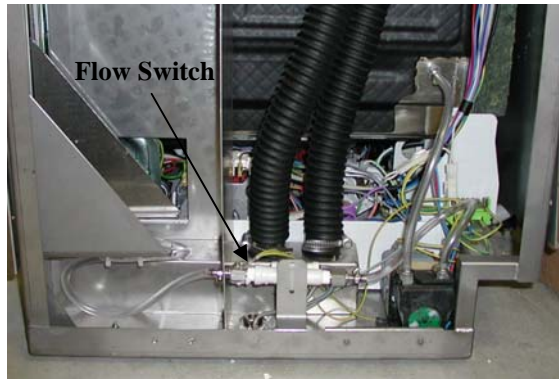
### Error code EF indicates a shorted Flow Switch.

1. If the Flow Switch is white and mounted horizontally, replace with new black flow switch and mount new switch vertically.
2. Disconnect tubing connected to suction side of dosing pump. Verify that cleaning solution is flowing to the dosing pump. Flush lines or flow switch as needed.
3. Disconnect the wires from the flow switch and connect an ohmmeter to the wires. Start a device test cycle, with the unit OFF hold in P2 & P3 and turn the power switch ON and release all buttons. The display should read P5 & 8. The unit will fill the chamber with water then the dosing pump should run for 20 seconds. While the dosing pump is running the meter should read less than 1 ohm (continuity). If reading is bad replace flow switch (#01-111474S).

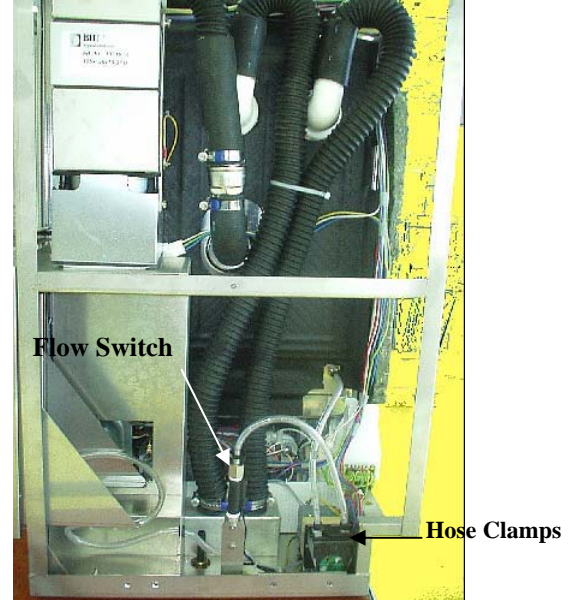


## Flow Switch Configurations & Dryer Check Valve Location

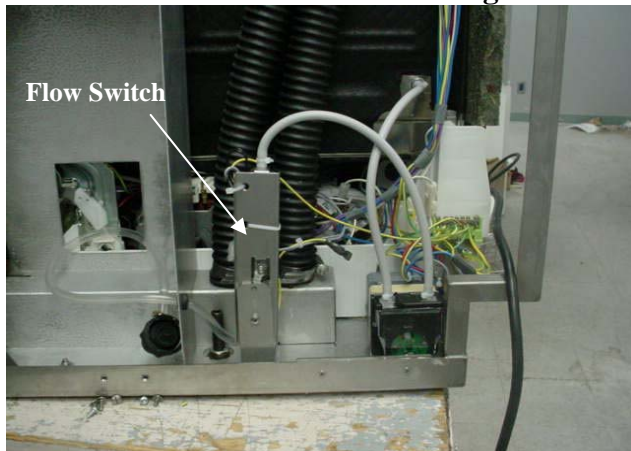
### Original Flow Switch



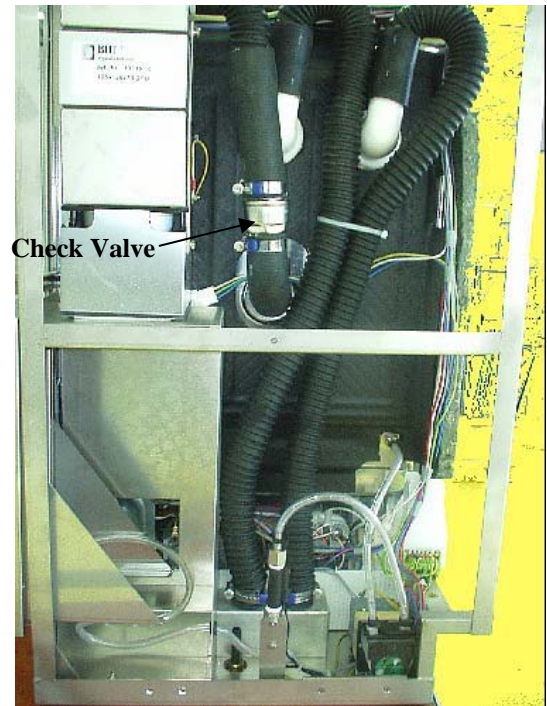
### Black Flow Switch



### Black Flow Switch with Mounting Bracket



### Dryer Check Valve

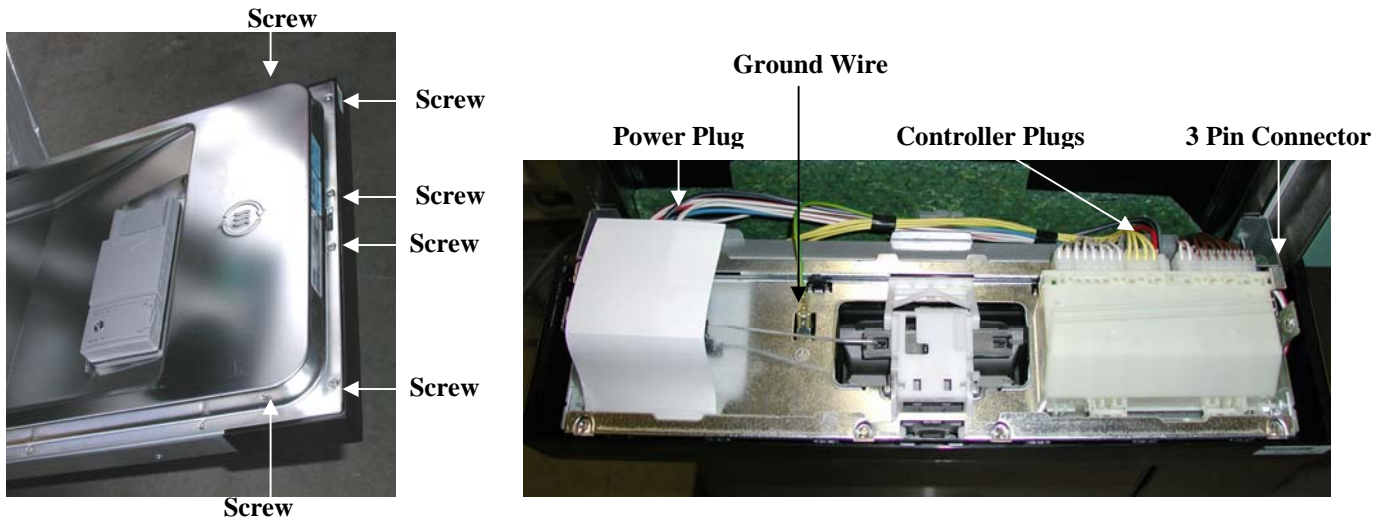


## Master Controller Replacement

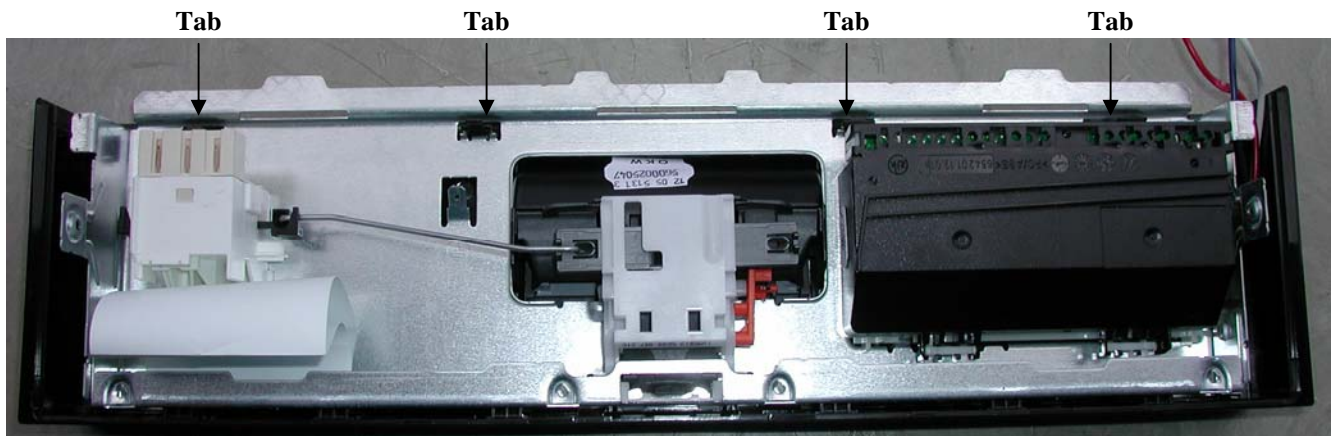
Remove six Torx 20 screws from inside top of door. There are four screws across the top, one coming in from the left side and one coming in from the right side.

Disconnect red, white & blue wires from 3 pin terminal strip on right side of controller.

