

**User  
Manual**

**Rapids™**  
Type I Water  
Purification System





**NOTICE**

*LabStrong™ Corp. shall not be liable for any damages arising out of or related to the incorrect installation or operation of the unit. LabStrong™ shall have no liability to you or any other person or entity for indirect, special, incidental or consequential damages of any description, whether arising out of warranty or other contract, negligence or other tort, or otherwise.*

*The Rapids™ Type I Water Purification System is designed to provide ultrapure water that meets ASTM Type I specifications, provided it is fed with water that meets certain quality specifications and is properly maintained as recommended by LabStrong™*

*LabStrong™ does not warrant the Rapids™ for any specific application. The end user must evaluate and decide if the water produced is to the standards needed for their purposes and procedures. LabStrong™ is not responsible for any results obtained due to usage of water produced by the Rapids™ Type I Water Purification System.*

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**Trademarks**

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## WARRANTY

### **New Equipment Limited Warranty**

LabStrong™ Corp. warrants that this product is free from defects in materials and workmanship and for any unit sold in the continental United States or Canada the warranty period for labor is ninety (90) days, and for a period of twelve (12) months, the parts required to repair such defect. Outside the continental United States or Canada, the warranty period covers for twelve (12) months the parts required to repair such defect. Labor outside of the continental United States or Canada is not covered. The warranty period for this product begins from date of shipment to the original buyer.

The exclusive remedy of buyer in the event of a breach of the foregoing warranty is expressly limited to the replacement or repair (at LabStrong™ Corp.'s option) of any product that malfunctions in conditions of normal use. An authorized agent or representative of must perform all warranty inspections and work. No goods shall be returned to LabStrong™ Corp. for inspection, repair or replacement pursuant to this warranty without prior written approval. All cleaning, decontamination, and shipping costs shall be the sole responsibility of the buyer together with any damage to the goods that might occur in transit to or from LabStrong™ Corp.'s warranty as stated herein is rendered null and void if the defect or malfunction occurred because of misuse, neglect, accident, improper service or other reasons unrelated to defects in materials or workmanship.

Under no circumstances does LabStrong™ Corp.'s responsibility or warranty extend to products other than those manufactured or distributed by; nor does LabStrong™ Corp.'s liability extend to any products, articles or parts which are furnished by buyer or obtained from other manufacturers or suppliers at buyer's request and/or in accordance with buyer's specifications. In the event that is unwilling or unable to repair or replace any defective or nonconforming product during the warranty period due to change in technical standards, technical modifications, non-availability of material or parts, or any other reason, buyer shall be entitled to a return of the purchase price paid for such product as its sole and exclusive remedy assumes no responsibility whatsoever for the accuracy of designs, specifications or materials furnished or specified by buyer.

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**Accessory Limited Warranty:** The accessories manufactured by LabStrong™ Corp. have a warranty period of 90 days from the date of purchase. Consumables (e.g. cartridges, drive belts, filters, heating elements, and thermistors) are not considered accessories and do not have a warranty period, except for an out of box failure.



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## USING THIS MANUAL

It is highly recommended to read this manual in its entirety prior to use in order to fully understand how to appropriately install, operate and maintain the Rapids™ Type I Water Purification System.

## SAFETY INFORMATION

Your Rapids™ System was designed with safety and functionality in mind. For a safe and optimal use please pay attention to the alert signals throughout the rest of the manual.

### **NOTICE**

Statements indicate information considered important, but not related to personal injury (e.g. messages relating to property damage).

### **CAUTION**

Statements indicate hazardous situations that, if not avoided, could result in minor or moderate injury.

### **WARNING**

Statements indicate hazardous situations that, if not avoided, could result in death or serious injury.

## INTRODUCTION

The LabStrong™ Rapids™ Type I Water Purification System is an easy-to-use and economical Type I ASTM Water Purification System. This water system is ideal for any laboratory that is looking for a system that produces analytical grade water. The Rapids™ Type I Water Purification System is simple to install and mounts directly to the wall near your water source. The Rapids™ achieves superior water purification with conductivity readings of up to 18.2 when paired with LabStrong™'s organic or standard cartridge kits.

For your reference, make a note of the serial number, date of purchase and supplier here:

|                         |         |
|-------------------------|---------|
| <b>Serial Number</b>    |         |
| <b>Model Number</b>     | D003312 |
| <b>Date of Purchase</b> |         |
| <b>Supplier</b>         |         |

## PACKAGE CONTENTS

Unpack the Rapids™ Type I Water System carefully. Ensure that all components are removed prior to discarding packaging. Items listed below.

Table 1.2

| Part/Form Number | Part/Form Name                                      | Part/Form Description   |
|------------------|---|---|
| D003312          | LabStrong™ Rapids™ Type I Water Purification System | The ASTM Type I Water System including all major components. See schematic on page 20                     |
| LT0033-1         | LabStrong™ Rapids™ User Manual                      | Instruction manual detailing the components, installation, maintenance and accessories of the water unit. |
| LT0033-2         | LabStrong™ Rapids™ Mounting Guide/Template          | Guide/template to aid in the mounting and installation of the water unit.                                 |
| PS-006           | LabStrong™ Rapids™ System Power Supply with Cord    | Used to supply power to the water unit.   |
| ST0033-2         | LabStrong™ Rapids™ Power Supply Velcro™ Holder      | Can be mounted to a wall to hold the power supply.  |
| FL-001           | Air Filter  | Used for filtering the air. Installed during the installation process.                                    |
| TU0033-2         | Tubing—10ft   | Cut to fit and used to connect the water unit and the water source.                                       |
| TL0012-2         | Fitting Removal Tool                                | Used for removing the top and bottom fittings of the cartridge end covers                                 |

## COMPATIBLE ACCESSORIES

All accessories are sold separately. Consult your distributor or visit [www.labstrong.com](http://www.labstrong.com).

Table 1.3

| <b>Part Number</b> | <b>Part Name</b> | <b>Part Description</b>   |
|--------------------|------------------|---|
| FL-001             | Air Filter       | Used for filtering the air. One (1) is included in the original shipment of the water unit.   |
| FL0016-1           | Final Filter     | Attached to the dispense solenoid valve, the 0.2 micron final filter will provide bacteria-free product water. Not included in original shipment.   |
| CMX25LS            | Cleaning Syringe | Contains a cleaning solution specifically formulated to sanitize and flush away bacterial contaminants. It is recommended to use cleaning syringe to sanitize the water purification unit when the unit is new and when installing new cartridge packs. |

## COMPATIBLE CARTRIDGES

All cartridges are sold separately as kits. Individual components of the kits are listed below along with the available kits and the contents of the kit. To purchase, consult your distributor or visit [www.labstrong.com](http://www.labstrong.com).

Table 1.4

| Cartridge Number  | Cartridge Kit Name                         | Cartridge Kit Contains         |
|---|--|--------------------------------|
| <b>AVAILABLE CARTRIDGE KITS FOR THE LABSTRONG™ RAPIDS™ TYPE I WATER PURIFICATION SYSTEM</b> |  |                                |
| D00336KT  | Tap/DI Feed Low Organic                    | D00331, D00332, D00332, D00333 |
| D00337KT  | Tap Feed Low Organic                       | D00331, D00334, D00332, D00333 |
| D00338KT  | Tap Feed Type 1                            | D00331, D00334, D00332, D00332 |
| D00339KT  | Tap/DI Feed Type 1                         | D00331, D00332, D00332, D00332 |
| D003310KT   | RO/Distilled Low Organic                   | D00335, D00332, D00332, D00333 |
| D003311KT   | RO/Distilled Type 1                        | D00335, D00332, D00332, D00332 |
| <b>DESCRIPTIONS OF COMPONENTS IN THE CARTRIDGE KITS. NOT SOLD SEPARATELY.</b>               |  |                                |
| D00331  | Pretreat Colloid/Organic Removal Cartridge |                                |
| D00332  | Mixed Med High Purity Cartridge            |                                |
| D00333  | Organic Removal Cartridge                  |                                |
| D00334  | Two Bed High Capacity Cartridge            |                                |
| D00335  | Pretreat Type I Cartridge                  |                                |

## REPLACEMENT PARTS

To purchase, consult your distributor or visit [www.labstrong.com](http://www.labstrong.com). Need technical assistance? Contact us via phone or email at 563-588-8900 or [technicalservice@labstrong.com](mailto:technicalservice@labstrong.com)

Table 1.5

| Part #   | Part Name                                | Quantity |
|----------|--|----------|
| ST0033-1 | Strap, Velcro™ Cartridge                 | 1        |
| ST0033-2 | Strap, Velcro™ Power Supply              | 1        |
| TL0012-2 | Fitting Removal Tool                     | 1        |
| PM0033-8 | Pressure Regulator                       | 1        |
| PM-009   | Fitting 3/8" x 3/8" Bulkhead Union       | 1        |
| PM-036   | Check Valve 3/8"                         | 1        |
| PM-037   | Fitting 3/8" Stem x 1/4" Male NPTF KYNAR | 3        |
| PM-038   | Fitting 3/8" x 3/8" x 3/8" Tee Union     | 1        |
| PM-039   | Fitting 3/8" x 3/8" Elbow Union          | 1        |
| PM-040   | Fitting 3/8" Stem x 1/4" Male NPTF PP    | 2        |
| PM-041   | Fitting 3/8" Tube x 1/4" Male NPTF       | 5        |
| PM-042   | Fittings 3/8" x 3/8" Tube Elbow          | 10       |
| PM-043   | Fitting 3/8" x 3/8" x 3/8" Tee Union     | 3        |
| PM-045   | Fitting Female Luer with 1/4" Barb       | 1        |
| PM-046   | Fitting Male Luer Plug                   | 1        |
| PU0033-1 | Water Pump                               | 1        |
| PM0033-3 | Dispense Solenoid                        | 1        |
| PM0033-6 | Air Inlet Solenoid                       | 1        |
| PM0033-6 | Inlet Water Solenoid                     | 1        |
| PM0033-7 | Recirculation Solenoid                   | 1        |

| Part #    | Part Name                                     | Quantity |
|-----------|---|----------|
| PC0033-2  | Display PCB                                   | 1        |
| PC0033-3  | Main Control PCB                              | 1        |
| PC0033-4  | NFC Reader PCB                                | 1        |
| WH0027-5  | Wire Harness, Display Connector               | 1        |
| WH00033-3 | Wire Harness, Power Supply to Control Board   | 1        |
| WH-002    | Wire Harness, Display Cable                   | 1        |
| WH0033-2  | Wire Harness, Control Board to NFC Controller | 1        |
| SW-001    | Switch, Rocker                                | 1        |
| PM-050    | Check Valve 1/4"                              | 1        |
| PM-051    | Check Valve 5/16"                             | 2        |
| CR-001    | Cord Set 125V 10 amps                         | 1        |
| PS-006    | Power Supply 115V AC to 24 VDC                | 1        |
| PM-052    | Conductivity Cell                             | 1        |

## REGULATORY INFORMATION

### **NOTICE**

#### **FCC Notices (United States of America)**

Contains FCC ID: 2ASQK-EA00351

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this device not expressly approved by LabStrong Corp. could void the user's authority to operate the equipment.

