



Centrego

5K40 Plus

User Manual



Centrego ECA Systems

Producing high-grade disinfection solutions for in-situ use from the electrolysis of water and salt. The most environmentally responsible way to protect staff, customers, assets and the environment, reducing carbon emissions and saving costs. Kills all microorganisms including bacteria, viruses, spores, fungi with rapid contact times, high efficacy, and limited regrowth.

Applications: water treatment, waste water treatment, industrial process water and CIP for plant and equipment cleaning and disinfection.



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Centrego 5K40 Plus



1.0 General

1.1 Installation of 5K40 system

The installation and commissioning of the 5K40 system should only be carried out by qualified Centrego technicians or staff that have been trained by Centrego.

Any questions relating to the installation and commissioning of these systems should be directed to Centrego Ltd.

1.2 Introduction and intended use

Congratulations on the purchase of the Centrego 5K40. Before using this unit for the first time, please read the manual carefully and keep all information for future reference. These instructions will show you how to use the device safely and protect you from danger or damaging the unit.

This device produces solution that can be dosed into water for treatment.

1.3 Design and compliance

The ECA solution produced by the machine has the following compliance listings.

SYSTEM CERTIFICATION
European Chemicals Agency (ECHA) listed
UK Health & Safety Executive (HSE) listed
US Environmental Protection Agency Approved
CE Certified

1.4 Symbols and meanings

Below are explanations of symbols and meanings used in this manual.

DANGER - is reserved for conditions and actions that are likely to cause serious or fatal injury

WARNING - Is reserved for conditions and actions that can cause serious or fatal injury

CAUTION - is reserved for conditions and actions that can cause injury or instrument damage

2.0 Safety

2.1 Caution Use Only As Directed

- Use solution only as directed by Centrego staff during training
- DO NOT use in an enclosed space. Use only in a well-ventilated area
- For industrial use only
- DO NOT spray into your eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- DO NOT swallow the activated solution. If swallowed, seek medical advice
- DO NOT use this unit near fire
- Wash hands after use. People with sensitive or damaged skin should avoid prolonged contact with the product
- Keep out of the reach of children and pets

2.2 Directions for Safe Use

- DO NOT move the unit during operation
- STORE SOLUTION SAFELY – Do not keep the activated ECA solution in the refrigerator or kitchen, catering areas where it can be confused with drinking water
- Produce only as much fluid as necessary and use as instructed
- Unused solutions can be disposed of with care
- Avoid direct exposure of the unit to the sun or central heating which might cause fire or damage
- DO NOT use ground water, polluted water or excessively hard water into the machine
- DO NOT use any other input apart from normal mains/tap water

2.3 Water quality

- The water supply MUST be from potable tap water with limited hardness
- If in a hard water area, a water softener is recommended
- Low calcium water is recommended
- DO NOT use ground water, polluted water or excessively hard water for input to the machine



	CAUTION - Potentially Hazardous Situation
	DANGER - Electric shock risk

2.4 General safety

- After 5 to 7 days pour the solution away and simply make some more
- After use, carefully wipe surfaces and leave to dry
- Always use the power cable and plug supplied.

The Centrego 5K40 generates a disinfection solution by the electrolysis of water and salt.
It is manufactured by Centrego Limited, of Unit N4 Marshall Way, Frome, Somerset, BA112FB, United Kingdom.

KEEP OUT OF REACH OF CHILDREN AND UNAUTHORISED PERSONNEL

3.0 Machine overview

3.1 Machine description

The Centrego 5K40 produces ECA (Electro chemically activated) disinfection solution on-site using salt and water. ECA disinfectant solution is an environmentally responsible alternative to most disinfection products.

The Centrego 5K40 is capable of producing 40 liters of solution every hour. The device uses an electrolysis cell to process the liquid input to the device into ECA solution that can be used to dose for water treatment.

3.2 Intended use of device

The Centrego 5K40 is intended to be used in large industrial facilities where the solution is dosed into water for water treatment, cleaning and disinfecting.

3.3 Intended use of ECA solution

The intention of using ECA solution for water treatment is an environmentally responsible system in that it can reduce a companies carbon footprint due to negating the need for disposable disinfection products and the plastic that comes with it. It also means that staff are safer due to the solution being hypoallergenic and not harmful to the skin.

4.0 Machine data

Mixed oxidant solution production	40ls/hr
Free Chlorine (HOCL + NaOCl)	4500 - 5000mg/L (4500-5000ppm)
Oxidation Reduction Potential (ORP)	≥700 mv
EC - depending on Free Available Chlorine (FAC)	mS <35
pH range	pH 8.0 to pH8.5

Water Supply	Min 50l per hour, fresh+brine or sea water
Water Pressure Supply	2-4 bar
Water Hardness	<17CaCo3/ppm
Salt Consumption	20 grams per litre
Electrical Current Supply	90 to 264vac 14A
Power Consumption	Single phase
Space Ventilation	>50M3/H
Ambient Temperature	min/max 5 °C to 40 °C

SYSTEM TECHNOLOGY
Electrochemical Activation (ECA) non-membrane cell system generating mixed oxidant solution consisting of hypochlorous acid and sodium hypochlorite with slightly alkaline levels for in-situ biocidal and cleaning solution applications.

INPUTS
Water (H ₂ O): Potable water, minimum requirement for filtered softened water, or reverse osmosis (RO) water. Maximum 70ppm TDS, conductivity 140uS/cm Salt (NaCl): Crystalline form, listed with European Chemicals Agency (ECHA) for the production of active chlorine by electrolysis.

SYSTEM SPECIFICATIONS & FUNCTIONALITY
HMI 7 inch touch screen controls
User adjustable PPM output
Automated brine control to maintain selected PPM output
Inputs - water plus brine or sea water
Onscreen notification of regular cell flushing process
Manual acid wash process
Built in water softener system (Optional)
Lockable castor wheels (Optional)
Marine grade stainless steel 316 framework
Remote monitoring systems controls via laptop or mobile phone
Expected operation life of cell approx five years (Use dependant)
Temperature input and output recording
Volume output real-time and cumulative
Flow rate & salinity monitoring and recording
Voltage/current & Alarms monitoring and recording