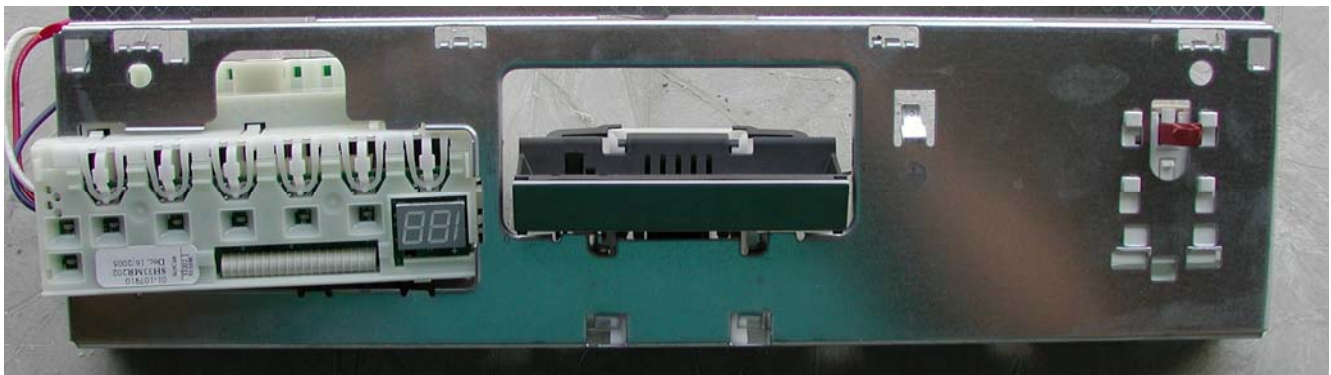
Remove all plugs from controller & power switch including ground wire.



Place the top of the door assembly on a counter top. Push in on the four black plastic tabs along the bottom and remove the black facia from the assembly.



Squeeze the two tabs by the display on the controller and push the controller out of the back of the frame.



## Slave Controller Replacement

Remove the top cover (see cover removal).

Open the cleaning solution drawer.

Remove the 7mm hex screw holding the top of the panel above the solution drawer. This screw is accessible with top cover removed from inside unit.

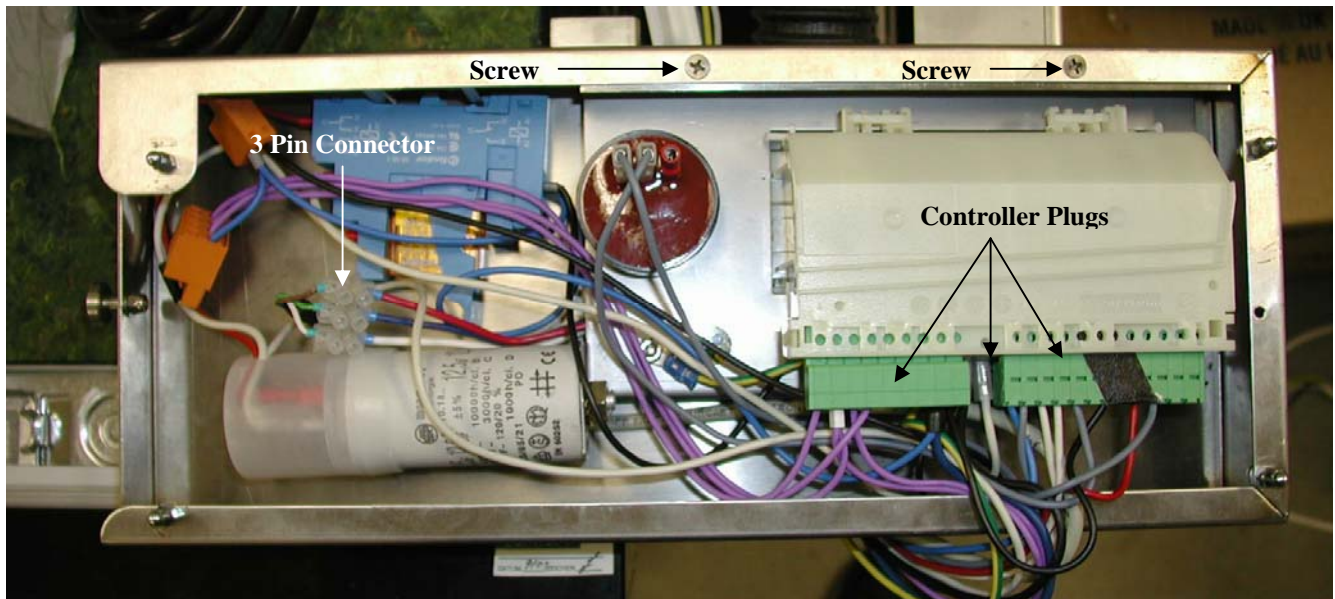
Slide a flat screwdriver under the top panel and pry it loose.

Set the panel on top of the unit.

Disconnect the controller plugs and red, white & blue wires from 3 pin terminal strip.

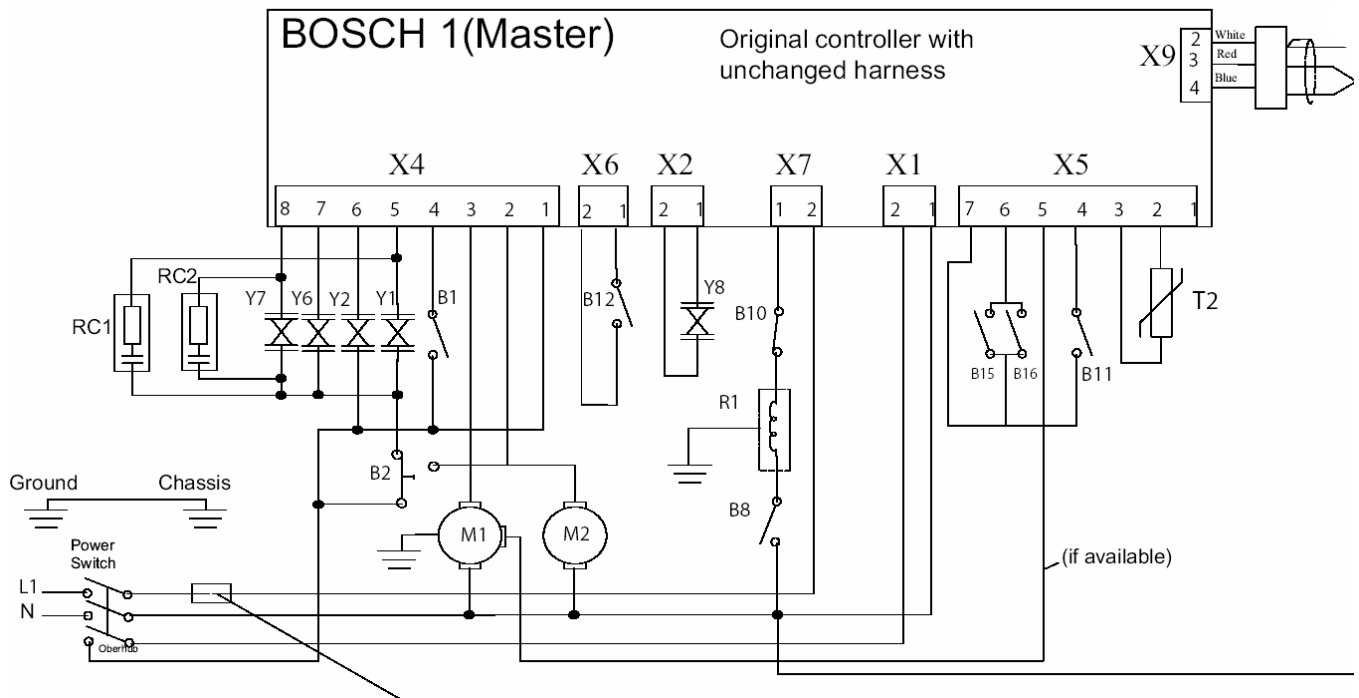
Remove two screws holding controller panel to frame.

Turn frame over to access controller.



Squeeze the two tabs by the display on the controller and push the controller out of the back of the frame.