### **NOTICE**

#### **IC Notices (Canada)**

Contains IC: 24977- EA00351

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

## PRODUCT SPECIFICATIONS

Table 1.6

|   |   |
|---|---|
| <b>Dimensions (WxHxD)</b>   | 26.5" x 22" x 11.5" / 67.31cm x 55.8cm x 29.21cm  |
| <b>Weight</b>   |   |
| Operational   | 56lbs./26kg   |
| Shear   | 225lbs./102kg <i>*Shear weight means mounted on wall with safety factor.</i>  |
| Per Cartridge   | 4lbs./1.8kg   |
| <b>Feed Water Requirements</b>  |   |
| Type of Feed Water  | Tap (TDS 100-300 ppm), RO, DI, Distilled  |
| Inlet Water Pressure  | 15 PSI Minimum, 100 PSI Maximum   |
| Inlet Water Temperature   | 4°C to 38°C (40°F to 100°F)   |
| TOC   | < 1.0 ppm   |
| Total Silica  | < 1.0 ppm   |
| Turbidity   | 1.0 NTU Max   |
| Piping connection   | Fitting capable of accepting a 3/8" OD tube   |
| <i>*System's capacity will be lower with tap water feed due to the amount of dissolved solids in the tap water. Recommended for low usage only.</i> |   |
| <b>Product Water Quality</b>  | Type I ASTM (Maximum 18.2 MΩ/cm)  |
| <b>Product Water Flow Rate</b>  | Type I water, up to 2 Liters per Minute (LPM)   |
| <b>Voltage</b>  | 100-240VAC 120W 50/60Hz at receptacle to 24 VDC at unit.  |
| <b>Cartridge Storage</b>  | Shelf life is two (2) years from date of manufacture, provided cartridge remains as delivered from LabStrong™ in the sealed plastic bag. Don't remove cartridge from bag until use. Keep cartridge away from heat. Exchange capacity is greatly reduced if resins are allowed to dry completely. Resins shrink due to moisture loss. Cartridges may not appear full; resins expand when wet to fill cartridges. |
| <b>Cartridge Odor</b>   | A normal by-product of some ion exchange resins is a slight release of amines that have a 'fishy' smell upon opening a sealed bag. Higher temperatures can increase intensity of the odor. Odor should greatly diminish and/or disappear after 3-5L of water are rinsed through the cartridge.  |
| <b>Operating Conditions</b>   | Temperature: 5°C to 40°C (41° to 104°F); Relative Humidity: 20% to 80 % non-condensing. Pollution Degree 2 in accordance with IEC 60664. Altitude Limit: 6562 ft. (2000meters).   |
| <b>Non-Operating Conditions</b><br><i>(Storage)</i>   | Temperature: 5°C to 40°C (41° to 104°F); Keep out of direct sunlight and away from heat. Relative Humidity: 10% to 85 % relative humidity / non-condensing. Altitude Limit: 6562 ft. (2000meters).  |

## PHOTO DIAGRAM OF THE RAPIDS™

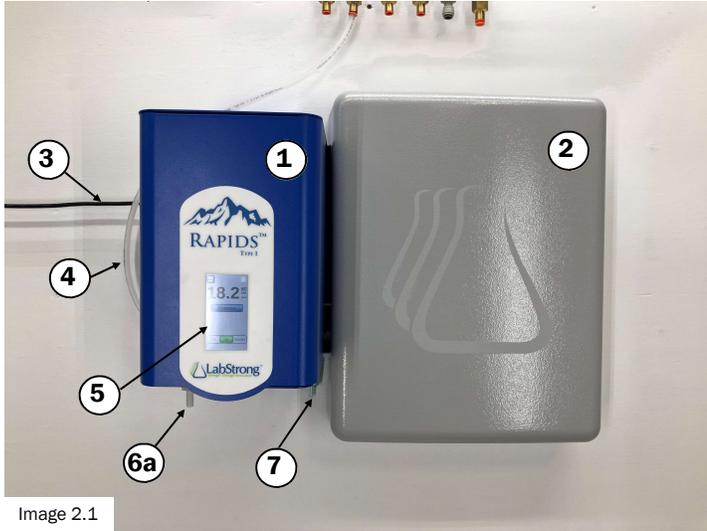


Image 2.1



Image 2.2



Image 2.3



Image 2.4

Table 2.5

| Ref. # | Description            | Function   |
|--------|------------------------|--|
| 1      | Housing Cover          | Houses the touchscreen display and protects the mechanical components of the unit.   |
| 2      | Cartridge Cover        | Attached by hinge pins on the top and magnets on the bottom. It Covers the installed cartridges.   |
| 3      | Power Cord             | Delivers electrical power to the unit.   |
| 4      | Inlet Water Tube       | 10 ft of tubing is supplied. Connects unit to a water source.  |
| 5      | Touchscreen Display    | Screen that allows a user to operate the Rapids™ unit.   |
| 6a     | Dispense Hose Fitting  | Water will dispense from this fitting. If the optional final filter is used, 6b, the fitting will be replaced by the final filter, 6b.                               |
| 6b     | 0.2 µm Final Filter    | Removes particulates down to 0.2 µm to provide bacteria-free water. This is an accessory that does not come with the unit. The final filter is purchased separately. |
| 7      | Air Filter             | The air filter attaches here and filters the incoming air.   |
| 8      | Power Switch           | Toggle the switch up or down will turn the unit on or off.   |
| 9      | Power Source Connector | Connection point for the power cord and the unit.  |
| 10     | Water Input Connector  | Connection point for the tubing from the water source to the unit.   |

# PHOTO DIAGRAM OF THE RAPIDS™



Image 2.6



Image 2.7



Image 2.8



Image 2.9

Table 2.10

| Ref. # | Description   | Function   |
|--------|---|--|
| 11     | Metal Rods  | Rods function as a hinge for attaching the cartridge cover to the unit. The bottom of the cover is secured with magnets.   |
| 12     | Cartridge Cover Magnets                               | Helps attach the cover to the unit.  |
| 13     | Fittings  | Fittings connect the tubes to the cartridges. There are four fittings on top and bottom of the cartridges.   |
| 14     | Ultra Pure Fitting                                    | Far left fitting is considered an ultra pure fitting. Water running through this fitting is considered pure water.   |
| 15     | Velcro™ Strap   | This strap helps secure installed cartridges.  |
| 16     | NFC Tag Reader  | Scans information from the NFC (Near-Field Communication) tags on the cartridges and relays it to the control board.   |
| 17     | Fitting Removal Tool                                  | Aids in cartridge fitting removal. When not in use, attach tool to the Velcro™ strap.  |
| 18     | Grommet Holder for the Dispense Hose Fitting (see 6A) | When not using the Dispense Hose Fitting (see 6A) store it in the grommet holder so as not to loose the part for later use.  |
| 19     | Cartridges (x4)                                       | Cartridges contain different resins to purify the water. Turn unit on and follow directions on display, located in Maintenance/Install New Cartridges or follow instructions listed on LT0033-3 flyer. |

## PHOTO DIAGRAM OF THE RAPIDS™

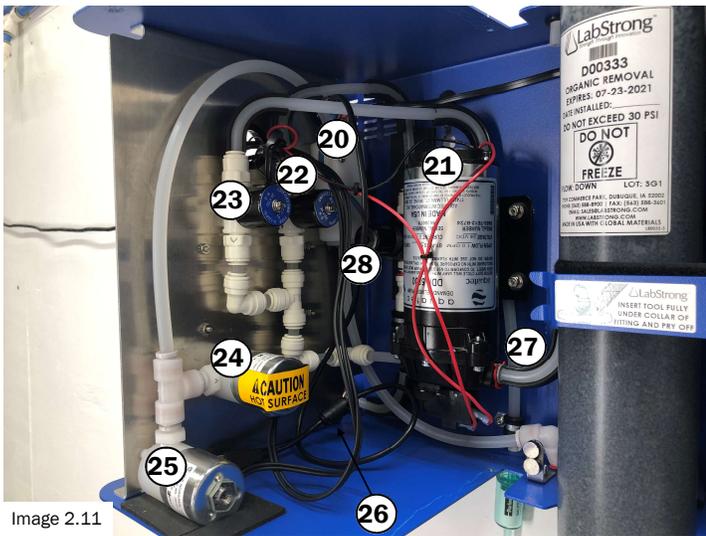


Image 2.11

Table 2.13

| Ref. # | Description            | Function  |
|--------|------------------------|---|
| 20     | Conductivity Cell      | Measures the electrical conductivity of the product water.  |
| 21     | Water Pump             | Pump provides optimal flow rates for proper resin exchange while in recirculation mode and boost flow in dispense mode. |
| 22     | Inlet Water Solenoid   | Allows supply water to enter the unit.  |
| 23     | Air Inlet Solenoid     | Assists in purging water during depressurization cycle.   |
| 24     | Recirculation Solenoid | Allows for recirculation of the water.  |
| 25     | Dispense Solenoid      | Allows for dispense of high purity water at a rate of up to 2 liters/minute.  |
| 26     | Display Connector      | Connects the unit to the display board on the housing cover.  |
| 27     | Pump Outlet            | Water exits the pump through this tube into cartridge #1.   |
| 28     | Pressure Regulator     | Regulates the pressure of the unit water.   |
| 29     | Control Board          | Controls all the major electronic components of the unit.   |

