Owner Manual

puresilk™ Chromatalyzer™

Patent Technology Numbers.

Australia	No. 2003240282
Canada	No. 2,483,477
France	No. FR 1 511 976
Germany	No. 603 28 601.1-08
New Zealand	No. 537012
Spain	No. EP 1 511 976
Switzerland	No. CH 1 511 976
UK	No. UK 1 511 976
USA	No. 7,988,916

IMPORTANT

Read this manual carefully before operating your PureSilk Chromatalyzer

KEEP IN A SAFE PLACE

Manufactured by Poolpower Australia Pty Ltd
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ELTHAM, VICTORIA, AUSTRALIA 3095
Tel: 1300 656 455
email: service@poolpower.com.au

Please Note

Scheduled Maintenance of chemical dosing systems must be performed

Failure to complete voids product warranty and may pose a health and safety risk

Domestic Pools - Service every 12mths
Commercial Pools – Service every 6mths

Chemical Dosing System Service Kit

CPS2 Model:
Order Puresilk Part #33512-TB-ACID

CPS3 & COMM1000 Models:
Order Puresilk Part #33513-TB-ACID/CHL

Ensure access to chemical delivery systems Is restricted to authorised service personnel

Wear appropriate Safety Goggles, Gloves & Protective Clothing

Read manual for service instructions or contact your local authorised service agent

1300 POOLS 1

sales@hayward-pool.com.au

IMPORTANT – Acid Dilution Criteria for Domestic Installations

Safety Goggles, Acid Resistant Gloves and a suitable Mask must be used at all times when inspecting, servicing or performing maintenance on the chemical delivery system.

Although this device has been engineered to deliver undiluted 33% Hydrochloric Acid (HCL), there are installation sites where the acid **MUST** be diluted in accordance with the table below.
The dilution conditions are specified in the best interests of safety and to minimise the risk of damage to equipment and property in the event of a containment breach.

- Access to all components of the acid delivery system **MUST BE** restricted to unauthorised persons, children and pets
- Where a Pool and Spa combination exists, diluted acid **MUST BE** used
- Where a Spa only exists, diluted acid **MUST BE** used
- For Pool volumes less than 50,000lts, diluted acid **MUST BE** used
- For Pool volumes 50,000lts or greater, the use of diluted acid is recommended where practical
- Diluted acid **MUST BE** used when components of the acid delivery system are located indoors or in a poorly ventilated area.
- Diluted acid **MUST BE** used if any components or tubing related to the acid delivery system are located in direct sunlight
- Where components of the acid delivery system are in close proximity to equipment or property that would be subject to corrosive acid fumes in the event of a containment breach, diluted acid in accordance with the dilution table **MUST BE** used
- For installations where an acid drum leak could damage flooring or create a safety hazard, the drum must be located within an additional containment vessel with a capacity of no less than 200% of the acid drum volume.
  The containment tank must be made from a plastic suitable for containment of Hydrochloric acid such as High Density Polyethylene.
  The containment vessel will act to minimise the risk of damage in the event of a drum leak.
- All elements of the chemical feed system must be regularly inspected to ensure it is in safe working order.

Procedure for Dilution of 33% Hydrochloric Acid

Dilution of approx 33% Hydrochloric Acid must be performed outdoors in a well ventilated area.
Always add the acid into the water, **NOT** the water into the Acid.
Always wear suitable protective goggles, gloves and masks suitable for use with Hydrochloric Acid

The dilution of 1 part 33% HCL to 1 part water will substantially reduce acid fuming

The diluted acid is STILL VERY DANGEROUS and CORROSIVE and must be treated with care.

Warranty is void if any other type of acid is used or dilution is not performed in accordance with these instructions.

Dilution Verses Pool Volume Table

Pool Volume	Dilution	Conditions
50,000lts or Greater	**1 Part 33% HCl to 1 Part Water**	33% HCL can be used, but only if **ALL** the conditions listed above are met and the use of diluted acid is not practical.
Less than 50,000lts	**1 Part 33% HCl to 1 Part Water**	
Less than 12,500lts	**1 Part 33% HCl to 1 Part Water**	Must limit the available 1 : 1 mixture to a volume of 5lts

Poolpower will not be liable for damage where a duty of care has not been demonstrated with respect to installation of this equipment or its ongoing maintenance.

IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions must always be followed.

READ AND FOLLOW ALL INSTRUCTIONS

WARNING: Potential risk of fire, electric shock, or injury to persons is possible if the installation and safety instructions listed in this manual and on the Chromatalyzer itself are not followed.

Disconnect all AC power during installation and or removal

Warning: To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

WARNING: Heavy pool (or Spa) usage and higher temperatures may require higher chlorine output to maintain proper free available chlorine residuals

WARNING: To reduce risk of injury, do not permit children to operate this device.

If additional chlorine is required due to heavy bather loads, use liquid chlorine (Sodium Hypochlorite) to maintain appropriate chlorine residual in the water.

Maintaining high salt and chlorine levels above recommended range may contribute to corrosion of pool or spa equipment

DO NOT add Pool or Spa chemicals directly to the skimmer.

The life expectancy of the Free Chlorine and pH reagent bags under normal use conditions (3 tests per day) is 6mths or 750 tests, whichever comes first.

Only use original and proprietary Puresilk Reagent Bags.

Follow all aspects of the local and National Electrical Code(s) when installing Puresilk Chromatalzyer.

NOTE: For outdoor pools, chlorine residuals can be protected from destruction by sun light by addition of stabilizer (cyanuric acid)

For proper sanitation, spas must be completely drained periodically. The number of days between COMPLETE SPA DRAINAGE is equal to the volume of spa water in litres, divided by 10 times the maximum number of daily spa users. Refill spa with water and repeat DIRECTIONS FOR USE of the device.

Health and Hyperthermia warnings for spa devices:
People with a medical condition should consult a physician before entering pool or spa water.

Maximum spa water usage temperature is 40 deg C. Bathing in spa water at 40 deg C should not exceed 15 minutes.

IMPORTANT SAFETY INSTRUCTIONS

Read all sections of this owner manual before installing or using Chromatalyzer.

Ensure the Chromatalyzer has been installed in accordance with the instructions in this manual.

Do not allow children or unqualified persons to operate or perform any maintenance on this device.

Do not allow children or unqualified persons to come into contact with the chemical dosage equipment, storage drums, feed tubes or injectors.

You must wear protective eye goggles, suitable acid and chlorine resistant gloves and respirator when fitting, filling, servicing or exchanging both solid and or liquid chemical dosage systems and storage containers.

Only those persons electrically qualified and authorised by Poolpower may perform service work or maintenance of an electrical or electronic nature.

Replace Peristaltic Pump tube/s every 12mths – See Peristaltic Pump section.

Check Reagent Bags periodically and replace at least every 6mths.

Caution – only use Puresilk proprietary reagents.

Manually adjust pH and chlorine levels to approximate set points before initiating Chromatalyzer.

Manually adjust the Calcium Hardness and Total Alkalinity levels as recommended by your pool professional before initiating Chromatalyzer.

Ensure water is regularly tested by a pool professional to confirm all aspects of the pool or spa water are being maintained correctly.

Where bather loads are high, you may be required to manually shock dose the pool with chlorine periodically - consult a pool professional for advise.

Regular testing of pool and spa water is imperative. A free chlorine level of 1 – 3 ppm (pools) or 3 – 5 ppm (spas) should be maintained with periodic manual shock dosing to effectively remove contaminants.

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INTRODUCTION

The Puresilk Chromatalyzer utilizes proven colourimetric technology and a patented analysis technique to control the pH and chlorine levels in swimming pools and spas.
It takes the guesswork out of balancing and treating your pool water and through automation, eliminates the constant requirement to handle dangerous chemicals.

The need to regularly test water, balance pH correction and manage chlorine dosage is very important in maintaining healthy balanced water.
Bather load and environmental impacts are dynamic, therefore guessing a dosage requirement to control these parameters is not sufficient.
The chlorine demand in a pool may vary enormously with changing bather load, water temp, debris and the application of covers.

Typically, on a domestic pool, the Chromatalyzer will perform three pH and chlorine tests per day.
The results of these tests are compared with the targets set.
If a correction is required, the Chromatalyzer will initiate a pump or device to feed a prescribed dosage of chlorine and/or acid to the pool or spa water.
Where a Salt Chlorinator is installed, the Chromatalyzer will switch the chlorinator ON and OFF to achieve the desired chlorine target.

Where a pool and spa combination exists, the Chromatalyzer is able to establish which volume it is treating with the installation of a flow switch in the spa suction line.
The only time the spa suction is utilized is if only the spa is being filtered and treated.
The Chromatalyzer therefore recognises if the smaller spa volume is to be treated and alters its dosage calculations.
Given the average spa is approximately 25 times smaller in volume than a pool, and is therefore more volatile, the Chromatalyzer automatically increases the frequency of testing to best manage this small body of water.

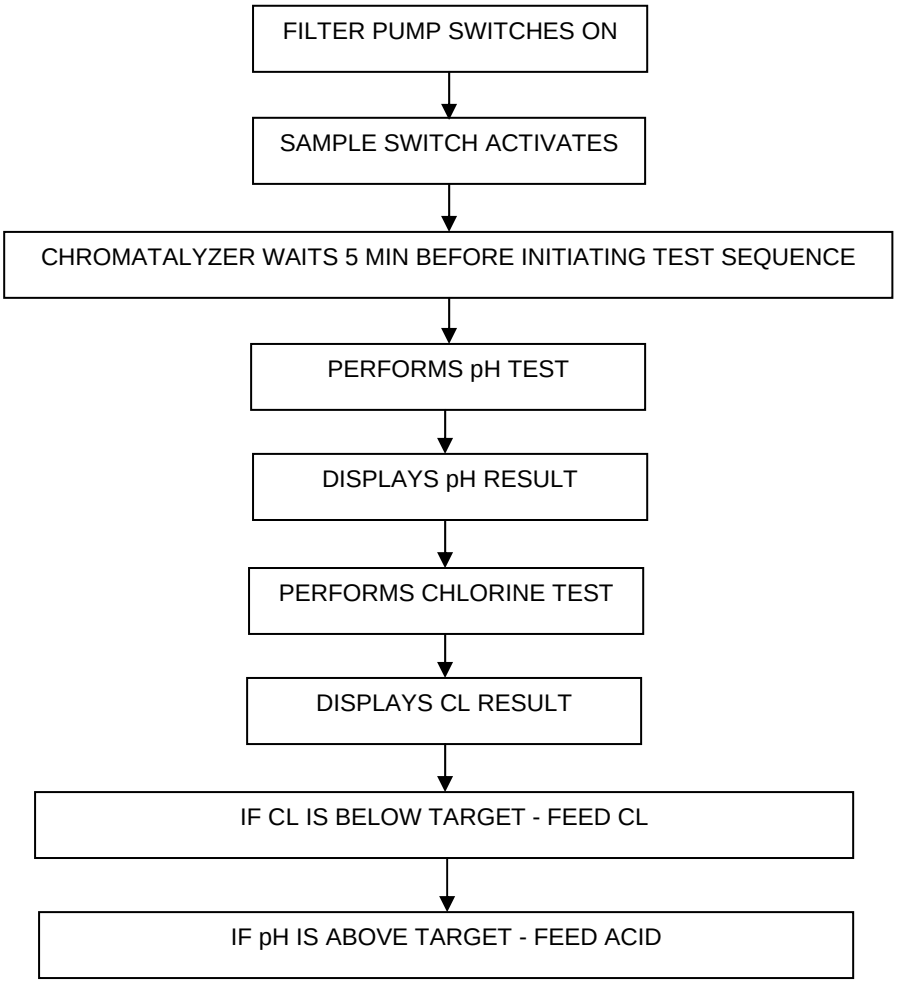
The Puresilk Chromatalyzer will ensure your pool water is correctly sanitised and the pH maintained.
The other less volatile balance parameters such as total alkalinity and calcium hardness levels must be checked and adjusted by you local pool professional.

Seven years of ground breaking research and development has resulted in the development of this great Australian product.
This innovative technology will benefit pool owners and commercial pools all over the world.

Thankyou for purchasing this great Australian product.

HOW THE PURESILK CHROMATALYZER WORKS

This flow chart is a basic representation of the Chromatalyzer test sequence.



NOTE: CPS2 and COMM1000 (salt chlorinator component only)
Where a salt chlorinator is controlled, both chlorinator and acid feed may occur simultaneously.

CPS3 and COMM1000 (Liquid or Solid Chlorine component only)
Where a liquid chlorine pump or any solid chlorine feed device is controlled, acid will not feed simultaneously with chlorine feed.
Chlorine, if required, will always complete its prescribed dosage before acid feed is initiated.

All chemical feeds immediately stop if the flow switch detects lack of flow.

The acid feed controlling software has built in safety limits to prevent a gross over feed of acid.
This limit based on:
Volume treated per test cycle
Volume treated per 24hrs
Volume treated per 48hrs - If 48hr limit is reached, acid feed stops and alarm sounds.

CHLORINE PRODUCTION AND CONTROL

A free chlorine residual of 1.0ppm to 3.0ppm must be maintained.

The ability of a chlorine generator or liquid chlorine feed pump to maintain the correct chlorine level will depend on the output of the device and the demand imposed by bather load and environmental factors.

Where a salt chlorinator is installed and is controlled by a Chromatalyzer, ensure the output of the salt chlorinator is set to maximum.
The Chromatalyzer will monitor and control the chlorine level by switching the chlorinator on for calculated periods of time based on demand, water volume and the chlorinator's output capacity.

The CPS3 and COMM1000 have an in-built peristaltic pump which delivers liquid chlorine. The Chromatalyzer will monitor and control the chlorine level by switching the peristaltic pump ON for calculated periods of time based on demand, water volume and the Liquid chlorine feed rate.

Testing for chlorine levels is very important and should be performed on a daily basis.
The Chromatalyzer achieves this better than any other method or device.
For the typical domestic swimming pool, three tests for both chlorine and pH are performed daily. If the target values are not hit, action is initiated via feed mechanisms to correct the level.

The requirement to super chlorinate or shock dose the pool manually during periods of high chlorine demand is highly recommended and in some or most cases absolutely necessary. Shock dosing the water manually with chlorine breaks irritating chloramines down and provides for safer water with reduced chlorine demand.

When a test reveals low chlorine or zero chlorine, always treat manually with chlorine and investigate.
Check if the chlorine generator or liquid feed pump is operating correctly.
Check if the filtration cycle is operating long enough for chlorine to be introduced.

EXCESSIVE CHLORINE LEVEL

If an excessive chlorine level exists in a pool or spa and it is not intentional, treat with Sodium Thiosulphate.
Sodium Thiosulphate reacts with the chlorine to reduce the level.
Always follow the instructions on the container to apply the correct amount.

CYANURIC ACID – CHLORINE STABILIZER

The sun's ultraviolet light breaks down chlorine so it is essential to use a chlorine stabilizer.

Cyanuric acid or chlorine stabilizer, when dissolved in the pool water to achieve levels of between 40ppm to 80ppm will effectively reduce the breakdown of chlorine by ultraviolet light.
Higher stabilizer levels may in fact be detrimental and hinder the kill rate of chlorine.
Consult with your pool professional.

WATER BALANCE

pH

pH refers to a logarithmic scale 0 to 14 where 0 represents the acidic end of the scale and 14 represents the Alkaline end.
A pH of 7 is neutral.

Salt Chlorination increases the pH of pool water to approx 8.4 whereas Liquid Chlorine has a pH of close to 14 and therefore the effect is greater.
The requirement for acid will be greater where Liquid Chlorine Pools exist.

High pH will reduce the effectiveness of chlorine, potentially cause scale on both the pool and the equipment, and irritate bathers.
Low pH may cause the water to become corrosive, damaging the pool interior finish, equipment and also irritate bathers.
Each pool finish and type has a specific range in which the pH should remain.

Generally a pH of between 7.2 – 7.6 is suitable for most pool types, however those requiring a higher pH will also require a higher chlorine residual. (Consult with your pool shop)

Total Alkalinity (T.A.)

The total alkalinity is a measurement of all the alkalis in your pool water, (Carbonates, Bicarbonates and Hydroxides).
When adjusted within the accepted levels, T.A. acts as a pH buffer, resisting change to the pH.

The recommended T.A. level of your pool may vary from 80ppm – 120ppm depending on the pool finish.

Consult with a pool water professional.

Calcium Hardness

Probably the most ignored of the three yet just as important.

The hardness of your pool water is very important in controlling scale and the corrosive effects of water.
A low calcium level may cause pool water to become corrosive even if the pH is within its recommended range.
Corrosive water can damage pool interiors and equipment if left unchecked.
A high calcium level may cause pool water to deposit scale, again even if the pH is within its recommended range.
Scale build up can damage equipment and interiors and make heating appliances inefficient.
Salt chlorinator cells may require very frequent cleaning as a result of high Calcium Hardness.

Generally a level of 100ppm – 200ppm is recommended.
Consult with your pool builder or pool shop.

NOTE: We strongly recommend you seek advice from a pool professional regarding the balancing of water for your pool. A correctly balanced pool will protect it and the equipment from damage and ensure bathers are swimming in clean clear healthy pool water.

Langlier Index

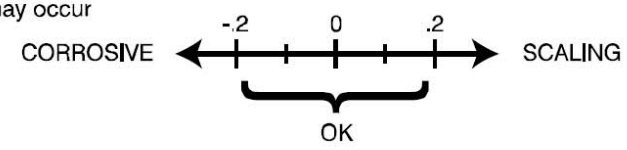
The Langlier Saturation index (Si) is a relationship between the Calcium Hardness, Total Alkalinity, pH and water temperature.
When the water is correctly balanced, the (Si) is +/- 0.2.
A Saturation index of less than -0.2, the water is corrosive.
A Saturation index of greater than +0.2, the water is scale producing and staining may occur.

Use the chart below to determine the saturation index.

Si = pH + Ti + Ci + Ai - 12.1

°C	°F	Ti	Calcium Hardness	Ci	Total Alkalinity	Ai
12	53	.3	75	1.5	75	1.9
16	60	.4	100	1.6	100	2.0
			125	1.7	125	2.1
19	66	.5	150	1.8	150	2.2
24	76	.6	200	1.9	200	2.3
			250	2.0	250	2.4
29	84	.7	300	2.1	300	2.5
34	94	.8	400	2.2	400	2.6
			600	2.4	600	2.8
39	103	.9	800	2.5	800	2.9

How to use: Measure pool pH, temperature, calcium hardness and total alkalinity. Use the chart above to determine Ti, Ci and Ai from your measurements. Insert values of pH, Ti, Ci and Ai into the above equation. If Si equals .2 or more, scaling and staining may occur. If Si equals -.2 or less corrosion or irritation may occur



When using Puresilk Chromatalyzer with Multi-Speed or Variable Speed Pumps

Domestic Pools

In general, the total volume of swimming pool water should be turned over at least 1.5 to 2.0 times per day through the filtration system.
Where traditional single speed swimming pool pumps are used, this is normally achieved within an 8hr period.

Where energy efficient Multi-Speed or Variable Speed pumps are used, the turnover condition of 1.5 to 2.0 times per day must be maintained.
This is VERY important.
If the turnover condition is not maintained, chemical and sanitiser distribution throughout the pool may not be uniform.

Poor circulation may provide water test samples that are not representative of the entire pool volume. The Chromatalyzer may test water of a different chemical composition than that tested at the surface of the pool at a location away from the filtration systems suction location.
When comparing Chromatalyzer readings with your own test kit, ensure the water sample is obtained as close as possible to where the pump draws water from the pool.
You must also initiate a Chromatalyzer test at the same time as performing a manual test and compare these results.

See example below

Traditional Fixed Speed Pool Pump

Pool Volume:	50,000lts
Traditional Pool Pump	210LPM
Turnover rate	4.0hrs
Time to turnover pool 1.5 times per day	6.0hrs
Time to turnover pool 2.0 times per day	8.0hrs
Chromatalyzer TP – Test Frequency Pool	10 (Test every 2hr, 40min)

Energy efficient Variable Speed pump operating at ½ the flow rate

Pool Volume:	50,000lts
Multi or Variable Speed Pool Pump	**105LPM**
Turnover rate	8.0hrs
Time to turnover pool 1.5 times per day	12.0hrs
Time to turnover pool 2.0 times per day	16.0hrs
Chromatalyzer TP – Test Frequency Pool	18 (Test every 5hr, 20min)

This example illustrates that when you halve the flow rate, you must double the filtration time and reduce the Chromatalyzer Test Frequency.

Please note: When performing manual testing of Chlorine and pH, always obtain the sample at the closest point to where the filtration pump draws its water.
This sample will be most representative of the sample obtained by the Chromatalyzer.

IMPORTANT – INTEGRATED POOL COVER CAVITIES

DO NOT RETURN WATER INTO POOL COVER CAVITIES
Where a salt chlorinator is operating and the pump speed is low, excessive chorine levels may exit the return lines at values greater than 10ppm.
Fixtures and materials located within the cavity may not be suitable for this high chlorine environment

QUICK START CHECK LIST – PART 1

Proceed to install and start up the system in accordance with the flow chart below.
Tick each box as it is completed

Where the installation is NOT a pool and spa combination ignore the Spa Volume and TS - Test Frequency Spa settings. These will not be active unless the optional spa switch has been installed.

