CUSTOMER SUPPORT

LXn-SERIES DISHWASHERS

MODELS
LXnC
LXnH
LXnR

LXGnPR
LXGnR

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FORM 41374 (February 2026)

IMPORTANT FOR YOUR SAFETY

THIS MANUAL WAS PREPARED FOR EXPERIENCED, TRAINED PROFESSIONALS AND SHOULD NOT BE USED BY ANYONE ELSE. BEFORE SERVICING EQUIPMENT OR USING THIS MANUAL, YOU MUST FULLY REVIEW YOUR PRODUCT'S SAFETY AND INSTRUCTION MANUAL, WHICH MUST BE FOLLOWED IN ALL RESPECTS. ALL EQUIPMENT REFERENCED HEREIN SHOULD ONLY BE OPERATED, MAINTAINED, AND/OR SERVICED BY EXPERIENCED, TRAINED PROFESSIONALS. PLEASE REVIEW YOUR PRODUCT'S WARRANTY STATEMENT PRIOR TO ANY SERVICE OR REPAIRS BEING PERFORMED, AS IMPROPER REPAIRS MAY VOID THE WARRANTY.

THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL GAS EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD START-UP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.

POST IN A PROMINENT LOCATION THE INSTRUCTIONS TO BE FOLLOWED IN THE EVENT THE SMELL OF GAS IS DETECTED. THIS INFORMATION CAN BE OBTAINED FROM THE LOCAL GAS SUPPLIER.

IMPORTANT

IN THE EVENT A GAS ODOR IS DETECTED, SHUT DOWN UNITS AT MAIN SHUTOFF VALVE AND CONTACT THE LOCAL GAS COMPANY OR GAS SUPPLIER FOR SERVICE.

FOR YOUR SAFETY

DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

FOR YOUR SAFETY
READ BEFORE OPERATING

DO NOT USE THIS APPLIANCE IF ANY PART HAS BEEN UNDER WATER. IMMEDIATELY CALL A QUALIFIED SERVICE TECHNICIAN TO INSPECT THE APPLIANCE AND TO REPLACE ANY PART OF THE CONTROL SYSTEM AND ANY GAS CONTROL WHICH HAS BEEN UNDER WATER.

IN THE EVENT OF A POWER FAILURE, DO NOT ATTEMPT TO OPERATE THIS DEVICE.

⚠ WARNING

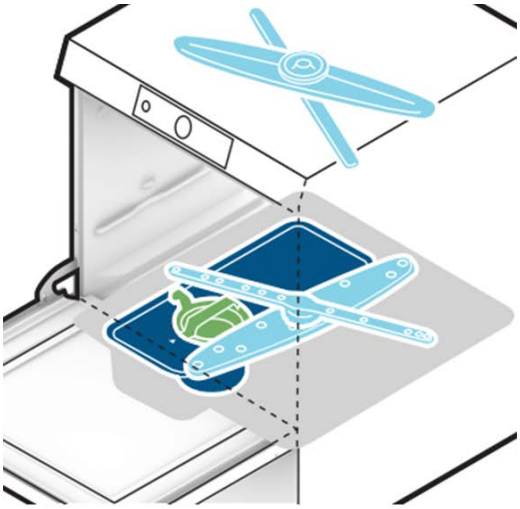
DISCONNECT THE ELECTRICAL POWER TO THE MACHINE AND FOLLOW LOCKOUT / TAGOUT PROCEDURES. THERE MAY BE MULTIPLE CIRCUITS. BE SURE ALL CIRCUITS ARE DISCONNECTED.

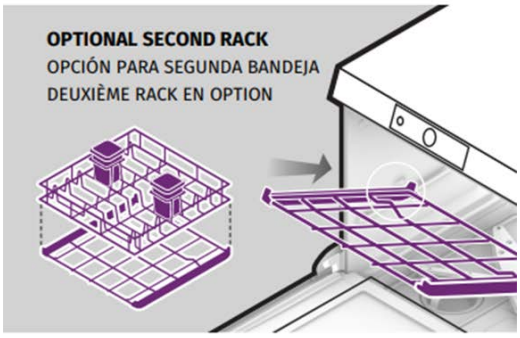
TABLE OF CONTENTS

OPERATION

INTERNAL DISH MACHINE COMPONENTS

Ensure all internal dish machine components shown below are properly installed. If components are not properly installed, issues such as splash out, poor wash results, or improper operation may occur.



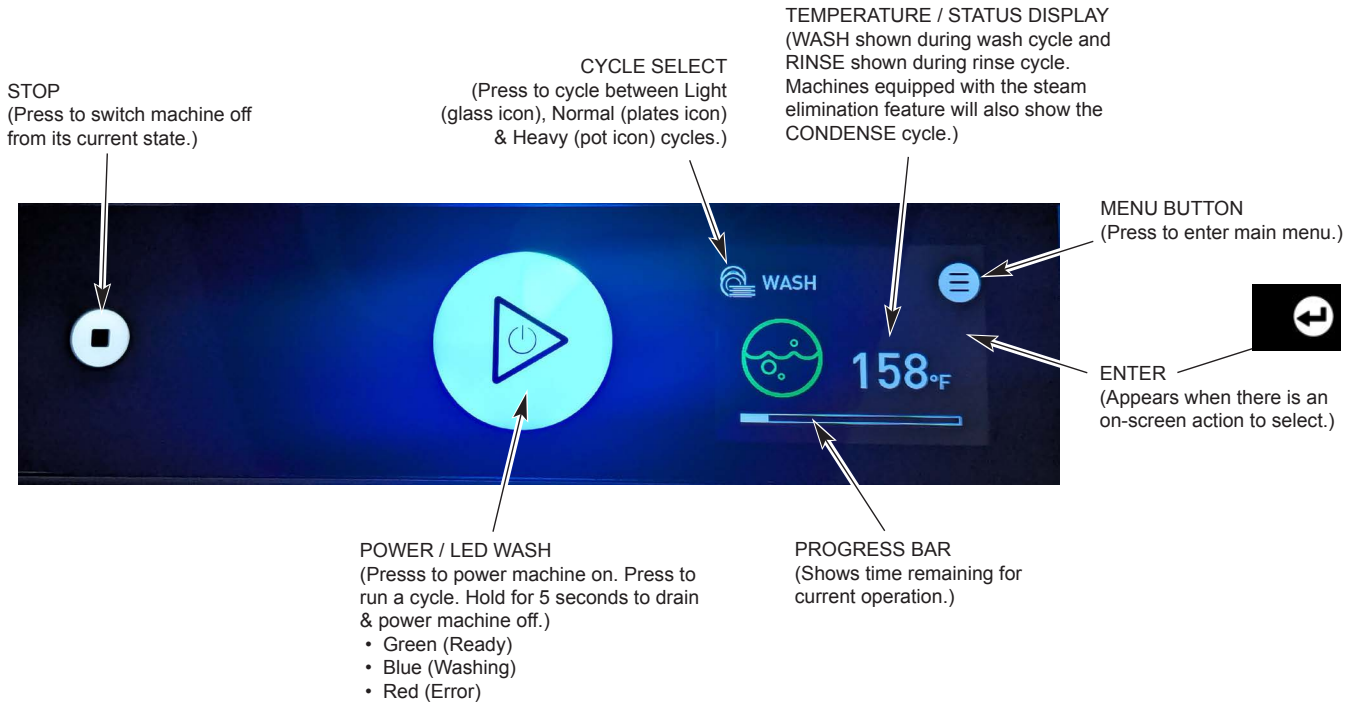


1. Ensure the strainer pan and strainer basket are clean and properly installed in the machine. When installing the strainer basket, ensure the basket is in the 'locked' position by rotating the basket clockwise.
2. Ensure both upper and lower wash and rinse arms rotate freely and are free of any obstructions.

HMI AND DISPLAY

The controls are mounted on the front of the machine.

NOTE: To enter the Manager Menu, enter code 1001. Refer to the Programming section on page 60 for more information.



COMMON INSPECTION INQUIRIES

Below are common inquiries that arise regarding code compliance from health and plumbing inspectors pertaining to dish machines.

Checking Dish Machine Temperature

Refer to the data label located on the lower front panel for minimum temperature requirements for the wash and final rinse temperatures. Below are the NSF guidelines for checking temperatures in dishwashing machines taken from the NSF Recommended Field Evaluation Procedures for Commercial Warewashing Machines document.

1. Heat accumulation on dishes over a period of time in hot water sanitizing machines, not merely a single temperature, achieves proper sanitization. Therefore, each of the wash, power rinse (on some machines), and final rinse cycles must be operating at its proper temperature. For hot water sanitizing machines, the following should be determined:
   a. No deposits (e.g., lime, napkins, etc.) on the heating elements.
   b. On gas-heated machines, tank gas heater jets are not obstructed.
   c. No excessive ventilation in the removal of steam and condensation.

2. Unless the machine has been used just prior to testing, it should be run through at least two complete wash and final rinse cycles before temperature readings are taken. On conveyor machines, this is done by running a rack through the machine twice.

3. The temperatures of wash water and pumped rinse water are taken directly from the tanks of the machines. As standard practice, the temperature of the water during the final rinse cycle should be taken at the inlet manifold.

4. Maximum-registering thermometers or thermo-labels (paper thermometers that change color when reaching specified temperatures) may be used to confirm the effectiveness of heat sanitization. **For hot water sanitizing machines, a reading of 160° F at the dish level, measured using a maximum registering or paper thermometer, is an indication of satisfactory sanitization.**

5. To give an accurate reading, the maximum registering thermometer should be attached in a vertical position to the machine. Rubber bands or clips may be used to hold the thermometer in place. The thermometer should also be removed from any case or guard when used. Thermo-labels are attached by pressure-sensitive adhesive tape to a clean, dry china plate.

6. Although absolute accuracy cannot be expected from thermometers, a variation of 1 to 2° F in either direction is acceptable.

Pumped Final Rinse System – Pressure Gauge Not Required

The FDA Food Code and NSF/ANSI Standard 3 for Commercial Warewashing Equipment require pressure gauges for machines that utilize line pressure sanitizing rinses. However, NSF/ANSI 3 goes on to state, “A pressure gauge is not required for non-recirculating pumped sanitizing rinses, recirculated sanitizing rinses, post-sanitizing rinses, or auxiliary rinses.”

In addition, the 2022 FDA Food Code includes the following wording:

4-204.118 Warewashing Machines, Flow Pressure Device

(A) WAREWASHING machines that provide a fresh hot water SANITIZING rinse shall be equipped with a pressure gauge or similar device such as a transducer that measures and displays the water pressure in the supply line immediately before entering the WAREWASHING machine; and

(B) If the flow pressure measuring device is upstream of the fresh hot water SANITIZING rinse control valve, the device shall be mounted in a 6.4 millimeter or one-fourth inch Iron Pipe Size (IPS) valve.

(C) Paragraphs (A) and (B) of this section do not apply to a machine that uses only a pumped or recirculated SANITIZING rinse.

All Hobart LXn commercial dish machines utilize a pumped final sanitizing rinse and produce a uniform spray pattern regardless of the incoming water pressure. For that reason, they are not required to have a pressure gauge.

Backflow Prevention

The Hobart LXn series commercial dishwashers are NSF Certified and meet the requirements of NSF 3 for Commercial Warewashing Equipment. NSF 3 requires backflow protection as follows:

Water Supply Protection

5.9.2 Water inlets intended to be connected to a water supply system under pressure shall be equipped with at least one of the following backflow prevention devices:

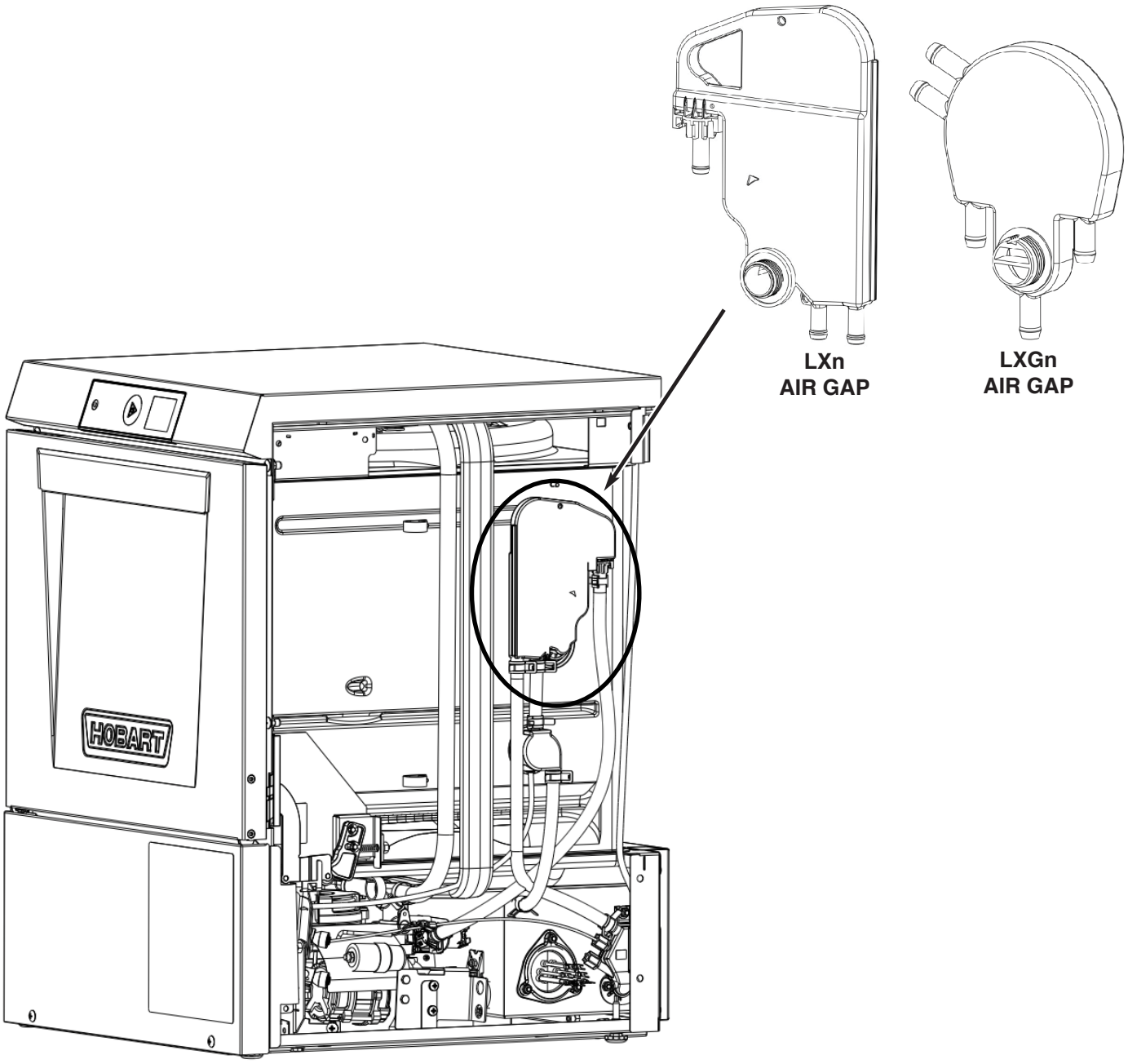
- an air gap that is:
  - installed in accordance with ANSI/ASSE 1004: *Commercial Dishwashing Machines*;
  - located on the outside of the machine wash and rinse chamers;
  - positioned above the overflow rim;
  - protected against suds, spray, splash and flooding; and
  - sized at least twice the diameter of the water supply inlet, but not < 1.0 in (25 mm).

  NOTE — Air gap need not be readily visible from the outside of the machine.

or

- a vacuum breaker that complies with ANSI/ASSE 1001, *Atmospheric Type Vacuum Breakers* (for intermittent pressure conditions), and is installed in accordance with ANSI/ASSE 1004: *Performance Requirements for Commercial Dishwashing Machines*.

The LXn series dish machines are provided with an air gap mounted on the right side of the chamber where the water fills the tank. An illustration of this component is shown below. This air gap fixture has been tested and approved by NSF International as evidenced by the Certification Mark on the machines. Therefore, additional backflow protection is not required for the LXn series dish machines.


LXn
AIR GAP
LXGn
AIR GAP
HOBART

DELIMING

Delime Notification Setup

The LXnH, LXnC, and LXGnPR models have the ability to notify the operator when to delime based on a set number of cycles ran. The factory default for the number of cycles until the delime reminder notification is displayed is 2000. Refer to the PROGRAMMING section of this manual on page 62 to set the number of cycles until the delime notification is displayed.

The LXnR and LXGnR models have the ability to notify the operator when to delime based on the incoming water hardness and dish machine usage. The factory default for water hardness is 7 grains per gallon. Refer to the PROGRAMMING section of this manual on page 62 to set the water hardness based on actual water conditions.

Manual Delime Procedure (Models LXnH, LXnC and LXGnPR)

The machine will prompt the operator when to delime based on the water hardness and machine usage. When prompted, the display will read 'Delime Required. Start Delime Cycle?'. If ready to delime, press either arrow button to highlight Yes and press the Enter button. Press the Enter button on No to delime the machine later. If Yes is selected, proceed to Step 3 below. Start the process at Step 1 if initiating the manual delime process without the prompt. If No is selected, the machine will continue to notify the operator at each start-up and power down until the delime cycle is completed.

1. Press the Menu button and scroll down until Delime Program is highlighted. Press the Enter button.

2. The display will prompt 'Start Delime Cycle?'. Press either arrow button to highlight Yes and press the Enter button.

3. Display will prompt 'Please clean strainer'. Open the machine door and remove the dish rack, strainer basket and strainer pan. Clean the basket and pan in a sink with a mild detergent and rinse.

4. Replace the strainer pan and strainer basket in the machine and ensure the basket is in the locked position.

5. Close the machine door and press the Enter button. The machine will drain. Once the machine has drained, the display will prompt 'Please add delime'. Open the machine door and pour the required amount of delime chemical into the wash tank according to the chemical suppliers' recommendation for a 2.9-gallon wash tank and close the door.

6. Once the door is closed, press the Enter button. The tank will fill with fresh water. Once filled, the unit will begin a 10-minute wash cycle. **NOTE:** The Enter button will not appear on the display until the door is opened and closed.

7. After the 10-minute wash cycle, the machine will drain and re-fill with fresh water. Once filled, the unit will begin a 1-minute wash cycle to flush any remaining delime chemical residue.

8. After the 1-minute wash cycle, the machine will drain and power down.

   NOTE: During the delime cycle, 'DELIME' will appear on the display when not being prompted for user interface.

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Auto Delime Procedure (Models LXnR and LXGnR)

The machine will prompt the operator when to delime based on the water hardness and machine usage. When prompted, the display will read 'Delime Required. Start Delime Cycle?'. If ready to delime, press either arrow button to highlight Yes and press the Enter button. Press the Enter button with No highlighted to delime the machine later. If Yes is selected, proceed to Step 3 below. Start process at Step 1 if initiating the auto delime process without the prompt. If No is selected, the machine will continue to notify the operator at each start-up and power down until the delime cycle is completed.

