HANS™ Premium Water Model 2 QUAD

Owner's Manual

10100-02

Model 2 QUAD is certified by IAPMO R&T to NSF/ANSI 61 and LEC 2006.

Model 2 QUAD has been evaluated by ASSE International for Halal compliance.

Model2 QUAD is certified by ASSE International to LEC 2006.

Model 2 QUAD is certified by IAPMO R&T to CSA B483.1, ASSE 1087 and to NSF/ANSI 244 for reduction/inactivation of pathogenic (disease-causing) bacteria, viruses and cysts

Model 2 QUAD is certified by Intertek to UL STD 979.

5019551

Document Revision Table

Revision	Date	Section(s) Revised: Description
01	08/06/2021	Initial Release
02	08/13/2021	General: Clerical and formatting updates Title Page: Updated certification language

Table of Contents

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General Information

Please refer to the **HANS™ Premium Water** website (www.hanspremiumwater.com/support) for the most current version of this manual as well as the Performance Data Sheet for this system (P/N 10031).

HANS™ Premium Water QUAD

The HANS™ Premium Water QUAD is a durable piece of equipment, which, with proper care, will last for many years. This Owner's Manual outlines operation and troubleshooting details vital to its sustained performance.

If the system is altered at the site of operation or if the inlet water conditions change, please contact your local dealer or distributor to determine proper recovery for your use.

Prior to operating or servicing the QUAD, this manual must be read and understood. Keep this and all associated documentation available for future reference.

Safety

The various safety headings used throughout this manual's text are defined below:

NOTE: Identifies statements that provide further information and clarification.

CAUTION: Identifies conditions or practices that could result in equipment or other property damage.

WARNING: Identifies conditions or practices that could result in injury or loss of life. Failure to follow warnings could result in serious injury or death.

DO NOT REMOVE UNDER ANY CIRCUMSTANCE CAUTION, WARNING, OR OTHER DESCRIPTIVE LABELS FROM THE SYSTEM.

General Information (continued)

Read this manual and the installation manual (P/N 8910) before installing and using the QUAD system. Follow steps exactly to install the system correctly. Failure to do so could cause personal injury or property damage.

As with any water system, it is highly recommended that a leak detection system with a water main shut-off valve be installed to prevent property damage due to a plumbing or system failure.

Do not use the HANS™ Premium Water QUAD to create safe, drinkable water that is from non-potable water sources. Do not use this system on microbiologically unsafe water or water of unknown quality without disinfecting.

For use with private wells:

WARNING: Do not use on private well water until the water has been tested by a certified drinking water laboratory to determine microbial safety in accordance with regulatory standards. Before using this system on a private well, it is the responsibility of the user to have the well tested by an accredited drinking water laboratory. For continuous use of this device on a private well, it is the responsibility of the user to obtain frequent microbiological testing (recommended twice per year, minimum) of the well water entering the system by an accredited drinking water laboratory to monitor continued compliance with the applicable regulatory standards. If the well source becomes microbiologically contaminated as indicated by testing, discontinue use of this system until sufficient well treatment and testing indicates that the water again meets the applicable regulatory standards. Following exposure of the device to microbiologically contaminated water and prior to its reuse, conduct the proper sanitization and servicing as directed in the service & maintenance manual (P/N 8920).

WARNING: This system may not perform as claimed unless all functional components are installed in their proper sequence in accordance with the installation and maintenance instructions.

This system has been tested according to NSF/ANSI 244 for reduction / inactivation of pathogenic (disease-causing) bacteria, viruses and cysts. The concentration of the indicated bacteria and virus surrogates in water entering the system was reduced to meet the reduction criteria, as specified in NSF/ANSI 244. The bacteria and virus surrogate reduction indicates verification of cyst reduction.

This system not intended to control all heterotrophic plate count (HPC) bacteria.

General Information (continued)

WARNING: This system is for use on water supplies that have been treated to public water system standards or otherwise are determined to be microbiologically safe as demonstrated by routine testing. This system has been tested to demonstrate protection against intermittent accidental microbiological contamination of otherwise safe drinking water.

Do not use with water that is microbiologically unsafe or of unknown quality. This system is not intended for use during a boil water advisory. Stop using this system when a boil water advisory is issued. After a boil water advisory has been discontinued and prior to reuse, sanitize and service the system as directed in the service & maintenance manual.

GROUNDING INSTRUCTIONS: This system must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for electric current. This system is equipped with a cord having a system-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.

WARNING: Improper connection of the system-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service representative if you are in doubt whether the system is properly grounded. Do not modify the plug provided with the system; if it will not fit the outlet, have a proper outlet installed by a qualified technician.

CAUTION: The manufacturer also recommends that the user periodically test the output water to verify the system is performing correctly.

General Information (continued)

Check with local public works department for plumbing and sanitation codes. Follow their guides as you install the HANS™ Premium Water QUAD. Follow local codes if they differ with guides in this manual.

In Massachusetts, plumbing code 248-CMR 3.00 and 10.00 shall be adhered. Consult with a licensed plumber.

Avoid installing this system in direct sunlight. Excessive heat may cause distortion or other damage to non-metallic parts.

If installing the QUAD outdoors, do not locate where it will be exposed to wet weather, direct sunlight, or extreme hot or cold temperatures. The system requires an ambient temperature range of 35 to 120 degrees Fahrenheit.

The QUAD has a non-metallic valve system. Installing it on metal plumbing will break electrical continuity, which may interrupt grounding for your home. You must restore electrical continuity in your metal plumbing system. Please refer to the installation manual (P/N 8910) for further information.

WARNING: An air gap should be plumbed to state and regional codes and used to connect the reject water outlet to a drain connection.

While this Reverse Osmosis system contains replaceable treatment components to raise pH, RO water can lower pH. As this can be corrosive to some plumbing materials, care should be taken to properly maintain your system.

General Information (continued)

California Proposition 65 Warning

WARNING: This product can expose you to chemicals including Arsenic, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Warranty / Terms of Use

Please refer to the **HANS™ Premium Water** website for Terms of Sale and Warranty Information. This information can be found at:

www.hanspremiumwater.com/support

Terms & Definitions

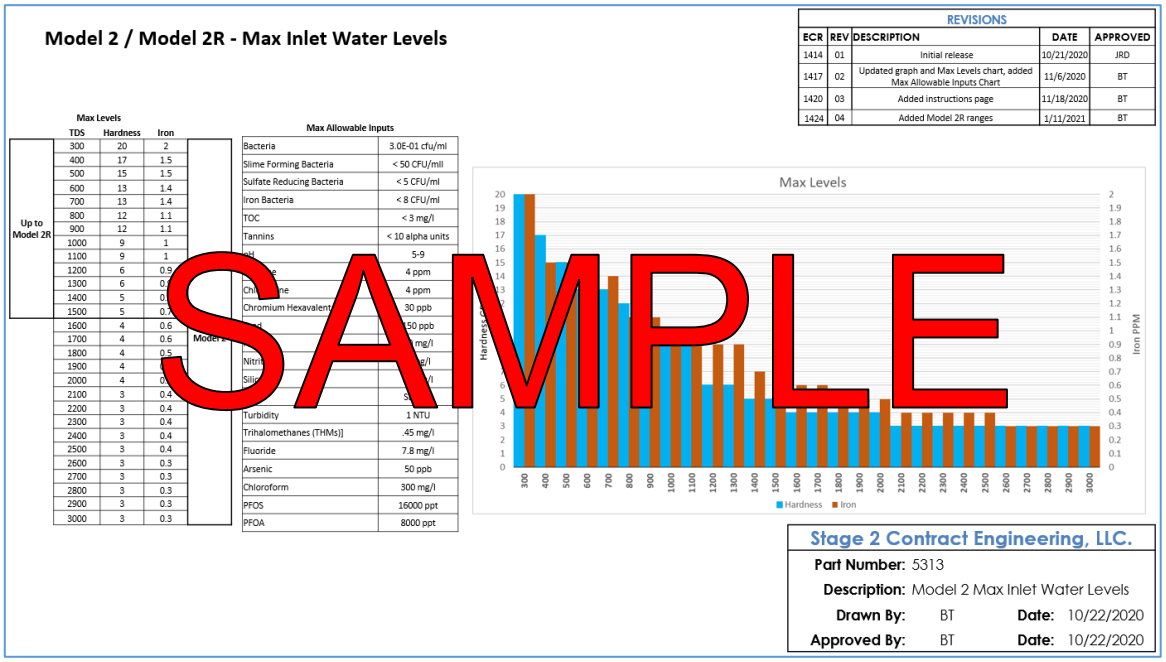
TERMS	DEFINITIONS
Ambient temp	Air Temperature of the immediate area around the system
Chlorine	Water additive in inlet water; may be used as a disinfectant
Element	Reverse Osmosis "filter"
gpg	Grains per gallon, a unit of measure of calcium carbonate
Hardness	Amount of dissolved calcium & magnesium in the water measured in grains per gallon (gpg)
Inlet Water	Unfiltered water from municipal or well that is plumbed into the system
Output Water	Clean water output from the system
pH	Scale of acidity from 0-14, with 7 being neutral
Power Cycle	Unplugging the unit from power, waiting 30 seconds, then reconnecting unit to power.
ppm	Parts per million, a unit of measure for small concentrations of substances in water
Recovery Rate	Amount of filtered water recovered compared to waste water in %
Stage 3 Element	Reverse Osmosis Elements used as final stage to clean inlet water (P/N 8017)
Surge tank	Internal storage tank used to store water and buffer outlet pressure
TDS	Unit of measure for total dissolved solids in water in ppm
Waste Water	Water carrying away contaminants from the Elements to the drain

System Specifications

Inlet Water Source -

The HANS™ Premium Water QUAD is designed to operate with a wide range of inlet water; however, refer to the **Max Inlet Water Levels document (P/N 5313)** for inlet water combination requirements.

A pretreatment system MUST be used to bring inlet water below these specs.



Sample illustration is for demonstration only. Refer to the Max Inlet Water Level document directly.

Higher inlet TDS and/or lower (seasonal) water temperatures will reduce the system's water output flow and recovery rate (efficiency).

For optimal performance if your system is on a well, use a 40/60 well switch with the minimum bound set to 45 psi. For inlet pressure that exceeds 60 psi, a pressure reducing valve (PRV) must be installed.

System Specifications (continued)

Failure to meet minimum water requirements may cause the RO elements to foul and void the manufacturer's warranty.

