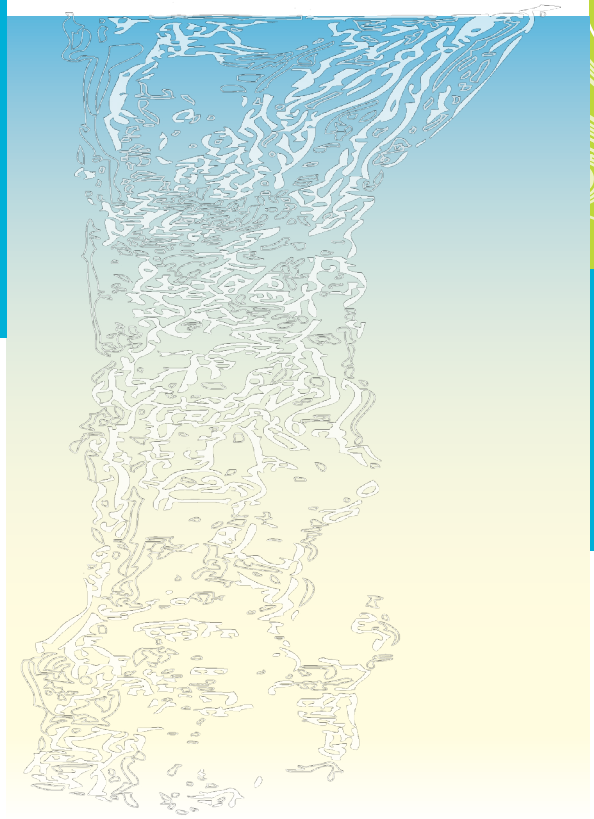
WaterLink® SpinTouch®

water quality

DEMO OUTFIT



LaMotte®

Table of Contents

See the WaterLink Spin Touch DW manual for use of the Spin Touch meter.

Safety Information

Read the instruction manual thoroughly to familiarize yourself with the test procedures before you begin. Make note of any precautions in the instructions.

*Reagent is a potential health hazard.
READ SDS: lamotte.com.
Emergency Information: Chem-Tel USA
1-800-255-3924 Int'l, call collect, 813-248-0585

Emergency information for all LaMotte reagents is available from Chem-Tel: (US, 1-800-255-3924) (International, call collect, 813-248-0585).

Keep equipment and reagent chemicals out of the reach of young children.

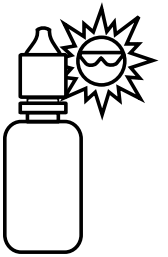
Protect Yourself and Equipment: Use Proper Analytical Techniques

Testing Hints

1

Tightly close all reagent containers immediately after use. Be sure not to interchange caps and pipets from different containers.

2

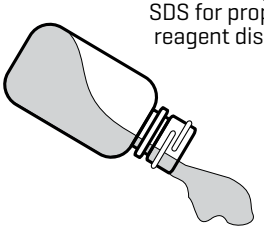


Avoid prolonged exposure of equipment and reagents to direct sunlight.

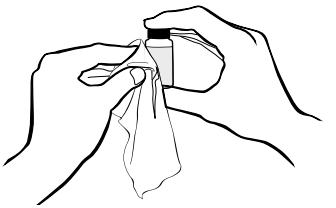
3

Protect reagents and components from extreme heat and cold.

4 Wipe up any reagent chemical spills, liquid or powder, as soon as they occur. Refer to label and accompanying SDS for proper reagent disposal.



5 Use care when dispensing or handling all reagents due to safety reasons. Some chemicals also may cause permanent stains if spilled.