NOTE: The machine will automatically pump delime solution into the dish machine during the auto delime cycle. Ensure sufficient chemical is present in the bottle and standpipe is fully inserted into bottle.

1. Press the Menu button and scroll down until the Delime Program is highlighted. Press the Enter button.
2. The display will prompt 'Start Delime Cycle?'. Press either arrow button to highlight Yes and press the Enter button.
3. The display will prompt 'Please clean strainer'. Open the machine door and remove the dish rack, strainer basket and strainer pan. Clean the basket and pan in a sink with a mild detergent and rinse.
4. Replace the strainer pan and strainer basket in the machine and ensure the basket is in the locked position.
5. Close the machine door and press the Enter button. DELIME will be displayed and the machine will drain. Once the machine has drained, the machine will begin to re-fill with fresh water and automatically add delime solution as the unit fills.
6. Once the unit has filled and delime solution has been added, the unit will begin a 10-minute wash cycle.
7. After the 10-minute wash cycle, the machine will drain and re-fill with fresh water. Once filled, the unit will begin a 1-minute wash cycle to flush any remaining delime chemical residue.
8. After the 1-minute wash cycle, the machine will drain and power down.

HOBART SMARTCONNECT APP

The LXn controls include built-in Wi-Fi, which allows you to connect your LXn commercial dishwasher to our easy to-use smart phone app. With the free Hobart SmartConnect app, you can receive email alerts and details for any machine errors and view machine configuration, consumption and usage information.

Scan the QR Code to download the app:

Getting Connected

Registering an Account

1. Open the app and tap on Register.
2. Enter your email and tap Send Verification Code. Then enter the code you receive in your email.
3. Provide the remaining information, including a password.
4. Tap Create.
5. Read and agree to the End User License Agreement and Privacy Policy. Tap Confirm when you are done.

   You can now use the app to connect to WiFi and pair your machine.

Connecting the LXn to WiFi from the SmartConnect App

1. Tap on the Menu button, then tap on the Wi-Fi button.
2. Tap on Connect for Hobart.
3. Follow the guide in the app to prepare the machine for connection.
4. Tap on Confirm Instructions and tap Yes if the machine is ready for connection.
5. The machine will generate a code; enter this into the app and it will connect with the machine.
6. A list of available networks will be displayed. Select the network you want to connect with and enter the network password if necessary.
7. When the Wi-Fi connection is successful, the machine will indicate success and display an access code to pair with the app.
8. From the main screen of the app, tap on the Menu button, then tap on the + button and enter the access code to pair with the machine.

Connecting the LXn to Wi-Fi from the Machine

1. Tap on the Menu button, select Manager Menu, enter pin 1001 and press Enter.
2. Scroll to Wi-Fi and press Enter.
3. Scroll and select Connection Assistant.

4. Scroll and select Search Network.
5. Scroll and select the available network you wish to connect to.
6. Enter the password for your network, then tap OK.
7. The machine will connect to your network, transfer data to the SmartConnect Cloud and display a connection code for the app.

If your machine won't connect to the Wi-Fi, go to our FAQs at **www.itwfoodequipment.com/smartconnect365/help** to troubleshoot your connection.

To Pair and Add your LXn to the App

Before pairing, make sure your machine is connected to WiFi using the previous steps. To pair your Hobart LXn to the SmartConnect App:

From the Dishmachine

1. Tap on the Menu button to enter the manager menu on your dish machine.
2. Select Manager Menu, enter pin 1001 and press Enter.
3. Scroll and select Wi-Fi.
4. Scroll and select Access Code.
5. An activation code will be generated and displayed. This code is valid for 48 hours.

From the App

1. Tap on the + button at the bottom of the machine list.
2. Enter the activation code found in the manager menu of the machine's touchscreen, then tap Submit.
3. Select your service provider from the drop-down menu.
4. Tap Finish. Your machine will now appear in the machine list on the home screen of the app.

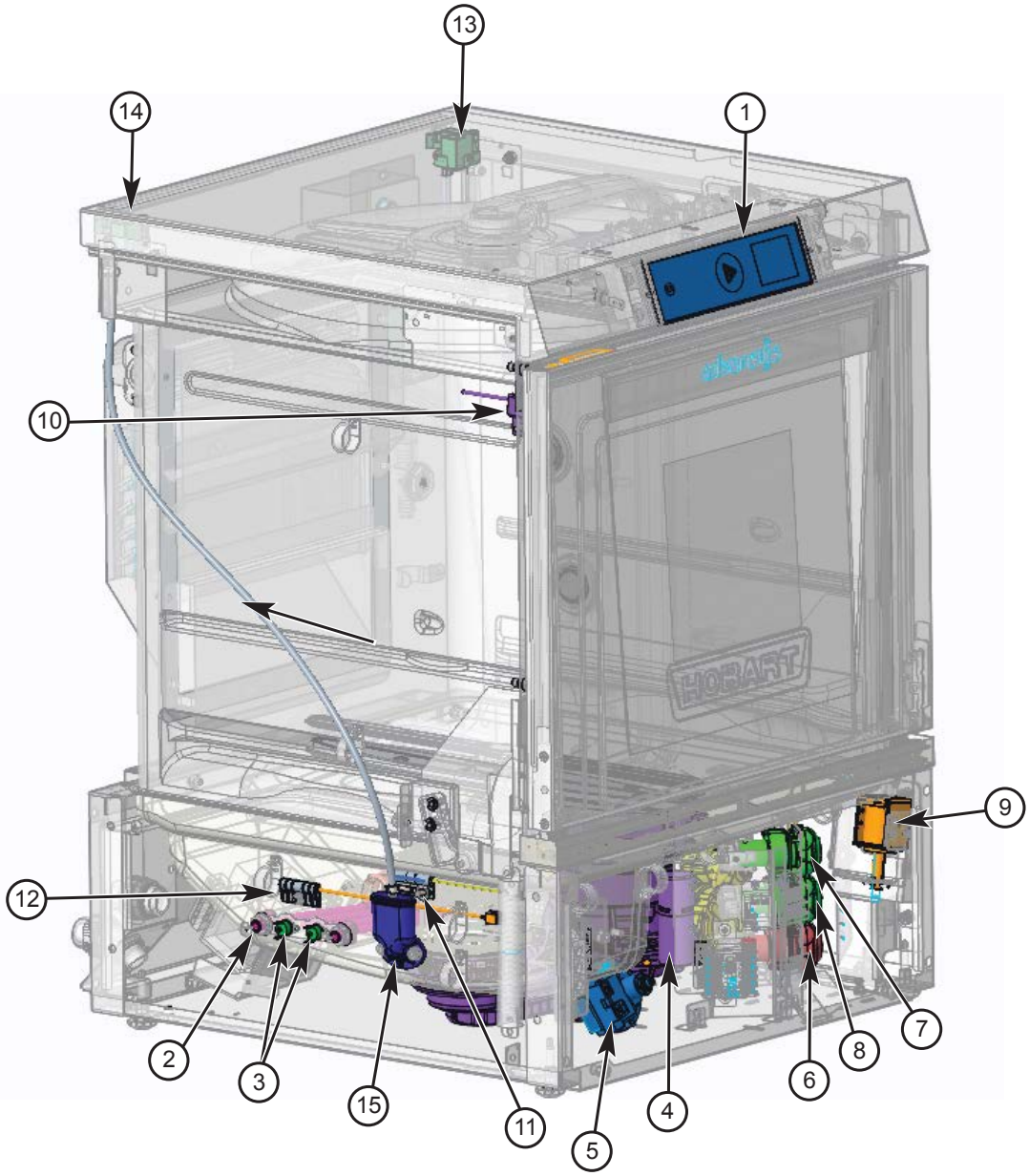
For more information about SmartConnect, including usage instructions, troubleshooting for your WiFi connection and other general questions, visit the SmartConnect Help and FAQ guide at **www.itwfoodequipment.com/smartconnect365/help**.

NOTE: Errors will only be visible for viewing and troubleshooting if there is an active error for a paired machine. If the machine is in normal operational state, the error page will not be available to view for the machine.

SERVICE

COMPONENT LAYOUT

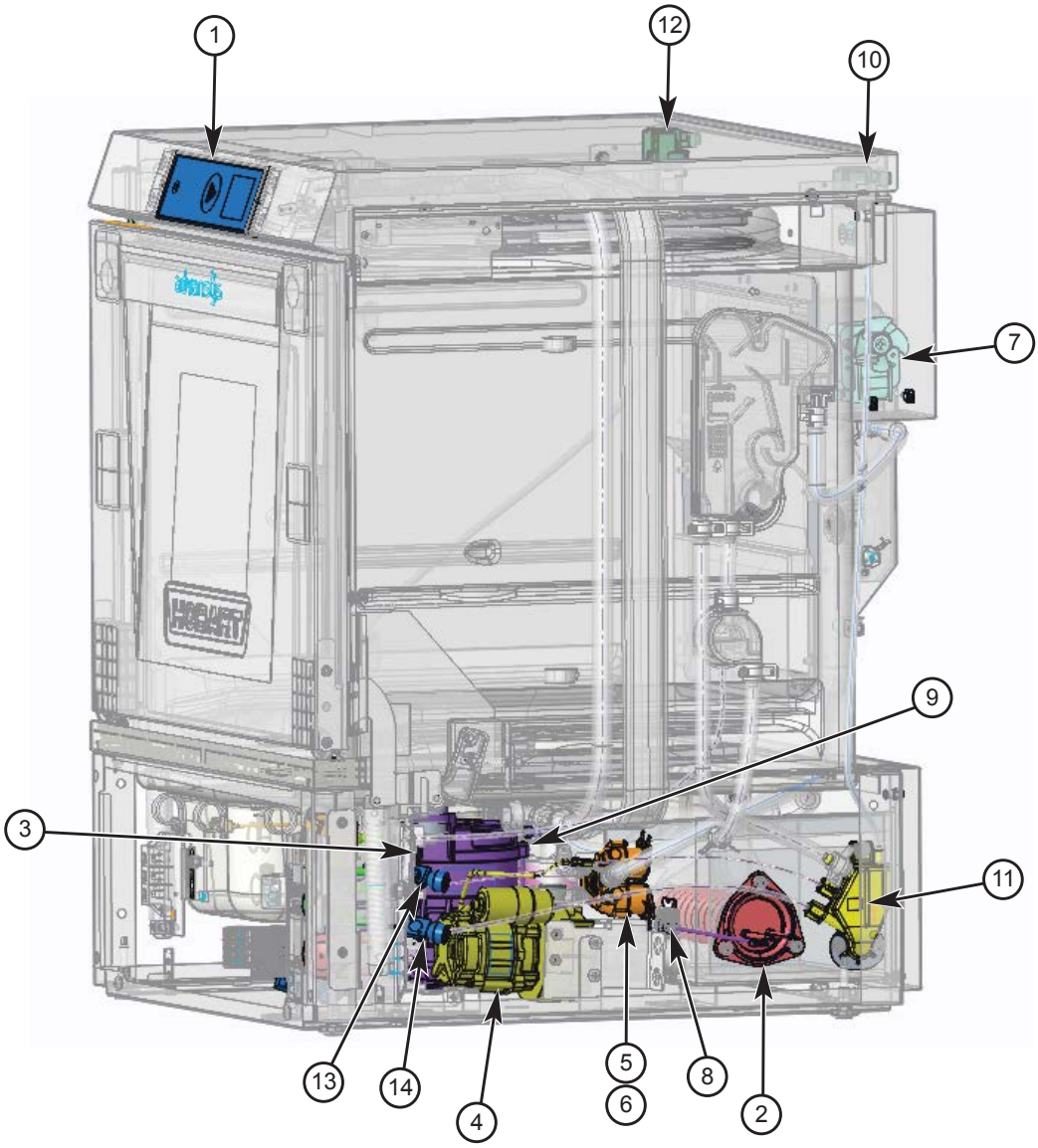
LXnH / LXnR



LXnR MODEL SHOWN

LXnH / LXnR		
Number	**Name / Electrical Callout**	**Function**
1	HMI (Display)	Visual display and interface that shows machine operation and programming.
2	Wash Tank Heater, 1.8KW (HTR1)	Heats water in wash tank.
3	Wash Tank Overtemp (TAS1/ TAS2)	Wash tank high temperature protection.
4	Wash Pump (MTR1)	Recirculates wash water in wash tank.
5	Drain Pump (MTR3)	Pumps the wash water out of the tank.
6	Delime Pump (MTR6)	Pumps delime solution into machine.
7	Detergent Pump (MTR7)	Pumps detergent into machine.
8	Rinse Aid Pump (MTR8)	Pumps rinse aid into machine.
9	Door Lock Solenoid (SOL3)	Engages door lock during cycle. (Advansys ventless models only)
10	Door Switch (LS1)	Detects door open or closed and prevents machine from running if door is opened.
11	Tank Strainer Switch (LS2)	Detects if wash tank strainer basket is missing or improperly installed.
12	Wash Tank Thermistor (QTM1)	Monitors temperature in wash tank.
13	Booster Pressure Sensor (PRS2)	Supplies volt reading for water level in booster tank.
14	Wash Tank Pressure Sensor (PRS1)	Supplies volt reading for water level in wash tank.
15	Wash Tank Air Trap	Provides input to pressure sensor for wash tank water level.

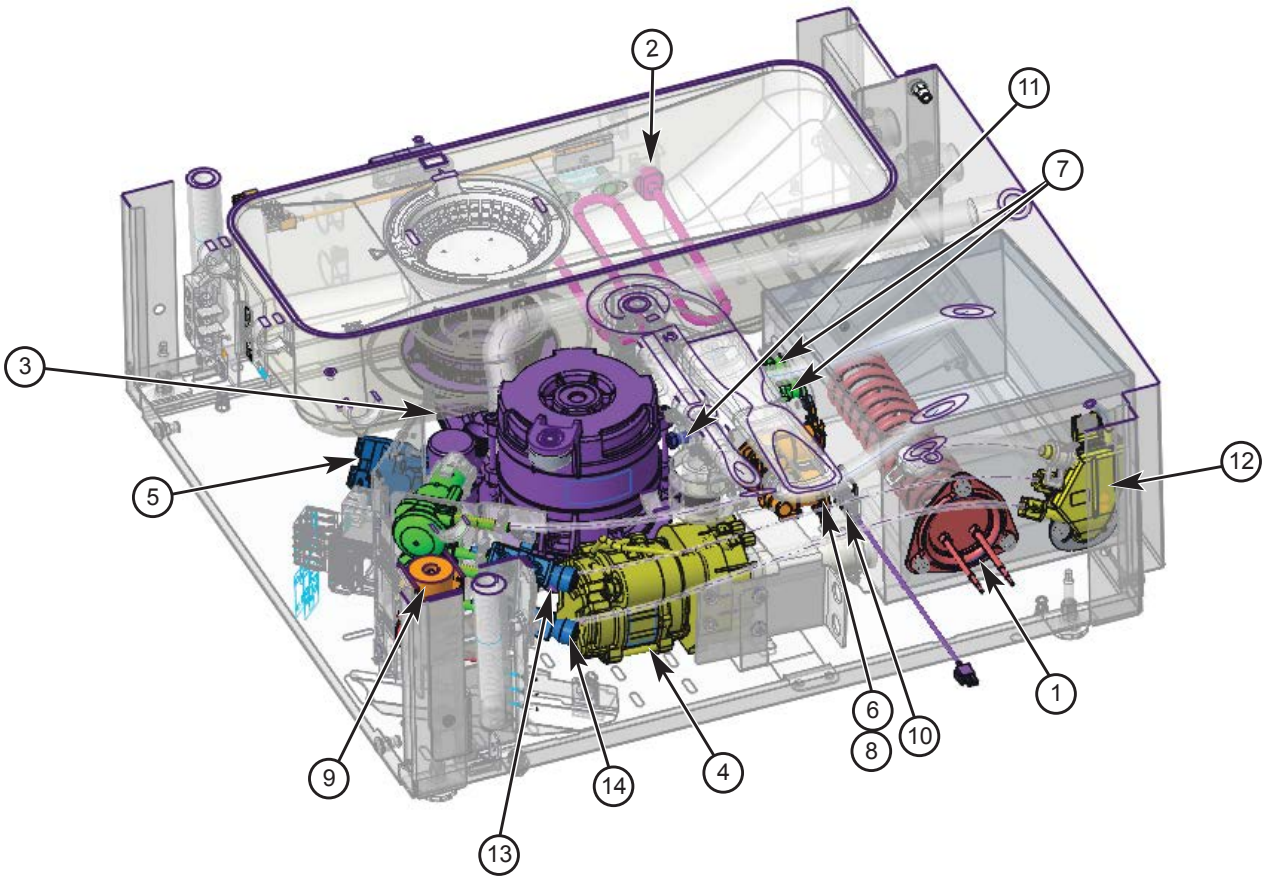
LXnH / LXnR



LXnR MODEL SHOWN

LXnH / LXnR		
Number	**Name / Electrical Callout**	**Function**
1	HMI (Display)	Visual display and interface that shows machine operation and programming.
2	Booster Heater Element, 4.9KW (HTR2)	Heats water in booster tank for final rinse cycle.
3	Wash Pump (MTR1)	Recirculates wash water in wash tank.
4	Rinse Pump (MTR2)	Pumps water from the booster heater through the final rinse system.
5	Booster Fill Valve (SOL1)	Supplies water to the booster tank.
6	Drain Water Tempering Valve (SOL2)	Allows cold water to enter the drain to cool drain water. (Only equipped if DWT kit is field installed.)
7	Ventless Fan (MTR5)	Pulls hot air/steam from wash chamber after rinse cycle. (Advansys ventless models only)
8	Booster Thermistor (QTM2)	Monitors temperature in booster tank.
9	Final Rinse Thermistor (QTM3)	Monitors final rinse temperature.
10	Booster Pressure Sensor (PRS2)	Supplies volt reading for water level in booster tank.
11	Booster Air Trap	Provides input to pressure sensor for booster tank water level.
12	Wash Tank Pressure Sensor (PRS1)	Supplies volt reading for water level in wash tank.
13	Detergent Chemcial Sensor (CHS2)	Detects if detergent is present.
14	Rinse Aid Chemical Sensor (CHS1)	Detects if rinse aid is present.