DIMENSIONS			
5K40 + mounting frame	163cm Height	54.5cm Width	53.5cm Depth

WEIGHT	
5K40 Dry device	Approx 96kgs

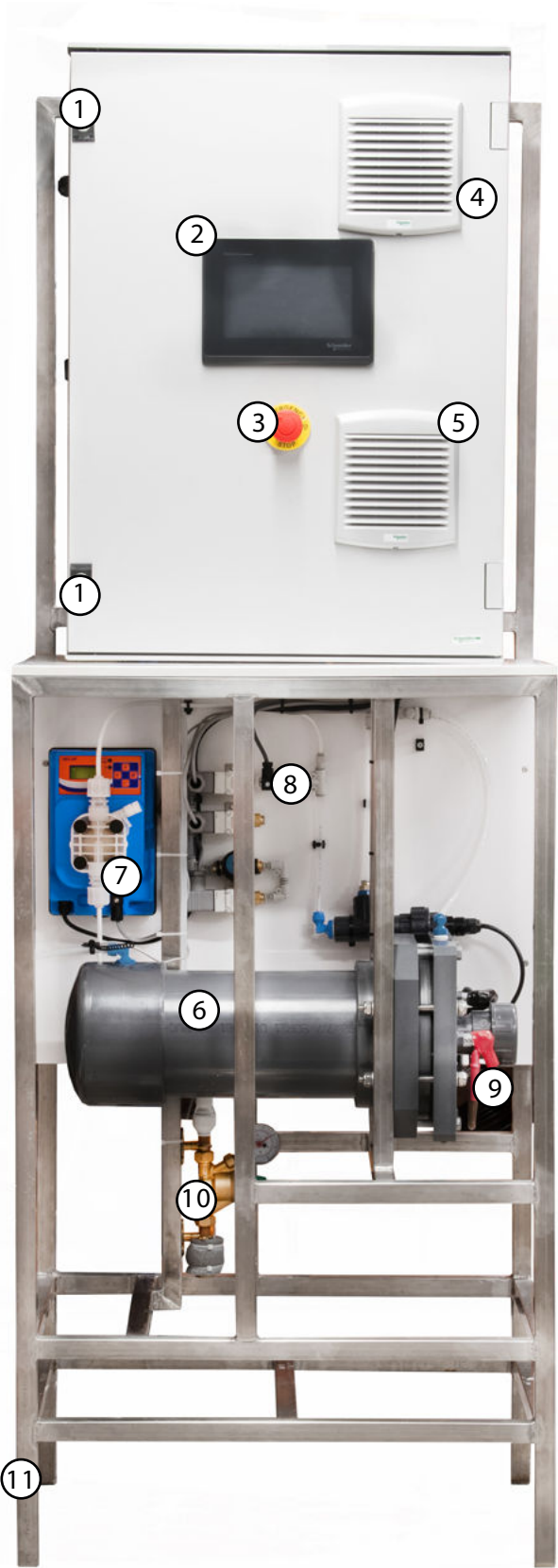
SOLUTION CERTIFICATION	EN13727
EN14476	EN13624
EN16777	EN1656 (Cefas Aquaculture approved)
EN13697	EN1500
EN1650	EN17126
EN14348	EN1276
EN14675 (Cefas Aquaculture approved)	



5.0 Device layout

5.1 Front of device

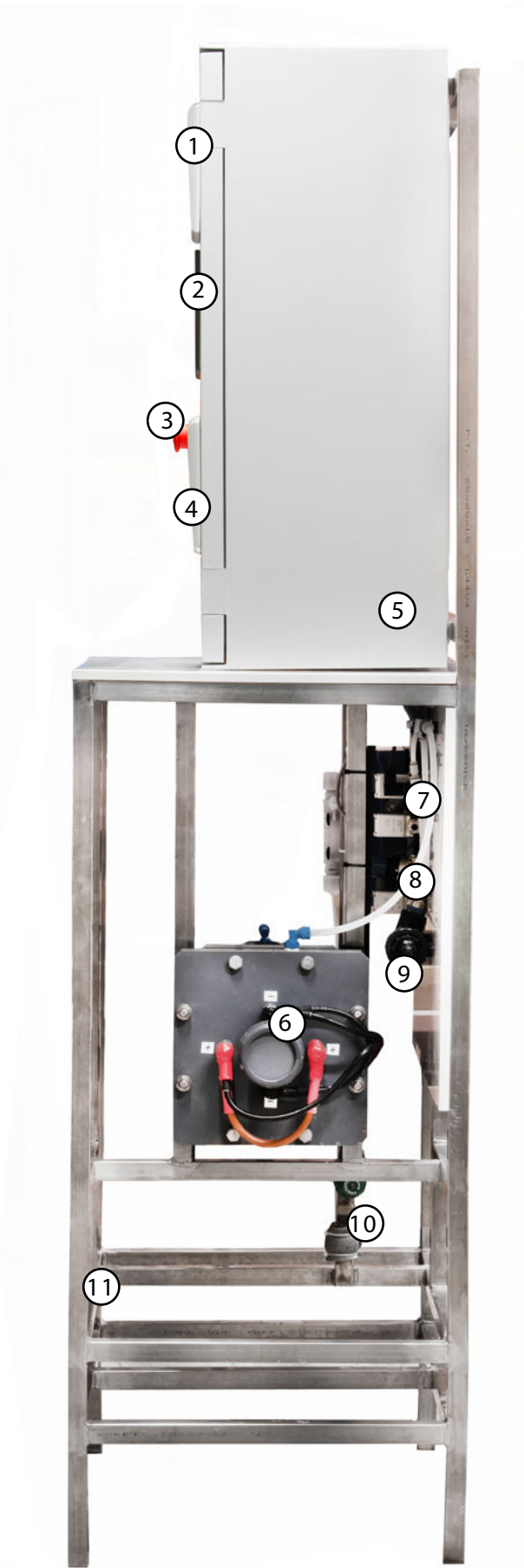
- 1 - Key holes (Do not open unless advised by a Centrego staff member)
- 2 - Touch screen
- 3 - Stop/reset button
- 4 - Air vent (Do not obstruct)
- 5 - Air vent (Do not obstruct)
- 6 - ECA Cell
- 7 - Brine Pump
- 8 - Overall water pressure regulator (Do not touch after installation unless advised by manufacturer)
- 9 - Electrical connections for ECA cell (Do not touch)
- 10 - Water input connection with water input pressure gauge.
- 11 - Metal stand



	CAUTION: This device is very heavy. Do not handle this machine without the appropriate training from Centrego.
	DANGER - Electric shock risk. Do not handle the power cable or any component without full training from Centrego

5.2 Right hand side

- 1 - Air vent (Do not obstruct)
- 2 - Touch screen
- 3 - Stop/Reset Button
- 4 - Air vent (Do not obstruct)
- 5- Cabinet
- 6 - ECA cell with power connections (Do not touch)
- 7 - Flow rate input adjuster to each cell (Do not touch unless advised by Centrego)
- 8 - Solenoid valves
- 9 - Salinity sensor
- 10 - Mains water input and input pressure gauge
- 11 - Metal stand



	CAUTION: This device is very heavy. Do not handle this machine without the appropriate training from Centrego.
	DANGER - Electric shock risk. Do not handle the power cable or any component without full training from Centrego