ANALYTICAL TECHNIQUES

1. Clean glassware is a must for accurate results. Thoroughly rinse test tubes before and after each test. Caps and stoppers should also be cleaned after each use.
2. Use test tube caps or stoppers, not your fingers, to cover test tubes and flasks during shaking or mixing.
3. When adding sample to calibrated test tube, be sure vial is filled to the appropriate mark. The bottom of the liquid (meniscus) should be level with the desired mark. (Figure 1)
4. When dispensing reagents from bottles filled with dropper plug and cap, be sure to hold bottle vertically and gently squeeze to dispense the appropriate number of uniform drops. (Figure 2)
5. For those reagents to be added with the screwcap pipet assemblies enclosed, remove polyseal cap on bottle and replace with the screwcap pipet.
   NOTE: Place the polyseal caps back on the reagent bottles for longer periods of storage. Be sure that both pipet assemblies and polyseal caps are thoroughly cleaned before placing on bottles to avoid contamination.
6. When dispensing reagents from pipets, hold pipet vertically to assure uniform drop size. This is extremely important when performing drop count titrations. (Figure 3)
7. To fill pipets, squeeze rubber bulb and immerse into reagent. Release bulb to fill. (Figure 4)

FIG. 1

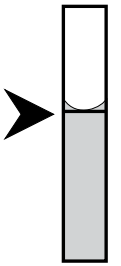


FIG. 2

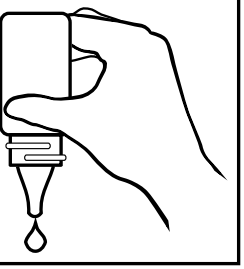


FIG. 3

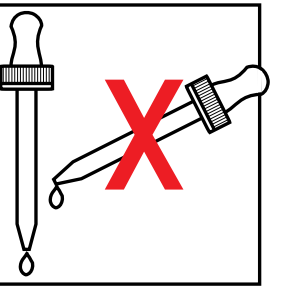
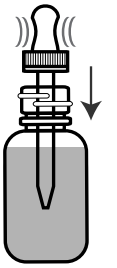