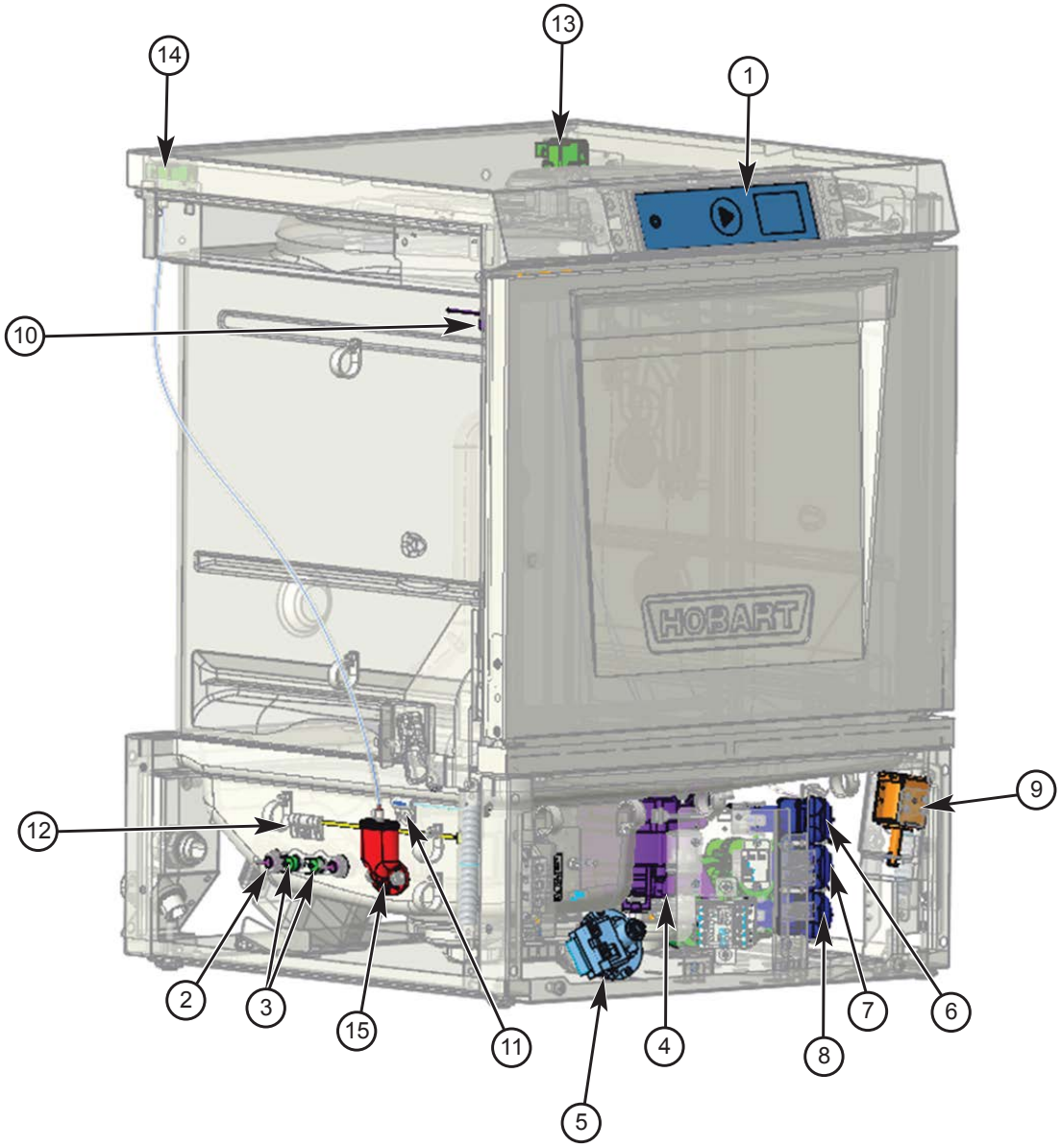
LXnH / LXnR



LXnR MODEL SHOWN

LXnH / LXnR		
Number	**Name / Electrical Callout**	**Function**
1	Booster Heater Element, 4.9KW (HTR2)	Heats water in booster tank for final rinse cycle.
2	Wash Tank Heater, 1.8KW (HTR1)	Heats water in wash tank.
3	Wash Pump (MTR1)	Recirculates wash water in wash tank.
4	Rinse Pump (MTR2)	Pumps water from the booster heater through the final rinse system.
5	Drain Pump (MTR3)	Pumps the wash water out of the tank.
6	Booster Fill Valve (SOL1)	Supplies water to the booster tank.
7	Booster Overtemp (TAS3/ TAS4)	Booster heater high temperature protection.
8	Drain Water Tempering Valve (SOL2)	Allows cold water to enter the drain to cool drain water. (Only equipped if DWT kit is field installed.)
9	Door Lock Solenoid (SOL3)	Engages door lock during cycle. (Advansys ventless models only)
10	Booster Thermistor (QTM2)	Monitors temperature in booster tank.
11	Final Rinse Thermistor (QTM3)	Monitors final rinse temperature.
12	Booster Air Trap	Provides input to pressure sensor for booster tank water level.
13	Detergent Chemcial Sensor (CHS2)	Detects if detergent is present.
14	Rinse Aid Chemical Sensor (CHS1)	Detects if rinse aid is present.

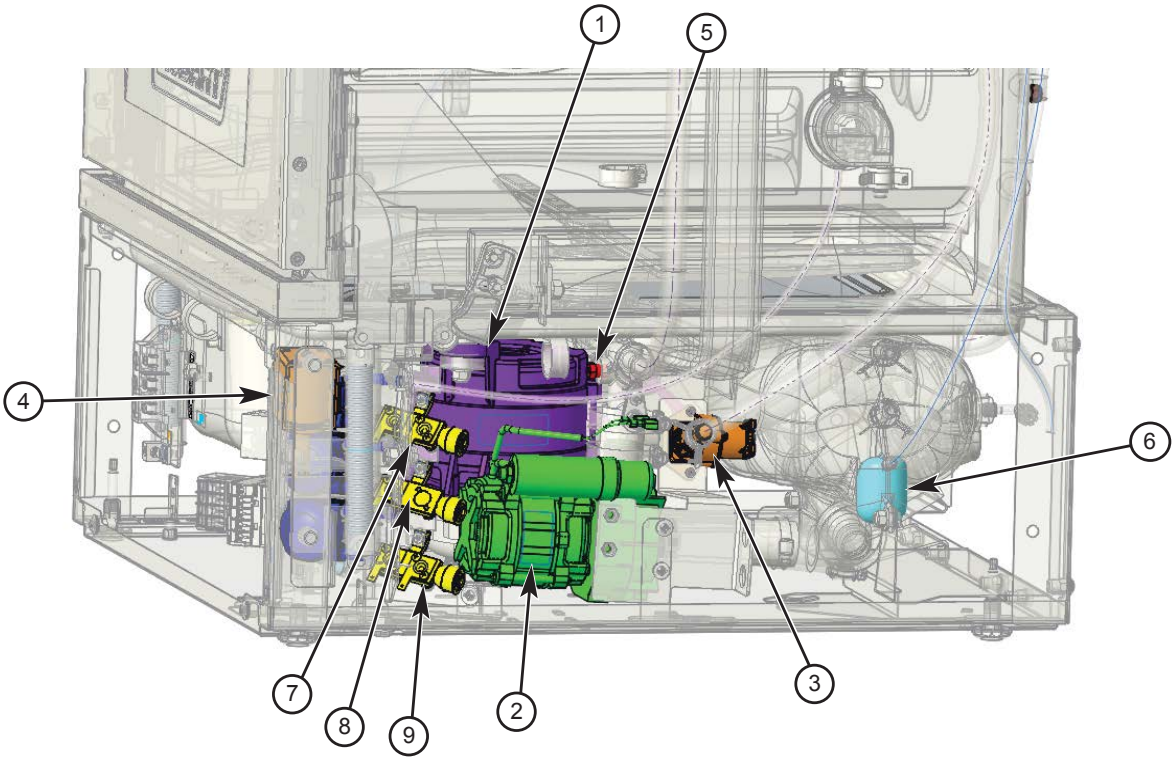
LXnC



LXnC MODEL SHOWN

LXnC		
Number	**Name / Electrical Callout**	**Function**
1	HMI (Display)	Visual display and interface that shows machine operation and programming.
2	Wash Tank Heater, 1.35KW (HTR1)	Heats water in wash tank.
3	Wash Tank Overtemp (TAS1/ TAS2)	Wash tank high temperature protection.
4	Wash Pump (MTR1)	Recirculates wash water in wash tank.
5	Drain Pump (MTR3)	Pumps the wash water out of the tank.
6	Detergent Pump (MTR7)	Pumps detergent into machine.
7	Rinse Aid Pump (MTR8)	Pumps rinse aid into machine.
8	Sanitizer Pump (MTR9)	Pumps sanitizer into machine.
9	Door Lock Solenoid (SOL4)	Engages door lock during cycle (field installed kit).
10	Door Switch (LS1)	Detects door open or closed and prevents machine from running if door is opened.
11	Tank Strainer Switch (LS2)	Detects if wash tank strainer basket is missing or improperly installed.
12	Wash Tank Thermistor (QTM1)	Monitors temperature in wash tank.
13	Holding Tank Pressure Sensor (PRS2)	Supplies volt reading for water level in booster tank.
14	Wash Tank Pressure Sensor (PRS1)	Supplies volt reading for water level in wash tank.
15	Wash Tank Air Trap	Provides input to pressure sensor for wash tank water level.

LXnC



LXnC MODEL SHOWN

LXnC		
Number	**Name / Electrical Callout**	**Function**
1	Wash Pump (MTR1)	Recirculates wash water in wash tank.
2	Rinse Pump (MTR2)	Pumps water from the booster heater through the final rinse system.
3	Fill Valve (SOL1)	Supplies water to the booster tank.
4	Door Lock Solenoid (SOL4)	Engages door lock during cycle (field installed kit).
5	Final Rinse Thermistor (QTM3)	Monitors final rinse temperature.
6	Holding Tank Air Trap	Provides input to pressure sensor for holding tank water level.
7	Detergent Chemcial Sensor (CHS2)	Detects if detergent is present.
8	Rinse Aid Chemical Sensor (CHS1)	Detects if rinse aid is present.
9	Sanitizer Chemical Sensor (CHS3)	Detects if sanitizer is present.

WIRING DIAGRAMS

The LXn dish machine wiring diagrams are located behind the lower front panel.

For .PDF files of all LXn wiring diagrams, scan the below QR code or visit **https://warewash.hobartcorp.com/lxnwiringdiagrams**.

⚠ WARNING

Disconnect the electrical power to the machine and follow lockout / tagout procedures. There may be multiple circuits. Be sure all circuits are disconnected.

SEQUENCE OF OPERATION

Machine Off – Display Not Lit

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Initial Conditions

- Doors up (Door interlock LS1 open)
- Wash tank empty (pressure sensor at 0.5 V)
- Water supply requirements:
  - LXnH models (110° F @ 15-65 PSI)
  - LXnR models (55° F @ 15-65 PSI)
  - LXnC models (120° F @ 15-65 PSI)
- Voltage supplied to machine is correct.
- Heater high limits are closed.

MACHINE IS OFF – DISPLAY IS NOT LIT

1. Line voltage present at the following components:
   a. Primary windings of transformer T1.
   b. J3.1 to F1.
   c. J3.3 to F2.
2. 120VAC from transformer T1 present at the following components:
   a. Neutral at TB3.5 and J3.5 of the control board.
   b. 120V present at J3.7, F3 fuse.
3. 9VAC from F4 fuse to neutral.
   a. 5VDC and 12VDC present at test points.
4. LED25 will be flashing and LED26 will always be on.

"On" Key Pressed

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

POWER BUTTON ON TOUCH SCREEN IS PRESSED

1. Display will be lit.
   a. Machine will begin fill cycle.

Fill Cycle (Empty Tank)

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

This is the fill cycle for when the machine has little to no water inside the sump.

Fill / Preheat Cycle

1. Fill displayed with door closed.
   a. LS1 door interlock closed.
   b. Tank strainer interlock LS2 closed.
2. Control board energizes K7 which energizes drain pump MTR3 for a 5-second pulse.
   a. Control board de-energizes K7 which de-energizes rinse pump MTR3 for a 5-second dwell.
   b. The control board re-energizes K7 which energizes drain pump MTR3 for a 5-second pulse.
   c. The control board de-energizes K7 which de-energizes drain pump MTR3.
3. Control board energizes K5 which energizes solenoid SOL1.
4. Booster tank begins to fill.
   a. Once booster reaches .74 V, control board energizes K8 which energizes CON1, energizing booster heating element HTR2.
   b. Booster will fill until 0.90 V.
   c. Control board de-energizes K5 which de-energizes solenoid SOL1 once 0.90 V setting is reached.
   d. Booster will continue heating until it reaches 100° F (38° C).
   e. Control board de-energizes K8 which de-energizes CON1, de-energizing HTR2.

5. Control board energizes K3 which energizes rinse pump MTR2.
   a. MTR2 runs for 15 seconds.
      1) At this point, the sump tank is being filled through the booster.
   b. Control board de-energizes K3 which de-energizes rinse pump MTR2.
6. Steps 3 – 5 are repeated until tank has reached 0.84 V.
7. Once tank has reached 0.60 V, control board energizes K9 which energizes contactor CON2, energizing sump heater HTR1.
8. Tank will continue heating until 154° F (68° C). For LXnC and LXGnPR machines, the tank will continue heating until 130° F (54° C).
9. Fill is now complete; wash temperature will be displayed, "Ready" will display when tank is above 151° F (66° C).
   a. For LXnC and LXGnPR machines, tank will display ready at 120° F (49° C).

   NOTE: HTR1 will continue to stay on, even after machine is ready. The tank will heat to 154° F (68° C) for LXnH and LXnR and 130° F (54° C) for LXnC and LXGnPR machines even though it says ready.

   NOTE: If tank or booster fail to reach ready temperature or water level set points, a FILL ERROR will occur.

   NOTE: A wash cycle may be started once display bar on HMI is full.

   NOTE: LXnC and LXGnPR machines do not have booster heating element HTR2.

Fill Cycle – Full Tank Hot Water

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

This is the fill cycle for when the machine detects water in the tank and the water is at a hot temperature.

Fill / Preheat Cycle

1. Fill displayed with door closed.
   a. LS1 door interlock closed.
   b. Tank strainer interlock LS2 closed.
2. Control board energizes K5 which energizes solenoid SOL1.
3. Booster tank begins to fill.
   a. Once booster reaches 0.74 V, control board energizes K8 which energizes CON1, energizing booster heating element HTR2.
   b. Booster will fill until 0.90 V.
   c. Control board de-energizes K5 which de-energizes SOL1 once 0.90 V setting is reached.
   d. Booster will continue heating until it reaches 181° F (83° C).
      1) LXnC and LXGnPR machines do not have booster heating element HTR2.
   e. Control board de-energizes K8 which de-energizes CON1, de-energizing HTR2.
4. Tank will continue heating until 154° F (68° C)
   a. For LXnC and LXGnPR machines, tank will continue heating until 130° F (54° C).
5. Fill is now complete, wash temperature will be displayed, "Ready" will display when tank is above 151° F (66° C).
   a. For LXnC and LXGnPR machines, tank will continue heating until 120° F (49° C).

   NOTE: HTR1 will continue to stay on, even after machine is ready. The tank will heat until 154° F (68° C) for LXnH and LXnR machines and 130° F (54° C) for LXnC and LXGnPR machines even though it says ready.

   NOTE: If tank or booster fail to reach ready temperature or water level set points, a FILL ERROR will occur.

   NOTE: A wash cycle may be started once display bar on HMI is full.

   NOTE: LXnC and LXGnPR machines do not have booster heating element HTR2.

Fill Cycle – Full Tank Cold Water

Refer to wiring diagram for model bing serviced when reviewing sequence of operation.

This is the cycle for when the machine detects water in the tank and the water is at a cold temperature.

Fill / Preheat Cycle

1. Fill displayed with door closed.
   a. LS1 door interlock closed.
   b. Tank strainer interlock LS2 closed.
2. Control board energizes K3 which energizes rinse pump MTR2 for 15 seconds.
3. Control board de-energizes K3, de-energizing rinse pump MTR2.
4. Control board energizes K7 which energizes drain pump motor MTR3 for 50 seconds.
5. Control board de-energizes K7 which de-energizes drain pump motor MTR3.
6. Control board energizes K5 which energizes solenoid SOL1.
7. Booster tank begins to fill.
   a. Once booster reaches 0.74 V, control board energizes K8 which energizes CON1, energizing booster heating element HTR2.
   b. Booster will fill until 0.90 V.
   c. Control board de-energizes K5 which de-energizes SOL1 once 0.90 V setting is reached.
   d. Booster will continue heating until it reaches 100° F (38° C).
   e. Control board de-energizes K8 which de-energizes CON1, de-energizing HTR2.
8. Control board energizes K3 which energizes rinse pump MTR2.
   a. MTR2 runs for 15 seconds.
   b. Control board de-energizes K3, de-energizing rinse pump MTR2.
9. Steps 6 – 8 are repeated until tank has reached 0.84 V.
10. Once tank has reahed 0.60 V, control board energizes K9 wich energizes CON2, energizing sump heater HTR1.
11. Tank will continue heating until 154° F (68° C).
    a. For LXnC and LXGnPR machines, tank will continue heating until 130° F (54° C).
12. Fill is now complete, wash temperature will be displayed, "Ready" will display when tank is above 151° F (66° C).
    a. For LXnC and LXGnPR machines, "Ready" will display when tank is at 120° F (49° C).
    NOTE: HTR1 will continue to stay on, even after machine is ready. The tank will heat until 154° F (68° C) for LXnH and LXnR machines and 130° F (54° C) for LXnC an LXGnPR machines even though it says ready.
    NOTE: If tank or booster fail to reach ready temperature or water level set points, a FILL ERROR will occur.
    NOTE: A wash cycle may be started once display bar on HMI is full.
    NOTE: LXnC and LXGnPR machines do not have booster heating element HTR2.

Booster Temp Reaches Set-Point

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Booster Temp Reaches Set Point

1. Control board K8 de-energizes CON1 coil through the relay board. CON1 contacts open, de-energizing booster heater HTR2.
   a. Booster heat LED 11 on relay board turns on.
   NOTE: LXnC and LXGnPR machines do not have booster heating element HTR2.

Tank Temp Reaches Set-Point

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Tank Temp Reaches Set Point

1. Control board K9 de-energizes CON2 coil through the relay board. CON2 contacts open, de-energizing tank heater HTR1.
   a. TANK HEAT LED 12 on relay board turns on.

Cycle Selection

Refer to wiring diagram for model being serviced when reviewing sequence of operations.

Choosing a Cycle

1. The LXnC allows for Normal (Plate icon) and Heavy (Pot icon) cycles.
   a. Cycles can be selected by the “Cycle Select” icon in the top left corner of the screen.
2. The LXnH allows for Normal (Plate icon) and Heavy (Pot icon) cycles.
   a. Cycles can be selected by the “Cycle Select” icon in the top left corner of the screen.
3. The LXnR allows for Light (Glass icon), Normal (Plate icon) and Heavy (Pot icon) cycles.
   a. Cycles can be selected by the “Cycle Select” icon in the top left corner of the screen.