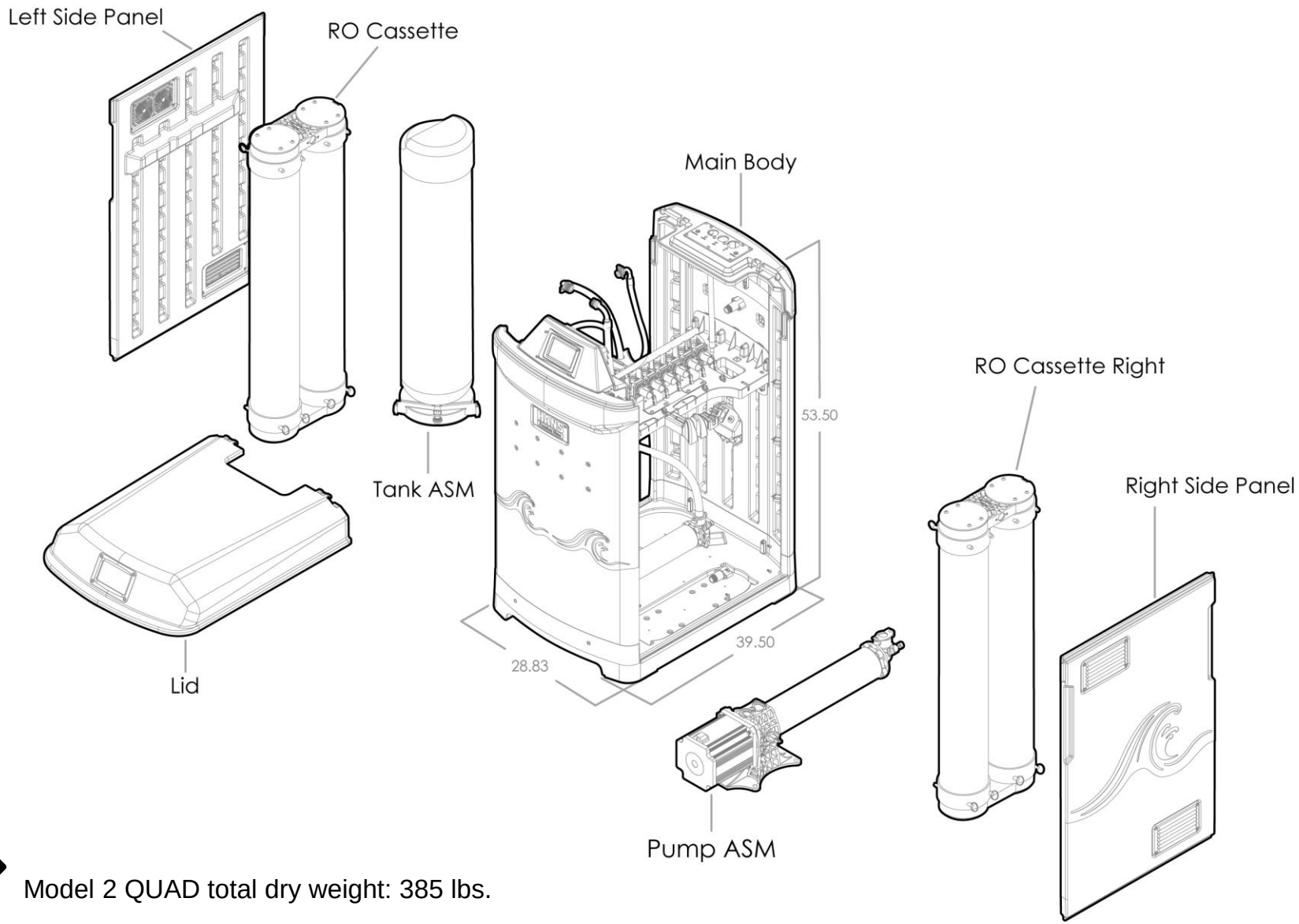
Combinations of TDS, Iron, Arsenic, hardness and other contaminants will change maximum specifications.

See Performance Data Sheet (***www.*hanspremiumwater*.com/support***)** for further information.

This Reverse Osmosis system contains replaceable treatment components critical for effective performance. It is the user's responsibility to heed all alerts and warning from the system concerning element replacement from the on-board display and the mobile app. The manufacturer also recommends that the user periodically test the output water to verify the system is performing correctly.

System Overview

Exploded view of the overall system and identification of the various sub-assemblies.

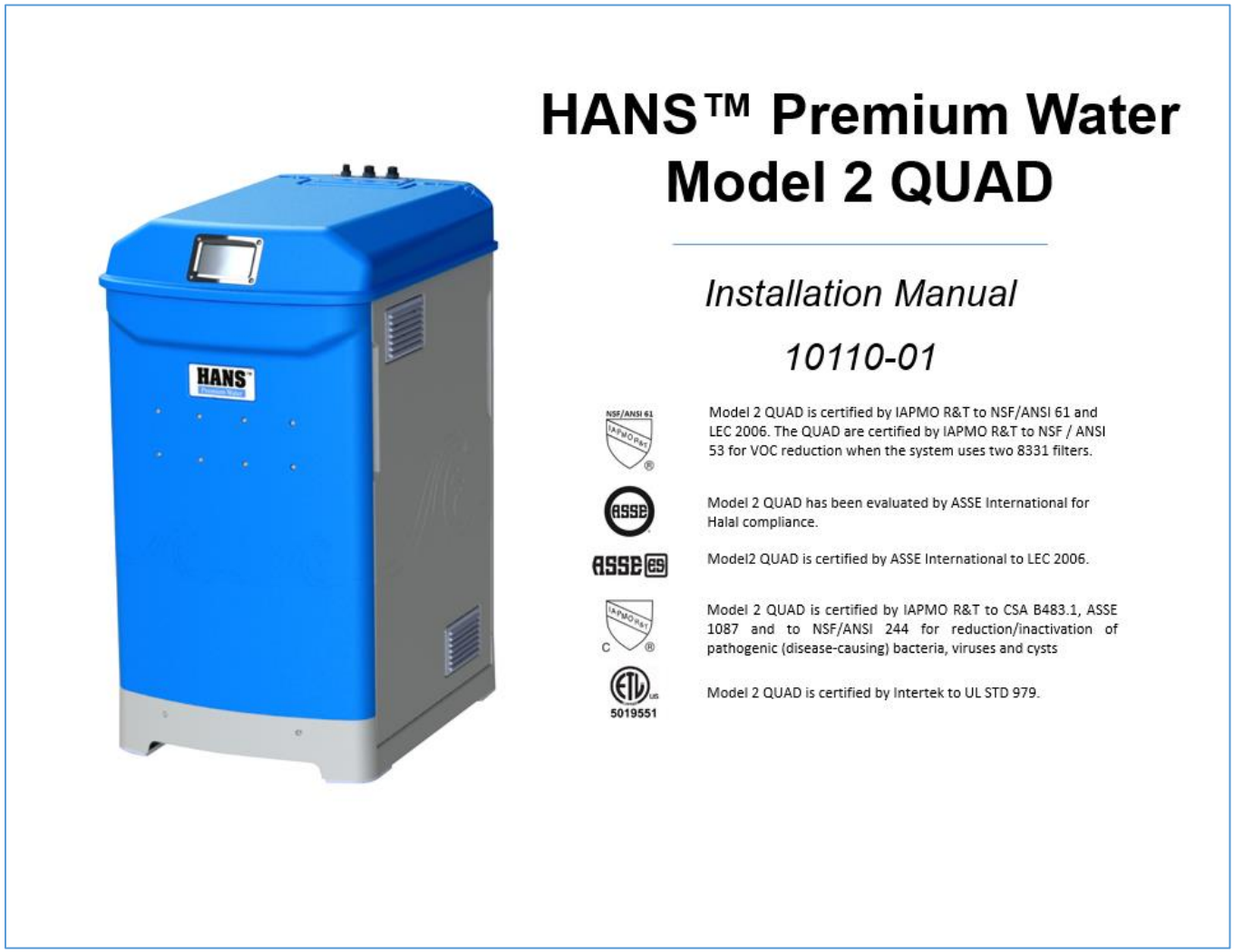


Model 2 QUAD total dry weight: 385 lbs.

Installation & Start-Up

Installation should be performed by a qualified technician.

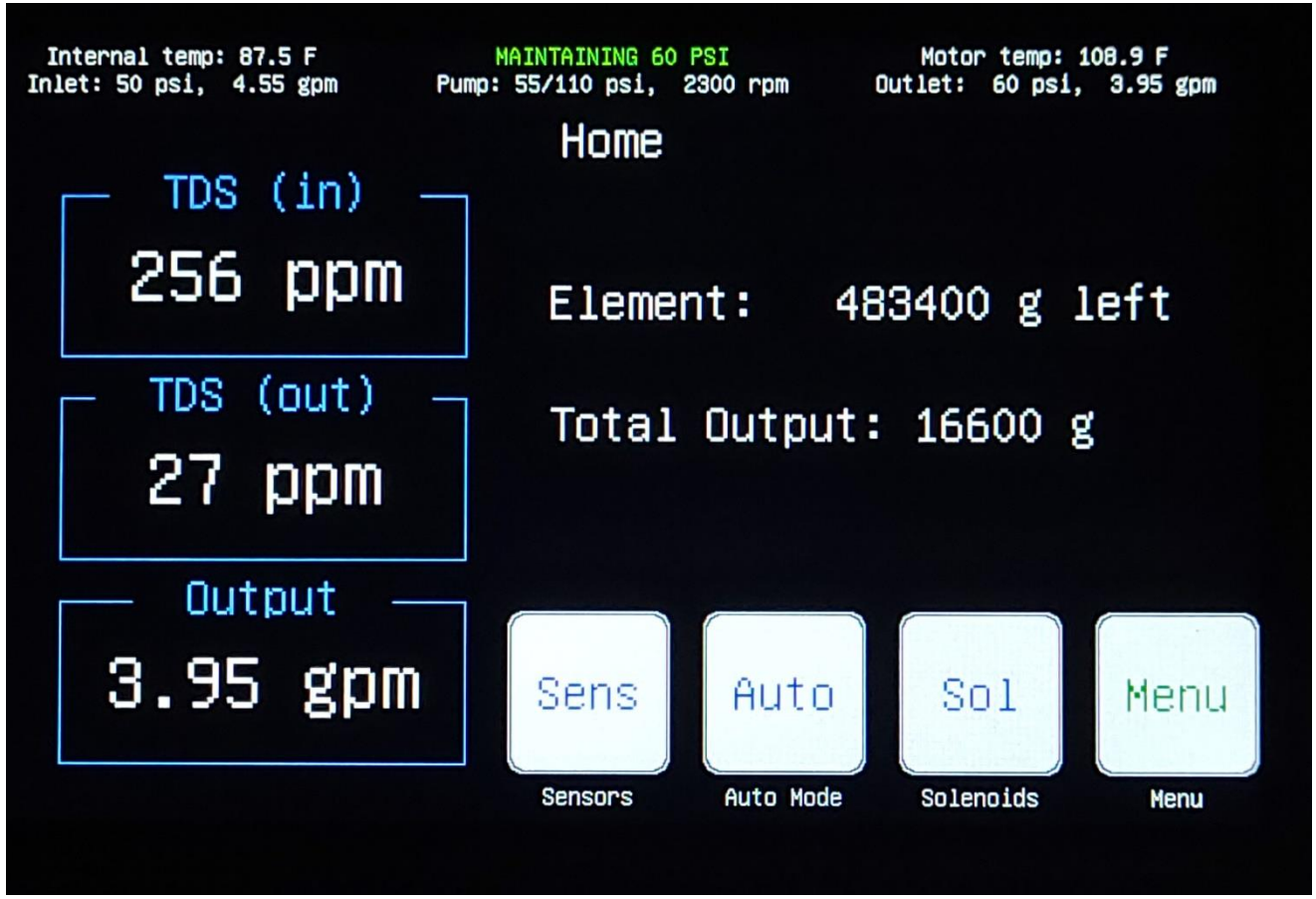
Refer to the HANS Premium Water Installation Manual – Model 2 QUAD (P/N 10110). Available for download at **www.hanspremiumwater.com/support**.



Display Navigation – Home Screen

The home screen displays all the pertinent operational parameters as well as filter life and total output (clean water).

From any screen, select the home button.