FIG. 4



Model S and DuoSoft Softeners

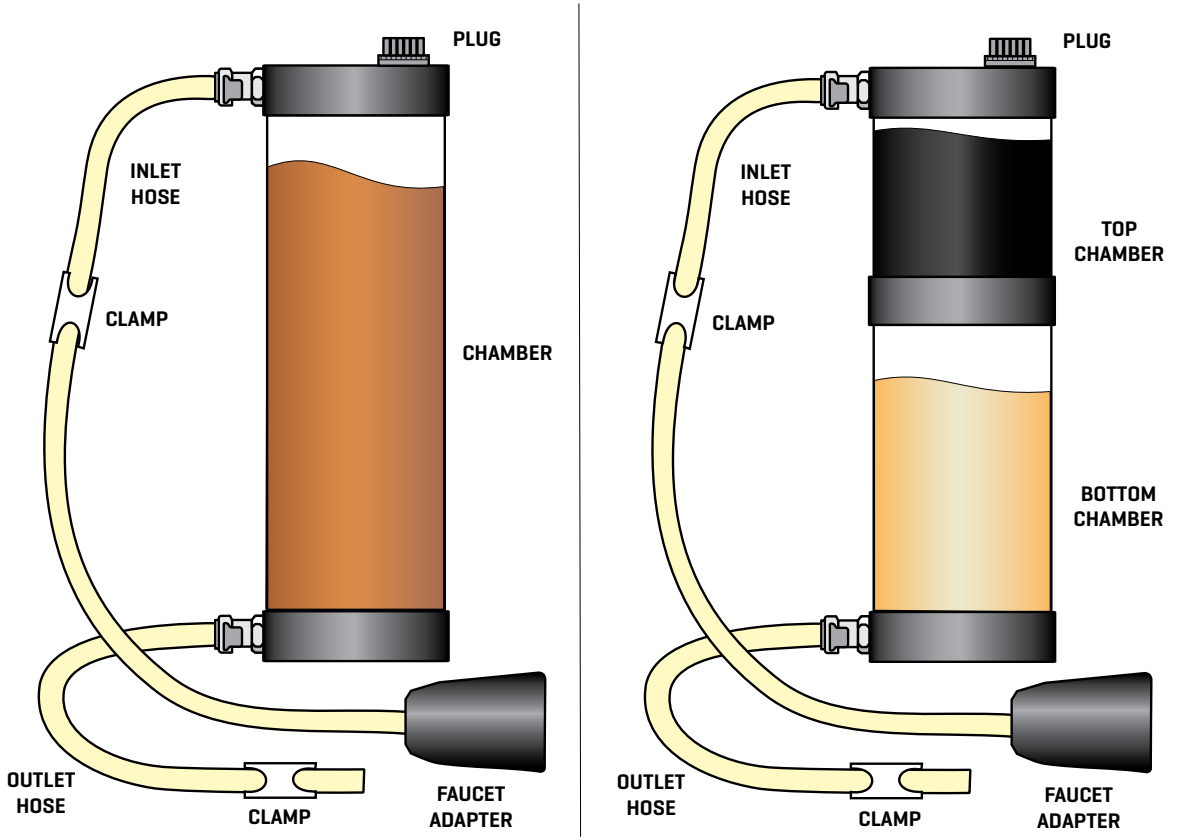
INTRODUCTION

The **Model S** and the **DuoSoft Water Softeners** are designed to produce high quality softened water. As water passes through the Model S chamber, the resin column causes scale-forming calcium and magnesium ions to be exchanged for non-scale-forming sodium ions. When the resin is exhausted it must be replaced or regenerated. Inexpensive resin refill packages are available, or the original resin can be regenerated by chemical treatment.

In the DuoSoft, water passes through both chambers and will be treated by both types of media. The two chambers of the DuoSoft may be easily filled with the media of choice for specific problem water.

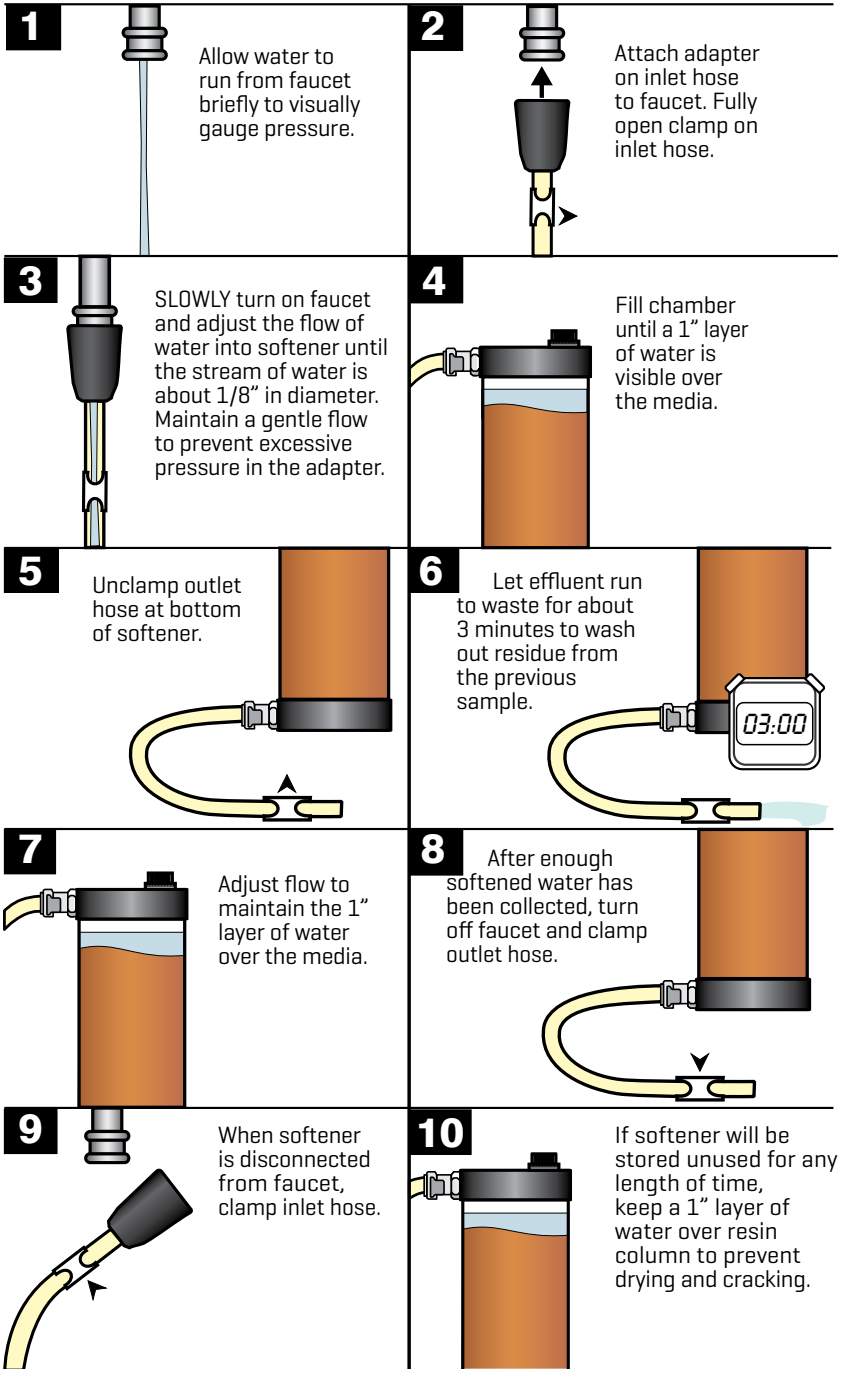
NOTE: These softeners DO NOT yield water suitable for drinking .

