



Simple, Precise Digital Water Testing



CONTENTS

SETUP	3
SOFTWARE UPDATES	3
PC CONNECTION	3
FILLING DISKS	4
GENERAL OPERATING	5
Disk Handling	5
Disk Storage	5
Meter	5
Meter Touchscreen Display	5
Testing: Connected to a PC via USB	6
Testing: Not Connected to a Computer	7
Out of Range Test Results	8
Test History Setting	8
Syringe	9
Reagent Disk	9
Universal Disk Cover	10
Meter Check Disk	10
USB Cable	10
Battery	10
Settings	11
TROUBLESHOOTING	
Meter Troubleshooting Guide	11
Meter Check Disk Troubleshooting Guide	13
AQUASPIN Web Application Troubleshooting Guide	14
Helpful Hints	14
RANGES	15
CONVERSIONS	16
SPECIFICATIONS	17
ACCESSORIES AND REPLACEMENTS	18
MAINTENANCE	19
Cleaning	19
Repairs	19
Meter Disposal	19
Disk Disposal	20
GENERAL INFORMATION	20
Packaging and Returns	20
General Precautions	20
Safety Precautions	20
Limits of Liability	20
CE Mark	20
Warranty	21
Ordering	22

SETUP

BEFORE FIRST USE

- **Ensure the PC and meter have the latest software.**
 1. Go to: <https://softwarecenter.lamotte.com>
 2. Select WaterLink Connect 2 software and then click "Free Download".
 3. A prompt will appear if firmware updates are available. Select Update. Testing and data transfer will not be possible until firmware has been updated.
- **Create your API AQUASPIN retailer login username and password by visiting <https://www.apifishcare.com/store-register> and clicking "Create account."**
 1. You will need to enter the serial number of your meter to create your account. The serial number can be found on the bottom of your AQUASPIN meter or on your warranty card. Enter the serial number with hyphen(s) included.

CHARGE THE BATTERY

1. Use the USB cable and the adapter to plug the meter into an AC outlet or use the USB cable (included) with a car charger (not included) to charge the battery. (Anker PowerDrive 2, DC 12/24V, 5V = 4.8A, Part Number A2310 recommended.)
2. The battery icon on the screen will show the battery status. Charge the battery until the battery indicator is full.

SOFTWARE UPDATES

Occasionally, the AQUASPIN meter will require updates and your PC will prompt you to do these updates by allowing you to "Update Now" or "Remind Me Later". If Remind Me Later is chosen, the update prompt will be displayed again in 23 hours. To update the software, open WaterLink Connect 2 on your computer, go to Settings > Service Settings > Get Updates.

Make sure your AQUASPIN meter is connected and then run the updates. Updates can take up to 30 minutes and you will want to dedicate that time to doing the update and nothing else on your computer to allow the update to not be disrupted.

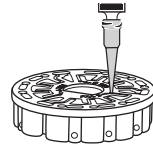
PC CONNECTION

When the API AQUASPIN meter is connected to a PC via USB cable, the onboard touchscreen becomes disabled and operation of the meter is performed using the API AQUASPIN website application. This application can be accessed at: <http://apifishcare.com/aquaspin/> via the API AQUASPIN website application, results from the meter will show on the computer screen, and can be saved to a customer's account and emailed with API product recommendations.

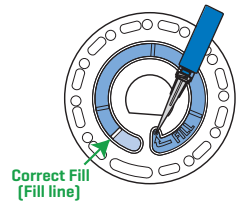
Customers must create an account from the link they receive in their API product recommendations email for their account creation to be finalized.

FILLING DISKS

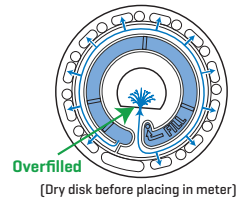
When the syringe is placed in the water sample and the plunger is pulled all the way up, the syringe will hold more than enough water to adequately fill the disk.



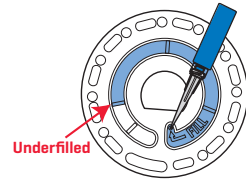
1. Fill the included syringe with the water sample. Then, locate the fill hole on the disk and slowly, with even pressure, begin to fill the disk with the syringe held vertically. The sample water will fill the chambers between the baffles in a counter-clockwise order. Each chamber will fill from the bottom to the top. Sample water should be added until the sample water in the fourth chamber fills to the top of the chamber slightly past the embossed fill line (it is ok to fill slightly past the fill line).



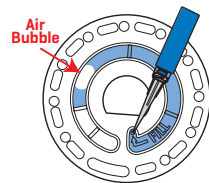
2. DO NOT overfill the disk. If the disk is overfilled, sample water will flow out of the overflow hole in the center of the disk. If this happens, be sure to dry the disk completely before running the test.



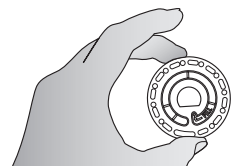
3. DO NOT underfill the disk. If the disk is under filled, the reagent chambers will not fill entirely and results will be inaccurate.



4. Do not introduce air bubbles into the disk. The reagent chambers will not fill entirely and results will be inaccurate. As soon as a bubble starts to form, pull back on the plunger to draw the bubble out of the disk. Begin the filling process again.



