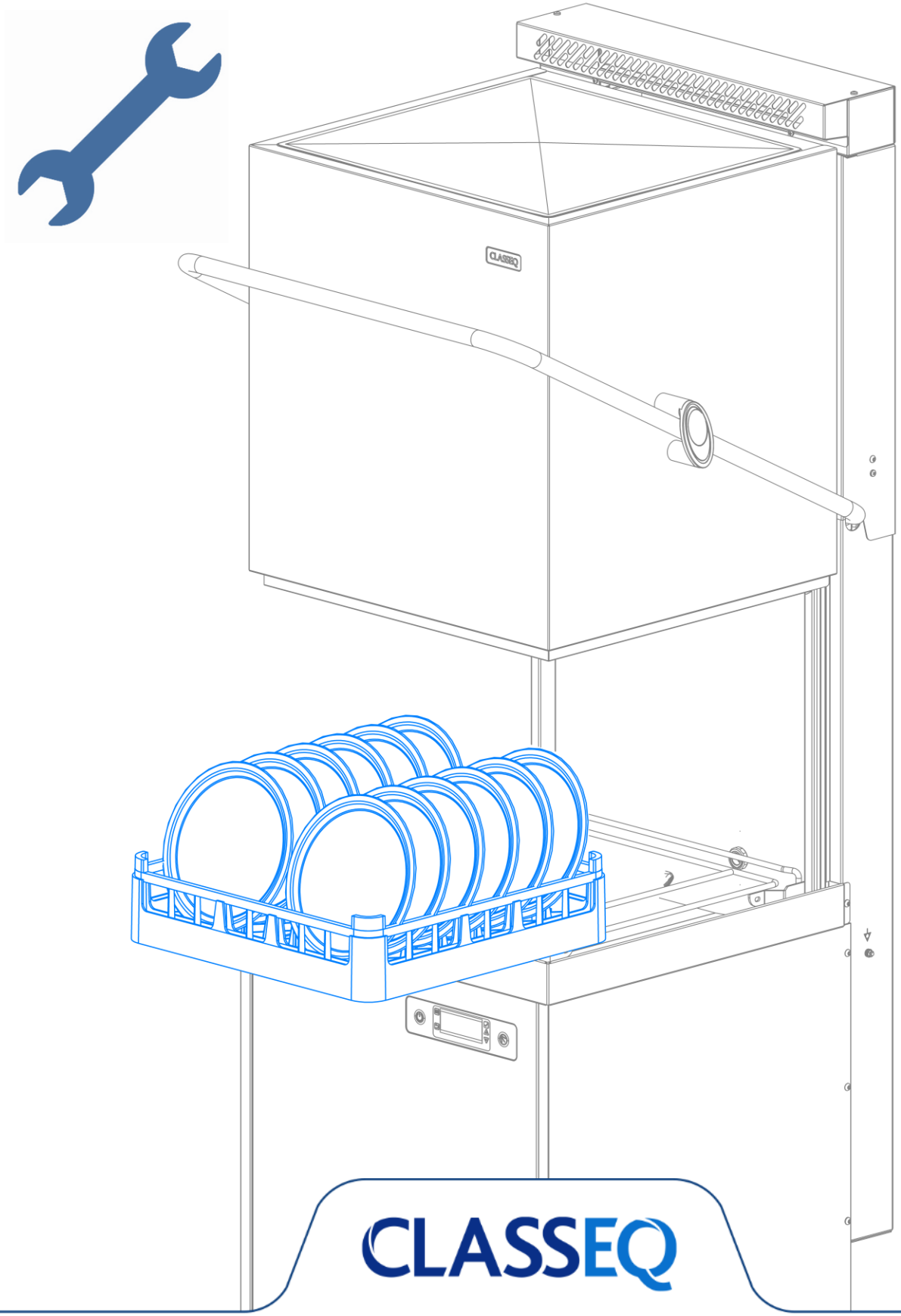
CP500
CP500 [SR]
CP500-WS
CP500-WS [SR]
CP500-AS
CP500-AS [SR]
CP500-AS-WS
CP500-AS-WS [SR]

Pass Through Warewasher

Engineers Manual



CLASSEQ

Dear reader,

This engineer's manual is for the Classeq Pass-through C range. It is intended to provide all the essential information required to diagnose faults that may occur throughout the life of this product. This manual includes a description and diagram of the different systems available within the Pass-Through range, information on the functions and capabilities, contingencies and alternate modes of operation, and step by step procedures for system access and use.

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1. Introduction

Prior to reading this manual it is essential that you are familiar with the contents and subject matter covered by the "***Installation and Operation manual***".

1.1 Installation and commissioning

Installation and commissioning instructions are detailed in the "***Installation and Operation manual***" and should always be followed. Incorrect installation may invalidate any warranties.

1.2 Service and repairs

Repairs to the machine should only be carried out by a ***Classeq*** approved/trained technician using genuine ***Classeq*** parts. Failure to do so may invalidate any warranties.

1.3 Modification

Classeq reserves the right to modify the machine or the contents of this manual without notice.

2. Safety

2.1 Symbols Used in this Manual

The following symbols are used in this Manual:

DANGER!

Warning against potential serious or fatal injuries to persons if the described precautionary measures are not taken.

Warning!

Warning against potential minor injuries to persons or potential material damage if the described precautionary measures are not taken.

Caution

Warning against defects in or destruction of the product if the described precautionary measures are not taken.

Recycling instructions.

▶ This symbol refers to a chapter with more detailed information

2.2 Danger Warnings

Unless the machine has been isolated from the supply there will always be potential for mains voltage to any components in the machine.

2.3 Warnings

DO NOT run the machine if there is no salt in the salt reservoir, as this will allow lime scale to build up, also any lime scale will invalidate your warranty.

DO NOT add any chemicals, such as detergent or rinse aid to the reservoir. These will cause damage to the machine.

2.4 Cautions

Only use granulated salt *(max. grain size 5 – 7 mm)*. Salt tablets are not suitable.

If the reservoir cap is not properly secured, water and/or chemicals can leak in or out of the unit causing damage to the machine.

Repairs to the machine should only be done with the mains supply isolated.

Any changes made to P30 will not be saved if power to the machine is disrupted before completely exiting service mode.

3. Tools List

The below list of tools will allow access to all components within the machine:

Tool group	Description
Spanner/nut runner/ratchet	5.5mm
	7mm
	8mm
	13mm
Pliers / Grips	Grip Pliers
Posi screwdriver	No. 1
	No. 2
Electrical testing	Ammeter (A)
	Capacitance meter (µF)
	Resistance meter (Ω)
	Continuity (•))

4. Machine Specifications

4.1 Systems matrix

Below is a table describing the various electrical arrangements available for the different machine types.

Type	30A 1N~	12A 3N~	16A 3N~	22A 3N~	17A *3~
CP500	●	◐	◐	○	◐
CP500AS	○	○	○	●	○

● – Standard ◐ - Optional ○ – Not available

Below is a table describing the various system specifications available for the different machine types.

Type	Inbuilt Water softener	Steam Recovery Unit	Detergent Pump	Rinse Pump	WRAS Approved Air-Break	Drain Pump
CP500	◐	◐	◐	●	●	●
CP500AS	◐	◐	◐	●	●	●

4.2 Mechanical specifications/ site requirements

For details on machine dimensions and site requirements refer to the "***Installation and Operation manual***" for the machine.

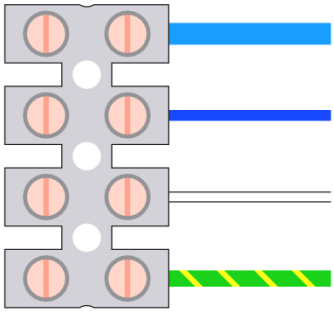
4.3 Electrical Components Specification

The table below indicates the electrical components in the machines and their electrical specifications

Component		Voltage range (V)	Frequency (Hz)	Current (A)	Power (W)	Resistance (Ω)
Inlet solenoid		200-240	50/60	0.22	5	4110
Rinse element	6000	220-240	50/60	8.7 /leg 26.09 Total	3 x 2000	26.5 / leg
	9000			13 / leg 39 Total	3 x 3000	17.6 / leg
Rinse pump		220-240	50	0.74	160	M – 107.4
						A – 104.2
		220-240	60	0.7	160	M – 107.0
						A – 107.5
Wash element		220-240	50/60	8.7	2000	26.5
Wash pump		220-240	50	2.0	400	M – 11.13
						A – 14.26
		220-240	60	1.7	400	M – 10.92
						A – 14.35
Drain pump		220-230	50	0.50	20	168
		200-240	60	0.45	32	84
Contactors		220-240	50/60	0.27	60	n/a
Relay (3 Pole)		220-240	50/60	0.006	1.3	6760
Detergent pump		220-240	50/60	0.03	8	3180
Rinse aid pump		220-240	50/60	0.03	8	3180
Tangential Fan		230	50/60	0.19	43	451

4.4 External Chemical Pump Signals

The external chemical signals terminal block is located on the PCB housing below the heating safety relays inside the machine.



BLUE - Neutral

BLUE – Rinse Aid Pump

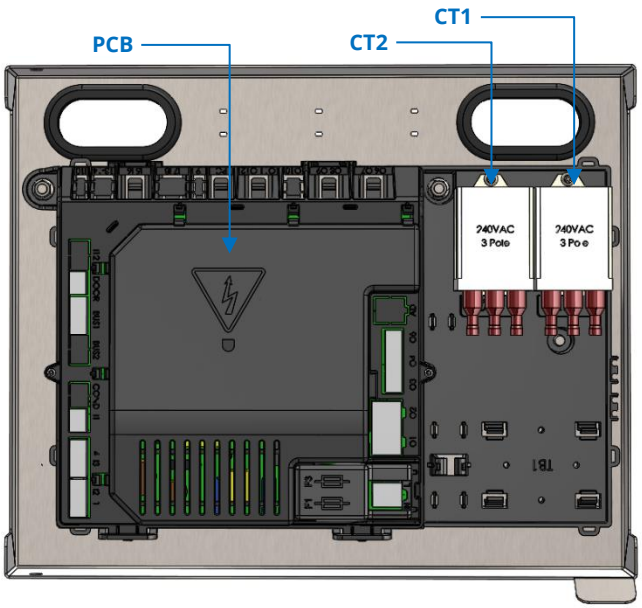
WHITE – Detergent Pump

GREEN/ YELLOW - Earth

The signals provided are triggered by the dosing rates set in the 'Commissioning Menu' (►7.3). The dosing rates stated in the Menu may differ depending on the pump flow rate.

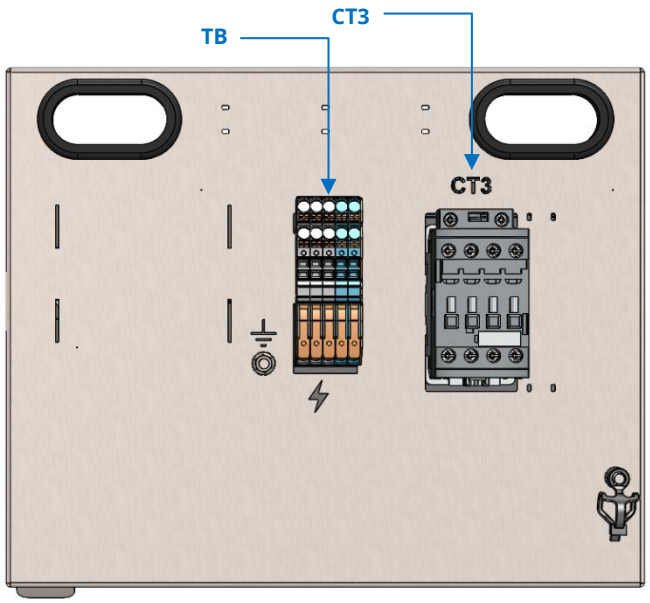
4.5 Electrical Components Layout – Standard

4.5.1 STD Electrical Panel (Front View)



PCB	Control Unit
CT1	Rinse Heating - Safety Relay
CT2	Wash Heating - Safety Relay

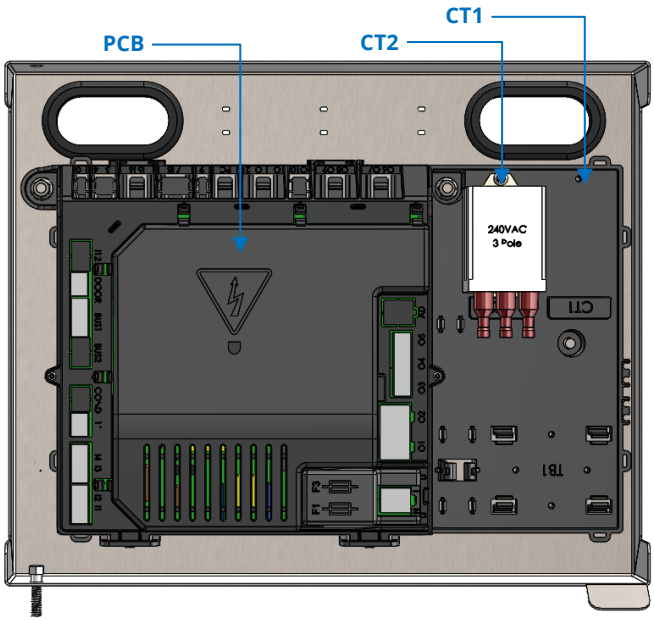
4.5.2 STD Electrical Panel (Rear View)



TB	Terminal Block
CT3	Rinse Heating - Contactor

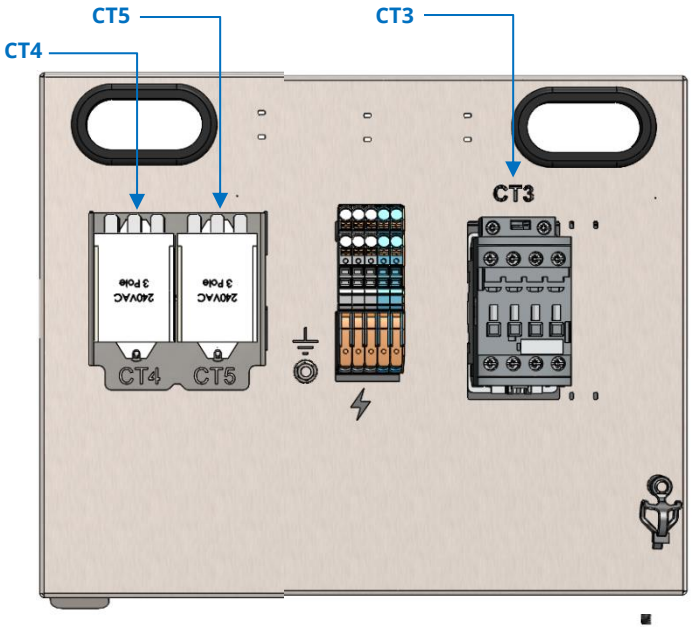
4.6 Electrical Components Layout – AS

4.6.1 AS Electrical Panel (Front View)



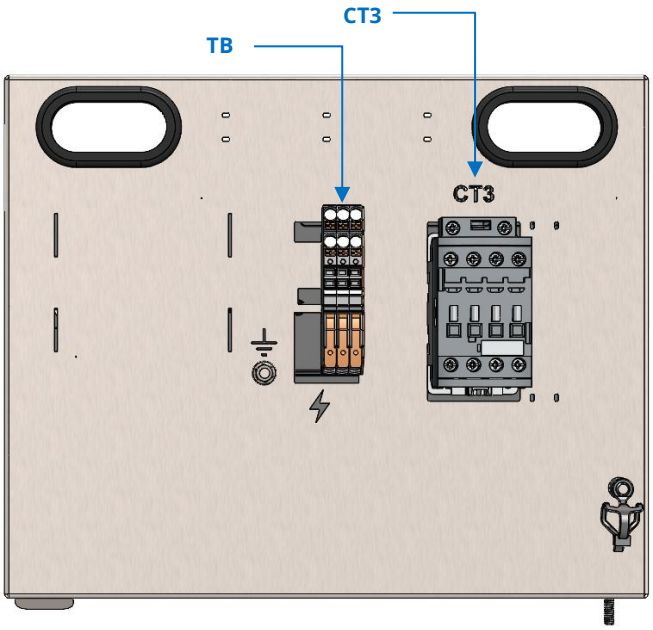
PCB	Control Unit
CT1	Empty
CT2	Wash Heating - Safety Relay

4.6.2 AS Electrical Panel (Rear View)



CT3	Rinse Heating - Contactor
CT4	Rinse Heating - Safety Relay 1
CT5	Rinse Heating - Safety Relay 2

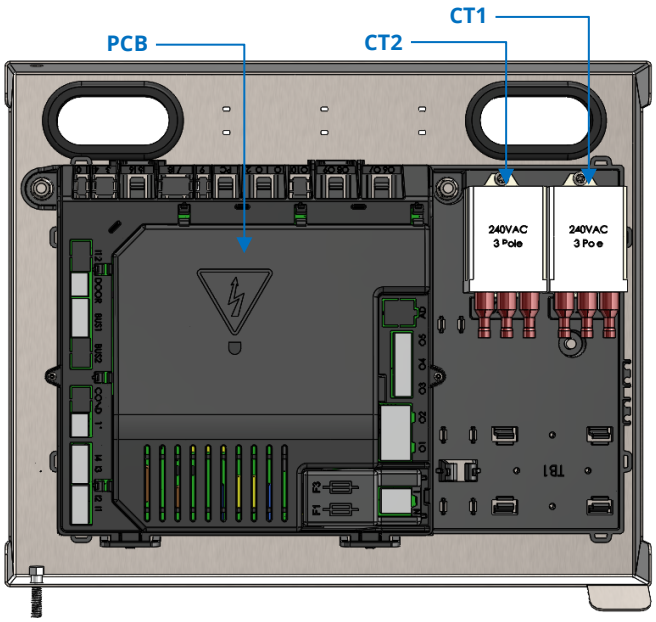
4.7.2 NN Electrical Panel (Rear View)



TB	Terminal Block
CT3	Rinse Heating - Contactor

4.7 Electrical Components Layout – No Neutral

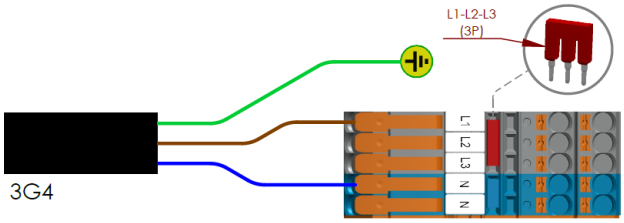
4.7.1 NN Electrical Panel (Front View)



PCB	Control Unit
CT1	Rinse Heating - Safety Relay
CT2	Wash Heating - Safety Relay

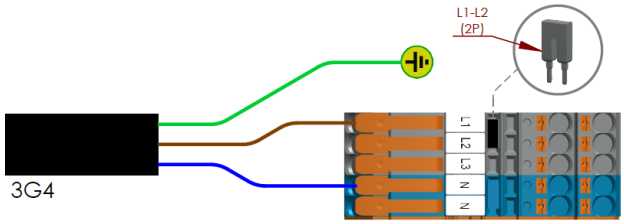
4.8 Terminal Block Configurations

4.8.1 1Phase 30Amp [6 kW Element]



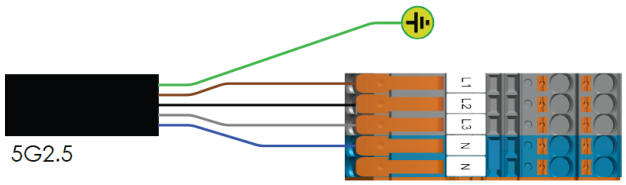
Earth (PE)	Live (L)	Neutral (N)
Green / Yellow	Brown	Blue
GN / YL	BN	BL
◐	●	●