READ INSTRUCTIONS BEFORE USE.



Instructions for Use

PROCEDURE **A** — Use of the Softeners

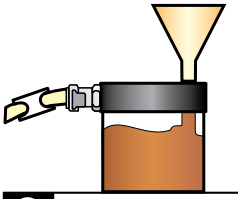


PROCEDURE **B** — Replacing the Media in the Softeners

ADDITION

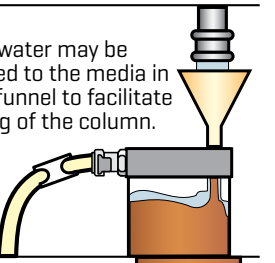
1

With the aid of a funnel, add the fresh media to the column.



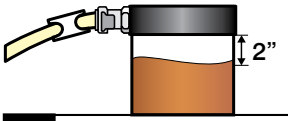
2

Tap water may be added to the media in the funnel to facilitate filling of the column.



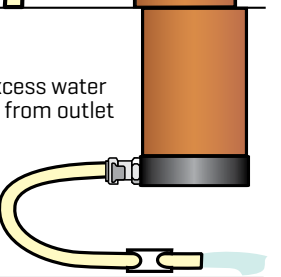
3

Continue adding media to the column until the resin is about 2" from the top of the column.



4

Allow excess water to drain from outlet hose.



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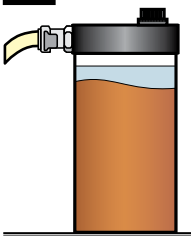


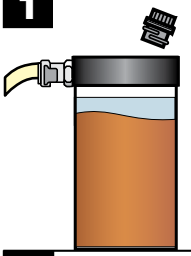
Clean threaded area completely and replace the black plug in the top of column.

DuoSoft Unit

To add the media in the bottom chamber, turn unit upside down and repeat Addition Steps 1-5. When media has been added to both chambers, proceed with Procedure A. When using carbon media, it is suggested that it be used in the top chamber.

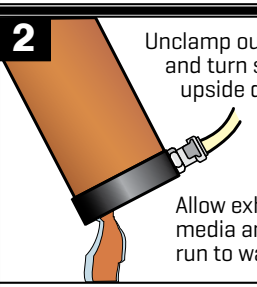
REMOVAL

1



To replace media, remove black plug from the top of dispenser.

2

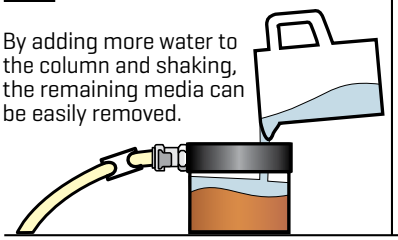


Unclamp outlet hose and turn softener upside down.

Allow exhausted media and water to run to waste.

3

By adding more water to the column and shaking, the remaining media can be easily removed.