5.3 Left hand side

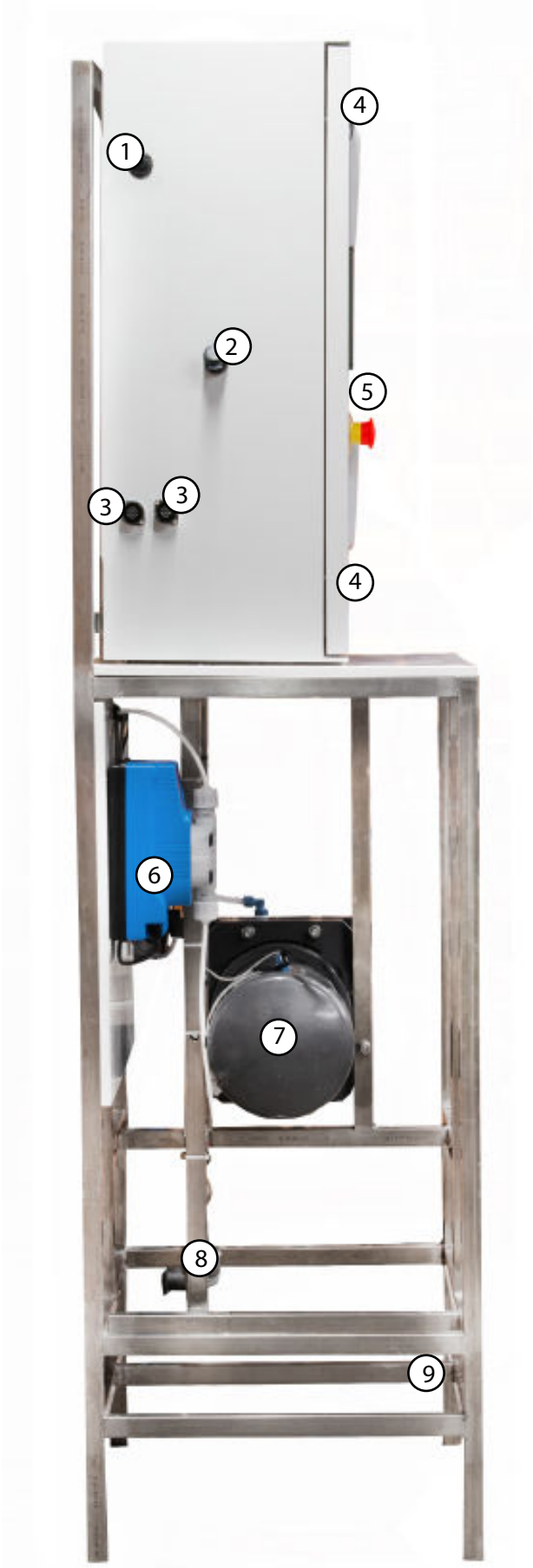
- 1 - Mains power input cable
- 2 - Ethernet connection for over the internet remote control (See Centrego for details)
- 3 - Liquid tank level sensor inputs (This is setup during installation - do not touch cables coming from these outputs)
- 4 - Locks for front door of device (Do not open this door unless advised by Centrego)
- 5 - Stop/Reset button
- 6 - Brine pump
- 7 - ECA Cell
- 8 - Water input connection with input pressure gauge
- 9 - Metal stand



CAUTION: This device is very heavy. Do not handle this machine without the appropriate training from Centrego.



DANGER - Electric shock risk. Do not handle the power cable or any component without full training from Centrego



5.4 Back of device

- 1 - 5K40 housing
- 2 - Back board that holds many components (do not remove any components or bolts from this board)
- 3 - Mains water input connection and pressure gauge
- 4 - Metal stand



CAUTION: This device is very heavy. Do not handle this machine without the appropriate training from Centrego.



DANGER - Electric shock risk. Do not handle the power cable or any component without full training from Centrego



5.5 Mains power cable and plug

The machine has a long thick cable going to a plug which is similar to the one shown on this page.

Do not disconnect plug or mains cable once machine is installed.

Always connect single phase plug to correct female wall connection.

Do not cut mains power cable.

NOTE:
This image shows the cable much shorter than the actual product



	CAUTION: Do not connect or disconnect this device to the mains power unless advised to by a Centrego staff member.
	DANGER - Electric shock risk. Do not handle the power cable or any component without full training from Centrego

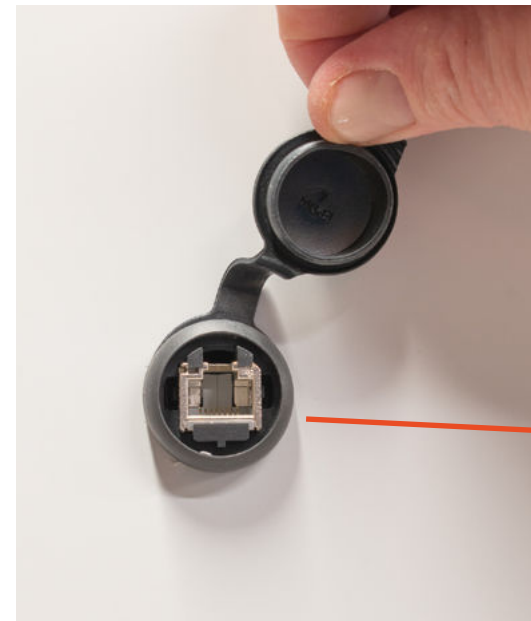
5.6 Ethernet port

The ethernet port has a black plastic cover to protect the port from moisture and dust when not being used.

In this close up image it is seen after opening the cover to reveal the port itself.

There is a Schneider produced software program that can be used to remotely control the software on this machine when connected to the internet via this ethernet port. Contact Centrego to speak about this.

This software does not adjust any of the physical valves or the water pump. It is only able to use the menu system on the touch screen, remotely.



5.7 Solution tank sensor connections

When this machine is installed by Centrego or Centrego trained staff, they will connect solution level sensors to these ports.

Once installed there will be a cable going from each of these ports to a solution tank.

Do not touch or remove these cables. Do not touch these cables unless advised to by Centrego staff.



5.8 Cell input flow rate adjuster

This flow rate input adjuster is mounted on the back board and control the flow to each individual ECA cell.

It is set during installation and therefore should not need to be adjusted at any point by a user.

Do not touch unless advised to by Centrego staff.



5.9 Water mains input

This is the mains water input connection. There is also a water input pressure gauge to show the pressure of the water input.