Wash Cycle

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

1. To begin a wash cycle, press "Play" button.
   a. Door interlock LS1 must be closed.
   b. Tank strainer interlock LS2 must be closed.
   c. WASH LED on relay board turns on.
2. The WASH icon and water temperature are displayed. Progress bar resets.
3. Wash cycle continues for time selected.
   a. Control board energizes K1 allowing Wash Pump MTR1 to run for the selected time.
   b. 8 seconds into the cycle, control board K7 energizes drain pump MTR3 will run for 1.8 seconds.
   c. Control board energizes FET5 on extension card A6, energizing detergent pump MTR7.
      1) After specified duration, control board de-energizes FET5 on extension card A6, de-energizing detergent pump MTR7.
4. Wash cycle completed.
   a. Control board de-energizes K1, de-energizing wash pump contactor CON3 which stops wash pump MTR1.
      1) WASH LED on relay board turns off.
   b. Dishwasher enters a 5 second dwell cycle.
      1) Water level is monitored for 3 seconds followed by control board energizing K7 which energizes drain pump MTR3 for minimum 2 seconds or until specified water level 1.82 V is reached.
      2) If DWT is on machine, control board K10 energizes TB3.5 and TB3.6 will have 120V present. SOL3 will energize for the same duration as the drain pump.
      NOTE: Progress bar will be filled 3/4 after wash cycle is completed.
      NOTE: When drain pump is energized, the DWT valve might have a delay before energizing.

Rinse Cycle Begins

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Rinse Cycle Begins

1. Control board energizes K3 which energizes rinse pump MTR2.
2. The RINSE icon and final rinse temperature are displayed.
3. For LXnC machines, control board energizes FET2 on extension card A6, energizing sanitizer motor MTR9.
5. Rinse cycle continues for the programmed time. Default is 8 seconds.
6. Control board de-energizes K3, de-energizing rinse pump MTR2.

Rinse Cycle Completed

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Rinse Cycle Completed

1. Control board enters 10 second sani-dwell. RINSE icon is displayed until sani-dwell cycle is complete.
2. Progress bar will be full after sani-dwell is complete.
   a. On Ventless models, the progress bar will reset to become a ventless fan progress bar.
3. For LXnC machines, control board de-energizes FET2 on extension card A6, de-energizing sanitizer motor MTR9.
4. Control board energizes K5 which energizes solenoid SOL1 to refill booster.
5. Control board energizes FET3 on extension card A6, energizing rinse aid pump MTR8.
   a. After specified duration, control board de-energizes FET3 on extension card A6, de-energizing rinse aid pump MTR8.
6. Once booster has reached full set point, control board de-energizes K5 which de-energizes solenoid SOL1.
7. Tank heat and booster temperatures continue to be monitored and maintained by the control board through the relay board.
   a. Once booster reaches 0.90 V, control board energizes K8 which energizes CON1, energizing booster heater HTR2.
   NOTE: LXnC and LXGnPR machines do not have booster heating element HTR2.

Condensing Cycle

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Condensing Cycle (ADVANSYS Models Only)

1. Progress bar will reset for ventless cycle duration.
   a. Display will change to show ventless fan.
2. Control board energizes K5 which energizes solenoid SOL1 to refill booster.
3. Control board energizes FET4 on extension card A6, energizing fan motor MTR5.
   a. Fan motor will operate 40 seconds.
4. After motor is done running, control board de-energizes FET4 on extension card A6, de-energizing fan motor MTR5.
5. Once booster has reached full set point, control board de-energizes K5 which will de-energize solenoid SOL1.
6. Ventless progress bar will be full at the end of the condensing cycle.
7. Tank temperature is displayed.

Drain Cycle (Powered Down)

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Drain Cycle

1. Press and hold power button for 5 seconds.
   a. Progress bar will fill up while holding power button.
   b. Drain visual will be displayed on the HMI once progress bar is full.
2. Heating elements shut off.
   a. Control board de-energizes K8 which will de-energize CON1, de-energizing booster heating element HTR2.
   b. Control board de-energizes K9 which will de-energize CON2, de-energizing tank heating element HTR1.
3. Control board K7 energizes drain pump MTR3 which will run for 50 seconds.
4. Control board K7 de-energizes drain pump MTR3.
5. Control board energizes K3 which energizes rinse pump MTR2 for 15 seconds.
6. Control board de-energizes K3 which will de-energize rinse pump MTR2.
7. Control board K7 energizes drain pump MTR3 for an additional 30 seconds.
8. Control board K7 de-energizes drain pump MTR3.
9. Drain pump will begin pulsing.
   a. Control board energizes K7 which energizes drain pump MTR3 for 3 seconds.
   b. Control board de-energizes K7 which de-energizes drain pump MTR3 for 3 seconds
   c. This will repeat 2 times.
10. Machine will now be shut off.
    NOTE: For machines with a DWT, control board k10 energizes TB3.5 and TB3.6 will have 120V present.

Drain Cycle (Manual Drain)

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Drain Cycle

1. Press and hold drain button for 5 seconds.
   a. Progress bar will fill up while holding drain button.
   b. Drain visual will be displayed on the HMI once progress bar is full.
2. Heating elements shut off.
   a. Control board de-energizes K8 which will de-energize CON1, de-energizing booster heating element HTR2.
   b. Control board de-energizes K9 which will de-energize CON2, de-energizing tank heating element HTR1.
3. Control board K7 energizes drain pump MTR3 which will run for 60 seconds.
4. Control board K7 de-energizes drain pump MTR3.
5. Drain pump will begin pulsing.
   a. Control board energizes K7 which energizes drain pump MTR3 for 3 seconds.
   b. Control board de-energizes K7 which de-energizes drain pump MTR3 for 3 seconds
   c. This will repeat 2 times.
7. Machine will now go into a fill cycle.
   a. Please refer to 'fill cycle'. Cycle will start with emptying the booster.
   NOTE: For machines with a DWT, control board k10 energizes TB3.5 and TB3.6 will have 120V present.

Manual Delime Cycle

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Manual Delime Cycle

1. Press the delime symbol located on the HMI display to start a delime cycle.
2. Use the arrows to select yes when prompted.
3. Open the door and remove the strainer.
   a. Door interlock LS1 will now be open.
   b. Tank strainer interlock LS2 will now be open.
4. Once strainer has been cleaned, place the strainer back into the machine.
   a. Tank strainer interlock LS2 will be closed.
5. Close the door.
   a. Door interlock LS1 will now be closed.
6. Press the selection arrow on the display.
7. Machine will go into a drain cycle.
   a. Machine is only emptying the sump.
   b. Refer to 'drain cycle' steps 2 through 5.
      1) Drain pump will run for 50 seconds.
8. Machine will prompt user to insert delime into machine.
   a. Open the door and insert the recommended delime dosage.
      1) Door interlock LS1 will be open.
   b. After delime is used, close the door.
      1) Door interlock LS1 will be closed.
   c. Press the selection arrow.
      1) Door must be closed before selection arrow will appear on HMI.
9. Machine will go into a fill cycle.
   a. Refer to 'fill cycle' for procedure.
      1) Process will start with emptying the booster since it is already full.
10. Machine will go into the delime wash cycle.
    a. Refer to 'wash cycle' for procedure.
       1) Cycle length will be 600 seconds.
11. Machine will go into drain cycle.
    a. Refer to 'drain cycle' steps 2 through 7.
12. Machine will go into fill cycle.
    a. Refer to 'fill cycle'.
13. Machine will go into drain cycle.
    a. Refer to 'drain cycle' steps 2 through 9.

Automatic Delime Cycle

Refer to wiring diagram for model being serviced when reviewing sequence of operation.

Automatic Delime Cycle

1. Press the delime symbol located on the HMI display to start a delime cycle.
2. Use the arrows to select yes when prompted.
3. Open the door and remove the strainer.
   a. Door interlock LS1 will now be open.
   b. Tank strainer interlock LS2 will now be open.
4. Once strainer has been cleaned, place the strainer back into the machine.
   a. Tank strainer interlock LS2 will be closed.
5. Close the door.
   a. Door interlock LS1 will now be closed.
6. Press the selection arrow on the display.
7. Machine will go into a drain cycle.

a. Machine is only emptying the sump.
b. Refer to 'drain cycle' steps 2 through 5.
1) Drain pump will run for 50 seconds.

8. Control board energizes FET1 on extension card A6, energizing delime pump MTR6.
   a. Delime pump will run for 32, 48 or 95 seconds depending on concentration.
9. Control board de-energizes FET1 on extension card A6, de-energizing delime pump MTR6.
10. Control board energizes K3 which energizes rinse pump MTR2.
    a. Rinse pump will run for 35 seconds.
11. Control board de-energizes K3 which cd-energizes rinse pump MTR2.
12. Control board energizes FET1 on extension card A6, energizing delime pump MTR6.
    a. Delime pump will run for 32, 48 or 95 seconds depending on concentration.
13. Control board de-energizes FET1 on extension card A6, de-energizing delime pump MTR6.
14. Control board energizes K5 which energizes booster fill valve SOL1.
15. Booster tank begins to fill.
    a. Once booster reaches 0.74 V, control board energizes K8 which energizes CON1, energizing booster heating element HTR2.
    b. Booster will fill until 0.95 V.
    c. Control board de-energizes K5 which de-energizes SOL1 once 0.95 V setting is reached.
    d. Booster will continue heating until it reaches 100° F (38° C).
    e. Control board de-energizes K8 which de-energizes CON1, de-energizing HTR2.
16. Control board energizes K3 which energizes rinse pump MTR2.
    a. Rinse pump MTR2 will run for 15 seconds.
       1) At this point, the sump tank is being filled through the booster.
    b. Control board de-energizes K3 which de-energizes rinse pump MTR2.
17. Steps 12 through 16 are repeated 5 times until tank has reached 1.9 V.
    a. Once tank reaches 0.72 V, control board energizes K9 which energizes CON2, energizing sump heater HTR1.
       1) Once tank temperature reaches 115° F (46° C) control board de-energizes K9 which de-energizes CON2, de-energizing sump heater HTR1.
18. Machine will go into the delime wash cycle.
    a. Refer to 'wash cycle' for procedure.
       1) Cycle length will be 600 seconds.
19. Control board energizes K5 which energizes booster fill valve SOL1.
    a. Booster will fill until 0.90 V.
    b. Control board de-energizes K5 which de-energizes SOL1 once 0.90 V setting is reached.
20. Control board energizes K7 which energizes drain pump MTR3.
    a. Drain pump will run for 90 seconds.
    b. 2 seconds into the drain cycle, control board energizes K3 which energizes rinse pump MTR2.
    c. Rinse pump MTR2 will run for 35 seconds.
    d. Control board de-energizes K3 which de-energizes rinse pump MTR2.
21. Machine will go into a fill cycle.
    a. Refer to 'fill cycle'.
22. Machine will go into a wash cycle.
    a. Refer to 'wash cycle' for procedure.
       1) Cycle length will be 60 seconds.
23. Machine enters drain cycle.
    a. Refer to 'drain cycle' steps 2 through 9.

TROUBLESHOOTING CHART

NOTE: Refer to Troubleshooting Error Codes on page 40 when the machine displays an error code.

SYMPTOM	POSSIBLE CAUSE
No machine operation.	1. Machine off. Turn the machine on. 2. Blown fuse or tripped circuit breaker at power supply. 3. Control board unplugged. 4. Verify HMI (display) cable is properly plugged into control board (J22) and to HMI. 5. Verify incoming voltage at transformers.
No machine operation (with display).	1. Loose connections on control and power supply board harnesses. 2. Control board malfunction. Verify 12VDC on control board. a. Verify +12V (D4), +5V (D5) and +3.3 (D6) LEDs are lit on control board.
Display screen does not respond to touch.	1. Shipping film not removed. Remove the clear shipping film from the HMI/display screen. 2. Grease build-up on display. Use a damp cloth and mild soapy water to clean the screen.
No display (HMI).	1. No power to the machine. Fuse blown or circuit breaker tripped. 2. Verify HMI (display) cable is properly plugged into control board (J22) and to HMI. 3. Control board malfunction. Verify 12VDC on control board. a. Verify +12V (D4), +5V (D5) and +3.3 (D6) LEDs are lit on control board. 4. Verify all fuses are operational. 5. T1 (120V) malfunction. Verify voltage. 6. T3 (24V) malfunction. Verify voltage. 7. HMI malfunction.
Machine will not fill or will not fill high enough.	**NOTE:** Fill time could be as high as 20 minutes. 1. Check water pressure. a. Disconnect incoming water supply line. Verify 5-gallon bucket will fill in 1 minute, 20 psi flowing. 2. Water level sensor malfunction. a. Verify tubing is connected but not clogged or kinked. Tubing should not be looped below tank water level. Must run vertically above water level. Verify there is no water in tubing. b. Check for loose or disconnected wiring harness. 3. Fill valve SOL1 malfunction. a. If not energizing, verify voltage from supply to SOL1. If voltage is present at valve, clean (valve strainer) or replace defective valve. 4. Verify fill air gap assembly (located on right side of machine) is free of any obstructions. 5. Clogged rinse arms. a. Verify rinse arm nozzles are clear of any obstructions. 6. Rinse pump motor (MTR2) malfunction. 7. Rinse relay K3 malfunction. 8. Door switch power relay K11 malfunction. 9. Control board malfunction. Verify 12VDC present on control board.
Repeatedly blows fuse or trips circuit breaker or GFCI.	1. Undersized fuse, circuit breaker or GFCI. 2. Short circuit in internal wiring or electrical component(s). 3. Incorrect voltage or heater. 4. If GFCI breaker, ensure installed and wired properly.
Machine will not drain.	1. Drain height over 17” above finished floor. 2. Clogged or kinked drain hose. 3. Drain pump motor (MTR3) malfunction. 4. Clogged pump strainer. 5. Anti-siphon valve clogged or obstructed. 6. Wash tank pressure sensor malfunction (PRS1). Verify all connections are tight and no water in tubing. 7. Loose wire connection(s) at drain pump or wash tank pressure sensor (PRS1).

SYMPTOM	POSSIBLE CAUSE
Door lock will not engage (Advansys models only).	1. Defective door lock solenoid. 2. Loose wire connections. 3. Broken, bent or jammed door lock actuator lever. 4. Door lock receiver not aligned. 5. Malfunctioning extension card (A6) and/or power supply.
Machine fills too high.	1. Drain hose clogged or kinked. 2. Sump water level sensor (PRS1) malfunction (including pressure sensor tubing and air trap). 3. Booster/holding tank water level sensor (PRS2) malfunction (including pressure sensor tubing and air trap). 4. Fill valve (SOL1) malfunction. 5. Darin pump (MTR3) malfunction. 6. Improper discharge draining of water on power down due to problems with drain water tempering (if applicable). Disconnect DWT and retest cycle. 7. Control board malfunction. Verify 12VDC is present on control board. a. Verify +12V (D4), +5V (D5) and +3.3 (D6) LEDs are lit on control board.
Dishwasher won't stop when door is opened.	1. Door switch malfunction. 2. Control board malfunction. Verify 12VDC on control board.
Water continuously filling.	1. Water level sensor malfunction, tank (PRS1) or booster (PRS2). 2. PRS1 and PRS2 pressure sensors wired backwards at board. 3. Verify air trap tubing or booster vent tubing is connected, but not clogged or kinked. 4. Fill valve (SOL1) malfunction.
Machine will not wash. Tank is filled with water.	1. Obstruction in wash arms. 2. Loose connection at control board (J8). 3. Obstruction in wash pump (MTR1). 4. Wash pump motor (MTR1) malfunction. 5. Control board malfunction. Verify 12VDC on control board.
Low / no wash tank heat.	1. No water in dishwasher tank. 2. Incorrect line voltage at TB1. 3. Wash tank pressure sensor (PRS1) malfunction. 4. Ensure heating element is clean and free of excessive lime scale and/or debris. Delime as required. 5. Wash tank thermistor (QTM1) malfunction. Refer to Component Operating Values, page 60, for resistance values. 6. Relay (1A) malfunction. 7. Defective heating element (HTR1). Check amp draw and resistance. Refer to Component Operating Values, page 58. 8. Check wire connections at relay and heating element.
Low / no booster tank heat.	1. Incoming water line plumbed incorrectly. Hot water supply should be 110°F minimum. For ventless models, 55°F minimum. 2. Booster tank (QTM2) malfunction. Refer to Component Operating Values, page 60, for resistance values. 3. Verify booster temperature set point. 4. Ensure booster heating element is free of excessive lime scale. Delime as required. 5. Defective booster heating element (HTR2). Check amp draw and resistance. Refer to Component Operating Values, page 58. 6. Contactor (CON1) malfunction. 7. Check wire connections at contactor and booster heating element. 8. 120VAC not present at booster contactor (CON1). Check voltage on control board at TP DO8.

SYMPTOM	POSSIBLE CAUSE
Leaking valve.	1. Hose connection at valve is leaking. Ensure hose gasket is seated properly and not worn or cut. 2. Defective solenoid valve.
Machine leaks from door.	1. Machine not level. 2. Improperly loaded racks or ware. 3. Machine operated without a rack. 4. Door seal worn. 5. Door seal not adjusted correctly. 6. Clogged or split wash arms. 7. Drain pump (MTR3) malfunction. 8. Sump water level sensor (PRS1) malfunction.
Rinse water does not reach 180°F during rinse cycle.	1. Rinse pump malfunction. 2. Defective final rinse and/or booster thermistor. 3. Voltage to booster heater circuit not correct. 4. Booster heating element malfunction. 5. Verify booster temperature set point. 6. Excessive lime scale. Booster heating element coated with lime scale. 7. Check for restrictions in final rinse line. Kinked hose. 8. Incorrect booster heater element installed. 9. Booster heater contactor (CON1) malfunction. 10. Ensure rinse arms rotate freely and are free of mineral deposits.
No final rinse.	1. Obstruction in rinse pump hose(s). 2. Check final rinse arms for debris or lime buildup. 3. Ensure hoses are not pinched or kinked. 4. Check rinse pump circuit, K3 relay. 5. Incorrect water level. Verify booster volt (V) level. Refer to Component Operating Values, page 60, for water level (V) values. 6. Rinse pump motor (MTR2) not energized. 7. Control board malfunction. Check F1 and F2 fuses on control board. 8. Rinse pump motor (MTR2) malfunction. 9. Excessive lime scale buildup in rinse system. 10. Loose wire connections.
Noisy wash or rinse arms.	1. Improper loading of ware hitting wash arms or damaged racks. 2. Missing, worn, or improperly installed sealing ring in upper and/or lower wash arm. 3. Damaged, broken, or bent wash or rinse arm. 4. Verify rinse shafts are tight and locking tabs are installed with retainer screws. 5. Worn, loose, or broken wash tube manifold.
Noisy during condensing cycle – ventless models only.	1. Check condensate fan and bearing for wear and any excessive movement. 2. Verify gasket is in place on ventless fan motor shaft. 3. Verify ventless impeller is not rubbing or sufficient clearance.
Booster heating element burns out repeatedly.	1. Ensure wires are connected. 2. Verify there are no leaks on booster. 3. Booster element powered with low or no water in booster. 4. Check for correct heater and voltage. Verify with machine data plate. 5. Booster contactor malfunction (CON1). 6. Booster pressure sensor malfunction (PRS2). 7. Excessive lime scale buildup on booster heating element.