4.8.2 1Phase 30Amp [9 kW Element]



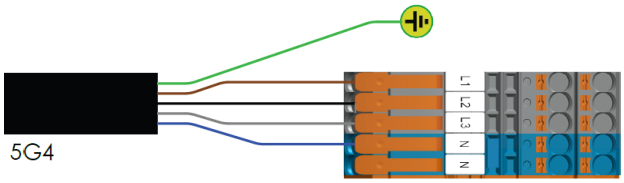
Earth (PE)	Live (L)	Neutral (N)
Green / Yellow	Brown	Blue
GN / YL	BN	BL
◐	●	●

4.8.3 3Phase 12Amp - 16Amp



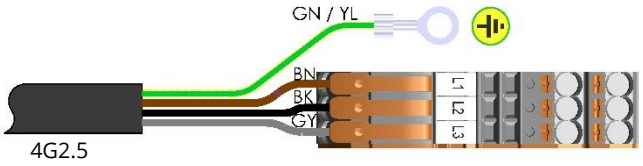
Earth (PE)	Live (L1)	Live (L2)	Live (L3)	Neutral (N)
Green / Yellow	Brown	Black	Grey	Blue
GN / YL	BN	BK	GY	BL
◐	●	●	●	●

4.8.4 3Phase 22Amp [AS Variants]



Earth (PE)	Live (L1)	Live (L2)	Live (L3)	Neutral (N)
Green / Yellow	Brown	Black	Grey	Blue
GN / YL	BN	BK	GY	BL
◐	●	●	●	●

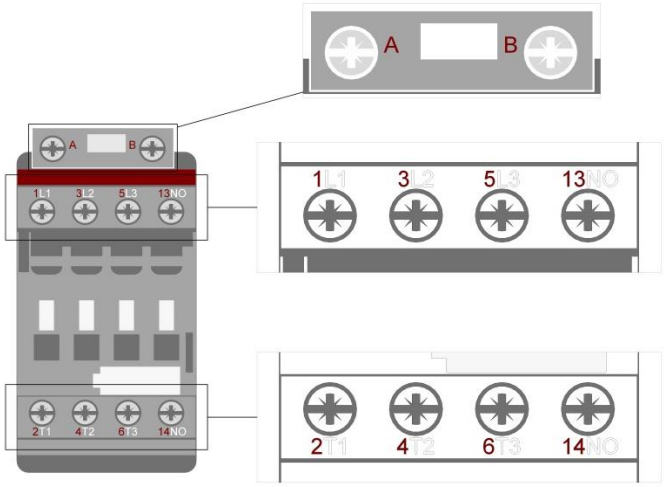
4.8.5 3Phase 17Amp (No Neutral)



Earth (PE)	Live (L1)	Live (L2)	Live (L3)
Green / Yellow	Brown	Black	Grey
GN / YL	BN	BK	GY
◐	●	●	●

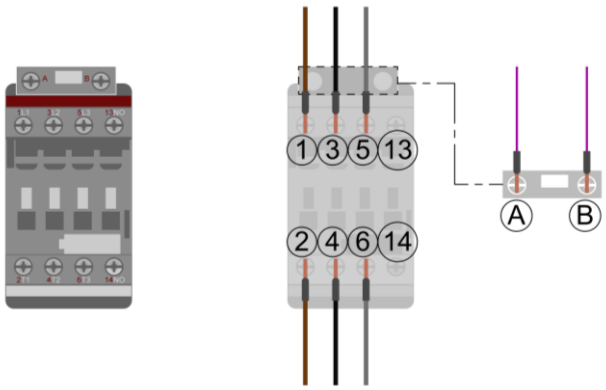
4.9 Contactor Wiring

The contactor on the rinse heating is labelled as below.



4.9.1 Standard (30A [1~N], 12A [3~N) & 16A [3~N])

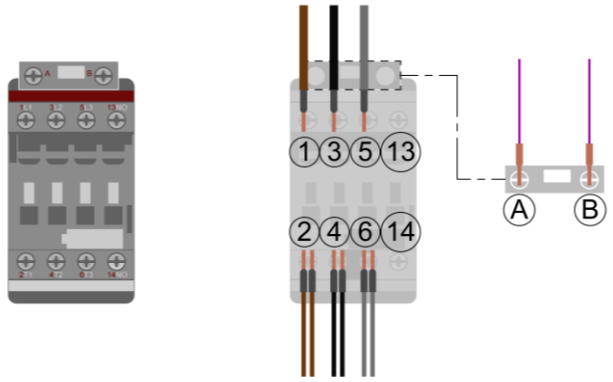
Rinse Contactor [CT3]



Position	1	3	5	13	A
Wire Colour	1x Brown	1x Black	1x Grey	None	1x Purple
Position	2	4	6	14	B
Wire Colour	1x Brown	1x Black	1x Grey	None	1x Purple

4.9.2 AS (22A [3~N])

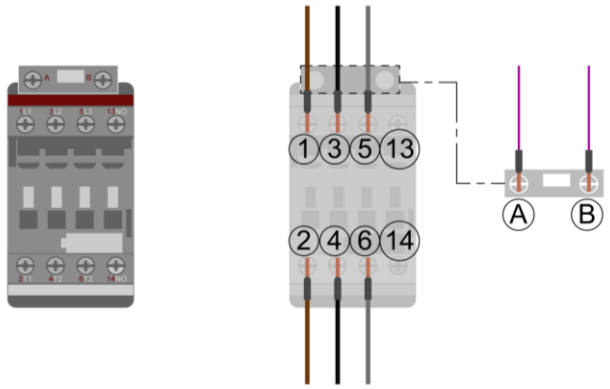
Rinse Contactor [CT3]



Position	1	3	5	13	A
Wire Colour	1x Brown	1x Black	1x Grey	None	1x Purple
Position	2	4	6	14	B
Wire Colour	2x Brown	2x Black	2x Grey	None	1x Purple

4.9.3 No Neutral (17A [3~])

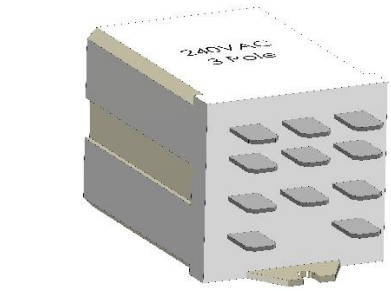
Rinse Contactor [CT3]

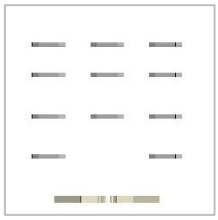


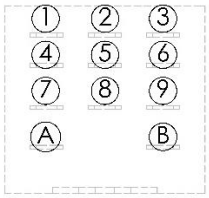
Position	1	3	5	13	A
Wire Colour	1x Brown	1x Black	1x Grey	None	1x Purple
Position	2	4	6	14	B
Wire Colour	1x Brown	1x Black	1x Grey	None	1x Purple

4.10 Safety Relay Wiring

The connections on the heating safety relays are detailed in this section.

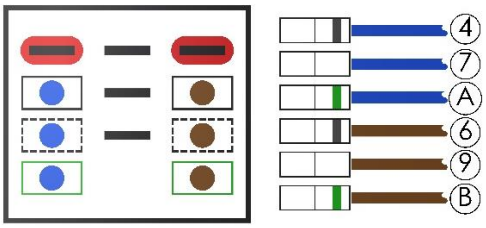






4.10.1 Wash Safety Relay (All Variants)

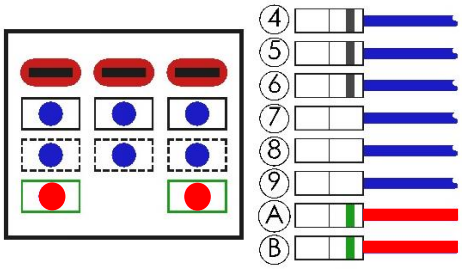
CT2



Position	1	2	3
Wire Colour	None	Empty	None
Marking	RED Cover	-	RED Cover
Position	4	5	6
Wire Colour	BLUE	Empty	BROWN
Wire Colour	1x BLACK	-	1x BLACK
Position	7	8	9
Wire Colour	BLUE	Empty	BROWN
Marking	None	-	None
Position	7	8	9
Wire Colour	BLUE		BROWN
Marking	1x GREEN		1x GREEN

4.10.2 Rinse Safety Relay (Standard)

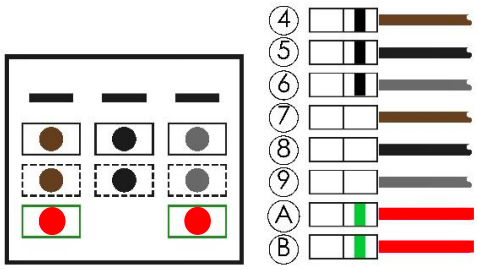
CT1



Position	1	2	3
Wire Colour	None	None	None
Marking	RED Cover	RED Cover	RED Cover
Position	4	5	6
Wire Colour	BLUE	BLUE	BLUE
Marking	1x BLACK	1x BLACK	1x BLACK
Position	7	8	9
Wire Colour	BLUE	BLUE	BLUE
Marking	None	None	None
Position	7	8	9
Wire Colour	RED		RED
Marking	1x GREEN		1x GREEN

4.10.3 Rinse Safety Relay (No Neutral)

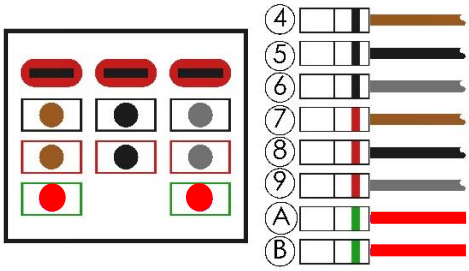
CT1



Position	1	2	3
Wire Colour	None	None	None
Marking	RED Cover	RED Cover	RED Cover
Position	4	5	6
Wire Colour	BROWN	BLACK	GREY
Wire Colour	1x BLACK	1x BLACK	1x BLACK
Position	7	8	9
Wire Colour	BROWN	BLACK	GREY
Marking	None	None	None
Position	7	8	9
Wire Colour	RED		RED
Marking	1x GREEN		1x GREEN

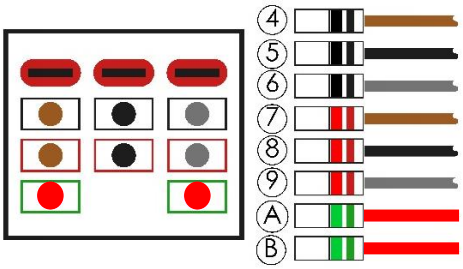
4.10.4 Rinse Safety Relay (AS)

CT 4



Position	1	2	3
Wire Colour	None	None	None
Marking	RED Cover	RED Cover	RED Cover
Position	4	5	6
Crimp Colour	BROWN	BLACK	GREY
Wire Colour	1x BLACK	1x BLACK	1x BLACK
Marking	7	8	9
Crimp Colour	BROWN	BLACK	GREY
Marking	1x RED	1x RED	1x RED
Marking	7	8	9
Crimp Colour	RED		RED
Marking	1x GREEN		1x GREEN

CT5



Position	1	2	3
Wire Colour	None	None	None
Marking	RED Cover	RED Cover	RED Cover
Position	4	5	6
Crimp Colour	BROWN	BLACK	GREY
Wire Colour	2x BLACK	2x BLACK	2x BLACK
Marking	7	8	9
Crimp Colour	BROWN	BLACK	GREY
Marking	2x RED	2x RED	2x RED
Marking	7	8	9
Crimp Colour	RED		RED
Marking	2x GREEN		2x GREEN

5. Water System

5.1 Water ways

Detailed within this section are the water ways and system details for each of the Pass Through Warewashers.

Models	Description
CP500	Standard Air Break
CP500-WS	Standard Water Softener
CP500-AS	AS [Twin Element] Air Break
CP500-AS-WS	AS [Twin Element] Water Softener
CP500-SR	Standard Air Break (with Steam Recovery)
CP500-WS-SR	Standard Water Softener (with Steam Recovery)
CP500-AS-SR	AS [Twin Element] Air Break (with Steam Recovery)
CP500-AS-WS-SR	AS [Twin Element] Water Softener (with Steam Recovery)

5.2 Water ways legend

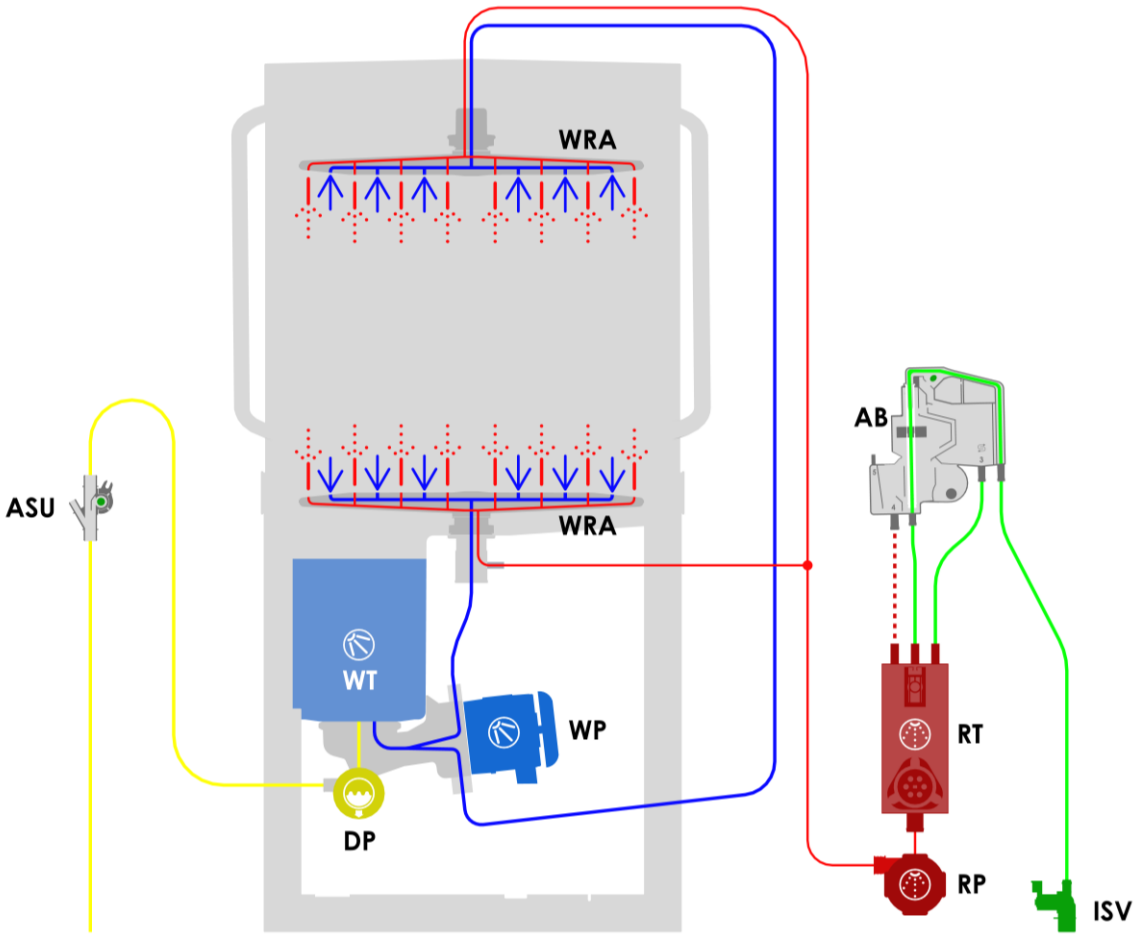
Key	Description
ISV	Inlet solenoid valve
AB	Air Break
RT	Rinse tank
RP	Rinse pump
WP	Wash pump
DP	Drain pump
WRA	Wash & rinse arm
WSU	Water softener unit
ASU	Anti-syphon unit
WT	Wash Tank
HX	Heat Exchanger

5.3 Standard Fill System
[Models: CP500, CP500-AS]

Key	Description
ISV	Inlet solenoid valve
AB	**WRAS approved type AB air gap**
RT	Rinse tank
RP	Rinse booster pump
WP	Wash pump
DP	Drain pump

Key	Description
WT	Wash Tank
WRA	Wash & rinse arm
WSU	Water softener unit
ASU	Anti-syphon unit
HX	Heat Exchanger

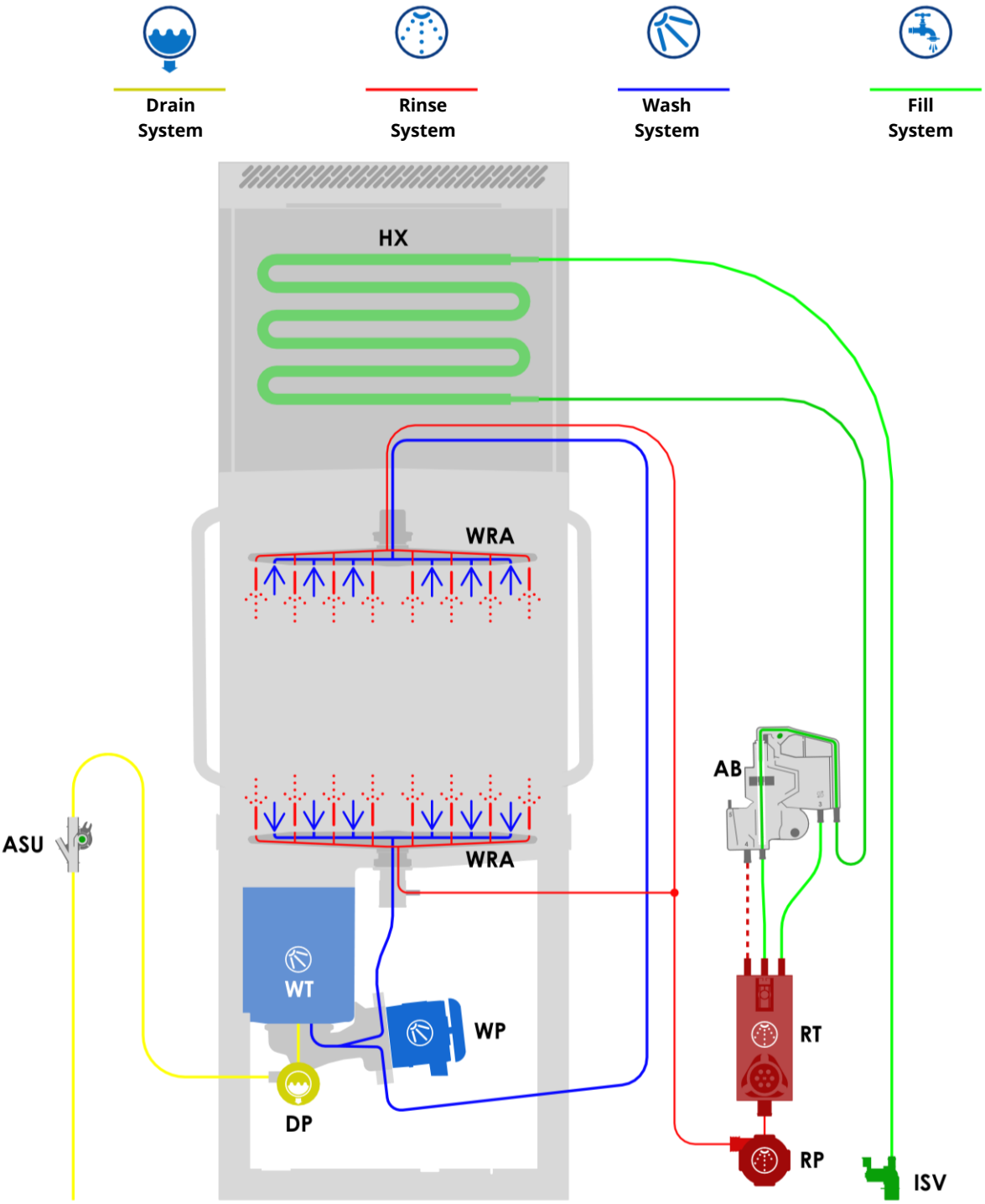
Drain System | **Rinse System** | **Wash System** | **Fill System**