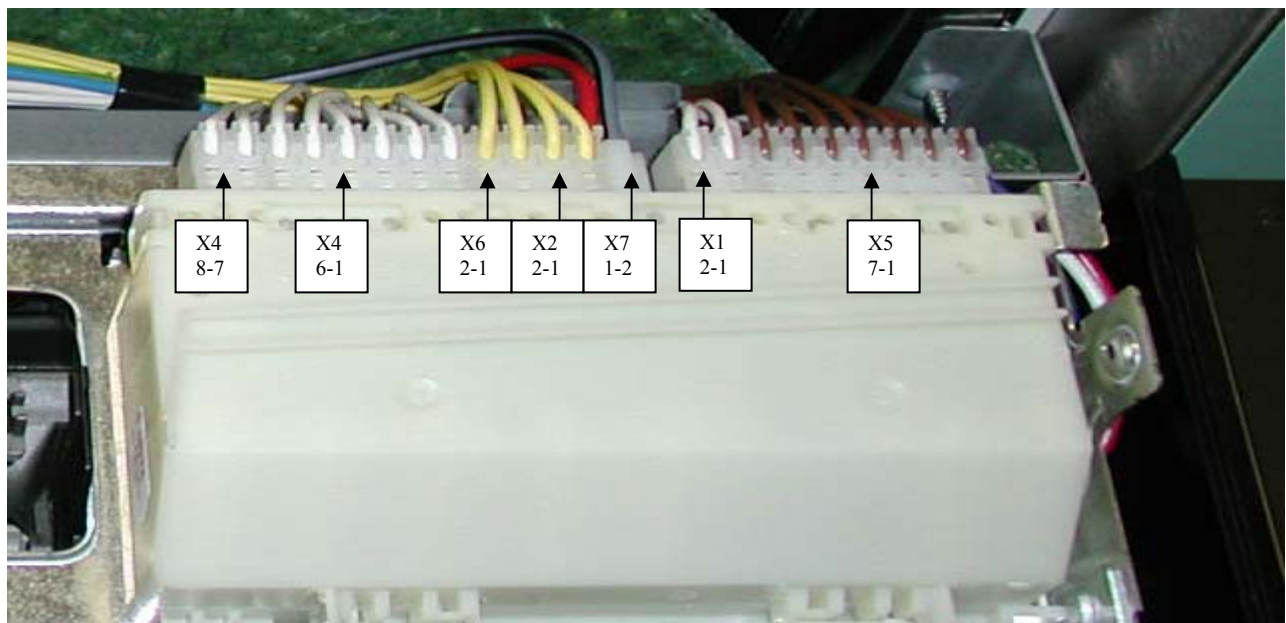
## Master Controller Wiring Diagram



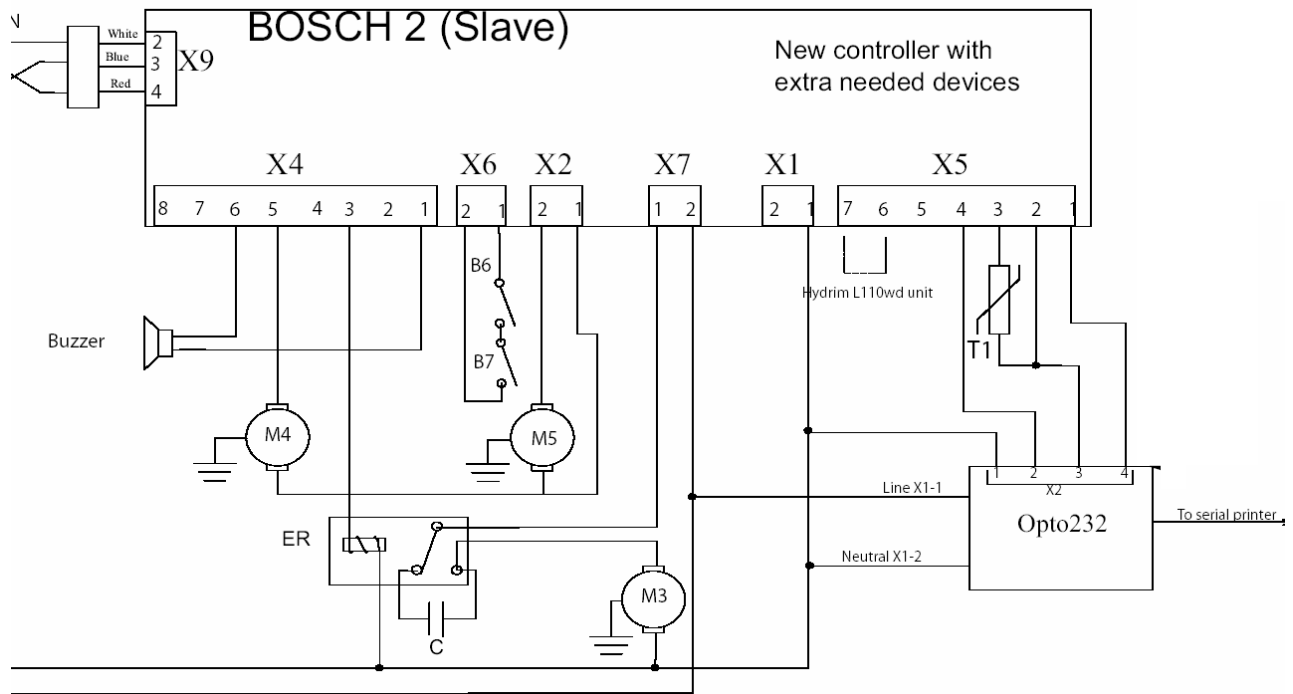
Y1-Cold Water Valve  
 Y2-Salt (Regeneration Valve)  
 Y6-Drain Valve for Sidebag  
 Y7-Hot Water Valve  
 Y8-Rinse Aid Actuator  
 M1-Circulation Pump  
 M2-Drain Pump  
 R1-Chamber Heater  
 T2-Water Inlet Temperature Sensor

B1-Chamber Full Pressure Switch  
 B2-Chamber Overflow Switch  
 B8-Pressure Switch for Heater  
 B10-Temperature Cutoff Switch for Heater  
 B11-Low Salt Switch  
 B12-Low Rinse Aid Switch  
 B15-Chemical Flow Switch  
 B16-Not Used

## Master Controller Wiring Picture



## Slave Controller Wiring Diagram

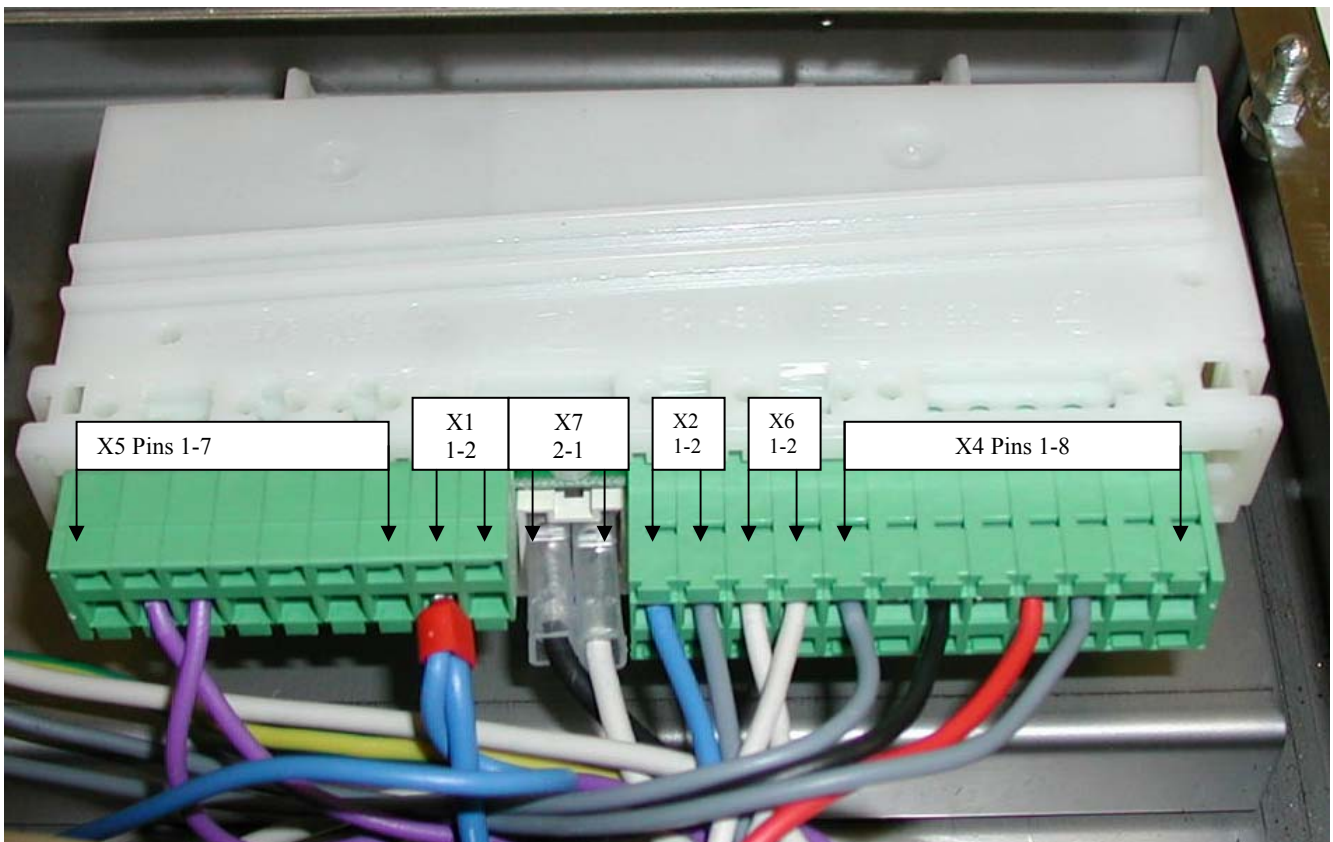


M3-Dryer Motor  
 M4-Dosing Pump 1  
 M5-Not Used

B6-Not Used  
 B7-Not Used  
 X6-Jumpered

T1-Chamber Temperature Sensor  
 ER-External Relay  
 C-External Capacitor

## Slave Controller Wiring Picture





## Checking & Programming Control Module



By pressing various combinations of buttons, it is possible to enter special cycles. To use these cycles, hold the two buttons indicated and power the unit on.

1. **“regeneration (salt) level set”**: By pressing buttons P1 & P2 while powering the unit on the display shows “L” on the first digit and the actual value of the regeneration level. Adjustment from 0 to 7 can be made with button P0 (down) & P1 (up).
2. **“reset drying cycle counter”**: By pressing buttons P0 & P2 while powering the unit on the display shows “c” and the first number of the actual drying cycle count followed by the last two digits of the drying cycle count. (For example if the drying cycle count is 739 then it will display c7 followed by 39) Pressing button P3 will reset the counter to “0”.
3. **“device test cycle”**: By pressing buttons P2 & P3 while powering the unit on the chamber fills with water, then the dosing pump runs for 20 seconds. During this time whenever button P3 is pressed the regeneration valve and salt indicator LED will start for 10 seconds.
4. **“repeater mode”**: By pressing buttons P2 & P4 while powering the unit on, the unit starts in idle mode with a flashing “00” on the display. A program selected in this mode will run until the unit is powered off with 10 minutes pause between cycles.
5. **“unit set”**: By pressing buttons P0 & P3 while powering the unit on the user can select among:
  - a) **“set wash time”**: The display shows “tl” followed by the actual value of the wash time. Adjustment from 5 to 99 minutes can be made with P0 (down) and P1 (up). Default value is 05 minutes.
  - b) **“set wash temperature”**: The display shows “tE” followed by the actual value of the wash temperature. Adjustment from 15 to 99 can be made with P0 (down) and P1 (up). Default value is 50°C.
  - c) **“set drying time”**: The display shows “dt” followed by the actual value of the drying time. Adjustment from 10 to 20 minutes can be made with P0 (down) and P1 (up). Default value is 10 minutes.
6. **“software revision”**: By pressing buttons P3 & P4 while powering the unit on the display shows “r” in the first digit followed by the first digit of the revision number and then the last two digits. (For example if the revision is 2.01 then the display will show r2 followed by 01).