5. Wet disks should be dried thoroughly with the included lint-free wipe. The disk should be handled on the edges only. The disk should be filled and used within 10 minutes. They cannot be filled ahead of time. Refer to Step 4 under the TESTING section for next steps.

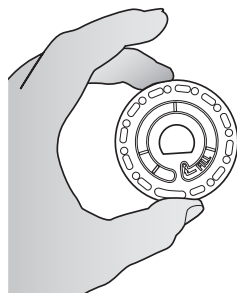


GENERAL OPERATING PROCEDURES

DISK HANDLING

The disk should be handled only by the edges. Avoid touching the top or bottom of the disk. The light passes through the non-frosted areas of the disk so these areas must be kept free of smudges and fingerprints. Wet disks should never be placed in the meter. Wet disks should be dried with a lint-free cloth before placing them into the chamber.

The disk is positioned in the chamber by aligning the D-shaped hole in the center of the disk over the D-shaped hub in the photometer chamber. The disk should be placed gently on the hub. There is no need to firmly press the disk down onto the hub. Universal disk cover should then be placed over the disk before running the test.

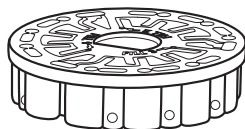


DISK STORAGE

Disks are sensitive to moisture and UV light. Avoid opening more packs than are needed. Disks have a limited shelf life and should not be exposed to the humidity in the air more than necessary.

Do not transport the meter with a disk in the chamber.

Store disks at 70°-80 °F (21°-27 °C).



METER

When a filled disk is placed in the chamber with universal disk cover and the lid is closed, the meter spins at high speed to distribute the sample to the test wells. Next the meter slows to maximize the pumping action of the stainless steel mixing beads as the reagents mix with the sample water. Each reaction is then read at the proper time and wavelength for that reagent system.



The button located in the lower center of the top of the meter turns the instrument on and off.

The blue on/off button indicator light indicates the status of the instrument.

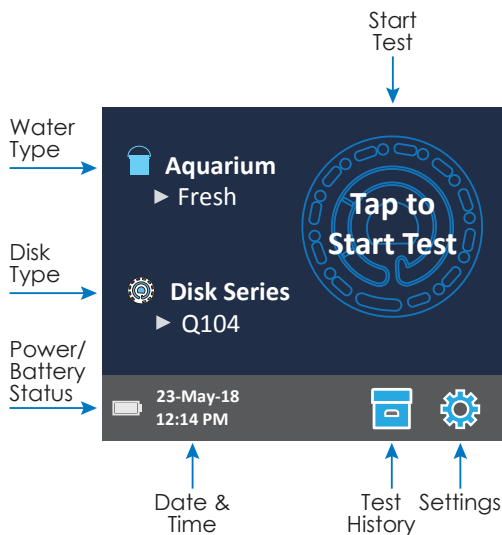
Steady blue light – the blue LED will remain steady to indicate that the meter is on and ready to run a test.

Blinking blue light (three blinks/second) – a test is in progress and the disk is spinning. Do not open the lid when the disk is spinning.

Care should be taken when closing the lid. Do not slam the lid. Wiring between the lid and the body of the photometer passes through the hinge. The meter will not run with the lid open.

METER TOUCHSCREEN DISPLAY

When the button is pressed to turn the meter on, the Test Screen will be displayed.

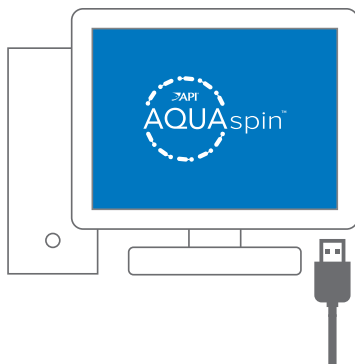


The display screen is touch-activated. To make a selection, tap the icon or word on the screen with a fingertip, fingernail, pencil eraser, or stylus.

- Gently wipe smudges from the screen with the Cloth Wipe.
- Do not touch the screen with a sharp object.
- Do not place objects on the screen that will scratch or damage it.
- Avoid touching the screen with wet fingers.

TESTING: CONNECTED TO A PC VIA USB

When the API AQUASPIN is connected to your PC via USB cable, the meter touchscreen will become disabled and operation of the meter is performed using the API AQUASPIN website.

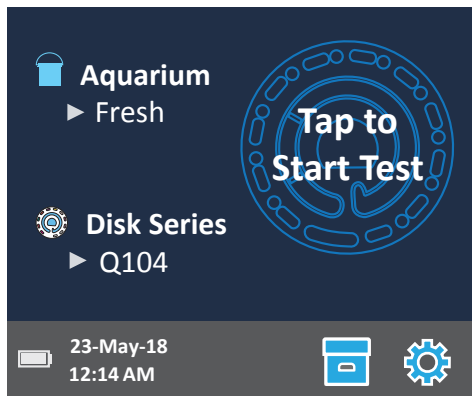


1. Connect your AQUASPIN meter to your PC via the USB cable.
2. Next, initiate the AQUASPIN program by signing into your account at: <https://www.apifishcare.com/login>

3. Refer to the FILLING section (page 4) for this step.
4. Place the filled disk into the AQUASPIN meter and cover the disk with the Universal Disk Cover. Close the meter lid.
5. Once signed into your retailer account, ask the customer if they have an AQUASPIN Advise account.
 - a. If the customer already has an account, enter their email address under the CONSUMER ACCOUNT LOOKUP section and select the tank name they are testing.
 - b. If the customer does not have an account, enter their email address and tank type under the REGISTER NEW CONSUMER ACCOUNT section.
6. Next, select the disk type (the disk type can be found on the foil packet). Then, hit RUN TEST button on the computer screen. The meter will automatically begin the test.
7. After a few minutes, the results will populate on the computer screen accompanied by API product recommendations.
8. An option to email the results and recommendations to the customer is then made available and the results are saved to the customer's AQUASPIN Advise account.
9. Dispose of the used disk to prepare for future tests.