5.4 Standard Fill System with Steam Recovery [Models: CP500-SR, CP500-AS-SR]

Key	Description
ISV	Inlet solenoid valve
AB	Air Break
RT	Rinse tank
RP	Rinse booster pump
WP	Wash pump
DP	Drain pump

Key	Description
WT	Wash Tank
WRA	Wash & rinse arm
WSU	Water softener unit
ASU	Anti-syphon unit
HX	Heat Exchanger

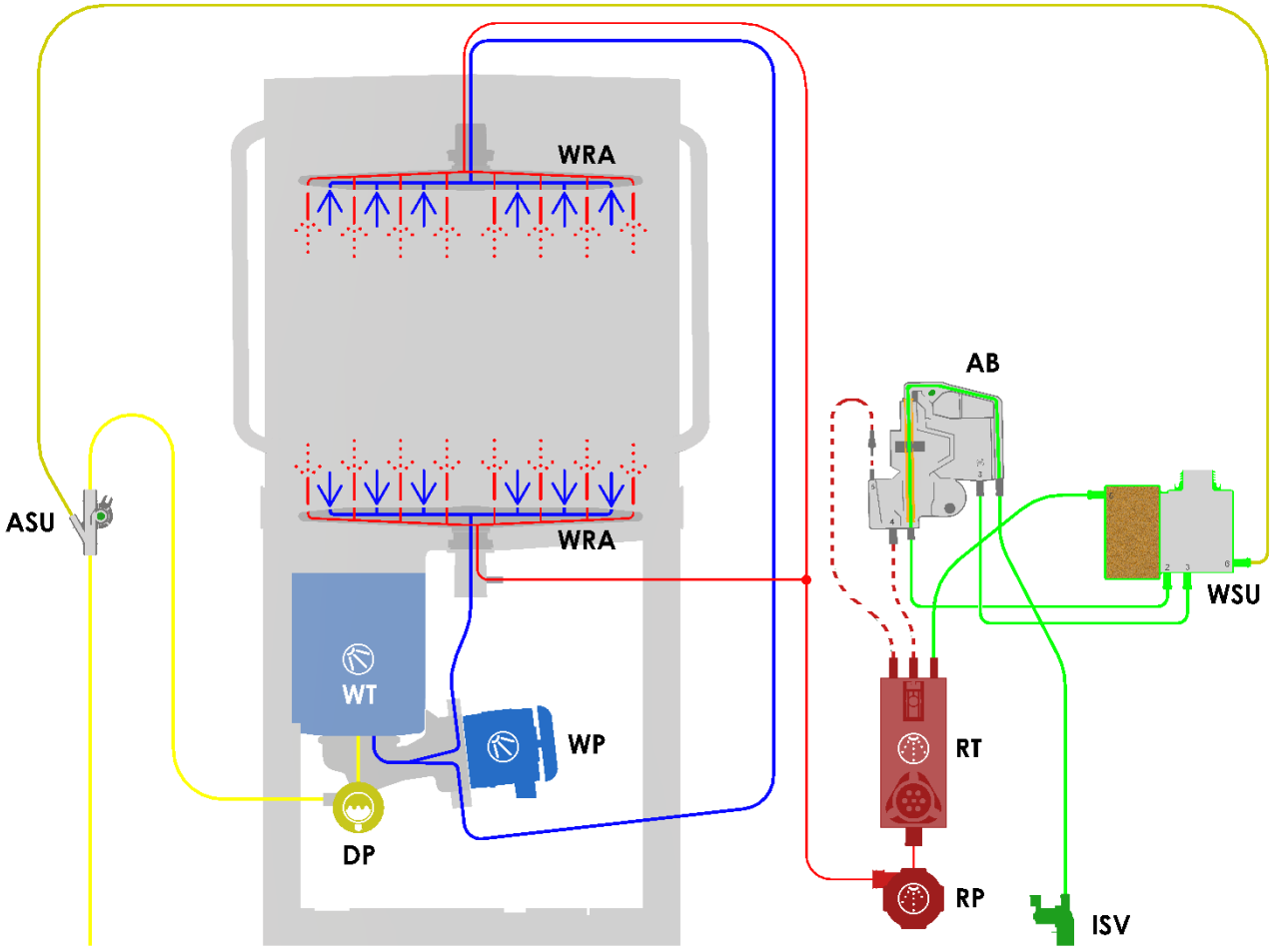


5.5 Water Softener Fill System
[Models: CP500-WS, CP500-AS-WS]

Key	Description
ISV	Inlet solenoid valve
AB	Air Break
RT	Rinse tank
RP	Rinse booster pump
WP	Wash pump
DP	Drain pump

Key	Description
WT	Wash Tank
WRA	Wash & rinse arm
WSU	Water softener unit
ASU	Anti-syphon unit
HX	Heat Exchanger

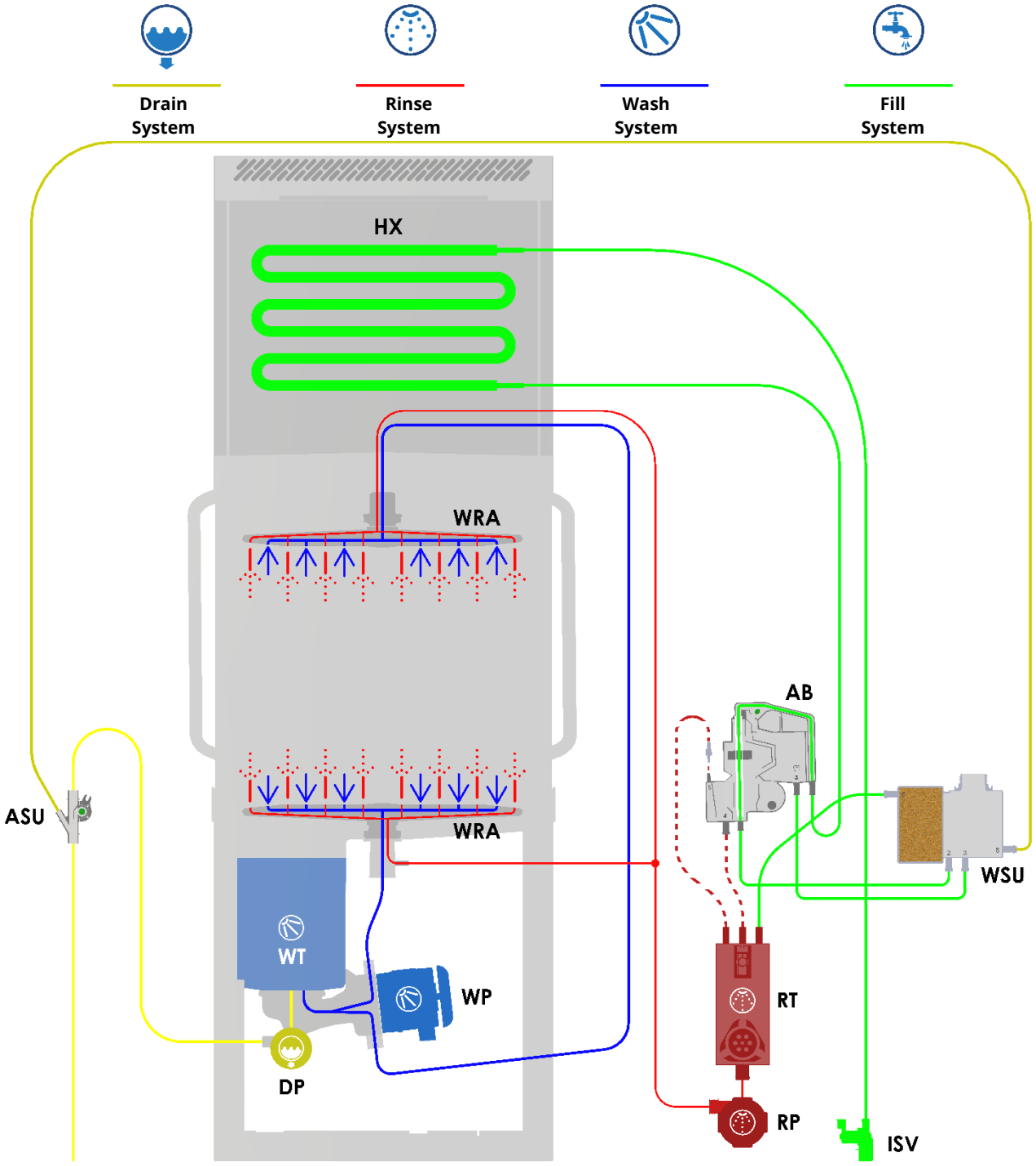
Drain System | **Rinse System** | **Wash System** | **Fill System**



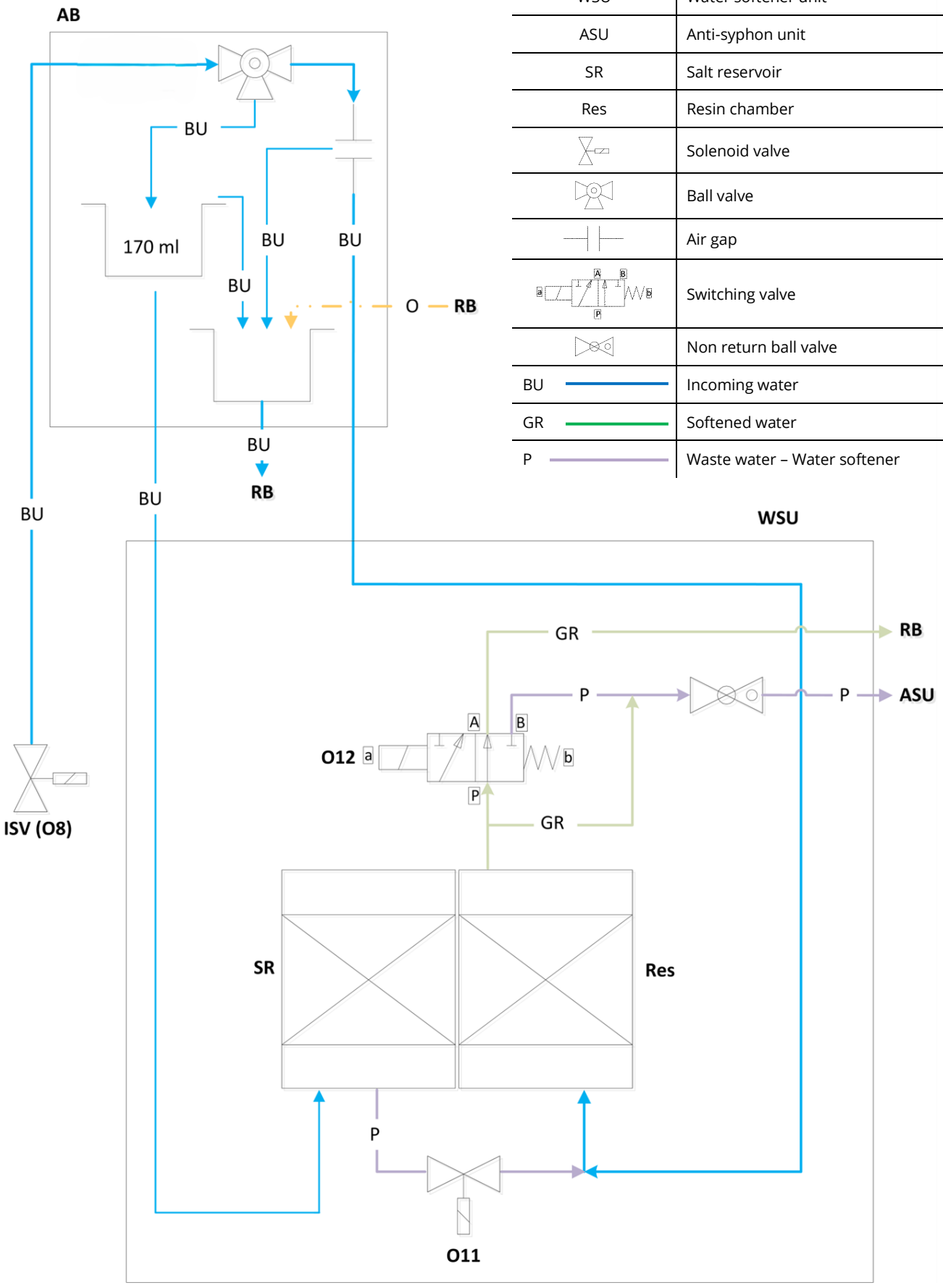
5.6 Water Softener Fill System with Steam Recovery [Models: CP500-WS-SR, CP500-AS-WS-SR]

Key	Description
ISV	Inlet solenoid valve
AB	Air Break
RT	Rinse tank
RP	Rinse booster pump
WP	Wash pump
DP	Drain pump

Key	Description
WT	Wash Tank
WRA	Wash & rinse arm
WSU	Water softener unit
ASU	Anti-syphon unit
HX	Heat Exchanger



5.7 Water Softener Unit

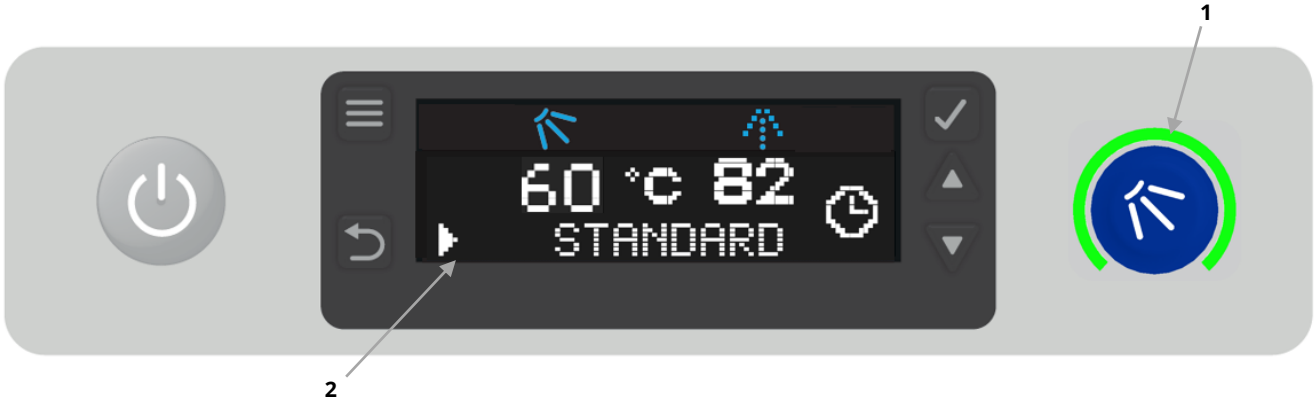


5.8 Water Softener Unit Legend

Key	Description
ISV	Inlet solenoid valve
AB	WRAS approved type AB air gap
RB	Rinse tank
WSU	Water softener unit
ASU	Anti-syphon unit
SR	Salt reservoir
Res	Resin chamber
	Solenoid valve
	Ball valve
	Air gap
	Switching valve
	Non return ball valve
BU	Incoming water
GR	Softened water
P	Waste water – Water softener

6. Logic

6.1 Indicator logic



Item	Description
1	Colour Indicator
2	Display indicator

6.1.1 Colour Indicator

AMBER

Machine is not ready to use. The **AMBER** state indicates that the machine is filling and heating.

GREEN

This will only illuminate **GREEN** when the following conditions are achieved:

- Wash tank water level full
- Rinse tank water level full

If one of these has not been achieved the indicator will display **AMBER** to indicate that the machine is not ready.

BLUE

This will illuminate **BLUE** when a cycle has been requested. The cycle will then start when the above interlock requirements have been achieved.

RED

In serious error conditions this indicator will illuminate **RED**, and the machine will turn off.

6.1.2 Display Indicator

This will display active state of the machine.

Filling and Heating

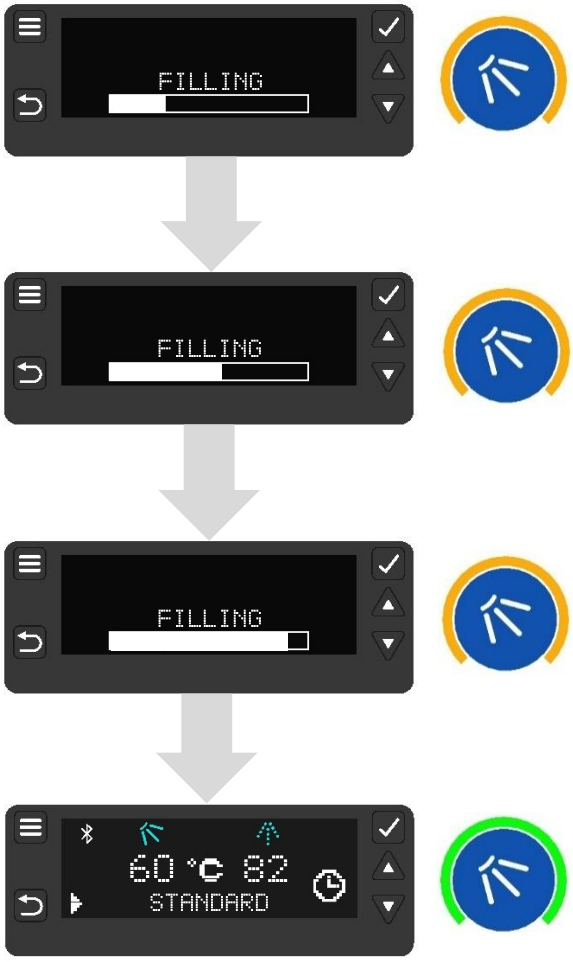
Standby Mode / Ready

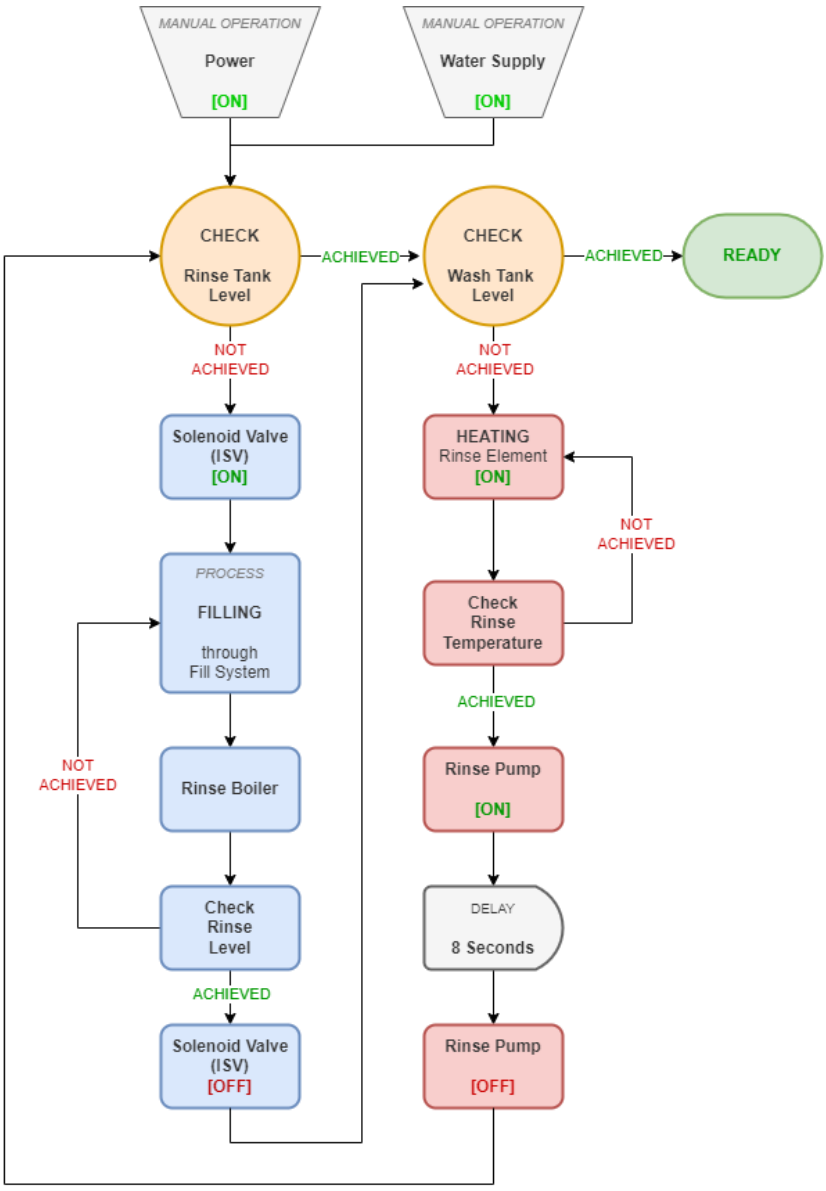
Cycle Mode / Washing

Drain Mode

6.2 Filling and heating process

During the filling and heating process the filling screen will be displayed with a progress bar to indicate the progression.