## Programming for HIP Cleaning Solution Revision 2.02 Software



Before proceeding verify that the Hydrim L110W has revision 2.02 software. By pressing buttons P3 & P4 while powering the unit on the display shows “r” in the first digit followed by the first digit of the revision number and then the last two digits. (For example if the revision is 2.02 then the display will show r2 followed by 02). If the Hydrim L110W has 2.02 software proceed with the programming.

The Hydrim L110W software has been upgraded for use of the HIP (Hydrim Instrument Protection) Cleaning Solution. Solution with enhanced instrument protection properties.

With 2.02 software, verify that the settings are correct for HIP Cleaning Solution. By pressing buttons P1 & P3 while powering the unit on you will have access to the wash settings. By pressing P3 you can select among the three wash settings c1, c2 and c3. In order to adjust the value of a setting, use the P0 button.

**Dosing settings table**

Wash setting “c2”	00
Prewash setting “c1”	01
Rinse setting “c3”	02


Note that there are values available other than those in the table. Please do not select these values unless advised to do so by a SciCan service technician.

### **Important!**

Ensure that all instruments are clean and free of stains and rust before using the HIP chemical.

## Water Test Kit Part #01-108305S

The Water Test Kit is used to test the hardness of the water. If the reading is above 180 ppm softening salts may be required in the Hydrim. To test the water, go to a sink close to the Hydrim. Remove one of the three test strip packets from the envelope. Open the test packet and remove the test strip. Hold the yellow end of the test strip under cold running water for approximately three seconds. Compare the color of the test strip to the color chart on the test strip packet. Compare the ppm reading for this color to the chart for the Hydrim you are installing. Add softening salt and adjust the salt regeneration as needed.



**Important information for the machine performance enclosed. Open this first!**

**HYDRIM WATER TEST KIT**

Water quality and water hardness are very important for proper Hydrim operation. Please check your water quality before proceeding with the machine installation.

Your Hydrim is equipped with a built-in water softening system. This water test kit will help you to properly adjust the water softening system, and to determine if you need additional water treatment.

The Hydrim test kit includes 3 water hardness test strips. Use them as described on the individual strip packages. Take the water sample from the location where the machine will be installed. Once you have determined the water hardness level in ppm (parts per million) find the recommended setting for your model (Hydrim C51 or Hydrim L110) in the table enclosed. Set up your machine using the instructions from the Hydrim Operator Manual. If your water hardness falls between two settings, select the higher setting. Water softening salt (available in most supermarkets or hardware stores) should be added regularly.

If you have difficulty measuring the water hardness, please contact your local water authority, who should be able to provide this information to you. Alternatively, if you have a water treatment system in your office, you can check the water quality with the equipment supplier or your maintenance contractor.

If your water hardness is outside the unit adjustment range, you will need to get an additional water treatment system. Otherwise you could experience reduced washing quality, spotting or discoloration. If you require a water treatment system please contact your local water equipment supplier.

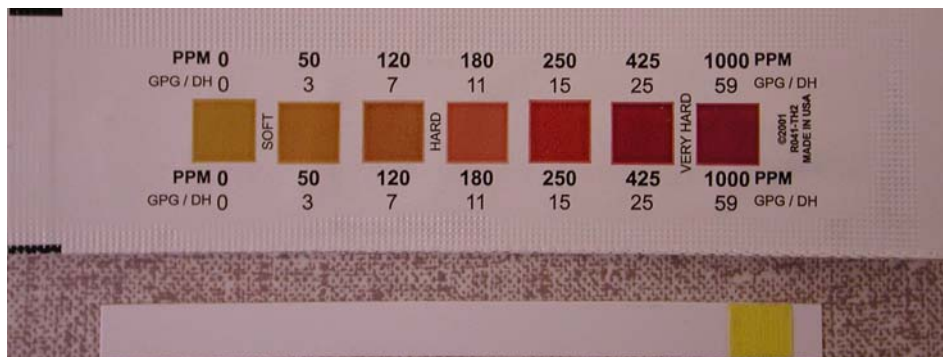
If you have any questions, call SciCan at 1-800-667-7733 (Canada) 1-800-572-1211 (U.S.), 416-445-1600 (International) or visit [www.scican.com](http://www.scican.com)

**Water hardness setup table**

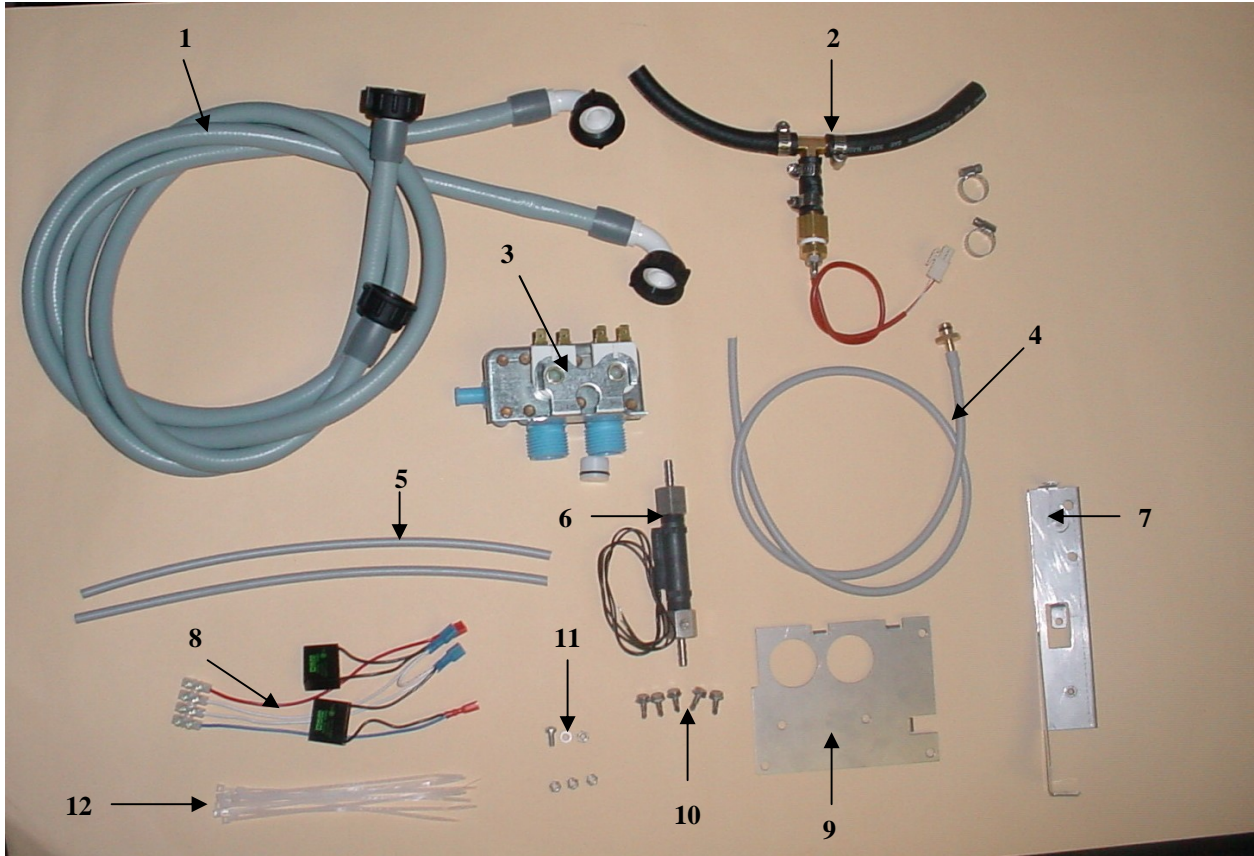
Hardness – ppm	Hydrim setting
0 - 180	0
190 - 210	1
220 - 250	2
260 - 300	3
310 - 350	4
360 - 400	5
410 - 540	6
550 - 890*	7
> 890	water treatment required

\* Not all ppm steps available on the test strip, round up to higher value.  
 \*\* Consider using additional treatment system even at this level.

99-108303



**Preventative Maintenance Kit  
Part #01-109707S**



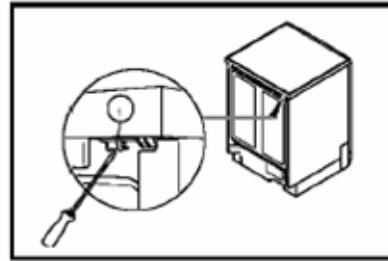
Item #	Description
1	Inlet tubing's for hot and cold water
2	Tubing assembly with sensor from inlet valve block to sidebag
3	Water inlet valve block
4	Vent tubing for top of sidebag
5	Tubing's from flow switch to dosing pump and dosing pump to chamber
6	Flow switch
7	Flow switch mounting bracket
8	Wiring harness for new valve block
9	Plate for water inlet valve block
10	Screws to mount valve block plate
11	Hardware to mount flow switch
12	Tie wraps for wiring harness

# Hydrim L110W Preventative Maintenance Kit Installation Procedure

## Remove All Covers

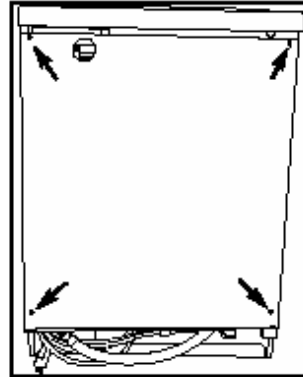
### Removing the Top Cover

Using a flat screwdriver, release the latch located at the back right of the unit.  
Pull the cover back about ½".  
Lift the cover off.