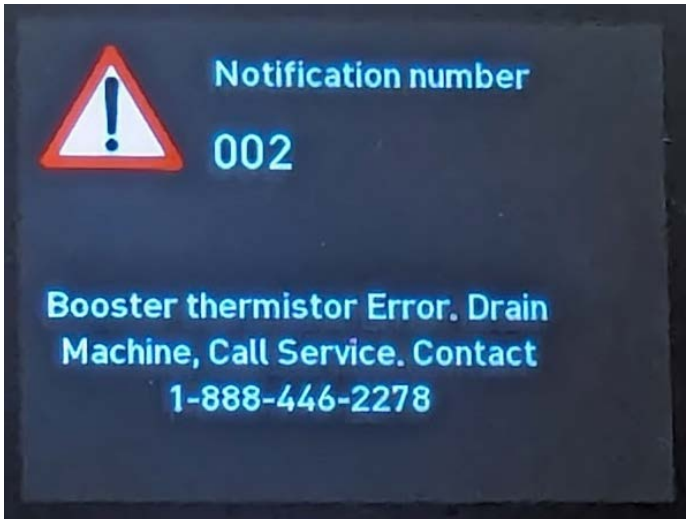
SYMPTOM	POSSIBLE CAUSE
High limit overtemp trips (wash sump and/or booster).	1. No water in sump or booster tank. 2. Tank (QTM1) and/or booster (QTM2) thermistor malfunction. 3. Sump or booster temperature setting too high. 4. Overtemp malfunction (sump - TAS1/TAS2, booster – TAS3/TAS4). 5. Sump overtemps – tank relay (RELAY1) or K9 relay on board malfunction. 6. Booster overtemps – booster relay (K8) on board or booster contactor (CON2) malfunction. 7. Tank (PRS1) or booster (PRS2) pressure sensor malfunction.
Excessive steam or water vapor after cycle is complete (LXnR or LXGnR models).	1. Incoming cold-water supply is too warm. Recommended between 55°F and 80°F. 2. Ventless fan motor (MTR5) malfunction. 3. Condense cycle time set too low. 4. Room ambient temperature is too cold. 5. Cold water supply hose strainer and/or solenoid valve (SOL1) strainer clogged causing low flow. 6. Check coil fins for excessive debris build up and clean as required. 7. Malfunctioning cold water solenoid valve (SOL1).
Hobart supplied chemical pumps not energizing.	1. Open F1 fuse on A6 extension card. 2. A6 extension card malfunction. 3. Malfunctioning PS1 power supply not supplying 24VDC to A6 extension card. 4. Loose/shorted wiring to chemical pump. 5. Chemical pump malfunction. 6. Incorrect machine type selected or not programmed correctly.
Not injecting chemical.	1. Insufficient chemical supply in bottle. 2. Worn chemical squeeze tube or roller. 3. Standpipe is not fully inserted into bottle. 4. Chemical pump malfunction or loose wire connection(s) at pump. 5. Loose clamp(s) connections at chemical fittings. 6. Hole in chemical tube causing bubbles. 7. Chemical line clogged. 8. Open F1 fuse on A6 extension card. 9. A6 extension card malfunction. 10. Malfunctioning PS1 power supply not supplying 24VDC to A6 extension card. 11. If applicable, ensure chemical bottle cap is properly secured and not cracked. 12. Manually prime the chemical(s). Refer to Programming, page XX. 13. Chemical tubing kinked. 14. Incorrect machine type selected or not programmed correctly. 15. Chemical sensors clogged. 16. Clogged rinse tee. 17. Clogged chemical vent adaptor.
Not sensing chemical (sending alert or locking out).	1. Loose/corroded electrical connections at chemical sensors. 2. Air bubbles in chemical line. 3. Chemical is not primed. 4. Unit is not programmed properly for alert or lockout for desired chemical. 5. Diluted or contaminated chemical. Replace with fresh bottle and prime. 6. Chemical sensor leaking or malfunctioning.
Upper and lower wash arm falls off.	1. Worn or broken rinse arm. 2. Loose or stripped upper/lower wash arm shaft. 3. Non-Advansys arms used in Advansys machine or vice versa.

SYMPTOM	POSSIBLE CAUSE
Ware / pans not clean.	1. Strainers clogged causing inadequate water supply to sump. Pump cavitation will occur if water is trapped above the strainer. Clean strainers as required. 2. Loss of water pressure due to pump obstruction. Remove strainers and check pump and drain intake for obstruction. 3. Obstructions in wash and/or rinse arms. 4. Excessive soil in machine – scrap ware before loading into machine. 5. Improper rack loading. 6. Wash tank water temperature too low. 7. Excessive lime scale. Delime machine as required. 8. Ensure chemicals are dispensing properly.
Spotting on ware.	1. Improperly loaded racks. 2. Rinse water temperature too low. 3. Improper type or concentration of detergent and/or rinse aid – contact chemical supplier. 4. Rinse aid chemical pump malfunction. 5. Hard water – excessive lime scale in machine. 3 grains of hardness or less recommended. Delime machine as required. 6. Excessive soil in machine; scrap ware before loading in machine. Ensure wash tank is drained and cleaned as required. 7. Loss of water pressure due to pump obstruction. Remove strainers and check pump and drain intake for obstruction.
Unexpected results on pans and ware.	1. Etching – usually caused by any combination of high temperatures, soft water, soft glass, or high alkaline washing solutions. 2. Pitting – stainless steel may pit with lengthy contact of foods containing salt, fruit juices, vinegar, etc. Wash immediately. 3. Black or gray marks – may have been rubbed with aluminum. 4. Brown stains – may be due to high iron content in water supply. 5. Chipping – improper loading or ware is too delicate. 6. Wooden ware damage – avoid washing in machine. 7. Rust on cast iron – seasoning is lost in machine. Avoid washing in machine. 8. Plastic ware distortion – high temperatures. Check plastic ware instructions. 9. Tarnishing – avoid washing silver, silver plates, and pewter in chemical sanitizing machines. 10. Fading of china patterns – usually due to high water temperature and strong detergent. Check that china is dishwasher compatible.

TROUBLESHOOTING ERROR CODES

Refer to the Component Layout diagrams section (page 14) for component locations.

For all Analog Inputs (AI), Digital Inputs (DI) and Digital Outputs (DO) shown in the following error code chart, refer to the Programming section on page 62 of this manual to access Diagnostics to see these values.



Error Code Example

Error Number	Message in Display	Description
001	**Message in Display**	**Booster thermistor Error. Drain Machine, Call Service.**
	Software	• Temperature at the booster sensor QTM2 (AI1) is greater than or equal to 239°F. • Short circuit of sensor QTM2 (AI1).
	Machine States	Fill program / Ready / Wash program.
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off / display remains switched on.
	Locked Programs	Fill program / Wash program / Ready
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the temperature at QTM2 (AI1) is < 239°F. The machine remains in the current mode. The display will turn off.
	Possible Problems	1. Check booster thermistor. 2. Check connections and wiring back to board. 3. Check for leaks onto wiring and connectors.
	Tech Tips	1. Monitor in Analog Inputs display mode while troubleshooting - actual value is shown while unit is in operation. Refer to the Programming section for accessing the Analogue Inputs display mode in the Parameters menu. 2. Unplugging thermistor should result in Error 002. 3. If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
002	**Message in Display**	**Booster thermistor Error. Drain Machine, Call Service.**
	Software	• The temperature sensor of the booster QTM2 (AI1) is ≤ 32°F. • Wire interruption (open circuit) of the sensor QTM2 (AI1).
	Machine States	Fill program/ Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off / display remains switched on.
	Locked Programs	Fill program / Wash program / Ready
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the temperature at QTM2 (AI1) is > 32°F. The machine remains in the current running mode. The display will turn off.
	Possible Problems	1. Check booster thermistor. 2. Check connections and wiring back to board. 3. Check for leaks onto wiring and connectors.
	Tech Tips	1. Monitor in Analog Inputs display mode while troubleshooting - actual value is shown while unit is in operation. Refer to the Programming section for accessing the Analogue Inputs display mode in the Parameters menu. 2. Unplugging thermistor should result in Error 002. 3. If water is getting into connector, add dielectric grease to area to protect.
003	**Message in Display**	**Booster temperature not reached during fill cycle.**
	Software	The set-point temperature on the temperature sensor booster QTM2 (AI1) was not reached within the time out setting. The timer starts when the booster heater comes on.
	Machine States	Fill program
	Start Key / Beeper	Green - red alternating flashing if machine is ready for operation.
	Machine Reaction	Fill program is continued. Monitoring of booster heating continues. The fault is only triggered once. Further triggering only takes place after the message has been acknowledged.
	Locked Programs	Wash program
	Enabled Programs	Fill program / Drain program
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen. The machine remains in the current mode.
	Possible Problems	1. Check High limit. 2. Check booster thermistor for proper response in service diagnostics menu - check for damage and tightness. 3. Check booster heater, wiring and contactor. 4. Check incoming water temperature. 5. Ensure thermal paste between thermistor and booster.
	Tech Tips	1. Use service diagnostics menu to verify water levels, heater energizing, temperature response, thermistors, high limits, fill rates. 2. If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
004	**Message in Display**	**Booster temperature not reached during wash cycle.**
	Software	The set-point temperature on the booster temperature sensor QTM2 (AI1) was not reached within the time out setting.
	Machine States	Wash program
	Start Key / Beeper	Green - red alternating flashing if machine is ready for operation/ control twice briefly on off (1 second after program end).
	Machine Reaction	A Wash program is continued after the expiration of the timer.
	Locked Programs	Wash program
	Enabled Programs	Drain program
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen. The machine remains in the current mode.
	Possible Problems	1. Check high limit. 2. Check booster thermistor for proper response in service diagnostics menu - check for damage and tightness. 3. Check booster heater, wiring and contactor. 4. Check incoming water temperature. 5. Ensure thermal paste between thermistor and booster.
	Tech Tips	1. Use service diagnostics menu to verify water levels, heater energizing, temperature response, thermistors, high limits, fill rates. 2. If water is getting into connector, add dielectric grease to area to protect.
006	**Message in Display**	**Sump thermistor Error. Drain Machine, Call Service.**
	Software	• The temperature at the temperature sensor tank QTM1 (AI2) is ≥ 239°F. • Short circuit in the sensor QTM1 (AI2).
	Machine States	Fill program/ Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON" / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program / Ready
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the temperature at QTM1 (AI2) is < 239°F. The machine remains in the current running mode.
	Possible Problems	1. Check tank thermistor. 2. Check connections and wiring back to board. 3. Check for leaks onto wiring and connectors.
	Tech Tips	1. Monitor in Analog Inputs display mode while troubleshooting - actual value is shown while unit is in operation. Refer to the Programming section for accessing the Analogue Inputs display mode in the Parameters menu. 2. Unplugging thermistor should result in Error 007. 3. If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
007	**Message in Display**	**Sump thermistor Error. Drain Machine, Call Service.**
	Software	• The temperature at the temperature sensor tank QTM1 (AI2) is ≤ 32°F. • Wire break (open circuit) of the sensor QTM1 (AI2).
	Machine States	Fill program / Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON" / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program / Ready
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the temperature at QTM1 (AI2) is > 32°F. The machine remains in the current running mode.
	Possible Problems	1. Check tank thermistor. 2. Check connections and wiring back to board. 3. Check for leaks onto wiring and connectors.
	Tech Tips	1. Monitor in Analog Inputs display mode while troubleshooting - actual value is shown while unit is in operation. Refer to the Programming section for accessing the Analogue Inputs display mode in the Parameters menu. 2. Unplugging thermistor should result in Error 007. 3. If water is getting into connector, add dielectric grease to area to protect.
008	**Message in Display**	**Wash tank temperature not reached during fill cycle.**
	Software	During the Fill program, the set-point temperature at the wash tank temperature sensor QTM1 (AI2) was not reached within the time out setting.
	Machine States	Fill program
	Start Key / Beeper	Green - red alternating flashing if machine is ready for operation/ control twice briefly on off (1 second after program end).
	Machine Reaction	Fill program is aborted. The machine goes into stand-by mode.
	Locked Programs	Wash program
	Enabled Programs	Fill program / Drain program
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen. The machine remains in the current mode.
	Possible Problems	1. Check High limit. 2. Check tank thermistor for proper response in service diagnostics menu - check for damage and tightness. 3. Check wash tank heater, wiring and contactor. 4. Ensure thermal paste between thermistor and tank.
	Tech Tips	Use service diagnostics to verify water levels, heater energizing, temperature response, thermistors, high limits, fill rates.

Error Number	Message in Display	Description
014	**Message in Display**	**Booster Pressure Error, Drain Machine, Call Service.**
	Software	• The voltage at the booster pressure sensor PRS2 (AI3) is ≥ 4.5V. • Short circuit at the booster pressure sensor PRS2 (AI3).
	Machine States	Fill program/ Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program / switching off via Off-button
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen. If the voltage value on PRS2 (AI3) is ≥ 4.5V, no arrow will appear. If it is in the normal range.
	Possible Problems	1. Damaged, pinched or corroded wire for sensor. 2. Tubing leak, kink or tubing full of water. 3. Check booster vent for blockage. 4. If booster spikes when wash pump runs, check rinse connection in wash tube for proper seating. 5. Faulty sensor.
	Tech Tips	1. Reseat connector. 2. Monitor service diagnostics screen for real time values as you troubleshoot. 3. Swap booster and sump sensor wires to see if the failure is resolved or follows the wiring, sensor or tubing. 4. Never remove or reconnect tubing connection with water in the tank.
015	**Message in Display**	**Booster Pressure Error, Drain Machine, Call Service.**
	Software	• The voltage at the booster pressure sensor PRS2 (AI3) is ≤ 0.30 V. • Wire interruption (open circuit) at the booster pressure sensor PRS2 (AI3).
	Machine States	Fill program/ Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program / switching off by means of Off button.
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the voltage value at the PRS2 (AI3) is > 0.3V. The machine remains in the current running mode.
	Possible Problems	1. Damaged, pinched or corroded sensor wire. 2. Tubing leak, kink or tubing full of water. 3. Check booster vent for blockage. 4. Faulty sensor. 5. Loose connections.
	Tech Tips	1. Re-seat pressure sensor connector. 2. Monitor service diagnostics screen for real time values as you troubleshoot. 3. Swap booster and sump sensor wires to see if the failure is resolved or follows the wiring, sensor or tubing. 4. Never remove or reconnect tubing connection with water in the tank.

Error Number	Message in Display	Description
016	**Message in Display**	**Wash Tank Pressure Error, Drain Machine, Call Servicee.**
	Software	• The voltage at the wash tank pressure sensor PRS1 (AI4) is ≥ 4.5V. • Short circuit at wash tank pressure sensor PRS1 (AI4).
	Machine States	Fill program/ Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program / switching off via Off-button
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the voltage value at the PRS1 (AI4) is < 4.5V. The machine remains in the current running mode.
	Possible Problems	1. Damaged, pinched or corroded sensor wire. 2. Tubing leak, kink or tubing full of water. 3. Faulty sensor. 4. Loose connections.
	Tech Tips	1. Reseat pressure sensor connector. 2. Monitor service diagnostics screen for real time values as you troubleshoot. 3. Swap booster and sump sensor wires to see if the failure is resolved or follows the wiring, sensor or tubing. 4. Never remove or reconnect tubing connection with water in the reservoir.
017	**Message in Display**	**Wash Tank Pressure Error, Drain Machine, Call Service.**
	Software	• The voltage on the wash tank pressure sensor PRS1 (AI4) is ≤ 0.30 V. • Wire interruption on the pressure sensor PRS1 (AI4).
	Machine States	Fill program / Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program / switching off by means of Off button.
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen if the voltage value at PRS1 (AI4) is > 0.3V. The machine remains in the current running mode.
	Possible Problems	1. Damaged, pinched or corroded wire for sensor. 2. Tubing leak, kink or tubing full water. 3. Faulty sensor. 4. Loose connections.
	Tech Tips	1. Re-seat pressure sensor connector. 2. Monitor service diagnostics screen for real time values as you troubleshoot. 3. Swap booster and sump sensor wires to see if the failure is resolved or follows the wiring, sensor or tubing. 4. Never remove or reconnect tubing connection with water in the reservoir.

Error Number	Message in Display	Description
018 (Firmware version 006.0001.003 and earlier)	**Message in Display**	**Wash tank water level is too high. Machine draining.**
	Software	The voltage on the tank pressure sensor PRS1 (AI4) is ≥ 1.2V.
	Machine States	Machine off / Fill program / Ready / Wash program
	Start Key / Beeper	Green - red alternating flashing when machine OFF / activate twice briefly on and off (1 sec after end of program).
	Machine Reaction	1. Machine automatically attempts to drain the extra water. 2. The drain pump MTR3 (DO6) is switched on until the voltage at PRS1 (AI4) is ≤ 0.84V. 3. If machine drains to the appropriate level (0.84V), the screen will display the ENTER button. 4. After hitting ENTER, the display will remove the error and power off the machine. Press power button to resume.
	Locked Programs	Fill program / Wash program / switching off via the Off button
	Enabled Programs	Drain program
	Acknowledgment	• Acknowledge the message by pressing the Enter button on the touch screen if the voltage value at PRS1 (AI4) is <= 0.84V. • Start of a drain program; The machine remains in the current running mode.
	Possible Problems	1. Excessive water from outside source (sprayer, tabling water flow, upside down tub, detergent feeder, etc.). 2. Drain pump malfunction. Refer to Service Programming diagnostic menu to toggle the drain pump output and check operation. 3. Drain anti-siphon malfunction (clear device of debris). 4. Drain hose kinked or drain needs cleared. 5. Fill valve malfunction / stuck on.
	Tech Tips	1. Verify water level is above the strainer. 2. Check drain pump and drain hose for debris/kinking. 3. If the water is not drained in approximately 2 minutes, error 52 (drain hose is clogged) will appear. There is no enter button to clear the error because the issue is not fixed. If you hold the power button for 5 seconds the machine will attempt to drain. If the machine still does not drain, you will get error 21 and 18 repeatedly. The machine will not run until these issues are resolved.
018 (Firmware version 006.0002.000 and newer)	**Message in Display**	**Wash tank water level is too high. Machine draining.**
	Software	The voltage on the tank pressure sensor PRS1 (AI4) is ≥ 1.2V for more than 120 seconds.
	Machine States	Initial startup / Machine off / Stand-by / Fill program / Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One time activation of 5 s.
	Machine Reaction	1. Machine automatically attempts to drain the extra water. 2. The drain pump MTR3 (DO6) is switched on until the voltage at PRS1 (AI4) is ≤ 0.84V. 3. If machine drains to the appropriate level (0.84V) within120 seconds, the error will not appear on the screen. 4. If the machine fails to drain to the appropriate level (0.84V) within 120 seconds, then the error will appear. 5. The ENTER button will appear once the water level is lowered to the appropriate level (0.84V).
	Locked Programs	Fill program / Wash program / switching off via the Off button
	Enabled Programs	Drain program
	Acknowledgment	• Acknowledge the message by pressing the Enter button on the touch screen if the voltage value at PRS1 (AI4) is ≤ 0.84V. • Start of a drain program; The machine remains in the current running mode.
	Possible Problems	1. Excessive water from outside source (sprayer, tabling water flow, upside down tub, detergent feeder, etc.). 2. Drain pump malfunction. Refer to Service Programming diagnostic menu to toggle the drain pump output and check operation. 3. Drain anti-siphon malfunction (clear device of debris). 4. Drain hose kinked or drain needs cleared.
	Tech Tips	1. Verify water level is above the strainer. 2. Check drain pump and drain hose for debris/kinking.