NOTE: Remove salt residue daily. Salt will damage the meter and cause inaccurate results. See the CLEANING section in the manual.

TESTING: NOT CONNECTED TO A COMPUTER*



1. Press the power button and hold in the button until the meter turns on.
2. Select an Aquarium type. Tap to confirm.
3. Select a Disk Series type. Tap to confirm. (Disk Series type can be found on the disk foil packaging). NOTE: Disk Series are limited by Water type selection.
4. Remove a disk from the packaging.
5. Use the syringe to fill the disk with the water sample.

6. Insert the disk. Cover the disk with the Universal Disk Cover. Close the lid.
7. Tap the "Tap to Start Test" text on the screen. If you wish to cancel the test, tap the "X" on the screen. If the test is cancelled discard the disk.
8. The results will be displayed.
9. Choose an option.
 - a. Tap "water drop" to return to the Test Screen.
 - b. Tap the highlighted "Floppy Disk" to save test results to the test log if Auto Save is not enabled.
8. Press and hold the power button for 2 seconds to turn the meter off.

NOTE: Remove salt residue daily. Salt will damage the meter and cause inaccurate results. See the CLEANING section in the manual.

NOTE: For water samples over 100 °F (38 °C) subtract 0.3 from pH result or, for the most accurate result, wait until water sample is below 90 °F (32 °C) to test.

*This method of testing will not allow the customer to receive history of their aquarium testing or product recommendations. TESTING: CONNECTED TO A COMPUTER VIA USB is the preferred method of testing.

OUT OF RANGE TEST RESULTS

Results that are out of the range of the reagent system will be **red** on the meter screen (see Ranges page 15). This indicates that the results are higher or lower than the ranges the meter software has been programmed to read, and should be considered an approximate value.



TEST HISTORY SETTING

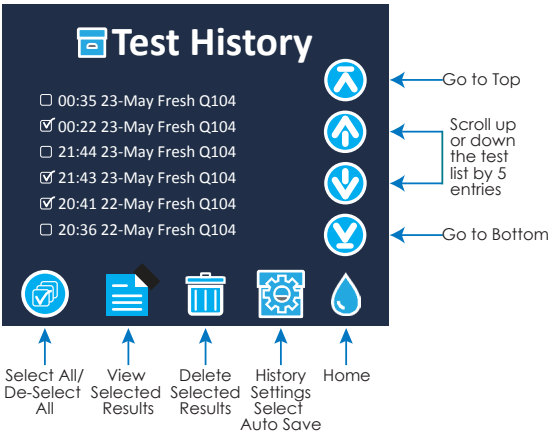


Printing results and transferring results via Bluetooth are not an option with the API AQUASPIN photometer. Printing testing results and product recommendations can be done via the API AQUASPIN website. Register for your store account here: <https://www.apifishcare.com/store-register>. If you already have a store account, login here: <https://www.apifishcare.com/login>.


The API AQUASPIN meter can log test results for 250 water samples in the Test History. The results for the most recent sample will be located at the top of the list. All results can be logged automatically, or results for an individual sample can be logged manually after the sample has been tested.

To turn on automatic logging, tap on the Test Screen. Tap . Select Auto-Save Tests. Tap and to return to the test screen. When Auto Save is selected will not be highlighted on the Test Results screen.

To manually log results for one sample at a time, Auto-Save Tests must be disabled. If Auto-Save Tests is disabled  will be highlighted on the Test Results screen. After the test has been run, tap  to save the results for that water sample to the Test History.



Logged results are viewed in Test History. Controls for viewing and managing single or multiple test records are located on the Test History screen. Tap the checkbox next to a test record to select it, then tap one of the buttons along the bottom to perform an action with the selected records.

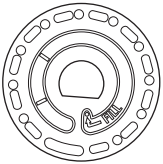
If the  symbol is displayed the default blank was used because the disk was under filled or there was an air bubble.

SYRINGE



A plastic syringe is used to fill the disks. A precision tip on the syringe fits into the fill hole on the disk. The syringe tip should not be removed from the syringe. Syringes should be cleaned between water samples. Pump air in and out of the syringe a few times to clear the previous sample, or rinse the syringe with a small amount of the next water sample before filling it with the next sample.

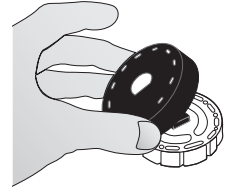
REAGENT DISK



The API AQUASPIN uses a disk reagent system. The dried reagents are packaged in single test amounts in a sealed, polystyrene disk. Stainless steel mixing beads in the reaction chambers mix the sample water and the dried reagents. Tests for all factors in the series are performed at one time. It is not possible to isolate the well for a single factor and perform a test for one test factor only. Disks should not be filled in the meter chamber.