INSTALL PURESILK CHROMATALYZER
LEAVE FILTER PUMP & CHROMATALYZER SWITCHED OFF
Page 39-50

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FIT ALL THREE REAGENT BAGS
Page 9-10

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CONNECT ACID RESERVOIR TO DELIVERY SYSTEM
Page 11-12

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CONNECT CHLORINE FEED DEVICE OR CHLORINE RESERVOIR TO DELIVERY SYSTEM
Page 13 -14

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SWITCH ON CHROMATALYZER ONLY
LEAVE POOL PUMP OFF
Page 15

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SET POOL VOLUME – IF APPLICABLE
FACTORY DEFAULT SETTING IS 50,000LTS
Page 16

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SET SPA VOLUME – IF APPLICABLE
FACTORY DEFAULT SETTING IS 1500LTS
Page 16

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SET TP – TEST FREQUENCY POOL

THE PRE-PROGRAMMED FACTORY DEFAULT SETTING (10), INITIATES A TEST SEQUENCE EVERY 2 HOURS AND 40 MINUTES AND IS PERFECT WHERE A SINGLE 8 HR PER DAY FILTRATION TIME EXISTS. THIS EQUATES TO THREE TESTS SEQUENCES PER DAY WHICH IS RECOMMENDED FOR DOMESTIC POOLS. **IF YOU OPERATE THE FILTER FOR 8HRS PER DAY, DO NOT ALTER FACTORY TP SETTING**.

IF FILTRATION TIME IS LESS THAN OR GREATER THAN 8HRS, REFER TO TP CHART ON PAGE 20 AND SET THE RECOMMENDED **TP** TO OPTIMISE TEST PERFORMANCE

Page 17-18

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SET TS – TEST FREQUENCY SPA
IF APPLICABLE

THE PRE-PROGRAMMED FACTORY DEFAULT SETTING (03), INITIATES A TEST SEQUENCE EVERY 30 MIN.
DO NOT ALTER THIS SETTING WHERE A COMBINED POOL AND SPA INSTALLATION EXISTS.
WHERE SPA ONLY EXISTS ALTER FREQUENCY TO SUIT DAILY FILTRATION TIME AS PER **TS** CHART
Page 17 & 19

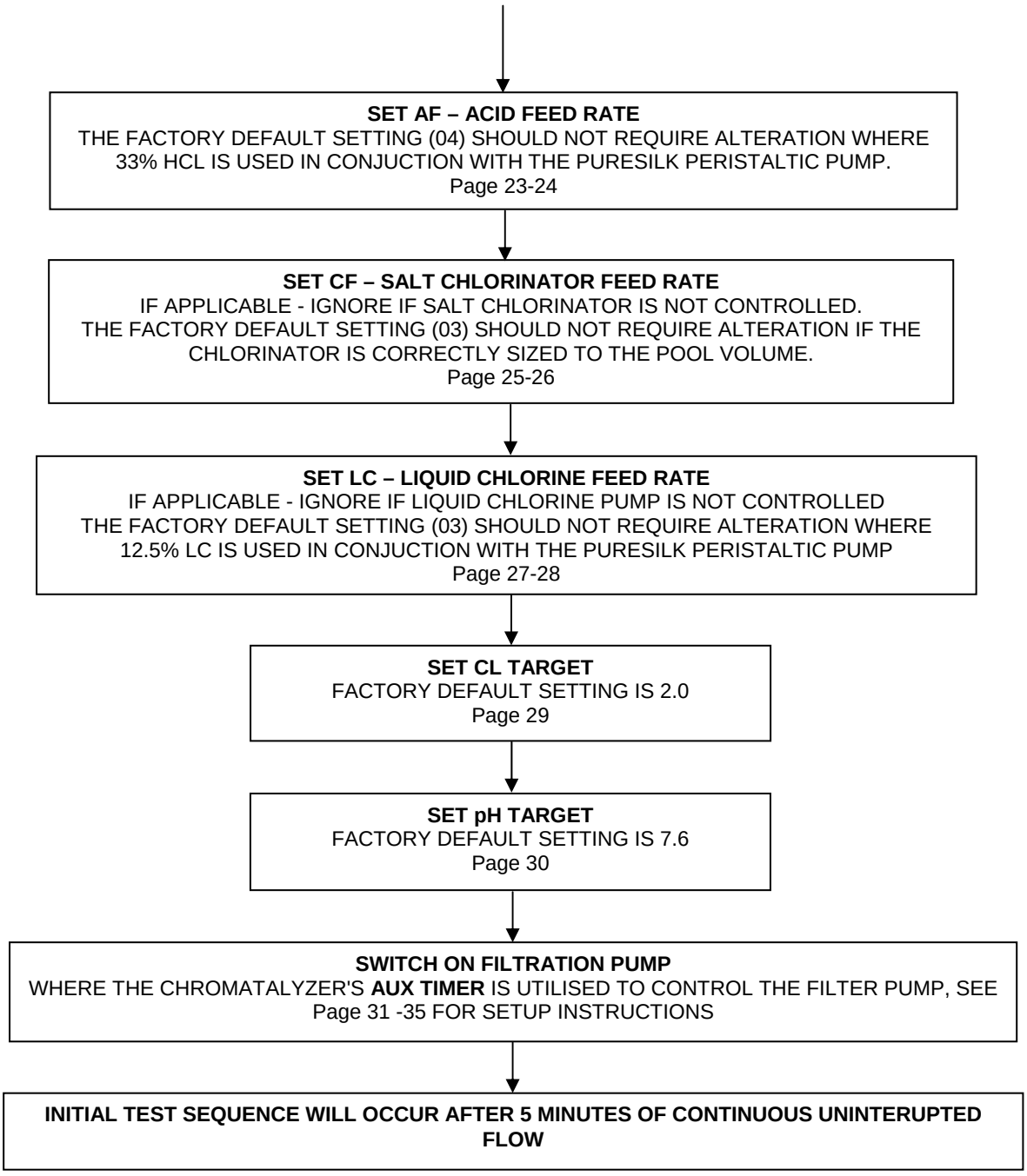
Please note: If a salt chlorinator is controlled, set the chlorinator output to maximum.

QUICK START CHECK LIST - PART 2

Proceed to install and start up the system in accordance with the flow chart below.
Tick each box as it is completed

Where the installation is NOT a Pool and Spa combination, simply ignore the Spa Volume and TS - Test Frequency Spa settings. These will not be active unless the optional Spa Switch has been installed.

CONTINUED FROM PART 1



IMPORTANT
Where a Gas Heater is installed and the condensate is returned into the pool, ensure the condensate enters after (downstream of) the Water Sample Flow Switch and the Salt Chlorinator Cell.

INSTALLING PURESILK REAGENT BAGS

Warranty void if non genuine reagents are used

Replace bags when empty or after 6 months, which ever comes first

Always keep spare replacement bags and store in a cool, dark place

The contents of each bag is sufficient for 750 tests (Domestic models)
It is good practice to regularly check the contents of the installed bags to help anticipate when a new set of reagent bags will be required.
If a reagent bag is empty, a flashing warning light and an intermittent alarm will sound to alert the home owner of the condition.

IMPORTANT:
If one or more of the test reagent bags are empty, the Chromatalyzer will produce a test fault and be unable to perform tests to obtain real time data.
If this occurs, the Chromatalyzer automatically defaults to an assumption that the deviation from target is 0.1 for every scheduled test.
This ensures that even if the reagent bag is not replaced in a timely manner, a small chlorine output is maintained to help prevent the pool from going green.

REMOVING EMPTY REAGENT BAGS - PROCEDURE

SWITCH CHROMATALYZER OFF

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SWITCH FILTRATION PUMP OFF

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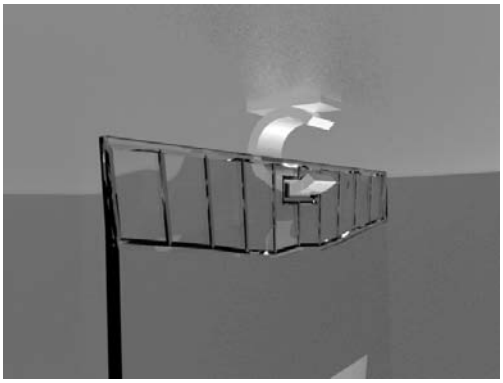
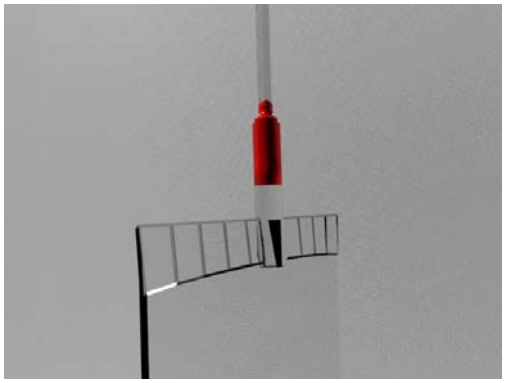
1 - UNHOOK EMPTY BAG

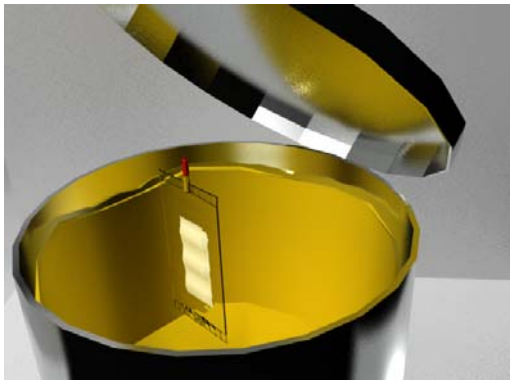


2 - HOLD TUBE CONNECTION UPPERMOST



3 - PULL TO REMOVE REAGENT FEED TUBE

4 - DISPOSE OF EMPTY BAG RESPONSIBLY



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FIT NEW REAGENT BAGS
SEE PAGE 10

FITTING NEW REAGENT BAGS - PROCEDURE

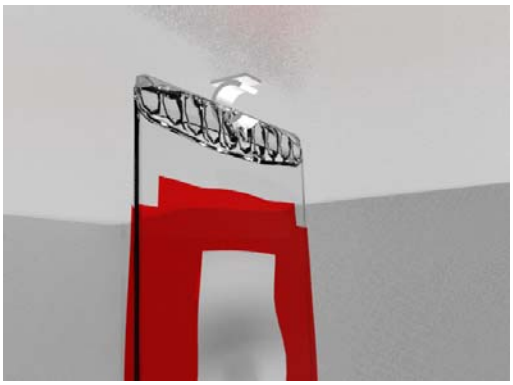
REAGENT TUBES AND BAGS ARE COLOUR CODED
ALWAYS REPLACE WITH AN IDENTICAL COLOUR

1 - HOLD NEW BAG SUCH THAT TUBE CONNECTOR IS UPPERMOST
DO NOT HOLD OR SQUEEZE BAG ITSELF

2 – TO OPEN, HOLD THE END OF CONNECTOR AND SNAP OFF TIP

3 - PUSH TUBING ONTO CONNECTOR

4 – HANG NEW BAG ON HOOK



SWITCH POWER ON TO CHROMATALYZER
REAGENT FEED TUBES WILL AUTOMATICALLY PRIME
UNIT IS READY FOR OPERATION

SWITCH FILTER PUMP ON

ACID RESERVOIR

SAFETY

Safety goggles, respirator and gloves suitable for use with hydrochloric acid must be used by persons handling the acid reservoir, feed and delivery system.

The Hydrochloric acid reservoir must be positioned in a secure location and in such a manner that access, especially to children is denied.

We recommend the use of industry standard, 15lt containers of 33% Hydrochloric Acid as the reservoir.
Certain installation conditions require Hydrochloric Acid to be diluted - refer to 'Acid Dilution Criteria' page on the inside front cover of this manual,
however the peristaltic pump and tubing is suitable for use with 33% HCL.
The use of larger acid storage reservoirs for domestic pools is not recommended.
The use of a 15lt container acts as a physical safety limit for acid delivery.

Hydrochloric acid and its fumes are corrosive and dangerous to persons.
You must prevent the escape of HCL fumes in a confined environment or they may damage equipment, cause corrosion or be a danger to health.

The Puresilk Chromatalyzer contains a modified 15lt container cap which must be utilized. This red coloured cap allows air into the container to replace the acid pumped out but isolates the contents from the atmosphere to prevent fuming.

Cables ties must also be used to lock the cap to the container handle.
This will prevent unauthorised opening of the acid by children.

Check with your supplier for the availability of an acid safety storage container.
These help to prevent access to the acid container by children and act as a secondary safety and containment vessel.

Ensure the acid feed and delivery tubing is correctly, neatly and safely installed.

DO NOT MIX CHLORINE OR ANY OTHER CHEMICAL WITH HYDROCHLORIC ACID

DO NOT USE HYDROCHLORIC ACID ON A PERISTALTIC PUMP AND FEED SYSTEM INTENDED AND LABELLED FOR LIQUID CHLORINE USE.

DO NOT USE LIQUID CHLORINE ON A PERISTALTIC PUMP AND FEED SYSTEM INTENDED FOR HYDROCHLORIC ACID USE.

ACID RESERVOIR – CONTINUED

DOES THE ACID RESERVOIR REQUIRE REPLACEMENT?
Inspect your acid reservoir regularly to ensure you have sufficient volume at hand.

The Chromatalyzer will provide an intermittent audible warning and illuminate the check acid or feed rate if the pH target is not achieved within a 72hr period.

If the pH target is not hit within a 72hr period, the most likely reason is that the Acid Reservoir is empty. Check and replace.

EXCHANGE ACID RESERVOIR PROCEDURE

Ensure Acid Dilution Criteria for Domestic Installations has been met as per inside front page of this manual

SWITCH OFF CHROMATALYZER

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SWITCH OFF FILTER PUMP

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FIT SAFETY GOGGLES, GLOVES AND RESPIRATOR MASK
ALL ITEMS MUST BE SUITABLE FOR USE WITH HCL

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ENSURE CHILDREN OR UNAUTHORISED PERSONS ARE A SAFE DISTANCE AWAY

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1 - CUT CABLE TIES THAT SECURE THE RED COLOURED "FUME STOP" CAP ONTO THE ACID CONTAINER

2 - UNSCREW THE "FUME STOP" CAP AND REMOVE ASSEMBLY FROM DRUM

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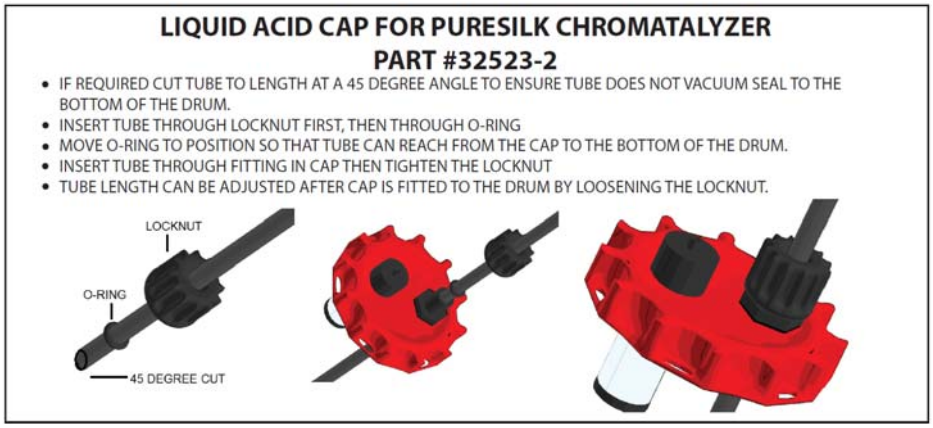
CAREFULLY INSTALL THE "FUME STOP" CAP ASSEMBLY INTO THE FULL CONTAINER AND SCREW TO CLOSE



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FIT CABLE TIE THROUGH BAND ON "FUME STOP" CAP AND SECURE ONTO CONTAINER HANDLE

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SWITCH ON FILTER PUMP

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SWITCH ON CHROMATALYZER

NOTE: The “Fume Stop” cap assembly will perish over time due to its exposure to hydrochloric acid. Replace every 12 months or as required.

LIQUID CHLORINE RESERVOIR

CPS3 & COMM1000 ONLY

SAFETY

Safety goggles, respirator and gloves suitable for use with sodium hypochlorite must be used by persons handling the liquid chlorine reservoir, feed and delivery system.

Corrosive

The liquid chlorine reservoir must be positioned in a secure location and in such a manner that access, especially to children is denied.
We recommend the use of industry standard, 15lt containers of 12.5% Sodium Hypochlorite as the reservoir. In some cases, the use of larger on-site storage containers may be more practical.
There is no need to dilute the Liquid Chlorine as the peristaltic pump and tubing is suitable for use with 12.5% Sodium Hypochlorite.

Sodium Hypochlorite is corrosive and dangerous to persons.
You must prevent leakage of this liquid or it may damage equipment, cause corrosion or be a danger to health.
The Puresilk Chromatalyzer contains a modified blue coloured 15lt container cap which must be utilised. This cap is know as the "LC CAP"
This "LC CAP" allows air into the container to replace the liquid pumped out and prevents air within from expanding and potentially rupturing the container.

Cables ties must also be used to lock the cap to the container handle.
This will prevent unauthorised opening of the liquid chlorine by children.

Check with your supplier for the availability of a safety storage container.
These help to prevent access to the chlorine container by children and act as a secondary safety and containment vessel.

Ensure the liquid chlorine feed and delivery tubing is correctly, neatly and safely installed.

DO NOT MIX CHLORINE OR ANY OTHER CHEMICAL WITH HYDROCHLORIC ACID

DO NOT USE HYDROCHLORIC ACID ON A PERISTALTIC PUMP AND FEED SYSTEM INTENDED AND LABELLED FOR LIQUID CHLORINE USE.

DO NOT USE LIQUID CHLORINE ON A PERISTALTIC PUMP AND FEED SYSTEM INTENDED FOR HYDROCHLORIC ACID USE.

LIQUID CHLORINE RESERVOIR – CONTINUED

DOES THE LIQUID CHLORINE RESERVOIR REQUIRE REPLACEMENT?
Inspect your liquid chlorine reservoir regularly to ensure you have sufficient volume at hand.

The Chromatalyzer will provide an intermittent audible warning and illuminate the check CL or feed rate if the CL target is not achieved within a 72hr period.

If the CL target is not hit within a 72hr period, the most likely reason is that the Liquid Chlorine Reservoir is empty. Check and replace.

EXCHANGE LIQUID CHLORINE RESERVOIR PROCEDURE

SWITCH OFF CHROMATALYZER

↓

SWITCH OFF FILTER PUMP

↓

FIT SAFETY GOGGLES, GLOVES AND RESPIRATOR MASK
ALL ITEMS MUST BE SUITABLE FOR USE WITH SODIUM HYPOCHLORITE

↓

ENSURE CHILDREN OR UNAUTHORISED PERSONS ARE A SAFE DISTANCE AWAY

↓

1 - CUT CABLE TIES THAT SECURE THE BLUE COLOURED "LC CAP" ONTO THE CHLORINE CONTAINER

2 - UNSCREW THE "LC CAP" AND REMOVE ASSEMBLY FROM DRUM

↓

CAREFULLY INSTALL THE "LC CAP" ASSEMBLY INTO THE FULL CONTAINER AND SCREW TO CLOSE

↓

FIT CABLE TIE THROUGH BAND ON "LC CAP" AND SECURE ONTO CONTAINER HANDLE

↓

SWITCH ON FILTER PUMP

↓

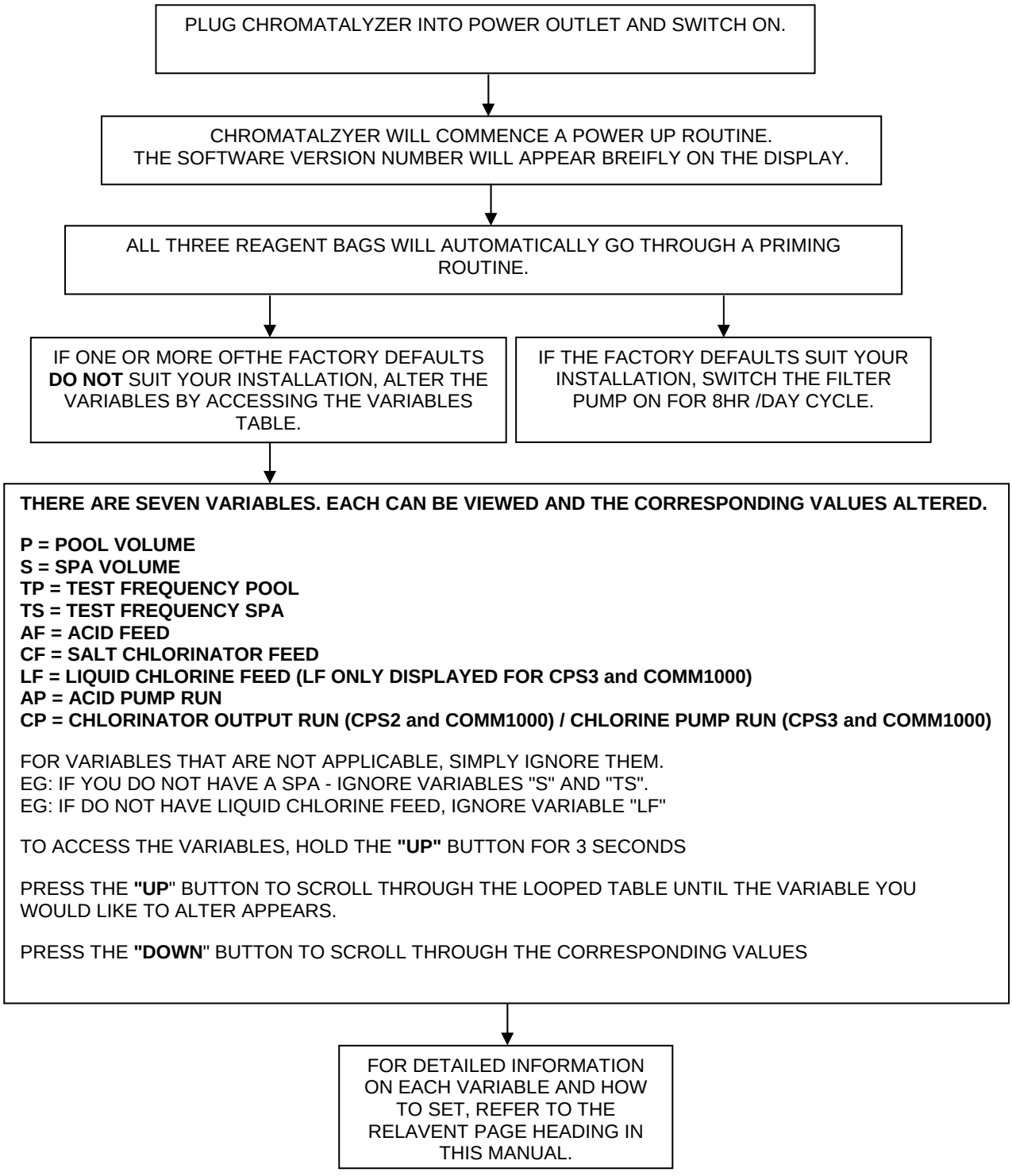
SWITCH ON CHROMATALYZER

NOTE: The “LC Cap” assembly will perish over time due to its exposure to liquid chlorine. Replace every 12 months or as required.