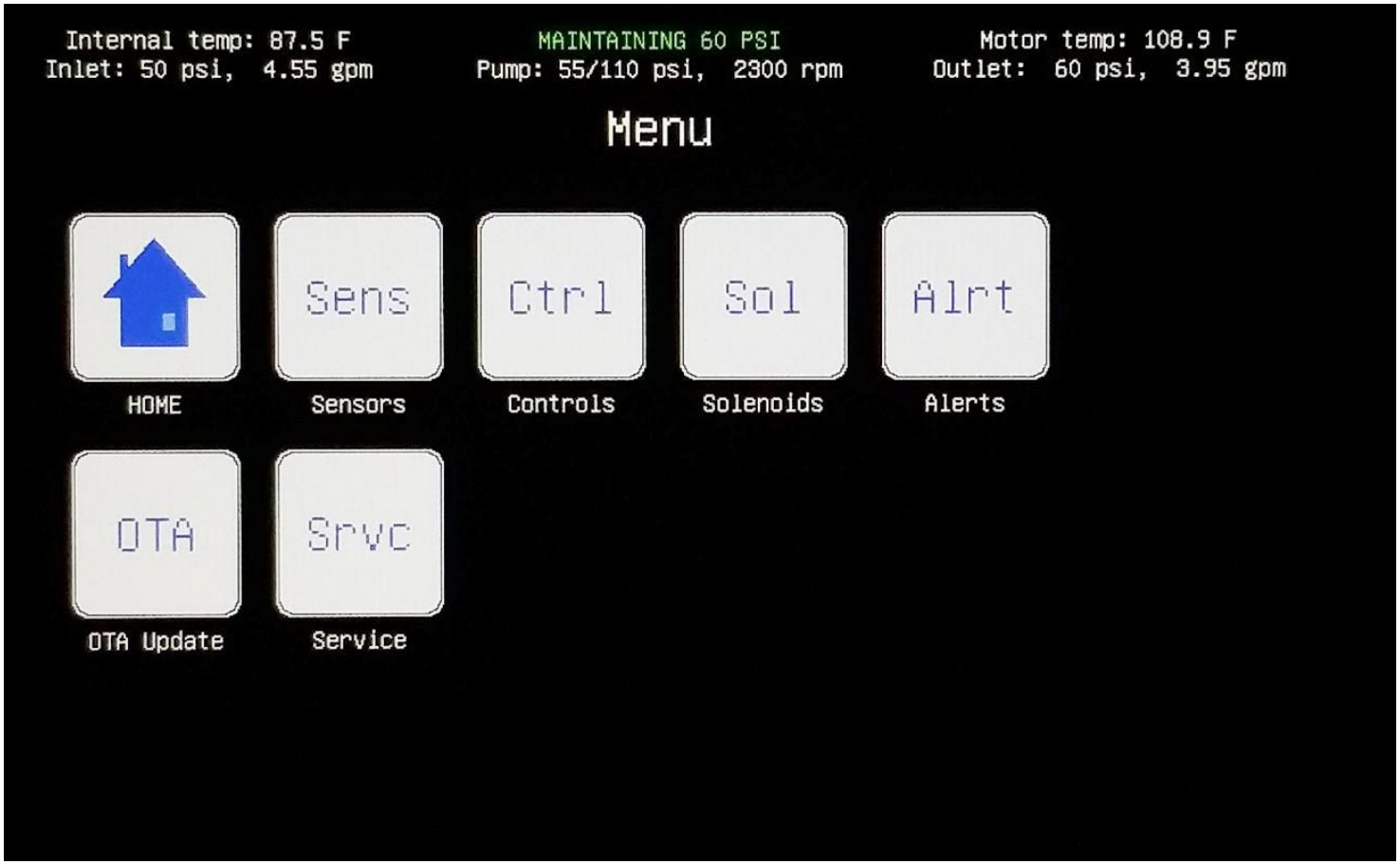


The top banner is universal across all screens and shows detailed operating data for the system.

Menu Screen

The menu screen is navigation hub which provides access to all sub-screens.

From the home screen, select menu.

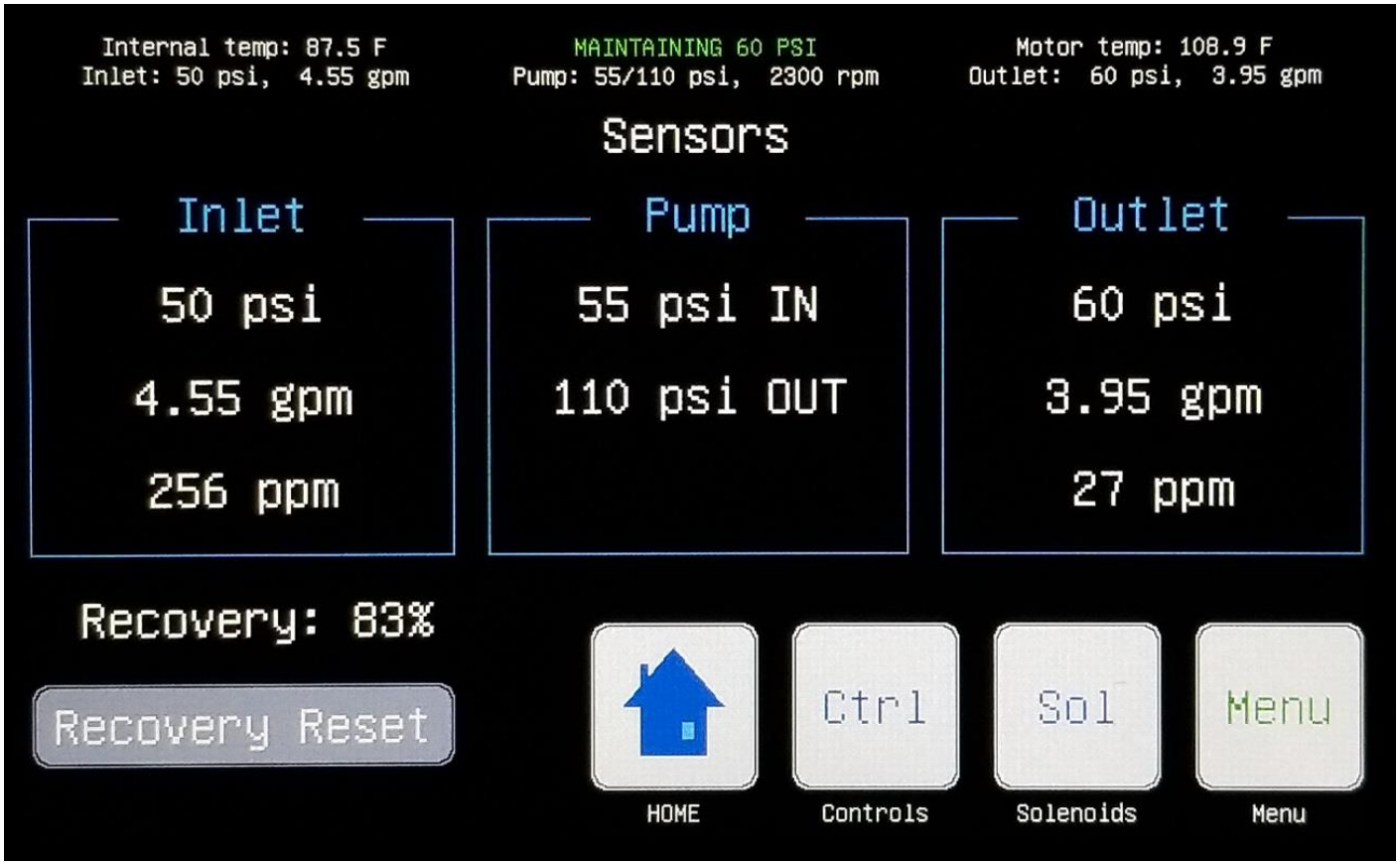


The sensors, controls, and solenoids screens primarily used during maintenance & service.

Sensors Screen

The sensors screen provides detailed operational data for all the system sensors.

From the home screen, select sensors.



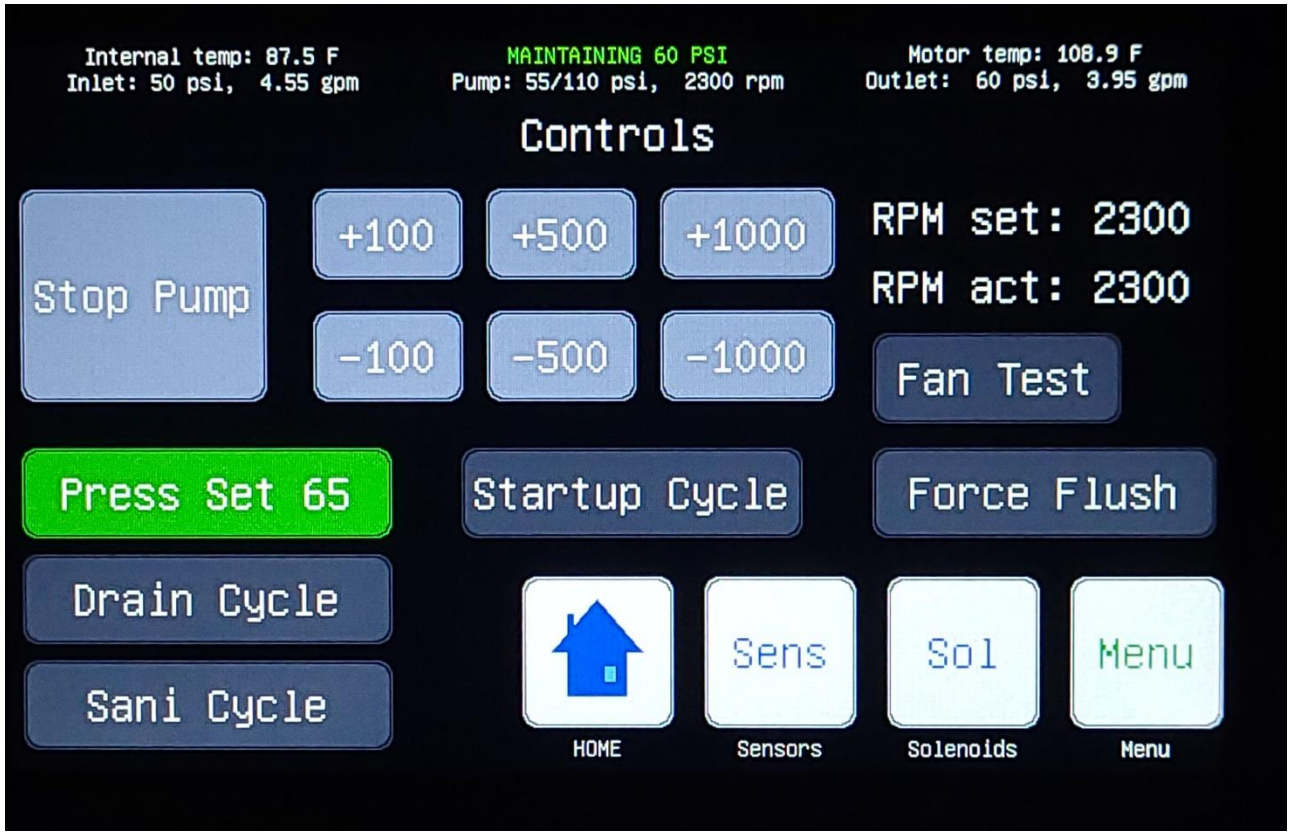
Recovery rate is a cumulative average since the last recovery reset. TDS readings are set to a default value of 100 after a reboot (power cycle) or software upgrade. TDS sensors require 90 seconds of continuous operation before providing a dynamic reading.

Controls Screen

The controls screen provides manual/automatic pump control and allows the user to perform a drain cycle, sanitization (sani) cycle, forced (idle) flush, fan test, or start-up cycle.

From the home screen, select controls.

Only a qualified technician should operate the pump in manual mode.

