

LINX[®] Cooler Module-140 (LCM-140) Drinking Water System (100-120V)

*with LINX Technology
and Dial-a-Taste[®] Mineral Level Control*

(February 14, 2011; Software version 20.063)

Owner's Manual



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Tested and Certified by WQA against NSF/ANSI Standard 53 in models LINX® 140 and LINX 140T Drinking Water Systems and LINX Cooler Module for the reduction of nitrate/nitrite.

Section 1. Safety Precautions

- The LINX Cooler Module (LCM) must be installed, serviced and maintained by an Authorized Dealer to assure that it complies with state and local laws and regulations as well as providing optimum performance. Massachusetts requires a licensed plumber to install the product according to plumbing code 248-CMR of the Commonwealth of Massachusetts. A Supplement to the Owner's Manual for Installation and Maintenance is available for qualified technicians.
- Read and follow all instructions carefully before using the LINX Cooler Module.
- DO NOT open the cell lids or outer enclosure when the LCM is powered. There is a risk of electrical shock.
- If the detachable power cord is damaged it must be replaced.
- Use with cold feed water ONLY (33-100°F; 1-40°C).
- DO NOT use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the systems.
- The LCM is designed to operate with supply water pressure in the range of 20-100 psi (130-690 kPa). If the pressure exceeds 100 psi (690 kPa), a pressure regulator must be installed.
- The LCM is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the LCM by a person responsible for their safety.
- Children should be supervised to ensure that they do not play with the LCM.
- Grounding Instructions: The LCM must be properly grounded. In the event of a malfunction, grounding will reduce the risk of electric shock. The LCM is equipped with a cord having an equipment-grounding conductor and a grounding plug. The equipment into which the LCM is installed must itself be plugged into an appropriate outlet that is installed and grounded in accordance with all local codes and ordinances.

Warning: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician if you are in doubt whether the LCM is properly grounded. Do not modify the plug provided for the LCM or the appliance in which it is installed. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Section 2. Overview of the LCM-140

The LINX Cooler Module (LCM) Drinking Water Systems employs an ion exchange process which uses electricity rather than chemicals for operation. LINX technology does not release chemicals to the environment and it conserves water compared to other drinking water systems that provide similar water quality.

LINX technology provides several important benefits:

- High flow rates: up to 0.5 gallons/minute (gpm) when installed without an external tank, and up to 1.0 gpm when installed with an external tank.
- Wastes 90% less water than reverse osmosis drinking water systems under typical usage conditions.
- The Dial-a-Taste control allows adjustment of product water mineral level for optimum taste.

The LCM systems include:

- One LINX 100 Sediment pre-filter (nominal 5 micron) to reduce particles and cloudiness
- Two LINX 100 TDS cartridges to reduce nitrate/nitrite contaminants for healthier water and other total dissolved solids (TDS) for better taste
- One LINX 100 or 110 Carbon post-filter (GAC) to further improve taste

Specification:

Feed Water Quality:	Potable water with maximum TDS of 1000 ppm, <20 grains of hardness (340 ppm hardness as CaCO ₃), pH 4 – 10; microbiologically safe
Feed Water Pressure:	20-100 psi (130-690 kPa)
Feed Water and Operating Temperature:	33-100°F (1-40°C)
Operation Mode:	Parallel LINX cell deionization; water available during regeneration
Regeneration:	34 minutes (17 minutes each cell)
TDS Rejection* (Maximum Dial):	≥85% TDS reduction
LCM Water Output Flow Rate:	0-600 ppm TDS feed: 0.5 gpm at ≥40 psi 600-800 ppm: 0.25 gpm (see Replacement Parts list for flow restrictor) 800-1000 ppm: 0.15 gpm (see Replacement Parts list for flow restrictor)
Flow Rate with External Tank:	1.0 gpm, maximum (LCM-140T Model only)
Water Output Volume per Cycle:	0-400 ppm TDS feed: 3.0 gallons per 34 minute regeneration cycle 400-1000 ppm TDS feed: 1.5 gallons per 34 minute regeneration cycle
Rated Capacity:	3 gallons/cycle
Rated Life**:	650 gallons for LINX 100 Sediment and LINX 100 or 110 Carbon filters 1300 gallons for two (2) LINX 100 TDS cartridges
Warranted Water Output per Day:	≤25 gallons (if product exceeds 25 gallons per day on average, the warranty is no longer valid)
Water Recovery:	0-400 ppm TDS feed: 70%; 401-1000 ppm TDS feed: 55%
Operating Voltage, Current:	100-120 VAC, 50/60 Hz, 6 A
Outside Dimensions:	12.2 in (deep) x 11.0 in (wide) x 14.0 in (high)

*TDS reduction was tested and verified at an independent laboratory: Pace Analytical Services, Inc.