Error Number	Message in Display	Description
020	**Message in Display**	**Rinse System Error, Check and Clean Rinse Arms.**
	Software	The wash tank water level did not increase enough while the rinse pump was on during the fill.
	Machine States	Fill program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen, the drain program will start.
	Possible Problems	1. Check if rinse arm clogged. 2. Check rinse pump (Check capacitor, Check resistance). 3. Check booster for excessive limescale.
	Tech Tips	1. Remove rinse arm to determine if it fills better. 2. Actuate rinse pump in service diagnostics to see if booster level drops - troubleshoot. 3. Inspect both rinse arms, booster, tee and all rinse system for clogging. 4. There is likely NO FAULT with pressure sensor.
021	**Message in Display**	**Drain hose is clogged. Clean drain hose and drain machine again.**
	Software	At the end of the drain program, the voltage at the tank pressure sensor PRS1 (AI4) is ≥ 0.65V.
	Machine States	Drain program
	Start Key / Beeper	Green - red alternating flashing when machine OFF / activate twice briefly on and off (1 sec after end of program).
	Machine Reaction	Machine is switched off, (off mode) display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program
	Acknowledgment	• The customer can not hit enter to clear the error or run the machine until the water is drained from the sump. • Once the water is drained, the enter button appears. The customer can hit enter to clear the error and the display will go blank. They can then hit power and begin filling the machine.
	Possible Problems	1. Drain hose is clogged. 2. Drain hose is kinked. 3. Drain strainer (drain body and standpipe) is clogged. 4. Drain pump malfunction. 5. Drain anti-siphon clogged (clear debris).
	Tech Tips	Ensure power to the machine is off and wash water has cooled. Verify standpipe and bottom of wash tank are free of debris. Clean the drain hose and drain the machine. Ensure drain hose is not kinked and installed properly. If error remains on screen, press and hold power button for 5 seconds to clear the error. Machine will drain and power down.

Error Number	Message in Display	Description
022	**Message in Display**	**Drain System Error during Wash Program.**
	Software	In the Wash program, the specified voltage value 0.78V at the tank pressure sensor PRS1 (AI4) is not reached within 5 minutes during the intermediate drain - activation of the drain pump MTR3.
	Machine States	Wash program
	Start Key / Beeper	Green - red alternating flashing if machine is ready for operation/ control twice briefly on off (1 second after program end).
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen. The machine remains in the current running mode.
	Possible Problems	1. Drain hose is clogged. 2. Drain hose is kinked. 3. Drain strainer (drain body and standpipe) is clogged. 4. Drain pump malfunction. 5. Drain anti-siphon clogged (clear debris).
	Tech Tips	Ensure power to the machine is off and wash water has cooled. Verify standpipe and bottom of wash tank are free of debris. Clean the drain hose and drain the machine. Ensure drain hose is not kinked and installed properly. If error remains on screen, press and hold power button for 5 seconds to clear the error. Machine will drain and power down.
029	**Message in Display**	**Program interrupted. Close door.**
	Software	Interruption of a running program by opening the door LS1 door switch.
	Machine States	Wash program
	Start Key / Beeper	Green - red alternating flashing in the Wash program / activate twice briefly on off (1 sec after program end).
	Machine Reaction	Wash is paused.
	Locked Programs	—
	Enabled Programs	No restrictions
	Acknowledgment	Close the door to clear the error.
	Related Parameters	**Input door switch LS1 (DI1).**
	Possible Problems	1. Check the door switch. 2. Check the magnet position. 3. Ensure door spring is not too tight, causing door to open slightly during cycle.
	Tech Tips	1. Touchscreen power/drain will not respond if door is open or door switch is open, door switch must be closed. 2. If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
032	**Message in Display**	**Fill error, inspect incoming water line.**
	Software	During the fill, the booster water level did not increase by 0.05V within 240 seconds.
	Machine States	Fill program/ Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Filling valve SOL1 (DO5) remains actuated.
	Locked Programs	- - -
	Enabled Programs	No restrictions
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message; The machine remains in the current running mode.
	Possible Problems	1. Check incoming water supply 15-65 psi flowing is recommended. 2. Check hose for kink/clog. 3. Inspect the valve, wiring (verify voltage at valve) and inlet screen. 4. Check for debris in water inlet break (air gap).
	Tech Tips	1. The 240 seconds begins when the fill valve turns on. 2. If a clog in the water break is suspected, replacing outlet hose with spare hose and running to drain is a good way to test if the valve is flowing. 3. Old PRVs or hose vacuum breakers have been known to cause this error, remove from system if suspect.
033	**Message in Display**	**Booster Fill Error, Check Incoming Water Line and Shut Off Valve.**
	Software	Booster did not reach 0.90V set point within 420 seconds.
	Machine States	Fill program / Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program
	Acknowledgment	Acknowledge the message by pressing the Enter button on the touch screen. The machine remains in the current running mode.
	Possible Problems	1. Check incoming water supply 15-65 psi flowing is recommended. 2. Check hose for kink/clog. 3. Inspect the valve, wiring (verify voltage at valve) and inlet screen. 4. Check for debris in water inlet break (air gap).
	Tech Tips	1. The 420 seconds begins when the fill valve turns on. 2. If a clog in the water break is suspected, replacing outlet hose with spare hose and running to drain is a good way to test if the valve is flowing. 3. Old PRVs or hose vacuum breakers have been known to cause this error, remove from system if suspect.

Error Number	Message in Display	Description
035	**Message in Display**	**Ensure tank strainer is locked in place.**
	Software	The strainer basket is not being sensed.
	Machine States	Fill program / Ready / Wash program / Drain program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	A Filling, Drain, Wash program is aborted. The display remains switched on. An entry in the fault memory is made only if: • When the door is closed, switch LS2 (DI3) is 0 for ≥ 5 seconds and a filling, drain, Wash program is active.
	Locked Programs	Fill program / Wash program / Drain program
	Enabled Programs	Switch off via the OFF button.
	Acknowledgment	Strainer switch S3 input DI3 = 1 for ≥1 seconds. • When the strainer is locked into place the error will clear. There is no enter button for this error. Message clears when the strainer is sensed.
	Possible Problems	1. Reed sensor LS2 (DI3) damaged or wiring. 2. Magnet on strainer damaged. 3. Strainer bent or misaligned.
	Tech Tips	Can be enable or disabled in the manager menu.
038	**Message in Display**	**Incoming power to machine is too high. Machine has powered down.**
	Software	Incoming power too high (greater than 280V).
	Machine States	Initial startup, machine off, stand-by, Fill program, ready for use, Wash program, Drain program.
	Start Key / Beeper	- - -
	Machine Reaction	Machine is switched off.
	Locked Programs	Everything
	Enabled Programs	- - -
	Acknowledgment	Mains off.
	Possible Problems	The incoming voltage must be at or below the required machine voltage (see machine data plate). Turn circuit breaker supply off and ensure unit is connected with proper voltage supply.
039	**Message in Display**	**Fill cycle interrupted. Close door.**
	Software	The door is open, or something is wrong with the reed switch (LS1).
	Machine States	Fill program
	Start Key / Beeper	Green - red alternating flashing in Fill program / control twice briefly on off (1 second after program end).
	Machine Reaction	The Fill program is interrupted as long as the door is open.
	Locked Programs	- - -
	Enabled Programs	No restrictions.
	Acknowledgment	Close door switch LS1 (DI1). The Fill program is afterwards continued.
	Possible Problems	1. Door switch or magnet damaged. 2. Door switch wire or connector damaged / corroded. 3. Door spring out of adjustment.
	Tech Tips	1. Touchscreen power/drain will not respond if door is open or door switch is open, door switch must be closed. 2. If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
049	**Message in Display**	**Communication between the controls has been interrupted.**
	Software	Interruption of communication between HMI and the CU board.
	Machine States	Initial startup, machine off, Fill program, Ready, Wash program, Drain program.
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on; Outputs are switched off immediately.
	Locked Programs	- - -
	Enabled Programs	No restrictions
	Acknowledgment	Communication between control panel and control has been restored Machine remains in current running mode.
	Possible Problems	1. Check connection - cable and pin connectors between controls and HMI. 2. Check MODBUS and connections.
	Tech Tips	The error will not clear until the problem is fixed.
052	**Message in Display**	**Drain System Error. Check Drain Pump and Hose.**
	Software	The wash tank water level was too high. Machine attempted to drain to 1.2V for 120 seconds.
	Machine States	Initial startup, machine off, stand-by, Fill program, Ready, Wash program.
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	1. Machine is switched off. 2. The display remains ON (also after the shutdown time T112). 3. The drain pump MTR3 (D06) is switched on until the voltage at the pressure sensor tank is PRS1 (AI4) <= 0.84V.
	Locked Programs	Fill program / Wash program / switching off via the off-button.
	Enabled Programs	Drain program
	Acknowledgment	1. Pressing the Enter button on the touch screen acknowledges the message if the voltage value at the pressure sensor tank PRS1 (AI4) is ≤ 0.84V. 2. Start of a drain program; Machine remains in current running mode.
	Possible Problems	1. Check drain hose for kink/clog. 2. Check drain pump. 3. Check drain anti-siphon for clogging (clean out). 4. Check tank pressure sensor/harness for proper response to water level.
	Tech Tips	1. The 120 seconds starts when the drain pump turns on. 2. Check tank pressure sensor - Level matches water level in tank.
057	**Fault Description**	**Wash tank is filling. Cycle will begin when water is replenished.**
	Software	The wash tank water level went below 0.7V.
	Machine States	Wash Program (start)
	Start Key / Beeper	The start button is blue during this time (Wash program active).
	Machine Reaction	The Wash program is stopped. It is followed by a Fill program. When the water level in the wash tank PRS1 (AI4) > 1.9V, the filling process is terminated and the Wash program is resumed.
	Locked Programs	Switching off via the OFF button. Start of a filling or Drain program.
	Enabled Programs	Water level wash tank too low. Adjustment running.
	Acknowledgment	By machine OFF or when water level > A78 is reached.
	Possible Problems	1. Check drain anti-siphon for clogging. 2. If the error persists, check incoming waterline and fill valve. 3. Check Rinse Arms for scale build up and rinse pump. 4. Check Strainer for clogging or scaling.
	Tech Tips	1. Possible that upside down containers are collecting water and keeping it from getting to the sump. 2. When this error appears the machine will attempt to refill the water automatically.

Error Number	Message in Display	Description
074	**Message in Display**	**Detergent Empty. Refill Detergent.**
	Software	Alerts operator to no detergent at the sensor CHS2 (AI9) > 1 (sensor reading higher than threshold), after 3 cycles.
	Machine States	Wash program
	Start Key / Beeper	Blinking red light
	Machine Reaction	Display error message.
	Locked Programs	None
	Enabled Programs	All
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message and will attempt to reprime the pump to the sensor.
	Possible Problems	1. Chemical bottle empty or standpipe not inserted in the bottle correctly. 2. Chemical squeeze tube worn. 3. Chemical adapter clamp loose (must be snapped tightly – zip ties and slip joints are unreliable). 4. Chemical delivery tube damaged. 5. Chemical screen on bottom of standpipe clogged or ball valve defective. 6. Chemical pump wire loose or motor not turning. 7. Roller assembly bracket/worn or lack of lubrication. 8. Chemical adapter cap damaged (non-warranty). 9. Check sensor for leaks/function – adjust sensor threshold if needed.
	Tech Tips	1. Clamps must be snapped tightly – zip ties and slip joints are unreliable, air entering and bubbles can help identify leakage areas. 2. Pinch tubing is a wear/PM part, should be replaced regularly. If replacing one tube, replace all tubes. (PM, not warranty.)
075	**Message in Display**	**Rinse aid empty. Refill Rinse Aid.**
	Software	Rinse aid was not sensed for three consecutive cycles.
	Machine States	Wash program
	Start Key / Beeper	Blinking red light
	Machine Reaction	Display error message.
	Locked Programs	None
	Enabled Programs	All
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message and will attempt to reprime the pump to the sensor.
	Possible Problems	1. Chemical bottle empty or standpipe not in the bottle correctly. 2. Chemical squeeze tube worn. 3. Chemical adapter clamp loose (must be snapped tightly - zip ties and slip joints are unreliable). 4. Chemical delivery tube damaged. 5. Chemical screen on bottom standpipe clogged or ball valve defective. 6. Chemical pump wire loose or motor not turning. 7. Roller assembly bracket/worn or lack of lubrication. 8. Chemical adapter cap damaged (non-warranty). 9. Check sensor for leaks/function - adjust sensor threshold if needed.
	Tech Tips	1. Clamps must be snapped tightly - zip ties and slip joints are unreliable, air entering and bubbles can help identify leakage areas. 2. Pinch tubing is a wear/PM part, should be replaced regularly, if replacing one tube, replace all tubes. (PM not warranty) 3. Pumped rinse machines have rinse aid dispensed into booster, so the pump runs during the wash cycle and not during the rinse.

Error Number	Message in Display	Description
076	**Message in Display**	**Sanitizer Empty. Refill Sanitizer.**
	Software	Alerts operator to no sanitizer at the sensor CHS3 (AI8) > 1 (sensor reading higher than threshold), after 3 cycles.
	Machine States	Wash program
	Start Key / Beeper	Blinking red light
	Machine Reaction	Display error message.
	Locked Programs	None
	Enabled Programs	All
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message and will attempt to reprime the pump to the sensor.
	Possible Problems	1. Chemical bottle empty or sanitizer cap broken. 2. Chemical squeeze tube worn. 3. Chemical adapter clamp loose (must be snapped tightly – zip ties and slip joints are unreliable). 4. Chemical delivery tube damaged. 5. Chemical screen on bottom of standpipe clogged or ball valve defective. 6. Chemical pump wire loose or motor not turning. 7. Roller assembly bracket/worn or lack of lubrication. 8. Chemical adapter cap damaged (non-warranty). 9. Check sensor for leaks/function – adjust sensor threshold if needed.
	Tech Tips	1. Clamps must be snapped tightly – zip ties and slip joints are unreliable, air entering and bubbles can help identify leakage areas. 2. Pinch tubing is a wear/PM part, should be replaced regularly. If replacing one tube, replace all tubes. (PM, not warranty.)
077	**Fault Description**	**3. Chemical adapter clamp loose (must be snapped tightly – zip ties and slip joints are unreliable).**
	Software	4. Chemical delivery tube damaged.
	Machine States	5. Chemical screen on bottom of standpipe clogged or ball valve defective.
	Start Key / Beeper	6. Chemical pump wire loose or motor not turning.
	Machine Reaction	7. Roller assembly bracket/worn or lack of lubrication.
	Locked Programs	8. Chemical adapter cap damaged (non-warranty).
	Enabled Programs	9. Check sensor for leaks/function – adjust sensor threshold if needed.
	Acknowledgment	1. Clamps must be snapped tightly – zip ties and slip joints are unreliable, air entering and bubbles can help identify leakage areas.
	Possible Problems	2. Pinch tubing is a wear/PM part, should be replaced regularly. If replacing one tube, replace all tubes. (PM, not warranty.)
	Tech Tips	1. Clamps must be snapped tightly - zip ties and slip joints are unreliable, air entering and bubbles can help identify leakage areas. 2. Pinch tubing is a wear/PM part, should be replaced regularly, if replacing one tube, replace all tubes. (PM not warranty).

Error Number	Message in Display	Description
079	**Message in Display**	**Sanitizer empty. Machine locked.**
	Software	The machine did not sense sanitizer for 3 consecutive cycles.
	Machine States	Wash program
	Start Key / Beeper	Blinking red light
	Machine Reaction	Machine is locked until sanitizer is replenished and confirmed.
	Locked Programs	Wash program
	Enabled Programs	Drain program
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message and will attempt to reprime the pumps to the sensor.
	Possible Problems	1. Chemical bottle empty or sanitizer cap broken (Hobart replacement 00-562963 for Ecolab screw on cap, non- warranty). 2. Chemical squeeze tube worn. 3. Chemical adapter clamp loose (must be snapped tightly - zip ties and slip joints are unreliable). 4. Chemical delivery tube damaged. 5. Chemical screen on bottom standpipe clogged or ball valve defective. 6. Chemical pump wire loose or motor not turning. 7. Roller assembly bracket/worn or lack of lubrication. 8. Chemical adapter cap damaged (non-warranty). 9. Check sensor for leaks / function - adjust sensor threshold if needed.
	Tech Tips	1. Clamps must be snapped tightly - zip ties and slip joints are unreliable, air entering and bubbles can help identify leakage areas. 2. Pinch tubing is a wear / PM part, should be replaced regularly, if replacing one tube, replace all tubes. (PM not warranty).
081	**Message in Display**	**Final Rinse Thermistor Error.**
	Software	• Final rinse temperature QTM3 (AI10) > 239° F • Short circuit of the sensor QTM3.
	Machine States	Fill program / Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON" / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message. If the temperature at QTM3 (AI10) is < 239°F, the machine remains in the current running mode.
	Possible Problems	1. Check final rinse thermistor. 2. Check connections and wiring back to board. 3. Check for leaks onto wiring and connectors.
	Tech Tips	1. Monitor in Analog Inputs display mode while troubleshooting - actual value is shown while unit is in operation. Refer to the Programming section for accessing the Analogue Inputs display mode in the Parameters menu. 2. Unplugging thermistor should result in Error 082. 3. If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
082	**Message in Display**	**Final Rinse Thermistor Error.**
	Software	• Final rinse temperature QTM3 (AI10) is ≤ 32°F. • Wire break (open circuit) of the sensor QTM3 (AI10).
	Machine States	Fill program / Ready / Wash program
	Start Key / Beeper	Permanent red light when machine "ON". / One-time actuation of 5 s.
	Machine Reaction	Machine is switched off; Display remains switched on.
	Locked Programs	Fill program / Wash program
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Pressing the Enter button on the touch screen acknowledges the message. If the temperature on QTM3 (AI10) is > 32°F, the machine remains in the current running mode.
	Possible Problems	1. Check final rinse thermistor. 2. Check connections and wiring back to board. 3. Check for leaks onto wiring and connectors.
	Tech Tips	1. Monitor in Analog Inputs display mode while troubleshooting - actual value is shown while unit is in operation. Refer to the Programming section for accessing the Analogue Inputs display mode in the Parameters menu. 2. If water is getting into connector, add dielectric grease to area to protect.
084	**Message in Display**	**Minimum final rinse temperature not reached. Machine locked.**
	Software	**THIS IS FOR SCB MACHINES ONLY.** The minimum final rinse temperature (120 °F) was not reached within 3 cycles.
	Machine States	Wash program
	Start Key / Beeper	Red blinking LED
	Machine Reaction	Display error message and lock wash program.
	Locked Programs	Wash program
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Press and hold the power button for 5 seconds to clear the error. The machine will drain and power off. Power back on and try again.
	Possible Problems	1. Check high limit. 2. Check booster thermistor for damage and tightness. 3. Check booster heater, wiring and contactor. 4. Ensure water is flowing through rinse arms into machine. Rinse arms and nozzles should be clean and free of lime scale. 5. Inspect for damaged wires in controls. 6. Check incoming water temperature. 7. Check for slow fill into booster. Low pressure or flow from clogged fill or valve strainer. Remove pressure regulator if under 65psi and any in-line backflow preventer. 8. Ensure thermal paste between thermistor and booster.
	Tech Tips	If water is getting into connector, add dielectric grease to area to protect.