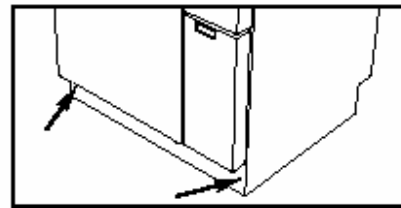
### Removing the Back Cover

Remove the screws in each corner of the panel.  
Remove the panel.



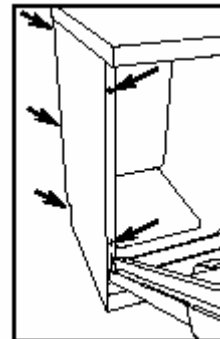
### Removing the Kick Plate

Remove the screws on both ends of the kick plate.  
Do not loose spacer behind right side of kick plate.  
Remove kick plate.



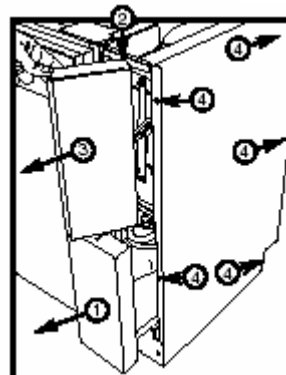
### Removing the Left Side Panel

Open the door of the unit.  
Remove the two screws from behind the doorframe.  
Remove the screw below the back panel.  
Remove panel.



### Removing the Right Side Panel

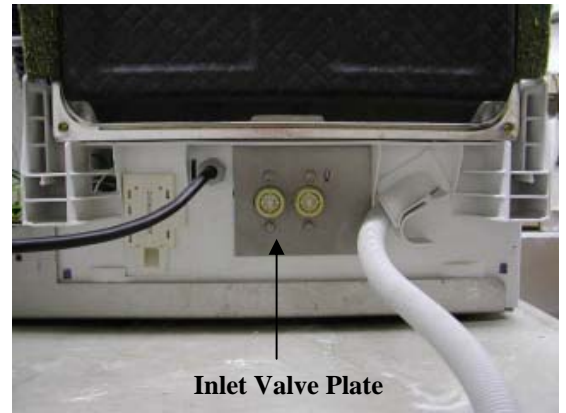
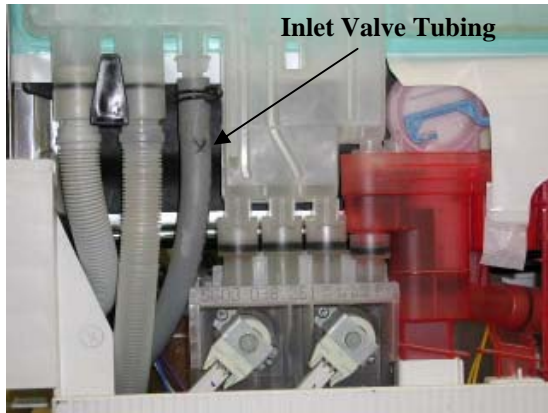
Open the cleaning solution drawer (1).  
Remove the screw holding the panel in place.  
Remove screw (2) from inside top edge of front panel above cleaning solution drawer.  
Pry off the front panel above cleaning solution drawer.  
Remove screw below the back panel.  
Remove screw holding panel in place.



## Old Hot/Cold Inlet Valve Removal

Disconnected inlet valve tubing under left side panel.

Remove four hex head screws holding inlet valve plate using 7mm nut driver in rear of unit.

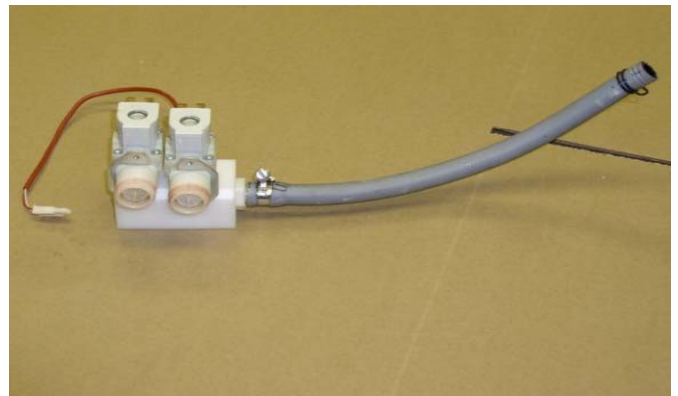
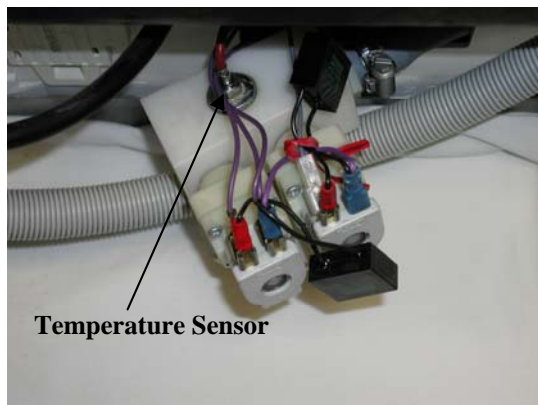


Remove hot/cold inlet valve block assembly with tubing from back of unit.

Disconnect wires to valves.

Disconnect the temperature sensor plug.

Discard assembly.



## Installing Hose Assembly with Temperature Sensor

Hose Assembly with Temperature Sensor



Feed the temperature sensor wire and plug into existing connector.



Push the temperature sensor down as shown



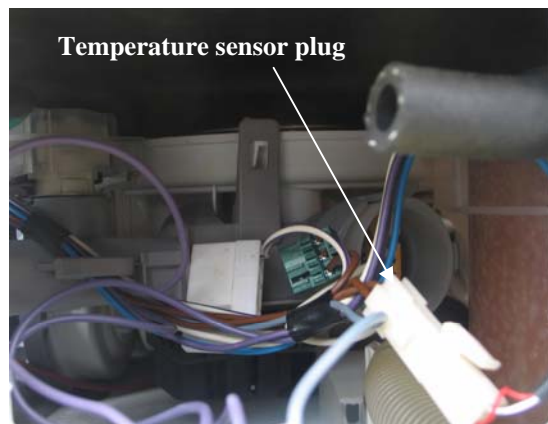
Guide the black tubing towards the hot & cold valve location.



Push the assembly in so wires and hose are accessible where valve block was removed.

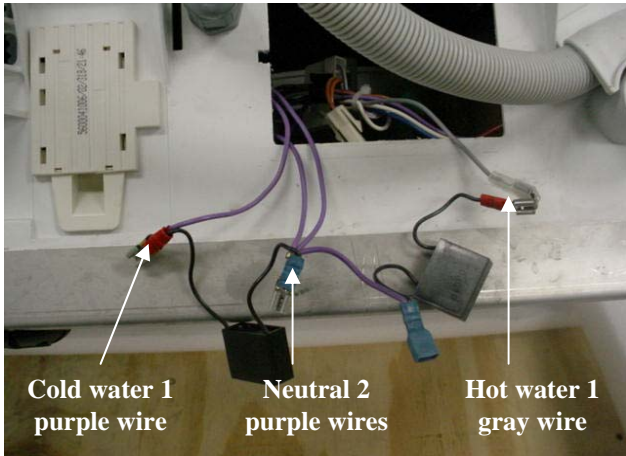


Connect new temperature sensor to plug disconnected from old sensor.

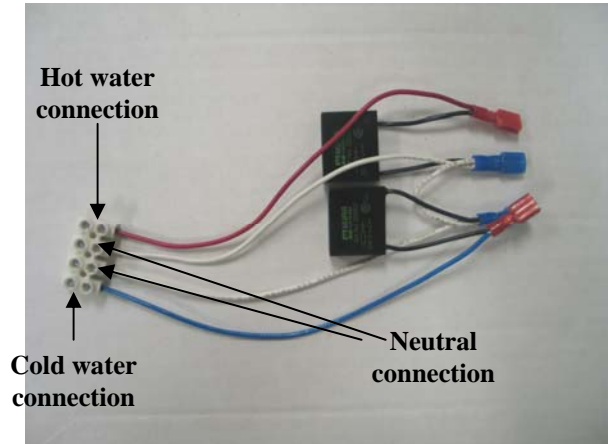


## Installing New Hot/Cold Inlet Valve

Wiring connections old valve block

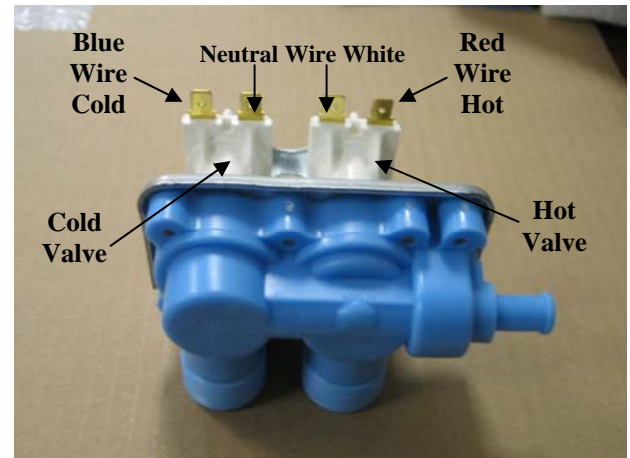
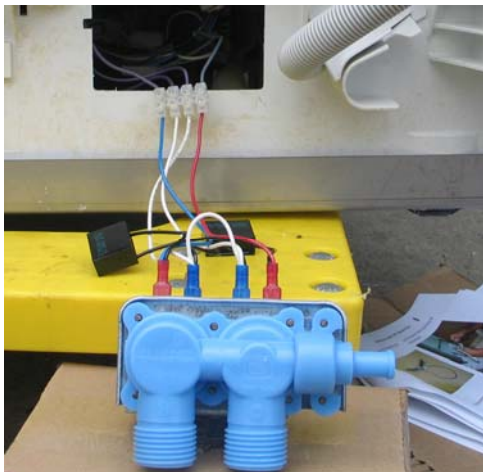


New hot/cold valve block wiring harness



Cut purple and gray wires from old valve block wiring harness and connect to new harness.