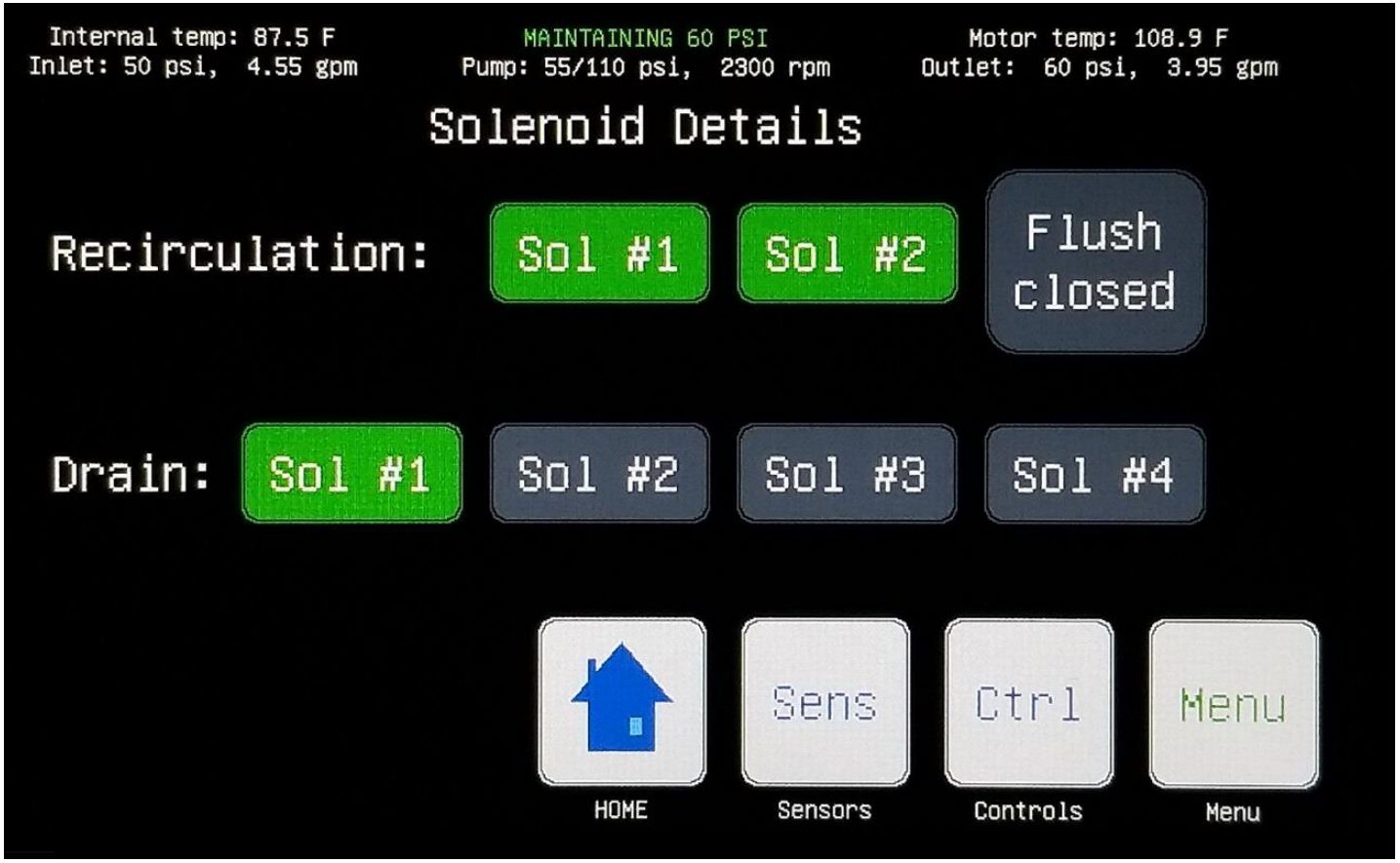


There is a 30 second delay to pump start-up after a system reset. During that delay, the controls screen offers the user the option to cancel automatic mode which will prevent the pump from starting.

Solenoid Details Screen

The solenoid details screen provides a visual indication of which valves are open/closed during automatic operation while also providing the user with manual control of each solenoid when the system is in manual mode.

From the home screen, select solenoids.

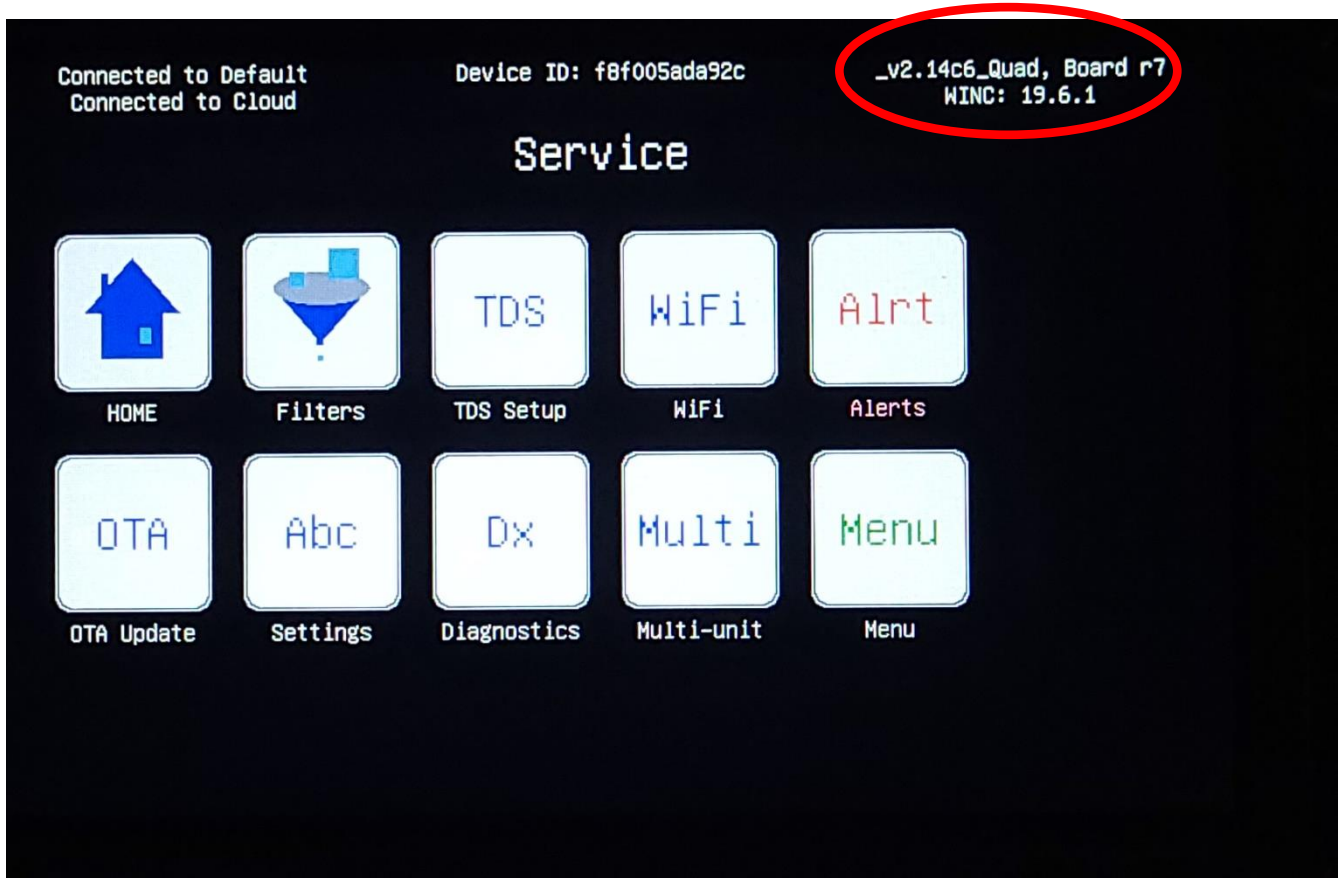


The system can only be placed into manual mode from the controls screen. A button highlighted in green indicates the valve is open.

Service Screen

The service screen provides access to advanced system settings.

From the home screen, select menu, then service.

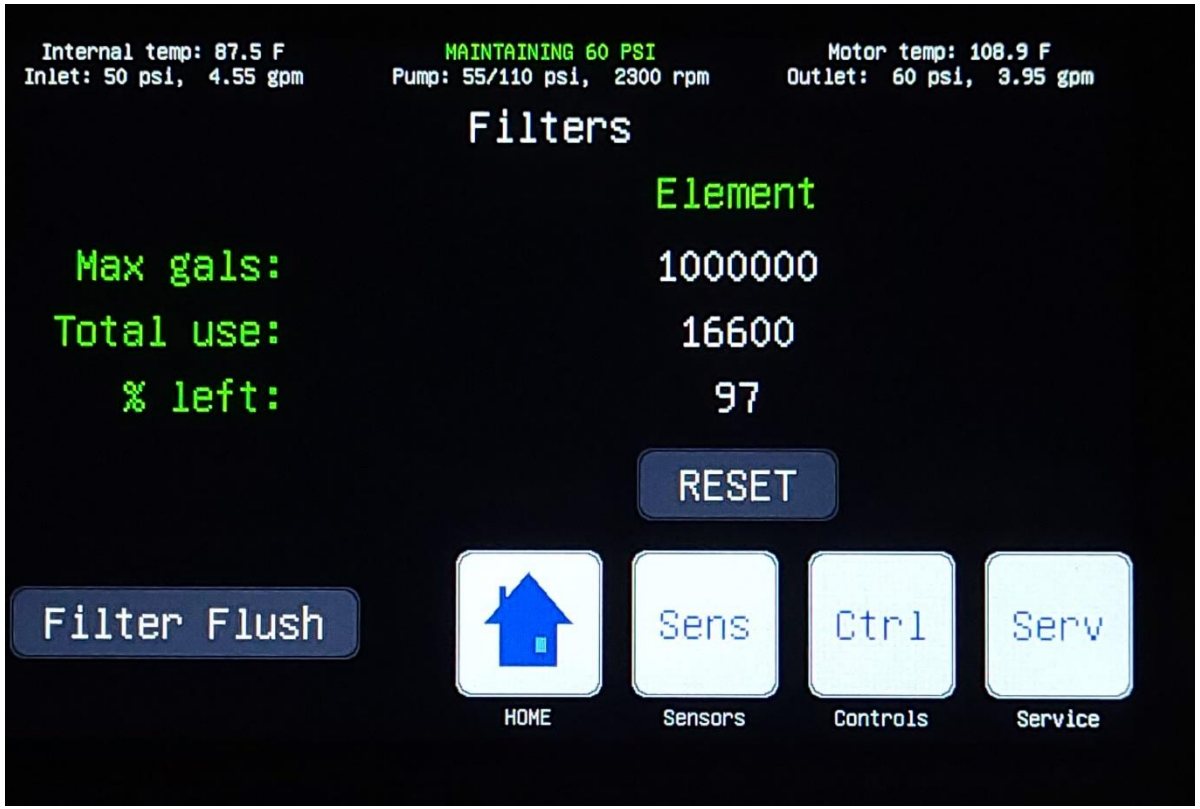


The service screen is typically only used during installation and/or service & maintenance. The current software and control board versions are listed in the upper right corner.

Filters Screen

The RO element capacities are automatically calculated based on the characteristics of the inlet water. The filters screen displays: the maximum capacity (in gallons) for the elements, the current total usage (in gallons), and the percentage of life left based on total usage. A filter flush is performed when replacing elements during routine maintenance (see the service manual (P/N 10120) for more details).

From the home screen, select menu, then service, then filters.



Element capacity should be reset upon element replacement by selecting the reset button.

TDS Settings

Set the TDS range based on the results of the **pre-installation water testing.**

From the home screen, select menu, then service, then TDS settings.

Once the TDS range is set, the inlet TDS value will not go below the indicated minimum value of the range.

Basic System Settings

The system has basic settings which are based on the individual application, customer preferences, and / or the relevant market.