**The rated lives of LINX 100 TDS cartridges and Sediment/Carbon filters is based on extensive testing by the manufacturer. The LINX Cooler Modules conform to NSF/ANSI 53 for nitrate/nitrite reduction as verified and substantiated by test data.

Section 3. Installation

The LINX Cooler Module must be installed and serviced by an Authorized Dealer to assure that it complies with state and local laws and regulations, and to provide optimum performance.

If the LCM is to be disconnected from the cooler for any reason, **FIRST** ensure that the feed water on the back-side of the cooler is turned off and the vent valve is opened to depressurize it (open the vent valve until water stops flowing). Then **DISCONNECT THE POWER** to the LCM by detaching the power cord at the rear (see Figure 1). Turn off the LCM product water valve (blue) and feed water valve (red).



Figure 1



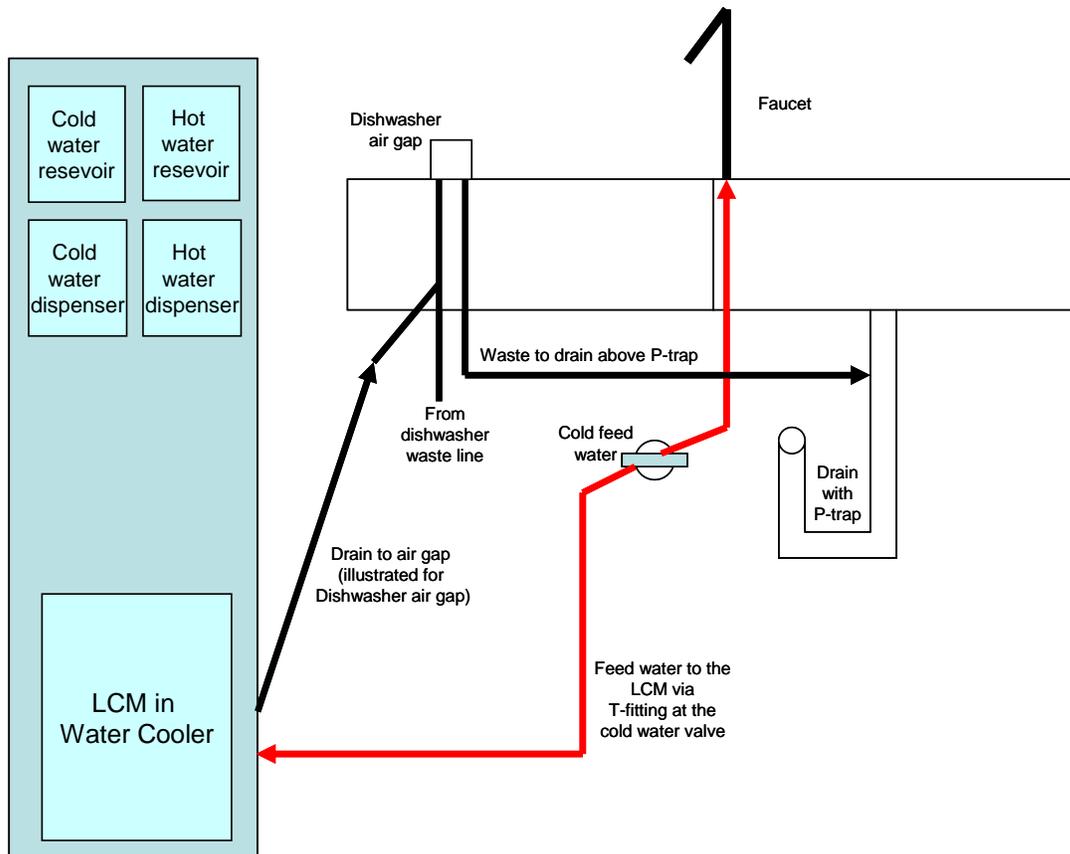
Figure 2

The new hose-sets supplied with the LCM are to be used rather than reusing old hose sets (if replacing another system, do not use the old hose-sets). The LINX 100 TDS, LINX 100 Sediment, and LINX 100 or 110 Carbon cartridges/filters are installed during installation, and occasionally replaced, by an Authorized Dealer. The LINX Carbon filters are flushed to drain via the vent valve to avoid contaminating the cooler tanks – do not flush the carbon filter to the cooler storage tanks.