Error Number	Message in Display	Description
085	**Message in Display**	**Wash tank overtemp tripped.**
	Software	Open circuit on wash tank high limit TAS3 (DI21).
	Machine States	All
	Start Key / Beeper	Solid red light
	Machine Reaction	Error state, will not run.
	Locked Programs	All
	Enabled Programs	None
	Acknowledgment	When problem is corrected, pressing the Enter button on the touch screen acknowledges the message and will proceed with cycle.
	Possible Problems	1. Check wash tank heater and reset overtemps. 2. Check contactor. 3. Check contactor wiring. 4. Check for loose wire connection to high limit. 5. Verify tank set points. 6. Ensure thermal paste between thermistor and tank.
086	**Message in Display**	**Booster overtemp tripped.**
	Software	Open circuit on booster tank high limit TAS4 or TAS6 (DI22).
	Machine States	All
	Start Key / Beeper	Solid red light
	Machine Reaction	Error state, will not run.
	Locked Programs	All
	Enabled Programs	None
	Acknowledgment	When problem is corrected, pressing the Enter button on the touch screen acknowledges the message and will proceed with cycle.
	Possible Problems	1. Check booster tank heater and reset overtemps. 2. Check contactor. 3. Check contactor wiring. 4. Check for loose wire connection to high limit. 5. Verify tank set points. 6. Ensure thermal paste between thermistor and booster.
087	**Message in Display**	**Minimum final rinse temperature not reached after repeating cycle.**
	Software	The minimum final rinse temperature (180 °F) was not reached after repeating cycles.
	Machine States	Wash program
	Start Key / Beeper	Red blinking LED
	Machine Reaction	Display error message and lock wash program.
	Locked Programs	Wash program
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Press and hold the power button for 5 seconds to clear the error. The machine will drain and power off. Power back on and try again.
	Possible Problems	1. Check high limit. 2. Check booster and final rinse thermistor for damage and tightness. 3. Check booster heater (amps on each leg), wiring and contactor. 4. Ensure water is flowing through rinse arms into machine. Rinse arms and nozzles should be clean and free of lime scale. 5. Look for damaged wires in control box. 6. Check incoming water temperature. 7. Check for slow fill into booster. Low pressure or flow from clogged fill or valve strainer. Remove pressure regulator if under 65psi and any in-line backflow preventer. 8. Ensure thermal paste between thermistor and tank.
	Tech Tips	If water is getting into connectors, add dielectric grease to area to protect.

Error Number	Message in Display	Description
088	**Message in Display**	**Alert: Wash Tank Contactor Fault. Pull Circuit Breaker(s) and Contact Service.**
	Software	Wash tank contactor was stuck when the machine was not calling for heat.
	Machine States	All
	Start Key / Beeper	Red blinking LED
	Machine Reaction	Display error message and automatically add water through the fill valve to prevent overheating, drain pump will activate if necessary.
	Locked Programs	All
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Press and hold the power button for 5 seconds to clear the error. The machine will drain and power off. Power back on and try again.
	Possible Problems	1. Check contactor CON2 (DI12) for proper function (first turn circuit breaker off). 2. Check contactor side switch for proper function. 3. Check contactor side switch and contactor wiring/ connections. 4. Check cable at the J19 connection.
089	**Message in Display**	**Alert: Booster Contactor Fault. Pull Circuit Breaker(s) and Contact Service.**
	Software	Booster contactor stuck.
	Machine States	All
	Start Key / Beeper	Red blinking LED
	Machine Reaction	Display error message and automatically add water through the fill valve to prevent overheating, drain pump will activate if necessary.
	Locked Programs	All
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Press and hold the power button for 5 seconds to clear the error. The machine will drain and power off. Power back on and try again.
	Tech Tips	1. Check contactor CON1 (DI11) for proper function (first turn circuit breaker off). 2. Check contactor side switch for proper function. 3. Check contactor side switch and contactor wiring/ connections. 4. Check cable at the J19 connection.
090	**Message in Display**	**Wash Temperature not reached. Drain and restart Machine. If necessary, contact Service technician.**
	Software	The minimum wash tank temp did not reach 151 °F (hot machines) or 126 °F (cold machines) within 20 minutes.
	Machine States	Wash program
	Start Key / Beeper	Red blinking LED
	Machine Reaction	Display error message and lock wash program.
	Locked Programs	Wash program
	Enabled Programs	Drain program / Power Down
	Acknowledgment	Press and hold the power button for 5 seconds to clear the error. The machine will drain and power off. Power back on and try again.
	Possible Problems	1. Check wash temp thermistor - QTM1 - for damage and tightness. 2. Check tank heater (amps on each leg), wiring and contactor. 3. Check high limits. 4. Look for damaged wires in control box. 5. Check incoming water temperature. 6. Ensure thermal paste between thermistor and tank.
	Tech Tips	1. If water is getting into connector, add dielectric grease to area to protect. 2. The 20 minutes starts when “Heating” appears on the screen.

COMPONENT OPERATING VALUES

Pressure Sensor Values

Pressure Sensor Values						
Machine Model	Wash Tank			Electric Booster (LXnH/LXnR/LXGnR Models) Holding Tank (LXnC/LXGnPR Models)		
	Empty	Full	Heat On	Empty	Full	Heat On
LXnH/LXnR/LXGnR	0.5 V	0.84 V	0.60 V	0.5 V	0.90 V	0.74 V
LXnC/LXGnPR	0.5 V	0.84 V	0.60 V	0.5 V	0.90 V	N/A

Thermistor Charts

Wash Tank Temperature Sensor Booster Tank Temperature Sensor (Part Number 00-775612-00001)	
Degree (°F)	Resistance (Ω)
32°F	36,496
86°F	9,928
104°F	6,749
122°F	4,674
140°F	3,290
158°F	2,366
203°F	1,109

Final Rinse Temperature Probe (Part Number 00-328994)	
Degree (°F)	Resistance (Ω)
95°F	63,480
104°F	51,050
113°F	41,290
122°F	33,590
131°F	27,480
140°F	22,950
149°F	18,670
158°F	15,500
167°F	12,930
176°F	10,840
185°F	9,120
194°F	7,710
203°F	6,540
212°F	5,570

Wash Tank Heater Values

LXnH/LXnR/LXGnR 1.8KW Wash Tank Heater					
Hobart Part Number	Voltage	Phase	Watts	Amps	Cold Resistance Ω
00-941286-00001	208	1	1,352	5.9 - 6.8	28.9 - 33.5
	240	1	1,800	6.8 - 7.9	

LXnC/LXGnPR 1.35KW Wash Tank Heater					
Hobart Part Number	Voltage	Phase	Watts	Amps	Cold Resistance Ω
00-941286-00003	120	1	1,352	10.1 - 11.8	9.6 - 11.2

Booster Heater Values

LXnH/LXnR/LXGnR 4.9KW Booster Heater					
Hobart Part Number	**Voltage**	**Phase**	**Watts**	**Amps**	**Cold Resistance Ω**
00-563564-00001	208	1	3,700	16 - 18.7	10.58 - 12.25
	240	1	4,926	18.5 - 21.6	

Motor Values

Wash Pump Motor				
Hobart Part Number	**Voltage**	**PH**	**Hz**	**Amps**
00-563012-00001	115 - 120	1	60	4.9
00-563012-00002	208 - 240	1	60	2.5

Rinse Pump Motor				
Hobart Part Number	**Voltage**	**PH**	**Hz**	**Amps**
00-942096-00001	115 - 120	1	60	1.4
00-942096-00002	208 - 240	1	60	0.8

Drain Pump Motor				
Hobart Part Number	**Voltage**	**PH**	**Hz**	**Amps**
00-562551-00001	120	1	60	0.55

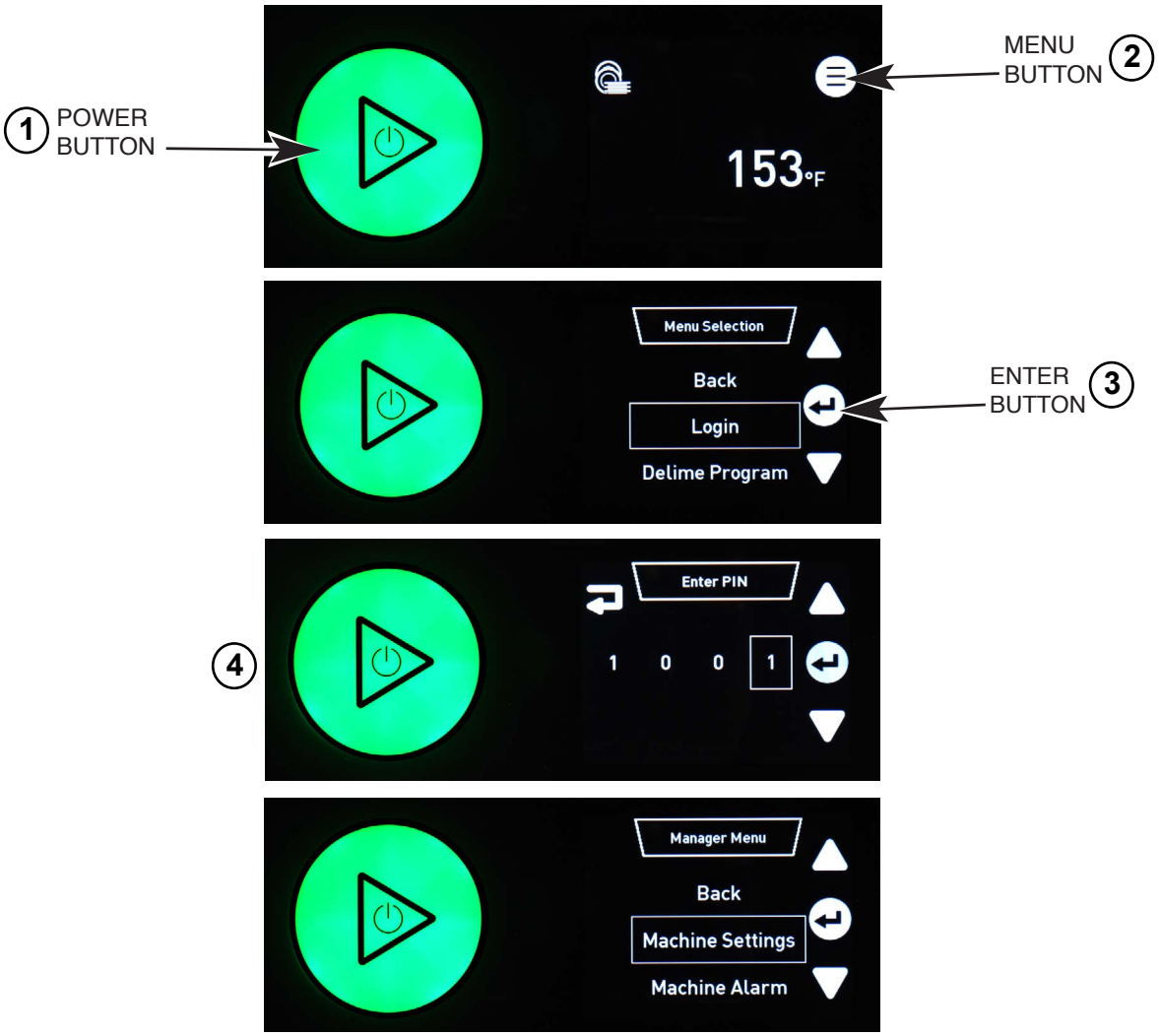
Fan (LXnR &LXGnR Models)		
Hobart Part Number	**Voltage**	**Amps**
00-941538-00002	220 / 240	0.51 / 0.63

PROGRAMMING

Manager Menu

The LXn dish machines allow customization options for machine operation. To activate or change these features, enter the Manager Menu using the following procedure.

1. Press the POWER button to turn the dishwasher on. Display shows ready screen when fill cycle has completed.
2. Press the MENU button in the upper-right hand corner of the display.
3. With 'Login' highlighted, press the ENTER button. The 'Enter PIN' screen will be displayed.
4. The default manager code is 1001. Use the ARROW buttons to change the value and then press the ENTER button to select the value and toggle to the next digit until the code is entered.
5. Use the ARROW buttons to toggle through the Manager Menu.
   a. Once the desired selection is highlighted, press the ENTER button.
   b. For selections that are editable, use the ARROW buttons to change the value.
   c. Once the required value is displayed, press the ENTER button to save the selection.
6. To exit the programming, use the ARROW buttons to scroll and highlight 'Back' and then press the ENTER button. Repeat this procedure until the ready screen is displayed.



Manager Menu Parameters

NOTE: The internal clock to the dishwasher may have up to 5 minutes per year deviation. Over time, this may affect time-based features such as Automatic Start / Drain programs. Be sure to double-check the machine clock setting in the Manager Menu when enabling these programs.

Parameter Name	Description	Possible Values	Default Value
MACHINE SETTINGS			
Language	Sets the language for machine display.	English, French, Spanish, etc.	English
Date	Sets the current day, month, year.		
Time	Selects the current time (hours & minutes). Time can also be updated to 24h format.		
Temperature Units	Sets the temperature displays to Fahrenheit or Celsius.	Fahrenheit or Celsius	Fahrenheit
MACHINE ALARM			
Machine Alarm	Enables or disables an end of cycle audible alarm.	Enable or Disable	Enable
CHEMICAL MENU			
Rinse Aid Concentration	Sets the rinse aid chemical concentration level.	0.0 ml/L - 2.0 ml/L	1.1 ml/L
Detergent Concentration	Sets the detergent chemical concentration level.	0.0 ml/L - 9.5 ml/L	2.5 ml/L
Prime Chemical Pumps	Allows the chemical pumps to prime. Select Yes for each pump to prime.		
Chemical Notification/ Lockout	If no chemical is detected, sets the display to notification or locks the machine out.	Notification, Detergent & Sanitizer Lockout	Notification
Delime Lockout	Enables or disables the delime lockout feature. When enabled, after 10 delime notifications have been ignored, the machine will lock out and be inoperable until a delime cycle is completed.	Enable or Disable	Disable
Sanitizer Dosing (LXnC / LXGnPR Models Only)	Sets the sanitizer chemical concentration level.	0% - 100%	11%
Delime Concentration (LXnR / LXGnR Models Only)	Sets the delime chemical concentration level based on % delimer in solution with sump & booster tank water.	Low (1.25%) Medium (1.89%) High (3.77%)	Low (1.25%)
WATER HARDNESS			
Water Hardness	Sets the water supply water hardness.	0 gr/gal - 250 gr/gal	7 gr/gal

Parameter Name	Description	Possible Values	Default Value
MACHINE CYCLE LOG			
Show Cycle Information	Displays date and time of previous cycles.		
AUTOMATIC START / DRAIN *			
Enable/Disable	Allows the automatic start/ drain feature to be disabled or enabled.	Enable or Disable	Disable
Switch on (Filling)	Sets the automatic start day of week and time. If feature is enabled, machine will automatically power on and fill at day and time set..		
Switch off (Draining)	Sets the automatic drain day of week and time. If feature is enabled, machine will automatically drain and power off at day and time set.		
Wi-Fi			
Enable/Disable	Enables or disables WiFi connectivity.	Enable or Disable	Disable
Status	Displays the current WiFi connection status of the machine.		
Connection Assistant	Guided connection to WiFi network.	• Search Network • WPS • Add Network	
Request Access Code	Generates an access code that can be used to pair the machine to the SmartConnect App.		
Connection Test	Tests the WiFi connection with the machine to confirm WiFi connectivity.		
Manual Installation	Allows connectivity to a hidden network.	• Search Network • WPS • Add Network	
Mobile Connection Assistant	Pairs machine to Wifi through SmartConnect app.	Enable or Disable	Disable
DELIME REMINDER (LXnH / LXnC / LXGnPR MODELS ONLY)			
Cycles Until Delime Notification	Shows the remaining number of cycles until the delime notification is displayed..		
Set Counter	Sets the number of cycles until the delime notification is displayed.	0-999,999	2000

*** NOTE:** When enabling Automatic Start / Drain feature, the machine will power on and fill and drain and power off while unattended. Prior to using this feature, ensure all machine panels are in place and that all facility connections to the machine (i.e.: water, drain, electric) are in working order.

Parameter Name	Description	Possible Values	Default Value
DELAY WASH PROGRAM			
Enable/Disable	Enables or disables wash tank temperature delay. If enabled, wash cycle will be delayed until minimum wash temperature is reached. Display will show 'Heating' until temperature is reached.	Enable or Disable	Disable
RINSE TEMPERATURE ALERT			
Disabled	Disables low rinse temperature alert.		
Notification	Enables low rinse temperature alert. After set number of cycles (default 3) below minimum rinse temperature requirement, display will show rinse temperature alert warning. Machine will continue to function as normal.		
Lockout Machine	Enables low rinse temperature lockout. After set number of cycles (default 3) below minimum rinse temperature requirement, display will show rinse temperature alert warning. Machine will lockout and unit will be inoperable.		
Repeat Cycle	After set number of cycles (default 3) below minimum rinse temperature requirement, machine will automatically repeat wash and rinse cycles.		
STRAINER MONITORING			
Strainer Monitoring	Detects if sump strainer is in place through error or warning. If set to Error Message, unit is inoperable until strainer is properly installed. If set to Warning, press Enter to continue with normal machine operation.	Error Message Or Warning	Error Message

Service Menu

Follow the below procedure to access the Service Programming Menu.