UNIVERSAL DISK COVER

The black Universal Disk Cover (1719) is placed over the disk in the photometer chamber to reduce interference from stray light. The disk cover is positioned over the disk by aligning the D-shaped hole in the center of the disk over the D-shaped hub in the photometer chamber. The disk cover should be placed gently on the hub. There is no need to firmly press the disk cover down onto the hub. The test will be aborted if the disk cover is not used.



METER CHECK DISK

The Meter Check Disk (AP-1705) serves multiple purposes:

- When the Meter Check Disk (MCD) is run as an option from the Disk Series menu following the Range Check Procedure, the values on the display are compared to the values on the chart of the Meter Check Disk package to determine whether the meter is reporting results in the expected ranges.
- The LED Calibration procedure uses the MCD to set the brightness of the LEDs.
- The MCD is used in the Angle Calibration procedure to analyze the alignment of the hub and disk.

For use of the Meter Check Disk see TROUBLESHOOTING WITH THE METER CHECK DISK.

USB CABLE

A USB cable connects the API AQUASPIN to a PC. When used with the AC Power Adapter, it connects the meter to an AC outlet.

WARNING: only use the wall adapter that is supplied with the kit. Make no substitutions.

BATTERY

A fully charged battery will last for approximately 150 tests under average conditions. The battery life will vary based on usage patterns. The meter should be turned off after testing to prolong the battery life. The standard life cycle of a lithium ion battery is 500 cycles. The battery will fully charge in approximately 10-12 hours. The battery is designed to be charged overnight and should be charged indoors only. The battery is rated at 12 V and 8.1 AH capacity. Power the meter from the battery pack or from AC power. The USB cable and AC adapter are used to plug the meter into an AC outlet. **WARNING:** only use the AC adapter supplied with this equipment. Do not substitute.




The battery charge status is indicated by the battery icon on the display. The battery icon will indicate when the battery charge is full, partial, low, empty or charging. The empty battery icon will flash to indicate that meter should be connected to AC power source. If the meter continues to be used at low battery power without connecting it an AC power source, the meter will go into an auto-shutdown mode. In this mode the meter will be locked until the meter is connected to an AC source and the battery is charged to a sufficient voltage. While charging, the charging battery icon will be displayed. The meter should






remain plugged in until the battery is fully charged. When the battery is completely charged, the charging icon will change to the full battery icon.



SETTINGS


Tap  to enter the SETTINGS menu. Tap  to return to the test screen at any time.


Brightness The brightness level of the display can be adjusted from 00 to 10. Tap  and  to adjust the brightness. Tap  to exit to the Settings menu.


Date/Time The Year, Month, Day, Format, Hour, Minute, AM/PM can be set. Tap  or  to adjust the displayed value. Tap  to move to the next value. After the last value has been chosen (minutes for 24 hour format, AM/PM for 12 hour format) tap  to return to the Settings menu. Tap  to exit to the Settings menu at any time.


Set Language There is one language option – English. Tap  to exit to the Settings menu.

Calibration Tap to run an angle calibration to evaluate the alignment of the hub and disk. Tap  to exit to the Settings menu.

Power Options There are three power options: Auto Dim Time, Auto Off Time, and Power. Tap the options then tap a selection. Tap selection. Tap  to exit to the Settings menu.

Other Settings About section lists the Serial Number, Firmware Version, Bluetooth MAC address, Bluetooth Version and Test Count. (Bluetooth is not available on the API AQUASPIN.) The Test Count shows the number of complete tests that have been performed over the lifetime of the meter. Tap  to return to the Settings menu.


Ranges Enabled allows the option of having test results that are out of the range of the reagent system displayed in **red**. The default setting is ON. Tap  to return to the Settings menu.

Select Disk Detection to display an error message and abort the test when improper testing conditions, such as No Disk, No Disk Cover, Used Disk or Meter Check Disk, are present that would result in inaccurate or no test results. The default setting is OFF. Tap  to return to the Settings menu.

TROUBLESHOOTING

METER TROUBLESHOOTING GUIDE

Problem	Reason	Solution
"No Disk, Test Aborted"	No disk in chamber	Place filled disk in chamber. Use disk cover. Select OK. Start test.
	Empty chamber	Insert filled disk. Cover with disk cover. Select OK. Start test.
"No Disk Cover, Test Aborted"	Disk cover was not used	Use disk cover. Select OK. Start test.