The machine is working to fulfil two requirements before it can move into the ready state.

- **Rinse tank water level full**
  Steps taken to achieve this include.
  - Activating Solenoid to fill Rinse Boiler
  - Monitoring Rinse Boiler level until full

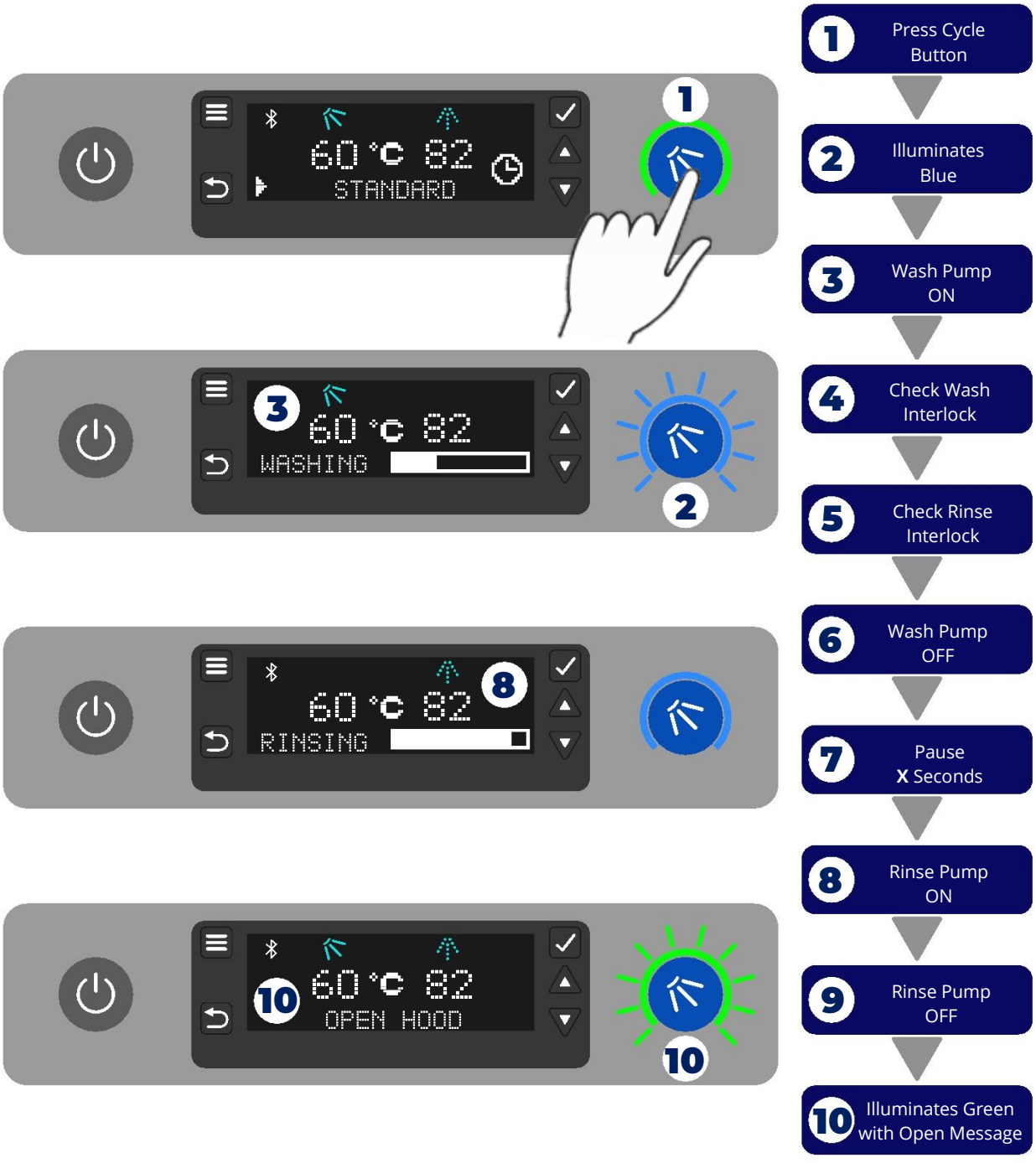
- **Wash tank water level full**
  To fill the wash tank the machine will use a 'Pause Transfer' using the following steps.
  - Activating rinse element to heat rinse boiler
  - Monitor rinse temperature until target is reached
  - Activating the rinse pump to transfer water into wash tank.
  - Repeating these steps until wash tank is full.

Generally, it will follow the process flow diagram detailed above. There are additional processes that run in the background. Some of which are detailed below.

- Once the wash tank has reached a minimum level this will begin to heat if required while the rinse tank is refilling.
- On machines with water softeners fitted the machine will calculate the volume of water that has passed through the unit and activate the regeneration process (▶6.7) as required.
- Once the wash tank water level and rinse tank water level are achieved, the **GREEN** lamp will illuminate. In the background the machine will continue to heat until the rinse boiler and wash tank have both reached the specified temperatures.

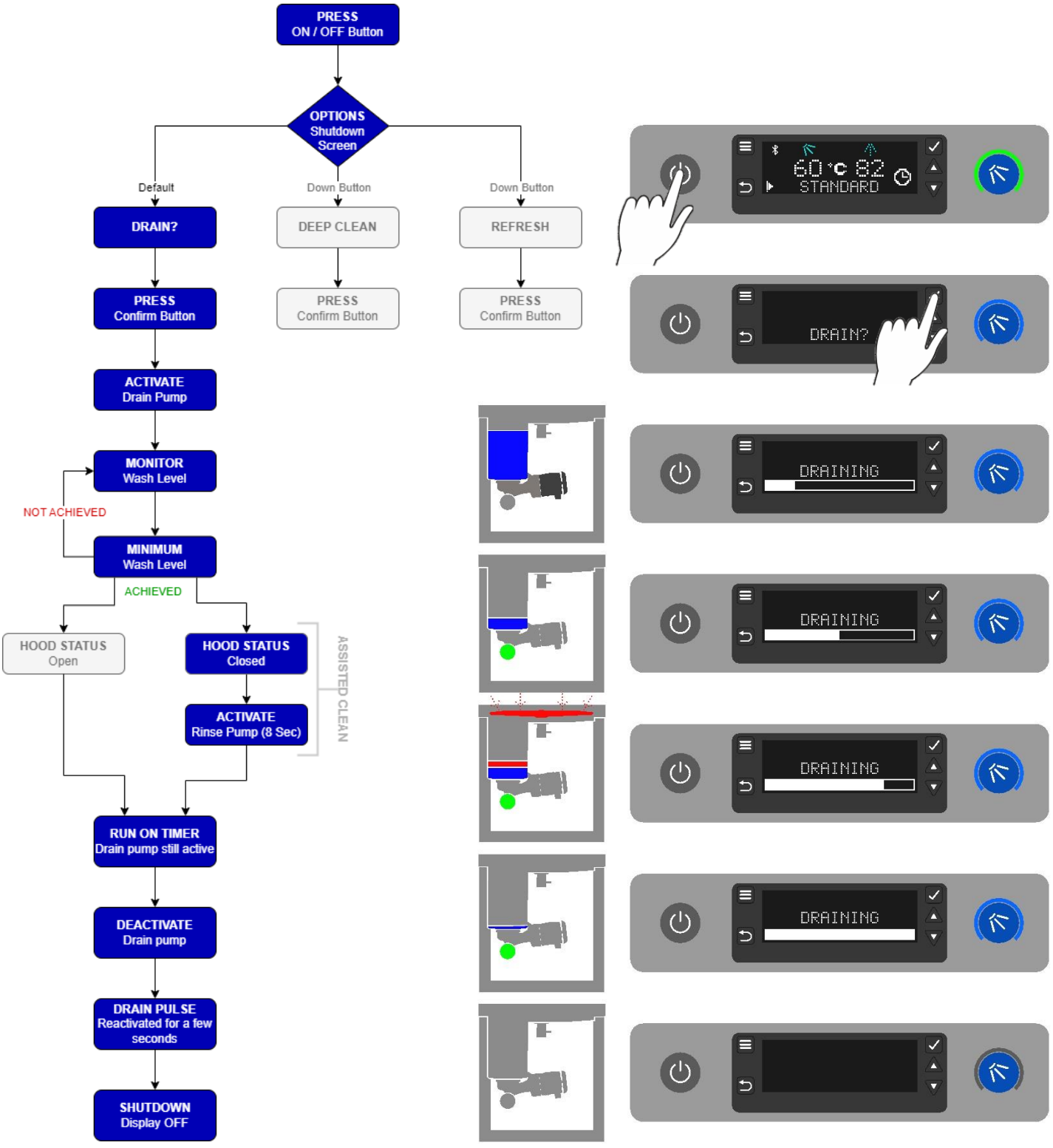
6.3 Wash and rinse

When a cycle is requested with the machine in standby, the wash and rinse, process on all machines, follow the procedure detailed below:



Refer (►7.2) for more information on Parameters P41 & P51 and interlock options. Please note if condition for either P41 or P51 not met during specific wash cycle time than it will extend the wash cycle time until it satisfies the conditions.

6.4 Drain



The draining of the machine functions in two ways:

1. It monitors the water level in the wash tank and drains away any excess water during operation.
2. If the machine is turned off and the drain cycle is selected, this function will follow the below process:
    a. Start draining the machine.
    b. Once the water reaches the minimum level in the wash tank an “Assisted clean” function will transfer water from the rinse boiler in the same fashion as it fills (►6.2) while continuing to drain (If the hood is open at this time the “Assisted clean” will be cancelled).
    c. Once the wash tank reaches a minimum level again it activates a run on timer to drain out the remaining water.

6.5 Chemical dosing

The machine doses chemical at two different stages:

6.5.1 While filling the machine:

The detergent is dosed into the wash tank with each transfer. At the end of the fill the rinse aid is dosed into the rinse tank.

6.5.2 While cycling the machine:

When a cycle is selected the detergent will dose into the wash tank. This will not occur on the first cycle after filling the machine.

After each cycle the rinse aid is dosed into the rinse boiler as per water used during cycle.

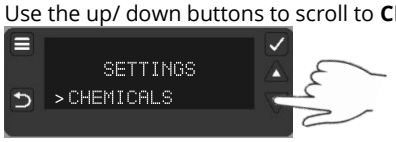
6.6 Chemical levels

Chemical levels can be monitored by setting up a bottle size in the settings menu or by fitting chemical lances to the machine.

6.6.1 Bottle Size (Chemical Menu)

1. Press the menu button to enter the **SETTINGS**

2. Use the up/ down buttons to scroll to **CHEMICALS**



3. Press confirm button to enter **CHEMICALS MENU**

4. Use the up/ down button to scroll to **SET BOTTLE SIZE**

5. Press confirm button to enter **BOTTLE SIZE**

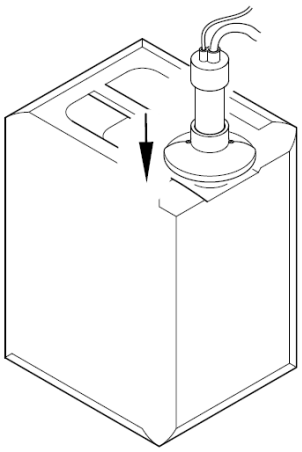
6. Use the up, down and confirm button to set value

7. Finalise set up by pressing confirm button.

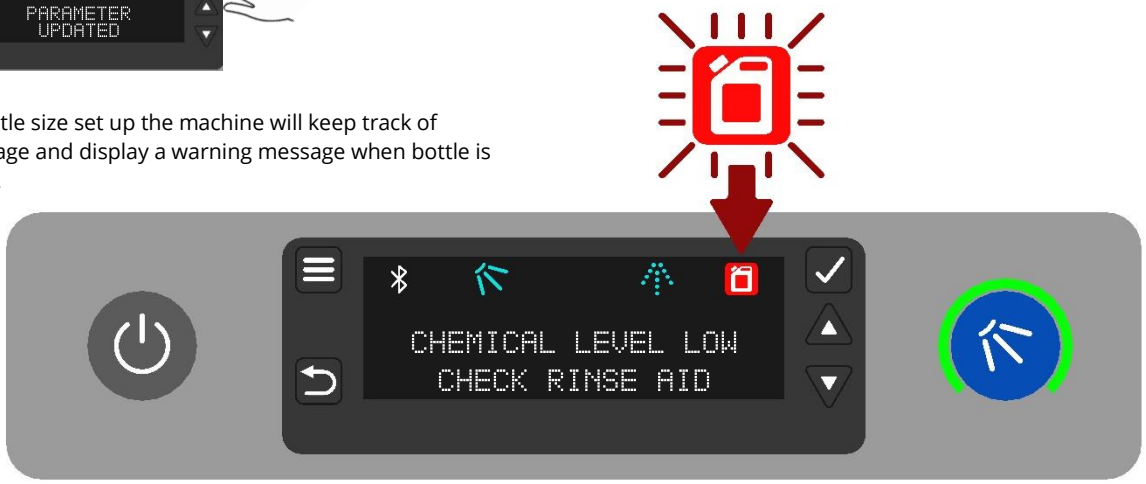
With the bottle size set up the machine will keep track of chemical usage and display a warning message when bottle is running low.

6.6.2 Chemical Lances

Chemical lance kit (30018975) is available to fit to all machines. Lances are fitted with a float device to monitor if a chemical bottle is full or empty. Once plugged into the machines control board, the machine will automatically detect that they are fitted.



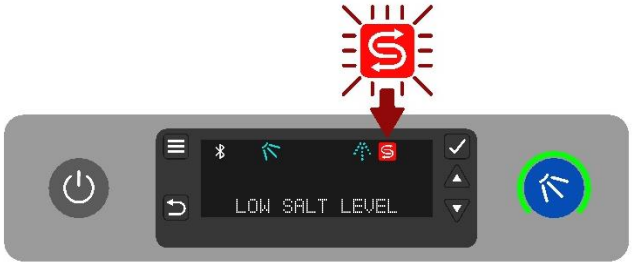
When bottle is empty the machine will display the chemical bottle symbol on the interface.



6.7 Water softener unit

On machines with the integral water softener fitted, the machine will monitor the amount of water passing through the resin of the softener unit and regenerate at intervals required by the water hardness setting. See user manual for more information.

The regeneration process passes salt water into the resin, allows a contact period for the salt to 'scrub' the resin then flushes this salt water out the waste.



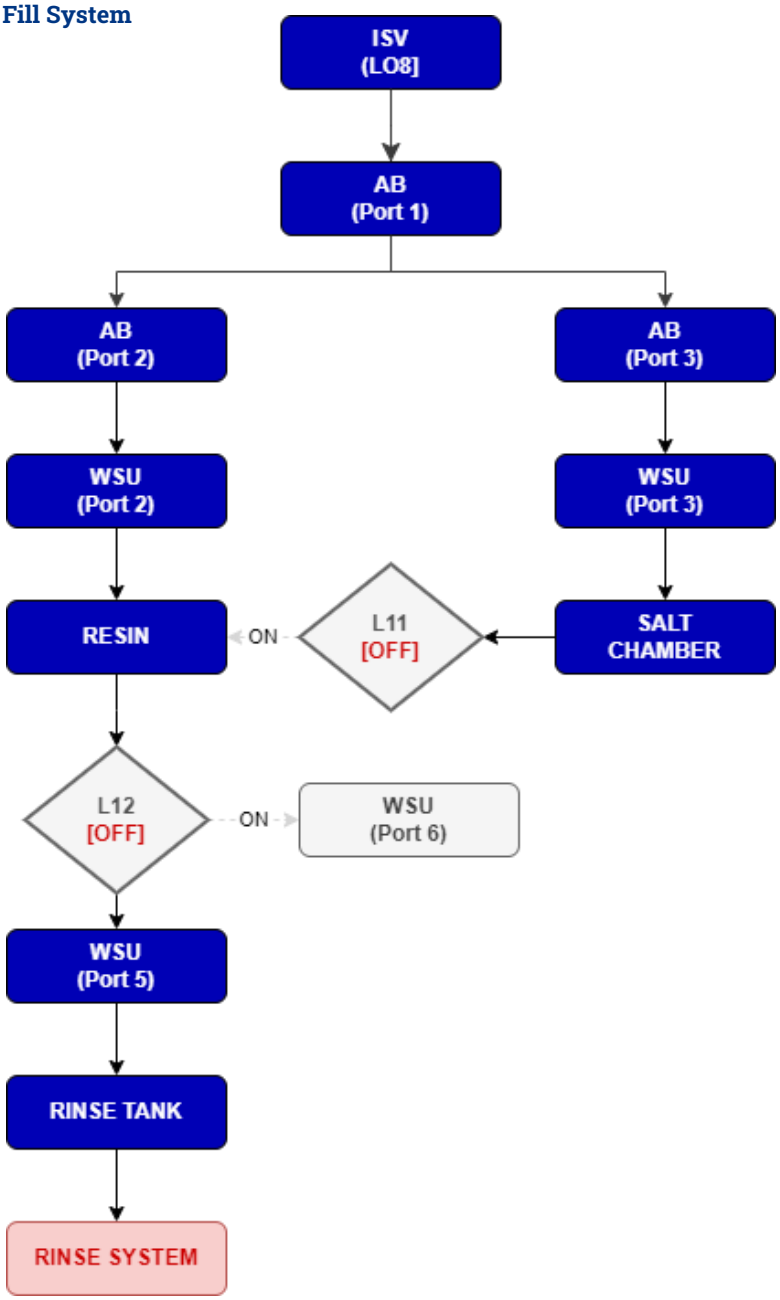
Re-fill salt indicator will flash to indicate water softener needs salt re-filling. For salt specification refer to the unit installation and operation manual for more information.