CHROMATALYZER - FIRST TIME START UP

Ensure installation is in accordance with this manual and has been performed by persons qualified to do so.

DO NOT SWITCH THE CHROMATALZYER ON UNLESS THE FIRST FOUR STEPS OF THE QUICK SET UP GUIDE HAVE BEEN CORRECTLY COMPLETED.



SET POOL AND OR SPA VOLUME

Before operation, it is necessary to program the Pool and/or Spa volume into the Chromatalyzer.
The unit performs both chlorine and acid dosage calculations based on the volume treated to hit set points.

The Chromatalyzer is pre-programmed with factory defaults of 50,000lts for Pools and 1,500lts for Spas. Although these are common values, you must alter them to best approximate your own Pool and or Spa volume.
The pre-set **Pool volumes** are listed below and correspond to volumes of zero, up to 999,000lts
0, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140, 160, 180, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 999.

The pre-set **Spa volumes** are listed below and correspond to volumes from zero up to 10,000lts
0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 6.0, 7.0, 8.0, 9.0, 10.

The numbers listed represent cubic metres of water.
Eg: The number 50 = 50 Cubic metres = 50,000lts

Please note: **With spa only installations where the volume is less than 10,000lts, Set the Pool Volume to zero - spa switch is not required.**

With pool only installations where the volume is less than 10,000lts, Set the Pool Volume to zero and operate pool as a spa - spa switch is not required.

Optional spa switch is required where pool and spa combinations exist.

PROCEDURE TO SET POOL VOLUME

HOLD THE "**UP" BUTTON** FOR 3 SECONDS.
"P" WILL BE DISPLAYED IN THE CL WINDOW.

THE CORRESPONDING VOLUME IN CUBIC METRES
WILL BE DISPLAYED IN THE pH WINDOW

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE PRE-SET LIST OF POOL VOLUMES AND PICKTHE ONE WHICH BEST APPROXIMATES THE POOL. IF EXACT VOLUME IS NOT LISTED, SET TO CLOSEST VOLUME **LESS** THAN ACTUAL VOLUME OF POOL.

WAIT 3 SECONDS FOR VALUE TO SET.

PROCEDURE TO SET SPA VOLUME

HOLD THE "**UP" BUTTON** FOR 3 SECONDS.
"P" WILL BE DISPLAYED IN THE CL WINDOW.

THE CORRESPONDING VOLUME IN CUBIC METRES
WILL BE DISPLAYED IN THE pH WINDOW

↓

PUSH THE "**UP" BUTTON** ONCE.
"S" WILL BE DISPLAYED IN THE LHS CL WINDOW.

THE CORRESPONDING VOLUME IN CUBIC METRES
WILL BE DISPLAYED IN THE pH WINDOW.

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE PRE-SET LIST OF SPA VOLUMES AND PICK THE ONE WHICH BEST APPROXIMATES THE SPA. IF EXACT VOLUME IS NOT LISTED, SET TO CLOSEST VOLUME **LESS** THAN ACTUAL VOLUME OF SPA.

WAIT 3 SECONDS FOR VALUE TO SET.

TP AND TS VARIABLES

Note: Optional Spa Switch MUST BE installed on Spa Suction line where a Pool and Spa combination installation exists.

Note: The daily filtration time MUST NOT be split into multiple periods.

TP = TEST FREQUENCY POOL
This term and its corresponding value refers to the time period between pool tests.

Setting the TP - Test Frequency Pool value is applicable for the following installations
Pool and Spa combinations
Pool only - where the volume is greater than 10,000lts
Spa only - where the volume is greater than 10,000lts - Volumes greater than 10,000lts are operated as Pools.

For domestic swimming pools operating a filter pump for 8hrs per day, the pre-programmed factory default test frequency is No.10 which corresponds to a test every 2 hours and 40 minutes.
The test frequency for this example is shown below.
You will see that the period after the last test is equal to the other periods.
This is important as it provides adequate time for the Chromatalzyer to complete any dosage requirements.

FILTER PUMP ON....CL/pH TEST.....CL/pH TEST.....CL/pH TEST.....FILTER PUMP OFF
TIME.....0 MIN.....5 MIN.....2HRS & 45MIN.....5HRS & 25MIN.....8HRS

The TP - Test Frequency Pool recommendations on page 20 ensure that you optimise the efficiency of the analysis and chemical delivery systems.

TS = TEST FREQUENCY SPA
This term and its corresponding value refers to the time period between spa tests.

Setting the TS - Test Frequency Spa value is applicable for the following installations:
Pool and spa combinations
Spa only installations
Pool only installations with a volume of less than 10,000lts - volumes less than 10,000lts are operated as spas.

For spa only installations, filtration times of 2hrs per day are common.
Refer to the guide on page 21 to select the appropriate TS value for 2hrs per day.

POOL AND SPA COMBINATIONS
Where a pool and spa combination exists, the optional spa switch must be installed on the spa suction line. The spa switch enables the Chromatalyzer to recognise when the spa only is being filtered and therefore choose the appropriate volume of water to treat.
When **spa mode** is recognised, an LED is illuminated on the control panel.
During **spa mode**, TS -Test Frequency Spa is automatically selected.
The increased test frequency ensures the rapidly changing Spa environment is adequately tested and treated.
During **spa mode**, the chlorine level and pH are affected by environmental factors and higher bather load ratios many times more quickly than during **pool mode**.
The higher test frequency enables the Chromatalyzer to react to a change in chlorine and pH levels and prevent them from drifting from the set targets.

During normal filtration of the pool and spa system, the spa suction line remains closed.
Water is drawn from the pool with a small portion or all of the water returning to the spa.
The excess water flows from the spa, back into the pool via pipes or an overflow.
This ensures that the water in both the pool and spa is being turned over and will not stagnate.

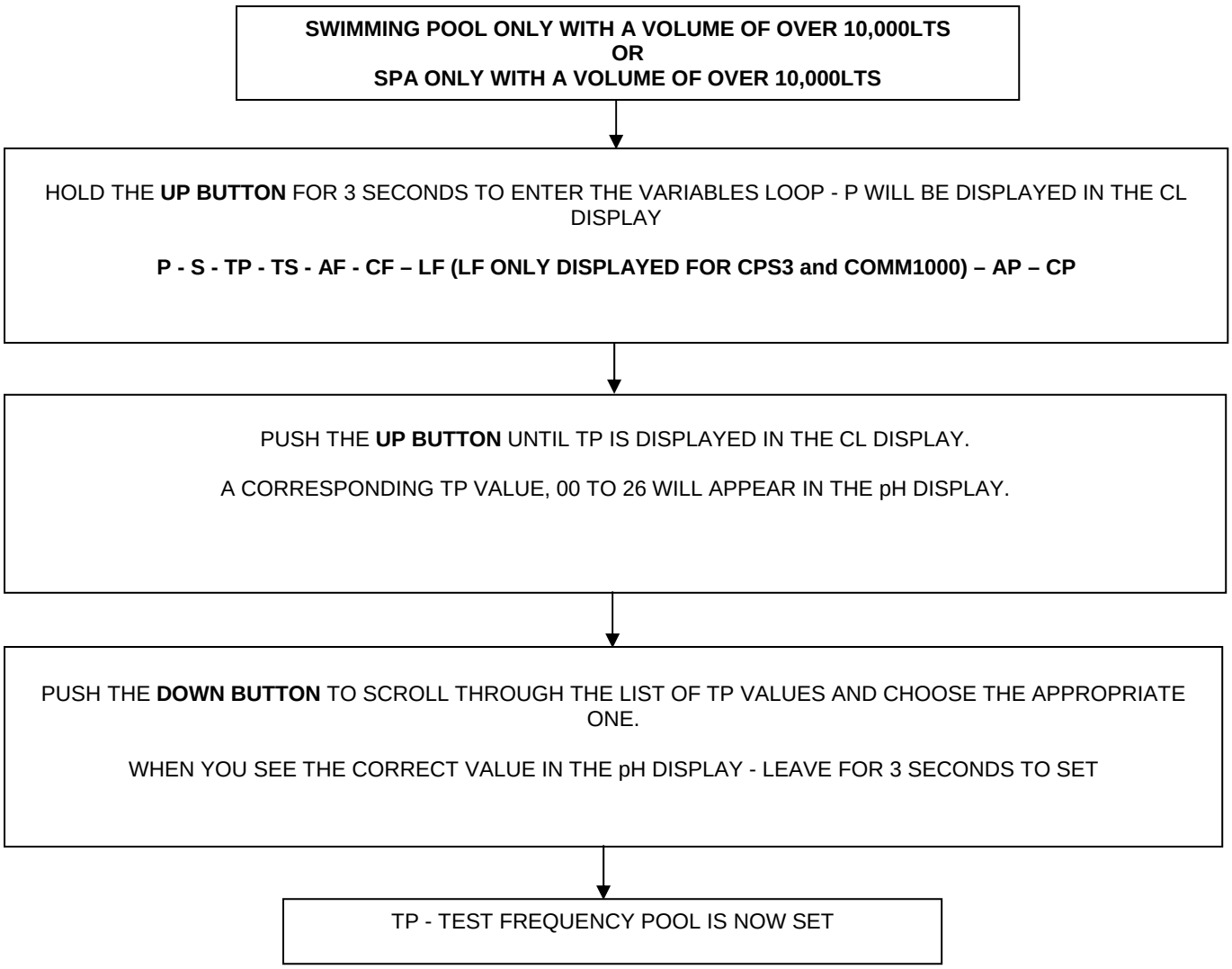
The spa suction line is opened when the spa ONLY is being filtered or heated for use.
The spa switch detects when the spa ONLY is being filtered and or heated.
When this occurs, the Chromatalyzer selects the TS variable which delivers a high test frequency in order to control the dynamic spa environment.
FOR POOL AND SPA COMBINATIONS - ALWAYS USE THE FACTORY DEFAULT FOR TS = 03

SET TP AND TS VARIABLES

Follow one of the three flow charts that best describes the installation format

FLOW CHART #1 - SWIMMING POOL ONLY WITH A VOLUME OVER 10,000LTS
OR
SPA ONLY WITH A VOLUME OVER 10,000LTS

Where increased or decreased testing frequencies are required, follow the procedure below to alter the frequencies to suit your application.
Before commencing this procedure, ensure you have determined the correct TP and or TS values from page 20 to synchronise with the daily filtration cycle time.



SET TP AND TS VARIABLES

FLOW CHART #2 - SWIMMING POOL ONLY WITH A VOLUME UNDER 10,000LTS
OR
SPA ONLY WITH A VOLUME UNDER 10,000LTS

Where increased or decreased testing frequencies are required, follow the procedure below to alter the frequencies to suit your application.
Before commencing this procedure, ensure you have determined the correct TP and or TS values from page 21 to synchronise with the daily filtration cycle time.

Please note: Swimming Pools with a volume of under 10,000lts will be considered and operated as Spas.

SWIMMING POOL ONLY WITH A VOLUME UNDER 10,000LTS
OR
SPA ONLY WITH A VOLUME UNDER 10,000LTS

↓

HOLD THE **UP BUTTON** FOR 3 SECONDS TO ENTER THE VARIABLES LOOP - P WILL BE DISPLAYED IN THE CL WINDOW.

P - S - TP - TS - AF - CF – LF (LF ONLY DISPLAYED FOR CPS3 and COMM1000) – AP – CP

↓

PUSH THE **UP BUTTON** UNTIL TP IS DISPLAYED IN THE CL WINDOW.

A CORRESPONDING TP VALUE, 00 TO 26 WILL APPEAR IN THE pH WINDOW.

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE LIST OF TP VALUES. **YOU MUST CHOOSE THE VALUE 00** WHEN YOU SEE 00 IN THE pH DISPLAY - PUSH THE **UP BUTTON** TO SET AND MOVE ONTO THE TS VALUE. CHOOSING 00 FOR THE TP VALUE ALLOWS THE SYSTEM TO OPERATE IN SPA MODE WITHOUT THE NEED FOR A SPA SWITCH.

↓

TS IS DISPLAYED IN THE CL DISPLAY.
PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE LIST OF TS VALUES 00 TO 26.
WHEN YOU SEE THE CORRECT VALUE AS DETERMINED BY THE TS CHART ON PAGE 21, WAIT 3 SEC TO SET.

↓

TS - TEST FREQUENCY SPA IS NOW SET.

SET TP AND TS VARIABLES

FLOW CHART #3 - SWIMMING POOL & SPA COMBINATION

Where increased or decreased testing frequencies are required, follow the procedure below to alter the frequencies to suit your application.
Before commencing this procedure, ensure you have determined the correct TP and or TS values from page 21 to synchronise with the daily filtration cycle time.

SWIMMING POOL & SPA COMBINATION

↓

HOLD THE **UP BUTTON** FOR 3 SECONDS TO ENTER THE VARIABLES LOOP - P WILL BE DISPLAYED IN THE CL DISPLAY

P - S - TP - TS - AF - CF – LF (LF ONLY DISPLAYED FOR CPS3 and COMM1000) – AP – CP

↓

PUSH THE **UP BUTTON** UNTIL TP IS DISPLAYED IN THE CL DISPLAY.

A CORRESPONDING TP VALUE, 00 TO 26 WILL APPEAR IN THE pH DISPLAY.

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE LIST OF TP VALUES 00 TO 26.
WHEN YOU SEE THE CORRECT VALUE AS DETERMINED BY THE TP CHART ON PAGE 20
PUSH THE **UP BUTTON** TO SET THE TP VALUE AND MOVE ONTO THE TS VALUE.

↓

TS IS DISPLAYED IN THE CL DISPLAY.
PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE LIST OF TS VALUES 00 TO 26.
WHEN YOU SEE THE CORRECT VALUE AS DETERMINED BY THE TS CHART ON PAGE 20, WAIT 3 SEC TO SET.

PLEASE NOTE: GENERALLY IT IS NOT REQUIRED TO ALTER THE FACTORY DEFAULT SETTING FOR TS WHERE A POOL AND SPA COMBINATION EXISTS.

↓

TS - TEST FREQUENCY SPA IS NOW SET.
TP - TEST FREQUENCY POOL IS NOW SET.

TEST FREQUENCY VERSES DAILY FILTRATION TIME TABLES

For the average domestic Swimming Pool, three test sequences for chlorine and pH should be performed per day.
For the average domestic Spa not connected to a swimming pool, three test sequences for chlorine and pH should be performed per day.

It is important to synchronise the daily filtration time with the Test Frequency to avoid wasted tests and optimise the efficiency of the analysis and chemical delivery systems.
A wasted test sequence occurs when the filter pump switches off before the Chromatalyzer has time to act on the results.

DO NOT SPLIT DAILY FILTER TIMES

DO NOT PROGRAM FILTER PUMP TO OPERATE MULTIPLE ON AND OFF TIMES PER DAY

OPERATE FILTER PUMP FOR A CONTINUOUS SINGLE PERIOD PER DAY

Where it is deemed three tests per day is insufficient such as in a commercial pool, the table on the following page may be utilised.

RECOMMENDED tP SETTINGS FOR 3 TESTS PER DAY

Filtration Cycle Time (hours)	Test Frequency	tP or tS setting
NO TESTS	OFF	00
¾ hour	15mins	01
1	20mins	02
1 ½	**30**mins	**03 (Default tS setting)**
2	40mins	04
3	1hr	05
4	1hr 20mins	06
5	1hr 40mins	07
6	2hrs	08
7	2hrs 20mins	09
8	**2hrs 40mins**	**10 (Default tP setting)**
9	3hrs	11
10	3hrs 20mins	12
11	3hrs 40mins	13
12	4hrs	14
13	4hrs 20mins	15
14	4hrs 40mins	16
15	5hrs	17
16	5hrs 20mins	18
17	5hrs 40mins	19
18	6hrs	20
19	6hrs 20mins	21
20	6hrs 40mins	22
21	7hrs	23
22	7hrs 20mins	24
23	7hrs 40mins	25
24	8hrs	26

POOL EG: If filter pump turns on at 9.00 and off at 17.00 (8hours) with the chromatalyzer tP set to 10 (Default setting) there will be 3 tests done within this time – 1st Test at 9.05 / 2nd Test at 11.45 / 3rd Test at 14.25

SPA EG: If filter pump turns on at 9.00 and off at 10.30 (1.5hours) with the chromatalyzer tS set to 03 (Default setting) there will be 3 tests done within this time – 1st Test at 9.05 / 2nd Test at 9.35 / 3rd Test at 10.05

NEED MORE THAN 3 TESTS SEQUENCES PER DAY?

USE THIS TABLE TO LOOK UP CORRESPONDING TP AND TS VALUES

Filter Pump Operating Hrs/day	3 Tests/Day	4 Tests/Day	5 Tests/Day	6 Tests/Day	8 Tests/Day
	TP or TS	TP or TS	TP or TS	TP or TS	TP or TS
ZERO TESTS	00	00	00	00	00
0.75hr	01				
1.0hr	02	02			
1.5hr	03				
2hr	04	04			
3hr	05				
4hr	06	06			
5hr	07	07	06		
6hr	08	08	07	06	
7hr	09	09	08	07	
8hr	10	09	08	07	06
9hr	11	10	09	08	07
10hr	12	11	09	08	07
11hr	13	12	10	09	
12hr	14	12	11	09	08
13hr	15	13	11	10	08
14hr	16	14	12	10	
15hr	17	14	12	11	
16hr	18	15	13	11	09
17hr	19	16	14	12	
18hr	20	17	14	12	10
19hr	21	18	15	13	
20hr	22	18	15	13	
21hr	23	19	16	14	11
22hr	24	20	17	14	
23hr	25	21	17	15	12
24hr	26	21	18	15	12

If more than 8 test sequences per daily filtration period is desired, divide the daily filtration time (minutes), by the desired number of tests per day

Compare the result with the actual test frequency time listed on page 21.

Choose the time and resultant TP or TS variable number that best approximates your calculated result.

SET ACID FEED - AF

The pre-programmed factory default AF value of "04" does not require alteration where a single Puresilk peristaltic pump is utilized with 33% Hydrochloric Acid.

The choice of feed rates is made available for adaptation where multiple acid feed pumps are being utilised or the 33% HCL is diluted prior to feed.
Co2 injection via a solenoid valve may also be controlled.

Acid is introduced into the pool and/or spa by the Chromatalyzer via various feed methods.
Standard systems utilize an inbuilt peristaltic pump to feed hydrochloric acid, although external pumps and CO2 injector systems may be used.

The built in peristaltic pump feeds approx 55ml per minute into a return line with a pressure of up to 250kpa.
Acid is only fed if the pool flow switch indicates water flow ensuring the concentrate is diluted before it enters the pool or spa.
Acid feed may occur simultaneously with salt chlorinator operation.

Acid feed WILL NOT occur simultaneously with liquid chlorine feed for safety reasons.

A 30 second delay exists between the completion of a liquid chlorine feed and an acid feed.

An acid feed will stop if a spa switch is activated during a feed based on the pool volume. This ensures excessive acid is not fed into the smaller spa volume.

There are seven ACID FEED variables to choose from, but as explained, the factory default will rarely require alteration.
Each of these variables corresponds to a formula which calculates the acid volume required to correct the pH based on the pool or spa volume.
Each pool and or spa system has different environmental impacts and rates of change with respect to pH.
For this reason, if the factory set default of AF04 is feeding too much acid and overshooting the target, a lower feed rate may be chosen.
The calculations incorporate an algorithm which uses test data to alter the dosage calculations to best suit the acid demand in the pool or spa.

There are six AF - ACID FEED variables to choose from.
AF 00, AF 01, AF 02, AF 03, AF 04, AF 05

Each of these numbers corresponds to an ACID FEED calculation.

AF 00 - FEED OFF

AF 01 - 4 x Standard Delivery (¼ strength acid, 8.25% HCL)

AF 02 - 3 x Standard Delivery (1/3 strength acid, 11% HCL)

AF 03 - 2 x Standard Delivery (½ strength acid, 16.5% HCL)

AF 04 - Standard Default Delivery (33% HCL)

AF 05 - Half Standard Delivery

The factory set default of **AF 04** is based on the requirements for the average domestic swimming pool and spa.