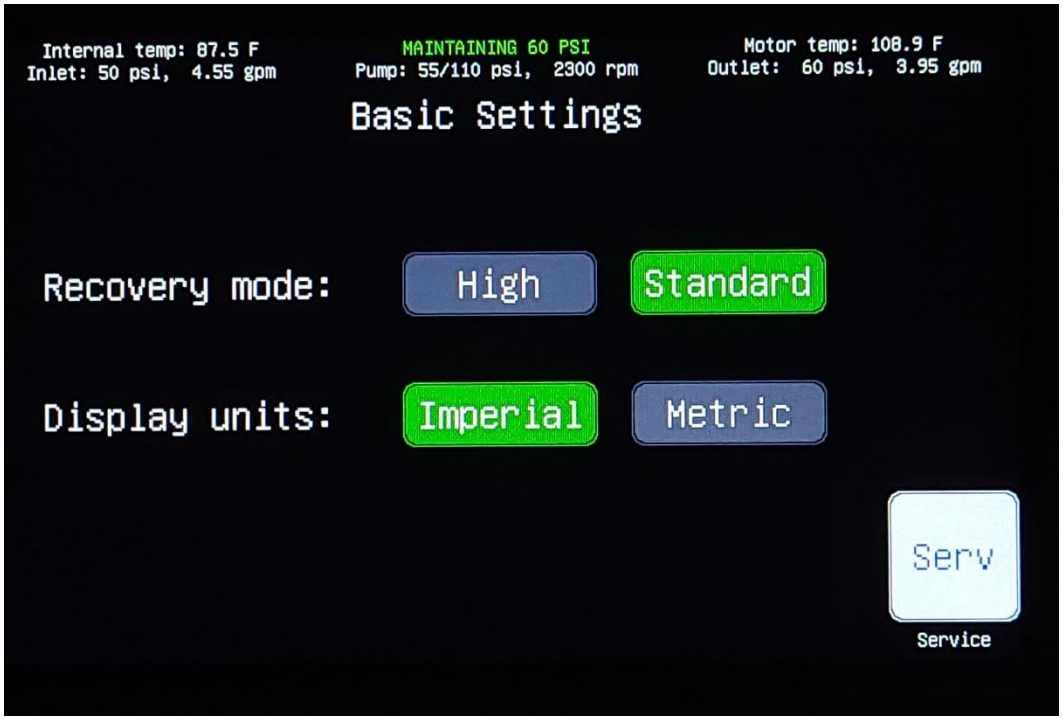
From the home screen, select menu, then service, then settings.

Recovery Mode

- High – increased recovery rate during operation.
- Standard – standard recovery rate during operation.

Display Units

- Imperial or metric depending on market.

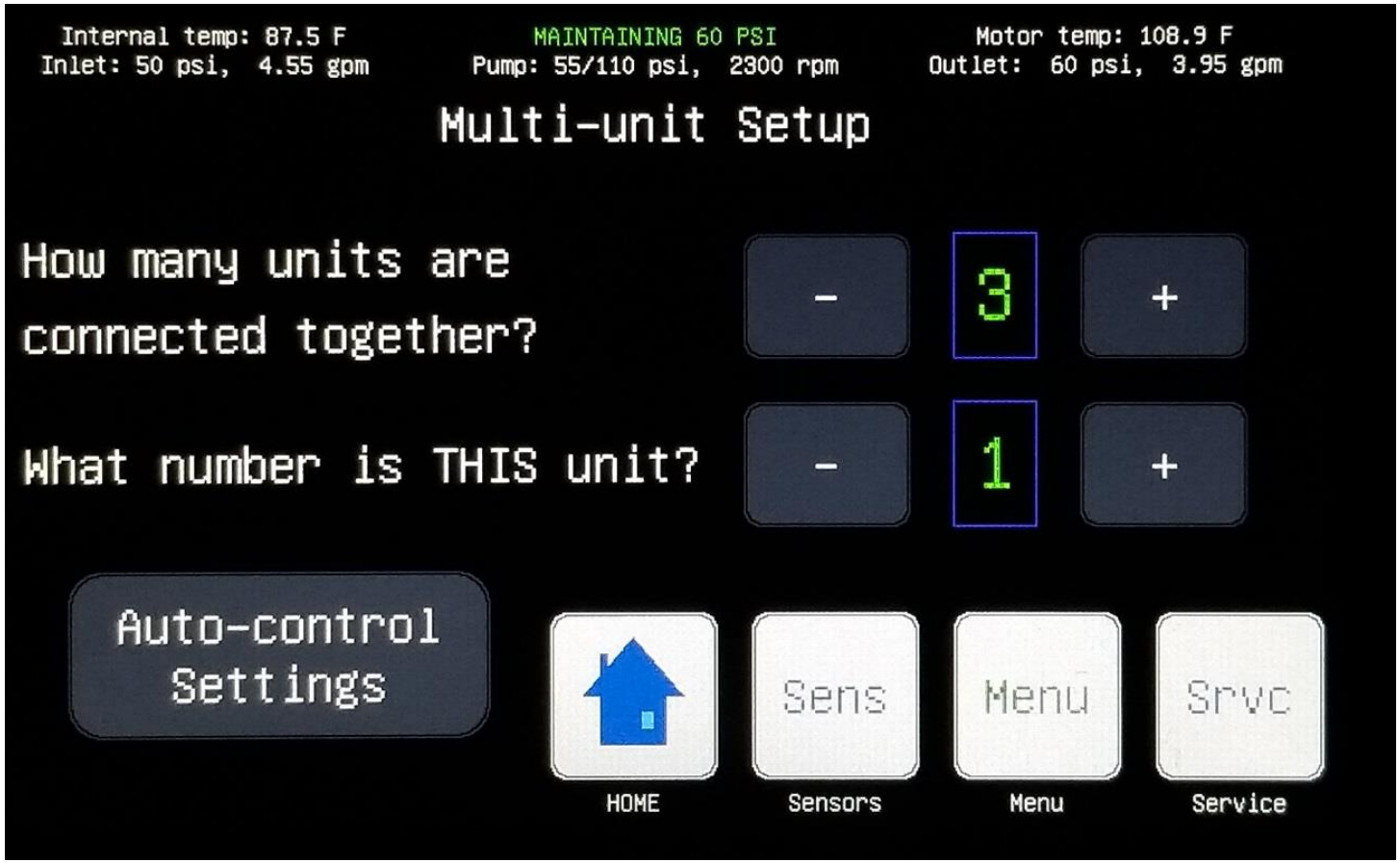


High Recovery may not be available for some inlet waters.

Multi-Unit Set-Up

Each unit needs to be configured to identify its position in the overall system.

From the home screen, select menu, then service, then multi.



When properly configured, multi-unit systems will adjust operational parameters for optimal performance.

Auto-Control Settings

To provide the user with the most flexibility to meet outlet demand, each individual unit can be set to maintain either outlet pressure or outlet flow.

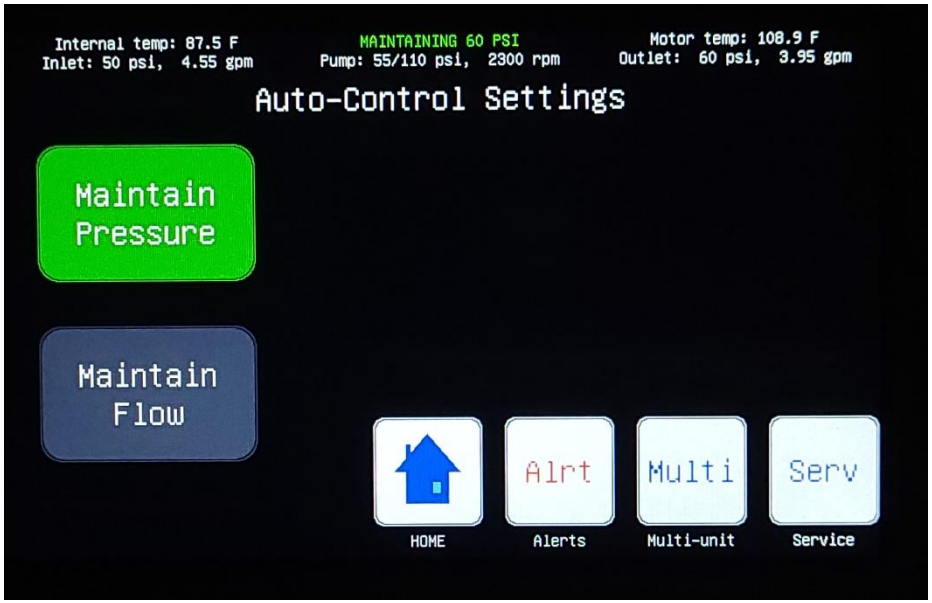
From the home screen, select auto.

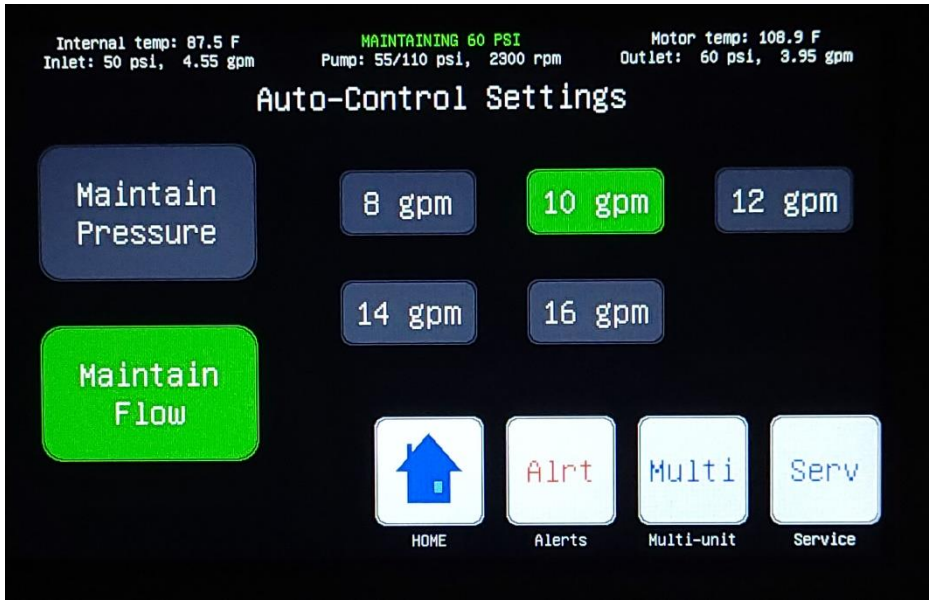
Maintain Pressure

- Automatic operation maintaining outlet pressure between 65 and 50 psi based on flow rate.

Maintain Flow

- Automatic operation maintaining desired outlet flow rate.