Below is the timing for this function of the water softener unit.

Function	**'FILL'** to Rinse Boiler	Pause	Salt to Resin **'DROP'** from Air Break	Pause	Pressurise	Regeneration Contact Time	Waste Valve	Through Resin **'FLUSH'** to Waste Water	Pause
Time	~	3s	25s	3s	0.5s	20s	3s	20s	3s
Inlet Solenoid (O8)									
WS Salt valve (O11)									
WS Waste valve (O12)									

6.8 Water Softener Unit Fill System

6.8.1 Filling process 'FILL'



1. **ISV (LO8)**

   During the filling process the machine will activate '**L08**' the inlet solenoid valve (**ISV**)

2. **AB (Port 1)**

   Incoming water will enter the Air Break (**AB**) into 'Port 1'

3. **AB (Port 2) / AB (Port 3)**

   Water will be divided into two paths.

   - **AB (Port 2)**

     Here the water is feed through a nozzle creating a stream that passes through the orange tube within the Air Break. At this point the water is open to atmospheric pressure and the inlet pressure is lost.

   - **AB (Port 3)**

     A small amount of the water flow is diverted into the port 3 chamber where 170ml is stored in the 'Regen' chamber of the Air Break. This chamber is connected to the salt chamber and is in a closed system as the Regen Valve (**L11**) if in the OFF state.

4. **WSU (Port 2)**

   The stream of water from the orange tube will enter the water softener unit (**WSU**) into 'Port 2'

5. **RESIN**

   Port 2 of the water softener unit (**WSU**) is connected directly into the Resin. This will soften the water and remove unwanted minerals.

6. **L12 [OFF]**

   On the exit path from the Resin is the shifting valve '**L12**' which will be in the OFF state.

7. **WSU (Port 5)**

   With **L12** in the OFF state the flow will be directed to Port 5 of the water softener unit (**WSU**).

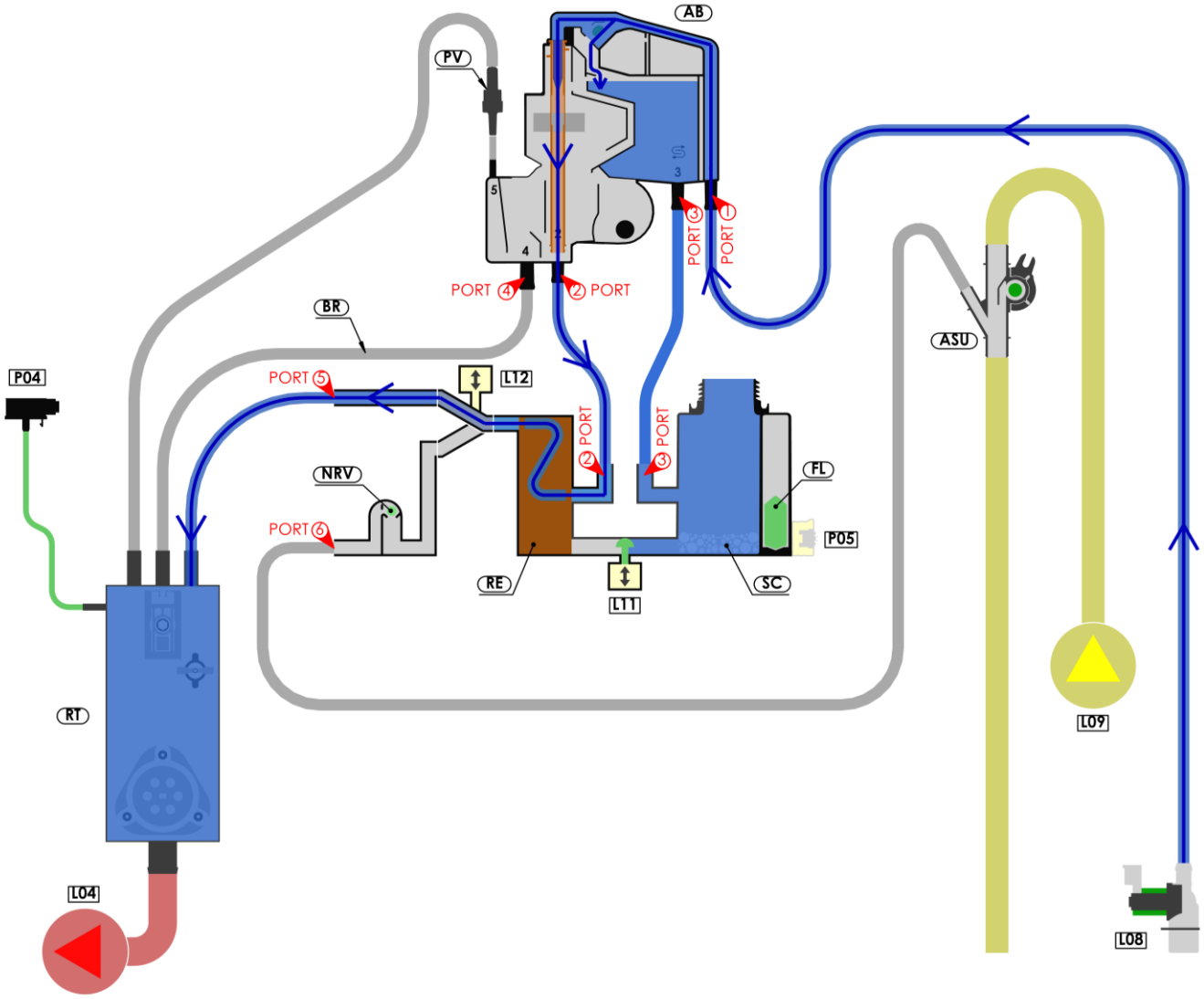
8. **RINSE TANK**

   Port 5 of the water softener unit is connected directly to the Rinse tank where the fresh incoming water which has now been softened can be heated ready to enter the **RINSE SYSTEM [LO4].**

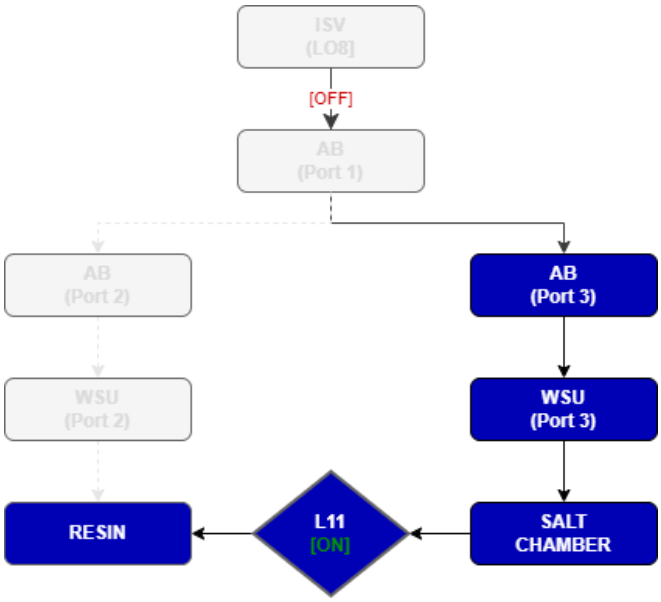
6.8.2 Filling Diagram

Key	Description
LO8	Inlet solenoid valve
AB	Air Brake
RE	WS Resin
L12	WS Shifting Valve
RT	Rinse Tank
LO4	Rinse pump
BR	Boiler Breather
PV	Pipe Vent

Key	Description
P04	Rinse tank pressure sensor
L11	Regen Valve
SC	Salt Chamber
FL	Float
PO5	Float reed switch
NRV	Non-Return Valve
ASU	Anti-syphon unit



6.8.3 Regeneration Drop Process 'DROP'



1. **ISV (LO8)**

   During the regeneration drop process the machine will deactivate '**L08**' the inlet solenoid valve (**ISV**)

2. **AB (Port 3) Regen Chamber**

   170ml of water will remain in the AB (port 3) regen chamber.

3. **Regen Valve (L11)**

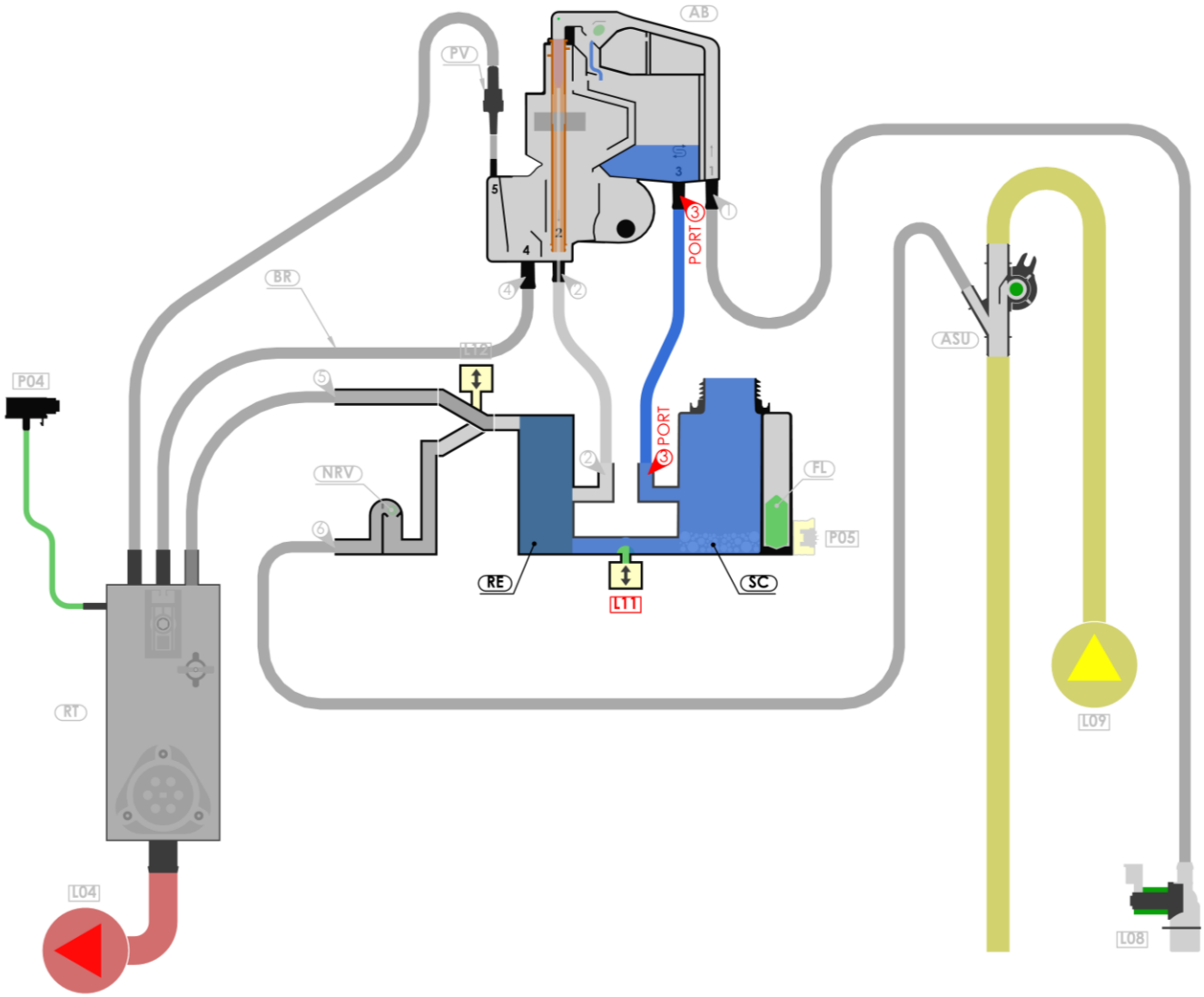
   The Regen Valve (L11) is activated, opening a path between the salt chamber and the Resin.

4. **Water Drop**

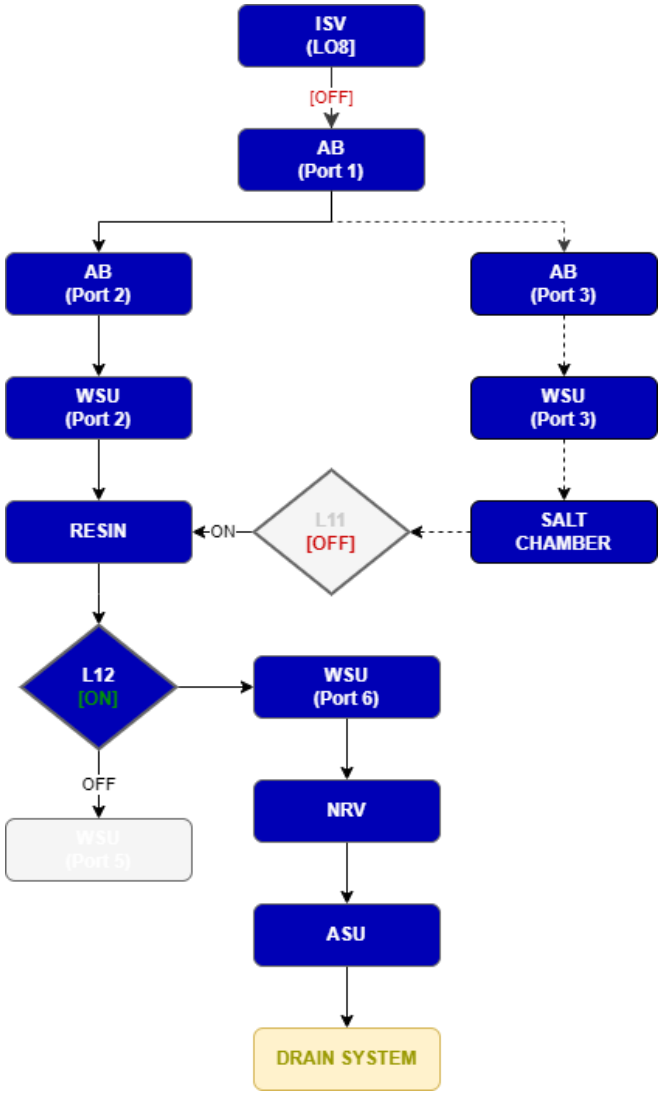
   The water in the regen chamber will drop, forcing water through the salt chamber and into the Resin.

6.8.4 Regeneration Drop Diagram 'DROP'

Key	Description
L11	Regen Valve
SC	Salt Chamber
RE	WS Resin



6.8.5 Regeneration 'FLUSH' Through Process



1. **Regen Valve (L11)**

   During the regeneration flush process, the machine will deactivate '**L11**' the regen valve to close the path between the salt chamber and the resin.

2. **Shifting Valve (L12)**

   Once the regen valve (L11) has been closed the Shifting valve (L12) will be activated. This changes the exit path out of the Resin chamber from the boiler to the drain.

3. **ISV (LO8)**

   The solenoid valve (LO8) will then be switch on to allow incoming water back into the Air Brake (AB).

4. **Water Softener Unit (Port 6)**

   With the Resin exit path now diverted to the drain the incoming water will flush through the Resin, cleaning out the brine water from the 'Regeneration Drop' Process.

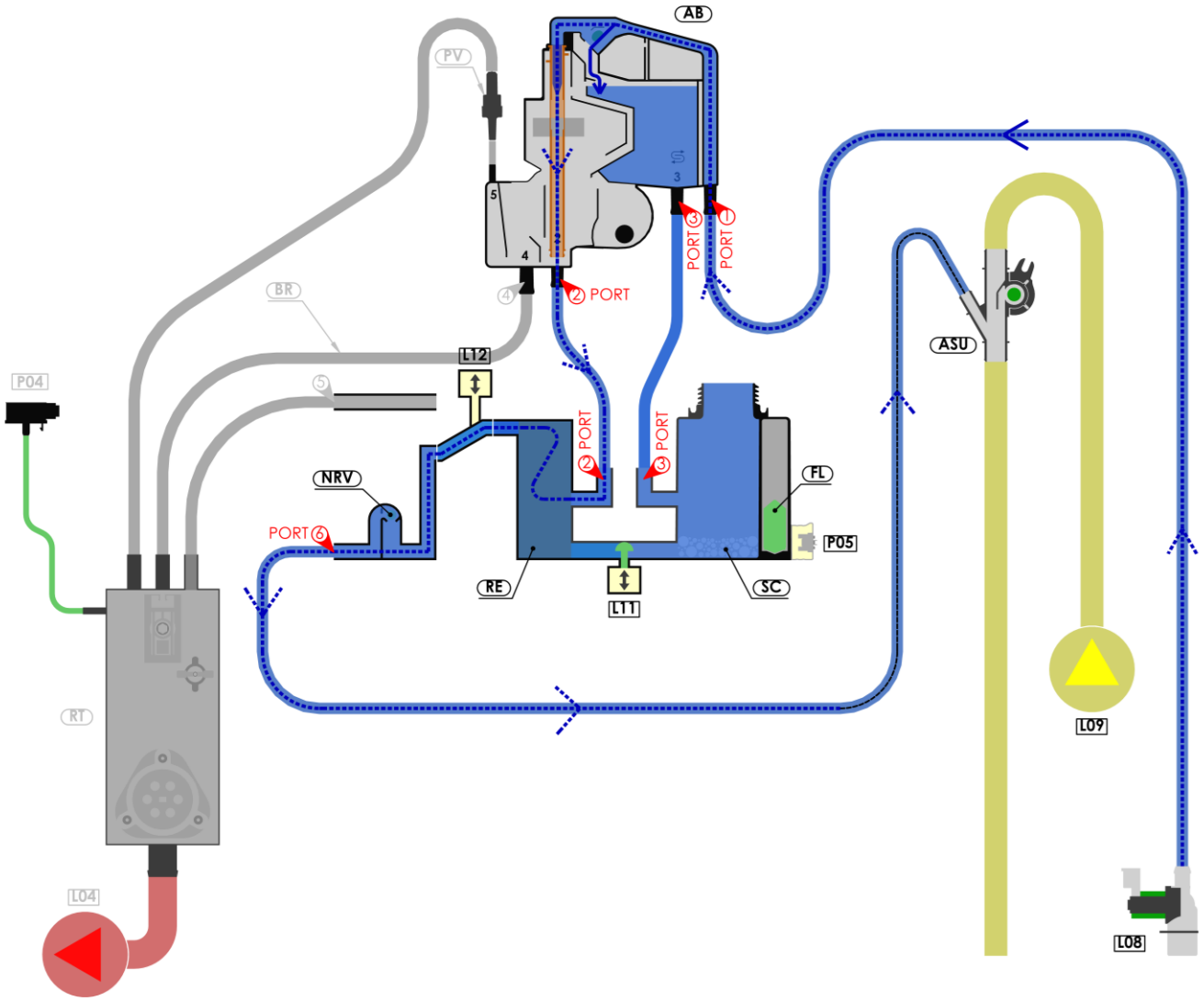
5. **Anti Syphon Unit (ASU)**

   The water is forced through the anti-syphon unit and into the drain. Exiting the machine with the wastewater.