Where increased or decreased pH correction dosages are required, follow the procedure on page 24 to change an ACID FEED variable to suit your application.

SET AF - ACID FEED

PROCEDURE TO VIEW OR ALTER AF - ACID FEED VALUE

The pre-programmed factory default AF value of "04" does not require alteration where a single Puresilk peristaltic pump is utilized with 33% hydrochloric acid.

HOLD THE **UP BUTTON** FOR 3 SECONDS TO ENTER THE VARIABLES LOOP - P WILL BE DISPLAYED IN THE CL DISPLAY

P - S - TP - TS - AF - CF – LF (LF ONLY DISPLAYED FOR CPS3 and COMM1000) – AP – CP.

↓

PUSH THE **UP BUTTON** UNTIL AF IS DISPLAYED IN THE CL DISPLAY.
A CORRESPONDING AF VALUE WILL APPEAR IN THE pH DISPLAY
AF00 – AF01 – AF02 – AF03 – AF04 – AF05.

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE SIX AF VALUES.
PUSH THE **UP BUTTON** TO SET THE AF VALUE AND MOVE ONTO THE CF VALUE.

ADDING pH BUFFER

Additions of pH buffer may cause increases in the pH exceeding 0.3, if not properly mixed. To prevent large amounts of acid being delivered when pH buffer is added, the Puresilk Chromatalyzer will suspend delivery of acid for 24 hours if it registers a pH increase of 0.3 or greater. It will continue to test as normal during this period, and then resume acid delivery as required after 24 hours.

SET CF - CHLORINE FEED - SALT CHLORINATOR CONTROL

CPS2 AND COMM1000 MODELS ONLY

Chlorine is introduced into the pool and/or spa by the Chromatalyzer via various feed methods.
The CPS2 and COMM1000 switch a salt chlorinator on and off for various periods of time to meet the demand requirements of the pool and/or spa.
The COMM1000 also utilizes an inbuilt peristaltic pump to feed sodium hypochlorite, although external pumps may be used.

The CF - Chlorine Feed Value relates to calculations that control the ON and OFF time of a salt chlorinator.

The salt chlorinator may simultaneously deliver chlorine whilst the peristaltic pump is delivering acid.

The salt chlorinator may simultaneously deliver chlorine whilst the peristaltic pump is delivering liquid chlorine (COMM1000 only).

There are nine CF - CHLORINE FEED values to choose from.

Each of these variables corresponds to a formula which calculates the chlorine volume required to hit the chlorine target based on the pool or spa volume.
Each pool and/or spa system has different environmental impacts and rates of change with respect to chlorine demand. For this reason, if the factory set default "01" is feeding insufficient chlorine to hit the chlorine target or is overshooting and feeding too much chlorine, a greater or lower feed rate may be chosen.

There are nine CF - CHLORINE FEED values to choose from.
CF 00, CF 01, CF 02, CF 03, CF 04, CF 05, CF 06

Each of these numbers corresponds to a CHLORINE FEED calculation.

PureSilk Models	Third Party Chlorinators
CF00 – Chlorinator Feed OFF	OFF
CF01 – PS15, PS20LS, PS25 (Default Setting)	Less than 25 grams per hour
CF02 – PS30LS, PS35, PS40LS	Less than 40 grams per hour
CF03 – PS45, PS50LS	Less than 50 grams per hour
The following settings are generally for large or commercial systems only	
CF04 – 2 x PS50LS	Less than 100 grams per hour
CF05 – 3 x PS50LS	Less than 150 grams per hour
CF06 – 4 x PS50LS	Less than 200 grams per hour
CF07 – 5 or 6 x PS50LS	Less than 300 grams per hour
CF08 – 7 or 8 x PS50LS	Less than 400 grams per hour

Factory set default for salt chlorinator control = **CF 01**
This is based on the requirements for the average domestic swimming pool and spa.

Where increased or decreased pH correction dosages are required, follow the procedure on page 26 to change CHLORINE FEED variable to suit your application.

SET CF - CHLORINE FEED

SALT CHLORINATOR CONTROL ONLY
MODELS CPS2 AND COMM1000 ONLY

PROCEDURE TO VIEW OR ALTER CF - CHLORINE FEED VALUE

HOLD THE **UP BUTTON** FOR 3 SECONDS TO ENTER THE VARIABLES LOOP - P WILL BE DISPLAYED IN THE CL DISPLAY
P - S - TP - TS - AF - CF – LF (LF ONLY DISPLAYED FOR CPS3 and COMM1000) – AP – CP.

↓

PUSH THE **UP BUTTON** UNTIL CF IS DISPLAYED IN THE CL DISPLAY.

A CORRESPONDING CF VALUE WILL APPEAR IN THE pH DISPLAY.

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE SEVEN CF VALUES.

WITH CPS2 MODELS:
WHEN YOU SEE THE VALUE YOU REQUIRE, WAIT 5 SECONDS AND IT WILL SET. ALL “VARIABLES” SETTINGS ARE NOW ENTERED AND DISPLAY WILL RETURN TO NORMAL OPERATION.

WITH CPS3 AND COMM1000 MODELS:
PUSH THE **UP BUTTON** TO SET THE CF VALUE AND MOVE ONTO THE LF VALUE.

SET LF - LIQUID CHLORINE FEED

CPS3 AND COMM1000 MODELS ONLY

The choice of feed rates is made available for adaptation where multiple chlorine feed pumps are being utilized or the 12.5% liquid chlorine is diluted prior to feed.
Chlorine erosion feeders may also be controlled with the LF value via solenoid valves.

Liquid chlorine is introduced into the pool and/or spa by the Chromatalyzer via various feed methods. Standard systems utilize an inbuilt peristaltic pump to feed liquid chlorine, although external pumps may be utilized.

The built in peristaltic pump feeds approx 55ml per minute into a return line with a pressure of up to 250kpa. Liquid chlorine is only fed if the pool flow switch indicates water flow ensuring the concentrate is diluted before it enters the pool or spa.

Liquid chlorine feed may occur simultaneously with salt chlorinator operation (COMM1000 ONLY).

Liquid chlorine feed WILL NOT occur simultaneously with acid feed for safety reasons.

A 30 second delay exists between the completion of a liquid chlorine feed and an acid feed.

A liquid chlorine feed will stop if a spa switch is activated during a feed based on the pool volume. This ensures excessive liquid chlorine is not fed into the smaller spa volume.

There are seven Liquid Chlorine FEED variables to choose from, but the factory default will rarely require alteration.
Each of these variables corresponds to a formula which calculates the liquid chlorine volume required to meet the demand based on the pool or spa volume.
Each pool and/or spa system has different environmental impacts and rates of change with respect to chlorine. For this reason, if the factory set default of LF03 is feeding an excess and overshooting the target, a lower feed rate may be chosen.
The calculations incorporate an algorithm which uses test data to alter the dosage calculations to best suit the chlorine demand in the pool or spa.

There are seven LF - LIQUID CHLORINE FEED variables to choose from.
LF 00, LF 01, LF 02, LF 03, LF 04, LF 05, LF 06

Each of these numbers corresponds to a LIQUID CHLORINE FEED calculation.

00 – Liquid Feed OFF

01 – 3 x Standard Delivery

02 – 1.5 x Standard Delivery

03 – Standard Default Delivery (For use with 12-13% Hypochlorite Solution)

04 – ¾ Standard Delivery

05 – ½ Standard Delivery

06 - ¼ Standard Delivery

The factory set default of **LF 03** is based on the requirements for the average domestic swimming pool and spa.

Where the factory default of LF 03 is not suitable, follow the procedure on page 28 to change the LF - LIQUID CHLORINE FEED variable to suit your application.

SET LF - LIQUID CHLORINE FEED

MODELS CPS3 AND COMM1000 ONLY

PROCEDURE TO VIEW OR ALTER LF - LIQUID CHLORINE FEED VALUE

HOLD THE **UP BUTTON** FOR 3 SECONDS TO ENTER THE VARIABLES LOOP - P WILL BE DISPLAYED IN THE CL DISPLAY
P - S - TP - TS - AF - CF – LF (LF ONLY DISPLAYED FOR CPS3 and COMM1000) – AP – CP.

↓

PUSH THE **UP BUTTON** UNTIL LF IS DISPLAYED IN THE CL DISPLAY.
A CORRESPONDING CF VALUE WILL APPEAR IN THE pH DISPLAY.

↓

PUSH THE **DOWN BUTTON** TO SCROLL THROUGH THE SEVEN LF VALUES.
WHEN YOU SEE THE VALUE YOU REQUIRE, WAIT 5 SECONDS AND IT WILL SET.
ALL " VARIABLES" SETTINGS ARE NOW ENTERED AND DISPLAY WILL RETURN TO NORMAL OPERATION.

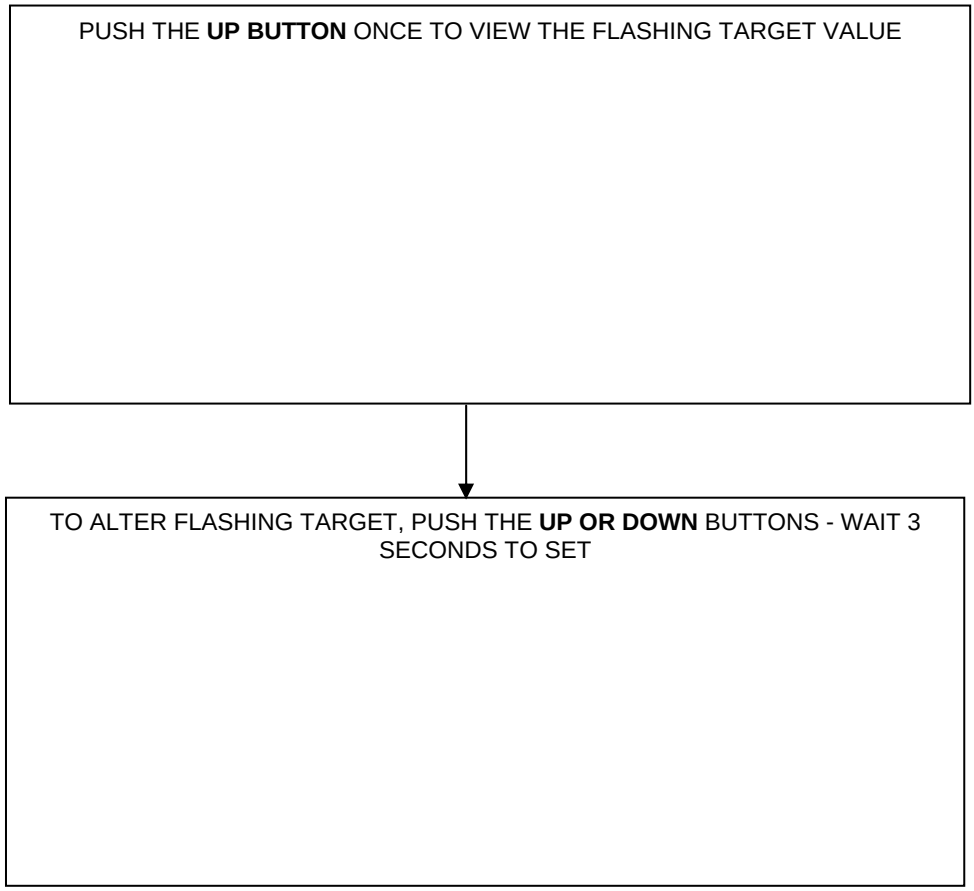
SET CHLORINE TARGET

The pre-programmed factory default setting for the Chlorine Target is 2.0 ppm.

Two parts per million is a free chlorine value that is widely accepted as a target for most domestic swimming pools.
Conditions in some swimming pools or spas may exist where the target must be set higher or lower.

Consult with your pool professional as to which target best suits your needs.

PROCEDURE TO VIEW OR ALTER CHLORINE TARGET



Please note: Pool and spa equipment manufacturers may void warranties if free chlorine levels are maintained above 4.0ppm.
Consult with your pool professional.

SET pH TARGET

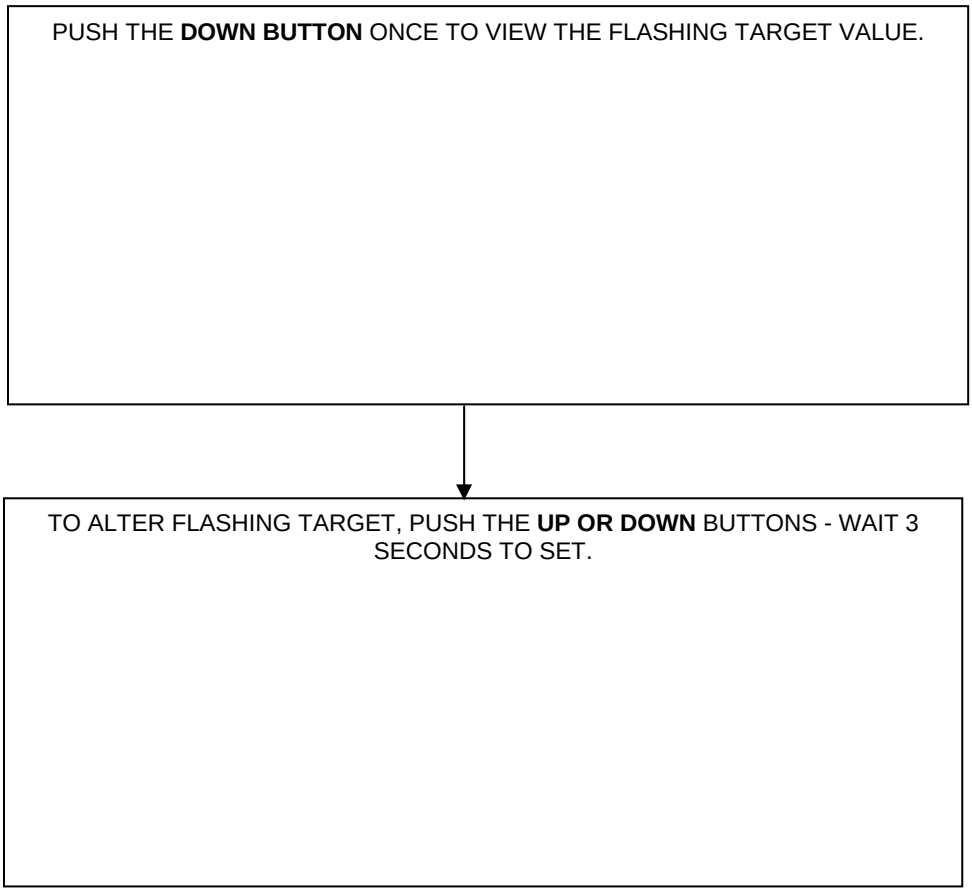
The pre-programmed factory default setting for the pH Target is 7.6

A pH value of 7.6 is widely accepted as a target for most domestic swimming pools.
Conditions in some swimming pools or spas may exist where the target must be set higher or lower.
Swimming pool interiors differ in the requirement for pH, some plaster type interiors may prefer a pH of 7.8 where some fibreglass pool manufacturers prefer the pH to remain at 7.2.

An important factor is the requirement to balance water as per the Langlier Index.
In some areas where the tap water contains high calcium hardness levels, a lower pH than what is considered normal may have to be applied to prevent scale deposits.

Consult with your pool professional as to which target best suits your pool and/or spa as many factors must be taken into account.

PROCEDURE TO VIEW OR ALTER pH TARGET



Please note: Pool and spa builders or manufacturers may void warranties if pH levels are not maintained in accordance with their instructions.
Consult with your pool professional.

AUX TIME CLOCK

CPS2, CPS3 AND COMM1000 MODELS

The Aux Time Clock operates on a 24hr clock system where 00:00 is 12:00 midnight.

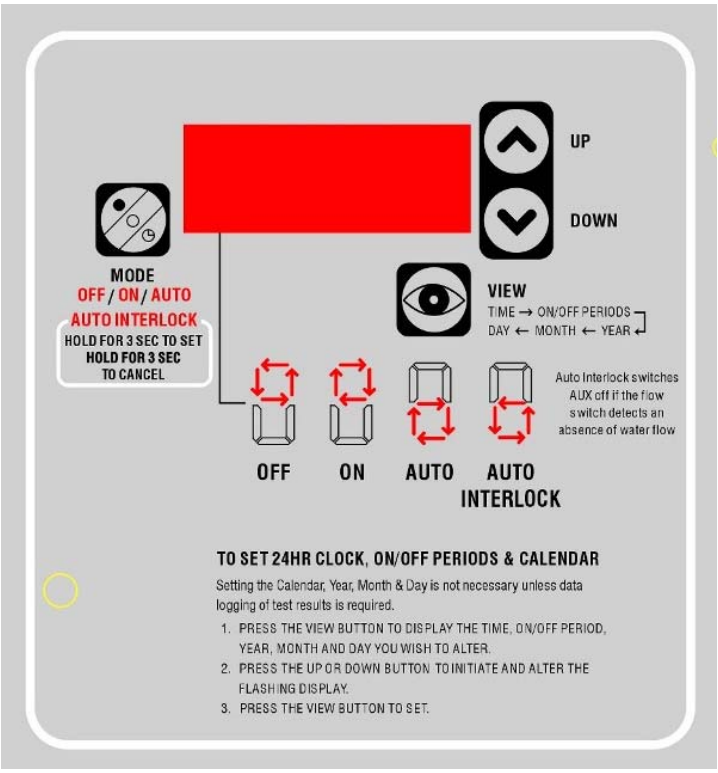
The Aux Time Clock controls a switched 240V socket at the base of the Chromatalzyer.
Any 240V, 9.5A or less, appliance is suitable to be operated from this outlet.

The Aux Time Clock may be used to operate a filter pump

The Aux Time Clock may be used to operate an in-floor cleaning pump
In-floor cleaning pumps may operate within the time period of the filtration cycle or independent of the filtration cycle.
Using the Aux Time Clock to control the in-floor cleaning pump provides the option to operate it at any time, or if the INTERLOCK feature is set, specifically within the filtration cycle.

The Aux Time Clock may be used to operate a pressure cleaner pump.
Many pressure cleaning pumps draw water from the return line of the filtration system and operate for a limited time within the filtration cycle.
The pressure cleaning pump relies on the filter pump to supply it with water.
If the filter pump switches off or is switched off for backwashing, the pressure cleaner pump will run dry and damage will occur.
The Puresilk Aux Time Clock has the ability to INTERLOCK the 240V output so that is will not deliver power to the aux device unless the flow switch recognises flow.
This feature uniquely protects the pressure cleaner pump from damage.

The Aux Time Clock may be used to provide TIME, DAY, MONTH AND YEAR details where optional data acquisition equipment is installed.
When is it necessary to log testing and operational data, the Aux Time Clock may be programmed so that Time, Day, Month and Year details appear alongside test data.
This data may be collected on a computer via a data cable or via a wireless modem.

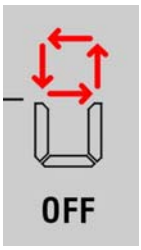


AUX TIME CLOCK

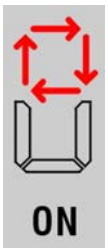
CPS2, CPS3 AND COMM1000 MODELS

Press to select **ON, OFF, AUTO or AUTO INTERLOCK**

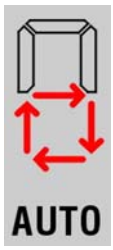
When **AUTO** mode is selected, the **ON/OFF** times you have set will switch the **240V AUX ON and OFF** on a daily basis.



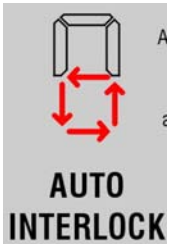
Indicted by way of the anti-clockwise rotation of the top portion of the first digit.
240V Aux will not supply power.



Indicted by way of the clockwise rotation of the top portion of the first digit.
240V Aux will continuously supply power .



Indicted by way of the clockwise rotation of the lower portion of the first digit.
When **AUTO** mode is selected, the **ON/OFF** times you have set will switch the **240V AUX ON and OFF** on a daily basis.



Indicted by way of the anti-clockwise rotation of the lower portion of the first digit.
When **AUTO INTERLOCK** mode is selected, the 240V Aux power is switched ON and OFF just as if it was in **AUTO** mode.
The difference is that if the Flow Switch detects a loss of water flow, the 240V Aux power will be switched OFF.

Press repeatedly to display, current **TIME, ON/OFF periods, DAY, MONTH and YEAR.**
Whilst a parameter is on the display, use the **UP and DOWN buttons** to alter.