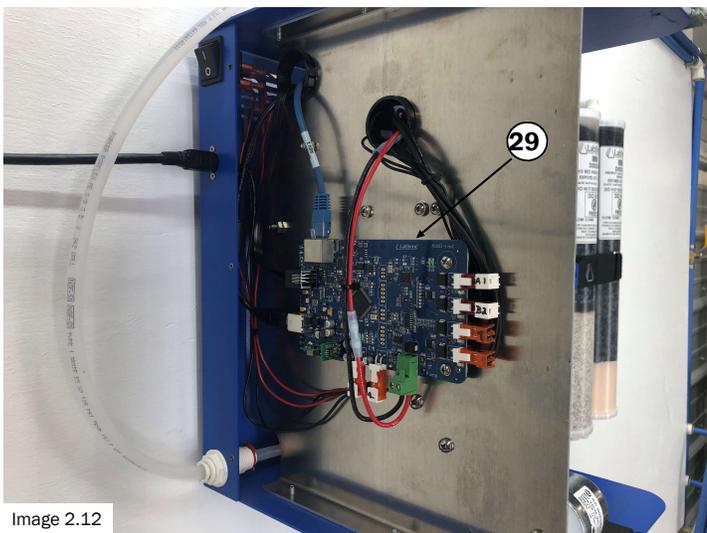


Image 2.12

# DRAWINGS OF THE RAPIDS™

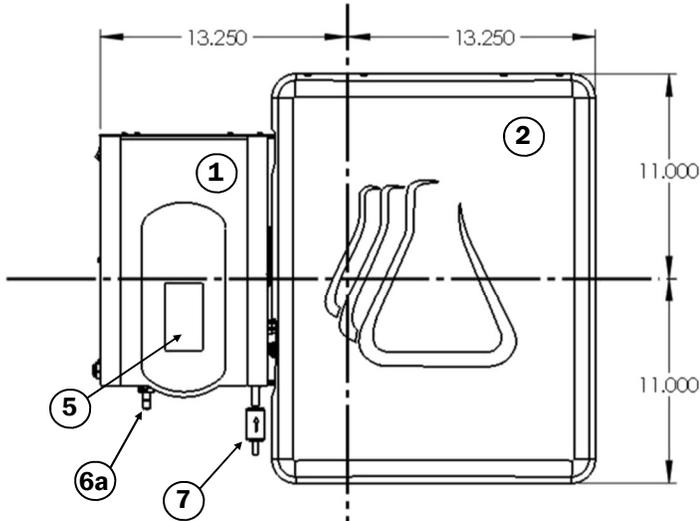


Figure 2.14

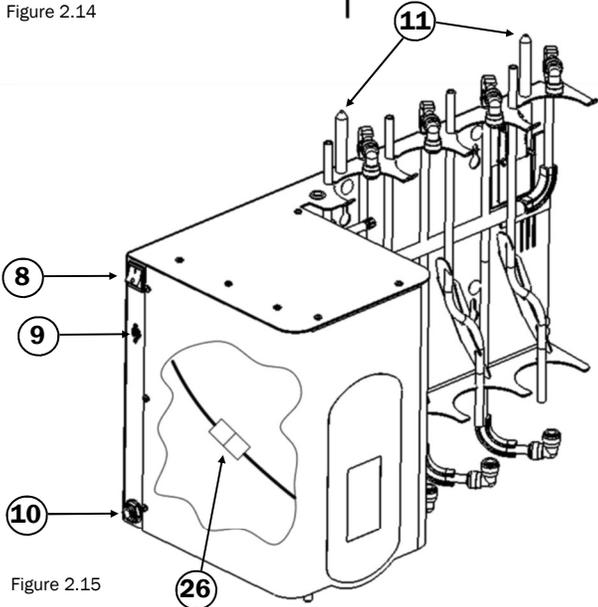


Figure 2.15

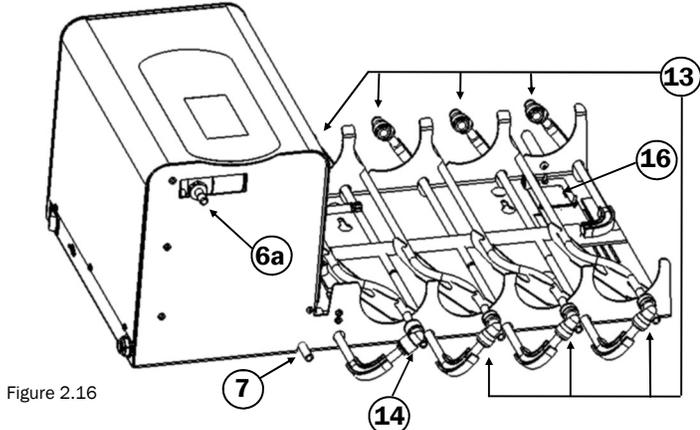


Figure 2.16

Table 2.17

| Ref. # | Description            | Function   |
|--------|------------------------|--|
| 1      | Housing Cover          | Houses the touchscreen display and protects the mechanical components of the unit.   |
| 2      | Cartridge Cover        | Attached by magnets, it covers the installed cartridges.   |
| 5      | Touchscreen Display    | Screen that allows a user to operate the Rapids™ unit.   |
| 6a     | Dispense Hose Fitting  | Water will dispense from this fitting. If the optional final filter is used, 6b, the fitting will be replaced by the final filter, 6b. |
| 7      | Air Filter             | The air filter attaches here and filter the incoming air.  |
| 8      | Power Switch           | Toggle the switch up or down will turn the unit on or off.   |
| 9      | Power Source Connector | Connection point for the power cord and the unit.  |
| 10     | Water Input Connector  | Connection point for the tubing from the water source to the unit.   |
| 11     | Metal Rods             | Rods function as a hinge for attaching the cartridge cover to the unit. The bottom of the cover is secured with magnets.               |
| 13     | Fittings               | Fittings connect the tubes to the cartridges. There are four fittings on top and bottom of the cartridges.                             |
| 14     | Ultra Pure Fitting     | Far left fitting is considered an ultra pure fitting. Water running through this fitting is considered pure water.                     |
| 16     | NFC Tag Reader         | Scans information from the NFC (Near-Field Communication) tags on the cartridges and relays it to the control board.                   |
| 26     | Display Connector      | Connects the unit to the display board on the housing cover.   |

## FLOW DIAGRAM OF THE RAPIDS™

Table 2.18

| Ref. # | Part #   | Part Name              |
|--------|----------|------------------------|
| 6b     | FL0016-1 | 0.2 µm Final Filter    |
| 21     | PM-052   | Conductivity Cell      |
| 22     | PU0033-1 | Water Pump             |
| 22     | PM0033-6 | Inlet Water Solenoid   |
| 23     | PM0033-6 | Air Inlet Solenoid     |
| 24     | PM0033-7 | Recirculation Solenoid |
| 25     | PM033-3  | Dispense Solenoid      |

| Ref. # | Part #       | Part Name          |
|--------|--------------|--------------------|
| 28     | PM0033-8     | Pressure Regulator |
| 31     | PM-036       | Check Valve        |
| 32     | PM-050       | Check Valve        |
| 33     | Refer to Kit | Cartridge 1        |
| 34     | Refer to Kit | Cartridge 2        |
| 35     | Refer to Kit | Cartridge 3        |
| 36     | Refer to Kit | Cartridge 4        |

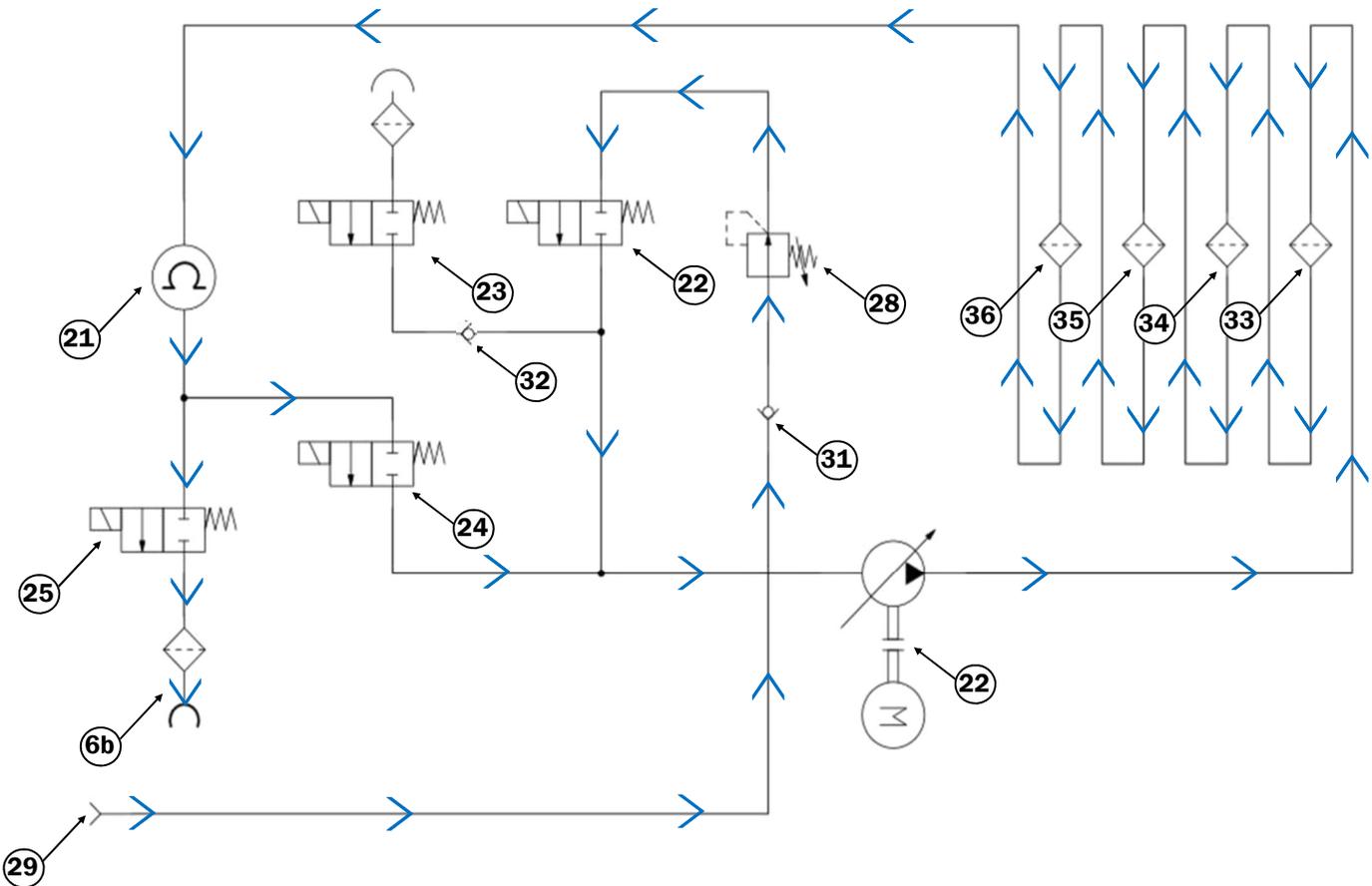


Figure 2.19

# PHOTO DIAGRAM OF THE RAPIDS™ CARTRIDGE KITS



D00336KT - Tap/DI Feed Low Organic



D00337KT - Tap Feed Low Organic



D00338KT - Tap Feed Type I



D00339KT - Tap/DI Feed Type I



D003310KT - RO/Distilled Low Organic

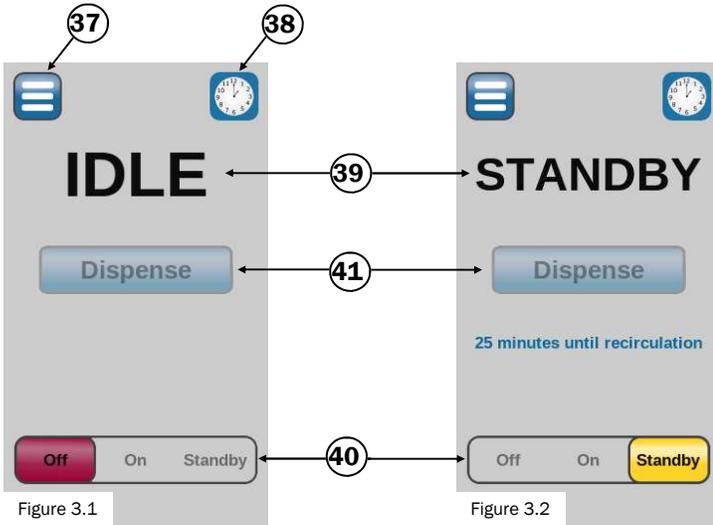


D003311KT - RO/Distilled Type I

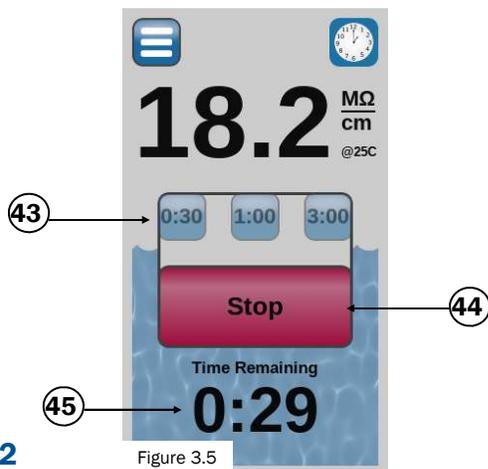
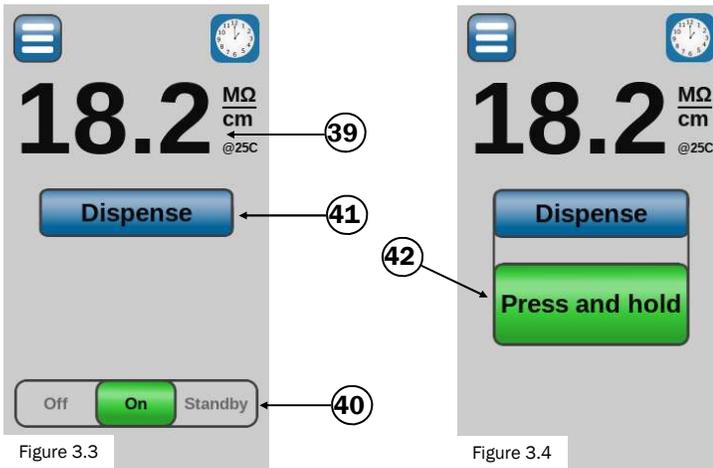
Table 3.6