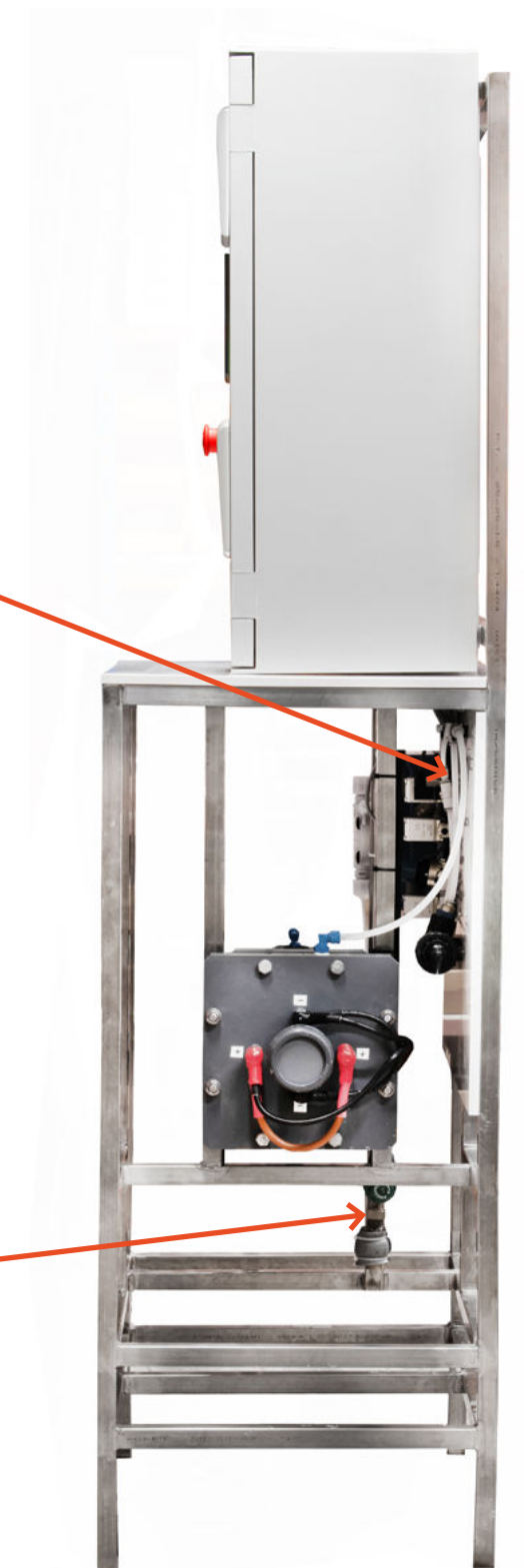
Centrego advises that the water input should be at 3 bar for optimum use.

Water input pressure is important for the machine to operate correctly.

If the water input pressure is too high or low, contact the management at your facility or a registered trained plumber to see if this can be resolved.

Water input pressure shown on this gauge cannot be adjusted by changing anything on the device itself.

The water pressure going into the machine is down to the plubing at the facility. If this is outside of tolerance, see the facility staff.

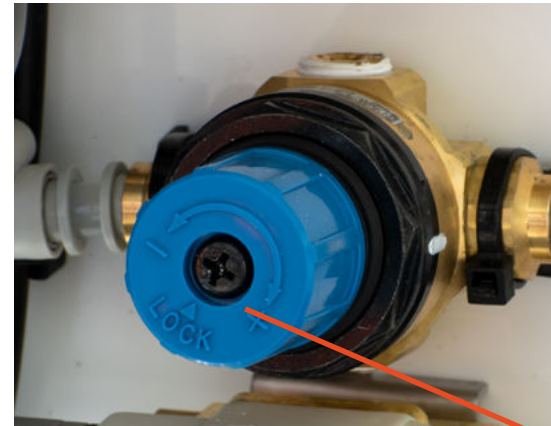


5.10 Water pressure regulator

Internal water pressure regulator.

This dial is setup during installation. Do not touch this dial unless advised to by a Centrego staff member.

This will adjust water pressure in the machine not water pressure coming into the machine.

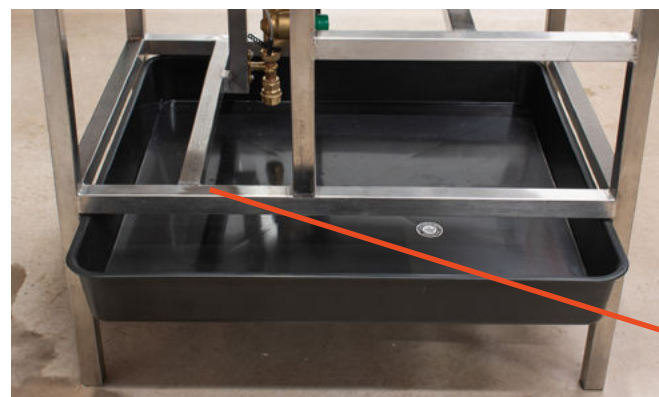


5.11 Drip tray

The machine comes with a drip tray upon delivery but for logistical reasons it is not installed. After Centrego staff installs the machine the drip tray will be in place as shown here.

If there are a few drops of moisture in this tray after use, simply let it dry or clean with a microfiber cloth.

In the unlikely event that this tray is full of water or solution then the machine may need to be seen urgently by a Centrego technician. If there is a leak, turn off the mains water input on the wall going to the machine and press the red 'Stop/Reset' button on the front of the machine and contact a line manager.