New valve block terminals



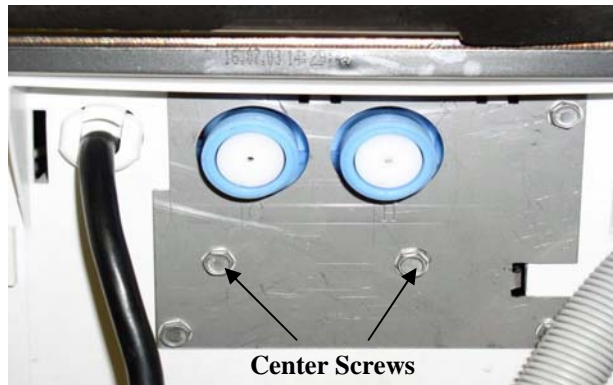
Connect black hose to valve block

Connect black hose to sidebag





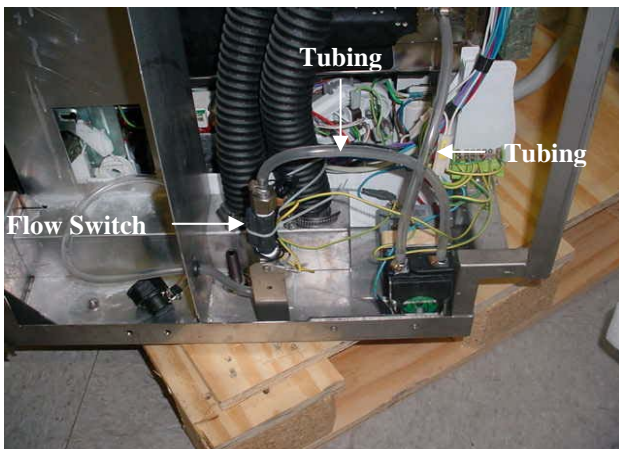
Connect valve plate by connecting 2 center screws first, then 3 corner screws using 8mm nut driver. Screws are self-tapping and corner screws need to thread into the plastic.



### Removal and Installation of Flow Switch Assembly with Tubing

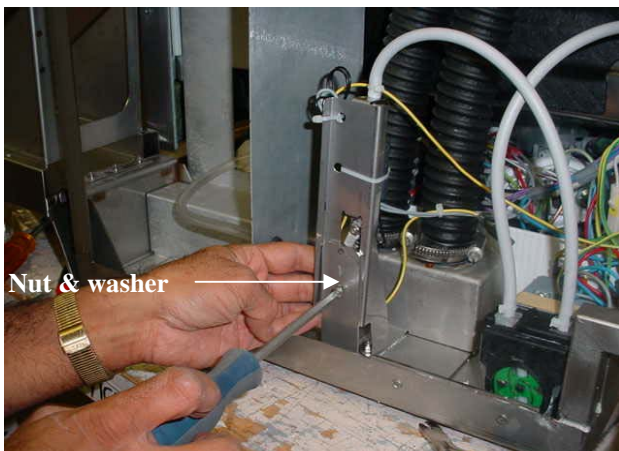
Remove the old flow switch and tubing going to dosing pump and chamber. Retain tubing attached bottom of flow switch and attach to new switch.

Attach new flow switch wires to terminal block and connect ground wire. Neatly tie wrap wiring to bracket. Connect new gray tubing to dosing pump and secure with a cable tie.



Screw the flow switch bracket to the unit bracket using M4 screw provided.

Bolt the bracket at the base of the unit by removing the nut and washer.



Connect new tubing from dosing pump to chamber and secure with a cable tie.



### Sidebag Vent Tubing Installation

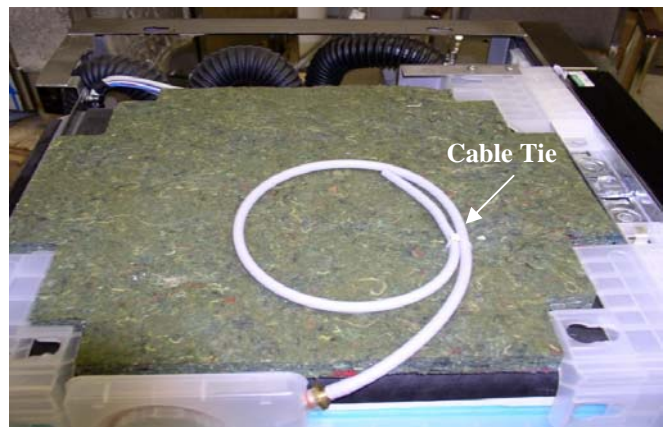


Trim sharp edge with knife as shown below



Secure the tubing with a cable tie to the top of the insulation by piercing two holes into the insulation and routing the tie through the holes to hold the tube. Do not over tighten leave the tubes fully open.

Lube O-ring slightly with soapy water and push fitting into top of sidebag.



**Note: Install new water inlet hoses and discard old hoses.**

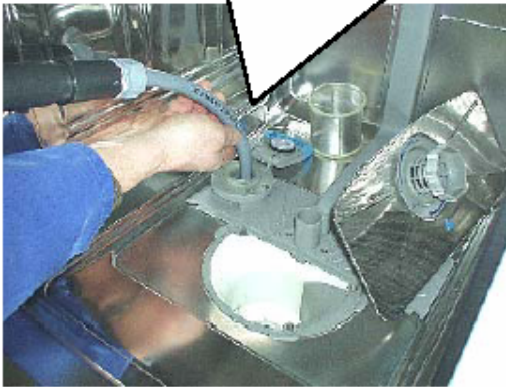
## Draining the Hydrim L110W for Shipping

### 1. To empty the sidebag:

- Start P1 cycle
- Interrupt cycle at the filling stage
- Disconnect hot and cold water connection
- Restart the cycle for 1 min.
- Observe the side bag is empty

### 2. Using shop vacuum remove water as shown on the next pictures:

*The salt container is to be emptied by a water sucking device, to avoid leakages and damages during the transport. Also the drain of the unit is emptied..*

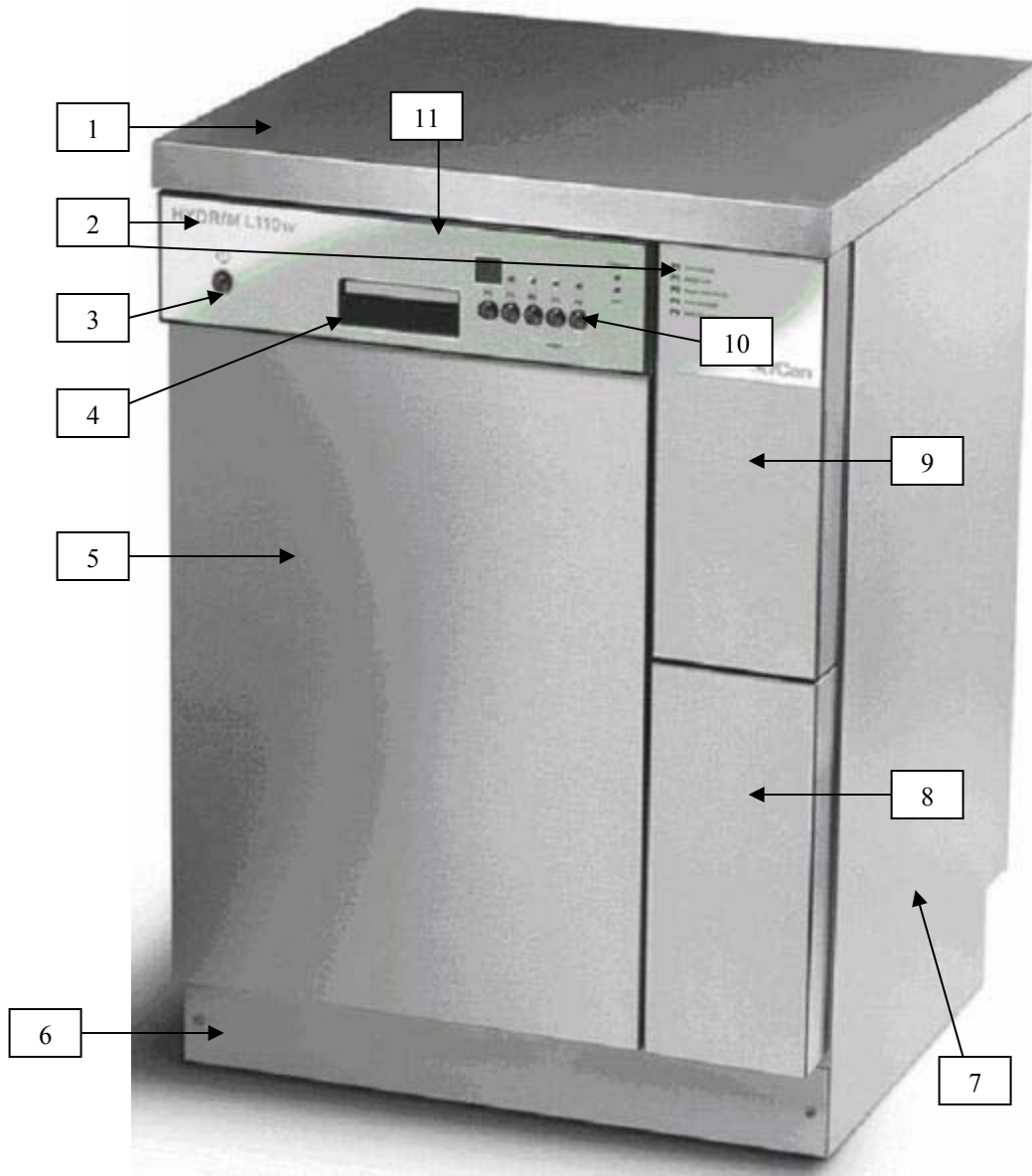


*The drain hose as well as the water inlet hoses are emptied by a water sucking device to avoid damages caused by leakage or frost.*