# GRAPHICAL TOUCH SCREEN

## Home Screen



| Ref. # | Description            | Function  |
|--------|------------------------|---|
| 37     | Menu Button            | Access the unit's main menu options.  |
| 38     | Clock                  | Displays the time based on time programmed in the settings menu.  |
| 39     | System Mode Line       | When the unit is in off or standby mode, the resistivity reading will not display. In on mode, a real time resistivity will display.  |
| 40     | System Mode Bar        | Use the bar to select the desired operating mode. The mode that is selected will be highlighted in either <b>red for off</b> , <b>yellow for standby</b> or <b>green for on</b> . It is recommended to leave the unit in STANDBY when not in use for water recirculation. |
| 41     | Dispense Button        | The dispense button will be grayed out and not operational when the unit is in off or standby mode. In the on mode, press the dispense button to show the 'Press and hold' button in order to dispense water.   |
| 42     | Press and Hold Button  | To dispense water, slide your finger from the 'dispense' button to the 'Press and hold' button. After a few seconds, timed dispense options appear.   |
| 43     | Timed Dispense         | Timed dispense for 30 seconds, 1 minute or 3 minutes. Time may be added at the start of dispense. Screen will lock until dispense time completes or stopped.  |
| 44     | Stop Button            | Press to stop timed dispense.   |
| 45     | Time Remaining Display | Remaining time of dispense. Blue water background will fill the screen to show progress of time remaining of the dispense. Once the screen is full, dispense will stop.   |



# GRAPHICAL TOUCH SCREEN

## Main Menu

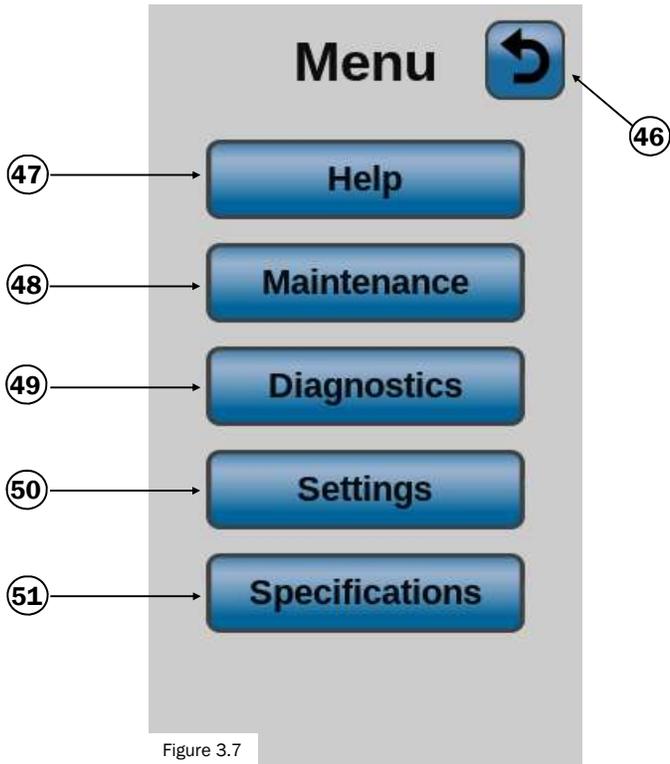


Figure 3.7

Table 3.13

| Ref . # | Description                | Function   |
|---------|----------------------------|--|
| 46      | Back Button                | Press this button to go to previous screen.  |
| 47      | Help Menu Button           | Find information on the manual, how-to videos, trouble shooting, contact your distributor, or provide feedback.        |
| 48      | Maintenance Menu Button    | Install or replace cartridges, clean the unit, purge air, depressurize cartridges, or calibrate the conductivity cell. |
| 49      | Diagnostics Menu Button    | View notification history, cartridges, conductivity cell or hourmeters.  |
| 50      | Settings Menu Button       | Change date and time, adjust sound, our perform a factory reset.   |
| 51      | Specifications Menu Button | View the specs on your unit.   |



Figure 3.8



Figure 3.9

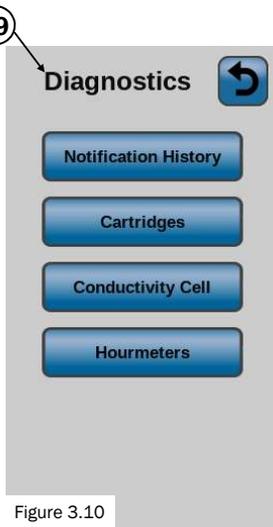


Figure 3.10

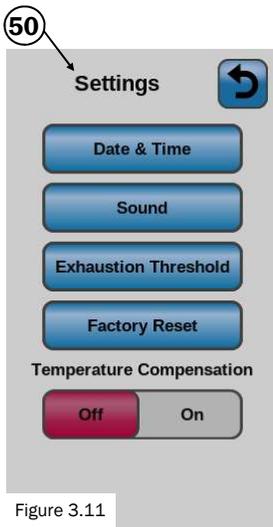


Figure 3.11

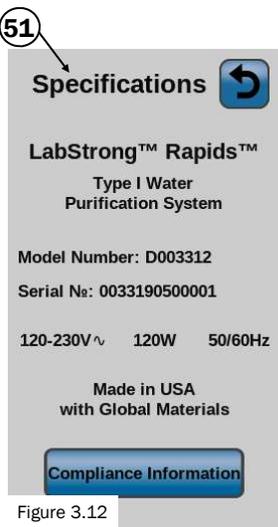


Figure 3.12

## GRAPHICAL TOUCH SCREEN

### Help Screen

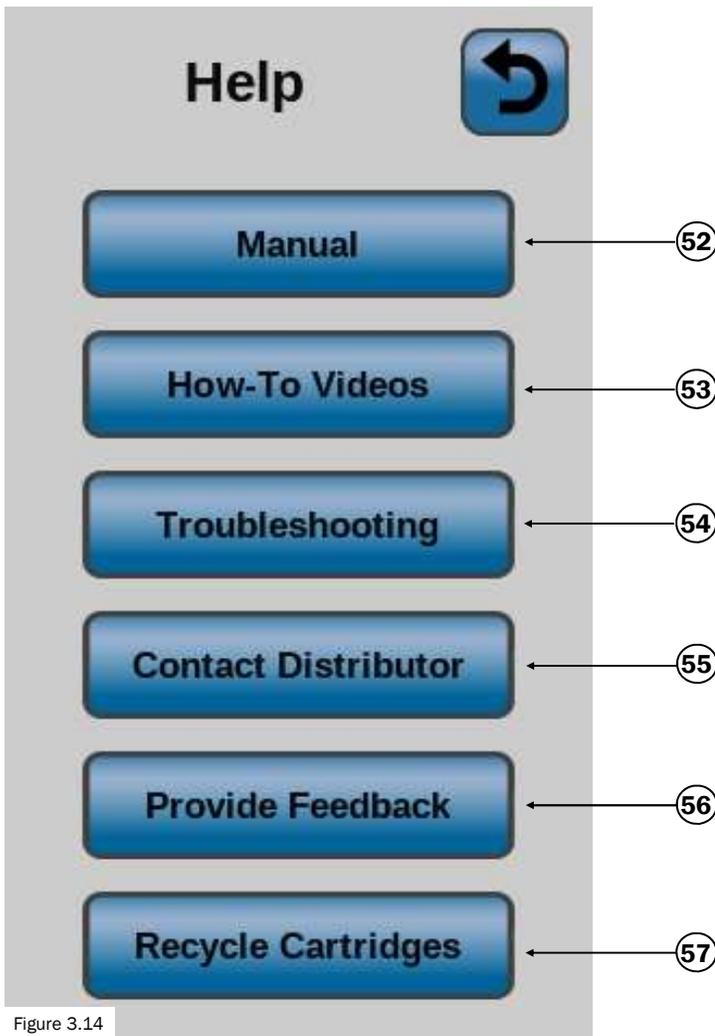


Table 3.15

| Ref. # | Description                  | Function   |
|--------|------------------------------|--|
| 52     | User Manual QR Code          | Using a smart phone, scan the code to access a digital copy of the user manual.                            |
| 53     | How-To Videos QR Code        | Using a smart phone, scan the code to access a collection of how-to videos .                               |
| 54     | Troubleshooting QR Code      | Using a smart phone, scan the code to access a list of troubleshooting.                                    |
| 55     | Contract Distributor QR Code | Using a smart phone, scan the code to get information about the distributor the Rapids was purchased from. |
| 56     | Provide Feedback QR Code     | Using a smart phone, scan the code to provide feedback about the Rapids™.                                  |
| 57     | Recycle Cartridges           | Using a smart phone, scan the code to learn how to recycle genuine LabStrong™ cartridges.                  |

Figure 3.14

## GRAPHICAL TOUCH SCREEN

### Maintenance

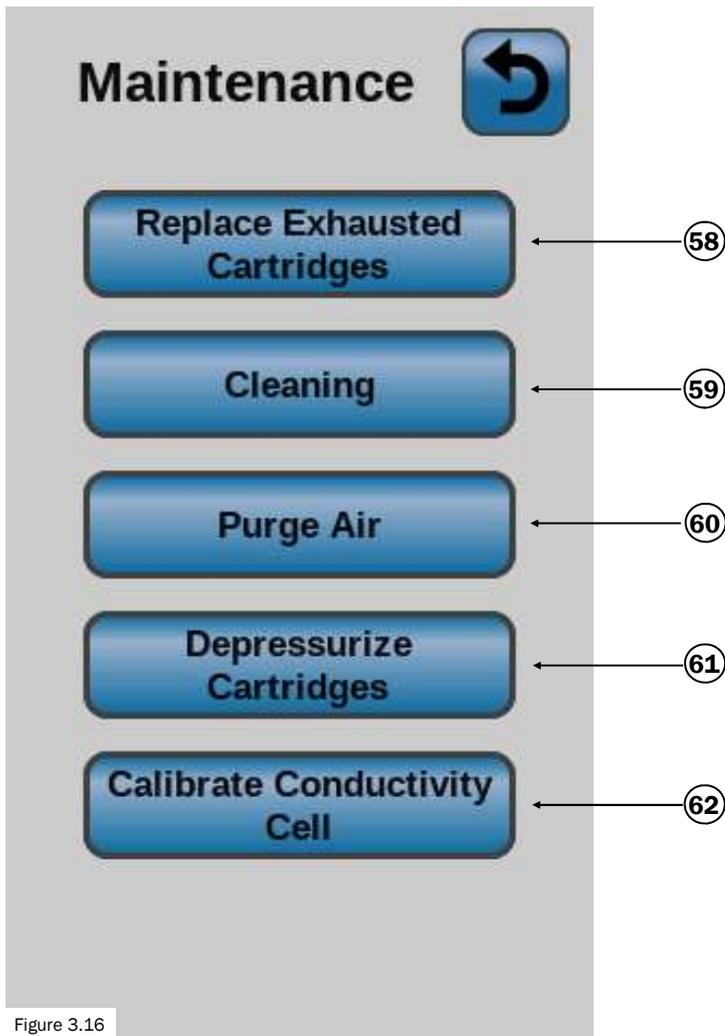


Figure 3.16

Table 3.17

| Ref. # | Description                  | Function  |
|--------|------------------------------|---|
| 58     | Replace Exhausted Cartridges | Read the instructions and follow them to replace your exhausted cartridges.   |
| 59     | Cleaning                     | Read the instructions, click begin and follow the prompts to clean the unit.  |
| 60     | Purge Air                    | Read the instructions, click begin and follow the prompts to purge air from the cartridges and fill them with water.                  |
| 61     | Depressurize Cartridge       | Read the instructions, click begin and follow the prompts to depressurize the cartridges.   |
| 62     | Calibrate Conductivity Cell  | Read the instructions, click begin and follow the prompts to calibrate the unit . Use the calibrator accessory, part number AY0033-1. |