5.12 Solution output tube

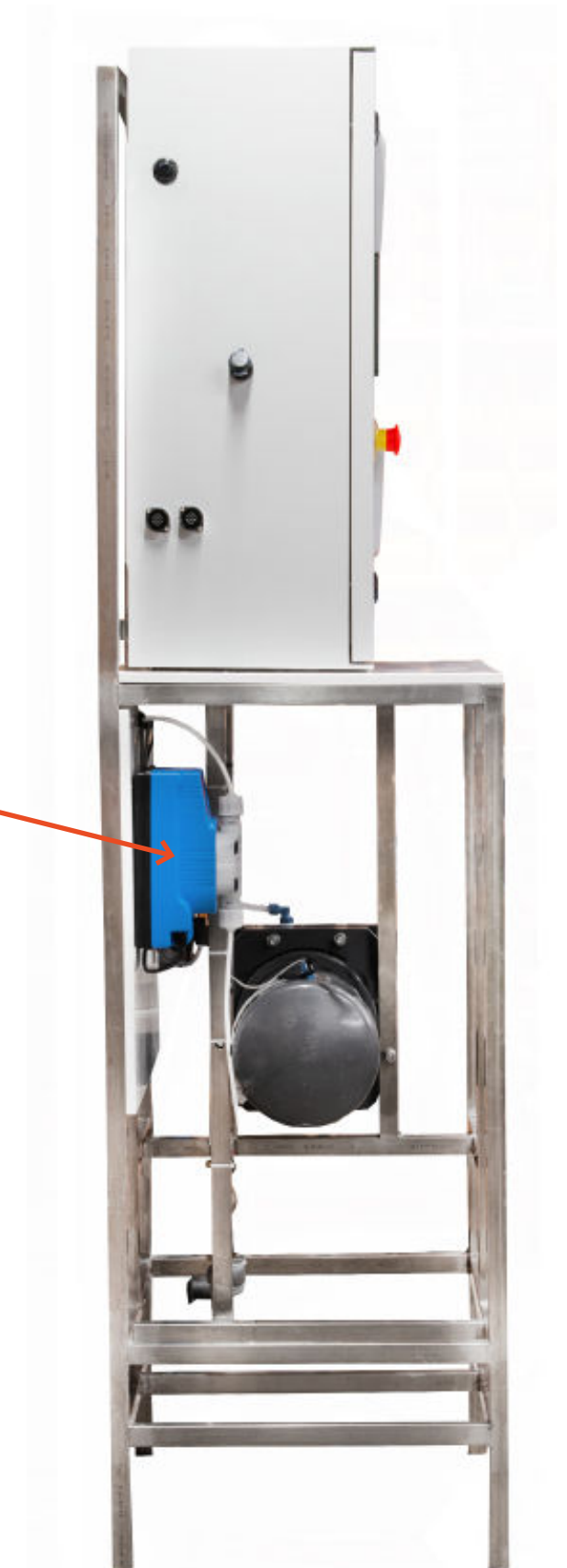
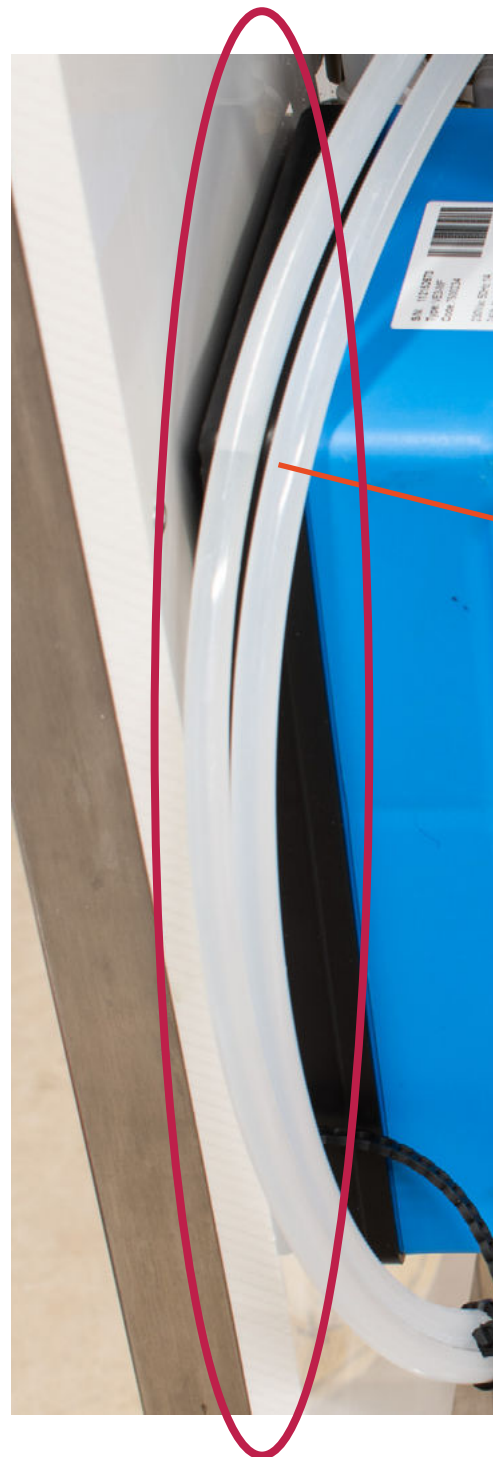
There is a solution output tube seen here with a red circle and also pointed out on the machine on the opposite page.

On delivery, it is wrapped around the brine pump as shown.

After the machine has been installed by Centrego staff these pipe will be placed over a tank where the solution is stored.

NOTE:

The machine has a brine input tube with circular filter that is to be put into a brine tank. This will be done during installation.



6.0 Handling

6.1 Handling the product

ALWAYS make sure that the device is clean at all times to reduce possible salt build up on all surfaces on and near the device.

DANGER - Do not get the power cable wet in any way before during or after use.

DANGER - Do not handle any electrical contact or power adapter with wet hands.

DANGER - Do not use abrasive chemical to clean the machine.

When handling the device:

Follow all health and safety training that you have had from your employer and or the manufacturer.

Do not touch or use the device without full training from Centrego trained personnel.

When installing or relocating the device:

Do not install or relocate this device. If this is done without advice from Centrego the machine may be damaged and injury may occur, and it may invalidate the warranty.

	CAUTION - Do not operate this device without full training by Centrego.
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6.2 Transportation

After testing and quality control the Centrego 5K40 is packaged for dispatch.

This device is designed to be installed by a professional onto a wall for frame and left in-situ. In the unlikely event that the device will need to be moved it is recommended that a member of staff who has been trained by the manufacturer does this. In most cases the manufacturer will carry this out as part of a contract.

If the device is relocated, make sure that all parts of the device are dry before packaging into an appropriate box.

	CAUTION: Do not connect or disconnect this device to the mains power unless advised to by a Centrego staff member.
	DANGER - Electric shock risk. Do not handle the power cable or any component without full training from Centrego