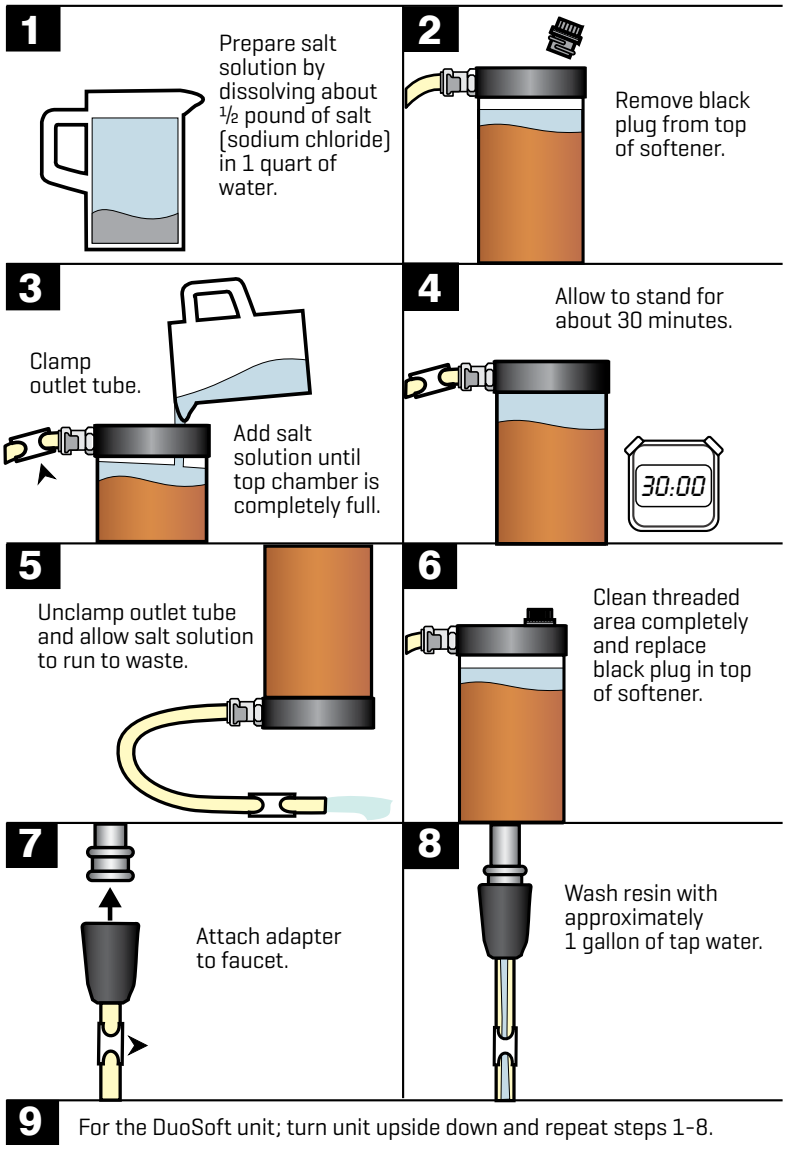
DuoSoft Unit

To remove the media in the bottom chamber, turn unit upside down and repeat Removal Steps 1-3. To add new media, follow Addition Steps 1-5 for both chambers.

PROCEDURE **C** — Regeneration of Media

Follow manufacturers' instructions for regeneration of media. Cation exchange resin may be regenerated in the following manner.

NOTE: Due to build up of air pressure, it is not possible to regenerate both chambers of the DuoSoft unit at the same time. Follow steps 1-8 to regenerate top chamber, then see step 9 to regenerate bottom chamber.



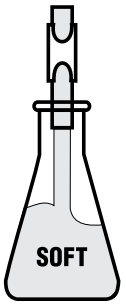
Soap Demonstration

Calcium and Magnesium ions present in a water supply are the principle contributors to the total hardness. Hard water tends to consume excessive quantities of soap and forms curds and deposits on glassware, fabrics, etc.

*WARNING: Reagents marked with an * are considered to be potential health hazards. To view or print a Safety Data Sheet (SDS) for these reagents go to www.lamotte.com. See Safety Information on page 3 for more information.

TEST PROCEDURE

1

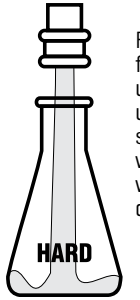


Thoroughly rinse the "SOFT" water flask (0453) with softened water.

2

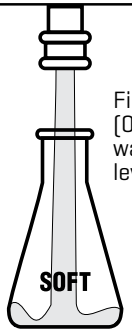
Thoroughly rinse the "HARD" water flask (0452) with untreated water.