"Lid Open, Test Aborted"	Lid opened	Close lid. Select OK. Start test.
"Used Disk"	Reacted disk in chamber	Select "Continue" to go to Test Results screen. Select "Abort" to go to Testing screen and run test with new disk.
Meter Check Disk	Meter Check Disk in chamber instead of reagent disk	Select "Continue" to go to Test Results screen. Select "Abort" to go to Testing screen and run test with reagent disk.
 On Test Results and Test History screens	Problem with default blank due to under filled disk or air bubble. Test results are questionable.	Fill disk correctly (see FILLING). On Test Results screen tap ! for details.
Range Error	Raw data out of range	Contact Support
Output Error	Decreased light intensity. Possibly dirty lens	Clean lens (see CLEANING). Follow Range Check Procedure. If error message persists, contact Support.
Consistently unexpected high results for metals	Metals may actually be present	Repeat test with distilled water. If the results still show that metals are present, contact Support.
Alkalinity result of 0 ppm	Usually due to an underfilled disk.	Review the disk filling procedures and test again. If problem persists, contact Support.
Low Nitrate or Nitrate-N results	Recent treatment with chlorine neutralizer containing sodium thiosulfate interferes with test reaction	Retest in 2 – 3 days
Unexpected results	Dirty disk cover	Gently clean disk cover apertures with pipe cleaner or lint free cloth.
Disk type is not an option in Disk Series	Software or meter firmware is out of date.	Update WaterLink Connect 2 at softwarecenter.lamotte.com
High pH results	Water sample temperature above 100 °F (38 °C) interferes with pH reagent	For water samples over 100 °F (38 °C) subtract 0.3 from pH result or, for the most accurate result, wait until water sample is below 90 °F (32 °C) to test




Disk not spinning	Lid open, meter not powered on, low battery, disk or disk cover pressed down too tightly on hub Fast electrical transients may disrupt operation of the API AQUASPIN meter	Close lid, power on meter, charge the battery or plug meter into a stable power source, remove the disk/disk cover and place back in the chamber more gently Restart the test to resume normal operation
Trouble connecting to computer by USB	Broken connection	Press and hold power button for 1 second.
Meter won't turn on	Needs reset or evaluated	Contact Support

METER CHECK DISK TROUBLESHOOTING GUIDE

Do not attempt to separate the components of the Meter Check Disk (Code AP-1705). The Meter Check Disk consists of a disk with a permanently attached cover. Do not fill the Meter Check Disk with water. Water is not used during the meter check procedure.

Range Check Procedure

The Meter Check Disk is used to verify the performance of a meter. It is not used to recalibrate the meter. Meters are calibrated at the time of manufacture. The meter is performing satisfactorily if readings using the Meter Check Disk are within the ranges provided on the Meter Check Disk pouch. Range specifications are specific to the disk identified by the serial number on the pouch. The range specifications will vary from disk to disk. The exact readings from a specific disk may vary from meter to meter.



1. Follow the Cleaning procedure on page 19 to clean the light chamber and optic lenses.
2. Tap  select Disk Series.
3. Tap **MCD** to select Meter Check Disk.
4. Tap  to return to the test screen.
5. Remove the Meter Check Disk from the foil pouch. DO NOT remove the black cover from the disk.
6. Insert the Meter Check Disk. Close the lid.
7. Tap  to start test.
8. Results will be displayed.
9. Compare the results on the display to the values on the chart shown on the pouch.
10. Replace the Meter Check Disk in the foil pouch for storage.

If the results are not within the range shown on the pouch, contact Support.

LED Calibration

The LED Calibration is performed to set the brightness of the individual LEDs.

Follow the Cleaning procedure on page 19 to clean the light chamber and optic lenses.



1. Tap  to go to settings.
2. Tap **Calibration**.
3. Tap **LED Cals**.
4. Remove the Meter Check Disk (Code AP-1705) from the foil pouch. DO NOT remove the black cover from the disk.
5. Insert the Meter Check Disk. Close the lid.
6. Tap **Start** to begin the meter check procedure.
7. When the calibration is complete the message "LED Calibration Complete" will appear.
8. Tap  to return to the Testing Menu and resume testing.

Angle Calibration

Angle Calibration checks the alignment of the hub and disk. The results are analyzed and reported as pass or fail. If the measurements pass the settings will be saved. If the analysis fails, contact Support.

If performing the LED Calibration and the Angle Calibration, the LED Calibration should be performed before the Angle Calibration.

Follow the Cleaning procedure on page 19 to clean the light chamber and optic lenses.

1. Tap  to go to settings.
2. Tap **Calibration**.
3. Tap **Angle Cals**.
4. Remove the Meter Check Disk (Code AP-1705) from the foil pouch. DO NOT remove the black cover from the disk.
5. Insert the Meter Check Disk. Close the lid.
6. Tap **Start** to begin the meter check procedure.
7. If the meter is performing satisfactorily, "Angle Calibration Successful" will be displayed and the settings will be saved. If the meter is not performing satisfactorily, "Angle Calibration Unsuccessful. Contact Support" will be displayed.
8. Tap  to return to the Testing Menu and resume testing.

AQUASPIN WEB APPLICATION ASSISTANCE

For questions or comments regarding API AQUASPIN website, please contact: Mars Fishcare by calling 1-800-847-0659 or by emailing APITechServices@effem.com.

For meter troubleshooting, please contact: LaMotte Company by calling 1-800-344-3100 ext. 3 or by emailing softwaresupport@lamotte.com.

HELPFUL HINTS

- DO NOT fill disk while in the meter. Fill the disk on a clean, dry surface.
- The disk should not contain any large air bubbles. Air bubbles will cause erroneous results.
- Empty syringe of previous water sample before filling with next water sample.