NOTE: Altering parameters from machine cofiguration as shipped may cause operation issues. Resetting parameters back to factory default settings is not covered under warranty.

1. Press the POWER button to turn the dishwasher on. Display shows ready screen when fill cycle has completed.
2. Press the MENU button in the upper-right hand corner of the display.
3. With 'Login' highlighted, press the ENTER button. The 'Enter PIN' screen will be displayed.
4. The service programming code is 8934. Use the ARROW buttons to change the value and then press the ENTER button to select the value and toggle to the next digit until the code is entered.
5. Once the service code has been entered, Use the ARROW buttons to toggle through the menu and access the below service menus.
6. To exit the programming, use the ARROW buttons to scroll and highlight 'Back' and then press the ENTER button. Repeat this procedure until the ready screen is displayed.

Parameter Name	Description	Possible Values	Default Value
DIAGNOSTICS			
Inputs/Outputs	Shows the values for the Digital Inputs, Analog Inputs and Digital Outputs. Also allows the component outputs to be energized by highlighting the appropriate component and pressing and holding the 0/1 button. The output will be energized until the 0/1 button is released.		
Error Log	Shows all the errors and how many times they have been triggered and when.		
CLEAR ERROR LOG			
Reset Error Log	Clears which errors have been triggered and when.	Yes or No	No

Parameters Menu

To access the Analogue Inputs display mode in the Parameters menu, follow the below steps.

1. Use the arrow buttons to navigate to parameter S51 and press the ENTER button.
2. Press the + button to change the 0 to 1 and press the ENTER button.
3. Highlight Exit Menu and press the ENTER button.
4. To exit the Parameters menu, use the ARROW buttons to scroll and highlight 'Back' and then press the ENTER button. Repeat this procedure until the Analogue Inputs mode is displayed.
5. After troubleshooting, access the Parameters menu and change parameter S51 back to 0.

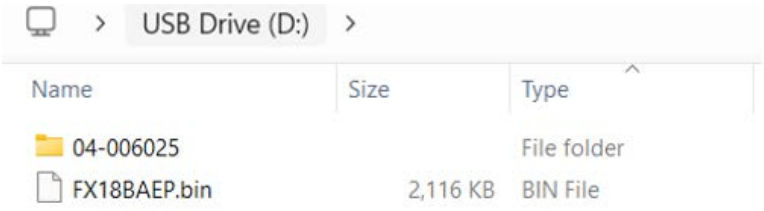
HMI Firmware Update

LXn Firmware Download Procedure

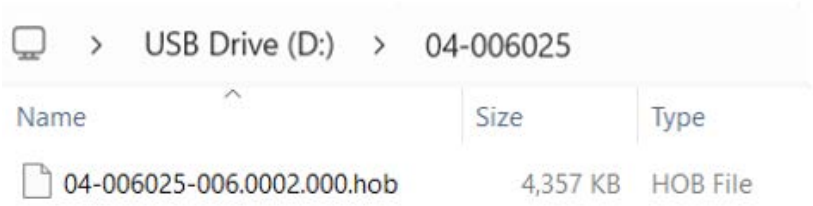
1. Scan the below QR code or QR code or visit **https://warewash.hobartcorp.com/lxnwiringdiagrams** and download the two firmware files (.hob and .bin). **NOTE: When downloading the files, ensure the file names remain the same once downloaded.**

2. On a blank USB drive, load the .bin file onto the main directory.

3. On the same USB drive, create a folder named “04-006025”.



4. Load the firmware (.hob file) in the 04-006025 folder.



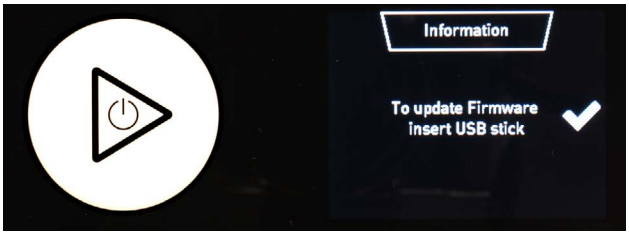
Updating Firmware on HMI

1. For a new HMI, the display prior to loading firmware will default to the below display.

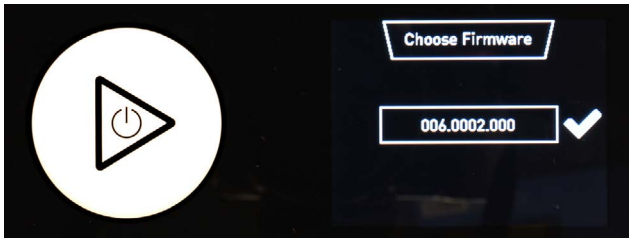
2. Before proceeding, ensure the unit is powered off at the circuit breaker supply.

3. With the unit powered off, remove the lower front panel and insert the USB drive, which was previously loaded with the files, into the USB port.

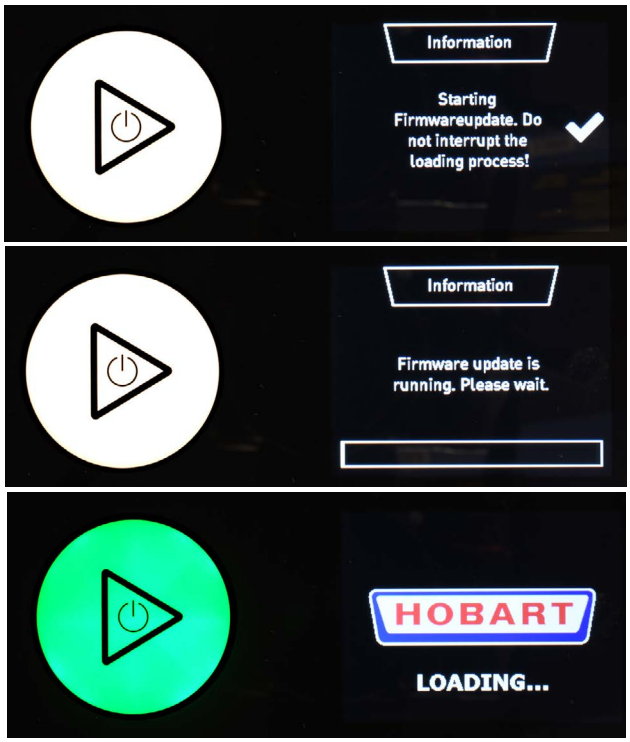
4. Turn the circuit breaker on and press the checkmark when displayed.



5. Press the checkmark to confirm the firmware version.

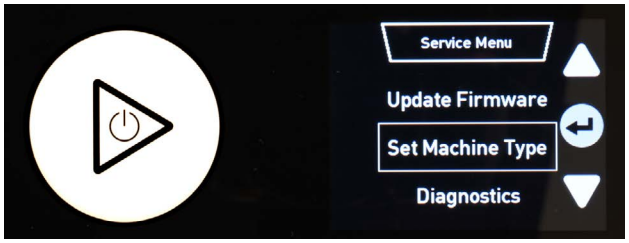


6. Press the checkmark to initiate the firmware update.



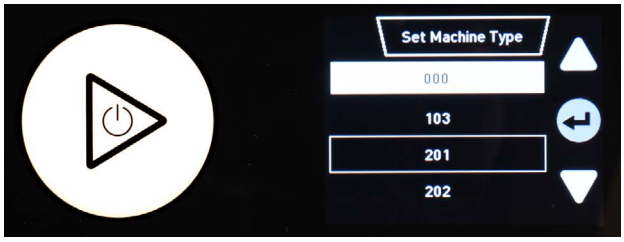
7. Once the firmware update has completed, press the Enter button.

8. Press the down arrow to highlight “Set Machine Type” and press the Enter button.



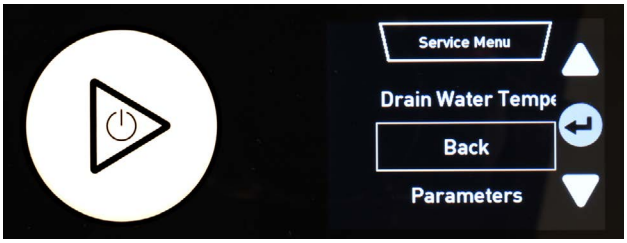
9. Using the below chart, set the Program Number for the Device Code based on the dish machine configuration. Use the arrow buttons to highlight the appropriate Program Number and press the Enter button.

Program Number	Device Code
103	LXnC-3
201	LXnH-1
202	LXnH-2
205	LXnH-5
206	LXnH-6
230	LXnH-30
301	LXnR-1
302	LXnR-2
305	LXnR-5
306	LXnR-6
307	LXnR-7
308	LXnR-8
330	LXnR-30
400	LXGnPR-1 LXGnPR-2 LXGnPR-3
500	LXGnR-1 LXGnR-2 LXGnR-4
530	LXGnR-30



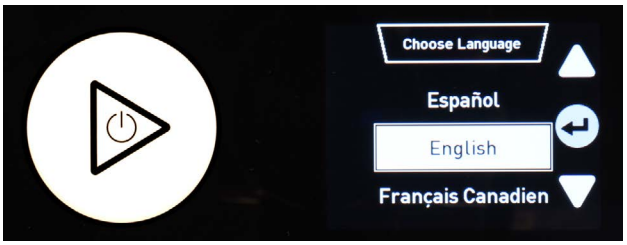
10. Once the loading process has completed, press the Enter button.

11. Scroll down and highlight “Back” to exit the programming. Repeat this procedure until the display powers off.



12. Press the Power button to turn the unit on.

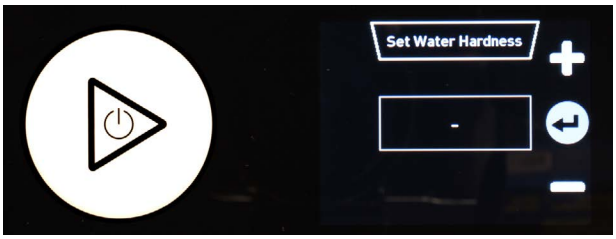
13. Highlight the appropriate language selection and press the Enter button.



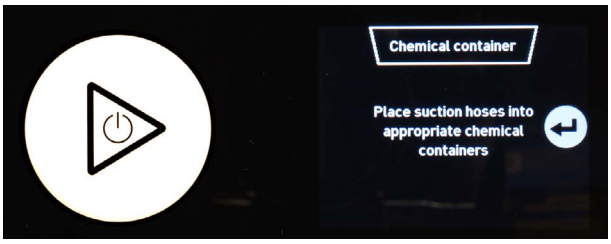
14. Set the current date and press the Enter button.

15. Set the current time and press the Enter button.

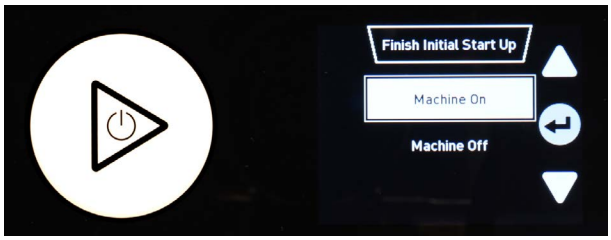
16. Select the water hardness value based on the water supply hardness to the dish machine and press the Enter button (default is 3 grains per gallon).



17. Press the Enter button to prime the chemical pumps. The chemical pumps will prime automatically once the Enter button is pressed.



18. With “Machine On” highlighted, press the Enter button to start the fill process or highlight “Machine Off” and press the Enter button to turn the machine off.



19. Remove the USB drive and replace the lower front panel. The machine is now ready for normal operation.

PREVENTATIVE MAINTENANCE CHECKLIST

The following items should be checked on a routine basis to ensure proper dishwasher operation and prolong the life of the machine and its components. It is recommended that these items be checked every six months or as required based on machine usage.

CONTROLS / ELECTRICAL COMPONENTS

- ☐ Check operation of all HMI buttons and functions.
- ☐ Check door switch and test operation. Adjust or replace as needed.
- ☐ Check for moisture in controls area; dry and repair as needed.
- ☐ Check for tightness and discolorization on all lead wires, terminal blocks, relays and contactors.
- ☐ If applicable, inspect power cord & plug for wear or damage.

FILL / FINAL RINSE SYSTEM

- ☐ Clean upper and lower final rinse arms and nozzles. Ensure arms rotate freely.
- ☐ Ensure no excessive lime scale build up inside the rinse arms.
- ☐ Fill the machine and check for proper water level in both sump and booster tank. Refer to Component Operating Values (page 58) and check volt (V) readings.
- ☐ Check all hoses and piping for leaks.
- ☐ Inspect and clean fill hose strainer.
- ☐ Inspect and clean fill valve strainer.
- ☐ Ensure fill air gap and chemical adapter nuts are tight inside wash chamber.
- ☐ Verify final rinse temperature. If incorrect, check the thermistor resistance (see chart below) and replace if required.

Final Rinse Temperature Probe (Part Number 00-328994)	
Degree (°F)	**Resistance (Ω)**
95°F	63,480
104°F	51,050
113°F	41,290
122°F	33,590
131°F	27,480
140°F	22,950
149°F	18,670
158°F	15,500
167°F	12,930
176°F	10,840
185°F	9,120
194°F	7,710
203°F	6,540
212°F	5,570

DOOR / PANELS

- [ ] Check to ensure unit is level. Adjust as required.
- [ ] Check both side and front panels for damage.
- [ ] Ensure lower front panel is installed properly with no gaps.
- [ ] Check for proper operation of the door assembly and ensure it closes properly.
- [ ] Inspect door seal for excessive wear and proper adjutment. Replace as required.

DRAIN SYSTEM

- [ ] Drain unit – check for leaks and proper drain pump operation.
- [ ] Check drain hose routing and ensure no kinks or sharp bends in hose.
- [ ] Clean tank bottom and drain manifold and check for debris.
- [ ] Ensure drain check valve tee is clean and free of debris and cap & ball is installed and tight.
- [ ] Clean wash tank air trap port.
- [ ] If the machine is equipped with the drain water tempering feature, inspct the vacuum breaker for leaks and replace the service kit if required.

WASH TANK SYSTEM

- [ ] Clean upper and lower wash arms. Ensure arms rotate freely.
- [ ] Inspect wash arm hubs for excessive wear. Replace as required.
- [ ] Clean strainer basket and strainer pan.
- [ ] Ensure wash tank heater is clean and free of soil and lime scale build up. If excessive lime scale is present, run delime cycle.
- [ ] Verify wash tank temperature meets the minimum requirement as shown on the data label.

CONDENSING CYCLE- LXnR & LXGnR MODELS ONLY

- [ ] Check operation of codensing system components (fan, coil, door lock).
- [ ] Ensure condensing coil is free of debris and clean as required.

CHEMICAL SYSTEM

- [ ] Verify all chemical pump operations and ensure chemicals are being dispnsed into the machine.
- [ ] Replace chemical pump squeeze/pinch tubes.
- [ ] Check all connections and fittings for leaks.
- [ ] Check tubing from chemical bottle to chemical pump and from chemical pump to machine for kinks, holes and leaks.
- [ ] Ensure standpipes are properly inserted into chemical containers.
- [ ] For low temperature chemical sanitizing machines, verify proper sanitizer injection (50-100 PPM).

NOTE: Reassemble any panels/covers or components that were removed.

RECOMMENDED SPARE PARTS

Below is a list of recommended spare parts. For the complete LXn parts manual, visit **www.hobartparts.com**.

Qty.	Part Number	Description
1	01-606235	Relay/Harness Kit (1 Pole) (40 Amp, 120V) (Wash Tank Heat Relay)
1	01-606531	Contactor Service Kit (20 Amp) (Booster Heater Contactor)
1	00-562598	Auxilary Switch (30-Amp Machines)
1	00-562599-00001	Relay (1 Pole) (40 Amp, 240V Coil) (Drain Pump Relay)
1	00-563996	Transformer - 250VA 50/60 Hz. (3-Phase or 2-Wire 1 Phase)
1	00-563609	Pressure Sensor Kit (Includes Pressure Sensor, Clamps, Tubing, Air Trap & O-Ring)
1	00-775612-00001	Temperature Sensor (Wash Tank)
2	00-942185	High Limit Protector (Wash Tank & Booster)
1	01-515276-00002	Reed Switch (Strainer Basket)
1	00-941286-00003	Heater Element (Sump) (120V)
1	00-941286-00001	Heater Element (Sump) (208-240V)
1	00-892725-00003	Heater Element (Sump) (208V) (LXnR-30, LXnH-30)
2	00-067500-00007	O-Ring (Heater Element, Sump)
1	01-605772	Booster Air Trap Service Kit (Includes Air Trap, O-Ring, Clamps & Fittings)
1	01-650033	Temperature Sensor Kit (Booster)
1	00-563564-00001	Heater Element (Booster) (208-240V, 1 Ph) (Includes O-Ring)
1	00-563564-00002	Heater Element (Booster) (208-240V, 3 Ph) (Includes O-Ring)
1	00-067500-00034	O-Ring (Booster Heater Element)
1	00-975433	Board (Daughter) (A6)
1	00-975430-00002	Control Board
1	00-562538-00004	Power Supply
1	01-605351	HMI Assembly
1	00-941429-00004	Door Switch Assy.
5	FE-025-84	Fuse (6.3 Amp) (250 VAC) (F1/F2)
2	FE-025-62	Fuse (2 Amp) (250V) (F3)
2	FE-025-61	Fuse (1.25 Amp) (250V) (F4)
5	FE-027-031	Fuse (4 Amp) (F1, A6 Extension Card)
1	00-941839-00001	Wash Arm Hub
1	00-328994	Rinse Probe Assy.
1	00-942101-00002	Capacitor (120 V., 60 Hz., 1 Ph.)
1	00-942101-00001	Capacitor (208-240 V., 50/60 Hz., 1 Ph.)
1	00-942100-00001	Drain Pump (60 Hz.)
1	00-563012-00001	Wash Pump Assy. (120 V., 60 Hz., 1 Ph.) (Includes Capacitor & Drain Pump)
1	00-563012-00002	Wash Pump Assy. (208-240 V., 60 Hz., 1 Ph.) (Includes Capacitor & Drain Pump)
1	00-563072-00002	RPE Valve (15 L/Min) (Fill / Drain Water Tempering)
1	00-563073-00003	Dual Valve (15 L/Min) (Advansys Models) (Drain Water Tempering)
1	00-274233	3/8" Vacuum Breaker Service Kit (Drain Water Tempering)
1	00-942096-00001	Rinse Pump (115-120 V., 60 Hz.)

Qty.	Part Number	Description
1	00-942096-00002	Rinse Pump (208-240 V., 60 Hz.)
1	00-950372-00002	Chemical Sensor (Detergent/Sanitizer)
1	00-950372-00003	Chemical Sensor (Rinse Aid)
1	00-949651-00004	Chemical Pump Tubing Kit (Includes Spring, Clamps, Tube, Rollers & Grease)