3



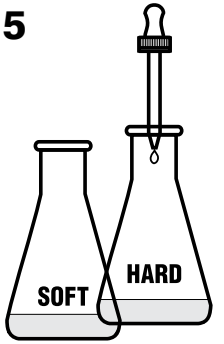
Fill the "HARD" flask (0452) with untreated water until the bottom surface is covered with a layer of water about ½" deep.

4



Fill the "SOFT" flask (0453) with softened water to the same level.

5



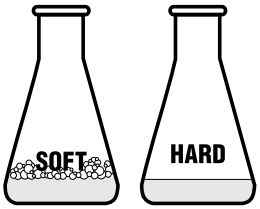
With the pipet (0392), add 4 drops of *Soap Reagent #4 (4767-CN) to each flask.

6

Cap and shake the flask.

7

A thick lather will form in the softened water.



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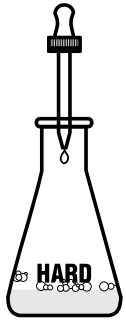
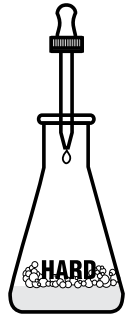


Continue to add *Soap Reagent #4 (4767-CN), one drop at a time, to the untreated "HARD" water, shake periodically until a lather forms. Count the number of drops added.

9



Extremely hard water may require 30, 40, or even 60 drops of *Soap Reagent #4 to produce a lasting lather.

Optional
Precipitation Demonstration #8124

Calcium and Magnesium ions are the major contributors to water hardness. The chemical reagents in this demonstration pull the Calcium and Magnesium ions out of solution to form a cloudy precipitate in hard water. The water that has been run through the ion exchange column has had these ions removed, therefore, the sample should remain clear.

NOTE: This portion of the AT-38/40 Water Quality Demo Kit is ONLY a visual demonstration illustrating the removal of Calcium and Magnesium ions from tap water after treatment by the ion exchange process. The results should not be interpreted beyond the intent of the demonstration.

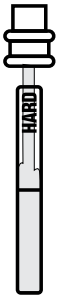
*WARNING: Reagents marked with an * are considered to be potential health hazards. To view or print a Safety Data Sheet (SDS) for these reagents go to www.lamotte.com. See Safety Information on page 3 for more information.

TEST PROCEDURE

1

Thoroughly rinse the "SOFT" water Demo Tube (0298) with softened water.

2



Thoroughly rinse the "HARD" water Demo Tube (0297) with untreated water.

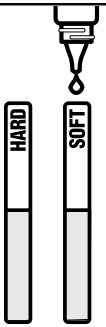
3

Fill the "SOFT" Demo tube (0298) to the line with softened water.

4

Fill the "HARD" Demo tube (0297) to the line with untreated water.

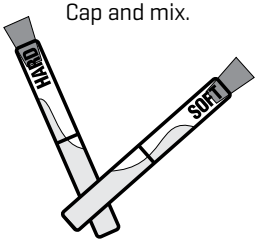
5



Add 7 drops of *Precipitation Reagent A (4542-CNWT) to each tube.

6

Cap and mix.



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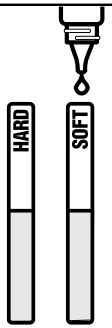
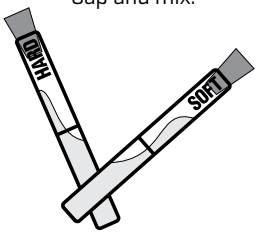


Add 7 drops of Precipitation Reagent B (4543-CNWT) to each tube.

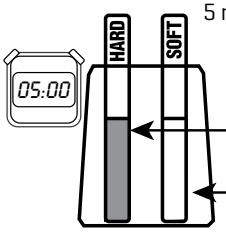
8

Cap and mix.



9

Place tubes in the Precipitation Rack (0879) and allow the tubes to stand for 5 minutes.