6.8.6 Regeneration 'FLUSH' Through Diagram

Key	Description
LO8	Inlet solenoid valve
AB	Air Break
RE	WS Resin
L12	WS Shifting Valve
RT	Rinse Tank
LO4	Rinse pump
BR	Boiler Breather
PV	Pipe Vent

Key	Description
P04	Rinse tank pressure sensor
L11	Regen Valve
SC	Salt Chamber
FL	Float
PO5	Float reed switch
NRV	Non Return Valve
ASU	Anti-syphon unit

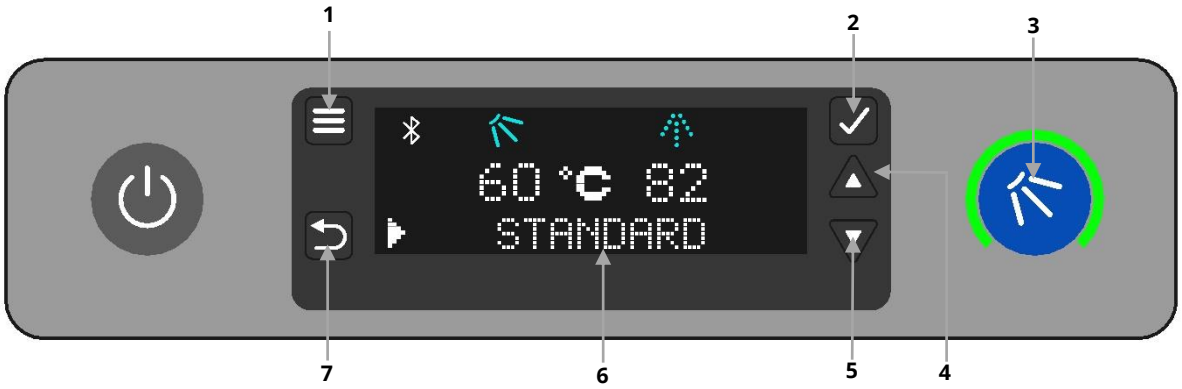


7. Service Mode

These settings should only be accessed by a qualified electrician or technician. Always make a note of previous settings before making any changes. Changes could result in a malfunction. Contact CLASSEQ TECHNICAL SERVICE for more information.

7.1 Service Interface

This feature can be accessed during filling, ready and cycle states.



7.1.1 Service Interface Legend

Item	Description
1	Menu button
2	Confirm button
3	LED indicator
4	UP Button
5	DOWN button
6	State Display
7	Back button

7.1.2 Service Mode

Service Mode is available within the Settings Menu. The setting Menu can be accessed by pressing the Menu button (1).

The UP (4) / DOWN (5) buttons can then be used to scroll to the Service Option within the Menu.

To enter the Service menu **PRESS & HOLD** the CONFIRM button (2).

After **6 SECONDS** the warning message will disappear on the DISPLAY (6) and display the spanner icon to notify you that the warewasher is now in Service mode.

Pressing UP & DOWN (4 & 5) buttons, scroll to SERVICE Lists and press CONFIRM button (2). Pressing BACK button (7) will take warewasher to Setting Mode and pressing BACK button (7) again will take warewasher to Normal Settings Mode.

7.2 Parameters

The parameters menu feeds back the reading that the sensors are receiving at any given time. Below is a list of Programmes that can be activated, via the UP and DOWN buttons (4 & 5). To select, press CONFIRM button (**2**). To come out of the Parameters menu press BACK button (7).

In the Service mode press the CONFIRM button (2) to enter the parameters list.

P01

Display Wash tank water temperature. This parameter cannot be changed and is for information only.

Signals are received via Wash tank temperature sensor.

P02

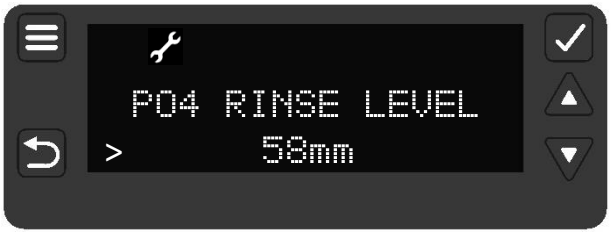
Display Wash tank water level. This parameter cannot be changed and for information purpose only.

Signals are received via Wash pressure sensor.

P03

Display Rinse tank water temperature. This parameter cannot be changed and for information purpose only.

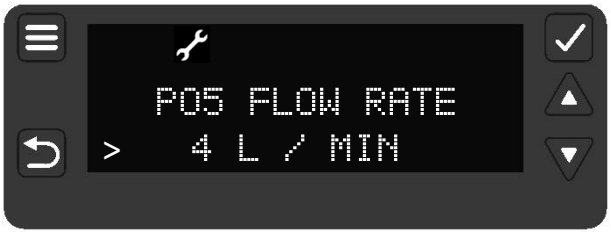
Signals are received via Rinse tank temperature sensor.



P04

Display Rinse tank water level. This parameter cannot be changed and for information purpose only.

Signals are received via Rinse pressure sensor.



P05

Display inlet solenoid valve flow rate. This parameter cannot be changed and for information purpose only.

This is value corresponds to inlet Solenoid valve and same for all UC range WS and Standard warewasher.

P06 *(Only on WS Warewasher)*

Display Salt present in the warewasher with internal Water softener.

It only displays either **Full or Empty**. This parameter cannot be changed and for information purpose only.

Signals are received via Salt float switch connected inside water softener unit.

Please Note: Standard warewasher will not display this parameter.

P10

This parameter displays either door/ hood is open or closed.

Signals are received via the proximity switch mounted inside on the top front surface of the wash tank. This parameter cannot be changed and is for information only.

P30

This parameter allows to change the Model type.

Press UP & DOWN buttons (4&5) to select desired Model type and confirm with pressing CONFIRM button (2).

CAUTION

***Please Note:* Refer Rating Label of the warewasher before updating Model. Incorrect model selection can result in warewasher not working correctly.**

CP500	Standard Air Break
CP500-WS	Standard Water Softener
CP500-AS	AS [Twin Element] Air Break
CP500-AS-WS	AS [Twin Element] Water Softener
CP500-SR	Standard Air Break (with Steam Recovery)
CP500-WS-SR	Standard Water Softener (with Steam Recovery)
CP500-AS-SR	AS Air Break (with Steam Recovery)
CP500-AS-WS-SR	AS Water Softener (with Steam Recovery)

P40

This parameter allows to change wash tank water temperature.

Selection range is from 30˚C to 75˚C.

Default setting or recommended setting is 60˚C.

Press UP & DOWN buttons (4&5) to select desired temperature and confirm with pressing CONFIRM button (2).

P41

This parameter allows to change wash tank water **INTERLOCK** temperature.

Selection range is from **0**˚C to **40** ˚C.

(P41 ≤ P40)

Default setting or recommended setting is 0˚C.

Press UP & DOWN buttons (4&5) to select desired temperature and confirm with pressing CONFIRM button (2).

***Please Note:* Warewasher will not start the cycle until the wash tank water interlock temperature is satisfied.**

P50

This parameter allows to change Rinse tank water temperature.

Selection range is from 55˚C to 85˚C.

The recommended setting is 82˚C on Dishwasher and 70˚C on Glasswasher. The machine will be set in the factory at these default settings.

Press UP & DOWN buttons (4&5) to select desired temperature and confirm by pressing CONFIRM button (2).

P51

This parameter allows to change rinse tank water **INTERLOCK** temperature.

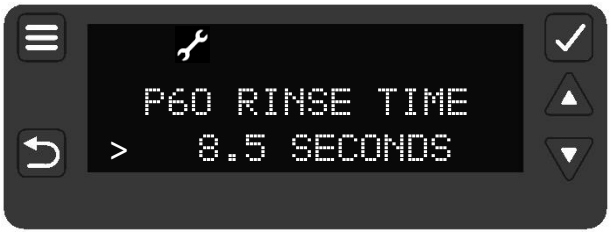
Selection range is from **55**˚C to **85** ˚C. **(P51 ≤ P50)**

Default setting or recommended setting is 55˚C.

Press UP & DOWN buttons (4&5) to select desired temperature and confirm with pressing CONFIRM button (2).

CAUTION

***Please Note:* The machine will extend the wash cycle until the rinse interlock temperature has been satisfied before starting the rinse cycle.**



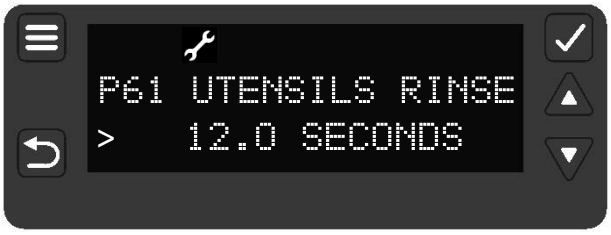
P60

This parameter allows to change Rinse time during cycle.

Selection range is from 2.0 to 12 seconds.

Default setting is 8.5 seconds.

***Please Note*: 8.5 seconds result in 3 litres of water per cycle, changing this parameter affects water usage of the warewasher.**



P61

This parameter allows to change rinse time during a utensil cycle.

Selection range is from 2.0 to 12.0 seconds.

Default setting is 8.5 seconds.

Press UP & DOWN buttons (4&5) to select desired time and confirm with pressing CONFIRM button (2).

P62

This parameter allows to change wash tank water **INTERLOCK** temperature for utensil cycles.

Default setting or recommended setting disables the wash interlock.

Enabling increases the Utensil wash interlock to 62˚C.

Press UP & DOWN buttons (4&5) to select desired temperature and confirm with pressing CONFIRM button (2).

***Please Note*: Warewasher will not start the cycle until the wash tank water interlock temperature is satisfied.**

P63

This parameter allows to change rinse tank water **INTERLOCK** temperature for utensil cycles.

Default setting or recommended setting disables the rinse interlock.

Enabling increases the Utensil rinse interlock to 85˚C.

Press UP & DOWN buttons (4&5) to select desired temperature and confirm with pressing CONFIRM button (2).

CAUTION

***Please Note:* The machine will extend the wash cycle until the rinse interlock temperature has been satisfied before starting the rinse cycle.**

P71

This parameter allows to change amount of detergent used during the **utensil** cycle.

Selection range is from 1-5.

Default setting is 2.

Press UP & DOWN buttons (4&5) to select desire multiplier and confirm with pressing CONFIRM button (2).

P72

This parameter allows to change amount of detergent used during the **Deep Clean** cycle.

Selection range is from 1-5.

Default setting is 3.

Press UP & DOWN buttons (4&5) to select desire multiplier and confirm with pressing CONFIRM button (2).

P73

This parameter allows to change amount of detergent used during the **intensive** cycle.

Selection range is from 1.0 – 2.0

Default setting is 1.0.

Press UP & DOWN buttons (4&5) to select desire multiplier and confirm with pressing CONFIRM button (2).

P82

This parameter allows the integration of external rinse aid lances to the warewasher.

Signals from the lances prompt the reminder before cycle to refill the rinse aid bottle in event of empty rise aid bottle.

Press UP & DOWN buttons (4&5) to select desired option and confirm with pressing CONFIRM button (2).

P83

This parameter allows the integration of external detergent lances to the warewasher.

Signals from the lances prompt the reminder before cycle to refill the detergent bottle in event of empty detergent bottle.

Press UP & DOWN buttons (4&5) to select desired option and confirm with pressing CONFIRM button (2).

P84

This parameter allows to set reminder in an event of no drain recorded during x number of cycles.

Default settings is disabled.

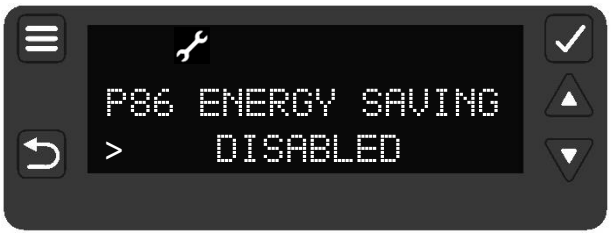
Press UP & DOWN buttons (4&5) to select desired option and confirm with pressing CONFIRM button (2).

P85

This parameter allows to set reminder of regeneration for external water softener fitted warewasher.

Default settings is disabled (OFF). Customize litres can be set from 1 litre to 65500 litres. Selecting OFF will disable this parameter.

Press UP & DOWN buttons (4&5) to select desired option and confirm with pressing CONFIRM button (2).



P86

This parameter allows to set energy saving Mode when warewasher is inactive for some time. Warewashers standby temperature are set low compared to target temperature.

Press UP & DOWN buttons (4&5) to select desired option and confirm with pressing CONFIRM button (2).

P87

This parameter allows to set reminder for service based on number cycles.

Default settings is disabled (OFF). Customize setting range is from can be set from 1 cycle to 65500 cycles. Selecting OFF will disable this parameter.

Press UP & DOWN buttons (4&5) to select desired option and confirm with pressing CONFIRM button (2).

7.3 Errors

The errors menu feeds back the last 38 errors on the machine to help identify the fault. Use the UP (**4**) and DOWN (**5**) keys to cycle through the list, the list does not roll over and will always start on the most recent error.

Below is a list of error codes and their possible cause. These are given as an aid only; all other possible causes of faults should be investigated before repair is carried out.

Errors E01,03,12,13,18,19 are displayed on the display when the fault is active.

Display	Title	Description	Possible cause
E00	New day	Displays each time the machine is switched on.	
E01	**Wash tank pressure sensor**	Invalid signal from the wash pressure sensor.	Wash tank pressure sensor faulty or disconnected.
E02	Wash tank temperature sensor	Invalid signal from the wash temperature sensor.	Wash tank temperature sensor faulty.
E03	**Rinse tank pressure sensor**	Invalid signal from the rinse pressure sensor.	Rinse tank pressure sensor faulty or disconnected.
E04	Rinse tank temperature sensor	Invalid signal from the rinse temperature sensor.	Rinse tank temperature sensor faulty.
E05	Wash water level unchanged during cycle.	Wash tank level not changed after soft start, repeated 3 times before error logged.	Wash pump blocked. Wash arm blocked. Wash pump capacitor failed. Wash pump failed. Board output relay failed.
E06	Rinse water level unchanged during rinse.	Rinse tank level not changed when starting the rinse pump.	Rinse arm blocked. Rinse pump blocked. Rinse pump capacitor failed. Rinse pump failed. Board output relay failed.
E07	Rinse tank temperature not achieved.	Rinse tank has not reached the target temperature within 60 minutes.	Rinse tank overheat thermostat tripped. Rinse tank heating element failed. Rinse tank element contactor failed. Board output relay failed.
E08	Wash tank temperature not achieved.	Wash tank has not reached the target temperature within 60 minutes.	Wash tank overheat thermostat tripped. Wash tank heating element failed. Board output relay failed.
E09	Wash water level unchanged during soft start.	Wash tank level not changed during soft start.	Wash pump blocked. Wash arm blocked. Wash pump capacitor failed. Wash pump failed. Board triac failed.

E10	Salt missing	Only in machines with water softener fitted. Salt level in reservoir is low for 30 seconds.	No salt in reservoir. Salt reed switch failed.
E11	**Display communication failure**	No signal from the user interface unit.	User interface not correctly connected. User interface failed.
E12	**Wash tank fill**	Wash tank has not filled within the required number of transfers.	Machine leaking. Very low water pressure (pressurised machines).
E13	**Rinse tank fill timeout**	Rinse tank has not filled within 5 minutes.	Water supply not connected or turned on. Very low water pressure. Solenoid valve failed.
E14	Door switch	Door switch has not changed position for the past 20 cycles	Door switch failed.
E16	**Wash tank overfill**	Wash tank has reached the flood risk level.	Site drain blocked. Machine waste hose blocked or kinked. Solenoid failed open. Drain pump failed.
E17	Filter mesh blocked	Water level in wash tank has been reduced to below minimum required level during a wash cycle.	Wash arms blocked. Wash pump blocked. Wash filters blocked. Container in wash tank collecting water.
E18	**Rinse tank temperature exceeded**	Rinse tank temperature has exceeded the safety limit.	Rinse tank temperature sensor disconnected. Rinse element relay fused. Main board relay fused. Rinse element wired incorrectly.
E19	**Wash tank temperature exceeded**	Wash tank temperature has exceeded the safety limit.	Wash tank temperature sensor disconnected. Main board relay fused. Wash element wired incorrectly.
E20	Power interruption	Power to machine has been interrupted.	Machine isolated from power supply. Power failure.
E21	**EEPROM Error**	EEPROM failed	Main board failed
E22	**Invalid machine type**	Incorrect machine type set	Machine type 0. Main board has not been configured.
E28	**Service Reminder Call Service provider**	Warewasher reached the value set on parameter **P87**.	Call Service provider to update **P87** value.

Items in **BOLD** will cause the machine to enter error mode; this will turn off the machine and illuminate the LED indicator **(3)** red.

E12 – Number of cycles will differ depending on machine.

7.4 Statistics

The statistics menu provides data on various aspects of the machine. Below is a list of the statistics that can be viewed.

Display	Description	Units
S00	Total number of completed wash cycles	
S01	Total run time (Power connected)	Hours
S02	Total active time (Machine ON)	Hours
S03	Total water usage	Litres
S20	Total number of regenerations	
S21	Total number of cycles without salt	
S22	Total number of deep clean cycles	
S23	Total number of drain cycles	
S24	Total number of refresh cycles	
S25	Total number of descale cycles	

S20 and S21 are only active in machines with integral water softener fitted.

7.5 Load Activation

The loads menu allows activation of specific loads within the machine to test their function. Some loads have safety criteria that need to be achieved before the load can be activated, if the component does not activate when the load is activated first check the continuity or resistance of the component through the harness.

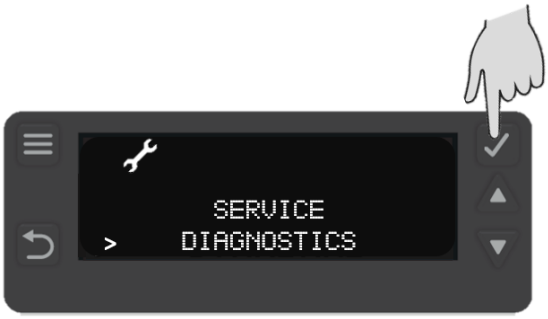
Below is a list of loads that can be activated, via the UP and DOWN buttons (**4** & **5**), and their required criteria. Each of the loads has a safety timeout applied to reduce the risk of wear on the components.

Display	Description	Value	Safety criteria
L00	Wash pump	0 = Off 1 = On	Door closed.
L01	Wash pump + soft start	0 = Off 1 = On	Door closed.
L02	Wash tank heat element	0 = Off 1 = On	Wash water level above minimum level.
L03	Detergent pump	0 = Off 1 = On	
L04	Rinse pump	0 = Off 1 = On	
L05	Rinse aid pump	0 = Off 1 = On	
L06	Wash tank heat element - Spare	0 = Off 1 = On	Wash water level above minimum level.
L07	Rinse tank heat element	0 = Off 1 = On	Door closed.
L08	Inlet solenoid valve	0 = Off 1 = On	
L09	Drain pump	0 = Off 1 = On	
L10	Steam fan	0 = Off 1 = On	
L11	WS Salt valve	0 = Off 1 = On	
L12	WS Waste valve	0 = Off 1 = On	
L13	WS Waste valve + inlet valve	0 = Off 1 = On	

Please Note: L11 and L12 will display if an integral water softener is fitted.