- Remove the filled disk from the meter after testing.
- Disks are sensitive to moisture and UV light. Only open new disk packaging when needed for a new test.
- Store new, packaged disks between 70°-80° F (21° – 27° C).
- Disks cannot be used more than once.
- Do not touch top or bottom of disk. Handle disk by the edge.
- Fill the disk on a dark surface to more easily see the sample water.
- Only the Universal Disk Cover (Code 1719) can be used with the API AQUASPIN.
- Keep the chamber clean and dry. Gently swab LED and photodiode lenses located around the hub with a cotton swab dampened with streak-free window cleaner. Do not use alcohol. It will leave a thin film over the lenses when dry.

RANGES

AQUASPIN Freshwater Disk (Code FW01)

Test Factor	Display Abbreviation	Range	Accuracy	Minimum Detection Limit
Alkalinity (KH)	ALK	0 – 250 ppm	+/- 15%	15 ppm
Ammonia	AMMO	0 – 3.0 ppm	+/- 0.2 ppm < 2.0, +/- 0.4 ppm > 2.0	0.2 ppm
General Hardness (GH)	G HARD	0 – 500 ppm	+/- 15%	20 ppm
Nitrate	NITRATE	0 – 300 ppm	+/- 20%	5 ppm
Nitrite	NITRITE	0 – 2.0 ppm	+/- 0.2 ppm	0.1 ppm
pH	pH	4.5 – 10.0	+/- 0.2 units	NA
Phosphate	PHOS	0 - 2.0 ppm	+/- 0.2 ppm	0.2 ppm

AQUASPIN Saltwater Disk (Code SW01)

Test Factor	Display Abbreviation	Range	Accuracy	Minimum Detection Limit
Alkalinity (KH)	ALK	0 – 300 ppm	+/- 15%	15 ppm
Ammonia	AMMO	0 – 3.0 ppm	+/- 0.2 ppm < 1, +/- 0.4 ppm > 1	0.2 ppm
Calcium	CAL	200 - 800 ppm	+/-15 %	NA
Magnesium	MAG	500 – 2200 ppm	+/- 15 %	NA

Nitrate	NITRATE	0 – 60 ppm	+/- 20%	5 ppm
Nitrite	NITRITE	0 – 2.0 ppm	+/- 0.2 ppm	0.1 ppm
pH	pH	6.5 – 10.0	+/- 0.2 units	NA
Phosphate	PHOS	0 – 2.0 ppm	+/- 0.2 ppm	0.2 ppm

NOTE: Colored reagents may be visible in the disk before adding sample water.

To order more disks or additional meters, shop here: www.shop.apifishcare.com

CONVERSIONS

Ammonia (NH₃)

Ammonia in water occurs in two forms: toxic unionized ammonia (NH₃) and the relatively non-toxic ionized form, ammonium ion (NH₄⁺). This test method measures both forms as ammonia (NH₃) to give the total ammonia concentration in water. The actual proportion of each compound depends on temperature, salinity, and pH. A greater concentration of unionized ammonia is present when the pH value and salinity increase.

1. Consult the table to find the percentage that corresponds to the temperature, pH, and salinity of the sample.
2. To express the test result as ppm Unionized Ammonia (NH₃), multiply the Total Ammonia test result by the percentage from the table.
3. To express the test result as ppm Ionized Ammonia (NH₄⁺), subtract the Unionized Ammonia determined in step 2 from the Total Ammonia.

pH	10°C		15°C		20°C		25°C	
	Fresh water ¹	Salt water ²	Fresh water	Salt water	Fresh water	Salt water	Fresh water	Salt water
7.0	0.19	—	0.27	—	0.40	—	0.55	—
7.1	0.23	—	0.34	—	0.50	—	0.70	—
7.2	0.29	—	0.43	—	0.63	—	0.88	—
7.3	0.37	—	0.54	—	0.79	—	1.10	—
7.4	0.47	—	0.68	—	0.99	—	1.38	—
7.5	0.59	0.459	0.85	0.665	1.24	0.963	1.73	1.39
7.6	0.74	0.577	1.07	0.836	1.56	1.21	2.17	1.75
7.7	0.92	0.726	1.35	1.05	1.96	1.52	2.72	2.19
7.8	1.16	0.912	1.69	1.32	2.45	1.90	3.39	2.74
7.9	1.46	1.15	2.12	1.66	3.06	2.39	4.24	3.43
8.0	1.83	1.44	2.65	2.07	3.83	2.98	5.28	4.28
8.1	2.29	1.80	3.32	2.60	4.77	3.73	6.55	5.32
8.2	2.86	2.26	4.14	3.25	5.94	4.65	8.11	6.61
8.3	3.58	2.83	5.16	4.06	7.36	5.78	10.00	8.18
8.4	4.46	3.54	6.41	5.05	9.09	7.17	12.27	10.10
8.5	5.55	4.41	7.98	6.28	11.18	8.87	14.97	12.40

¹Freshwater data from Trussel (1972).

²Seawater values from Bower & Bidwell (1978). Salinity for Seawater values = 34‰ at an ionic strength of 0.701 m.

FOR EXAMPLE:

A fresh water sample at 20°C has a pH of 8.5 and the test result is 1.0 ppm as Total Ammonia.

1. The percentage from the table is 11.18% (or 0.1118).
2. 1 ppm Total Ammonia x 0.1118 = 0.1118 ppm Unionized Ammonia
- 3.