Plumbing connections as seen from the front of the LCM (Figure 2; top to bottom fittings) are:

- Feed water (cold water only) to the top connector (red)
- Drain line (to the air gap, then the drain) is connected to the second-from bottom connector (black)
- Product water to the appliance (eg. water cooler) to the bottom connector (blue)

A diagram illustrating plumbing connections for the LCM in a water cooler appliance is shown on the following page. Feed water is provided from the cold water supply via a T-fitting on the cold water valve. When installing the cooler to the main feed water supply, do not use a saddle valve with puncturing needle because it will not provide sufficient flow. In the plumbing diagram is shown installation with connection of the waste water line to the drain via a dishwasher air gap. Actual installation will vary depending on local plumbing codes.



Section 4. Operation

The LINX Cooler Module (LCM) operations are automatic. The LCM employs two flow sensors to measure and control product and waste water volumes and to indicate when it is time to replace filters and/or cartridges. **The user only has to open and close the appliance dispenser to operate the LCM.**

Selecting Feed Water TDS Level

The LCM must be set to your incoming feed water quality. Two settings are available: a first level for 0-400 ppm, and a second level for 401-1000 ppm TDS feed waters. The default setting is for ≤ 400 ppm TDS feed water which provides 3 gallons of drinking water prior to regeneration, yielding 70% water recovery. Selecting the 401-1000 ppm TDS feed level provides 1.5 gallons of drinking water with 55% recovery. Your Authorized Dealer will determine the TDS of your feed water as part of the installation.

Additionally, when operating on 600-800 ppm feed water TDS, the 0.5 gpm flow restrictor is replaced with a 0.25 gpm restrictor by your Dealer (see Replacement Parts List). For feed water of 800-1000 ppm a 0.15 gpm flow restrictor is used.

Conditioning LINX 100 TDS, LINX 100 Sediment, and LINX 100 or 110 Carbon Cartridges/Filters

When the LINX 100 or 110 Carbon filter is replaced by the Authorized Dealer, up to a 5 gallon rinse will be completed to remove all fine particles. When the LINX 100 TDS cartridges are replaced, an 90 minute pre-conditioning stage will be initiated.

System Operation

The two LINX 100 TDS cartridges operate in parallel during normal water production to provide >85% TDS reduction. When the service volume has been delivered, 3 gallons on the low TDS feed setting and 1.5 gallons on the high setting, a 34 minute regeneration takes place. The LCM will not produce water during the regeneration.

Note: The LCM is designed for intermittent, not continuous, use. To obtain the specified $\geq 85\%$ TDS reduction, the systems must be configured as described in the Specification section. To maintain the 3 year Warranty, the average daily usage must be <25gallons.

Indicator Lights

The Dial-A-Taste[®] control is located on the left side of the LINX Cooler Module (Figure 3). There are five LEDs in a vertical array at the front of the same box (Figure 4). The center green LED light indicates that the unit is powered and functioning. The four other indicator lights, labeled A, B, C and D (see image below) are used to indicate system status as shown in the following table. When product water is drawn by the faucet or tank, blue lights A and C flash indicating both cells are delivering water. A single red flashing light indicates that regeneration of that cell is in progress. The indicator lights also signal when the safety switch is not engaged, and when service is required (see the table below for the lights observed in each case). For the two alarms at the bottom of the table, repowering will reset the system; if the alarm re-occurs, call your Authorized Dealer.