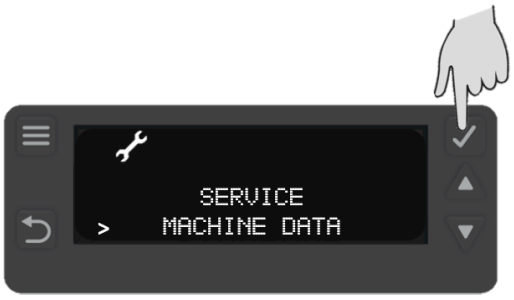
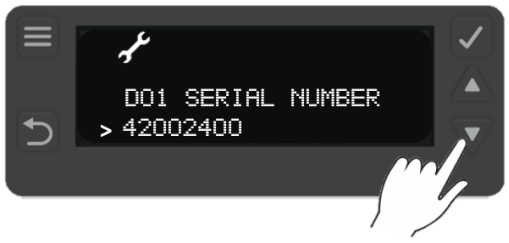
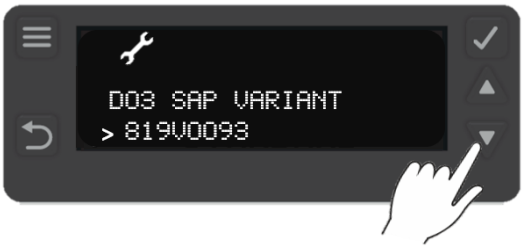
7.6 Diagnostics

This Service module allows to run the diagnostics tool on the warewasher. In an event of first Error recorded Diagnostic progress stops and Error is displayed. Re-run the diagnostic tool once Error has been resolved. For more information on Error please refer section (►7.3.2)

Press SELECT button (2) to activate diagnostics tool.	
Display shows the progress bar.	
In an Event of NO Errors	
In an Event of Error (Image is example only)	

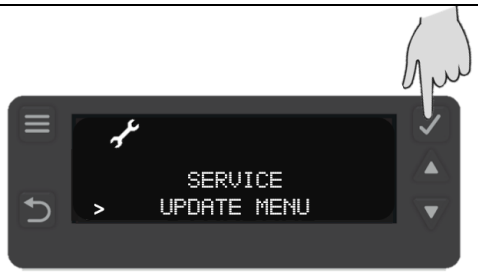
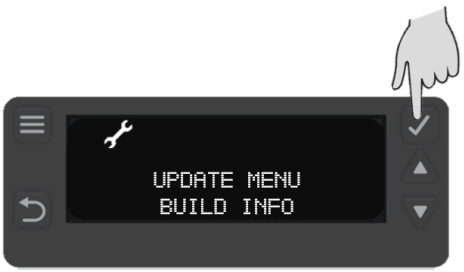
7.7 Machine Data

Machine data provides warewasher information only. Information cannot be change.

Press SELECT button (2) to view the machine information.	
Press the DOWN button (5) to view more information after serial number. (Image is example only)	
Press the DOWN button (5) to view more information. (Image is example only)	
Press the DOWN button (5) to view more information. (Image is example only)	
Press the BACK button (7) to exit Machine Data Menu. (Image is example only)	

7.8 Update Menu

Update Menu provide information on the Software version.

Press SELECT button (2) to enter Update Menu.	
Press SELECT button (2) to view the software version information.	
Press the DOWN button (5) to view more information. **DU – Display Unit** **CWS - Main Board.**	
Press the BACK button (7) to exit Update Menu.	

8. Control unit

DANGER!

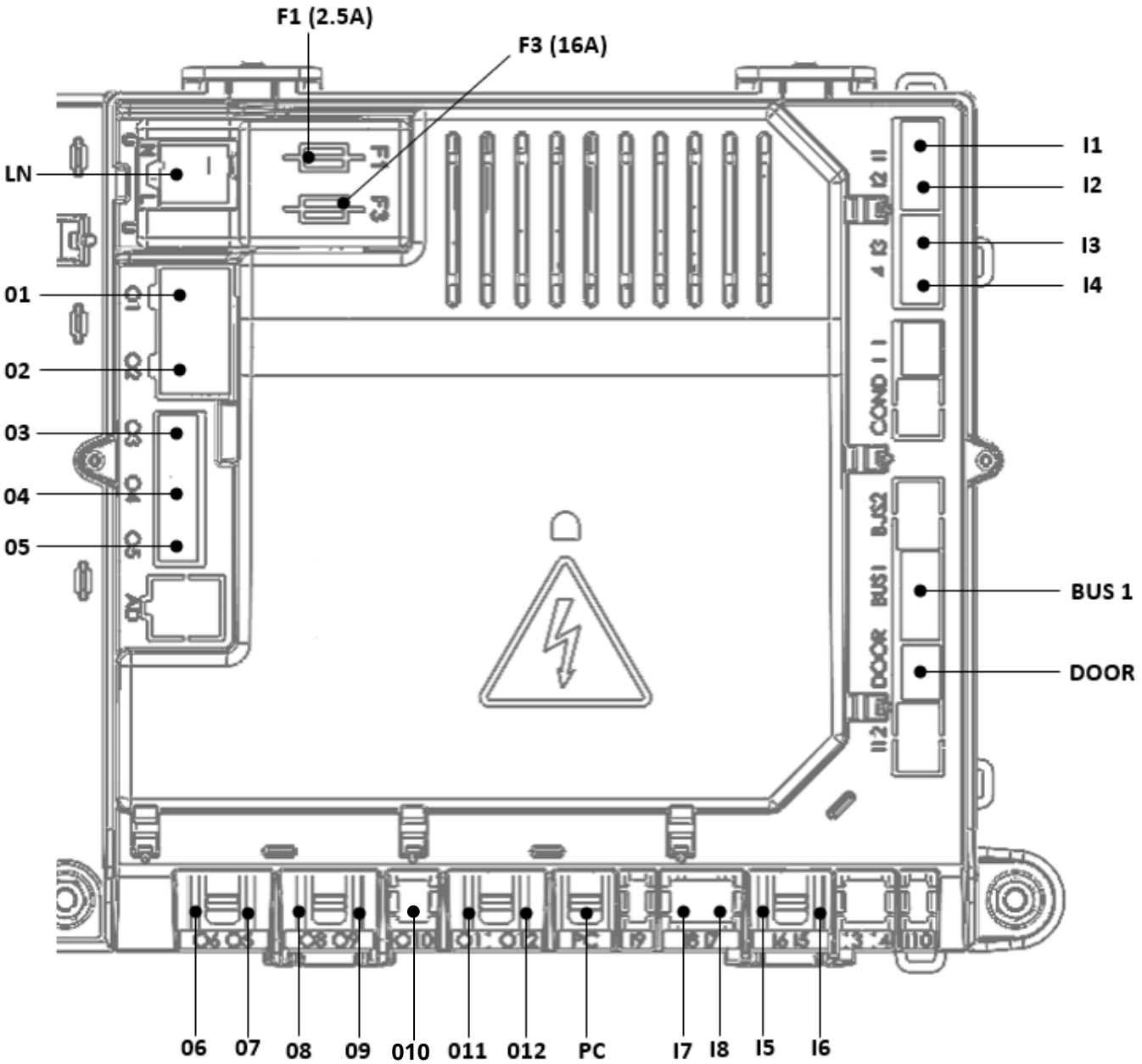
Unless the machine has been isolated from the supply there will always be potential for mains voltage to any of the components in the machine.

CAUTION

Repairs to the machine should only be done with the mains supply isolated.

8.1 Inputs and outputs

8.1.1 Main board



8.1.2 Inputs

INPUTS	
Label	**Device**
I1	Wash temperature sensor
I2	Wash pressure sensor
I3	Rinse temperature sensor
I4	Rinse pressure sensor
I5	Water softener float switch
I6	Not used
I7	Detergent Lance *(Optional)*
I8	Rinse Aid Lance *(Optional)*
Bus	User interface
Door	Door switch
PC	Production test port
LN	Mains power from terminal block
F1	2.5A Fuse [***O3, O5, O6, O7, O8, O9, O10, O11 & O12***]
F3	16A Fuse [***O1, O2 & O4***]

8.1.3 Outputs

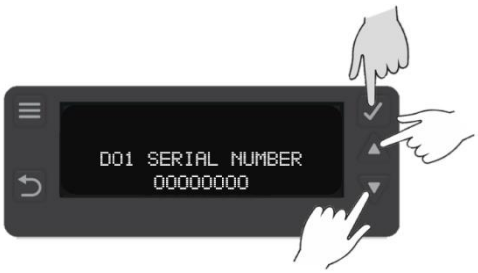
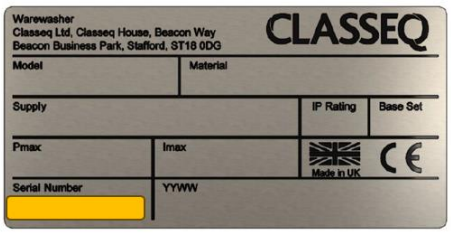
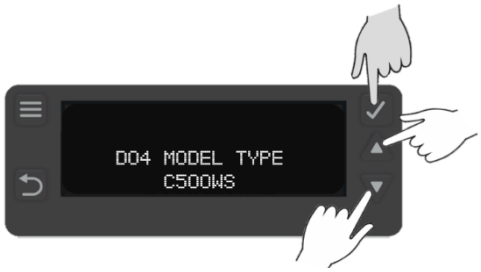
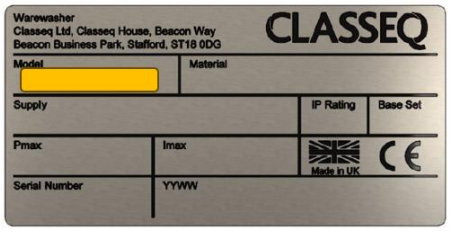
OUTPUTS	
Label	**Load**
O1	Wash pump
O2	Wash element
O3	Detergent pump
O4	Rinse booster pump
O5	Rinse Aid pump
O6	Rinse Safety Relay
O7	Rinse contactor
O8	Inlet solenoid valve
O9	Drain pump
O10	Steam Recovery Fan *[SR Machines Only]*
O11	WS Salt Valve *[WS Machines Only]*
O12	WS Waste Valve *[WS Machines Only]*

8.2 Board setup

CAUTION

***Please Note:** Refer to the Rating Label of the warewasher before selecting Model. Incorrect model selection can result in warewasher not working correctly.*

In the event of changing a control board, the new board will need to be configured to the machine. The warewasher automatically detects that a new board has been fitted and starts the initial setup. Warewasher is not accessible until this set up is completed.

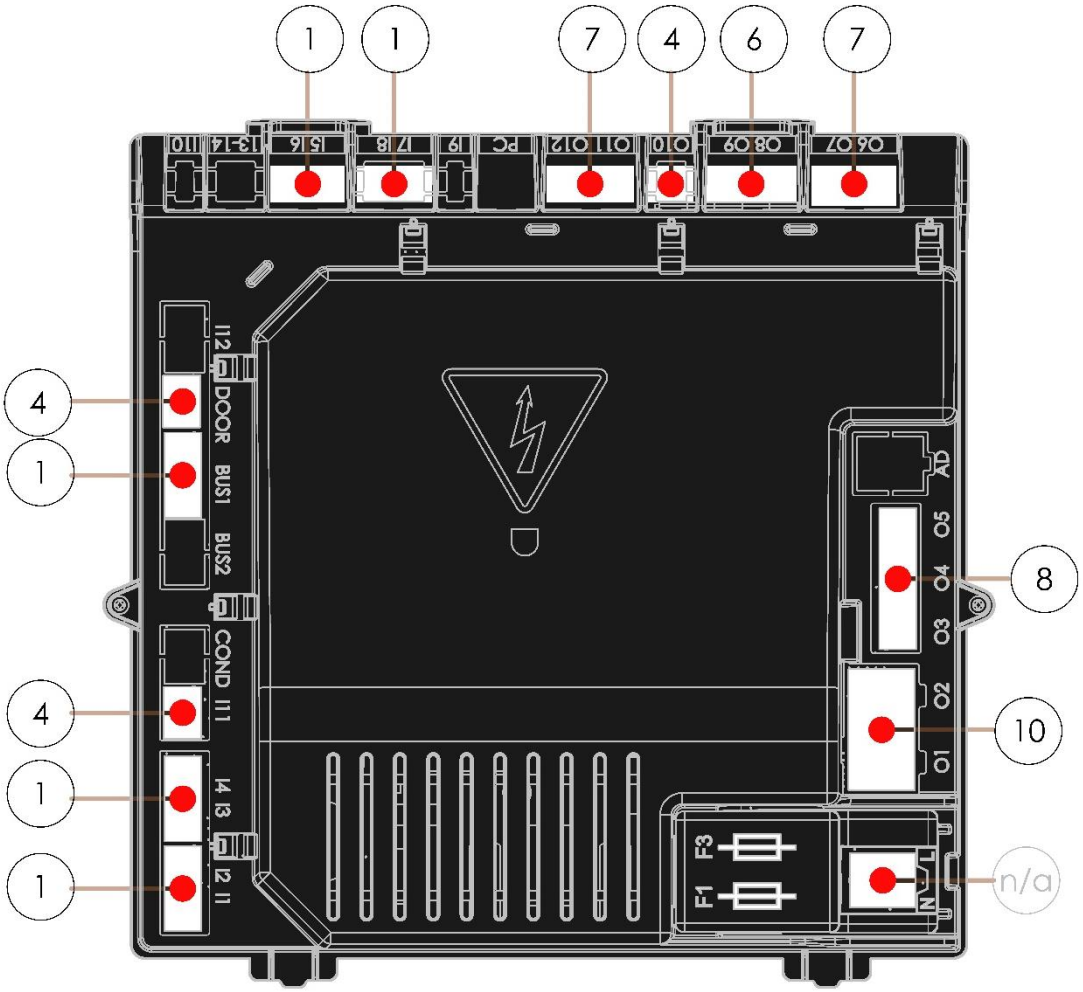
Step	Instruction	
1		Switch the warewasher ON by pressing ON/OFF Button
2		Press CONFIRM button (2) to start the set up.
3		Press UP & DOWN buttons (4&5) to select numbers which matches to serial number on the Rating Label (Silver Label) and confirm with pressing CONFIRM button (2). 
4		Press UP & DOWN buttons (4&5) to select from list the model which matches to model on the Rating Label (Silver Label) and confirm with pressing CONFIRM button (2). 
5	Setup now is completed.	

9. Cable Repair Kits

9.1 Available Cable Kits list

Detailed below are the spares cable kits available for the machine:

Item	Description	Part number
1	KIT MACRO-MODULE PLUG SIZE 2,5 6-POLE	30002484
2	KIT MACRO-MODULE PLUG SIZE 2,5 5-POLE	30002483
3	KIT MACRO-MODULE PLUG SIZE 2,5 4-POLE	30002482
4	KIT MACRO-MODULE PLUG SIZE 2,5 3-POLE	30000198
5	KIT MACRO-MODULE PLUG SIZE 2,5 2-POLE	30000197
6	Module Plug (Size 5,0 / 4Pole) Type A	30014137
7	Module Plug (Size 5,0 / 4Pole) Type B	30014138
8	Module Plug (Size 5,0 / 6Pole)	30014140
9	MACRO-MODULE PLUG5, 5-POLE	3112091
10	Marco Module Plug5, 5Pole	30002002



10. Wash Performance

The most important factors of a warewasher to generate good wash results are; mechanics, time, chemical and temperature. Only when these four factors are well balanced a good wash result can be achieved. Below you will find a list of recommendations and a troubleshooting guide to help you achieve this;

10.1 Recommended chemicals

Code	Description
B12N	Universal – Rinse Aid
F320	Universal Dishwasher – Detergent
F26	Universal Glasswasher - Detergent
F8000	All-purpose hygienic - Detergent
C10	Descaler and tarnish remover

10.2 Recommended chemical dosing

	Detergent	Rinse Aid
Setting	2.5 ml/Ltr	0.5 ml/ Ltr
Range	0.0 – 9.9 ml/Ltr	0.0 – 9.9 ml/Ltr

Note

To adjust these settings, see **'Section 7.3 - Setting Chemical Dosage'**

10.3 Recommended Temperatures

	Glasswasher	Dishwasher
Wash	60°C	60°C*
Rinse	70°C	82°C*

* All CP500 models are pre-set with dishwasher recommended temperatures

Note

To adjust these settings, see **'Section 8.3 - Heat Interlock Settings'.**

10.4 Troubleshooting

	Problem	Possible Cause	Possible Solution
GENERAL	**POOR WASH RESULTS**	Dirty machine	Ensure the machine is cleaned regularly. This includes primary and secondary filters, wash arms, rinse arms and all cabinet surfaces and apertures.
		Blocked / stiff wash and rinse nozzles	
		Insufficient pre-wash	Do not tip beer or food waste into the machine. The proteins within the waste can neutralise the chemicals used to clean, resulting in wash performance issues. Only pre-wash wares using cold water as hot water can bake any proteins on making them very difficult to clean.
		Basket loaded incorrectly/ wrong basket type	Do not overload baskets and follow the loading instructions in 'Installation & operation manual'. Always ensure a suitable basket is used.
		Incorrect temperature settings	Ensure the machine has the suitable temperature settings.
		Incorrect chemical dosing	Ensure the machine has the suitable chemical settings.
		Detergent and rinse aid feeds crossed	Check that the detergent and rinse aid feeds are connected correctly.
		Poor Water Quality (Hard Water)	Ensure the water softener is filled with salt when required. If this is not maintained then this allows the machine to run with hard water, increasing the risk of lime scale build up. When hard water is used the detergent will not work as effectively. It can also restrict the flow or water through the wash and rinse arms reducing the efficacy.
		Incorrect cycle selected	Different wash cycles are available. A longer program may be required for wares that are heavily soiled.

	Problem	Possible Cause	Possible Solution
GLASSWASHER	**CLOUDY GLASSES**	Poor water quality, Hard water with high mineral content	Improve water quality by fitting water softener unit
	ETCHING ON GLASSES	High temperatures, Aggressive chemicals,	Adjust Temperatures, Change chemicals / dosage rates,
	POOR HEAD RETENTION (BEER)	Excessive rinse aid, Poor quality rinse aid, Excessive detergent, Fats in wash water,	Adjust Rinse Aid Dosing, Ensure rinse aid is of good quality, Adjust Detergent Dosing, Increase pre-rinse to remove any fats from coffee cups/ glasses, Check rinse pressure, booster pump may be required
	WHITE SPOTS & SHREAKS ON GLASSES	Oily film on glass from towel drying, Poor rinse pressure, Insufficient/ poor quality rinse aid Insufficient/ poor quality detergent	Do not towel dry glasses, Check rinse pressure, booster pump may be required Check rinse aid and dosing rate Check detergent and dosing rate
	GLASS BREAKAGES	Temperatures too high	Recommended 70°C for glass washing
		Incorrect basket used	Use suitable basket
	DIRTY GLASSES	Dirty machine, No pre-wash, Poor quality damaged glasses, Insufficient/ poor quality rinse aid Insufficient/ poor quality detergent	Clean machine regularly, Leave the door open overnight to allow machine to dry out, Renovate/ replace glasses, Check chemicals and dosing rates,
DISHWASHER	**FOAMING**	Low temperatures	Check temperatures
		Incorrect detergent	Check correct chemicals are being used
		Incorrect dosing of detergent or rinse aid.	Check dosing of chemicals
	TEA STAINING	Low temperatures	Check temperatures
		Incorrect cycle selected	Check dosing of chemicals
		Incorrect detergent and/ or dosing	Check correct chemicals are being used
			Recommended Chemical – F8000
	CONDENSATION ON WARES	Normally a dirty glass.	Check temperatures
		It can be caused by towel drying.	Check dosing of chemicals
		Incorrect detergent levels.	Check correct chemicals are being used
		Low temperatures.	
	BLUE FILM ON WARES	Excessive rinse aid.	Check temperatures
		Hard water (lime scale).	Check dosing of chemicals
		High temperatures	Check correct chemicals are being used

11. Quick Reference

CLASSEQ

C Range

Engineers Quick Reference Guide

CUSTOMER SETTINGS			
•	LANGUAGE		
•	CHEMICALS		
	DETERGENT		
		SET DOSAGE	*0.1 x ml/L*
		SET BOTTLE SIZE	*L*
		PRIME PUMP	*On / Off*
	RINSE AID		
		SET DOSAGE	*0.1 x ml/L*
		SET BOTTLE SIZE	*L*
		PRIME PUMP	*On / Off*
•	BLUETOOTH		*On / Off*
•	CHANGE UNITS		*°C / °F*
•	WASH MODE		*Glass / Dish*
•	ALERT SOUND		
	ALERT_ALL		*On / Off*
	ALERT_WASH		*On / Off*
	ALERT_SALT		*On / Off*
•	WATER SOFTENER SETTING		*°dH*
•	EXTERNAL WATER SOFTENER REMINDER		*On / Off*

NEW BOARD DETECTED	
•	C400
•	C400WS
•	C500
•	C500WS
•	CP500
•	CP500WS

RENTAL SETUP	
•	START RENTAL
•	CYCLES REMAINING

ERRORS	
E00	NEW DAY
E01	**WASH TANK PRESSURE SENSOR**
E02	WASH TANK TEMPERATURE SENSOR
E03	**RINSE TANK PRESSURE SENSOR**
E04	RINSE TANK TEMPERATURE SENSOR
E05	WASH WATER LEVEL UNCHANGED DURING CYCLE
E06	RINSE WATER LEVEL UNCHANGED DURING RINSE
E07	RINSE TANK TEMPERATURE NOT ACHIEVED
E08	WASH TANK TEMPERATURE NOT ACHIEVED
E09	WASH WATER LEVEL UNCHANGED DURING SOFT START
E10	REFILL SALT CONTAINER
E11	**DISPLAY COMMUNICATION FAILURE**
E12	**WASH TANK FILL TIMEOUT**
E13	**RINSE TANK FILL TIMEOUT**
E14	DOOR SWITCH - CHECK OPERATION VIA SERVICE MENU
E16	WASH TANK OVERFILL - CHECK FOR DRAIN BLOCKAGE
E17	BLOCKED FILTERS - CHECK AND CLEAN PRIMARY FILTERS
E18	**RINSE TANK TEMPERATURE OUT OF RANGE**
E19	**WASH TANK TEMPERATURE OUT OF RANGE**
E20	POWER INTERRUPTION
E21	**EEPROM ERROR**
E22	**INVALID MACHINE TYPE**
E25	UNABLE TO EMPTY WASH TANK
E28	SERVICE REMINDER CALL SERVICE PROVIDER

The machine will enter error mode; this will turn off the machine and illuminate the cycle indicator red.