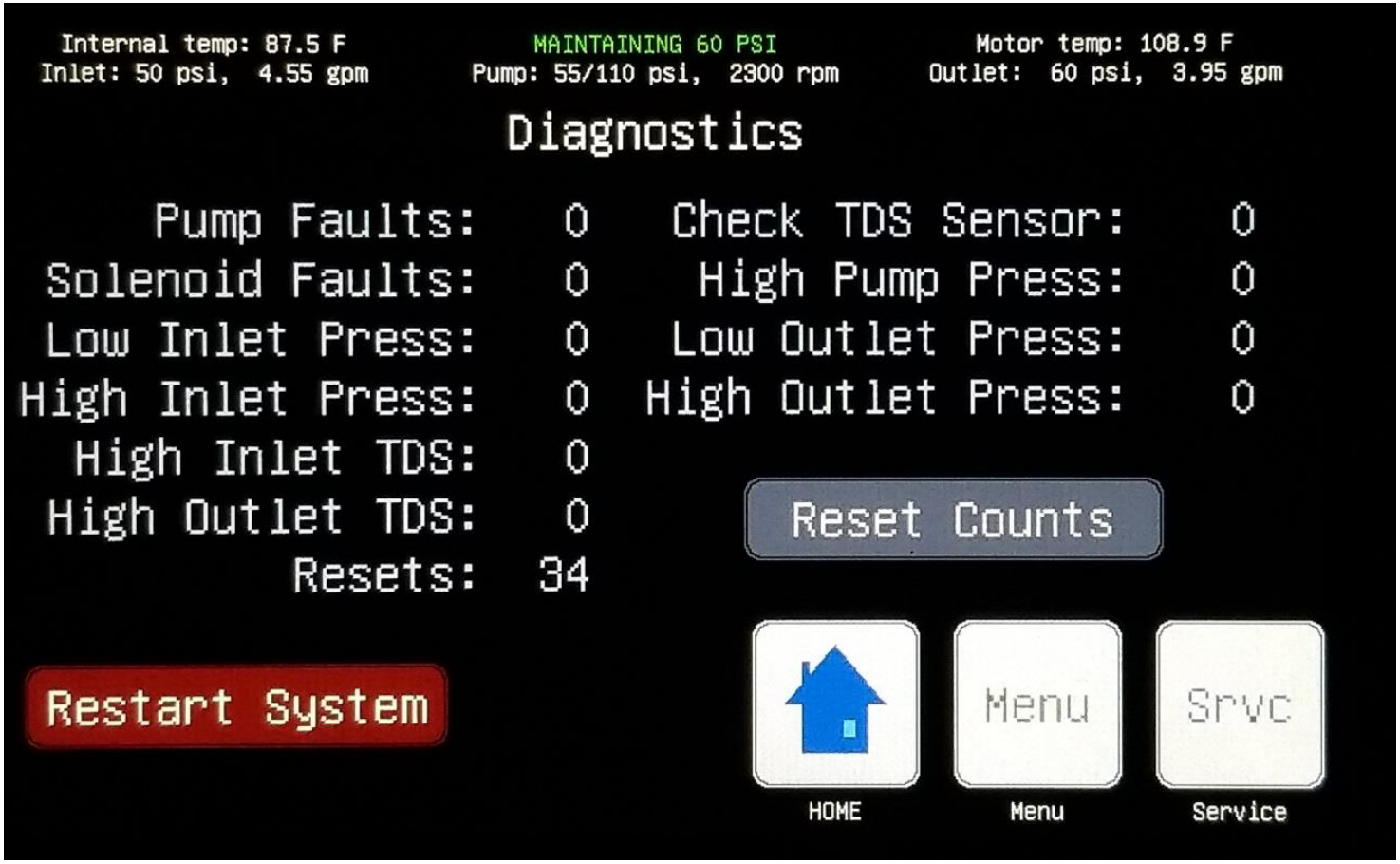


A combination of outlet settings may be used in certain multi-unit systems, depending on the application.

System Diagnostics

The diagnostics screen displays cumulative counts of any faults related to the various line items. This screen is typically used for service and/or troubleshooting. The total fault counts can be reset by pressing the 'reset counts' button.

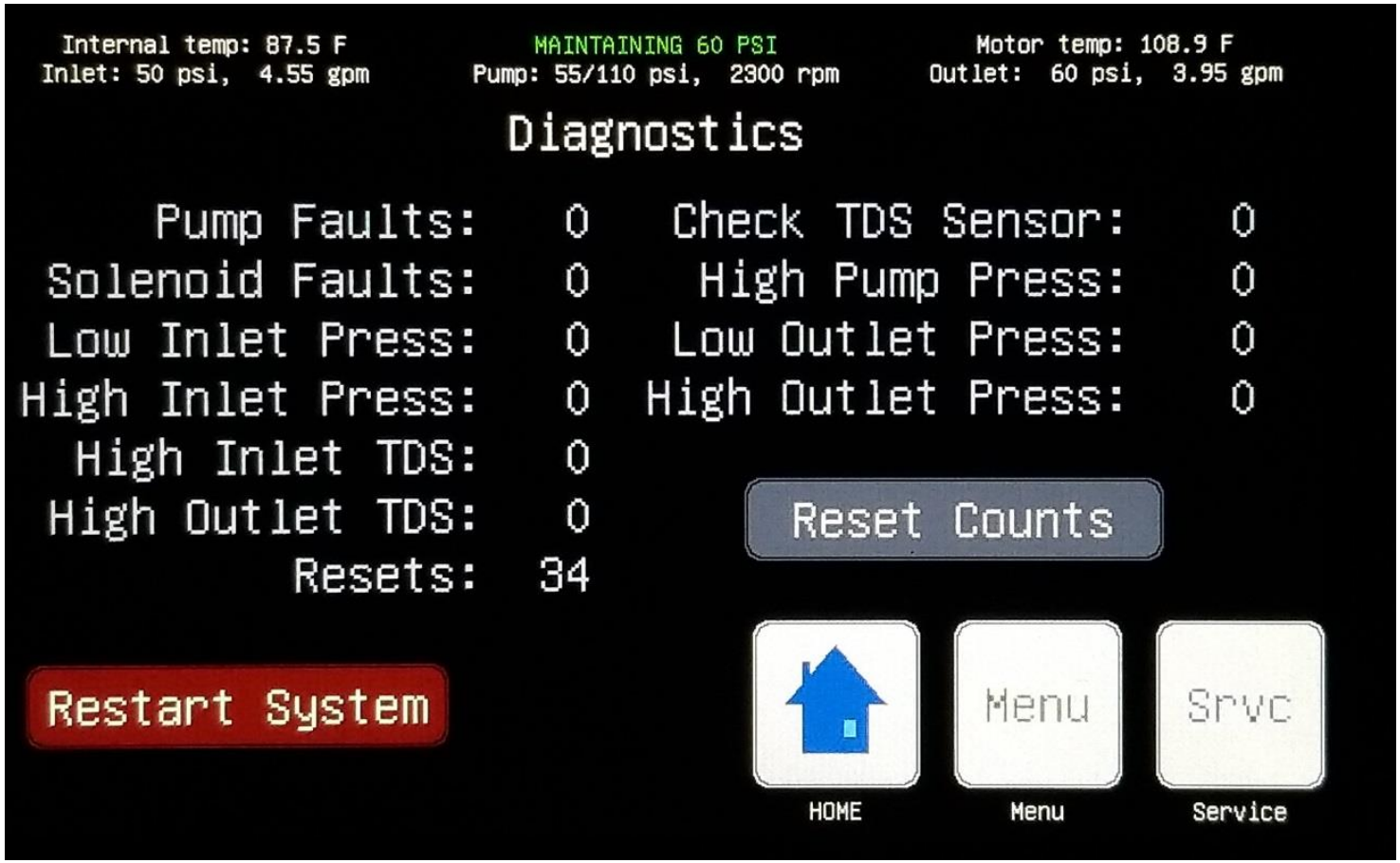
From the home screen, select menu, then service, then diagnostics.



System Restart

If required, the system can be restarted manually.

From the home screen, select menu, then service, then diagnostics, then restart system.



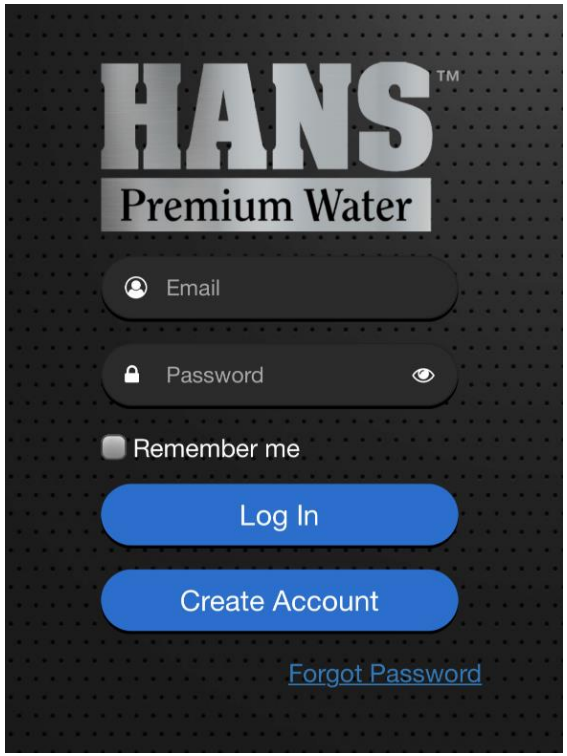
Pressing the ‘restart system’ button will produce a secondary confirmation window. The user may then select ‘cancel’ or ‘restart’.

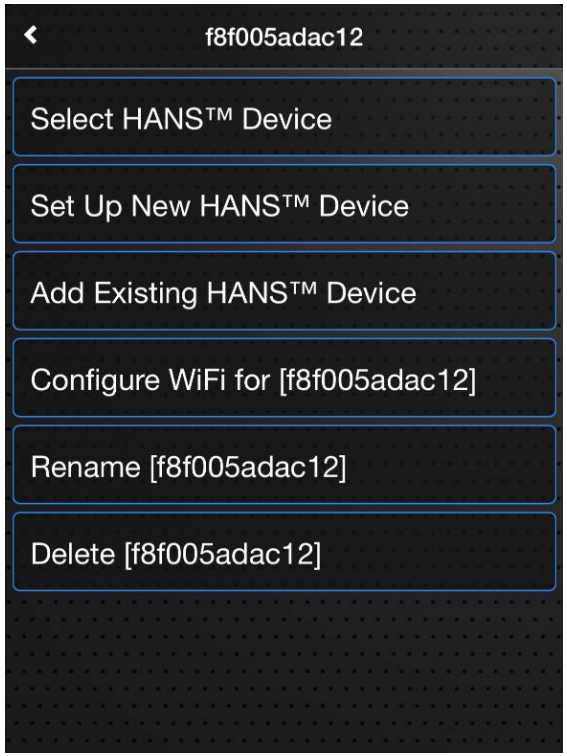
Wi-Fi Set-Up

Configure the on-board Wi-Fi capability using the smart phone application.

Download the HANS Premium Water Application for your iOS or Android device.