AUX TIME CLOCK - SETTING GUIDE

CPS2, CPS3 AND COMM1000 MODELS

SET 24HR TIME CLOCK

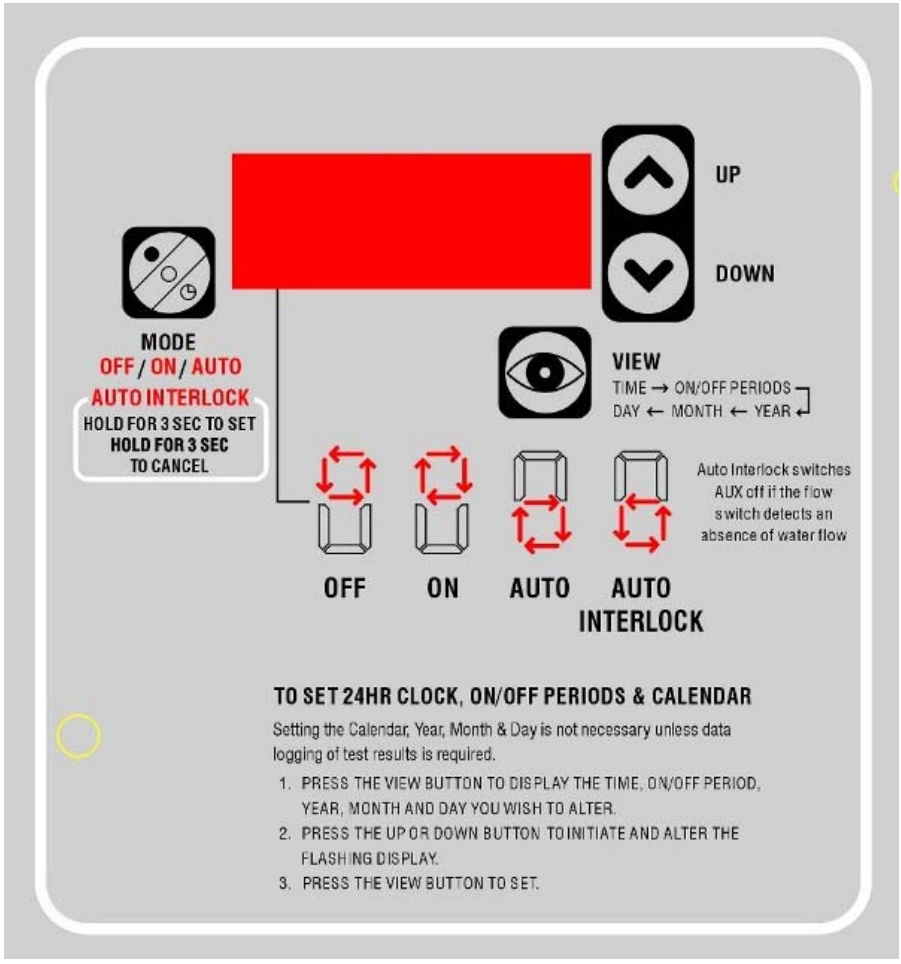
PRESS **VIEW BUTTON** ONCE TO DISPLAY CURRENT TIME.

↓

IF YOU WISH TO ALTER IT, PRESS THE **UP** OR **DOWN BUTTON** ONCE TO ENTER THE SET MODE - DISPLAY WILL BEGIN FLASHING.

↓

PRESS THE **UP** OR **DOWN BUTTON** TO ALTER THE TIME.
WAIT 30 SEC FOR IT TO SET OR PUSH THE **VIEW BUTTON** AGAIN.



AUX TIME CLOCK - SETTING GUIDE

CPS2, CPS3 AND COMM1000 MODELS

SET AUTO TIMER TO SWITCH AUX ON AND OFF ONCE PER DAY

PUSH THE **VIEW BUTTON** UNTIL **ON 1** APPEARS.
WAIT FOR THE CORRESPONDING TIME TO APPEAR.

↓

PRESS THE **UP OR DOWN BUTTON** ONCE TO ENTER THE SET MODE - DISPLAY WILL BEGIN FLASHING.

↓

PUSH THE **UP OR DOWN BUTTON** UNTIL THE DESIRED START TIME IS ON DISPLAY.
WAIT 30 SEC FOR IT TO SET OR PUSH THE **VIEW BUTTON** AGAIN.

↓

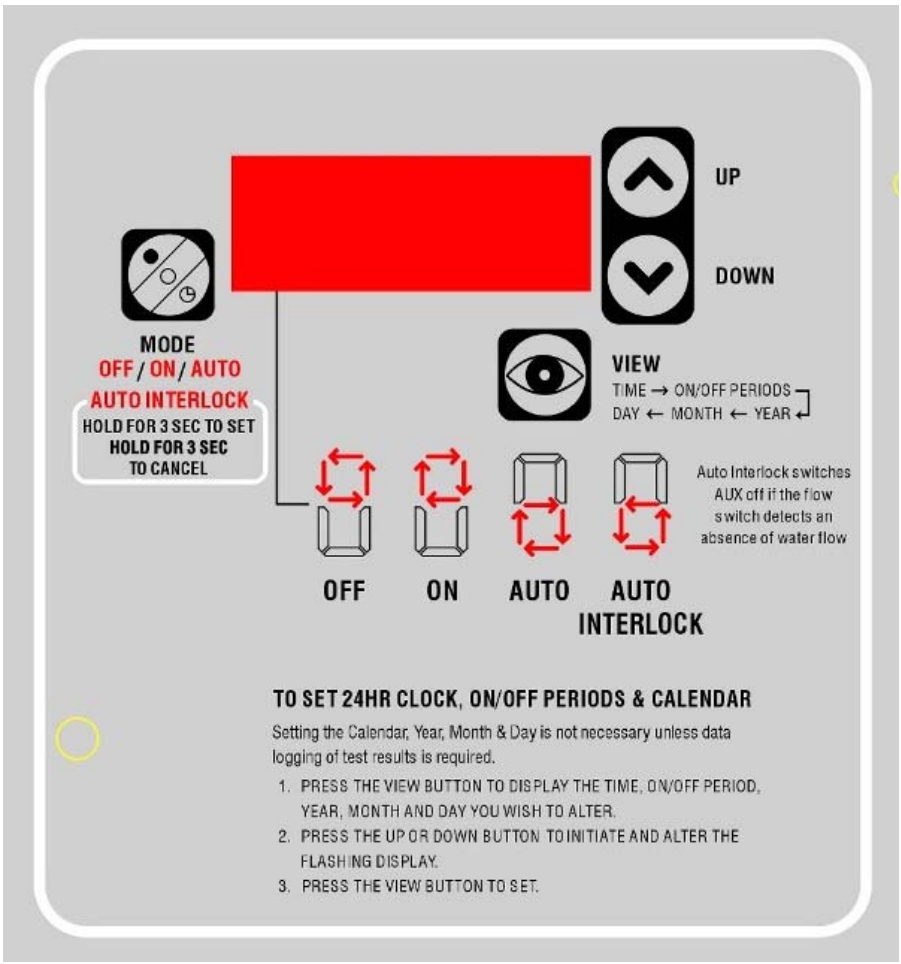
PUSH THE **VIEW BUTTON** UNTIL **OFF 1** APPEARS.
WAIT FOR THE CORRESPONDING TIME TO APPEAR.

↓

PRESS THE **UP OR DOWN BUTTONS** ONCE TO ENTER THE SET MODE - DISPLAY WILL BEGIN FLASHING.

↓

PUSH THE **UP OR DOWN BUTTON** UNTIL THE DESIRED OFF TIME IS ON DISPLAY.
WAIT 30 SEC FOR IT TO SET OR PUSH THE **VIEW BUTTON** AGAIN.



AUX TIME CLOCK - SETTING GUIDE

CPS2, CPS3 AND COMM1000 MODELS

SET CALENDER - DAY, MONTH AND YEAR

PUSH THE VIEW BUTTON UNTIL **OFF 04** APPEARS AND THEN PUSH IT ONCE MORE.

2011 WILL APPEAR IN THE DISPLAY - USE THE **UP** OR **DOWN** BUTTONS TO ADJUST YEAR.

PUSH THE **VIEW BUTTON** AGAIN TO SET YEAR, THEN PUSH **VIEW BUTTON** AGAIN TO DISPLAY THE MONTH.

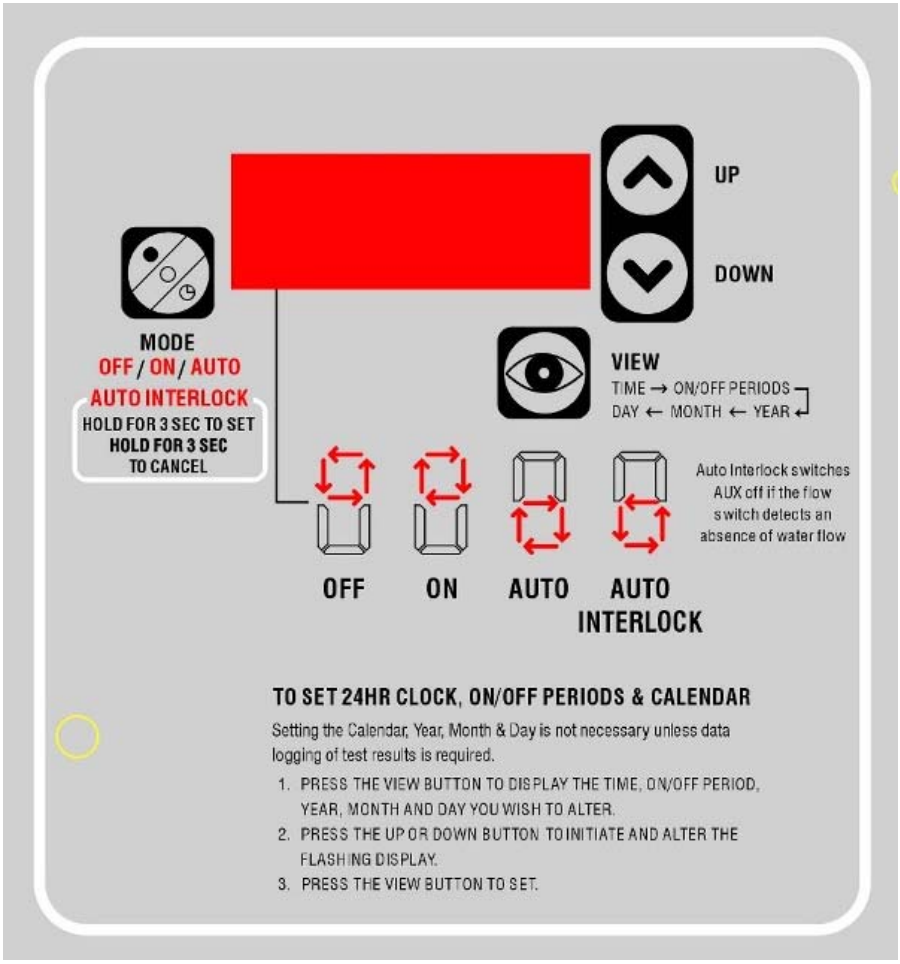
USE THE **UP** OR **DOWN** BUTTONS TO ADJUST THE MONTH.

PUSH THE **VIEW BUTTON** AGAIN TO SET MONTH, THEN PUSH **VIEW BUTTON** AGAIN TO DISPLAY THE DAY.

USE THE **UP** OR **DOWN** BUTTONS TO ADJUST THE DAY.

PUSH THE **VIEW BUTTON** AGAIN TO SET DAY.

WAIT FOR 5 SECONDS - DISPLAY WILL REVERT TO CLOCK DISPLAY.



PERISTALTIC PUMP MAINTENANCE

REPLACE PERISTALTIC PUMP SQUEEZE TUBE AND ROLLERS EVERY 12 MONTHS

DO NOT allow children or unqualified persons to operate or perform any maintenance on this device.

DO NOT allow children or unqualified persons access to the chemical dosage equipment, storage drums, feed tubes, chemical pumps or injection sites.

YOU MUST wear protective eye goggles, suitable acid and chlorine resistant gloves and respirator when fitting, filling, servicing or exchanging both solid and/or liquid chemical dosage systems and storage reservoirs.



DO NOT use acid and/or chlorine types that are NOT specified by Puresilk.

DO NOT add chlorine to acid or acid to chlorine.

DO NOT add water into hydrochloric acid.

DO NOT use NON-GENUINE replacement parts or fitting.

YOU MUST ensure acid and chlorine supply and feed tubes are correctly and neatly installed.
A neat and tidy installation will prevent dangerous accidents from occurring.

Peristaltic Pump Maintenance
The Puresilk peristaltic pump is fitted with a santoprene squeeze tube which is suitable for 33% hydrochloric acid and 12.5% sodium hypochlorite.

A split and leaking tube may be dangerous to persons and will damage equipment.

Pro-active maintenance will ensure trouble free operation and peace of mind.

It is recommended that an authorised service professional perform this maintenance however the homeowner may replace the tube if all safety precautions are undertaken.

Puresilk Chromatalyzer Waste Line Assembly - Part # 33520

Screw the black fitting at the end of the assembly onto the waste fitting at the base of the Chromatalyzer to secure.
Ensure the outlet of the waste line tubing is not in a position that may be prone to blockage.
If you use a container to collect the waste, ensure the container is open to atmosphere.
The 1.5m long waste can be shortened but must not be extended.
If you need to divert the waste to a further location, allow the waste to drip into a 15mm PVC piping arrangement such that gravity diverts the waste away.

AP AND CP FUNCTIONS

In the “user variables” menu there are 2 functions which allow you to run the acid and liquid chlorine peristaltic pumps for 60 seconds. This allows you to check if they are operating, and to flush chemicals out of them when performing maintenance.

AP FUNCTION - Filter pump must be running for peristaltic pumps to engage. Enter the “user variables” menu by holding the **UP** button for 5 seconds. Once CL display reads **P**, use **UP** button to scroll until CL display reads **AP** and pH display reads **00**. Pressing the DOWN button will begin a countdown in the pH display from 60 to 00. The peristaltic pump for feeding acid will engage for the length of the countdown.

CP FUNCTION - Filter pump must be running for peristaltic pumps to engage. Enter the “user variables” menu by holding the **UP** button for 5 seconds. Once CL display reads **P**, use **UP** button to scroll until CL display reads **CP** and pH display reads **00**. Pressing the DOWN button will begin a countdown in the pH display from 60 to 00.
CPS2 models: The salt chlorinator will switch to 100% production for the length of the countdown.
CPS3 and COMM1000 models: The peristaltic pump for feeding liquid chlorine will engage for the length of this countdown.

PERISTALTIC PUMP SQUEEZE TUBE AND ROLLERS REPLACEMENT PROCEDURE *FLUSHING FEED TUBE*

Ensure squeeze tube is flushed with water before replacing. Filter pump must be running for peristaltic pumps to engage.

HOLD THE **UP BUTTON** FOR 3 SECONDS TO ENTER THE VARIABLES LOOP - P WILL BE DISPLAYED IN THE CL DISPLAY
P - S - TP - TS - AF - CF – LF (LF ONLY DISPLAYED FOR CPS3 and COMM1000) – AP – CP.

↓

PUSH THE **UP BUTTON** UNTIL AP (ACID PUMP) OR CP (CHLORINE PUMP)
IS DISPLAYED IN THE CL DISPLAY AND 00 WILL APPEAR IN THE pH DISPLAY

↓

DISCONNECT FEED TUBING FROM ACID OR CHLORINE CAP ASS”Y AND PLACE INTO FRESH WATER

↓

PRESS **DOWN BUTTON** TO FLUSH FEED TUBING AND SQUEEZE TUBE
00 IN pH DISPLAY WILL COUNT DOWN FROM 60 TO 00
NOTE: FILTER PUMP MUST BE RUNNING WITH FLOW STAND-BY LIGHT OFF

↓

REPEAT TWICE TO ENSURE LINE IS FULLY FLUSHED

Once squeeze tube is fully flushed, you are ready to replace the squeeze tube and rollers. You will require a phillips and a flathead screwdriver to perform this.

PERISTALTIC PUMP SQUEEZE TUBE AND ROLLERS REPLACEMENT PROCEDURE *CHANGING SQUEEZE TUBE AND ROLLERS*

SWITCH OFF FILTER PUMP.

↓

SWITCH OFF CHROMATALYZER AT WALL SOCKET.

↓

ENSURE YOU HAVE THE APPROPRIATE SAFETY GOOGLES, GLOVES AND A RESPIRATOR ON. SAFETY GEAR MUST BE SUITABLE FOR USE WITH SODIUM HYPOCHLORITE AND HYDROCHLORIC ACID.

↓

ENSURE YOU HAVE A STANDARD 10LT PLASTIC BUCKET AVALIABLE.
BUCKET IS USED TO CAPTURE ANY SPILLS WHILST TUBE DISCONNECTION TAKES PLACE

↓

UNSCREW BOTH THE SUCTION TUBE NUT AND THE DELIVERY TUBE NUT ON THE PERISTALTIC PUMP AND REMOVE TUBING. PLACE TUBING ENDS IN THE BUCKET TO PREVENT CHEMICAL SPILLAGE.
SEE DIAGRAMS 1 AND 2 ON PAGE 39

↓

REMOVE THE TWO SCREWS THAT SECURE THE CLEAR PUMP COVER ON.
SEE DIAGRAM 3 ON PAGE 39

↓

REMOVE SQUEEZE TUBE AND ROLLERS FROM PUMP. USE FLATHEAD SCREWDRIVER TO PRY OFF ROLLERS. ***SEE DIAGRAM 4 ON PAGE 39***
RINSE IN FRESH WATER AND DISPOSE OF RESPONSIBLY.

↓

GREASE AND FIT THE NEW SQUEEZE TUBE AND ROLLERS TO THE PUMP HOUSING AND ENSURE ROLLER MECHANISM IS CORRECTLY IN PLACE. ***SEE DIAGRAMS 5 AND 6 ON PAGE 39***

↓

CAREFULLY PUSH THE PUMP COVER ON AND SECURE WITH TWO SCREWS.

↓

RE-ATTACH SUCTION AND DELIVERY TUBE LINES AND SECURE WITH NUTS.
SEE DIAGRAM 7 AND 8 ON PAGE 39

↓

SWITCH FILTRATION SYSTEM ON.

↓

SWITCH CHROMATALYZER ON.

PERISTALTIC PUMP SQUEEZE TUBE AND ROLLER REPLACEMENT PROCEDURE *DIAGRAMS*

Diagram 1

Diagram 2

Diagram 3

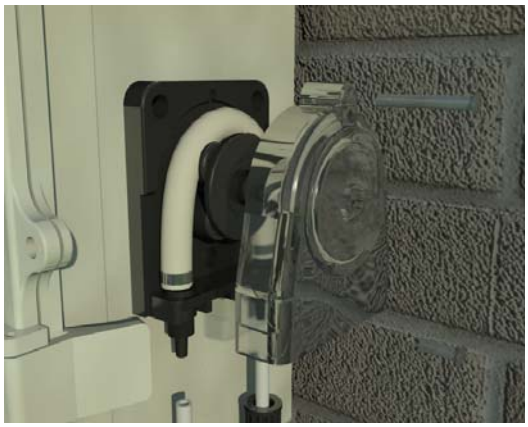


Diagram 4

Diagram 5

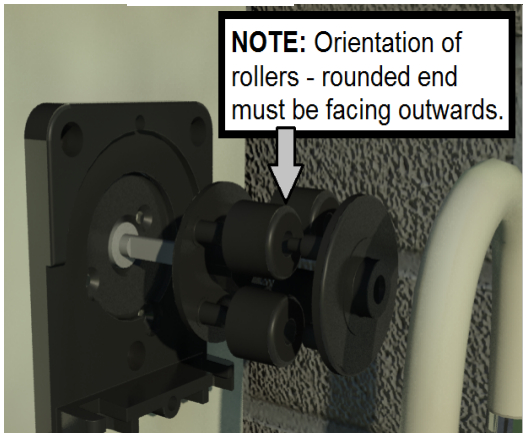


Diagram 6

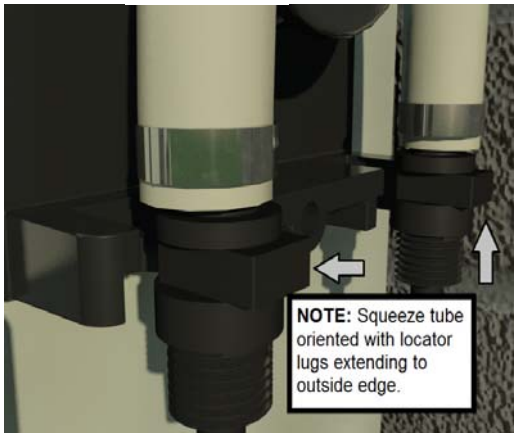


Diagram 7

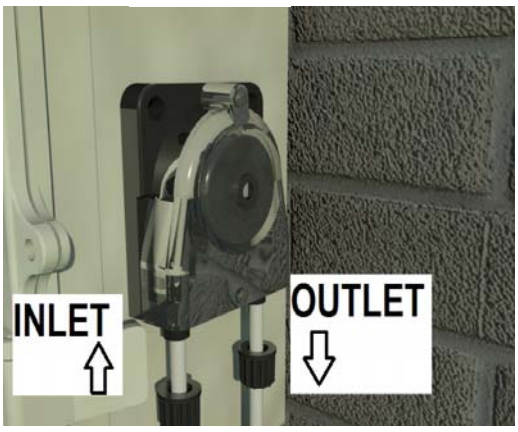


Diagram 8

MAINTENANCE SCHEDULE FOR CHEMICAL DOSING SYSTEM

The Puresilk Chromatalyzer uses 33% hydrochloric acid to balance pH levels, and 12.5% sodium hypochlorite with liquid chlorine dosing models to balance the chlorine level. These chemicals are highly corrosive. Scheduled maintenance is required to ensure the chemical dosing systems operate correctly. Follow schedule below.