Safety interlock applies

LOAD ACTIVATION		
L00	**WASH PUMP**	*On / Off*
L01	**WASH PUMP + SOFT START**	*On / Off*
L02	**WASH TANK HEAT ELEMENT**	*On / Off*
L03	**DETERGENT PUMP**	*On / Off*
L04	**RINSE PUMP**	*On / Off*
L05	**RINSE AID PUMP**	*On / Off*
L06	**WASH SPARE / RINSE SAFETY**	*On / Off*
L07	**RINSE TANK HEAT ELEMENT**	*On / Off*
L08	INLET SOLENOID VALVE	*On / Off*
L09	DRAIN PUMP	*On / Off*
L10	STEAM FAN	*On / Off*
L11	WS SALT VALVE	*On / Off*
L12	WS WASTE VALVE	*On / Off*
L13	WS WASTE VALVE + INLET VALVE	*On / Off*

DIAGNOSTICS	
•	START DIAGNOSTICS ROUTINE?

PARAMETERS		
P01	WASH TANK TEMPERATURE	°C
P02	WASH LEVEL	***
P03	RINSE TANK TEMPERATURE	°C
P04	RINSE LEVEL	***
P05	WATER FLOW RATE	dl/min
P06	SALT PRESENT	Full/ Empty
P10	DOOR/ HOOD SWITCH	Open/ Closed
P30	BASE SET	***
P40	WASH TARGET	°C
P41	WASH INTERLOCK	°C
P50	RINSE TARGET	°C
P51	RINSE INTERLOCK	°C
P60	RINSE TIME	Sec
P61	UTENSILS RINSE TIME	Sec
P62	UTENSILS WASH INTERLOCK	°C
P63	UTENSILS RINSE INTERLOCK	°C
P71	UTENSILS DET MULTIPLIER	***
P72	DEEP CLEAN DETERGENT MULTIPLIER	***
P73	INTENSIVE DETERGENT MULTIPLIER	***
P82	RINSE AID LANCE	***
P83	DETERGENT LANCE	***
P84	HYGIENE REMINDER	*On / Off*
P85	EXTERNAL WATER SOFTNER REMINDER	*On / Off*
P86	ENERGY SAVING	*On / Off*
P87	SERVICE REMINDER	*On / Off*
P98	DEMO MODE	*On / Off*

STATISTICS		
S00	TOTAL NUMBER OF COMPLETED WASHES	***
S01	UP-TIME HOURS	Hours
S02	TOTAL OPERATIONAL TIME	Hours
S03	TOTAL ESTIMATED WATER USAGE	Litres
S20	TOTAL NUMBER OF WS REGENERATIONS	***
S21	TOTAL NUMBER OF CYCLES WITHOUT SALT	***
S22	TOTAL NUMBER OF DEEP CLEAN CYCLES	***
S23	TOTAL NUMBER OF DRAIN CYCLES	***
S24	TOTAL NUMBER OF REFRESH CYCLES	***
S25	TOTAL NUMBER OF DESCALE CYCLES	***

Items marked with this background are only present in **Pass-through** models.

Items marked with this background are only present in machines with **Water softeners** fitted.

12. Machine Rating

12.1 Element Ratings

RINSE ELEMENT	6 kW (30019239) 3 Legs	9 kW (30019240) 3 Legs	2 x 6 kW (30019239) 6 Legs
30A / 220-240V / 1N~ 50Hz	YES	NO	NO
12A /380-415V / 3N~ 50Hz	YES	NO	NO
16A /380-415V / 3N~ 50Hz	NO	YES	NO
22A /380-415V / 3N~ 50Hz	NO	NO	YES
17A / 190-210V / 3~ 60Hz	YES	NO	NO

12.2 Mains Cable Types

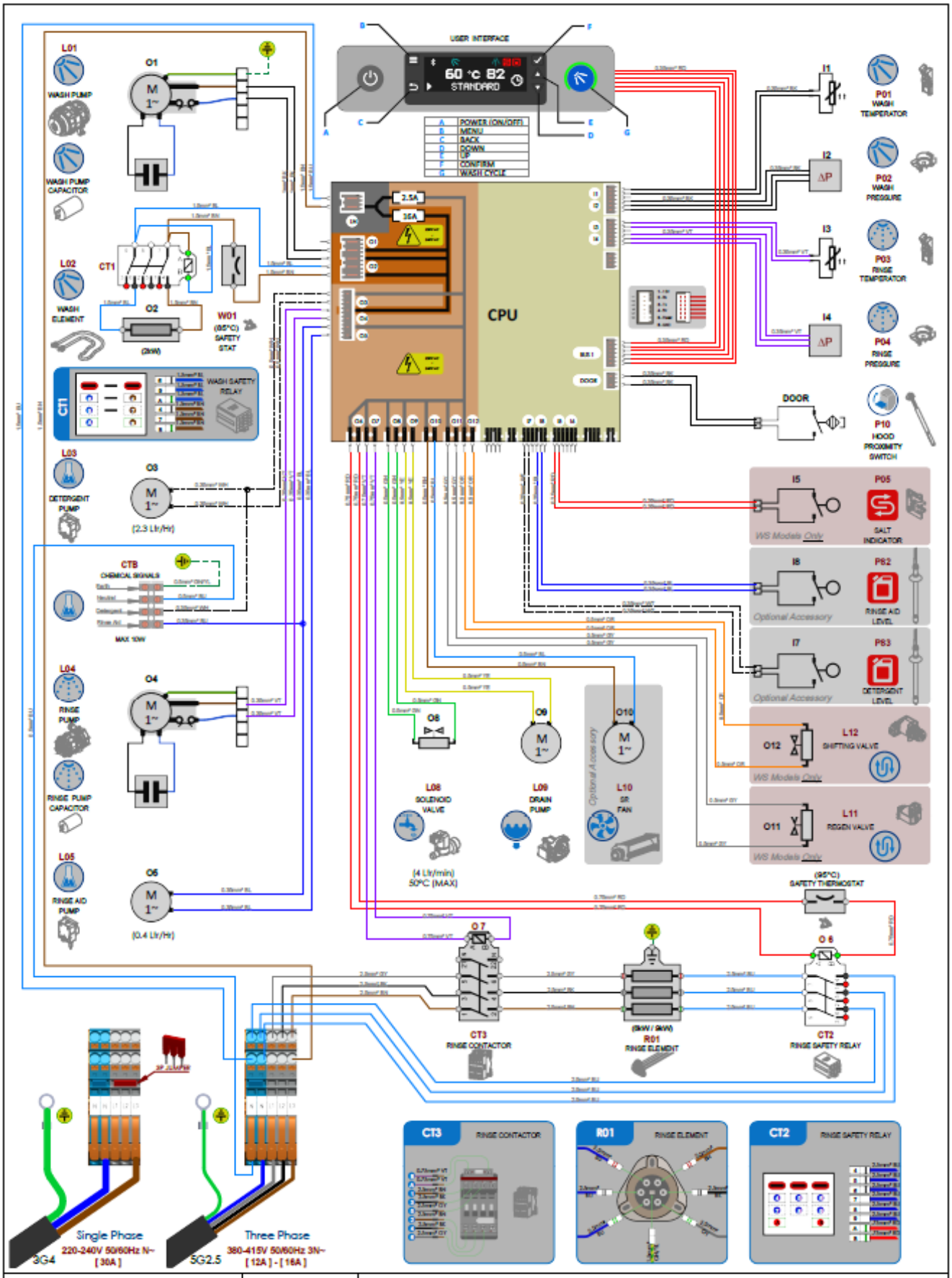
Machine rating (Volts / Phase / Amps)	Cable type
220-240V / 1N~/30A	H07RN-f 3G 4.0
380-415V / 3N~/12A	H07RN-f 5G 2.5
380-415V / 3N~/16A	H07RN-f 5G 2.5
380-415V / 3N~/22A	H07RN-f 5G 4
200-230V / 3~/17A	H07RN-f 4G 2.5

12.3 Mains Cable Specification

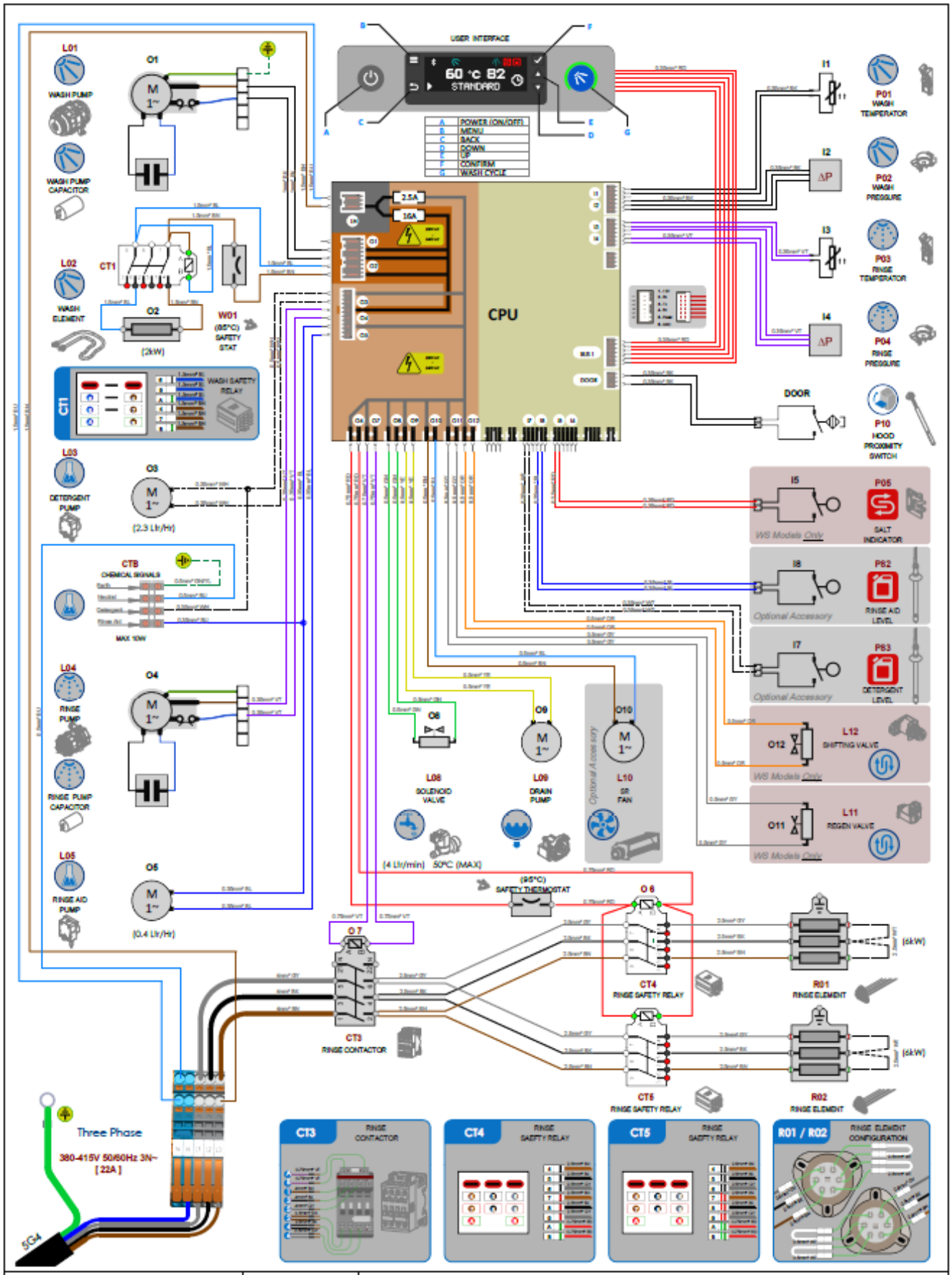
Temp. rating	Length of cable	Conforms to
80°C min.	3m	IEC 60335-2-58 & IEC 60227 types 56 & 57

13. Wiring Diagrams

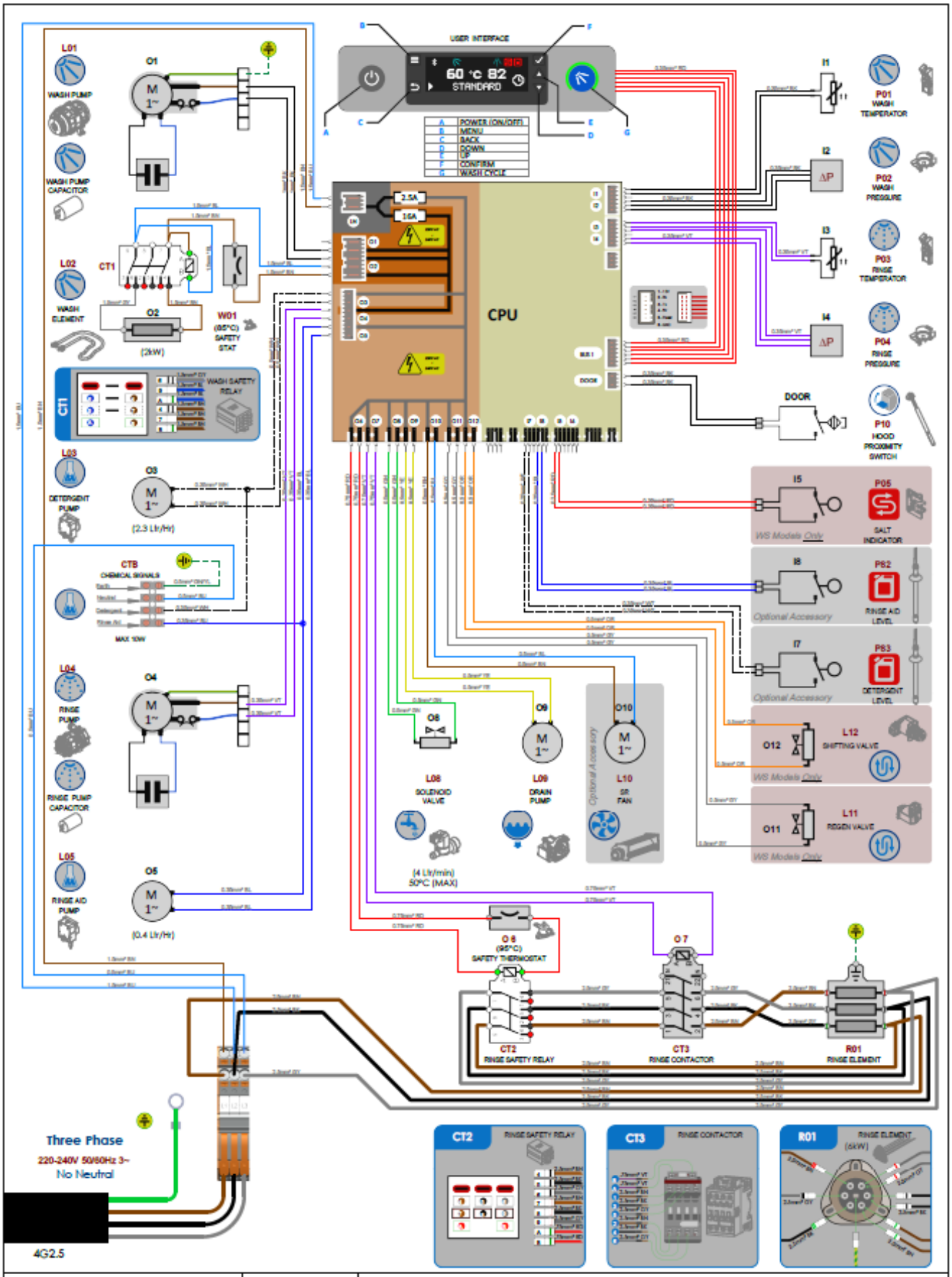
13.1 Standard



13.2 AS


USER INTERFACE
60 °c 82
STANDARD
CPU
WASH PUMP
WASH PUMP CAPACITOR
WASH ELEMENT
(2kW)
WASH SAFETY RELAY
DETERGENT PUMP
(2.3 Ltr/Hr)
CHEMICAL SIGNALS
RINSE PUMP
RINSE PUMP CAPACITOR
RINSE AID PUMP
(0.4 Ltr/Hr)
SOLENOID VALVE
DRAIN PUMP
SR FAN
(4 Ltr/min) 50°C (MAX)
SAFETY THERMOSTAT
RINSE CONTACTOR
RINSE SAFETY RELAY
RINSE ELEMENT
DOOR
SALT INDICATOR
RINSE AID LEVEL
DETERGENT LEVEL
SHIFTING VALVE
REGEN VALVE
HOOD PROXIMITY SWITCH
WS Models Only
Optional Accessory
Three Phase
380-415V 50/60Hz 3N~
[22A]
5G4
CLASSEQ
Classeq Ltd.
Classeq House
Beacon Business Park
Beacon Way
Stafford
ST18 0DG
United Kingdom
DESCRIPTION: Wiring Diagram - Passthrough [2025] - AS
DRAWING NO: 30022052
NAME: AB
DATE: 27/03/2025
STATUS: PRODUCTION
REVISION: A

13.3 No Neutral



14. Useful Contact Details

We're dedicated to supporting our customers and distributor partners, any questions you have or support you need simply get in touch.

Company Details

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15. Notes

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REVISION:	B
DATE:	27/05/2025