Indicator Status Table

LCM System Status	Light A (Blue)	Light B (Red)	Light C (Blue)	Light D (Red)
Both LINX Cells Providing TDS Reduction	Blinking	Off	Blinking	Off
Cell 1 TDS Reduction	Blinking	Off	Off	Off
Cell 1 Regenerating	Off	Blinking	Off	Off
Cell 2 TDS Reduction	Off	Off	Blinking	Off
Cell 2 Regenerating	Off	Off	Off	Blinking
Conditioning LINX 100 TDS Cartridges (90 min)	All 4 lights blink in sequence (left-to-right-to-left)			
LINX Carbon and Sediment Filter Life End	Off	Solid	Off	Off
LINX 100 TDS Cartridge Life End	Off	Off	Solid	Off
Magnet to Trigger Safety Switch Not in Position*	Off	Blinking	Blinking	Blinking
Drain Line/Valve Blocked Alarm	Blinking	Blinking	Blinking	Blinking
Leak to Drain Alarm	Off	Off	Blinking	Blinking
External Leak Alarm**	Blinking	Blinking	Off	Blinking
No Power to LINX Cells (poor TDS reduction)	Blinking	Off	Blinking	Blinking

* to operate the system the LCM safety switch near the LED's must be triggered by the appliance door magnet

**to turn off the leak sensor buzzer, unplug the LINX system

Dial-a-Taste[®] Mineral Level Control

The mineral level of the product water can be adjusted with a screwdriver via the Dial-A-Taste[®] control on the front-left box of the LCM (Figure 3, 4). Turning the dial clockwise, in the direction of “min” reduction increases mineral content. As the dial is turned, the blue and red light-emitting diode (LED) indicator lights on the front of this box show the mineral level selected. No LEDs lit means the highest mineral content is selected (~70% TDS reduction), one LED

means the second highest mineral level, two LEDs means the middle level, three LEDs means the second lowest level, and all four LEDs mean the lowest mineral level is selected (>85% TDS reduction). After the dial has been set, the LEDs indicating mineral level will turn off and resume their normal display. The appliance tank must be emptied at least once before a change in mineral level is realized.

When treating water comprising regulated contaminants, the Dial-a-Taste control should be set fully counter-clockwise to maximize reduction of the regulated contaminant.



Figure 3



Figure 4

Section 5. Maintenance

LINX 100 TDS Cartridges, LINX 100 Sediment Filters, and LINX 100 or 110 Carbon Filters

The LCM includes three types of replaceable components:

- Two LINX 100 TDS cartridges
- One LINX 100 Sediment filter (nominal 5 micron)
- One LINX 100 or 110 Carbon filter (GAC).

The indicator lights let you know it is time to call for service (see Indicator Status Table in the previous section). The LINX 100 Sediment and LINX 100 or 110 Carbon filters need replacement at 650 gallons, while the LINX 100 TDS cartridges require replacement at 1300 gallons. Some reduction in water flow rate may be noticed near the end of filter and cartridge life. Contact your Authorized Dealer for service and replacement cartridges and filters.

Drain Blockage and Leak Detection Alarms

When treating hard water, scale may accumulate in the drain valves or drain line causing leaks to the drain or a plugged drain line. The LCM-140 detects drain line plugging and leaks to the drain. If a drain plug is detected, the LCM system will shut-down and all four indicator lights (blue and red) will blink in unison. For the LCM-140 model, if a drain leak is detected, indicator lights C and D will blink. If either alarm is observed, reset the system by repowering it. This is done by detaching and reattaching the power cord at the rear of the LCM. If the alarm occurs again, contact your Authorized Dealer for maintenance.