"FUME STOP" CAP This is the red cap and push-fit assembly that screws on to the acid reservoir. *Domestic:* Replace every 12 months *Commercial:* Replace every 6 months
"LC CAP" This is the blue cap and push-fit assembly that screws on to the liquid chlorine reservoir. *Domestic:* Replace every 12 years *Commercial:* Replace every 6 months
FEED TUBE This is the black tubing which goes between the "fume stop" cap or "LC cap", peristaltic pumps and the injection point. *Domestic:* Replace every 12 years *Commercial:* Replace every 6 months
PERISTALTIC PUMP SQUEEZE TUBE AND ROLLERS ONLY This is the pump mounted on the side of the Chromatalyzer control box. Inside the pump is a cream coloured 'squeeze tube', and rollers which rotate to squeeze the tube open and closed. *Domestic:* Replace every 12 months *Commercial:* Replace every 6 months
INJECTION POINT This is the clear chamber plumbed into the pipe which delivers the acid and liquid chlorine into the pool water. It has screw in non-return valves to stop water travelling back up the feed tube. These non-return valves require periodic replacing. *Domestic:* Replace every 12 months *Commercial:* Replace every 6 months

It is recommended that an authorised service professional perform this maintenance however the homeowner may replace the tube if all safety precautions are undertaken.

Ensure chemical dosing system is fully flushed with fresh water before performing maintenance. See 'AP/CP FUNCTION' on page 37 for instructions on flushing chemical dosing system.

Maintenance for Liquid Chlorine Feed

Liquid Chlorine may crystallise and block feed lines and injector sites.
Preventative maintenance will prevent blockages damaging equipment and ensure the correct flow of Chlorine to the pool.
The rate of Liquid Chlorine crystallisation will vary from pool to pool so regular inspection and testing of the feed system is required.
Generally, inspecting the injector fitting and flushing the Chlorine Delivery system once a month with water as described below will
ensure trouble free operation although more frequent maintenance may be required where water chemistry promotes blockages.
1. Remove the Liquid Chlorine Feed Line from the Chlorine Drum and place in a jug of warm water.
2. Initiate 5 x 1 minute cycles of the Liquid Chlorine Peristaltic Pump (see CP FUNCTION on page 37 of this manual) to flush the line and dissolve crystals (Equivalent to approx 200mls pumped).
3. Inspect and ensure delivery system is working by ensuring approx 200mls of water has been pumped from the jug.
4. Remove the injector fitting and check it for blockages. You may need to physically unblock using and implement.

Commercial installation may require frequent inspections

Please note: There are products on the market that help prevent crystallisation.
Your local pool professional will provide advice on use of these products

INSTALLATION GUIDE

YOU MUST read the entire manual before continuing with the installation.
YOU MUST ensure suitably qualified persons are performing the installation.
WARNING – DO NOT REMOVE JUNCTION BOX PANEL OR MAIN CONTROL PANEL.
High voltage components must be wired or serviced by electrically qualified persons.

Puresilk Chromatalyzers - CPS2, CPS3, COMM1000 and COMM2000.
Refer to contents list on page 57 to check and familiarise yourself with the names of items provided.
See page 49 for direct wiring instructions for countries where this is required – USA, CANADA, EUROPE, ASIA.

Puresilk Chromatalyzer Installation Guide

The Puresilk Chromatalyzer is suitable for indoor and outdoor installation and has an IP23 rating.
As defined in AS3000 section G.3., the unit must be installed either 1.2m higher than the highest water level or at least 3m from the pool edge.

The unit must be installed within 2 metres of a suitable 240V power outlet – DO NOT USE EXTENSION LEADS.

The unit must be mounted using the mounting bracket kit provided on a solid wall or post.

Always mount the power pack as per local electrical codes.

Air flow around the power supply must not be restricted or warmed from a heat source.

Do not mount where sprinkler or other irrigation systems are likely to spray water onto the underside of the device.

Ensure the Chromatalyzer is mounted at a distance from the **sample switch** such that both the **water sample tubing** and **sample switch cable** will reach and attach to the Chromatalyzer in a neat and secure manner.
Length of **water sample tube** - 2 metres.
Length of **flow switch cable** – 2 metres.
Please note: **DO NOT extend the length of the water sample tubing.**
DO NOT use an alternative water sample tubing other than that supplied.
DO ensure the water sample tubing is contained with the flexible conduit provided.
Do ensure the flexible conduit is positioned neat and securely with cables ties.

If the Chromatalyzer is not able to be mounted close enough to the return water line so that the water sample tubing will reach, YOU MUST install a water bypass.

Where a pool and spa combination exists, ensure the Chromatalyzer is mounted at a distance from the **spa switch** such that the cable will reach and plug into the Chromatalyzer in a neat and secure manner.
Length of **spa switch cable** - 4 metres.

Ensure the Chromatalyzer is mounted at a distance from the Puresilk salt chlorinator such that the **PS control cable** will reach and attach to the Chromatalyzer in a neat and secure manner.
Length of P**S control cable** - 1.2 metres.

Ensure the Chromatalyzer is mounted at a distance from acid and/or chlorine injector such that the **acid and/or chlorine delivery tubing** will reach and attach in a neat and secure manner.
Length of **acid delivery and/or chlorine delivery tubing** - 8 metres

If the Chromatalyzer contains an AUX TIME CLOCK, ensure the 240V AUX appliance will reach the AUX power socket contained in the base.

IMPORTANT

Where a Gas Heater is installed and the condensate is returned into the pool, ensure the condensate enters after (downstream of) the Water Sample Flow Switch and the Salt Chlorinator Cell.

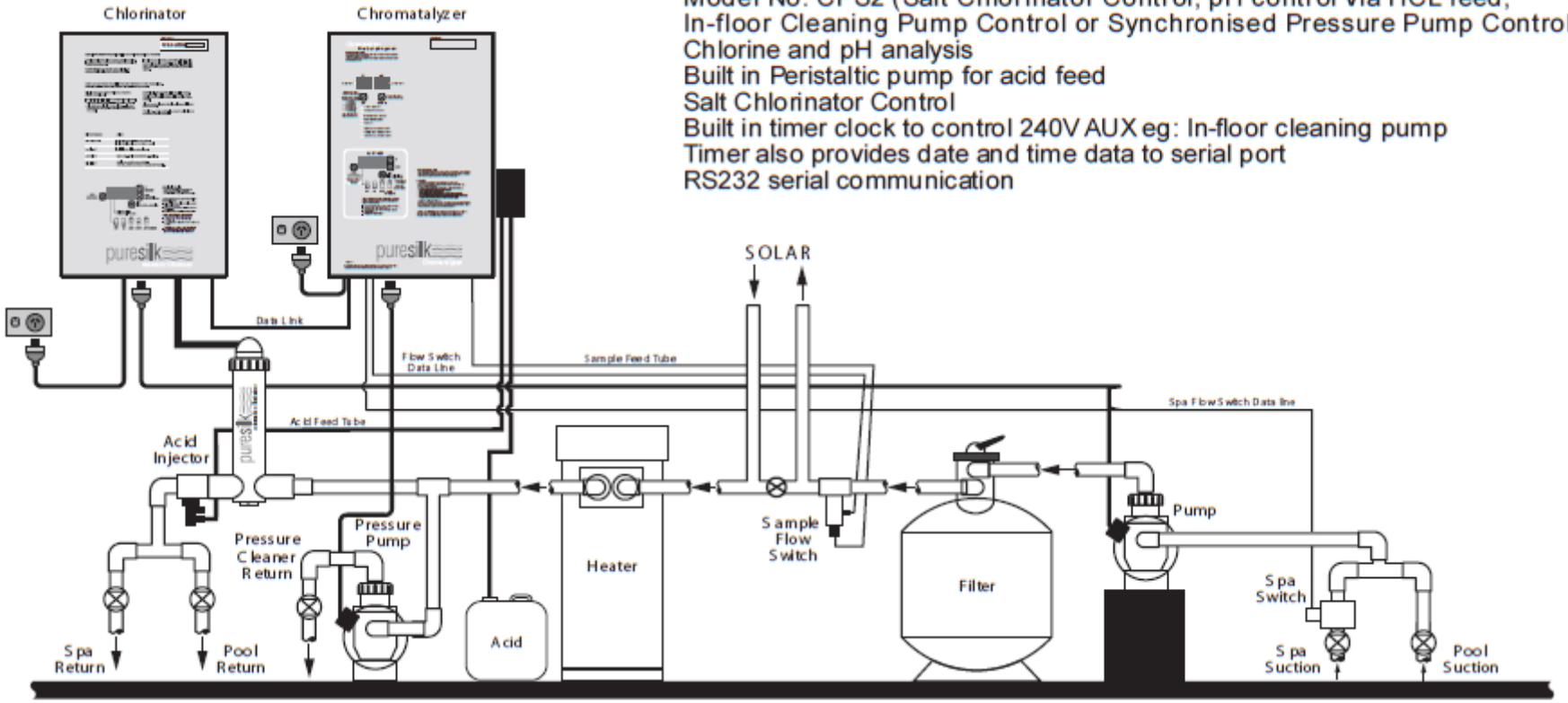
IMPORTANT – INTEGRATED POOL COVER CAVITIES
DO NOT RETURN WATER INTO POOL COVER CAVITIES

Where a salt chlorinator is operating and the pump speed is low, excessive chorine levels may exit the return lines at values greater than 10ppm.
Fixtures and materials located within the cavity may not be suitable for this high chlorine environment.

puresilk
water quality management

Spa and Pool Combination

Model No. CPS2 (Salt Chlorinator Control, pH control via HCL feed, In-floor Cleaning Pump Control or Synchronised Pressure Pump Control)
Chlorine and pH analysis
Built in Peristaltic pump for acid feed
Salt Chlorinator Control
Built in timer clock to control 240V AUX eg: In-floor cleaning pump
Timer also provides date and time data to serial port
RS232 serial communication



This diagram illustrates an installation for a pool and spa combination. If the application is on a pool only or a spa only, the spa flow switch is not required. The spa flow switch is only applicable when a system has the option of switching between two different bodies of water.

Please Note: Plumbing diagrams are intended to illustrate installation positions of PureSilk equipment relative to other pool equipment only. Specific valve requirements will depend on the pools requirements and ancillary equipment.

It is important that the Sample Flow Switch is orientated vertically downwards as per the diagram. This prevents bubbles from entering sample feed line.

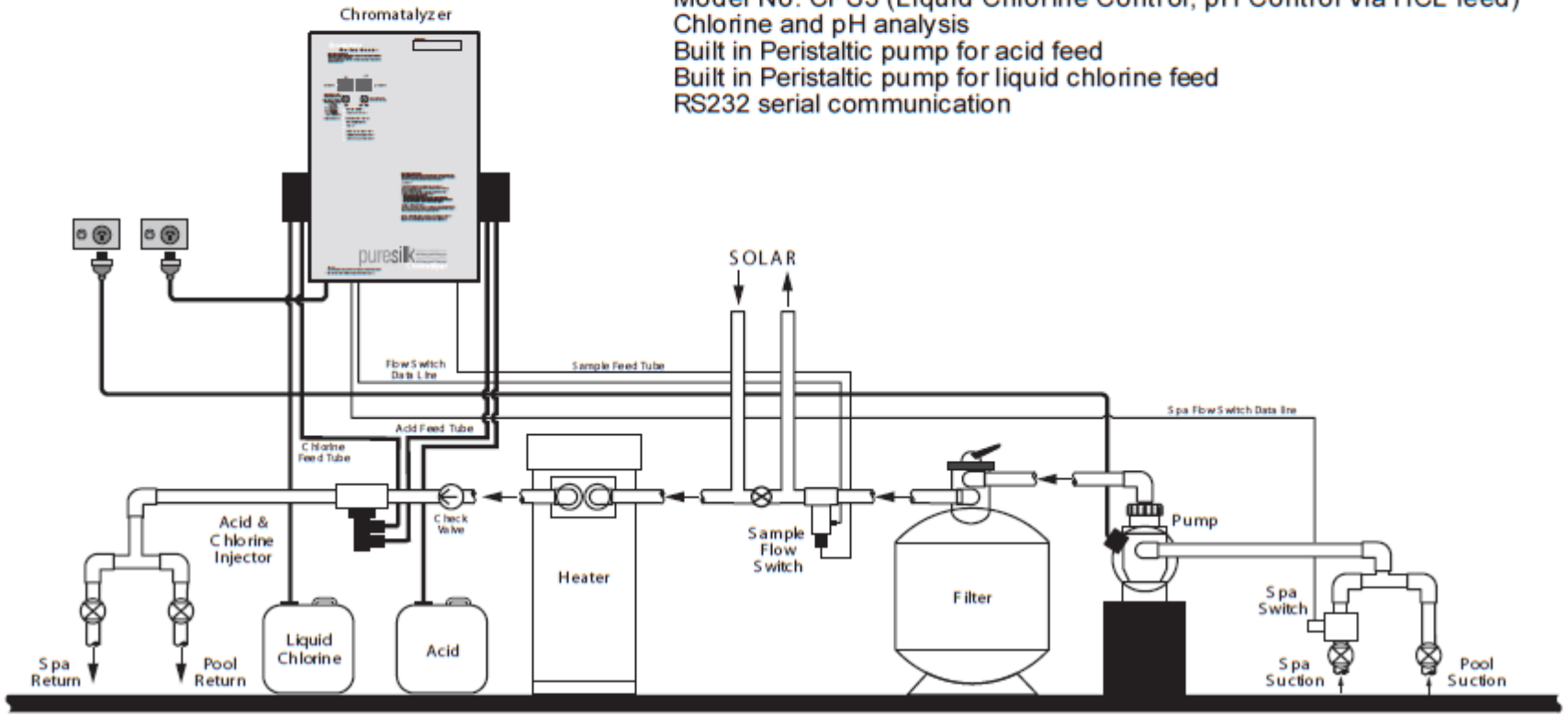
This Plumbing Diagram illustrates use of the AUX TIME CLOCK and AUTO INTERLOCK feature to control a pool cleaner Pressure Pump. The AUTO INTERLOCK prevents the Cleaner Pump from running dry or causing a damaging vacuum. Alternatively the AUX TIME CLOCK can be used to control an IN-FLOOR CLEANING PUMP with or without utilizing the AUTO INTERLOCK feature.

CPS-2

puresilk
water quality management

Spa and Pool Combination

Model No. CPS3 (Liquid Chlorine Control, pH Control via HCL feed)
Chlorine and pH analysis
Built in Peristaltic pump for acid feed
Built in Peristaltic pump for liquid chlorine feed
RS232 serial communication



This diagram illustrates an installation for a pool and spa combination. If the application is on a pool only or a spa only, the spa flow switch is not required. The spa flow switch is only applicable when a system has the option of switching between two different bodies of water.

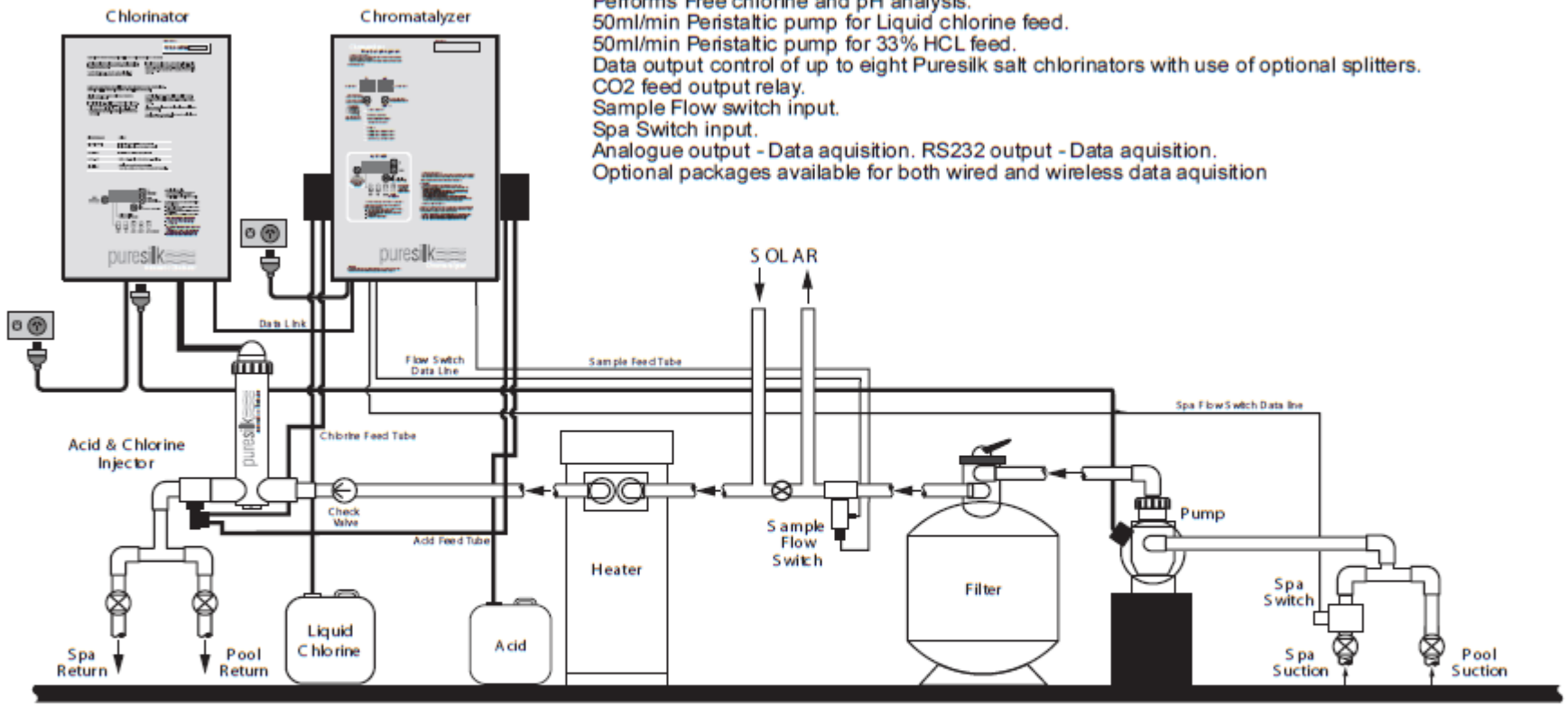
It is important that the Sample Flow Switch is orientated vertically downwards as per the diagram. This prevents bubbles from entering sample feed line.

Please Note: Plumbing diagrams are intended to illustrate installation positions of PureSilk equipment relative to other pool equipment only. Specific valve requirements will depend on the pools requirements and ancillary equipment.

CPS-3

puresilk
water quality management

COMM1000 with RDR
RDR - Rapid Demand Recovery
The COMM1000 utilises Salt chlorinators to meet the average chlorine demand on the pool. The RDR system initiates liquid chlorine feed if the Chlorine test value falls to less than or equal to 70% of the target.
Performs Free chlorine and pH analysis.
50ml/min Peristaltic pump for Liquid chlorine feed.
50ml/min Peristaltic pump for 33% HCL feed.
Data output control of up to eight Puresilk salt chlorinators with use of optional splitters.
CO2 feed output relay.
Sample Flow switch input.
Spa Switch input.
Analogue output - Data aquisition. RS232 output - Data aquisition.
Optional packages available for both wired and wireless data aquisition



This diagram illustrates an installation for a pool and spa combination. If the application is on a pool only or a spa only, the spa flow switch is not required. The spa flow switch is only applicable when a system has the option of switching between two different bodies of water.

Please Note: Plumbing diagrams are intended to illustrate installation positions of PureSilk equipment relative to other pool equipment only. Specific valve requirements will depend on the pools requirements and ancillary equipment.

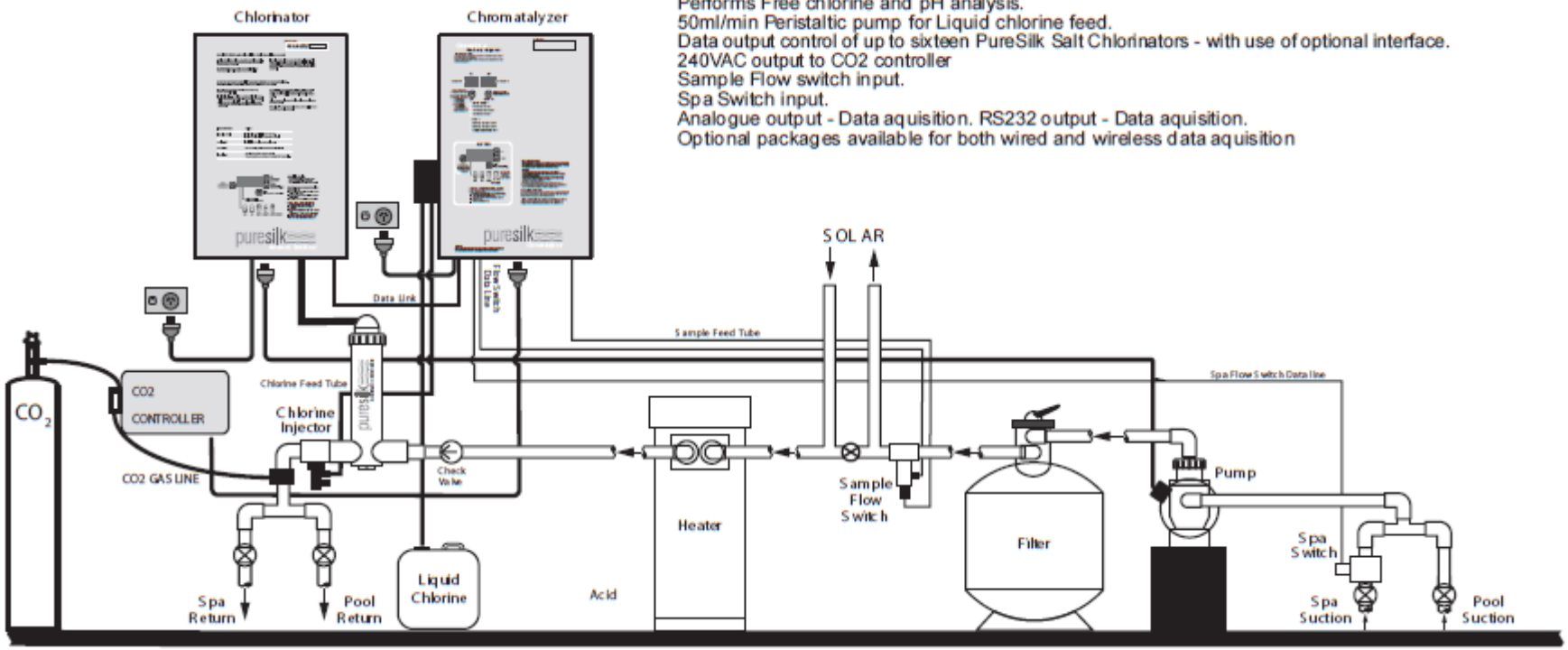
It is important that the Sample Flow Switch is orientated vertically downwards as per the diagram. This prevents bubbles from entering sample feed line.

