INSTALLATION AND OPERATING INSTRUCTIONS

For TUFFChem TP100 Series Pool water Balancing System.

TUFFChem TP100

Designed and manufactured in Australia
www.profacture.com.au

IMPORTANT NOTICE

The material within this document is believed to be accurate and reliable as at date of printing. However, Profacture assumes no responsibility for the use of this material.

Profacture Pty Ltd reserves the right to make changes to the material at any time and without notice. Refer to the Profacture web site (www.profacture.com.au) for the most updated version.

The content of these documents is continually reviewed and amended, where necessary. However, discrepancies cannot be excluded. No guarantee is made for the completeness of these documents. The images contained in this document are for illustrative purposes only and may vary depending on the product model.

Section 1: Safety instructions

1.1 Read and follow all instructions

Attention Installer: This manual contains important information about the installation, operation and safe use of this product. This information should be given to the owner and/or operator of this equipment.

WARNING - Before installing this product, read and follow all instructions which are included.

It is essential that the installer should be a person with sufficient experience in pool equipment installation and be approved to install the TUFFChem Controller, so that all the instructions in this manual can be followed exactly.

Failure to follow these instructions may result in property damage or maybe even personal injury. Improper installation and/or operation will void the warranty.

All electrical work must be performed by a licenced electrician and conform to all national, state, and local codes.

When installing and using the TUFFChem controller, basic safety precautions should always be followed.

1.2 WARRANTY

This warranty is applicable to workmanship and materials only and is not transferable under any circumstance. This unit is designed for use in domestic swimming pools only. Keep your original purchase invoice and serial number in a safe place.

The TUFFChem has been manufactured and tested to the highest standard and accordingly carries the following warranty.

The TUFFChem Controller will be repaired at no charge for a period of **36 Months** from the date of purchase should it be found after examination that the failure has been caused by faulty workmanship or materials. This is a back to base warranty. **The Probe, peristaltic pumps is covered by a 12 month warranty. Rotor and squeeze tubes are not covered under warranty as they are subject to general wear and tear.**

Adverse operating conditions beyond the control of the manufacturer such as improper voltage or water pressure, excessive ambient temperature or any condition that adversely affects the performance of the TUFFChem will render this warranty null and void.

Please note greasing of the squeeze tube reminder appears on the controller screen every 90 days. It is your responsibility to ensure this service is done as per reminder. Failing to do so will void warranty of the peristaltic pump. Rotors and squeeze tubes need to be inspected and replaced every 12 months.

TuffChem in commercial installations comes with a 12 month warranty on controller, probe and peristaltic pumps.

A defective TUFFChem controller must be returned to the manufacturer or dealer as soon as the purchaser becomes aware of the defect and all transport costs will be covered for the first 12 months. Neither the manufacturer nor the dealer shall be held responsible for any goods damaged in transit.

If after examination the equipment is found to be defective it will be repaired or replaced free of charge. However, if upon inspection of the equipment it is found that the terms of this warranty are not satisfied, then the usual charges of the manufacturer for repair or replacement will be made including all transport costs.

Any liability of the manufacturer pursuant to the Trade Practices Act 1974, as amended for a breach of a condition or warranty shall be limited to replacing or acquiring the equipment (or part thereof) where the same has been supplied.

The maximum liability incurred by the manufacturer shall not in any case exceed the contract price for the equipment or the product parts or components thereof claimed to be defective. Further, the manufacturer shall not be liable for any loss, damage or delay directly or indirectly caused by any malfunction of or defect of or failure of the equipment other than as expressly provided in this warranty.

Products sold by Profacture are designed for use with swimming pool water balanced in accordance with the Langelier Saturation Index with a pH range of 6.8-7.8.

Profacture will not be held liable for damage caused by, but not limited to, corrosion, scaling or stress.

The following may void warranty:

– Installation is carried out incorrectly by any person other than a person authorised by us to do so.
– The TUFFChem controller is serviced by any person other than a person authorised by us to do so.
– The TUFFChem controller is not protected from the elements.
– The TUFFChem controller is not operated in a position/area with good ventilation.
– Water has been allowed to enter the TUFFChem controller or cable connections.
– Run in a commercial installation unless a commercial model is purchased.
– Insect infestation or penetration by dust, sand or other foreign particles inside the TUFFChem controller.
– Damage beyond our control.
– Equipment that has been misused, neglected, damaged, repaired without authorisation or altered in any way.

1.3 Warranty Claims

When making a warranty claim, please note the following information is to be provided or claim may not be approved.

– pHMate Controller Serial Number
– Details of the Dealer
– Installation Date
– Your Full Name
– Your Phone number
– Your Address Details
– Details of the Issue

We keep extensive production and sales records so this information will expedite the processing of your claim. All warranty support claims must be lodges online here - https://www.profacture.com.au/warranty-support/

1.4 Register Your Product

We recommend you register your TUFFChem controller on our website here - www.profacture.com.au/registration within 30 days of installation along with an image of the installation.

PLEASE DO NOT operate the TUFFChem controller until you have carefully read and understood all the information in this user manual. Should you have any questions about the operation or installation please visit our FAQ page on our website or connect with our team at support@profacture.com.au

Contents

Section 2 – System Overview

2.1 – How it works

Your TuffChem continually samples your pool water pH and ORP level utilising advanced technology and scientifically engineered sensor probes. ORP stands for Oxidation Reduction Potential which measures how effective the sanitiser is oxidising contaminants in your pool. Varying the ORP level will increase or decrease the rate of disinfection of your pool water. Your TuffChem will dose acid and chlorine automatically to balance your pool water to your desired set pH and ORP level. A high pH level greatly reduces chlorine's effectiveness at sanitising your pool water so it is very important to keep it within the correct range. Please see Section 4 – TUFFChem TP100 Series Functions for TUFFchem operation instructions.