Section 6: Troubleshooting

Observation	Causes/Remedies
No Water Flow No Green Power Light	<ul style="list-style-type: none"> • No power; unit not plugged into required 100-120V outlet. • Fuse blown (6 A slow blow fuse). <p><i>Remedy – Replace fuse</i></p> <ul style="list-style-type: none"> • Electronics failure. <p><i>Remedy – Call your Authorized Dealer</i></p>
Four blue and red Indicator Lights Flash up and down	<ul style="list-style-type: none"> • The system is conditioning the LINX 100 TDS cartridges; this process takes 90 minutes.
No or Low Product Water Flow (Green light on; no indicator lights are flashing when tank drawing water)	<ul style="list-style-type: none"> • Tubing connections are incorrect • Insufficient feed water pressure (<20 psi). <p><i>Remedy – Call your Authorized Dealer to install a booster pump</i></p>
No Product Water Flow Indicator lights C and D flashing	<ul style="list-style-type: none"> • Leak detected (LCM-140 models only) <p><i>Remedy – If occurs again after re- powering, call Authorized Dealer</i></p>
No Product Water Flow Indicator lights A, B, C and D flash	<ul style="list-style-type: none"> • Clogged drain line (drain valve(s) or tubing) <p><i>Remedy – If occurs again after re-powering, call Authorized Dealer</i></p>
Light other than power light continuously on	<ul style="list-style-type: none"> • LINX 100 Sediment filter, LINX 100 or 110 Carbon filter, or LINX 100 TDS cartridges have surpassed their usage volume limits <p><i>Remedy – Call your Authorized Dealer to replace cartridges and/or filters</i></p>
Objectionable Taste or Odor	<ul style="list-style-type: none"> • LINX 100 or 110 Carbon filter is missing or exhausted. <p><i>Remedy – Call your Authorized Dealer to replace the carbon filter</i></p>
Poor TDS reduction	<ul style="list-style-type: none"> • Dial-a-Taste knob set to high mineral level (rotated clockwise). • Missing or damaged bottom LINX 100 TDS cartridge o-ring • Excessive flow rate for feed TDS (wrong flow restrictor used) • LINX 100 TDS cartridges need replacement.
Leak Out Top of Cell Lid	<ul style="list-style-type: none"> • LINX 100 TDS cartridge not completely inserted. <p><i>Remedy – Twist lids clockwise until they stop (main rib points front-back)</i></p> <ul style="list-style-type: none"> • Top cap o-rings not sufficiently seated in grooves <p><i>Remedy – Replace top cap o-rings</i></p>
Rapid Clicking Noise (Indicator lights moving back and forth)	<ul style="list-style-type: none"> • The system is cleaning its valves by rapidly opening and closing them. The process takes one minute to complete and occurs every 130 gallons of water production.

Contact your Local Authorized Dealer for service and replacement components

Replacement Parts List:

Part	Part Number
LINX 100 TDS Cartridges	08-00033-A
LINX 100 Sediment Filters	28-000509
LINX 110 Carbon Filters	28-000530
0.25 gpm Flow Restrictor set	07-000122
0.15 gpm Flow Restrictor set	07-000123
Filter Housing o-ring	28-000507
LINX 100 TDS Cartridge top o-ring	28-00037-A
LINX 100 TDS Cartridge bottom o-ring	28-00025-A
LINX cell lid drivers	19-000001
Drain Valve Body, Left (from rear)	28-000309
Drain Valve Body, Right (from rear)	28-000310

The LINX Cooler Module is manufactured by:

Pionetics Corporation
151H Old County Road
San Carlos, CA 94070
USA
(650) 551-0250
www.LINXwater.com





WARRANTY REGISTRATION CARD INSTRUCTIONS

1. Complete the information requested on the reverse side of this form.
2. Cut along the dotted line below to separate the registration card from the customer's copy of the warranty. Retain the top half for your records.
3. **Dealer MUST** enter data from this card on the online Warranty Registration page below to ensure warranty coverage:

http://linxwater.com/warranty_registration/form.php

4. The customer is to retain the bottom portion for their records.



Limited Lifetime Warranty **LINX 140 and LINX 140T Drinking Water Systems** **with LINX® Technology**

Customer's Copy

Pionetics Corporation warrants to the original purchaser that the LINX 140 and LINX 140T Residential Drinking Water Systems specified by the model and serial number will be free from defects in material and workmanship from the date of purchase for the following period:

- Lifetime for the system excluding the components below.
- The LINX 100 TDS cartridges are warranted for one year from date of purchase. If the required pre-filter conditions to the LINX 100 TDS cartridges are not followed, the LINX 100 TDS cartridges will not be warranted.
- The power supply and electrodes will be warranted for a period of 3 years.
- This warranty does not cover the disposable LINX 100 Sediment and LINX 110 Carbon Filters whose life depends on feed water conditions.

THIS WARRANTY IS EFFECTIVE TO ORIGINAL PURCHASER ONLY AS LONG AS THE DRINKING WATER SYSTEM REMAINS AT THE ORIGINAL INSTALLATION SITE OR IS MOVED BY AN AUTHORIZED REPRESENTATIVE.

No sales representative, distributor, dealer or other person is authorized to make any other warranty on behalf of Pionetics Corporation. Upon expiration of the applicable warranty periods, Pionetics shall have no further liability related to the products to which the periods apply, except with respect to warranty claims asserted during the appropriate warranty period.