7.0 Screen layout

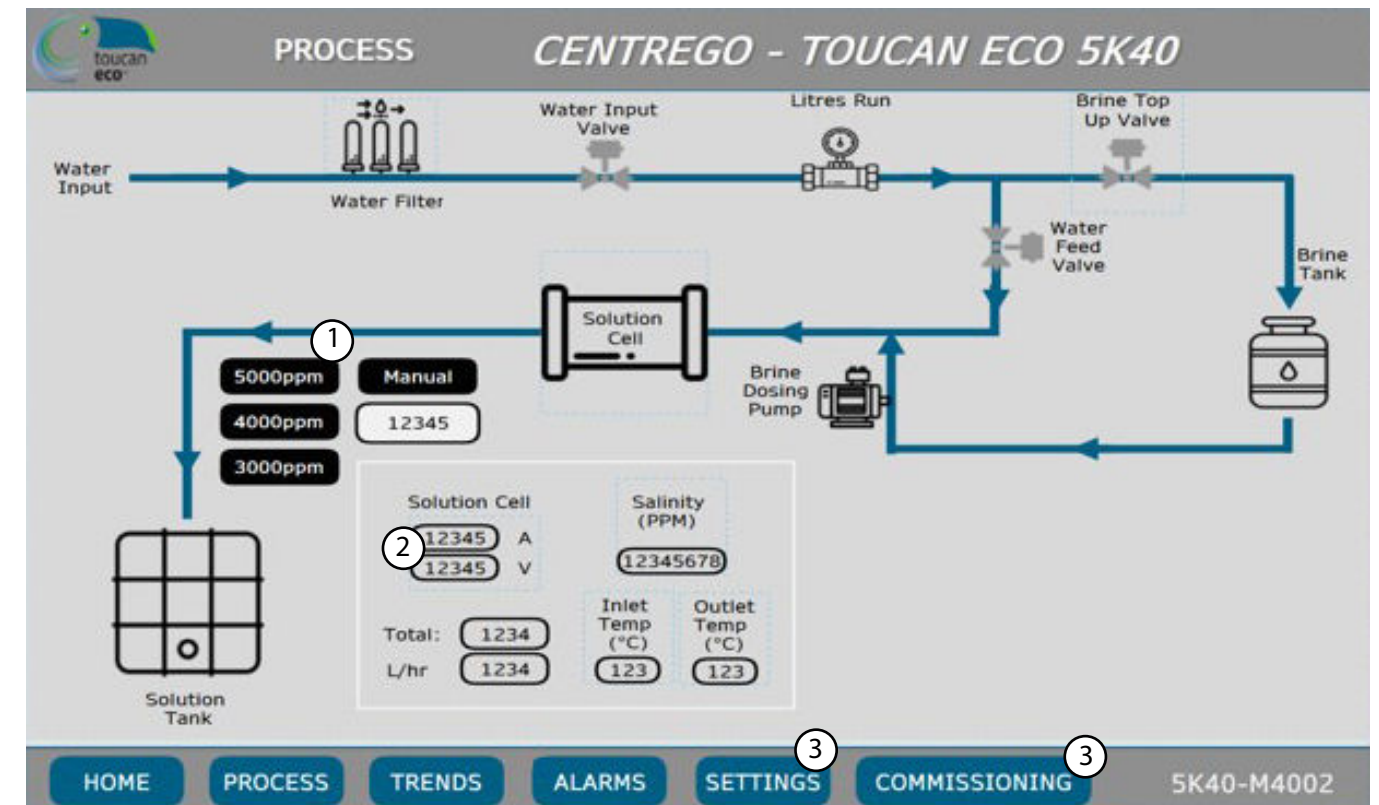
7.1 Process screen layout

(Items that are not self explanatory on this part of the menu are explained below)

1 - Adjust PPM output using pre-programmed values or enter a manual value

2 - Amp and Volts values for ECA

3 - Menus only accessible to Centrego staff



7.2 Home menu layout

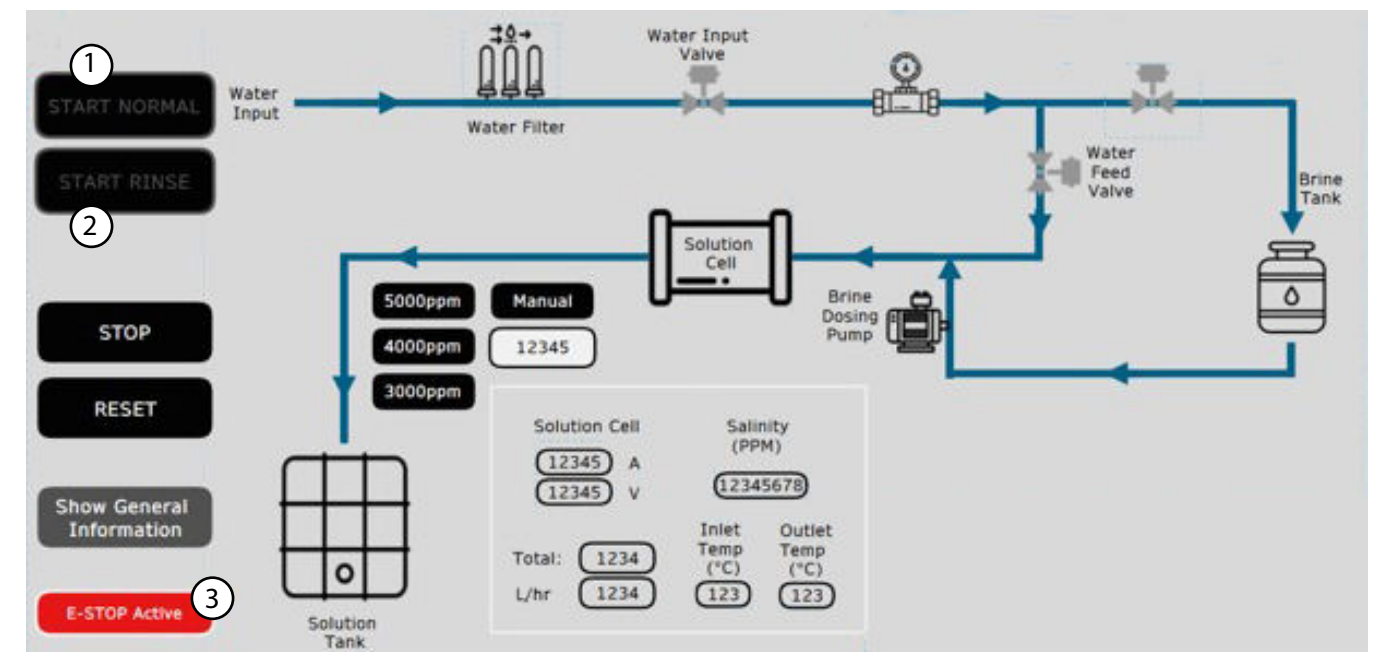
(Items that are not self explanatory on this part of the menu are explained below)

1 - Start noemal runnig process of machine

2 - Start Rinse: This will start a water rinse of the CEA cell in order to clean it after the machine has not been used. This can also be used before the machine is left dorment

3 - E-STOP Active: Shows when the ESTOP button has been pressed. This will not when when button is released.

WARNING:
This information is designed to increase the understanding of the device for users. We recommend that you do not touch, change, or modify anything on this device without consulting this manual and without training by Centrego staff. There are no user-serviceable parts inside.



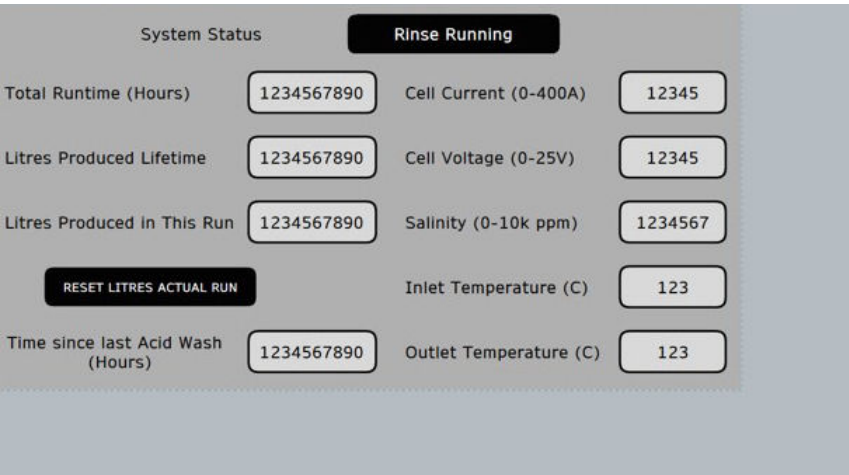
7.2 General Settings

This menu gives important temperature about all parts of the system. There is also timing information that will be usefull when planning future use of the machine



7.3 Other information

This menu gives information on total volumes of solution produced as well as operational information.