Total Ammonia	1.0000 ppm
Unionized Ammonia	– 0.1118 ppm
Ionized Ammonia	= 0.8882 ppm

To convert Ammonia (NH₃) to Ammonia-Nitrogen (NH₃-N) multiply by 0.823

To convert Nitrite (NO₂) to Nitrite-Nitrogen (NO₂-N) multiply by 0.304

To convert Nitrate (NO₃) to Nitrate-Nitrogen (NO₃-N) multiply by 0.226

SPECIFICATIONS

Instrument Type	Centrifugal Fluidics Photometer
Wavelengths (interference filters)	390 nm, 428 nm, 470 nm, 525 nm, 568 nm, 635 nm
Display	Color Capacitive Touchscreen, 3.5 in, 320 x 240 pixel resolution
Wavelength Accuracy	±2 nm
Wavelength Bandwidth	10 typical
Photometric Range	-2 to 2 AU
Photometric Precision	±0.01 AU at 1.0 AU
Photometric Accuracy	±0.01 AU at 1.0 AU
Sample Chamber	Accepts prefilled disk
Light Source	6 LEDs
Detectors	6 silicon photodiodes
Pre-Programmed Tests	Yes, with automatic wavelength selection
Languages	English
Temperature	Operation: 0-50 °C; storage – 40-60 °C
Operation Humidity Range	0- 90 % RH, non-condensing
Communication	USB-C, Bluetooth low energy technology (BLE)
Calibration	Factory set
Firmware	updateable
Software	WaterLink® Connect 2

Power Requirements	USB wall adapter, USB computer connection or internal lithium ion rechargeable battery														
Battery Type	Lithium ion														
Minimum Capacity	12 V/2.6 AH														
Charge Life	Approximately 150 tests														
Battery Life	Approximately 500 charges														
Full Charge	10-12 hours														
Water Resistance	Rubber over-molded base, rubber USB Port Plug, gasketed display and hinge.														
Electrical Rating	Rated voltage (5V), Rated power of input current (1.6 A) at USB C														
Auto Off	Yes, default 15 (only with battery power)														
Power Save	Yes, default OFF														
Data Logger	250 test results stored for download to PC														
Certifications	EZ-BLE™ ProC™ Module, CYBLE-022001-00 RF Radio: <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; vertical-align: top;">FCC (USA):</td> <td style="width: 33%; vertical-align: top;">Industry Canada (IC) Certification:</td> <td style="width: 33%; vertical-align: top;">FCC ID: WAP2001 License IC: 7922A-2001</td> </tr> <tr> <td>CE (Europe):</td> <td></td> <td>Complies with Directive 1999/5/EC</td> </tr> <tr> <td>MIC (Japan):</td> <td></td> <td>005-101007</td> </tr> <tr> <td>KC (Korea):</td> <td></td> <td>MSIP-CRM-Cyp-2001</td> </tr> </table>			FCC (USA):	Industry Canada (IC) Certification:	FCC ID: WAP2001 License IC: 7922A-2001	CE (Europe):		Complies with Directive 1999/5/EC	MIC (Japan):		005-101007	KC (Korea):		MSIP-CRM-Cyp-2001
FCC (USA):	Industry Canada (IC) Certification:	FCC ID: WAP2001 License IC: 7922A-2001													
CE (Europe):		Complies with Directive 1999/5/EC													
MIC (Japan):		005-101007													
KC (Korea):		MSIP-CRM-Cyp-2001													
	EMC:	EU: ETSI EN 301489-1 US: FCC PART 15 B CAN ICES-3 (B)/NMB-3(B) AS/NZS: CSPR 22													
	Safety:	EU: EN61010-1:2010 AS/NZS: national differences													
Dimensions	21.6 X 12.4 X 10.4 cm (L X W X H) 8.5 X 4.9 X 4.2 in														
Weight	0.79 Kg, 1.74 lb														

ACCESSORIES AND REPLACEMENT PARTS

Description	Code
API AQUASPIN Meter	ASO1
Syringe with tips (3)	1189-3
Syringe tips (3)	1189-TIP
Cleaning Tissues	0669
Meter Check Disk	AP-1705

Universal Disk Cover	1719
USB Cable	1712
AC Adapter	1713
Cloth Wipe	3580-WIPE-GEN
Carrying Case	OC01
API AQUASPIN Manual	AP-3580-MN
API AQUASPIN Quick Reference Guide	AP-3580-QG
API AQUASPIN Counter Mat	AP-3580-MAT
API AQUASPIN Banner	AP-3580-BAN
API AQUASPIN Decal	AP-3580-DECAL

MAINTENANCE

CLEANING

The optical system of the API AQUASPIN must be kept clean and dry for optimal performance. Dry the disk with a lint-free wipe before placing it in the chamber to avoid introducing moisture. For best results, store the instrument in an area that is dry and free from aggressive chemical vapors. Clean the exterior housing with a damp, lint-free cloth. Do not allow water to enter the light chamber or any other parts of the meter. To clean the light chamber and optic lenses, point a can of compressed air into the light chamber and the lid and blow the pressurized air into the light chamber and lid. Focus the pressurized air around the LEDs which are the small round lenses positioned at 2:00, 4:00, 6:00, 8:00, 10:00 and 12:00 in the lid. The photodiodes are located on the bottom of the chamber around the hub. This area must be kept clean and dry. Use a cotton swab dampened with streak-free window cleaner to gently swab the LED and photodiode lenses. Do not use alcohol; it will leave a thin residue over the optics when dry.