This warranty does not cover damage during installation or damage resulting from freezing, mishandling, improper installation, water pressure in excess of 100 pounds per square inch, or ambient temperatures in excess of 100° F. Labor charges incurred in connection with the repair and/or replacement of parts, other than repairs done at Pionetics Corporation's factory, are expressly excluded from this warranty. All transportation and freight costs in connection with the repair and/or replacement of parts are expressly excluded from this warranty. This warranty does not cover failures or defects that are the result of misuse, mishandling, misapplication, neglect, abuse, alteration of the product, or repair performed by anyone other than Pionetics Corporation or a Pionetics authorized agent, or where the unit has not been installed in compliance with local plumbing codes and ordinances. The LINX 140 and LINX 140T Residential Drinking Water Systems are designed for intermittent, not continuous, use. To obtain the specified performance, daily usage must be 25 gallons/day or less.

All warranties are subject to requirements set forth in the owner's manual. Upon receipt of any defective product specified above Pionetics Corporation will, at its option, repair or replace the product at its expense provided the original purchaser of that product has followed the procedure for obtaining warranty performance set forth below. The product so repaired or used as replacement will be shipped to the purchaser at the purchaser's cost.

PURCHASER'S REMEDIES FOR DEFECTS OR FAILURES, TO THE EXTENT PERMITTED BY APPLICABLE LAW, ARE LIMITED TO THE REMEDY PROVIDED BY THIS WARRANTY, TO THE EXTENT ENFORCEABLE UNDER APPLICABLE LAW. Pionetics Corporation shall in no event be liable for consequential, incidental or special damages arising out of the use of, or inability to use, the product.

This warranty gives you specific legal rights; you may also have other rights which vary from state to state.

As soon as the purchaser discovers any defect or failure, the purchaser must within the period of the applicable warranty, notify Pionetics Corporation of that defect. Pionetics Corporation will assign a return authorization number and the purchaser must then return the defective part or item, with all transportation charges prepaid, to Pionetics Corporation with the return authorization number for reference.

Warranty performance information may be obtained by writing to: **Pionetics Corporation, 151-H Old County Road, San Carlos, CA 94070**



PIONETICS

151-H Old County Road, San Carlos, CA 94070

PIONETICS WARRANTY REGISTRATION CARD

ATTENTION DEALER: USE THIS CARD to record the required information. Then, GO ONLINE to complete the warranty registration within 30 days of installation to ensure proper warranty coverage.

Customer Name _____ Phone _____

Address of Installation _____ e-mail _____

City _____ State _____ Zip Code _____

Pionetics Dealer _____

City _____ State _____ Zip Code _____

Model: <input type="checkbox"/> LINX 140-120V <input type="checkbox"/> LINX 140-240V <input type="checkbox"/> LINX Cooler Module-120V (Check One) <input type="checkbox"/> LINX 140T-120V <input type="checkbox"/> LINX 140T-240V <input type="checkbox"/> LINX Cooler Module-240V	Unit Serial Number:
Front Cartridge Serial #:	Back Cartridge Serial #:

FEED WATER DATA *Installer must complete and leave with customer.*

Purchase Date:

____/____/____

TDS Level _____ ppm	Hardness _____ grains/gal	pH Level pH _____	Water Flow _____ gal/min	Water Pressure _____ psi
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PRODUCT WATER DATA

TDS Level _____ ppm	Hardness _____ grains/gal	pH Level pH _____	Water Flow _____ gal/min	Water Pressure _____ psi
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CUSTOMER INFORMATION

DEALER: Complete this form and GIVE THIS BOTTOM PORTION TO THE CUSTOMER along with a copy of their purchase agreement.

Pionetics Dealer _____

Address _____

City _____ State _____ Zip Code _____

Phone Number _____

Model: <input type="checkbox"/> LINX 140-120V <input type="checkbox"/> LINX 140-240V <input type="checkbox"/> LINX Cooler Module-120V (Check One) <input type="checkbox"/> LINX 140T-120V <input type="checkbox"/> LINX 140T-240V <input type="checkbox"/> LINX Cooler Module-240V	Unit Serial Number:
Front Cartridge Serial #:	Back Cartridge Serial #:

FEED WATER DATA *Installer must complete and leave with customer.*

Purchase Date:

____/____/____

TDS Level _____ ppm	Hardness _____ grains/gal	pH Level pH _____	Water Flow _____ gal/min	Water Pressure _____ psi
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PRODUCT WATER DATA

TDS Level _____ ppm	Hardness _____ grains/gal	pH Level pH _____	Water Flow _____ gal/min	Water Pressure _____ psi
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THANK YOU FOR CHOOSING LINX® PRODUCTS FOR GREAT TASTE – LESS WASTE