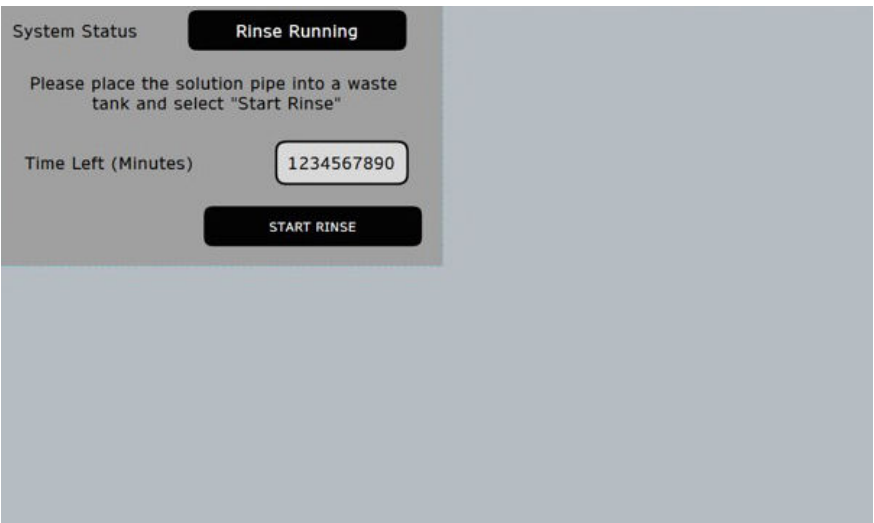


7.4 Rinse Running

Rinse running timer shows you how long the water rinse for the cell will last for.

This is initiated on the screen button shown in point (7.2).

Ronse should be done every 500 hours.



7.5 Alarms Menu

The alarms menu will log any alarms that are triggered.

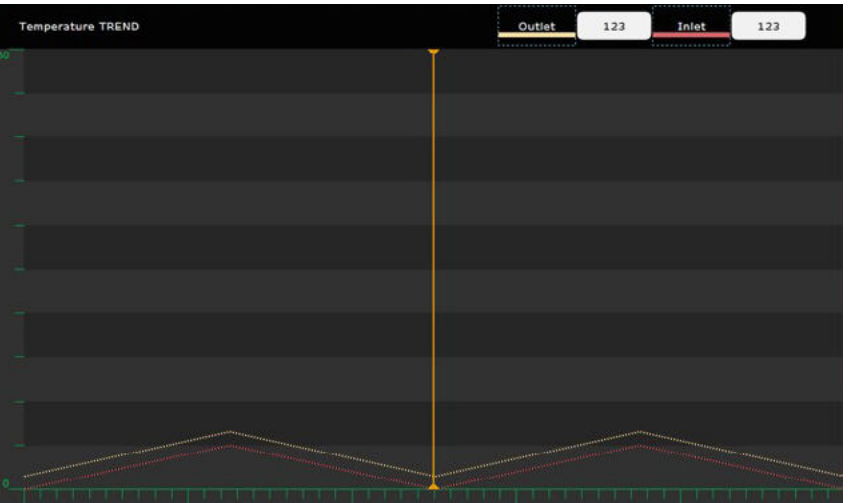
Alarms will be listed in order and show what date and time the alarm happened.

If the machine is turned off by the plug, this information may be lost.



7.6 Trends menu

This menu will show a time based graph of all values monitored over time. Many vitals can be tracked on here.



7.7 Warning messages

If any of these messages appear. below are points to elaborate.

1 - Water input to machine may have reduced or stopped. Check it is flowing properly from mains into machine.

2 - Water input to machine is too cold.

3 - Water input to machine is too Hot.

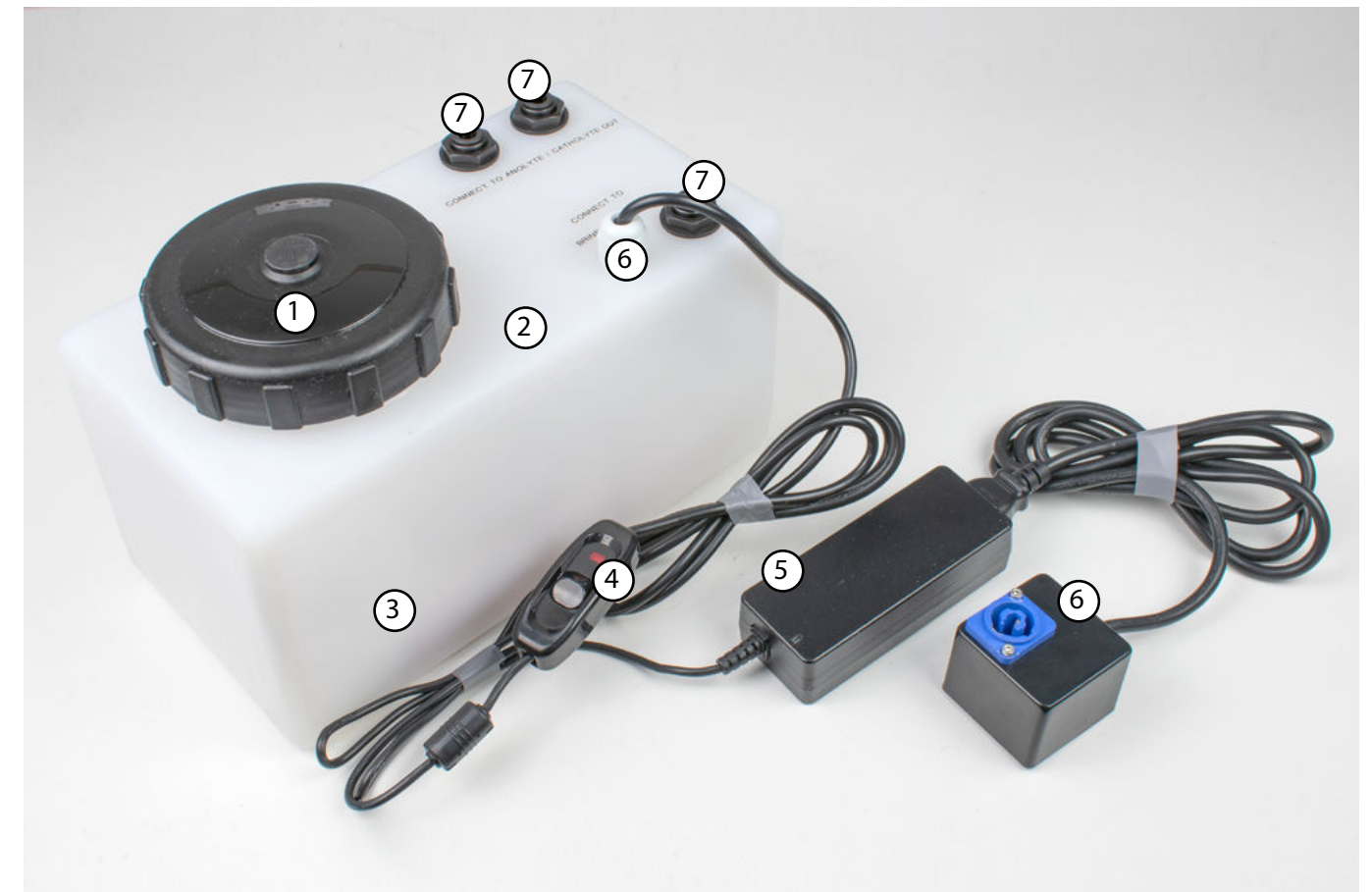
4 - Check brine tank has adequate salt and circular filter is below salt/water line