TDS

Optional Test Module · CODE 1749

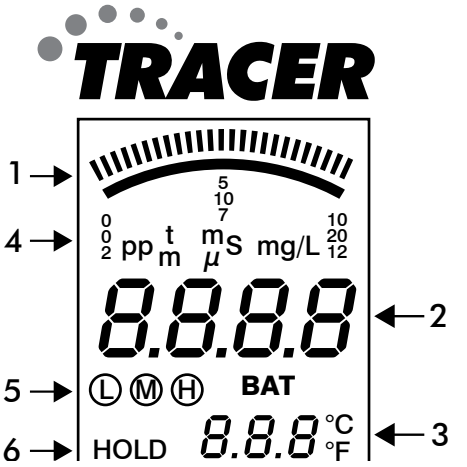
METER DESCRIPTION

Front Panel Description

1. Battery compartment cap
2. LCD Display
3. MODE button - change mode, hold data, store data
4. CAL button - calibration, change temperature units, recall data
5. ON/OFF button
6. Electrode Collar
7. Electrode
8. (Note: The Electrode cap is not shown)

TRACER Display

1. Bar graph display
2. Main display
3. Temperature display
4. Measurement units
5. Range calibration and low battery indicators
6. Reading hold indicator



BASIC OPERATION

Powering the TRACER

The Tracer uses four CR2032 Lithium Ion batteries. If the batteries are weak, the *BAT* indicator will appear on the display. Press the ON/OFF key to turn the TRACER on or off. The auto power off feature will shut the TRACER off automatically after ten minutes of inactivity.

Automatic Calibration

When the TRACER is turned on, it will enter the Automatic Calibration mode. *SELF* and *CAL* will appear while the calibration is in progress. After the calibration is completed, the *SELF* and *CAL* display icons will extinguish.

Changing Temperature Units

To change the displayed temperature units between °F or °C:

1. With the TRACER off, press and hold the CAL button.
2. With the CAL button pressed, momentarily press the ON/OFF button. When SELF CAL appears in the display, release the CAL button. The TRACER will return to the operational mode with the temperature displayed in the new units.

Low Battery Indicator

The "*BAT*" indicator will be displayed when the batteries become weak. Refer to the maintenance section for battery replacement information.

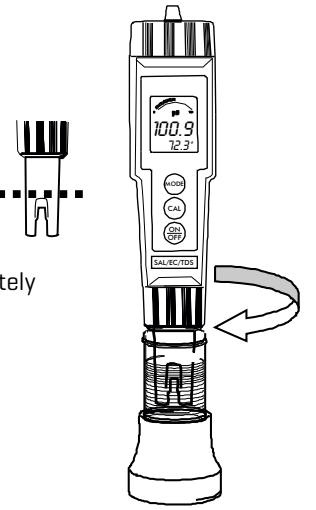
TESTING

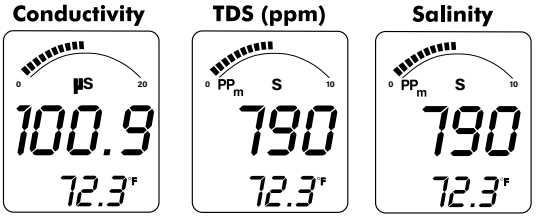
Getting Started

1. Remove the cap from the bottom of the TRACER to expose the electrode.
2. Before the first use, rinse the electrode in deionized water and dry.
3. For best results, calibrate for conductivity with a standard in the expected range of the sample. For maximum accuracy calibrate from low conductivity value standards to high conductivity value standards.
4. Store dry.

Measurement

1. Fill a sample cup to the 20 mL line with the test sample. Sample depth must be greater than or equal to 1.5 inches.
2. Immerse the TRACER electrode in the sample. Make sure the electrode is completely submersed.
3. Press the ON/OFF button. (8888 and then SELF CAL will appear in the display during the initial diagnostics).
4. Press and hold the MODE button to scroll to the desired measurement mode.
5. Insert the electrode into the sample making sure that the electrodes are completely submerged.
6. Slowly stir the sample with the TRACER to remove air bubbles.
7. The meter will autorange to the proper range and the reading will be displayed.
8. Rinse the electrode in distilled water. Replace the cap.