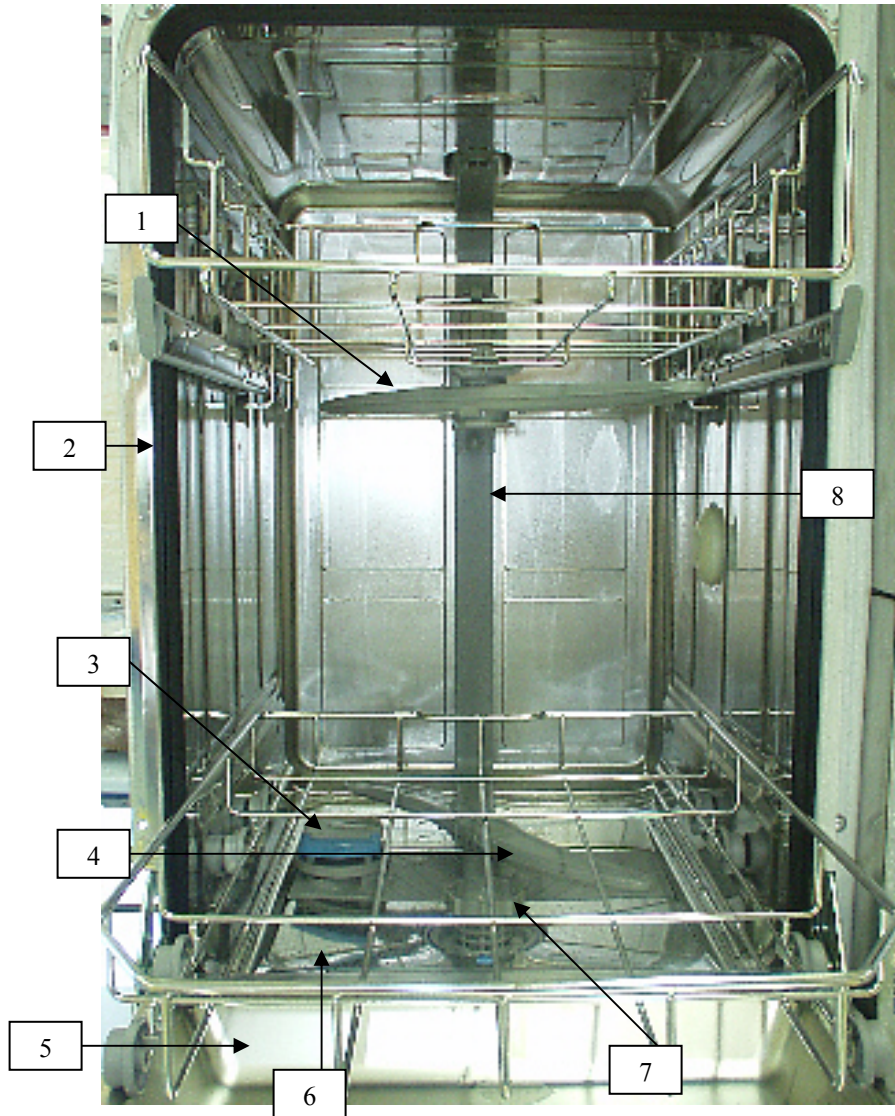
**At the end clean the washing chamber with a towel and a stainless steel care spray.**

### Parts Front View Door Closed



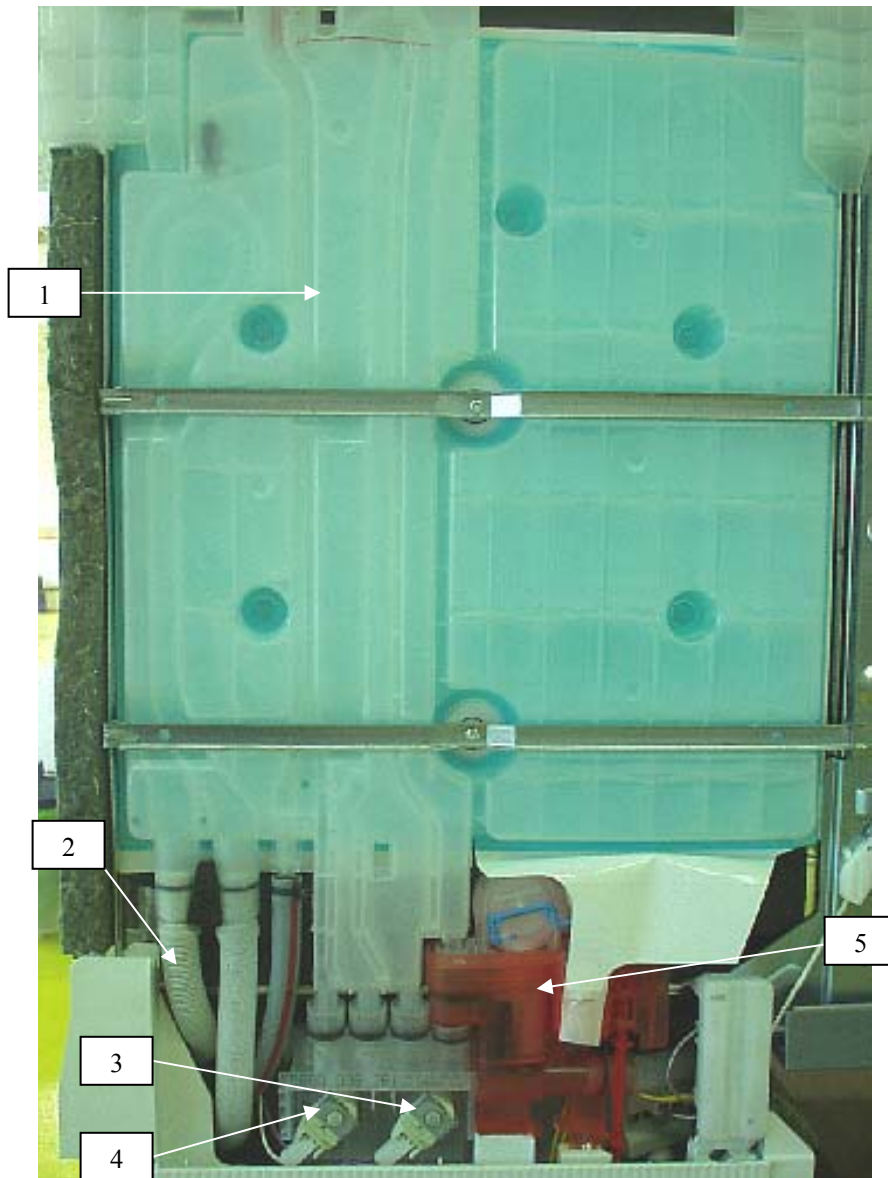
Item #	Part#	Description
1	50750.10	Cover Top
2	13790.06	Decals (Set of 2)
3	13459.00	Power Switch
3	13471.01	Button ON/OFF Silver
4	16945.00	Door Lock Handle
5	16979.02	Cover Door Front
6	16648.01	Kick Plate Front
7	16695.00	Cover Right Side
8	16662.06	Cover Cleaning Solution Drawer
9	16663.06	Cover Slave Controller (No Decal)
10	13471.02	Button Program Silver
11	13476.25	Control Panel Facia with Decal
Not Pictured	16696.00	Cover Left Side
Not Pictured	16656.00	Cover Back
Not Pictured	13633.00	Screw Kit (Cover Screws)