## GRAPHICAL TOUCH SCREEN

### Diagnostics Screen

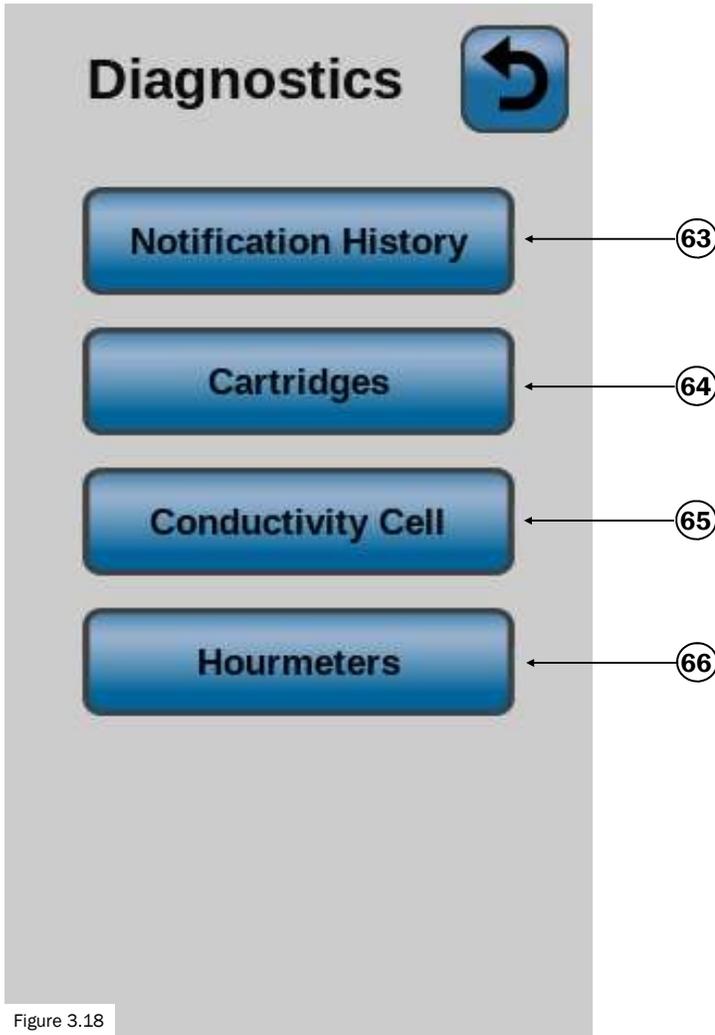


Table 3.19

| Ref. # | Description          | Function  |
|--------|----------------------|---|
| 63     | Notification History | View a history of all the notifications given by the unit.  |
| 64     | Cartridges           | View information about the current cartridges installed in the unit. Information is gathered from the NFC tag, which is read by the NFC tag reader in the Rapids™ unit. |
| 65     | Conductivity Cell    | View information about the conductivity cell in the unit.   |
| 66     | Hourmeters           | View the hourmeters—total hours, pump hours, and dispense time of the unit.   |

Figure 3.18

## GRAPHICAL TOUCH SCREEN

### Settings Screen

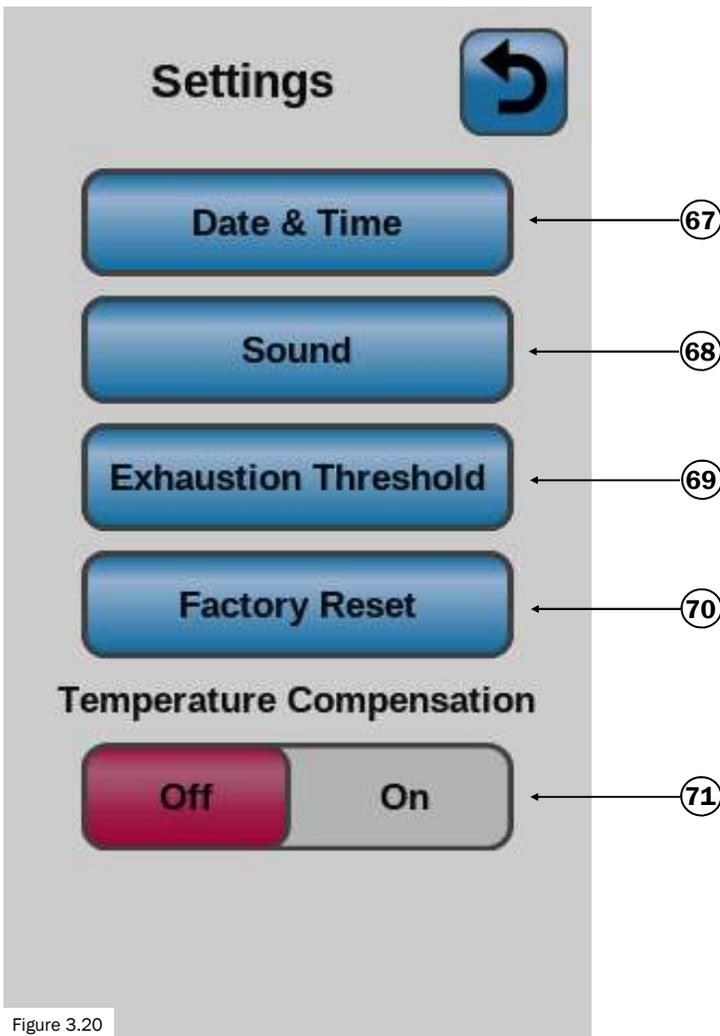


Figure 3.20

Table 3.21

| Ref. # | Description               | Function   |
|--------|---------------------------|--|
| 67     | Edit Date & Time          | Use this setting to change the date and time of the unit.  |
| 68     | Sound Settings            | Use this setting to adjust the volume of the unit.   |
| 69     | Exhaustion Threshold      | The <i>Exhaustion Threshold</i> is the temperature-compensated resistivity value below which cartridges will be considered exhausted. Further explanation can be found in the Maintenance section. |
| 70     | Reset to Factory Defaults | Setting should only be used if the unit needs to be reset back to default values. Once you press 'reset', the action can not be undone.  |
| 71     | Temperature Compensation  | While in 'ON' the resistivity will be compensated to 25°C. In 'OFF' the resistivity reading will not be compensated to 25°C.   |

## GRAPHICAL TOUCH SCREEN

### Specifications Screen

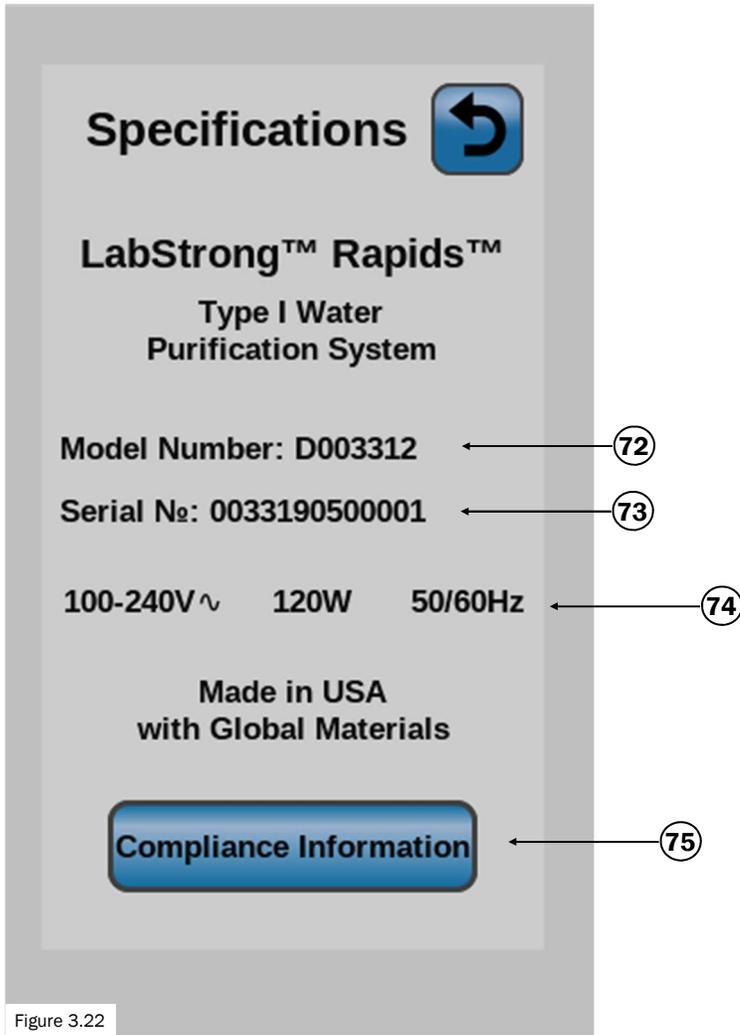


Table 3.23

| Ref. # | Description            | Function  |
|--------|------------------------|---|
| 72     | Model Number           | Shows the model number of your Rapids™  |
| 73     | Serial No.             | Each Rapids™ is given an unique serial number to identify it. You may be asked for this number when asking for technical service. |
| 74     | Power Requirements     | Shows the power requirements for the Rapids™  |
| 75     | Compliance Information | Press the button to learn more about compliance information.  |

Figure 3.22

## SAFETY INSTRUCTIONS PRECAUTIONS BEFORE INSTALLATION

### Precautions before installation (wall mounting) Rapids™ Type I Water Purification System.

The Rapids™ Type I Water Purification System can be fed from a pretreated or tap water source. You may find that some municipal tap water supplies contain a high concentration of suspended particles, and dissolved organic and inorganic materials that can decrease the life of the cartridges installed in the Rapids™.

- ⚠ CAUTION** Failure to follow the instructions and warnings mentioned in this manual will result in the inability to maintain safe operation.
- ⚠ CAUTION** Do not mount the Rapids™ unit directly over equipment that requires electrical service. Routine maintenance (removing exhausted cartridges) of this unit may involve water spilling from the cartridges, resulting in an electrical shock hazard if improperly located.
- ⚠ CAUTION** This unit is to be only used with the provided power supply. The power supply must be securely mounted and away from source of water. (e.g. not over sink or open container of water).
- ⚠ CAUTION** This unit is to be used with the specified water feeds (pretreat or tap) only.
- ⚠ CAUTION** To lift and mount the water system on wall we recommend it is done with two people.
- ⚠ CAUTION** Wall composition, condition and construction, as well as the type of fasteners to be used should be considered when mounting this unit. Both the mounting surface and fasteners selected must be capable of supporting a minimum weight of 225 lbs./102 kg (operational weight of 56lbs. X 4x safety factor). Inadequate support or fasteners may result in damage to the mounting surface and/or the equipment. If you are unsure of how to wall mount the Rapids water unit, please consult with your building maintenance personnel or local contractor.
- ⚠ CAUTION** Unit is equipped with a timed dispense option. User must be aware of flow rate of water so as not to overfill containers that could cause spills onto a bench or floor.
- ⚠ CAUTION** This product contains magnets; some of which are nickel plated. People with an allergy to nickel should avoid skin contact with all magnets.
- ⚠ CAUTION** This product contains both Ferrite (weak magnetic field) and rare earth Neodymium (strong magnetic field) type magnets. People using pacemakers, implanted heart defibrillators and other devices sensitive to magnetic fields that come in close proximity of magnets used in this product could be exposed to health concerns. People having these or other electrical medical implants should keep sufficient distance from the magnets; if you are unsure of the distance consult your health care provider.

## INSTALLATION REQUIREMENTS FOR THE RAPIDS™ WATER PURIFICATION SYSTEM

Table 4.1

| <b>Feed Water Requirements</b>  |  |
|---|--|
| Type of Feed water  | Tap (TDS 100-300 ppm), RO, DI, Distilled   |
| Inlet Water Pressure  | 15 PSI Minimum, 100 PSI Maximum  |
| Inlet Water Temperature   | 4°C to 38°C (40°F to 100°F)  |
| TOC   | < 1.0 ppm  |
| Total Silica  | < 1.0 ppm  |
| Turbidity   | 1.0 NTU Max  |
| <i>*System's capacity will be lower with tap water feed due to the amount of dissolved solids in the tap water. Recommended for low usage only.</i> |  |
| <b>Feed water Connection Needed</b>   |  |
| Feed water Piping Connection  | Fitting capable of accepting a 3/8" OD tube  |
| <b>Environmental Requirements—INDOOR USE ONLY</b>   |  |
| Operating   | 5°C to 40°C (41° to 104°F);<br>Relative Humidity 20% to 80 % non-condensing installation.<br>Pollution Degree 2 in accordance with IEC 60664.<br>Altitude Limit 6562 ft. (2000meters). |
| Storage   | 5°C to 40°C (41°F to 104°F)<br>10% to 85 % relative humidity / non-condensing  |
| <b>Power Requirements</b>   |  |
| Power source  | Rated at minimum of 15 amps at 120 volts.  |

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS™

**CAUTION** Consult your maintenance personnel or a local contractor for expertise in performing this installation.

**CAUTION** The mounted system was not designed to support any additional weight. Do not place anything on top of the mounted system.