2.2 – What's in the box

Only use the equipment supplied by Profacture Pty Ltd. Use of non-genuine components may result in damage to the TUFFChem controller and void warranty

Description	**QTY**
TUFFChem Controller	1
Calibrated probe	1
Manifold – injection point with 2 non-return valves	1
Manifold – probe	1
Drum filter	2
Hose weight	2
Wall plugs (2 x screws / wall plugs)	1
Commercial grade tubing – 6m	1
Acid label / disc	1
User guide	1
Mounting bracket	1

2.3 – Technical Specifications

- Operating temperature: 0-60degC
- pH Range: 0-11 pH
- Slope: >98%
- pH sensor: Glass Bullet
- Accuracy: +- 0.1 pH unit

2.4 – Power Supply specifications

TUFFChem Power Supply is a 240 Volt unit with an IP 24 Rating and needs to be plugged in to a weather proof power point. The unit has a resettable fuse at the bottom. For the Timer Power Point Model the limit on the GPO is 7.5 amps Max.

2.5 – Preparation for installation

Sanitisation – Water Balance

The pool needs to be balanced before installation. Ensure the pool chemistry is as per the requirements of the pool surface.

One of the main requirements to keeping pool water looking crystal clear is to ensure the pH levels are correctly maintained. Failure to maintain correct pH levels may lead to the water turning cloudy, and in severe cases cause people to become ill.

The TUFFChem Controller has a pH sensor. It works by measuring the ph in the water. To get a stable pH it is paramount to have the Total Alkalinity in the range recommended.

To ensure that the sensor read correctly, it is essential that the pool water is clean and free from contaminants such as plant or other foreign matter. Water chemistry must be checked by a professional prior to installation of the TUFFChem Controller. Water must be balanced prior to installation and setup for water chemistry management functions to operate correctly.

Water that is balanced has proper levels as outlined below

- pH: 7.2 – 7.7 pH
- Operating temperature: 0-60degC
- Total Alkalinity: 80 – 160 ppm
- Calcium Hardness: 90 – 250 ppm
- Cyanuric Acid (Stabiliser): 0 – 50 ppm

PLEASE NOTE: Stabiliser levels above 70 can cause in accurate ORP readings.

- Chlorine: 1 – 3 ppm

Section 3 - Installation

3.1 – Selecting suitable mounting location

The enclosure of the TUFFChem Controller is made from powder coated metal cabinet making it resistant to normal weather and UV conditions. The TUFFChem controller may be mounted either indoors or outdoors but out of direct sunlight.

It is recommended that the TUFFChem Controller be mounted under cover protecting it from harsh weather conditions. This will ensure a greater service life. Choose a location that best allows for the next three requirements.

Electrical requirements:
The TUFFChem Controller must be mounted within 1.5 m from the power supply.

3.2 - Installing the Probe in manifold as per diagram:

The probe comes installed in a protective cap which contains a storage solution. This storage solution keeps the pH probe glass hydrated and ensures the probe will be ready to use as soon as it is installed.

Location: The probe can be installed before the pump, however for optimum life of the probe it is best installed after the filter. Unfortunately, probes installed before the pump are prone to sand and debris that are abrasive make contact with the probe that can cause damage. Always ensure that the probe manifold is full of water when the system is off. **The probe must be installed horizontally, NOT VERTICAL. Never install the probe after the cell or injection point as this will result in incorrect readings.**

3.3 Installing the injection point manifold as per diagram.

It is recommended that the injection point manifold is installed last in the return line to the pool. EG after the heat pump or gas heater. Never install the injection point before the cell or pool heating as this will cause damage which will void your heater warranty.

Glue the manifolds with PVC cement (Type P).The manifolds are designed to take 50mm PVC pipe. Reducing bushes can be used for 40mm PVC pipe.

3.4 – Mounting the TUFFChem controller to the wall.

Masonry wall installation: 3. Using an 7mm masonry drill bit, drill the marked holes to the depth of the supplied wall plugs. –

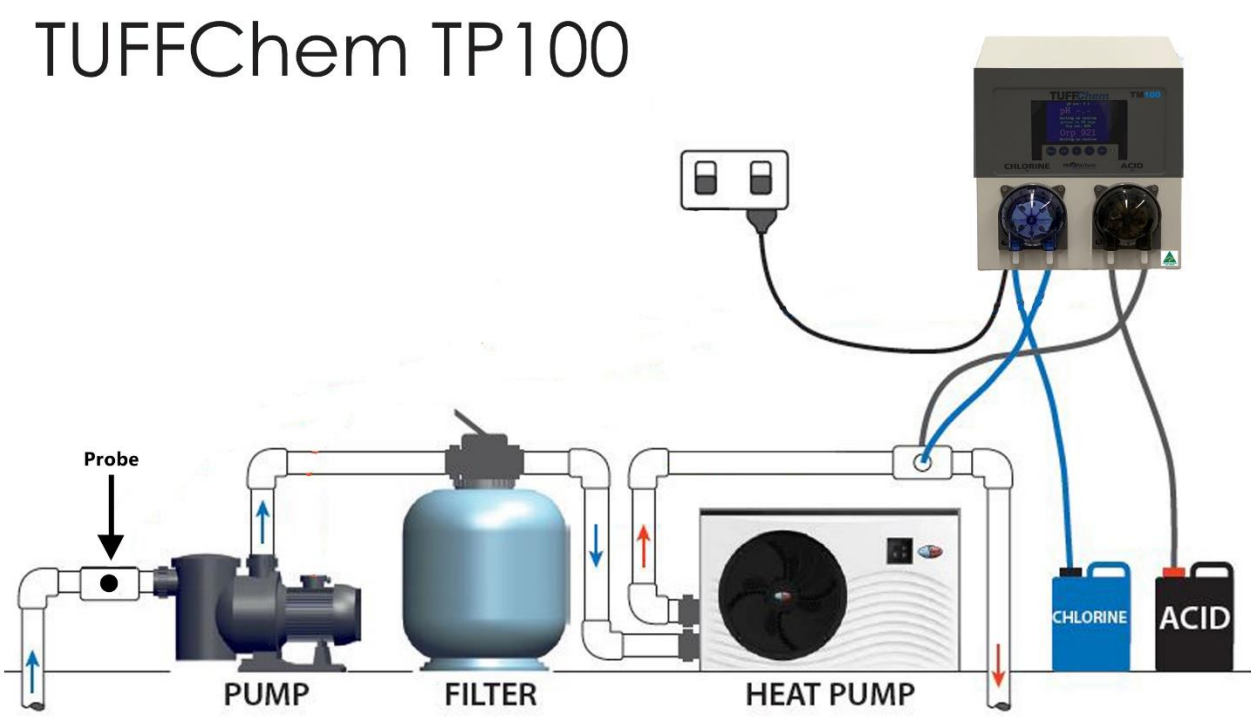
The mounting bracket comes with a spirit level with options for mounting. Once mounting bracket is secure to the wall load the TUFFChem onto the mounting bracket and secure with locking screw that is provided.