### Parts Front View Door Open



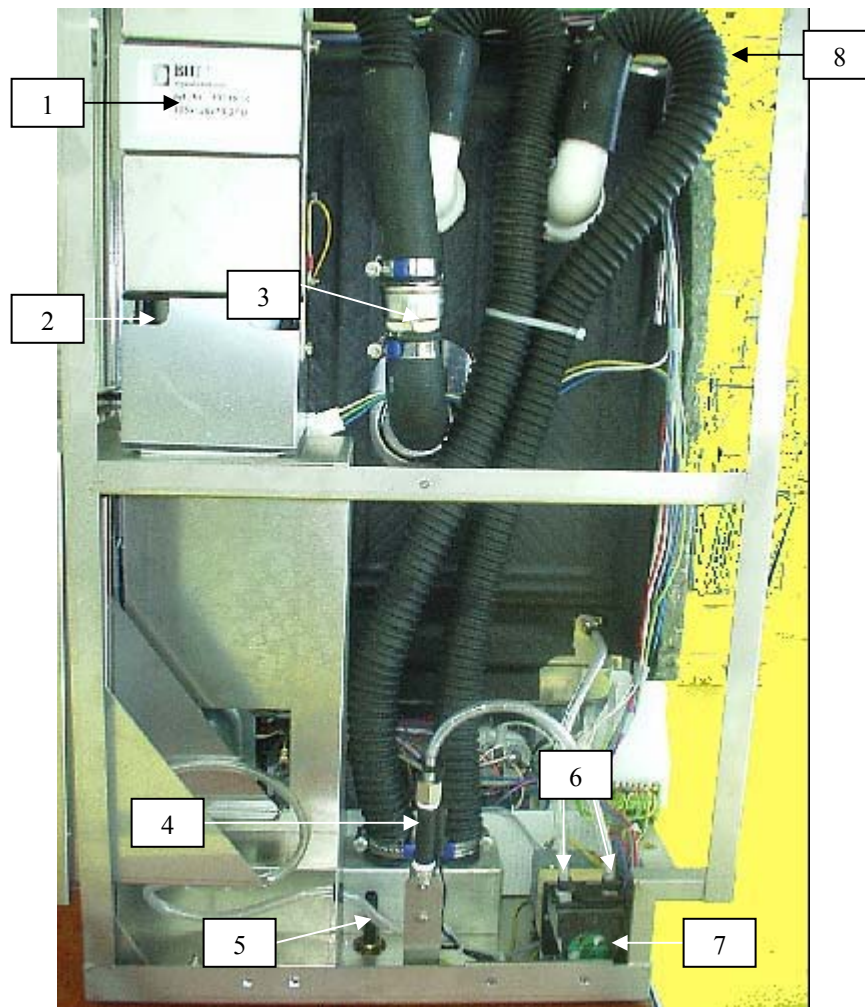
Item #	Part#	Description
1	13492.00	Wash Arm Upper
2	13456.00	Door Gasket
3	13638.00	Lid Salt Container
4	13481.00	Wash Arm Lower
5	13611.06	Door Inner Panel
6	13466.00	Filter Bottom Flat
7	13465.00	Filter Bottom Round
8	13629.00	Pipe Water Feed to Wash Arm

### Parts Left Side No Cover



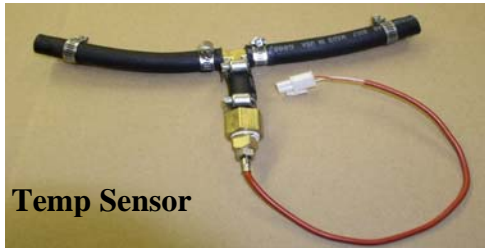
Item #	Part#	Description
1	13462.00	Sidebag
2	13455.00	Drain Tubing
3	13614.00	Solenoid Valve Drain
4	13615.00	Solenoid Valve Regeneration
5	13447.01	Emitter Housing Red
5	13447.00	Emitter Housing Clear

## Parts Right Side No Cover

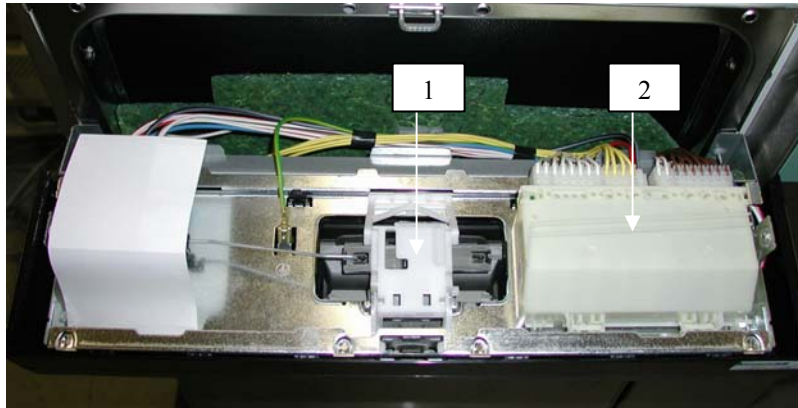


Item #	Part #	Description
1	13319.10	Dryer Air Filter
2	18466.00	Dryer Air Turbine
3	13416.01	Check Valve Dryer 1"
4	01-111474S	Flow Switch
5	13599.00	Foot Front
6	21624.02	Dosing Pump Clamp External
7	13634.00	Dosing Pump
8	21027.00	Tubing Exhaust Air

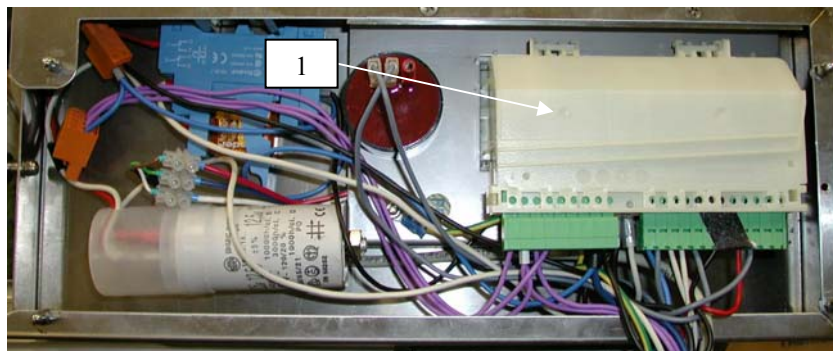
## Parts Water Inlet Valve, Inlet Temp Sensor & Controllers



**Note: If Water Inlet Valve is defective install Preventative Maintenance Kit #01-109707S or Inlet Valve, Wiring Harness & Temp Sensor Kit #01-109863S.**



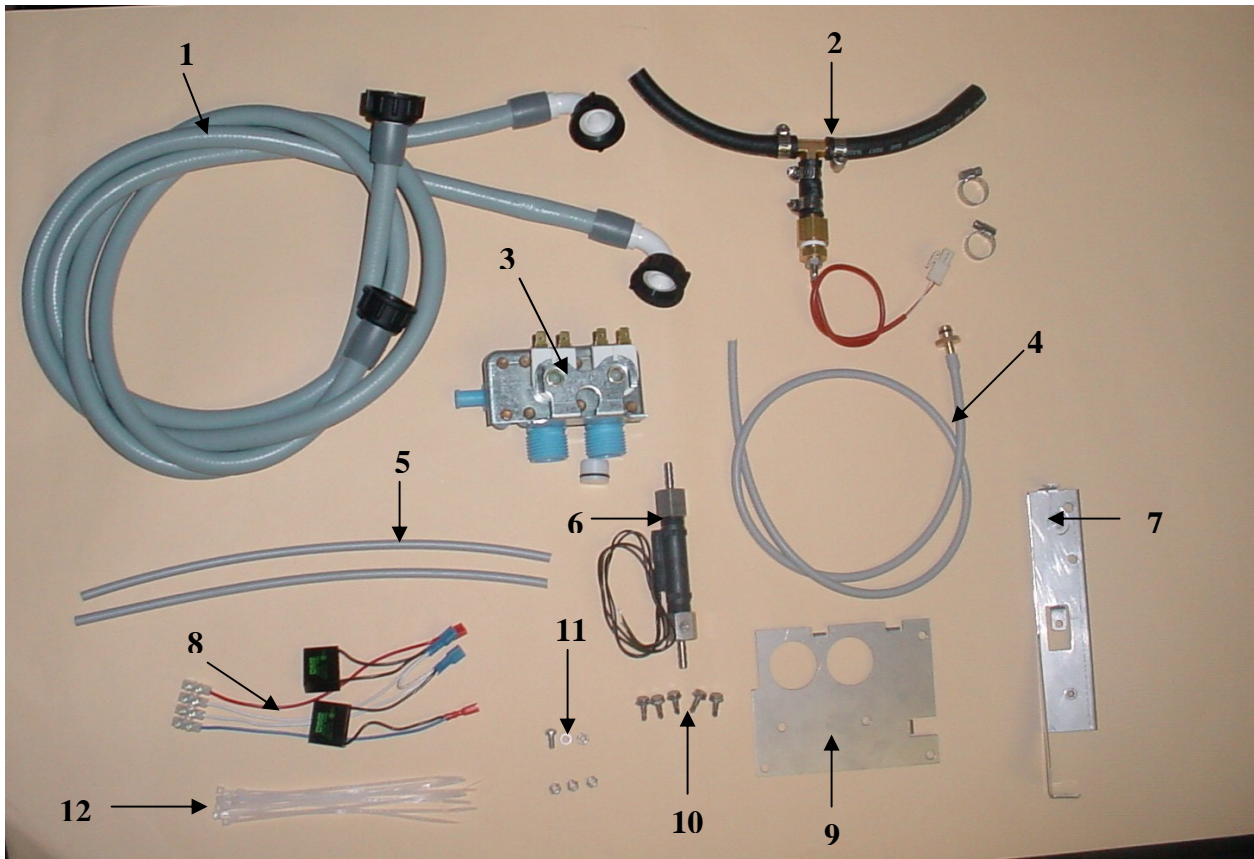
Item #	Part#	Description
1	16945.00	Door Lock Handle
2	13475.03	Controller Master



Item #	Part#	Description
1	13475.04	Controller Slave



**Preventative Maintenance Kit  
Part #01-109707S**



Item #	Description
1	Inlet tubing's for hot and cold water
2	Tubing assembly with sensor from inlet valve block to sidebag
3	Water inlet valve block
4	Vent tubing for top of sidebag
5	Tubing's from flow switch to dosing pump and dosing pump to chamber
6	Flow switch
7	Flow switch mounting bracket
8	Wiring harness for new valve block
9	Plate for water inlet valve block
10	Screws to mount valve block plate
11	Hardware to mount flow switch
12	Tie wraps for wiring harness