### BEFORE YOU BEGIN

#### STEP 1 | Select a location to mount the Rapids™ unit.

- Select the location you wish to mount the unit.
  - \* Power source should be no more than 3ft.- 4ft./1 m away and rated at minimum of 15 amps at 120 volts.
  - \* Inlet water source should be near the unit. (10ft. of plastic tubing has been included with the original shipment.)
  - \* The wall must be able to support 56lbs./26kg of operating weight and a shear weight of 225lbs./102kg (56lbs + 4x safety factor).
  - \* Mount the system above or close to a sink.

**CAUTION** The LabStrong™ Rapids™ Type I Water Purification System will weigh approximately 56lbs./26kg once operating. When the system is on and the pump is running, the Rapids™ will also vibrate. Ensure the unit is supported by a wall stud or extra board that will support a shear weight (unit weight plus 4x safety factor) of 225lbs./102 kg.

### USING THE TEMPLATE & PREPARING THE SYSTEM FOR MOUNTING

#### STEP 2 | Use the template that was included with your Rapids™ when it was shipped.

- Mount the template to the wall with removable tape. Ensure the template is completely flat and level on the wall. Use a level on the horizontal center line of the template for accuracy.
  - \* When the system is mounted it will extend 1ft./31cm above and below the horizontal center line and 13.25 in./33.6 cm on either side of the vertical center line.

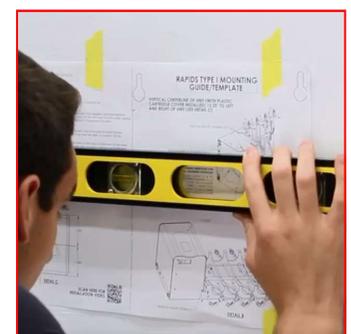


Image 4.2

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS (CONT.)

### STEP 3 | Prepare the Rapids™ system by carefully removing the housing cover and detaching the Display Cable.

- The metal housing cover is screwed in and attached to the system for shipping. The metal cover needs to be removed before mounting the unit. Remove the metal housing cover with care as not to pull on the Display Cable.
  - \* A total of seven (7) Phillips™-head screws need to be removed to detach the housing cover: three (3) on the top of the housing, three (3) on the left-hand side and one (1) underneath.
  - \* The Phillips™-head differentiates these screws from the other screws holding the base system together. DO NOT REMOVE THE OTHER SCREWS.
  - \* Once the screws are removed, slowly and carefully remove the cover until you are able to reach the Display Cable and unhook it.

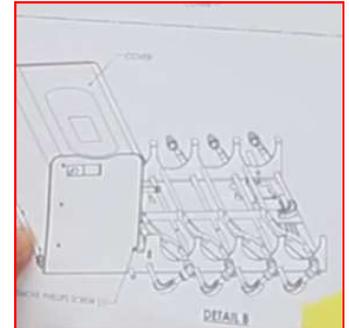


Image 4.3

### STEP 4 | Using a center punch, mark the center of the five (5) crosshairs, , located on the template.

**CAUTION** Check with your maintenance personnel or contractor regarding which fasteners would work best for mounting the Rapids™ to your specific wall.

### MOUNTING THE RAPIDS™

**CAUTION** All composition, condition and construction, as well as the type of fasteners to be used should be considered when mounting this unit. Both the mounting surface and fasteners selected must be capable of supporting a minimum weight of, 225lbs./102kg. If you have inadequate support or fasteners in place, may result in damage to the mounting surface and or the equipment. If you are unsure of how to mount the water system, please consult with your building maintenance personnel or local contractor.

**CAUTION** See Safety Information in the Safety Instructions Precautions Before Installation section.

### STEP 5 | Drill proper sized holes into the wall before placing the fasteners that will mount the Rapids™ unit.



Image 4.4



Image 4.5

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS (CONT.)

### STEP 6 | Remove the template and screw in the fasteners that will hold the Rapids™ unit to the wall.

- Do not tighten yet. Leave about  $\frac{1}{2}$  in. -  $\frac{3}{8}$  in./1.27 cm - 0.95 cm sticking out of the wall in order to mount the system on top of the fasteners.
- \* When choosing fasteners note that the keyhole diameter is 0.625 in./1.5875 cm



Image 4.6

### STEP 7 | Mount the Rapids™ system by aligning the five (5) keyhole slots with the fixtures on the wall.

- Once lined up, slide the system down to lock it into place on the fasteners.



Image 4.7

### STEP 8 | Tighten the five (5) fasteners to securely mount the Rapids™ unit on the wall.

- An extension will be needed in order to reach and tighten all the back fasteners.
- Do not over-tighten or vibration noise may occur.



Image 4.8

## REATTACHING THE HOUSING COVER

### STEP 9 | Reconnect the display cable that is in the housing unit to the display.

- Position the cable towards the back of the housing unit of the Rapids™.
  - \* Positioning the cord too close to the silver solenoids, located in the front of the housing unit, could result in heat damage to the cord.
  - \* The cable must stay inside the housing unit and not left on the outside.



Image 4.9

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS (CONT.)

### STEP 10 | Reattach the metal housing cover back onto the housing of the Rapids™ unit.

- It is suggested that two people perform this task to make it easier to complete.
  - \* Once the cover is in place, screw back in the seven (7) Phillips™-head screws to reattach the housing cover.
  - \* There are three (3) on the top of the housing unit, three (3) on the left-hand side of the unit and one (1) underneath the Rapids™ unit.



Image 4.10

### STEP 11 | Screw in the mounting strap for the power supply to the wall.

- The mounting strap is included with the Rapids™ system. It is not required to use the strap to attach your power supply to the wall. This strap is for your convenience.
- Using the Velcro™, loop the power cord then attach the loop(s) power supply.



Image 4.11

**CAUTION** The power supply must be located away from source of water (e.g. not over sink or open container of water)

### STEP 12 | Plug the cord into the left side of the Rapids™ system.

- Ensure that the flat side of the connector is facing towards you. The flat side has arrows on it.
- The plug will latch onto the connector.
- To remove, push in to release the latch in order to pull out the cord.



Image 4.12

### STEP 13 | Attach the tubing to the water inlet of the Rapids™ to the water source.

- 10ft./3m of tubing is included with your Rapids™ shipment.
- Cut tubing to the length needed to reach between the water source and the Rapids™ system.
- The connector to hook up the tubing to the water source is not included.



Image 4.13

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS (CONT.)

### INSTALLING CARTRIDGES

**STEP 14 | Using the Fitting Removal Tool, remove the fittings from the cleaning tubes. If your fittings are not connected to the cleaning tubes, skip this step.**

- The Fitting Removal Tool is included with your shipment of the Rapids™ unit.
  - \* Read the directions label that is on the tool's handle about proper use.
    - REMOVING TOP FITTINGS: With the Velcro™ on the tool facing away from the unit, pull up.
    - REMOVING BOTTOM FITTINGS: With the Velcro™ on the tool facing away from the unit, pull down.
  - \* The Fitting Removal Tool can be easily stored by attaching it with the Velcro™ on the tool to the Velcro™ on the cartridge strap, once the cartridges are fully installed.
- There are eight (8) total fittings that must be removed—four (4) on the top and four (4) on the bottom.



Image 4.14

**STEP 15| Power on the Rapids™ unit.**

- Plug the power supply into the AC outlet. Refer to Installation Requirements table for power specifications.
- The power switch is located on the upper left hand side of the unit.
- It will take a minute for the Rapids™ to boot up completely.
- The Rapids™ will need to be turned on to complete proper cartridge installation.

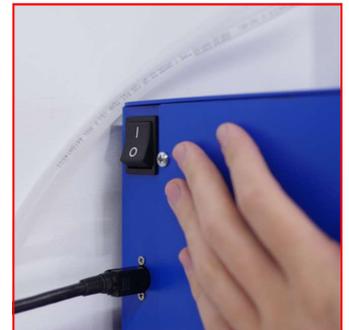


Image 4.15

**STEP 16| Locate the cartridge that has the NFC tag on the back of the cartridge**

- Only one (1) out of the four (4) cartridges will have a NFC tag. The tag is a small white circle and it will be opposite the cartridge label.
- The NFC tag is used to communicate and identify the cartridge kit to the Rapids™ unit. This also assures proper installation of installation.
  - \* Do not remove the NFC tag.
- The cartridge with the NFC tag will go into position #1.
  - \* Position #1 refers to the rightmost cartridge holding slot on the unit.
  - \* The fittings are numbered 1, 2, 3, 4 from right to left.



Image 4.16

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS (CONT.)

**STEP 17| PRIOR TO INSTALLING THE CARTRIDGES refer to and select the Menu button on the Rapids™ screen.**

- The menu button is located at the top left of the home screen. This button looks like this: 
- In the Menu, choose the MAINTENANCE button then choose the INSTALL NEW CARTRIDGES button.
  - \* A text box will appear that reads, 'Install New Cartridges'. Read the directions and press BEGIN.



Image 4.17

**STEP 18| Follow the prompts and animations to aid in the installation of the new cartridges.**

- First, if the Velcro™ strap is not already undone, unstrap it prior to putting in the cartridges.
- Push NEXT to move through the prompts and animations.
- Select the cartridge kit to be installed.
  - \* View the installation order of the kit—the fittings are numbered 1, 2, 3, 4 from right to left.
    - If you forget the order of the cartridges, simply hit the back button at the top right to refer back to the 'View Installation Order' page. You can also view the order on page 21 of this manual.
  - \* Install cartridge one (1) in the first, rightmost position by pushing the it into the two metal slots.
  - \* The NFC Tag Reader will scan the NFC tag on the cartridge kit once the cartridge is locked into place. A green check mark will appear once the Reader successfully scans the tag.
    - *If the NFC tag on your genuine LabStrong™ cartridge is not reading/ scanning, use the test NFC tag in the back of the manual to ensure the NFC tag reader in the unit is functioning. Contact our Technical Support team if there are issues with your NFC tag or reader:*
      - Email: [technicalsupport@labstrong.com](mailto:technicalsupport@labstrong.com)*
      - Phone: 563-588-8900*
  - \* Lock in the fittings on the top and bottom of the first cartridge. To do this, firmly press down on the top fittings and up on the bottom fitting to lock onto the tube of the cartridge. **Press past the initial resistance.**
  - \* The lip located on the top lid should rest on top of the metal slot of the cartridge should hit the top of the slot on the Rapids™ unit.
  - \* Install the remaining three cartridges, in the specified order, using the same process as the first cartridge.
  - \* Double check that all the fittings, top and bottom, are tight and secure.
  - \* Replace the Velcro™ strap over the cartridges.
  - \* It is suggested to also Velcro™ together the strap and the fitting removal tool for safe keeping.

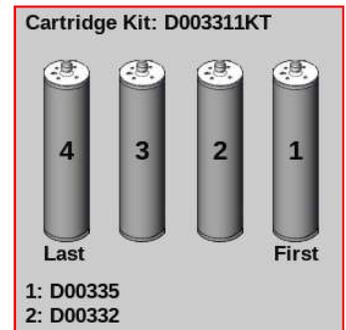


Image 4.18



Image 4.19



Image 4.20

## INSTALLATION INSTRUCTIONS FOR THE RAPIDS (CONT.)

### STEP 19| Install the air filter and purge the air from the Rapids™ unit and cartridges.

- Take the air filter that came with the Rapids™ unit and with the arrow facing up, connect it to the air filter tube located on the back right of the housing unit.
- Prepare a place for water to dispense while purging the air from the unit.
  - \* Either put a bucket under the unit or attach a hose to feed into a receptacle during the purge.
- Click the 'PURGE AIR' button and turn on the water source.
  - \* The purge will take about five (5) minutes to complete.
  - \* A green check will appear when the purge cycle is complete.
  - \* Click next when you are ready to move on to the next step.