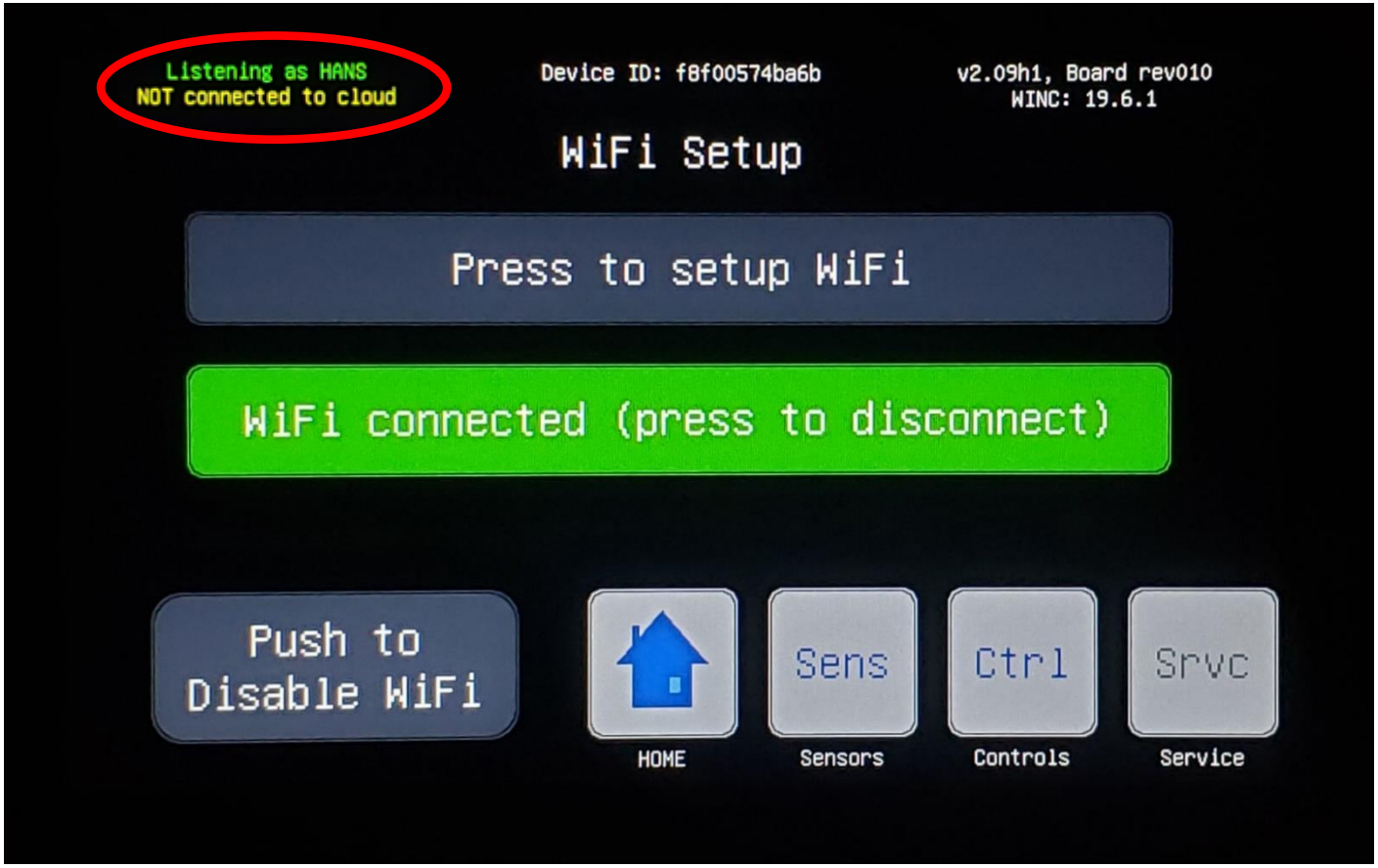
1. If you're a first-time user, create an account.
2. Once logged-in, select 'Set Up New HANS Device'.
3. The app will direct the user to initialize Wi-Fi set-up on the HANS unit.





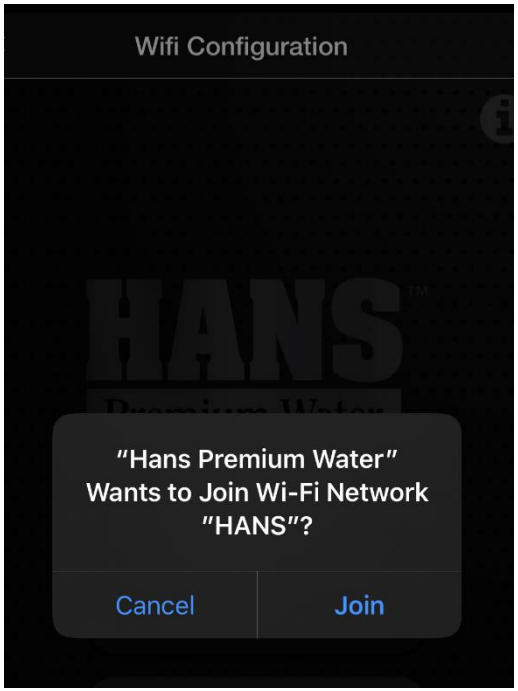
Wi-Fi Set-up (continued)

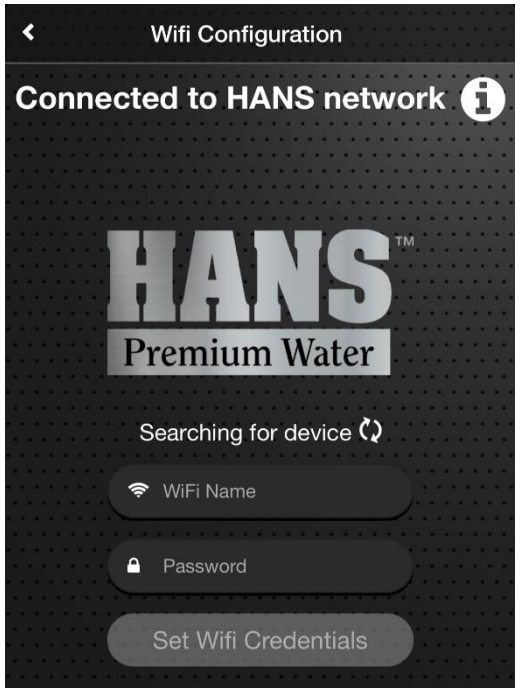
4. From the home screen of the HANS unit, select menu, then service, then ‘Press to setup Wi-Fi’.
5. With the Wi-Fi Set-up initialized, the upper left corner of the screen will show ‘Listening as HANS’

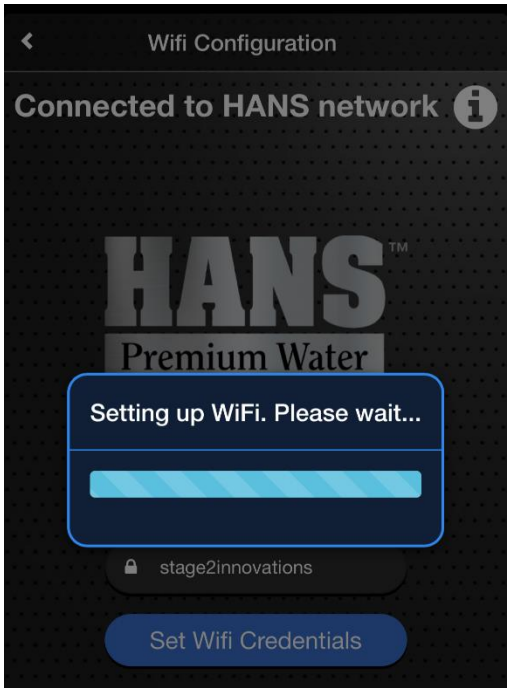


Wi-Fi Set-up (continued)

6. Join the ‘HANS’ Wi-Fi Network
7. Enter the Wi-Fi router name and password.
8. Verify connection to router and to cloud in the upper left corner of the HANS unit screen.







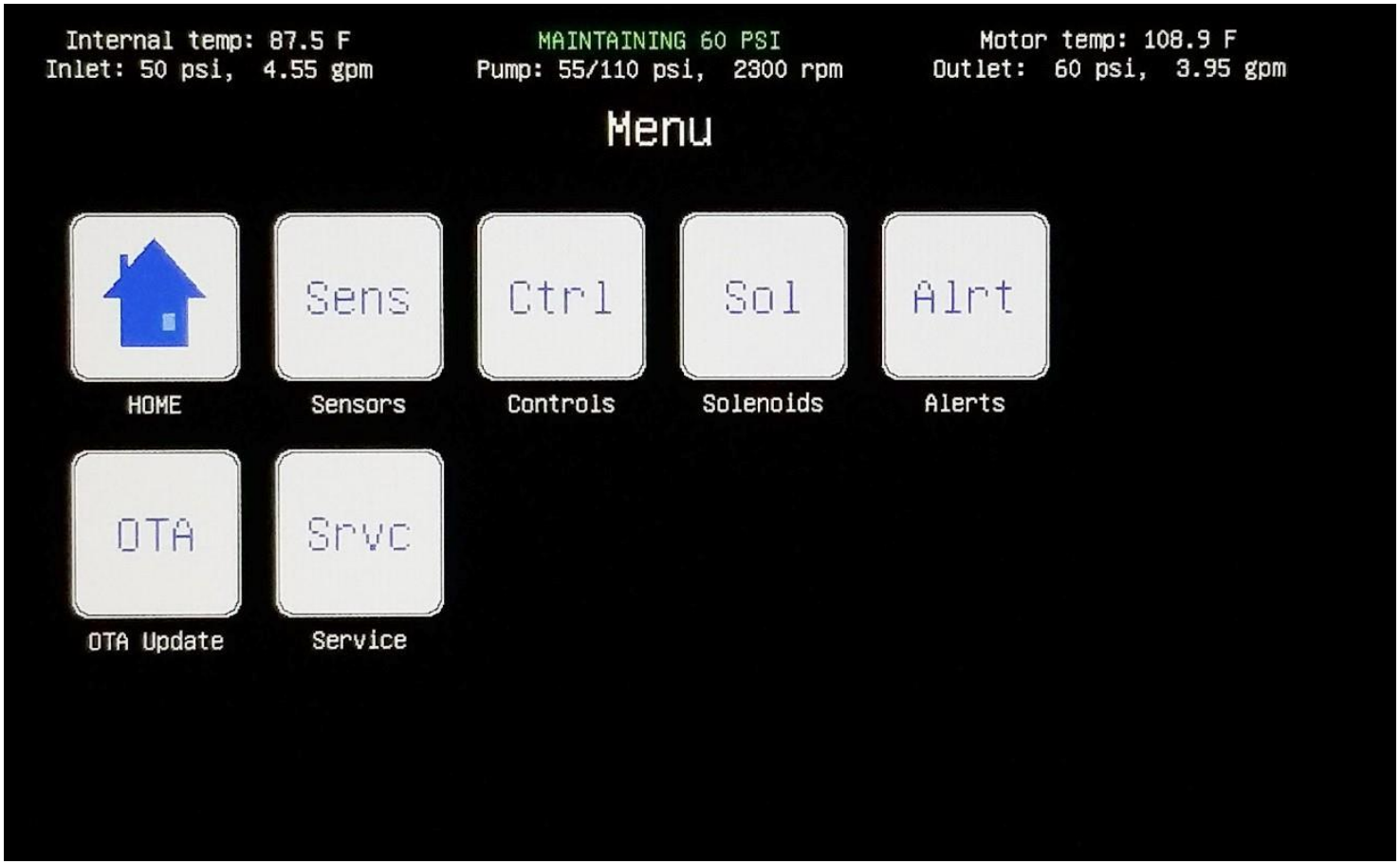
If properly connected to the router and cloud, the upper left corner of the screen will read:

‘**Connected to router_name’**
‘Connected to cloud’

Software Updates

When connected to Wi-Fi and the cloud, the system can automatically download and install software updates with the push of a button.