WARNING
Failure to install your TUFFChem controller correctly will void warranty.

Recommended TUFFChem Preventative Maintenance

1. Grease Squeeze tube every 3 months with a silicone-based grease
2. Replace Squeeze tube every 12 months
3. Replace Rotor every 12 months
4. Replace feed lines every 12 months

3.5 – Installation & Connections



Next, connect the acid drum to the dose pump.
A concentration of 110g/L hydrochloric acid is required for the dosing system.
Most hydrochloric acid is sold at a concentration of 330g/L. To achieve correct concentration, dilute 1 litre of hydrochloric acid with 2 litres of tap water.

1. Place container away from pool equipment in a well-ventilated area

2. Drill an 11mm hole into the lid of the acid container

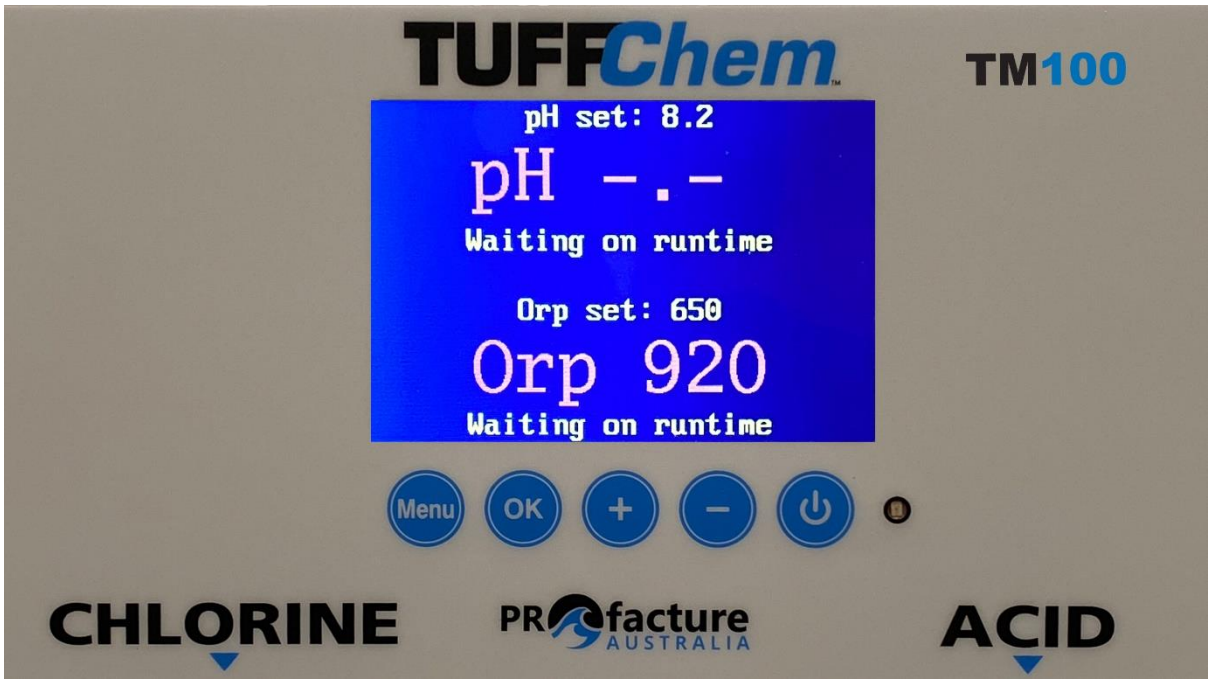
3. Feed through the supplied clear feed tube through the hole on the lid then slide the ceramic hose weight and then push on the supplied filter basket to the end of the feed tube. Ensure the tube is pushed all the way on the tapered nipple and allow to drop to the bottom of tub.

4. Run the feed tubes from the acid and chlorine containers to the input of the dose pump (left side).

5. Connect another length of feed tube onto the outlet of the dose pump (right side) and connect to the inlet of the check valve.