Image 4.21

### STEP 20 | Install the 0.2 µm Final Filter

- The Final Filter is NOT included with the Rapids™ shipment. It is a separate accessory and it is strongly encouraged to purchase this accessory for bacteria-free water.
- The Final Filter will attach to the dispense solenoid valve located under the housing unit towards the front left.
- Store the dispense hose fitting in the grommet holder, located to the top left of the cartridge in the fourth position.

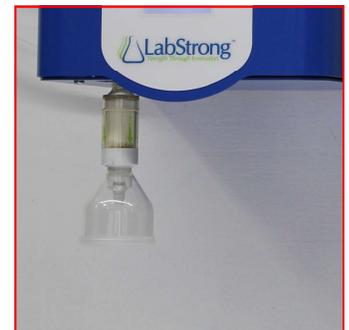


Image 4.22

### STEP 21 | Put on the gray cartridge cover

- Align the top of the cover with the two metal rods located above the cartridges.
  - \* As you tilt the cover bottom towards the cartridges you feel the magnets lock the cover into place.



Image 4.23

Once all the steps are completed, your Rapids™ Type I Water Purification System will be installed.

Scan the QR code below to view a full video on installing the Rapids™



<https://labstrong.link/99999/S0033?id=15&h=ed2798bf34690b0aa0ca27174c4185fb2f5014294c7c6a9b6d88945674884835>

QR Code 4.24

## OPERATION OF THE RAPIDS™

### ⚠ CAUTION

Failure to follow the instructions and warnings mentioned in this manual will result in the inability to maintain safe operation.

### ⚠ CAUTION

Unit is equipped with a timed dispense option. User must be aware of flow rate of water so as not to overflow containers and cause spills onto a bench or floor.

### TURNING ON THE RAPIDS™ UNIT

- To turn on the Rapids™ Unit, ensure that the power supply cable is first plugged into the power source and the Rapids™ unit . Refer to installation requirements for power specifications.
- Toggle the power switch up to turn on the unit.
- The unit will take about a minute to fully power on and show the display.



Image 5.1

### DISPENSING WATER FROM THE RAPIDS™ UNIT

- From the home screen, put the unit into 'ON' mode. Water can not be dispensed from 'IDLE' or 'OFF' mode.
- Press the dispense button then slide your finger to the 'PRESS AND HOLD' button.
- Hold this button to dispense water manually or slide your finger up to select a timed dispense option.
  - \* Time may be added until desired dispense time is reached by pressing either the 30 second, 1 minute or 3 minute buttons once or multiple times.
  - \* After a couple seconds the screen will lock and only the 'STOP' button will be able to be pressed.
  - \* Water will stop dispensing in the timed dispense mode once the time is completed. A count down display is shown along with a 'water filling' progress graphic on the background of the display. Blue water background will fill the screen to show progress of time remaining of the dispense. Once the screen is full, dispense will stop.
  - \* To stop water during timed dispense, press the "STOP" button.

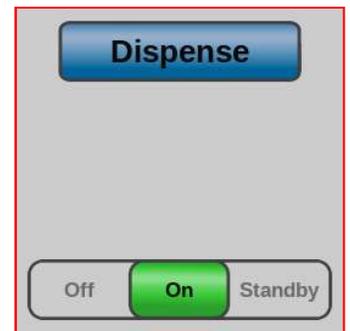


Image 5.2



Image 5.3



Image 5.4

## OPERATION OF THE RAPIDS™

### ACCESSING THE MENU & SUB-MENUS

- The 'MENU' button is located at the top left of the home screen. This button looks like this: 
- Once pressed, additional sub-menus are available to choose from in order to perform various functions with the unit.
  - \* Help
  - \* Maintenance
  - \* Diagnostics
  - \* Settings
  - \* Specifications
- Refer to Photo Diagram section to view all the submenus and the functions of each.



Image 5.5

### RAPIDS™ EXHAUSTION THRESHOLD

The *Exhaustion Threshold* is if the Rapids™ has been in the 'ON' mode for more than 30 minutes, and the temperature-compensated resistivity has not been above this value, the Rapids™ will issue a "Cartridge Kit Exhausted" notification code. By default, this value is set to 17.9 MΩ/cm.

If you wish to change this, select  > Settings > Exhaustion Threshold. You can set the Exhaustion Threshold to any value between 10.0 and 18.0 MΩ/cm.

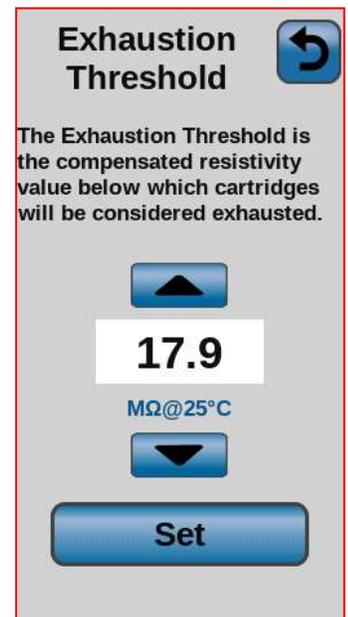


Image 5.6

### SCANNING QR CODES

A QR code is like a barcode and there are many embedded throughout the Rapids™ to aid in operating, maintaining and troubleshooting with the unit and/or contacting the distributor of the Rapids™. QR codes can be scanned with a smart phone, tablet or computer. Using either the camera or a downloaded app, hold your device over the code so that the whole code can be seen. The device will scan the code and depending on your device settings will provide a link or automatically redirect you to a website with further information.



Image 5.7

## SERVICE

Refer to the Specification Label or the Specifications screen for the complete model number and serial number when requesting service, replacement parts or in any correspondence concerning this unit.

All parts listed herein may be ordered from the LabStrong™ distributor from whom you purchased this unit or can be obtained promptly directly from LabStrong™. When service or replacement parts are needed, LabStrong™ asks that you check first with the distributor where the unit was purchased. If the distributor cannot handle a request then please contact our customer service department at (563) 588-8900.

### **NOTICE**

In the event this product needs repair, LabStrong™ is not responsible for any shipping damages that occur during the return of this product. Shipping is the customer's responsibility. Use of original packaging is recommended. If not in possession of original packaging, contact LabStrong™ for replacement inserts prior to shipping.

For service or repair, contact LabStrong™ Corporation at (563) 588-8900. LabStrong™ will provide a Return Goods Authorization (RGA) form that must be completed before an RGA number can be issued. Once a RGA number is issued, please return the unit for repair to our service department at:

LabStrong Corporation  
7709 Commerce Park  
Dubuque, Iowa 52002

## SERVICE

### Service Warranty

Accessory Limited Warranty: The accessories manufactured by LabStrong Corp. have a warranty period of 90 days from the date of purchase. Consumables do not have a warranty period, except for an out of box failure.

#### NOTICE

Each LabStrong™ has a RFID tag attached so that the Rapids™ water system can recognize a genuine LabStrong™ cartridge once installed. The RFID tag will duplicate the information displayed on the cartridge label, in a machine-readable format, so that the user can be assured of having the correct cartridge installed and in the correct order.

**DO NOT REMOVE THE RFID TAG.** If you remove the tag, the system will not be able to recognize the cartridge as a kit and validate order of installation.

Phone: 563-588-8900

Email: [technicalservice@labstrong.com](mailto:technicalservice@labstrong.com)

### RFID Technology

#### NOTICE

This unit and its consumable components utilize RFID tag technology. The RFID tag will duplicate the information displayed on the cartridge label, in a machine readable format, so that the user can be assured of having the correct cartridge installed.

The RFID tag does not collect information and is just an electronic label. Information about which cartridges are sold and to what user is collected by LabStrong™ at the time of purchase. This information is associated with the tag for the purpose of enabling the LabStrong™ Link. Information collected at the time of purchase is used by the distributor and manufacturer to provide the user with high quality service. Information gathered is not shared or sold to outside parties.

Questions regarding the LabStrong™ RFID and LabStrong™ Link technology?

Contact us at:

Phone: 563-588-8900

Email: [technicalservice@labstrong.com](mailto:technicalservice@labstrong.com)

## TROUBLESHOOTING

### NOTIFICATION CODES

LabStrong™ Rapids™ Type I Water Purification System will display notification codes to alert you to situations which require your attention. These situations include periodic maintenance tasks, such as replacing cartridge kits, as well as the occasional malfunction, such as a failure of the Rapids™ to read the NFC tag on a cartridge kit. When a notification code is display, you will be presented with a summary of what happened to prompt the notification, along with a description of what you should do to address the situation. If you need more detailed information, scan the QR code displayed on the screen to be directed to instructions specific to your code on our web site.