Remove smudges due to routine use from the touchscreen with the Cloth Wipe (Code 3580-WIPE-GEN). Use a cloth dampened with alcohol for more thorough cleaning when necessary. Do not use streak-free window cleaner, or similar cleaners, on the touchscreen.

REPAIRS

Should it be necessary to return the meter for repair or servicing, pack the meter carefully in a suitable container with adequate packing material. A return authorization number must be obtained from LaMotte Company by calling 800-344-3100, ext. 3 (US only) or 410-778-3100, ext. 3, faxing 410-778-6394, or emailing softwaresupport@lamotte.com. Often a problem can be resolved over the phone or by email. If a return of the meter is necessary, attach a letter with the return authorization number, meter serial number, a brief description of problem and contact information including phone and FAX numbers to the shipping carton. This information will enable the service department to make the required repairs more efficiently.

METER DISPOSAL

Waste Electrical and Electronic Equipment (WEEE)

Natural resources were used in the production of this equipment. This equipment may contain materials that are hazardous to health and the environment. To avoid

harm to the environment and natural resources, the use of appropriate take-back systems is recommended. The crossed out wheeled bin symbol on the meter encourages the use of these systems when disposing of this equipment.



Take-back systems will allow the materials to be reused or recycled in a way that will not harm the environment. For more information on approved collection, reuse, and recycling systems contact local or regional waste administration or recycling services. Do not incinerate the equipment.

DISK DISPOSAL

The disks cannot be reused. Over time, the water in reacted disks will evaporate. Disks can be recycled. Warning: Recyclers should check with the local authorities. Some states may require that no chemical residue remains on the plastic or may not be able to accept plastic waste with stainless steel mixing beads.

GENERAL INFORMATION

PACKAGING AND RETURNS

Experienced packaging personnel at LaMotte Company assure adequate protection against normal hazards encountered in transportation of shipments. After the product leaves the manufacturer, all responsibility for its safe delivery is assured by the transportation company. Damage claims must be filed immediately with the transportation company to receive compensation for damaged goods. Should it be necessary to return the instrument for repair or servicing, pack the instrument carefully in a suitable container with adequate packing material. A return authorization number must be obtained from LaMotte Company by calling 1-800-344-3100 or 1-410-778-3100, ext. 3 or emailing tech@lamotte.com. Attach a letter with the authorization number to the shipping carton which describes the kind of trouble experienced. This valuable information will enable the service department to make the required repairs more efficiently.

GENERAL PRECAUTIONS

Read the instruction manual before attempting to set up or use the instrument. Failure to do so could result in personal injury or damage to the meter. The API AQUASPIN should not be stored or used in a damp or excessively corrosive environment. Care should be taken to prevent water or reagents from entering the photometer chamber. Wet disks should never be put into the photometer chamber.

SAFETY PRECAUTIONS

Read the safety precautions on the labels of all reagent containers and packaging prior to use. Ensure that the protection provided by this equipment is not impaired. Do not install or use this equipment in a manner that is not indicated in this manual.

LIMITS OF LIABILITY

Under no circumstances shall LaMotte Company be liable for loss of life, property, profits, or other damages incurred through the use or misuse of its products.

CE MARK

The API AQUASPIN meter has been independently tested and has earned the European CE Mark of compliance for electromagnetic compatibility and safety.

This meter complies with Part 15 of the FCC rules. Operation is subject to the

following two conditions: (1) This meter may not cause harmful interference, and (2) this meter must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital meter, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARRANTY

LaMotte Company warrants this instrument to be free of defects in parts and workmanship for 2 years from the date of shipment. If it should become necessary to return the instrument for service during or beyond the warranty period, contact our Technical Service Department at 1-800-344-3100 or 1-410-778-3100, ext. 3 or softwaresupport@lamotte.com for a return authorization number or visit www.lamotte.com for troubleshooting help. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, and improper maintenance. LaMotte Company warrants this instrument to be free of defects in parts and workmanship for 2 years from the date of shipment. If it should become necessary to return the instrument for service during or beyond the warranty period contact our Technical Service Department at 1-800-344-3100 or 1-410-778-3100, ext. 3 or softwaresupport@lamotte.com for a return authorization number or visit www.lamotte.com for troubleshooting help. The sender is responsible for shipping charges, freight, insurance, and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. LaMotte Company specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental, or consequential damages. LaMotte Company's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

To register your meter with the LaMotte Service Department, go to www.lamotte.com and choose SUPPORT on the top navigation bar.

Serial Number _____

ORDERING

To purchase more API reagent disks, additional AQUASPIN meters, or the Storage and Carrying Case, shop through the link here: www.shop.apifishcare.com.

To purchase spare parts, contact LaMotte Company by calling 1-800-344-3100, ext. 3, or by emailing softwaresupport@lamotte.com.



Questions or Comments?
1-800-847-0659 | www.apifishcare.com

Mars Fishcare North America, Inc.
50 E. Hamilton St. | Chalfont, PA 18914



Disk US Patent No. 8,734,734

© Mars or Affiliates

Manufactured by:
LaMotte Company
802 Washington Ave. | Chestertown,
MD 21620
800-344-3100 | www.lamotte.com

AP-3580-MN 2.21