CALIBRATION

For the most accurate results, allow sufficient time for the temperature of the probe to reach the temperature of the sample before calibrating. This will be indicated by a stable temperature reading on the display

1. Fill a sample cup to 20 mL line with a Salt Calibration Standard, 3ppt (6005)
2. Press the ON/OFF button to turn the TRACER on. Press MODE button and advance to salinity mode.
3. Insert electrode standard. Tap or stir the sample with TRACER to dislodge air bubbles.
4. Press and hold the CAL button for approximately 2 seconds. "CAL" will appear and the display will flash.
5. The meter will automatically recognize and calibrate to the calibration standard. The display will briefly indicate "SA" and "End" and then return to the measurment mode.
   NOTE: "SA" will not appear if the calibration fails.
6. Meter is now calibrated for salinity, TDS and conductivity.

NOTE: Each time the calibration mode is entered all calibration range indicators will be cleared, but only the calibration data for the currently selected range will be replaced. In the conductivity/TDS modes, the calibrations for the other two ranges will be saved even though the indicators for those ranges are no longer displayed. Calibration of all three ranges must be performed during one power on period for all three calibration range indicators to be displayed.

Electrode Care

1. Always rinse the electrode in distilled or deionized water between measurements to avoid cross-contamination of the samples. Double rinsing is recommended when high accuracy is required.
2. Do not touch the electrodes. Touching the surface of the platinized electrodes may damage and reduce the life of the electrodes.

Replacing the Electrode

1. Unscrew and remove the electrode collar. Turn collar counter-clockwise.
2. Gently rock the electrode side to side, while pulling it away from the meter, until it disconnects from the electrode socket.
3. To attach an electrode, align the slots and carefully plug the electrode into the meter socket. CAUTION: Take care to align pins carefully. Bent or broken pins will cause the meter to malfunction.
4. Firmly tighten the electrode collar to create a seal with the rubber gasket between the electrode and the meter.

Replacement Parts

To order individual reagents or test components, use the specified code number.

CODE	DESCRIPTION
1002	Model S Softener (AT-38)
1022-FLD	DuoSoft Softener
*4767-H	*Soap Reagent #4, 60 mL
*4767-L	*Soap Reagent #4, 500mL
1028	DirectFLO Duo-Soft Softener
0879	Precipitation Rack, acrylic
0392	Pipet, plain, plastic, w/cap
0651	Stopper, rubber 00, for Precipitation tubes
*4542WT-H	*Precipitation Reagent A, 60 mL
*4542-L	*Precipitation Reagent A, 500 mL
4543WT-H	Precipitation Reagent B, 60 mL
4543-L	Precipitation Reagent B, 500 mL
0452	Flask, 250 mL, "HARD", w/cap
0453	Flask, 250 mL, "SOFT", w/cap
0297	Test Tube, "HARD", 15 x 120 mm, w/cap
0298	Test Tube, "SOFT", 15 x 120 mm, w/cap
1749	TRACER TDS/Con/Salt/Temp
6005-J	Salt Calibration Solution
6005-L	Salt Calibration Solution
8124	Precipitation Demo Kit

*Reagent is a potential health hazard.
READ SDS: lamotte.com.
Emergency Information: Chem-Tel USA
1-800-255-3924 Int'l, call collect, 813-248-0585

Replacement Parts

For Optional Test Modules

To order individual reagents or test components, use the specified code number.

CODE	DESCRIPTION
2799A-NN3703ABX	Nitrate #1 Tablet (50) and *Nitrate #2 CTA Tablet (50)
0106	Test tubes, plastic, 2.5, 5 & 10 mL, w/caps (2)
0106-FP	Protective Sleeve
3494-01	Nitrate-Nitrogen Octa-Slide 2 Bar, 0–15 ppm
6905A-6999ABOX	DPD #1R Tablet (50) and DPD #3R Tablet (50)
0106	Test Tube, Plastic, 2.5, 5 & 10 mL, w/caps (2)
3401-01	Chlorine Octa-Slide 2 Bar, 0.2–3.0 ppm
6354-L	Conductivity Standard, 1413 µmhos/cm (990 ppm TDS), 500 mL
6418-L	Conductivity Standard, 6,668 µmhos/cm (4,668 ppm TDS), 500 mL

*Reagent is a potential health hazard.
READ SDS: lamotte.com.
Emergency Information: Chem-Tel USA
1-800-255-3924 Int'l, call collect, 813-248-0585

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