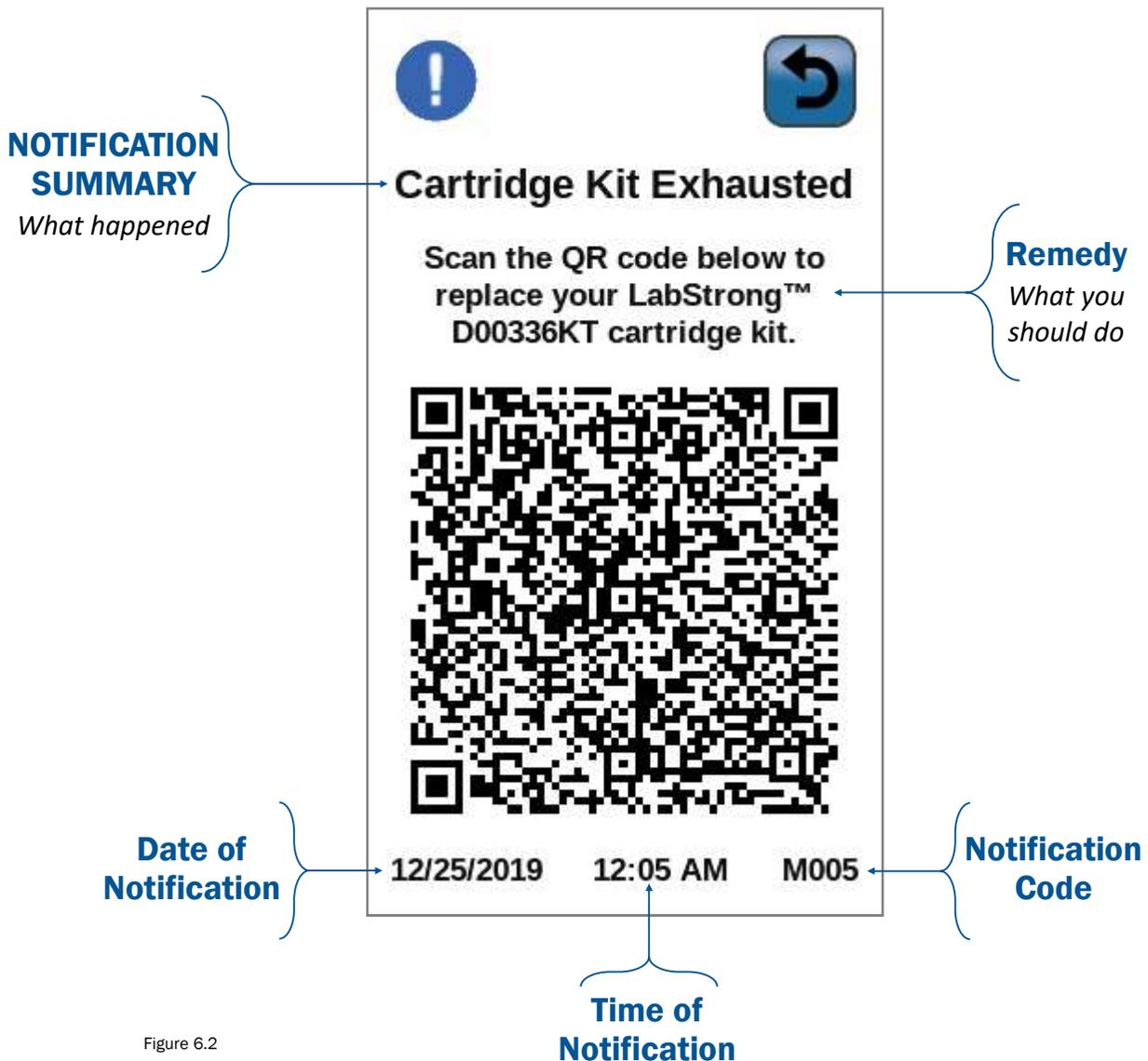


Figure 6.2

## TROUBLESHOOTING

Table 6.3

| Issue   | Possible Causes                                  | Solutions  |
|---|--|--|
| Product water flow rate is too low.   | The inlet water pressure has dropped or stopped. | Check the inlet water shut off valve, (failed valve) PM0033-6.   |
|   | The inlet water flow rate has dropped.           | Check the inlet water filtering system for a clogged filter.   |
|   | The 0.2 micron Final Filter could be clogged.    | Replace the 0.2 micron Final Filter (FL0016-1).  |
| Product water continues to flow water from dispenser after releasing the dispense button. | The 0.2 micron final filter could be clogged.    | Replace Final filter (FL0016-1).   |
|   | Dispense solenoid valve could be defective.      | Replace the dispense solenoid valve (PM0033-3).  |
| No product water flow from dispenser .  | No flow from inlet water source.                 | Check the inlet water, at feed source.   |
|   | Feed water not connected.                        | Connect feed water source to Rapids™ unit.   |
|   | Failed inlet solenoid valve.                     | Replace inlet solenoid valve (PM0033-6).   |
|   | The 0.2 micron Final Filter could be clogged .   | Replace the 0.2 micron Final Filter (FL0016-1).  |
| Short cartridge kit life.   | Cartridge kit is beyond expiration date.         | Check expiration date. Cartridge kits begin to lose capacity after being stored for two years from the date of manufacture.  |
|   | Poor quality feed water.                         | Check the quality of the inlet tap water source, TDS, Turbidity, Silica and conductivity.  |
| Recirculation water will not rinse up to desired purity level.                            | Exhausted cartridge kit .                        | Replace cartridge kit as indicated in, "Cartridge Kit Replacement".  |
|   | New cartridge kit installation .                 | Check to make sure that the each cartridge from the kit is placed in the proper order. Position #1 through #4 and in the proper orientation, top and bottom. Rapids system is a down flow configuration. |

## TROUBLESHOOTING

Table 6.4

| Issue   | Possible Causes   | Solutions  |
|---|---|--|
| Water Leak at one of the cartridge connection fittings                            | Check to make sure the fitting is pressure down on the cartridge nipple as far as possible.           | Depressurize the system, (relieve the water pressure) then remove the fitting that is leaking and re-seal the fitting back to the cartridge to seat the o-ring in the fitting to the cartridge nipple securely .   |
| Exhaustion Threshold error message<br>"Cartridge Kit nearing Exhaustion"          | The cartridge kit has reached its exhaustion threshold preset to factory setting of, 17.9 Meg-ohm/cm. | Compare the value of the exhaustion threshold to the purity reading on the display.  |
|   | The exhaustion threshold has been adjusted to a different value at location.                          | Adjust exhaustion threshold, if necessary.   |
| Purity reading is displaying above 18.2 Meg-ohm/cm.                               | The temperature compensation has been disabled.   | Set the temperature compensation mode to "On". This will compensate the purity reading to 25° C.   |
| Error codes appear on the display, but cannot be resolved by changing the values. | One or more values have been changed causing error codes that cannot be resolved.                     | Press the Menu button, then press the Settings button and this will lead to the Factory Reset button, once this button is pressed the RESET button will appear. Press the reset button to reset all of the Factory Values back to the original settings. |

## SYSTEM MAINTENANCE

### INITIAL CARTRIDGE INSTALLATION

*Carefully read and understand the full written instructions prior to installing cartridges.*

#### **NOTICE**

This unit was designed to work in optimal condition with genuine LabStrong™ cartridges.

**STEP 1|** Press the MENU button.

**STEP 2|** Select and press the MAINTENANCE BUTTON.

**STEP 3|** Select and press the INSTALL NEW CARTRIDGE button.

**STEP 4|** Press the BEGIN button.

**STEP 5|** Select and press the proper cartridge kit being installed.

**STEP 6|** View the install order then press the NEXT button.

**STEP 7|** Install the proper cartridge in the first position, (start right to left). Press NEXT.

**STEP 8|** Make sure the tubes and fittings are installed properly then press the NEXT button.

**STEP 9|** Install the remaining three cartridges in the proper order. Press the NEXT button.

**STEP 10|** Make sure the bottom tubes and fittings are properly installed. Press the NEXT button.

**STEP 11|** Once the cartridges are properly installed and the drain tube is installed at the dispenser port, turn on the inlet water valve then press the PURGE AIR button.

**STEP 12|** Once the air purge is completed, install the 0.2 Micron Final Filter and press the NEXT button.

**STEP 13|** Replace the cover then press the NEXT button.

**STEP 14|** Once installation is complete, press the DONE button.

**STEP 15|** The main display screen will then appear, On / Off or Standby. Press the ON button to start the Rapids™ system in the normal operation.

**STEP 16|** Press the STANDBY button to place the unit in the standby mode.

**STEP 17|** The standby mode will not have any components energized in this sequence, other than the microprocessor.

## SYSTEM MAINTENANCE

### EXHAUSTED CARTRIDGE REPLACEMENT

*Carefully read and understand the full written instructions prior to replacing exhausted cartridges.*

**STEP 1|** Press the MENU button.

**STEP 2|** Select and press the MAINTENANCE BUTTON.

**STEP 3|** Select and press the REPLACE EXHAUSTED CARTRIDGES button.

**STEP 4|** Press the BEGIN button.

**STEP 5|** Remove the cover and press the NEXT button.

**STEP 6|** Remove the final filter and then press the NEXT button.

**STEP 7|** Attach a dispenser tube to drain water then press the NEXT button.

**STEP 8|** Turn off the inlet water valve.

**STEP 9|** To remove excess water, press the BEGIN PURGE button.

**STEP 10|** Cartridges are ready to be removed.

**STEP 11|** Remove tubing and fittings at top of cartridges and press NEXT button.

**STEP 12|** Remove tubing and fittings at bottom of cartridge and press NEXT button.

**STEP 13|** Remove the old cartridges and press the NEXT button.

**STEP 14|** Select if you want to perform the cleaning procedure. If yes, follow directions in the System Maintenance section about cleaning. If no, go to step 15.

**STEP 15|** Select and press the proper cartridge kit being installed.

**STEP 16|** View the install order then press the NEXT button.

**STEP 17|** Install the proper cartridge in the first position, (start right to left). Press NEXT.

## SYSTEM MAINTENANCE

### EXHAUSTED CARTRIDGE REPLACEMENT (CONT.)

- STEP 18|** Install the tubing and fittings to the top of cartridges and press the NEXT button.
- STEP 19|** Install the remaining three cartridges in the proper order. Press the NEXT button.
- STEP 20|** Make sure the bottom tubing and fittings are properly installed. Press the NEXT button.
- STEP 21|** Once the cartridges are properly installed and the drain tube is installed at the dispenser port, turn on the inlet water valve then press the PURGE AIR button.
- STEP 22|** Once the air purge is completed, install the 0.2 Micron Final Filter and press the NEXT button.
- STEP 23|** Replace the cover then press the NEXT button.
- STEP 24|** Once cartridge replacement is complete, press the DONE button.
- STEP 25|** The main display screen will then appear, On / Off or Standby. Press the ON button to start the Rapids™ system in the normal operation.
- STEP 26|** Press the STANDBY button to place the unit in the standby mode.
- STEP 27|** The standby mode will not have any components energized in this sequence, other than the microprocessor.

## SYSTEM MAINTENANCE

### WHEN TO CHANGE THE 0.2 MICRON FINAL FILTER (FLO016-1)

The final filter is able to remove particulates down to 0.2 µm to provide bacteria-free water .

Table 6.5

| Issue  | Solutions                             |
|--|---------------------------------------|
| When the flow rate through the final filter drops below one liter per minute.                                      | Replace the 0.2 Micron Final Filter . |
| When product water continues to flow from the 0.2 micron final filter after the Dispense button has been released. |                                       |
| When the bacteria levels increase above the recommended ASTM Standards of Bacterial count 1 0/1000mL               |                                       |

## SYSTEM MAINTENANCE

### CLEANING

**⚠ CAUTION** Wear protective gloves and eye protection when performing the cleaning procedure

*Carefully read and understand the full written instructions prior to cleaning the Rapids™. Cleaning intervals are dependent on feed water to the unit and product water usage.*

**STEP 1|** Select and press the MENU button.

**STEP 2|** Select and press the MAINTENANCE button.

**STEP 3|** Select and press the CLEANING button.

**STEP 4|** Select and press the BEGIN button.

**STEP 5|** Remove the cover then select and press the NEXT button.

**STEP 6|** Remove the final filter.

**STEP 7|** Attach a tube to the dispenser fitting to port outlet and route to a drain.

**STEP 8|** Turn off the water inlet valve.

**STEP 9|** Press the BEGIN PURGE button.

**STEP 10|** Use the fitting removal tool to remove the top tubing/fittings from the cartridges. Press the NEXT button.

**STEP 11|** Use the fitting removal tool to remove the bottom tubing/fittings from the cartridges. Press the NEXT button.

**STEP 12|** Remove the old cartridges from the Rapids™ system. Press the NEXT button.

**STEP 13|** Install the cleaning tubes that are attached to the back plate of the Rapids™ unit, in place of the cartridges. Press the NEXT button.

**STEP 14|** Press OPEN DISPENSE VALVE, then press the NEXT button.

## SYSTEM MAINTENANCE

### CLEANING (CONT.)

- STEP 15|** Inject the cleaning solution, Cleaning Syringe, CMX25LS, in the luer lock port until the cleaning syringe is empty. Reattach the plug in the luer lock fitting. Press the NEXT button.
- STEP 16|** Press the CLEAN button.
- STEP 17|** Remove the cleaning tubes and drain tube, begin to install the new cartridges. Press the NEXT button.
- STEP 18|** Select and press the proper cartridge kit being installed.
- D00336KT Cartridge Kit
  - D00337KT Cartridge Kit
  - D00338KT Cartridge Kit
  - D00339KT Cartridge Kit
  - D003310KT Cartridge Kit
  - D003311KT Cartridge Kit
- STEP 19|** Install the proper cartridge in the first position, (start right to left). Make sure the tubing/fittings are pressed completely onto the cartridge. Then press the NEXT button.
- STEP 20|** Install the remaining three cartridges in the proper order. Ensure the tubing/fittings are pressed completely onto the cartridges. Press the NEXT button.
- STEP 22|** Turn on the inlet water valve.
- STEP 23|** Press the AIR PURGE button.
- STEP 24|** Once the air purge is completed, install the 0.2 Micron Final Filter and press the NEXT button.
- STEP 25|** Replace the cover then press the NEXT button.
- STEP 26|** Cleaning is complete—press the DONE button.
- STEP 27|** Press the ON button to start the Rapids™ system in the normal operation.
- STEP 28|** Press the STANDBY button to place the unit in the standby mode.
- STEP 29|** The standby mode will not have any components energized in this sequence, other than the micro-processor.





**LabStrong™ Corp.**

7709 Commerce Park  
Dubuque, IA 52002  
Phone: 563-588-8900  
Fax: 563-588-3601  
E-mail: [info@labstrong.com](mailto:info@labstrong.com)

**NFC Tag  
Reader Tester**



Keep this tag for testing your NFC  
tag reader in the Rapids™.