This Plumbing Diagram illustrates use of the AUX TIME CLOCK and AUTO INTERLOCK feature to control a pool cleaner Pressure Pump. The AUTO INTERLOCK prevents the Cleaner Pump from running dry or causing a damaging vacuum. Alternatively the AUX TIME CLOCK can be used to control an IN-FLOOR CLEANING PUMP with or without utilizing the AUTO INTERLOCK feature.

COMM1000

puresilk
water quality management

COMM2000 with RDR
RDR - Rapid Demand Recovery
The COMM2000 utilises Salt chlorinators to meet the average chlorine demand on the pool. The RDR system initiates liquid chlorine feed if the Chlorine test value falls to less than or equal to 70% of the target.
Performs Free chlorine and pH analysis.
50ml/min Peristaltic pump for Liquid chlorine feed.
Data output control of up to sixteen PureSilk Salt Chlorinators - with use of optional interface.
240VAC output to CO2 controller
Sample Flow switch input.
Spa Switch input.
Analogue output - Data aquisition. RS232 output - Data aquisition.
Optional packages available for both wired and wireless data aquisition



This diagram illustrates an installation for a pool and spa combination. If the application is on a pool only or a spa only, the spa flow switch is not required. The spa flow switch is only applicable when a system has the option of switching between two different bodies of water.

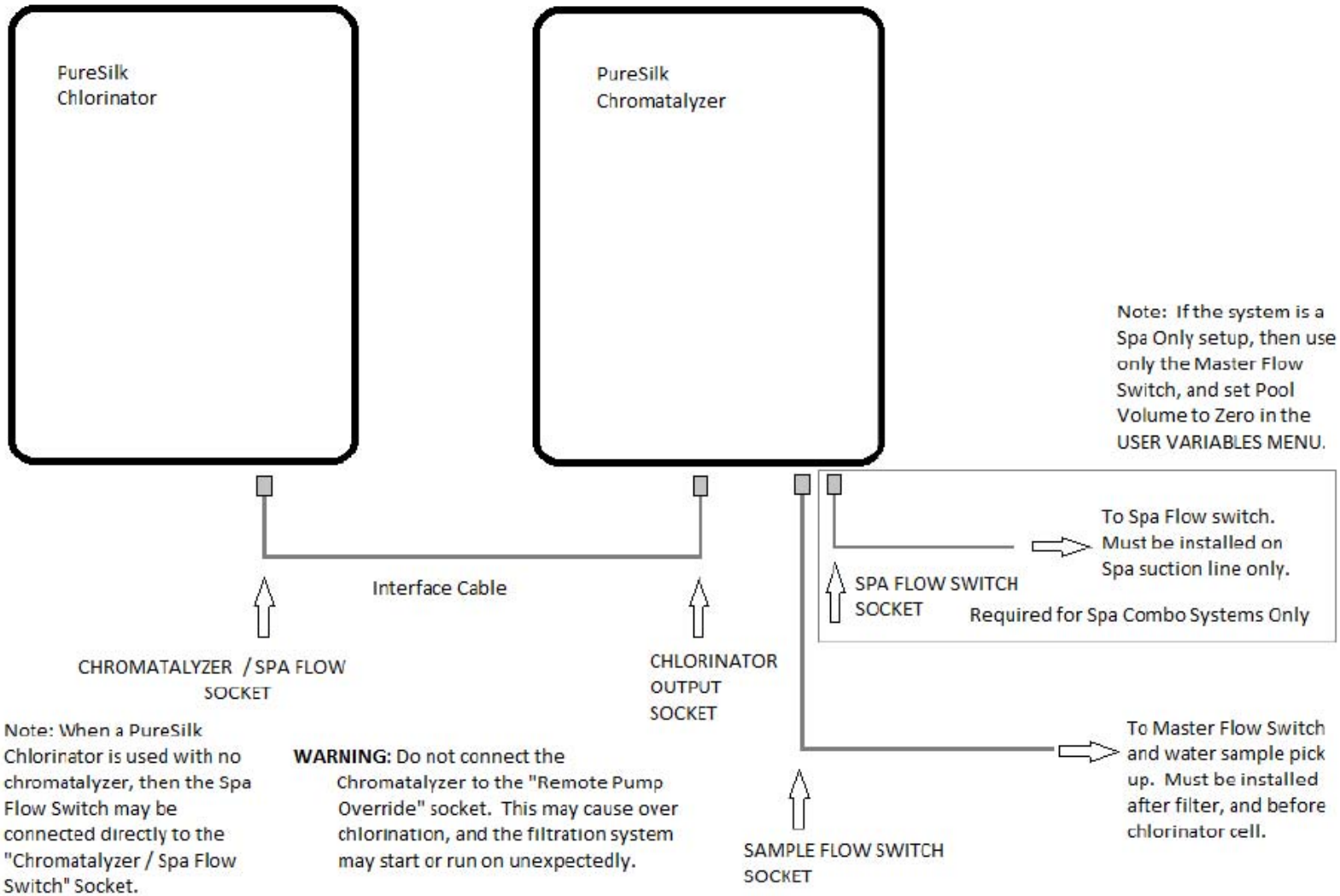
Please Note: Plumbing diagrams are intended to illustrate installation positions of PureSilk equipment relative to other pool equipment only. Specific valve requirements will depend on the pools requirements and ancillary equipment.

It is important that the Sample Flow Switch is orientated vertically downwards as per the diagram. This prevents bubbles from entering sample feed line.

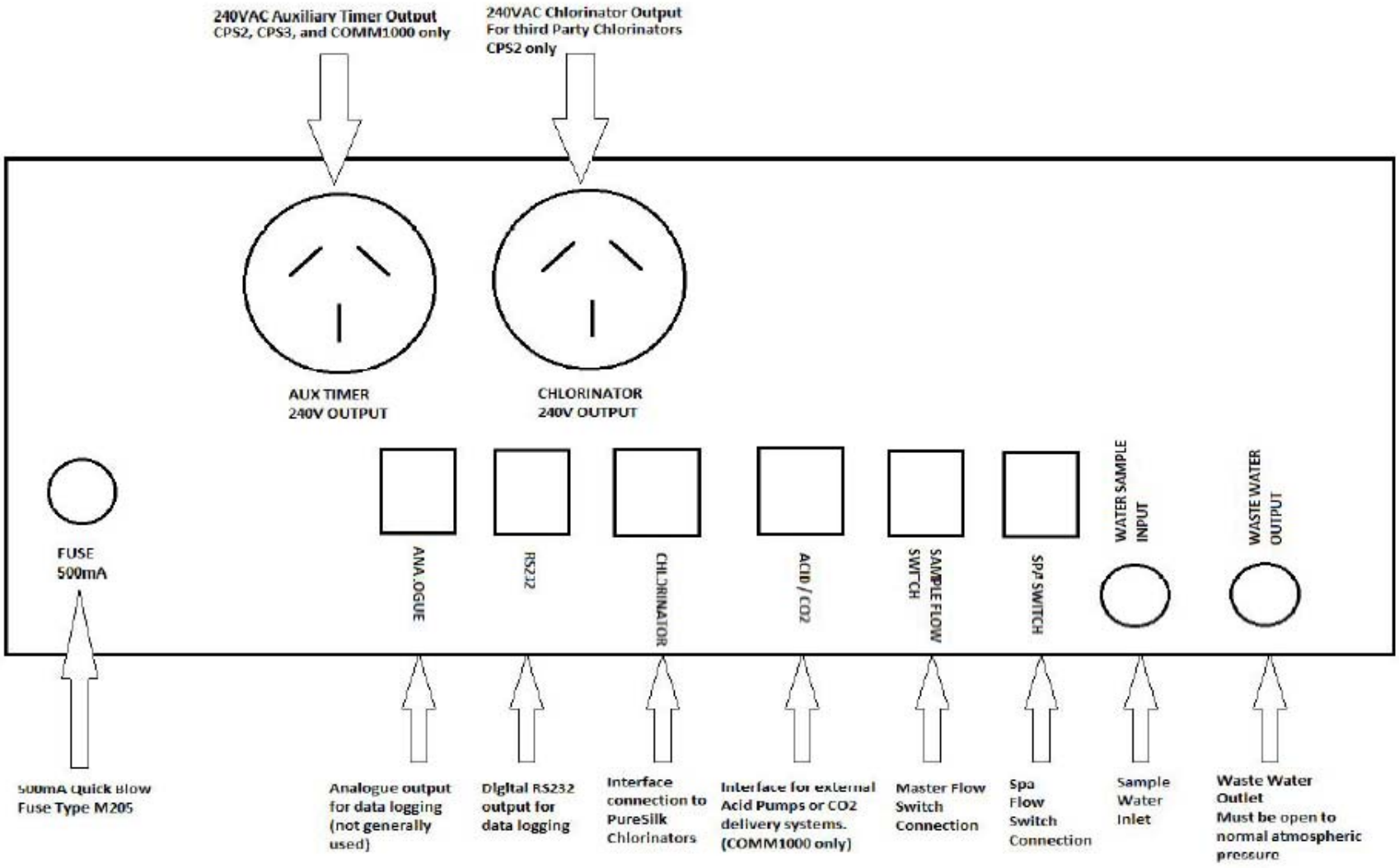
This Plumbing Diagram illustrates use of the AUX TIME CLOCK and AUTO INTERLOCK feature to control a pool cleaner Pressure Pump. The AUTO INTERLOCK prevents the Cleaner Pump from running dry or causing a damaging vacuum. Alternatively the AUX TIME CLOCK can be used to control an IN-FLOOR CLEANING PUMP with or without utilizing the AUTO INTERLOCK feature.

COMM2000

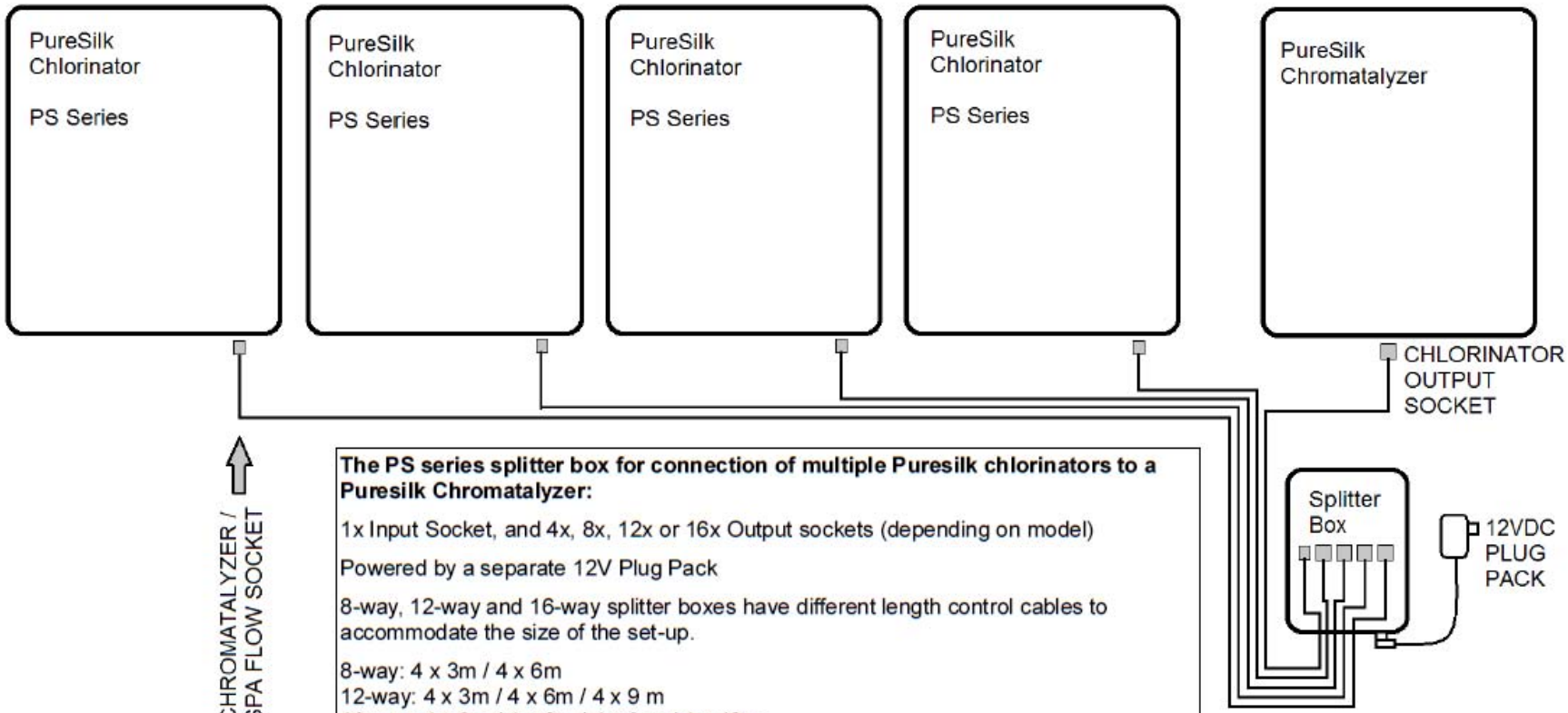
Typical Wiring for a PureSilk Chromatalyzer to PureSilk Chlorinator



Bottom View of the PureSilk Chromatalyzer Connections



Chromatalyzer Multi-Chlorinator Set Up



The PS series splitter box for connection of multiple Puresilk chlorinators to a Puresilk Chromatalyzer:

1x Input Socket, and 4x, 8x, 12x or 16x Output sockets (depending on model)

Powered by a separate 12V Plug Pack

8-way, 12-way and 16-way splitter boxes have different length control cables to accommodate the size of the set-up.

8-way: 4 x 3m / 4 x 6m
12-way: 4 x 3m / 4 x 6m / 4 x 9 m
16-way: 4 x 3m / 4 x 6m / 4 x 9 m / 4 x 12m

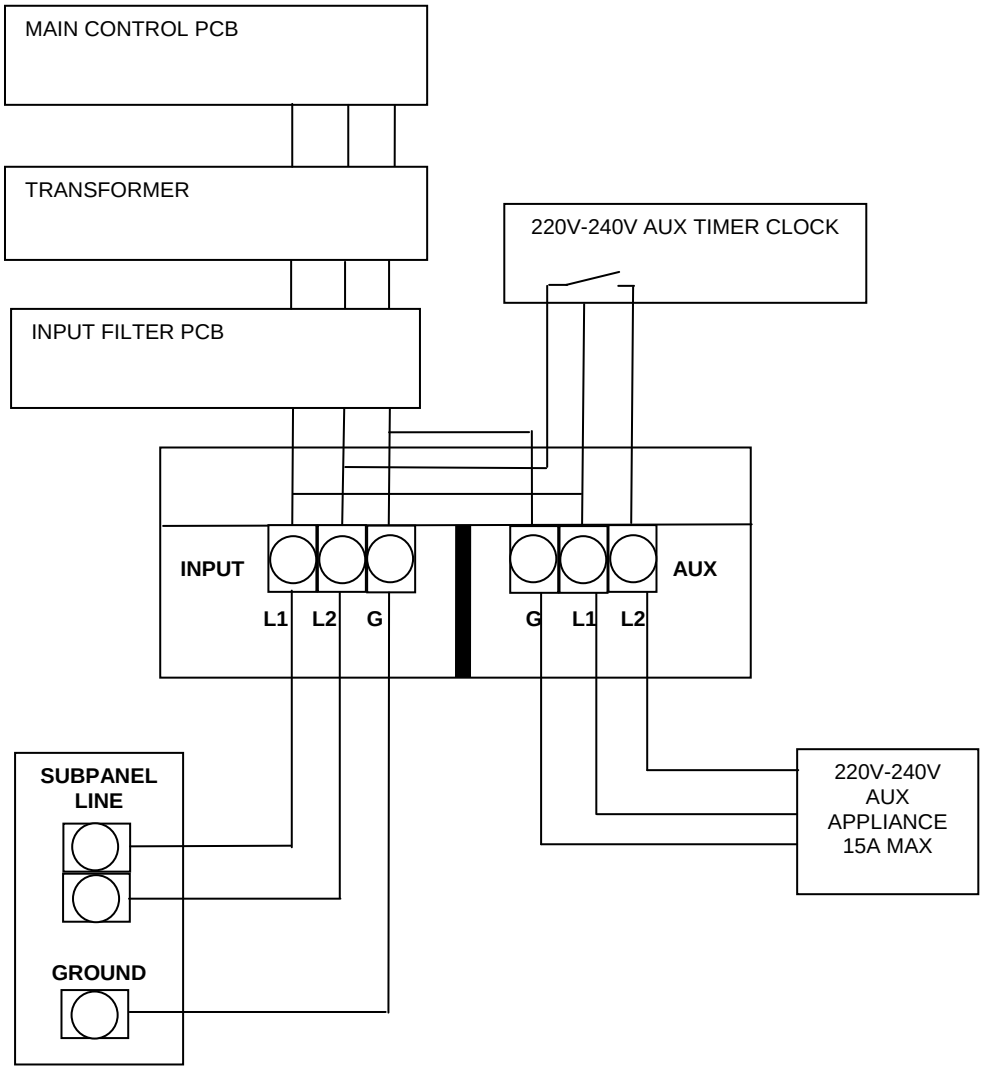
WIRING INSTRUCTIONS – USA / CANADA / EUROPE

WARNING – ISOLATE SUPPLY POWER TO CHROMATALYZER BEFORE OPENING ELECTRICAL JUNCTION BOX, OR SERVICING CHROMATALYZER OR APPLIANCES WIRED INTO THE JUNCTION BOX.

CAUTION – FOR CONTINUED PROTECTION AGAINST POSSIBLE ELECTRIC SHOCK USE ONLY IDENTICAL REPLACEMENT PARTS WHEN SERVICING.

Power must be switched off at the circuit breaker before performing any wiring or opening the junction box of the Chromatalyzer. Local and NEC electrical codes must be followed.

Refer to labeling on the Chromatalyzer and inside the junction box for wiring markings and power ratings.



WARNING: LINE VOLTAGE MUST BE OFF AT THE CIRCUIT BREAKER BEFORE PERFORMING ANY WIRING OR DISCONNECTING AUX APPLIANCE.

AN ISOLATION SWITCH ON THE SUBPANEL MUST ALSO BE INSTALLED.

Model: CPS2 Wiring Configuration

CPS2 - contains a time clock and controls the 220V-240V AUX.

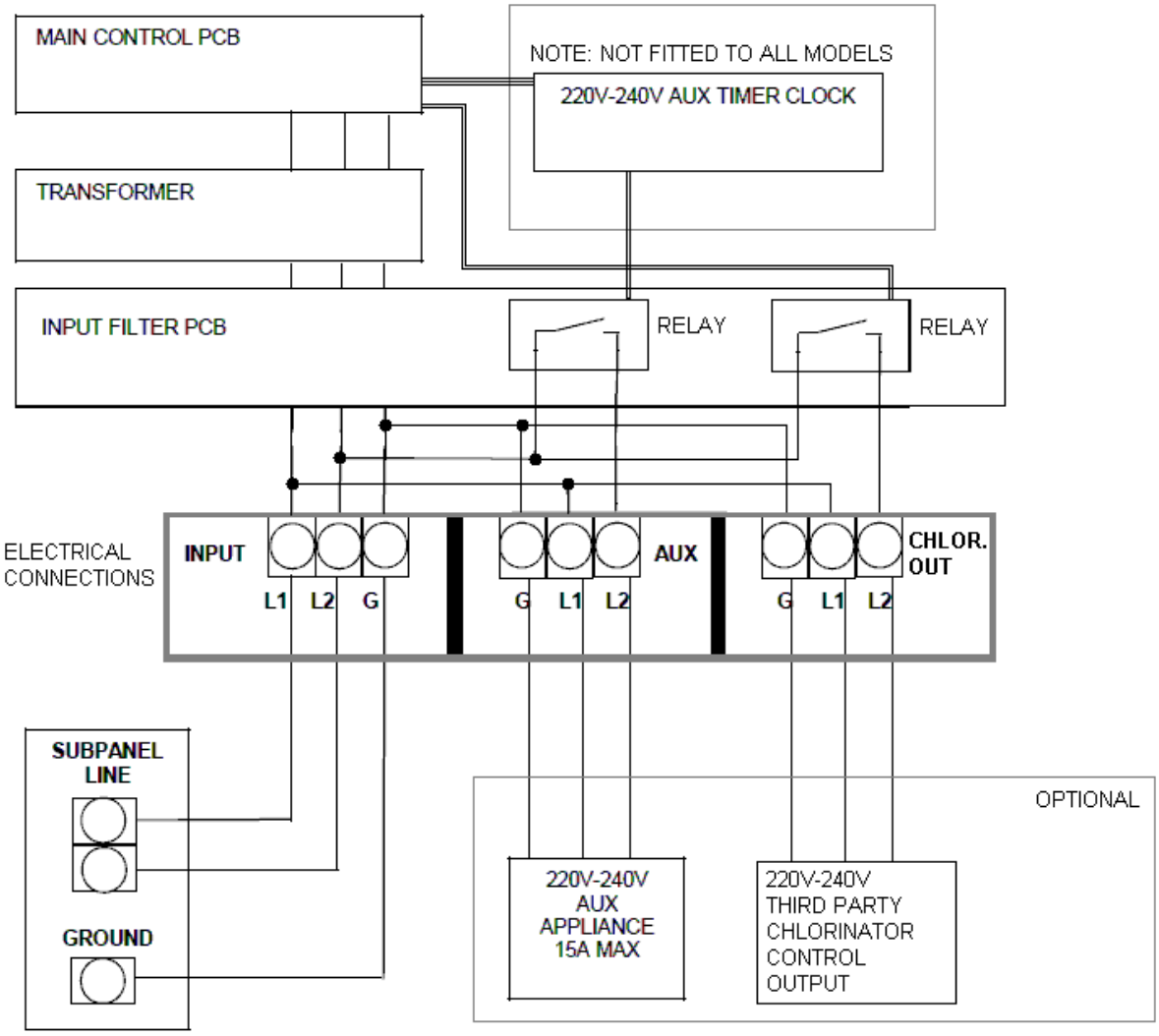
Wire the Puresilk Chromatalyzer CPS2 directly to the 220V-240V line supply as per the diagram below.