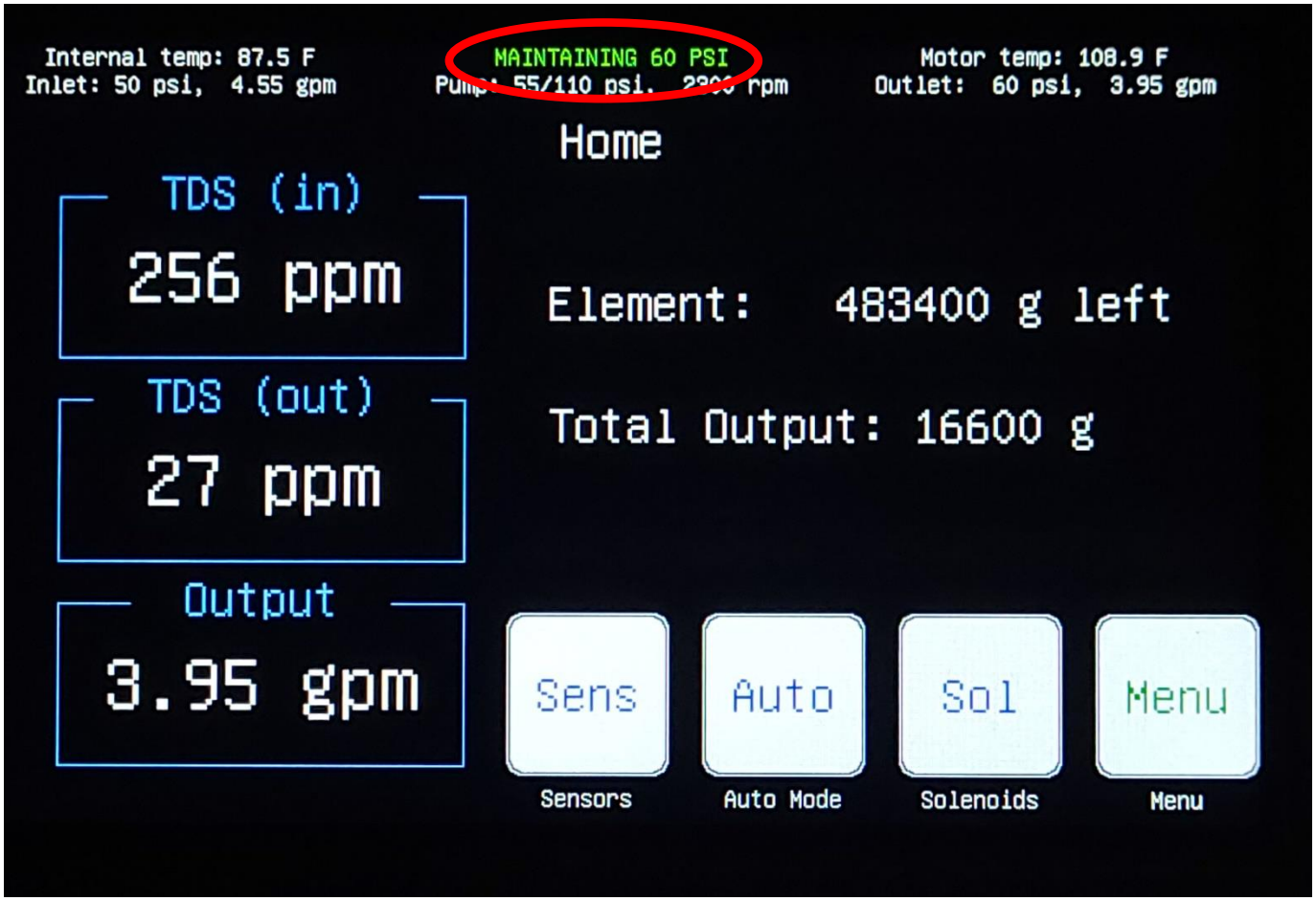
From the home screen, select menu, then OTA Update.



OTA is an acronym for over-the-air. Pressing the OTA button will produce a secondary confirmation window. The user may then select ‘cancel’ or ‘upgrade’.

Operational States

The system has several operational states based on inputs, user selections, or system faults. The operational state is displayed at the center of the screen banner.



The top banner is universal across all screens and shows detailed operating data for the system.

Operational States (continued)

The following table lists all the operational states, along with a brief description of each.

Operational State	Description
24-Hour Flush	A 24-hour flush occurs once the system has been in an idle state (no outlet flow) for twenty-four (24) consecutive hours. This is an automatic operation which does not require any additional action.
Dormant Flush	A dormant flush occurs once the system has been in an idle state (no outlet flow) for four (4) consecutive hours. This is an automatic operation which does not require any additional action.
Drain Cycle	The drain cycle opens all drain valves along with the flush valve and is used to drain the system during service and/or maintenance. This is a manual operation which is typically performed by a qualified technician.
High Inlet Pressure Dump	A high inlet pressure dump opens the drain valves for 3 seconds in order to relieve excessive internal or external pressure. This is an automatic operation which will occur repeatedly if the inlet pressure is above the system specifications.
High Outlet Pressure Shutdown	The high outlet pressure shutdown turns off the pump and opens the drain valves to release excessive internal pressure. This is an automatic operation which will remain in effect until the outlet pressure is below 70 psi.
Idle Flush	An idle flush occurs once the system enters an idle state (no outlet flow) following 30 minutes of cumulative operation since the last flush. This is an automatic operation which does not require any additional action.

Operational States (continued)

Operational State	Description
Low Inlet Pressure Shutdown	A low inlet pressure shutdown occurs when the inlet pressure is below 8 PSI for more than 5 continuous seconds or below 1 PSI for 1 second. This is an automatic operation which will remain in effect until the inlet pressure is above 30 PSI.
Low Pump-Inlet Pressure Stage 1 - 4	The low pump inlet pressure states occur when the pump inlet pressure drops below the required level for proper operation. There are four (4) stages which limit the pump motor speed to various levels depending on the input pressure. These states allow the unit to continue operating at lower input pressures. This is an automatic operation which will remain in effect until the pump inlet pressure is above 30 PSI.
Maintaining 50 – 65 psi	Maintaining pressure is the normal operating state of the system. In this state, the system is maintaining a specific outlet pressure. This pressure is based on the outlet flow rate. For lower outlet flow rates, the maintained pressure is higher. This is an automatic operation and indicates the system is running normally.
Maintaining 4 – 16 gpm	Maintaining flow is a custom operational setting for the system. In this state, the system is maintaining a specific output flow. This is typically used for multi-unit systems only. Once the setting is made, this is an automatic operation.
Manual Mode	Manual mode allows the system to be operated manually. This is a manual operation and should only be performed by a qualified technician.
Motor Fault Shutdown	A motor fault shutdown occurs when the system has experienced a critical fault related to the operation of the pump motor. This is an automatic operation which may require a system restart or evaluation by a qualified technician.

Operational States (continued)

Operational State	Description
Running Flush	A running flush occurs when the system has been continuously operating (continuous outlet flow) for more than 30 to 60 minutes, depending on the inlet water TDS. This is an automatic and relatively frequent operation which does not require any additional action.
Start-up Cycle Stage 1-4	The start-up cycle is an automatic operation used during initial start-up only. This operation should only be performed by a qualified technician.
Sani-Cycle	The sani-cycle is a manual operation used only during full system sanitization. This is a manual operation and should only be performed by a qualified technician.

Warnings / Alerts - Alerts Screen

The alerts screen displays any active alerts or warnings.

From the home screen, select menu, then alerts.

The banner for the alerts screen is unique in that it displays Wi-Fi connectivity, device ID, and electronic hardware information.

Warnings / Alerts (continued)

The following table lists the potential warnings / alerts that may appear and provides a description / potential solution. The top left corner of the universal banner on the display screen will read '**Check alerts**' when there is an active alert present. The message will remain on the banner and the alert will remain on the alerts screen until the condition no longer exists. *To view details of any active warning or alert(s), go to the **Alerts ('Alrt') screen**.*

Warning / Alert	Alert Message	Description / Solution
Low inlet pressure	Warning! Inlet pressure is too low!	Check the inlet water supply (water being fed to the system) and make sure any necessary valves leading to the system are open. If a valve is closed, please open it to allow water to flow. Make sure the inlet water is not leaking. If you have a well, check for proper pressure in the well tank, making sure that the circuit breaker on the well pump is switched on. Ensure water is flowing through the well pump properly. Ensure you have a 40/60 well tank pressure switch. Set the minimum bound of the switch to 45 psi for best performance.
High inlet pressure	Water inlet pressure is too high!	Check the inlet water supply (water being fed to the system) and make sure the pressure is not over 60 psi. If the inlet pressure is above 60 psi, a pressure regulating valve (PRV) will need to be installed. If you have a well, check for proper pressure in the well tank, make sure that the well pump pressure switch is properly suited for this application (i.e. 40-60 psi).

Warnings / Alerts (continued)

Warning / Alert	Alert Message	Description / Solution
High pump pressure	In High Pump Pressure Shutdown! Contact Customer Service.	The pressure is too high, and the pump has now shut off. Check to make sure that your Stage 3 element is not blocked. Clear any blockages, including inappropriately closed valves. If the issue remains, contact Customer Service.
Pump motor controller fault	Pump Motor Controller Fault – In Shutdown!! Contact Service Immediately	Restart the system to determine if it will clear the fault (see page 27). If not, contact Customer Service.
Pump speed fault alert	Pump Speed Error!! Pump turned off Contact Service Immediately	Restart the system to determine if it will clear the fault (see page 27). If not, contact Customer Service.
Solenoid driver fault	Solenoid driver fault! Contact customer service.	Restart the system to determine if it will clear the fault (see page 27). If not, contact Customer Service.

Warnings / Alerts (continued)

Warning / Alert	Alert Message	Description / Solution
Low outlet pressure (shutdown)	Low outlet pressure! Check sensor!	A low outlet pressure shutdown will occur when the outlet pressure reads at below 1 psi for more than 5-10 seconds (depending on outlet flow). The unit will automatically shut down and remain in this state until outlet pressure is restored for a minimum of 30 seconds. This may be caused by a failure in the outlet pressure sensor or an issue downstream from the unit. If the issue persists, contact Customer Service.
High outlet pressure (shutdown)	Outlet pressure too high! Check IMMEDIATELY! Pump will be re-enabled when pressure <70 PSI	The system is designed to prevent over-pressurization by preventing pump operation when the outlet pressure is above 80 psi.
High Inlet TDS	ALERT!! Elevated Inlet TDS!	The system is not designed to handle inlet water TDS above 3000. Confirm that the inlet water TDS is below 3000. If so, replace the inlet TDS sensor and confirm the inlet water TDS settings under the setup screen.
High Outlet TDS	ALERT!! Elevated Outlet TDS!	Outlet TDS is above 500. If the outlet TDS is above this threshold the system with continue to operate but in an active alert state. If the alert state persists, contact Customer Service.

Warnings / Alerts (continued)

Warning / Alert	Alert Message	Description / Solution
Element - 10% life	Warning! Element has <10% life. Service soon.	This message serves as a reminder to schedule your regular system maintenance. Please contact Customer Service.
Element - 0% life	ALERT!! Element has expired. Service IMMEDIATELY!	Using an expired element affects the overall cleanliness of the output water. Please service the RO element right away to keep your water as clean as possible.
Motor Temperature Alert	ALERT!! Motor over-temp Shutdown! Contact Customer Service	The pump motor has over-heated, check to make sure the motor fans are operating properly and that nothing is blocking the vents in the side panels. If the alert state persists, contact Customer Service.
Electronics Temperature Alert	Electronics over-temp Shutdown! Contact Customer Service	The system has detected an elevated temperature in the electronics box (e-box). The system will automatically resume operation when temperature has normalized. If the alert state persists, contact Customer Service.
TDS Sensor Alert	Check TDS sensors.	The inlet TDS sensor appears to not be functioning properly. If the alert state persists, contact Customer Service.

Troubleshooting

1. Display screen will not turn on

   ✓ Confirm the power supply is properly connected at the rear of the machine and the base of the e-box.

   ✓ If power supply is properly connected, perform a power cycle by disconnecting the unit from the power supply, wait 30 seconds, and reconnect power. If a power cycle does not fix the issue, replace the e-box (refer to the Service & Maintenance manual P/N 10120).

2. Pump will not run

   ✓ Confirm the pump wire harness is properly connected to the side of the e-box.

   ✓ Confirm the system shows a minimum of 30 psi inlet pressure.

   ✓ If an audible beeping noise is heard from the e-box, perform a system restart (see page 27) . If a system restart does not fix the issue, replace the e-box (refer to the Service & Maintenance manual P/N 10120).

3. Low inlet pressure

   ✓ Confirm inlet water supply has been restored.

   ✓ If pressure is present in the system and the inlet pressure sensor is reading 0 psi, replace the sensor.

4. Wi-Fi will not connect

   ✓ Ensure a strong Wi-Fi signal is present from the router. A range extender may be required in certain areas where the signal may not be reliable.

5. TDS values are not changing

   ✓ TDS sensors require 90 seconds of continuous operation before providing a dynamic reading.

   ✓ If a TDS value is well outside the expected range (based on pre-installation water testing), replace the sensor.

P/N 10100-02
QUAD Owner’s Manual

HANS Premium Water
26700 Haggerty Road,
Farmington Hills, MI 48331
(833) 333-4267