SECTION 4 – TUFFChem TP100 Series Functions

4.1 Home Screen



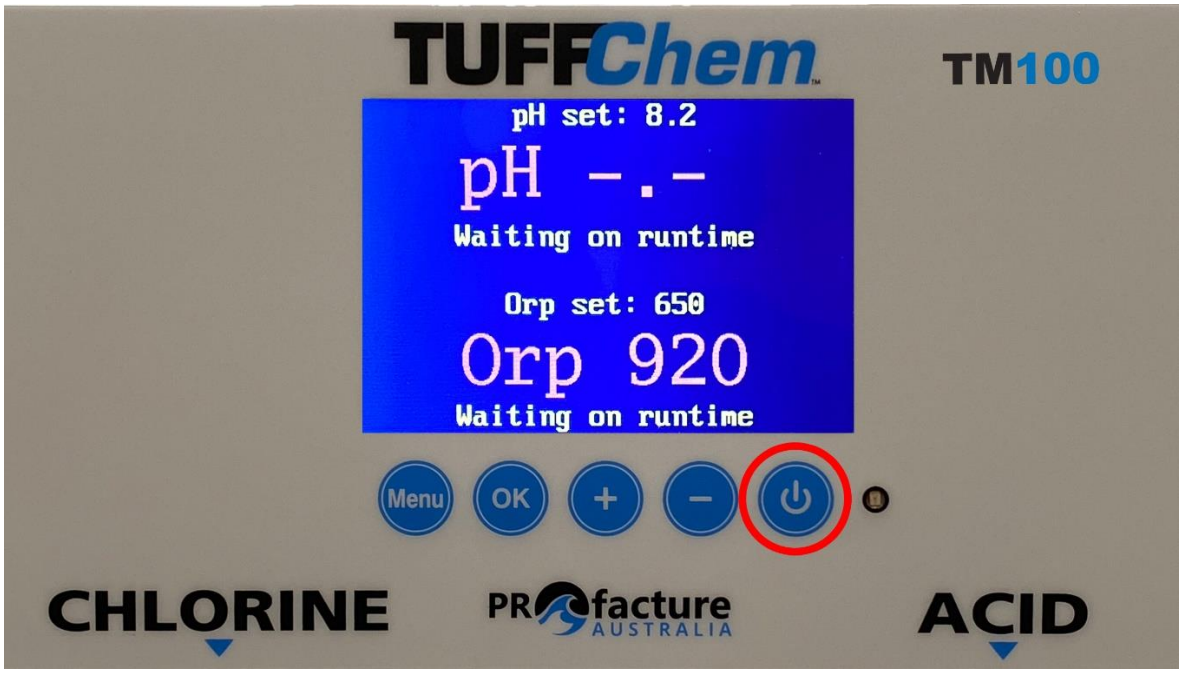
Functions

- Displays pool pH & ORP
- The set point can be adjusted from this screen.
- pH range is from 6.8 to 8.2
- ORP range is to 950

  To Update - Press “OK” button once to set pH and “+ or -“ buttons to increase or decrease set point. Press “OK” button once to set ORP and “+ or -“ buttons to increase or decrease set point.

NOTES:

4.2 Power Button Function

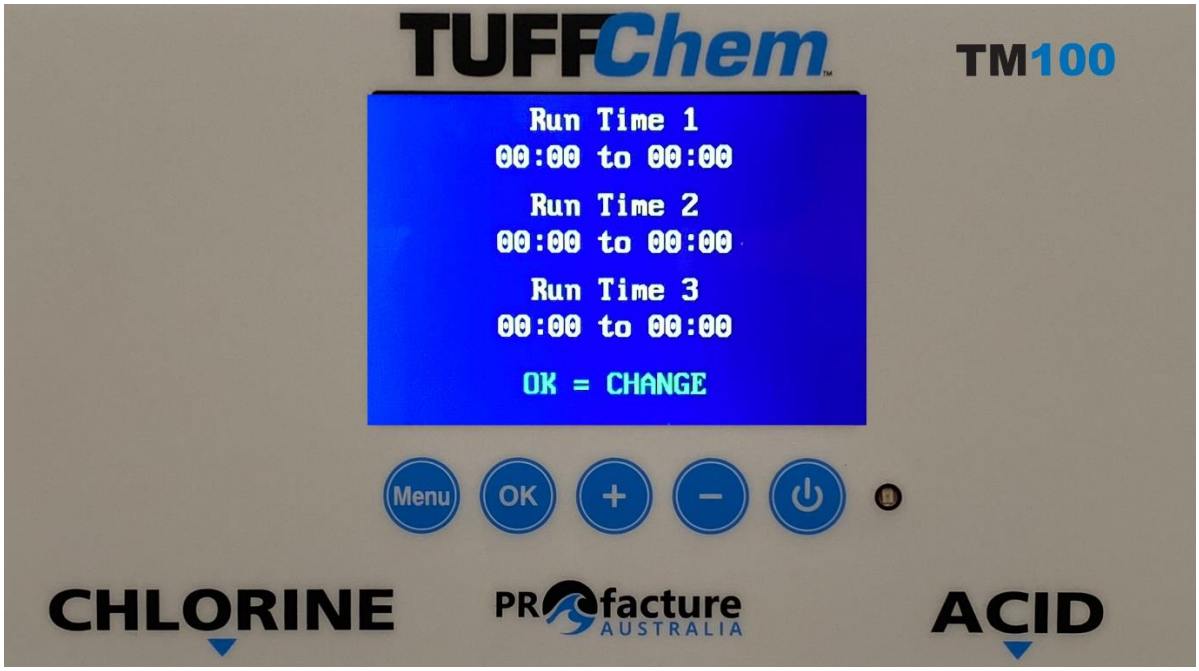


Functions

- The power button allows you to turn the TUFFChem Off while in timer mode.
- To turn it back on to normal timer cycle press “Power” button.

NOTES:

4.3 Run Time Function



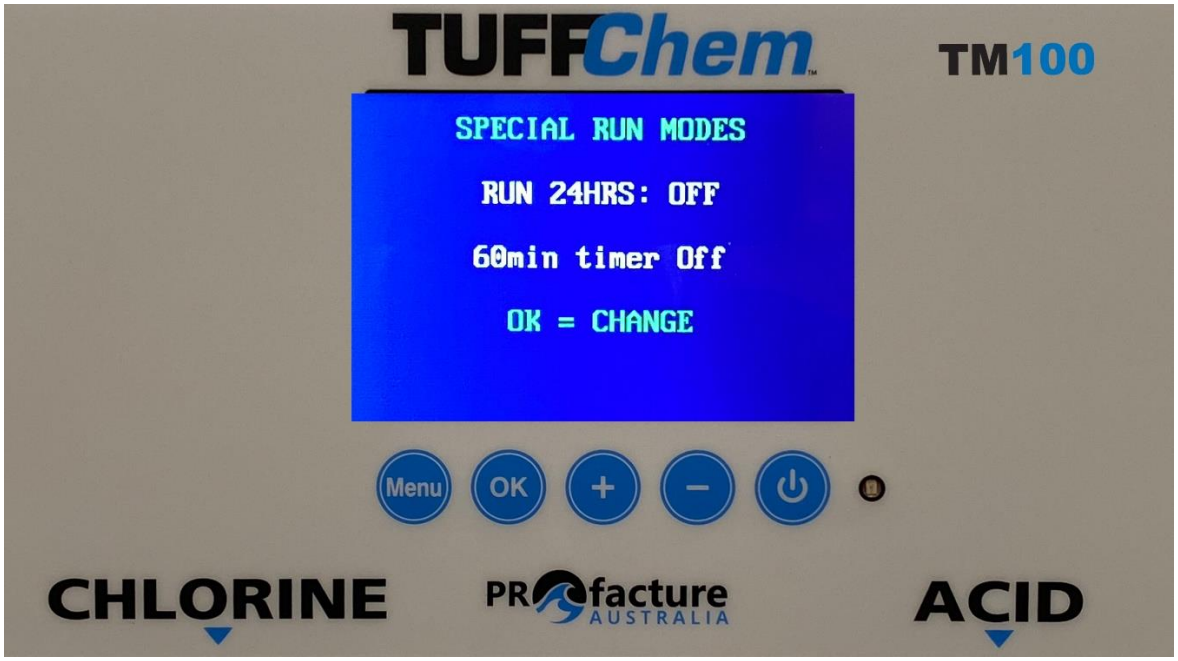
Functions

- The TUFFChem has 3 available run time options per day.
- Run timer 1
- Run timer 2
- Run timer 3

To Update - Press “OK”
To set a timer press “+ or -“ buttons to set time.
Press “OK” to save and scroll to next timer.

NOTES:

4.4 Special Run Mode Function



Functions

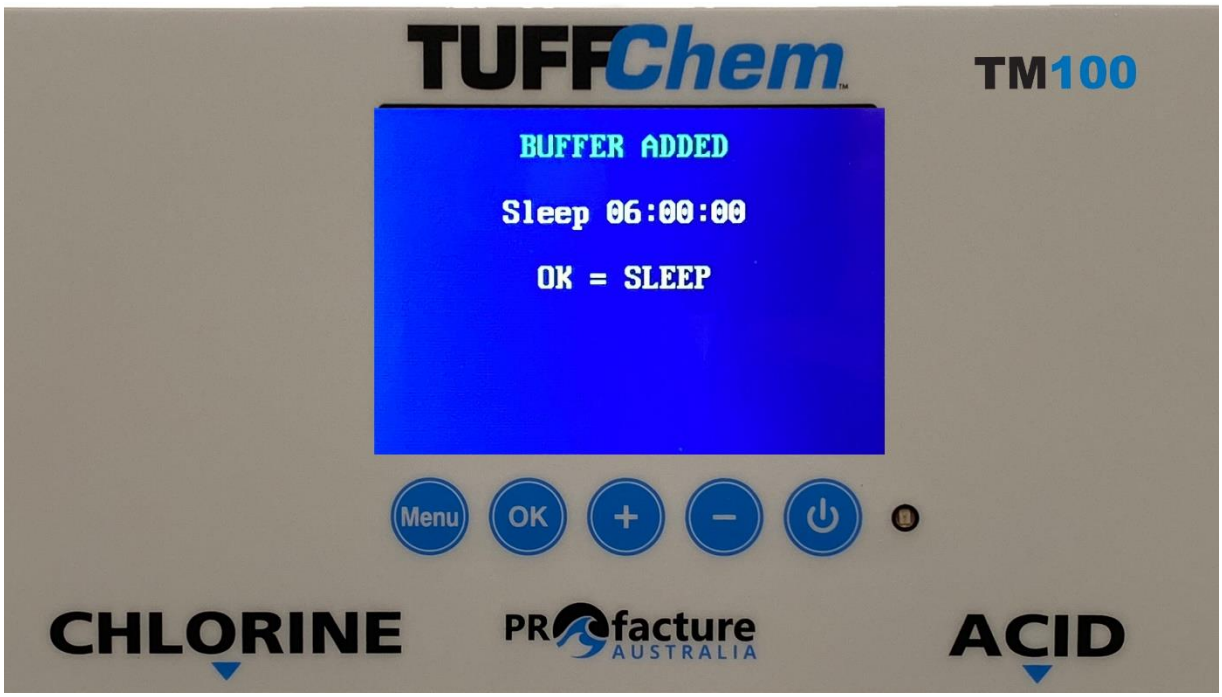
- The TUFFChem has two manual run mode options.
- 24 hours per day, 365 days per year on/off operation.
- 60 minutes to run system outside timer cycle.
  *For example timer is set for 9am start & at 7am there is a need to start the unit for 1 hour. This is when the 60 minute timer function is used and once complete will revert to normal timer mode.

  To Update - Press “OK”
  Press “+ or -“ buttons to set on or off operation.
  Press “OK” to save.

  *Auto timer operation will resume once special run mode has been completed

NOTES:

4.5 Buffer Add Function



Functions

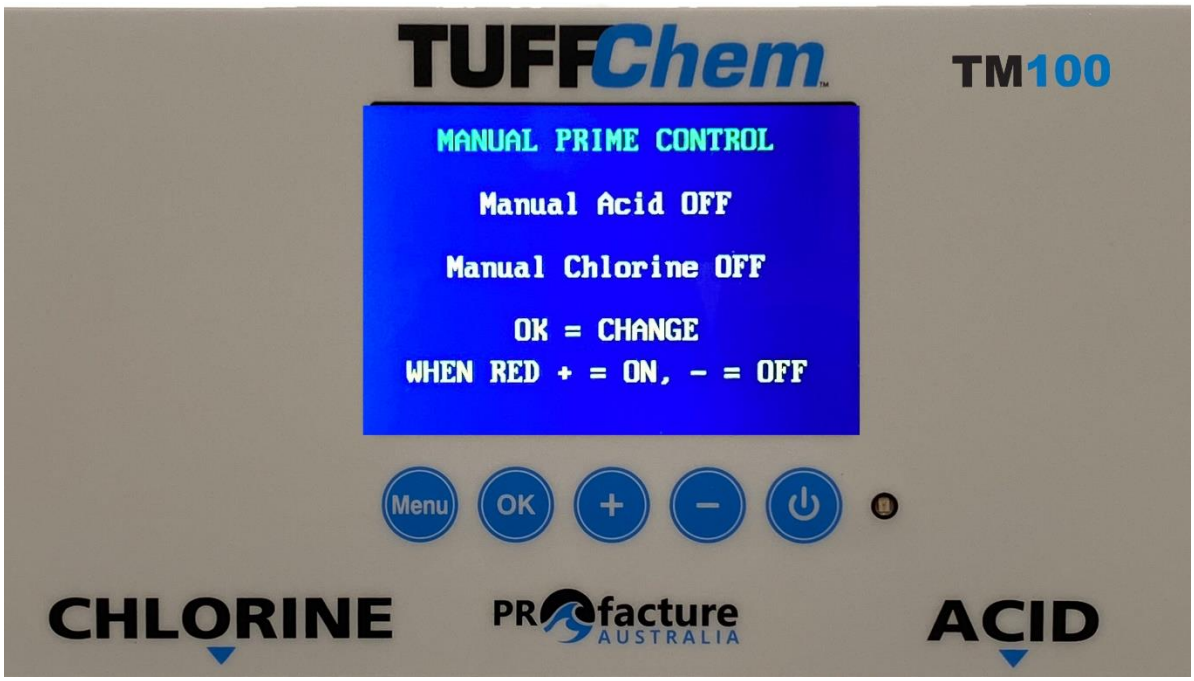
- The TUFFChem acid pump can be put to sleep when buffer is added to the pool.
- Choose up to 12 hours sleep time.

  To Update - Press “OK”
  Press “+ or -“ buttons to set sleep time.

  *The buffer added function come preset with 6 hours sleep time.

NOTES:

4.6 Manual Prime Function



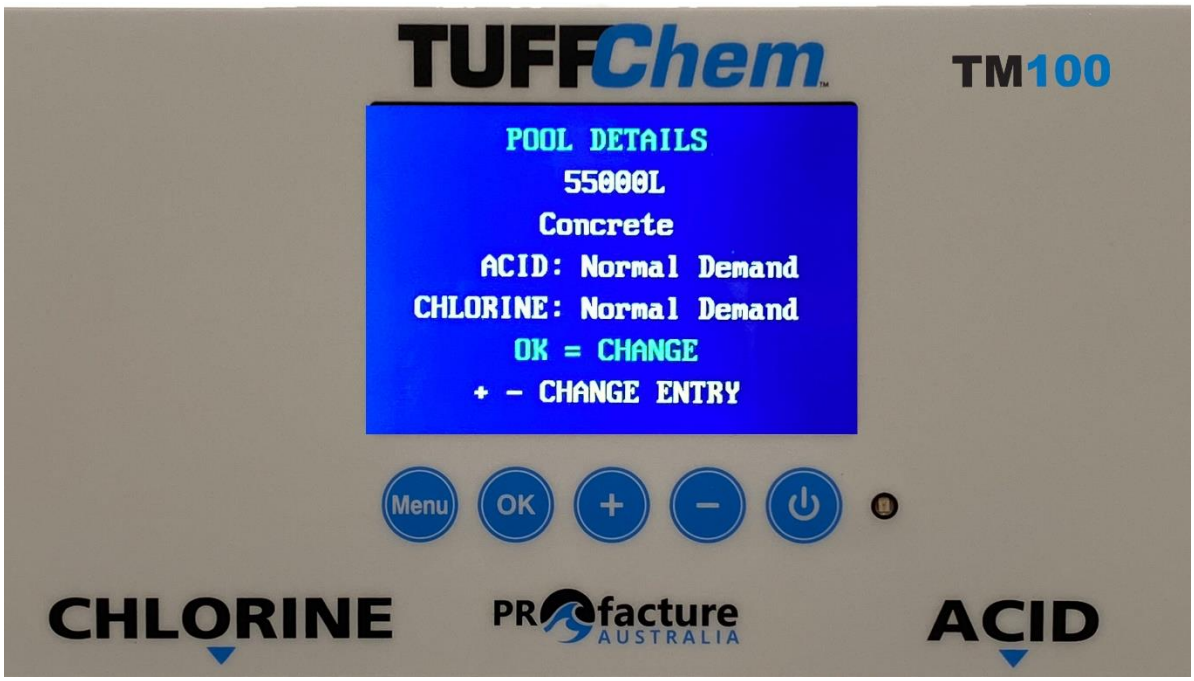
Functions

- Manual feeding of the acid & chlorine can be done from this function.
- Manual feed/prime the lines on installation.
- Manual feeding can be done at any time.

  To Update - Press “OK” to highlight acid.
  Press “+ or -“ to turn on/off.
  Press “OK” to repeat for chlorine.
  Press “+ or -“ to turn on/off.

NOTES:

4.7 Pool Details Function



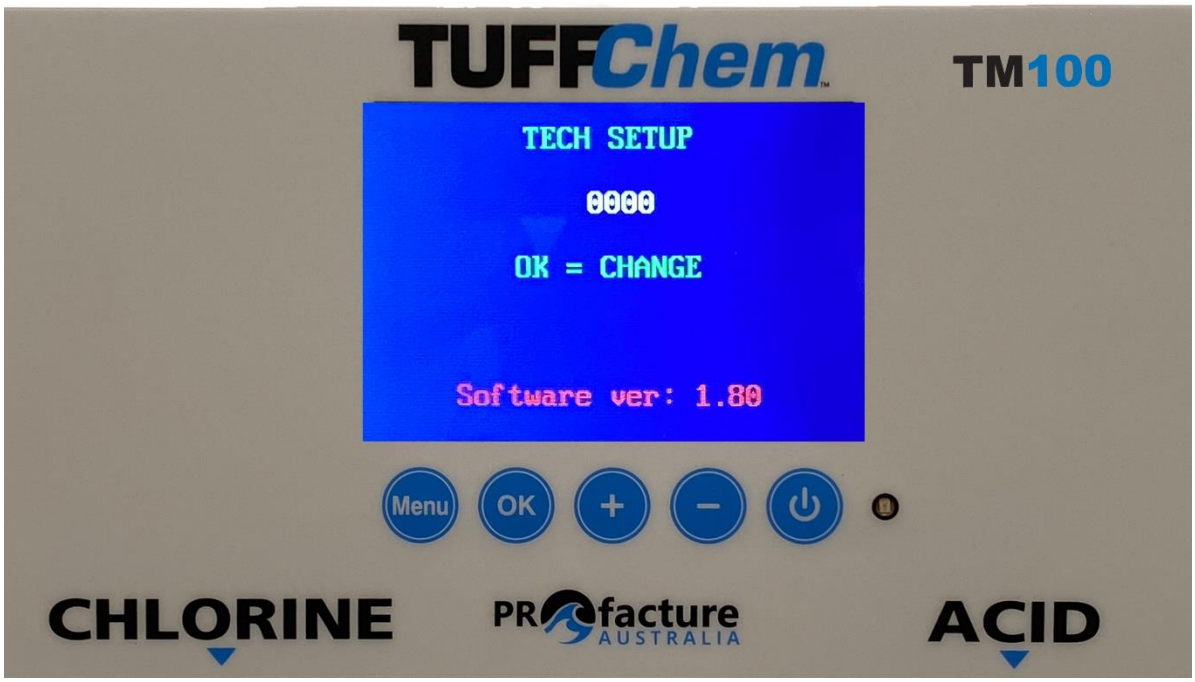
Functions

- Enter your pool detail here in the pool details function.
- Select your pool volume (litres).
- Select your pool surface.
- Select your acid demand level – normal, medium, high.
- Select your chlorine demand level – normal, medium, high.

To Update - Press “OK” to highlight pool requirements
Press “+ or -“ buttons to set your pools details.
Press “OK” to scroll to next option & set.

NOTES:

4.8 Technician Setup Function



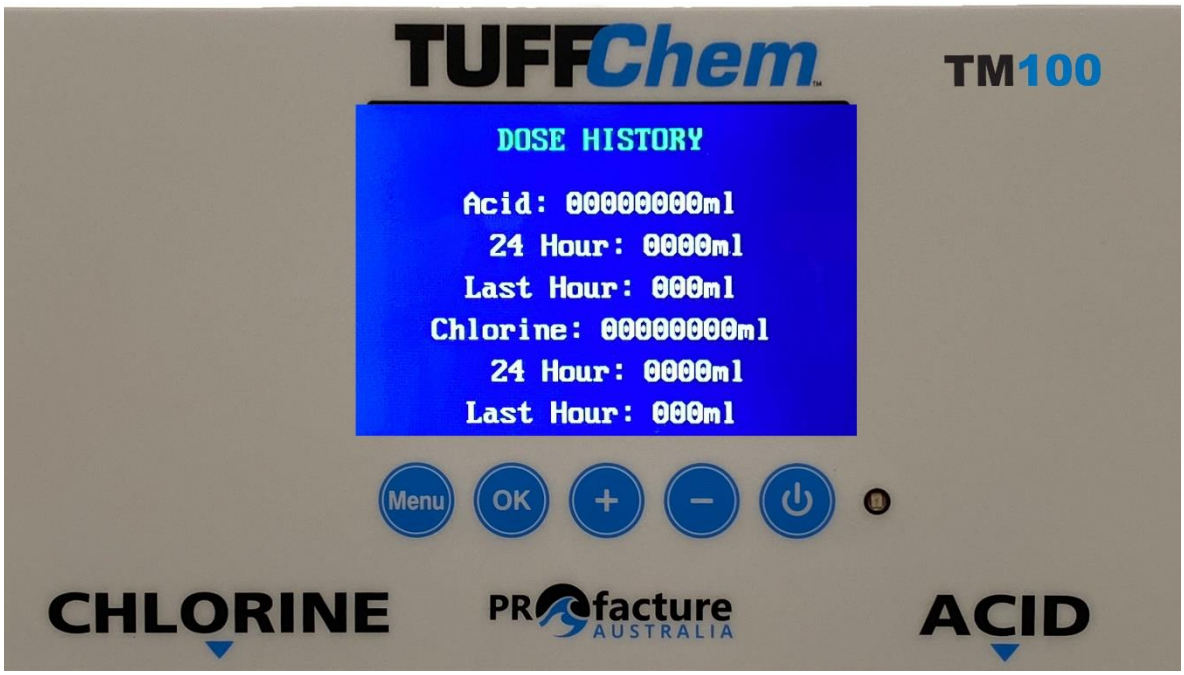
Functions

- TUFFChem technician settings.

*Only authorised pool technicians have access to this function.

NOTES:

4.9 Dose History Function



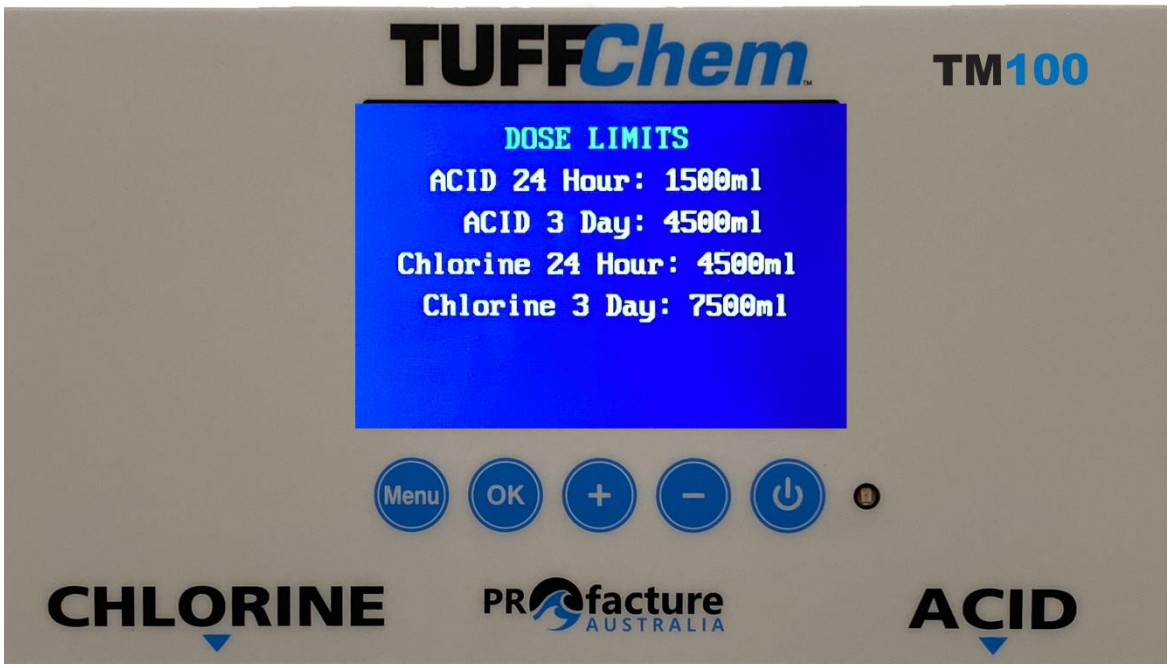
Functions

- Displays dosing history for the last hour and 24 hours or operations.
- Acid dosing history.
- Chlorine dosing history.

*This is a display only function.

NOTES:

4.10 Dose Limit Function



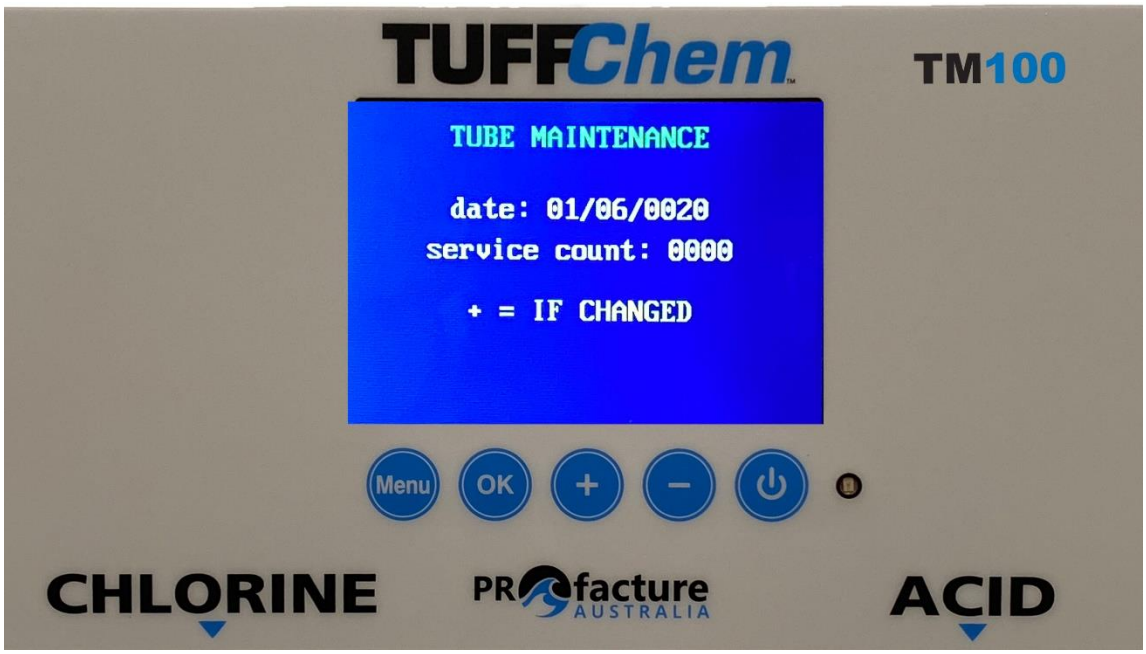
Functions

- Displays dosing limits for operation.
- Acid dosing limit per 24 hour & per 3 days.
- Chlorine dosing limit per 24 hour & per 3 days.

*This is a display only function that will display once your pool details have been added in the Pool Details function.

NOTES:

4.11 Tube Maintenance Function



Functions

- Displays the TUFFChem tube maintenance status.

*Service count is for service use only. Tube maintenance must be carried out every 3 months. Failure to perform tube maintenance will void warranty.

NOTES:

Section 5 – Frequently Asked Questions

Q. How do I grease the squeeze tubes?

A. Refer to the video on profacture.com.au

Q .Why does my TUFFChem count down and not dose.

A. The TUFFChem is reaching it 3 day dose limit hence the countdown and no dose. Through the menu button in Pool Details change the demand to next setting i.e Normal to Medium -High and if the limits are still being reached then change pool volume by 10,000 litres and monitor.

Q. How often do I need to clean the probe?

Every 3-6 months depending on pool usage. Deposits can lodge on the probe. These deposits are mostly from sunscreen oils etc. Eventually these deposits will prevent the probe from reading correctly. Failure to clean the probe will result in in accurate readings with can result in over dosing of chemicals.

Q. How do I clean my probe?

A. In a cup add about 30ml of Acid to 30 ml water and dip the tip of the probe in this solution for 3-5 minutes. Rinse off the probe in fresh water and install. Always use protective equipment when handling chemicals to prevent any injury from splashing etc. The solution from the cup can be tipped back in the pool.

Q. What type of acid can we run with the system?

A. The system is designed to run with Hydrochloric or Non Fume Acid.

Q. System Says Probe not connected

A. Check that the cable from the probe is securely connected to the control unit.

Q. Can the probe be calibrated?

A. This can only be carried out by a professional technician.

Q. Why is there a difference in the actual chemistry and what the TUFFChem reads?

A. We allow for a tolerance of up to 0.3 on the pH side and 10-30 points on the ORP between the manifold and the pool skimmer box where the samples should be taken from because that is the closest point to the manifold. Do note that this tolerance is due to hydraulics in pools that cause this variance.


PR facture
AUSTRALIA