8.0 Flow flush system

8.1 Flow flush system layout

- 1 - Flow Flush system lid
- 2 - Flow flush system tank
- 3 - Flow flush pump (inside tank)
- 4 - In line power switch
- 5 - In line Transformer
- 6 - Adapter for Flow device power cable
- 7 - Tube connections



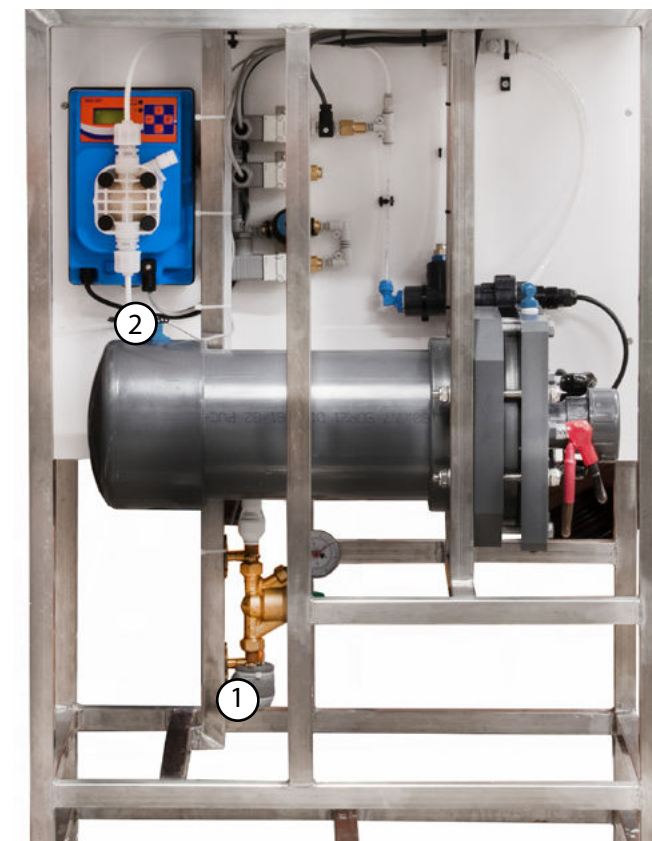
8.2 Connect flow flush system

- 1 - Connect here for input to cell
- 2 - Connect here for output from cell

Connect flow flush system to cell as shown here and then turn flow flush system on to clean cell. for 10-15 minutes.

This should be done every few months depending on use.

The flow wash system is supplied separately to the Centrego 5K40 device.



9.0 Stop/reset button

9.1 Where is the button

Pressing the 'STOP' button will stop the device completely. When released the machine will resume.

The STOP button is located on the front of the device. It is a large red button as shown.



9.2 Activating the button

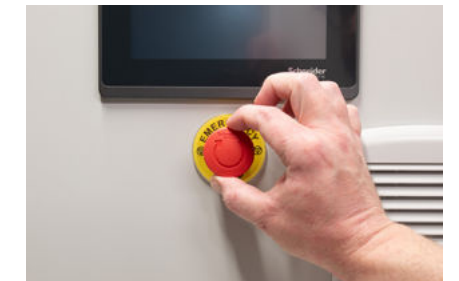
Press the button with your fingers or hand.

Press the button directly into the device until there is a click. Once activated, the machine will completely stop.



9.3 De-activating the button

To release the button and resume normal operation. Grip the button push it into the device or away from you, and rotate clockwise. There are arrows to follow on the red button for the direction.

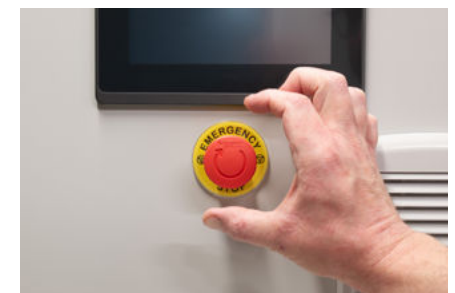


The button will feel as if it clicks towards you.

This has now been released/de-activated.



Once the button has been released/de-activated. You can let go of the button. Normal operation will resume.



10.0 ECA cell information

General Safety

For your own safety and to be able to use this generator in a correct way it is important that you carefully read through this manual, including tips and warnings before using it for the first time. In order to avoid unnecessary mistakes and accidents; it is important that everyone who manages the generator to have good knowledge of its area of use and its safety features. Save this manual and ensure that it accompanies the chlorinator if it is moved so that all users have accurate safety information.

- It is dangerous to alter the specifications or attempt to modify this product in any way.
- The electrolysis equipment is not intended for use by persons with reduced physical or sensory ability, or lack of sensory ability, or lack of experience and knowledge if they are not instructed and supervised by a person responsible for their safety.
- Repairs carried out by inexperienced staff can result in injury or serious malfunctioning. Always contact your dealer or our service department. Always insist on genuine spare parts.

Below is a link to the website for the manufacturer of the ECA cell. Further information on these cells.

Permascand website:

<https://permascand.com/>

This link is hyperlinked to Verders website. you can click on these links if you are viewing an interactive PDF version of this manual.

The two ECA cells are circled in red.

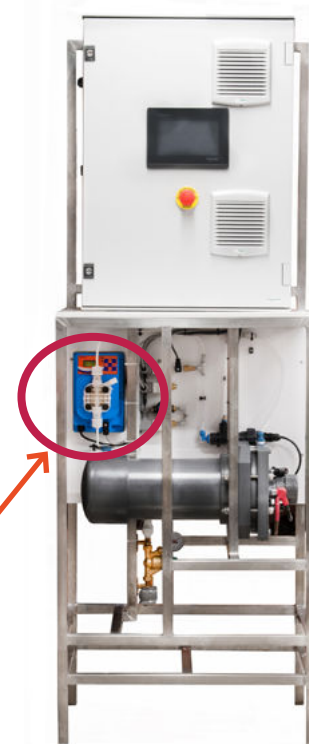


11.0 Brine Pump information

10.1 Location of pump in device

This pump is shown with the red circle.

This does not need adjusting.
It may need servicing depending on use.
For further information on the pump
read manuals accessible on Verder
website (linked on opposite page).



10.2 Pump manual links

Below are links so that further information can be found for this pump.
The model of this pump that is manufactured by Verder is as follows:

ME3-MF

Click the below links to access supporting documents from the Verder website:

Verderliquids main website link:

<https://www.verderliquids.com>

Data Sheet:

https://www.verderliquids.com/fileadmin/user_upload/Website_documents_2016/Microdos/Datasheets/EN/ME/Microdos_ME3-MF_INT_EN_Datasheet.pdf

Manual:

https://www.verderliquids.com/fileadmin/user_upload/Website_documents_2016/Microdos/Manuals/Microdos_ME3_INT_EN-FR-IT-ES_Manual.pdf

These links are hyperlinked to Verders website. You can click on these links if you are viewing an interactive PDF version of this manual.





SCAN FOR WEBSITE



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