The 220V-240V supply must have a minimum current rating of 15A and contain a GFI device and isolating switch.

Other devices as specified by the local electrical codes must be fitted.

Ensure the ground wire is connected to the “G” marked on the input terminal block in the junction box.
The line supply must remain on at all times except where the unit is being electrically installed or serviced or when reagents are being replaced.
The line supply to the Chromatalyzer must not be controlled by an external time clock as it should remain on 24/7.
Refer to labeling inside Chromatalyzer junction box for wiring markings and power ratings.

220V – 240V WIRING



WARNING: LINE VOLTAGE MUST BE OFF AT THE CIRCUIT BREAKER BEFORE PERFORMING ANY WIRING OR DISCONNECTING AUX APPLIANCE.

AN ISOLATION SWITCH ON THE SUBPANEL MUST ALSO BE INSTALLED.

Model: CPS3 Wiring Configuration

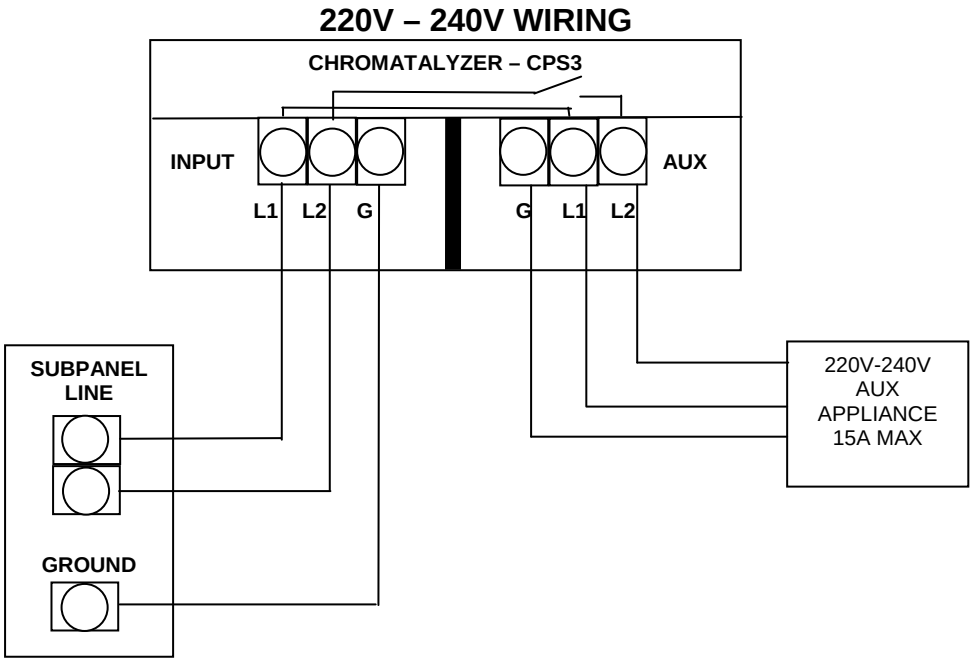
CPS3 - contains a time clock and controls the 220V-240V AUX.

Wire the Puresilk Chromatalyzer CPS3 directly to the 220V-240V line supply as per the diagram below.

The 220V-240V supply must have a minimum current rating of 15A and contain a GFI device and isolating switch.

Other devices as specified by the local electrical codes must be fitted.

Ensure the ground wire is connected to the “G” marked on the input terminal block in the junction box.
The line supply must remain on at all times except where the unit is being electrically installed or serviced or when reagents are being replaced.
The line supply to the Chromatalyzer must not be controlled by an external time clock as it should remain on 24/7.
Refer to labeling inside Chromatalyzer junction box for wiring markings and power ratings.



WARNING: LINE VOLTAGE MUST BE OFF AT THE CIRCUIT BREAKER BEFORE PERFORMING ANY WIRING OR DISCONNECTING AUX APPLIANCE.

AN ISOLATION SWITCH ON THE SUBPANEL MUST ALSO BE INSTALLED.

Model: COMM1000 Wiring Configuration

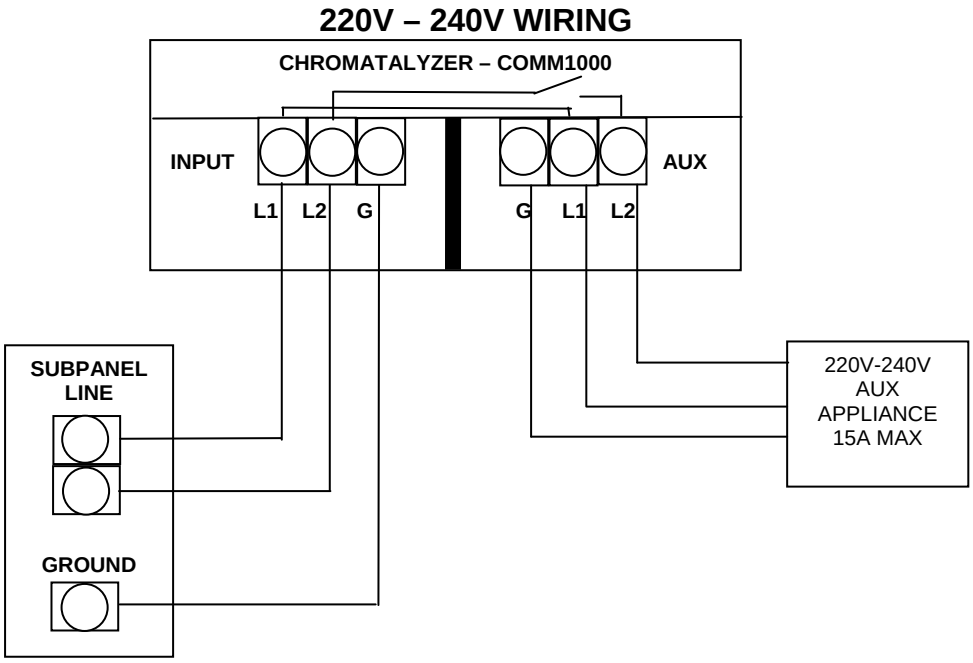
COMM1000 - contains a time clock and controls the 220V-240V AUX.

Wire the Puresilk Chromatalyzer COMM1000 directly to the 220V-240V line supply as per the diagram below.

The 220V-240V supply must have a minimum current rating of 15A and contain a GFI device and isolating switch.

Other devices as specified by the local electrical codes must be fitted.

Ensure the ground wire is connected to the “G” marked on the input terminal block in the junction box.
The line supply must remain on at all times except where the unit is being electrically installed or serviced or when reagents are being replaced.
The line supply to the Chromatalyzer must not be controlled by an external time clock as it should remain on 24/7.
Refer to labeling inside Chromatalyzer junction box for wiring markings and power ratings.



WARNING: LINE VOLTAGE MUST BE OFF AT THE CIRCUIT BREAKER BEFORE PERFORMING ANY WIRING OR DISCONNECTING AUX APPLIANCE.

AN ISOLATION SWITCH ON THE SUBPANEL MUST ALSO BE INSTALLED.

HANDY HINTS

- Initiate a test sequence at any time by holding the UP and DOWN buttons simultaneously until you hear a beep (approx. 5 seconds). 'Low Flow – Standby' light must be off (filter pump running).
- Run the peristaltic pumps at any time for 60 seconds to flush out chemicals – see AP and CP functions on page 37.
- When replacing reagents bags, after breaking off tip give bag a small squeeze to ensure liquid comes out cleanly.
- Ensure unit is turned off at wall socket when replacing reagent bags.
- If treating a spa as a separate body of water, a Puresilk spa switch must be installed.

ERROR CODE REGISTER

If errors are occurring you should check the following:

Error Code Register:
To check the list of errors which have occurred in the Error Code Register, press and hold the DOWN button until the error codes are displayed. Display should show E1-xx.

Error/s logged in the Error Code Register:
– In the LEFT HAND DISPLAY (CL display), E1.
– In the RIGHT HAND DISPLAY (pH display), xx represents the error code which has been logged. A code -0 (in pH display) means no error has been logged.
– Use the DOWN button to scroll through error register.
– E2, E3, E4.... E8, E9 are progressively older errors.
– As a new error occurs, it will always get logged into position E1 and existing errors will shift up down position. The error that is logged in position E9 will disappear from the log.
– To clear all errors from the Error Code Register, press up & down buttons simultaneously.

Refer to the trouble shooting guide for a full explanation of each error code.

Trouble Shooting Guide

SYMPTOM	POSSIBLE CAUSE	SOLUTION
CHECK CL FEED RATE LED FLASHING	CL Target has not been hit within 72 hrs	High Chlorine demand may exist. Demand may be caused by high bather load. Stabiliser level may be low. For liquid chlorine units - check reservoir Is not empty. Check peristaltic pump is operating O.K. For salt chlorinators - check unit is set to maximum output and operating correctly. Manual shock dosing may be required. Have a pool technician test water.
CHECK ACID FEED RATE LED FLASHING	pH Target has not been hit within 72 hrs	Check acid reservoir is not empty. Check operation of peristaltic pump is O.K. High acid demand may exist where excessive alkaline has been added to the pool. High acid demand may exist where a new cement based pool interior has been commissioned.
SPA MODE - LED ON	Spa switch located on Spa suction line of a pool and spa combination has been activated. Spa suction line is open.	Check if Spa suction line valve has been left open during normal filtration cycle.
CL REAGENT 1 EMPTY - FLASH LED	Reagent No.1 is empty	Switch unit off and replace bag.
CL REAGENT 2 EMPTY - FLASH LED	Reagent No.2 is empty	Switch unit off and replace bag..
pH INDICATOR EMPTY - FLASH LED	pH indicator is empty	Switch unit off and replace bag.
EXCESSIVE REAGENT USE	Unit is operating at increased test frequency.	TP or TS is incorrectly set for a higher than required test frequency. Where a Pool and Spa combination exists, check that the unit is not operating in Spa Mode at all times. Check Spa Switch is activated only when the Spa is being used. Check if Spa suction valve is functioning correctly. Check power is not switching on and off on a daily basis. The unit must not be time clock controlled. Each time power is switched onto the unit, a prime cycle will occur. This prime cycle will expel a small portion of reagent.

Trouble Shooting Guide - continued

SYMPTOM	POSSIBLE CAUSE	SOLUTION
LOW FLOW - STANDBY LED is ON but the filter pump is running.	Water is not being pumped	Check baskets are clean. Check valve position. Check pump is primed. Check filter is clean. Check water level.
	Water is being pumped	Check sample switch is connected to correct port at base of unit. Check sample flow switch is positioned correctly as per flow direction.
TEST FAULT LED is ON	**ERROR CODES**	
When a test fault occurs an error code will be generated and displayed at the time of the fault.	01 - Piston not home	Check if waste tube is blocked.
	02 - Calibration error	Check if water sample tube is blocked or drawing in air.
The unit will remember up to 10 error codes. To review, press and hold the DOWN button for 5 seconds.	03 - pH value outside limits	pH level is outside of normal limits. Have pool water checked by pool shop.
The latest error will display first.	04 - CL value outside limits	CL level is greater than 10ppm. This may be a result of manual shock dosing
Error sequence number (E0 - E9) is in the left hand display followed by a numerical code (00 - 99) in the right hand display.	05 - Sustained pH deviation	pH Target has not been met in over 72 hrs. Check acid reservoir.
	06 - Sustained CL deviation	CL Target has not been met in over 72 hrs. Check liquid chlorine reservoir or salt chlorinator operation. Salt Chlorinator may not be sized correctly for pool volume. High CL demand may exist and manual shock dosing may be required.
Pressing the DOWN button again will scroll through the last 10 error codes. To clear all error codes from memory, momentarily press both UP and DOWN buttons whilst viewing the error codes. To return to normal operation, don't press any buttons for 10 seconds.	07 - pH Reagent failed to prime	pH reagent bag is empty.
	08 - CL reagent 1 failed to prime	CL reagent 1 bag is empty.
	09 - CL reagent 2 failed to prime	CL reagent 2 bag is empty.

Trouble Shooting Guide - continued

SYMPTOM	POSSIBLE CAUSE	SOLUTION
TEST FAULT LED is ON (cont.)	**ERROR CODES**	
	10 - pH reagent lost prime during test	Full compliment of reagent could not be delivered as bag emptied. Replace reagent bag.
	11 - CL reagent 1 lost prime during test.	Full compliment of reagent could not be delivered as bag emptied. Replace reagent bag.
	12 - CL reagent 2 lost prime during test	Full compliment of reagent could not be delivered as bag emptied. Replace reagent bag.
	13 - Piston position error - home switch activated too early	Check sample line for blockage. Check waste line for blockage.
	14 - Piston position error - home switch activated too late	Check sample line for blockage. Check waste line for blockage.
	15 - Acid delivery 48 hr quota exceeded	Abnormally large amount of acid has been delivered. Check if acid reservoir is empty. Have a pool technician test water. Switch unit OFF and ON again to reset. Where excessive alkaline has been added to the pool, this may occur. Where a new pool interior exists, acid demand may be high.
	16 - Liquid Chlorine 48 hr quota exceeded	Abnormally large amount of liquid chlorine has been delivered. Check if CL reservoir is empty. Have a pool technician test water. Switch unit OFF and ON to reset. High bather load or excessive CL demand may exist. Stabiliser level may be low.
	17 - Chlorinator 48 hr run time quota has been exceeded. (This occurs only in spa mode with Puresilk chlorinator)	As per 16.
	98 - Fault writing to eeprom	Major fault - Contact service agent.
	99 - Fault reading from eeprom	Major fault - Contact service agent.

	CHROMATALYZER KITS - CPS2/CPS3/COMM1000/COMM2000				
	List of components included in each kit for each model				
CODE	**DESCRIPTION**	**CPS2**	**CPS3**	**COMM1000**	**COMM2000**
CPS2	PURESILK CPS2 ANALYSER C/W ACID PUMP & TIMER	✔			
CPS3	PURESILK CPS3 ANALYSER C/W ACID/CL PUMP & TIMER		✔		
COMM1000	PURESILK COMM1000 ANALYSER C/W ACID/CL PUMP & TIMER			✔	
COMM2000	PURESILK COMM2000 ANALYSER C/W CL PUMP & TIMER				✔
32500	PURESILK CHROMATALYZER OWNER MANUAL	✔	✔	✔	✔
32501	PURESILK CHROMATALYZER QUICK SET-UP GUIDE	✔	✔	✔	✔
33359	WALL MOUNT BRACKET C/W MASONARY PLUGS & SCREWS	✔	✔	✔	✔
32611-MP	PURESILK FLOW SWITCH ASS"Y - FILTER / 2.4M RJ CABLE / 2M SAMPLE LINE (ND-100-65 TUBE) - MAGNET PLUG TYPE	✔	✔	✔	✔
32655-1	ACID/CHL HDPE FEED TUBING 8M (BLACK)	✔	✔ ✔	✔ ✔	✔
32523-2	FUME STOP CAP ASS"Y FOR ACID	✔	✔	✔	
32702-TBB	PURESILK ACID INJECTOR COMPLETE - PURESILK ONE-WAY CHECK VALVE TB WITH NUT / BLACK CHECK VALVE HOUSING / 50mm TEE & PLUG	✔			
32659-2	LIQUID CHLORINE CAP ASS"Y		✔	✔	✔
32703-TBB	PURESILK ACID & CHLORINE INJECTOR COMPLETE - 2x PURESILK ONE-WAY CHECK VALVE TB WITH NUT / BLACK CHECK VALVE HOUSING / 50mm TEE & PLUG		✔	✔	
32704-TBB	PURESILK CHLORINE INJECTOR COMPLETE - PURESILK ONE-WAY CHECK VALVE TB WITH NUT / BLACK CHECK VALVE HOUSING				✔
32720	PURESILK CL CONTROL CABLE 1.2M	✔		✔	✔
32650-1	PURESILK CHROMATALYZER FREE CHLORINE / PH REAGENT SET	✔	✔	✔	✔
33520	PURESILK CHROMATALYZER WASTE LINE ASSEMBLY	✔	✔	✔	✔
OPTIONAL ITEMS					
32533-MP4	PURESILK SPA SWITCH WITH 4.0M RJ CABLE C/W TEE & PLUG - MAGNET PLUG TYPE				
32720-1	PURESILK CL CONTROL CABLE 3.0M				
32720-12	PURESILK CL CONTROL CABLE 12M				
32655-2	ACID/CHL HDPE FEED TUBING 16M (BLACK)				
33336	PURESILK 4-WAY SPLITTER BOX - PROVIDES CHROMATALYZER CONTROL FOR UP TO 4 PS CHLORINATORS				
33336-8	PURESILK 8-WAY SPLITTER BOX - CONTROLS UP TO 8 PS CHLORINATORS, C/W 8 x 32720-1				
33336-12	PURESILK 12-WAY SPLITTER BOX - CONTROLS UP TO 12 PS CHLORINATORS C/W 12 x 32720-1				
33336-16	PURESILK 16-WAY SPLITTER BOX - CONTROLS UP TO 16 PS CHLORINATORS C/W 16 x 32720-1				
MAINTENANCE ITEMS					
32523-2	"FUME STOP" ACID DRUM CAP ASS'Y				
32659-2	LIQUID CHLORINE CAP ASS"Y				
32655-1	ACID/CHL HDPE FEED TUBING 8M (BLACK)				
33501-TB	PURESILK ONE-WAY CHECK VALVE TB				
32554-12	PURESILK PERISTALTIC PUMP ROLLER KIT & SANTOPRENE TUBE ASS"Y				
33512-TB-ACID-2	SERVICE KIT (CPS2) - INCLUDING: 32523 / 32655-1 / 32554-12-ACID / 33501-TB				
33513-TB-ACID/CHL-2	SERVICE KIT (CPS3 / COMM1000) - INCLUDING: 32523 / 32659 / 2x 32655-1 / 1x 32554-12-ACID / 1x 32554-12-CHL / 2x 33501-TB				

WARRANTY

DOMESTIC APPLICATIONS

Puresilk Chromatalyzer models: CPS2 and CPS3 (models not for commercial applications)

- 2 - Year Warranty – Parts (Not including maintenance items)
- 2 - Year Warranty - Workshop Repair Labour (Not including maintenance items)
- 1 - Year Warranty - Infield Labour (30kms of an authorised service agent)

COMMERCIAL APPLICATIONS - Must use COMM1000

Puresilk COMM1000 model:

- 1 - Year Warranty - Parts (Not including maintenance items)
- 1 - Year Warranty - Workshop Repair Labour (Not including maintenance items)
- 1 - Year Warranty - Infield Labour (30kms from an authorised service agent, Not including maintenance items)

Conditions:

- Infield labour charges apply to units installed for a period exceeding 12mths
- Infield labour charges may apply within the 12mth period if location is more than 30kms from authorised service agent
- Freight charges are the responsibility of the home owner
- Under no circumstances shall the manufacturer be liable for incidental or consequential damages, inconveniences or expenses in connection with the removal, installation or replacement of equipment
- Under no circumstances shall the manufacturer be liable for damage caused to persons or property as a result of use of this equipment
- Charges will apply during the warranty period if installation or method of operation is not in accordance with our instructions
- Use with bore water may void warranty
- Warranty extending beyond 1 year is not transferable
- Purchase receipt must be produced to claim warranty

The following invalidates warranty

- Incorrect installation
- Incorrect use
- Misuse
- Water in excess of 40 deg C
- Water temperature of 0 deg C or lower
- Pressures exceeding 350kpa
- Where used for a purpose other than that described in this manual
- Use of non-genuine components / reagents / indicators
- Use of chemicals or optional equipment not authorised for use by Puresilk
- Where immediate action has not been taken to rectify a problem

HISTORY NOTES

Chromatalyzer model number: **serial number:**

Date of chromatalyzer installation:

Reagent bags changed:

Maintenance Items:

Customer notes: