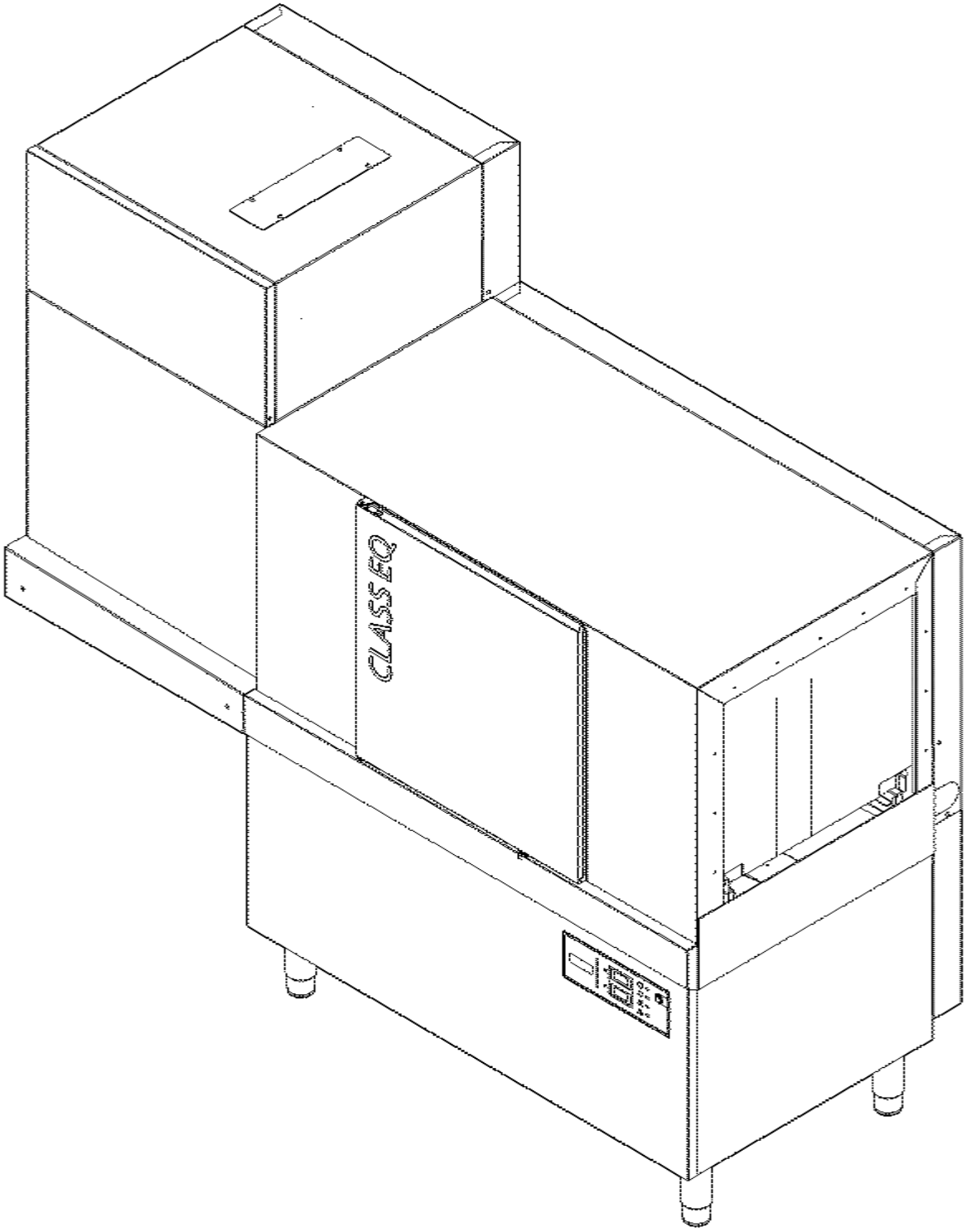
CST Machines



Contents

1. Introduction

CAREFULLY READ THESE INSTRUCTIONS, BEFORE INSTALLING AND OPERATING OR REPAIRING THIS APPLIANCE.

INCORRECT INSTALLATION, ADAPTATIONS OR ALTERATIONS COULD RESULT IN INJURY OR DAMAGE TO PROPERTY.

MALICIOUS DAMAGE, DAMAGE DUE TO NEGLIGENCE, OR FAILURE TO COMPLY WITH THESE INSTRUCTIONS AND LOCAL LEGISALTION, OR UNAUTHORISED TAMPERING WILL INVALIDATE ANY WARRANTY AND RELIEVE THE MANUFACTURER OF ALL LIABILITY

DAMAGE CAUSED DUE TO THE LACK OF, OR INCORRECT USE OF A WATER SOFTNER, OR LIMESCALE DAMAGE WILL NOT BE COVERED BY THE MANUFACTURES WARRANTY

Introduction:

Prior to reading this manual, it is essential that you are familiar with the contents and subject matter covered within the ***'Installation & Operators Manual'*** *or* ***'Installation instruction'***.

Installation:

Installation should only be carried out by a ***Classeq*** approved technician, in accordance with current regulations and within our instructions.

Repairs and spare parts:

The appliance must only be repaired by a ***Classeq*** approved technician, using genuine ***Classeq*** spare parts, failure to do so could invalidate any warranty and relieve the manufacture of all liability.

Modification:

Classeq reserves the right to modify either the appliance or the contents of these instructions without notice.

2. Recommended Tool Kit

Recommended hand tools	Specification
	5.5mm - Spanner / nut runner / socket
	7.0mm - Spanner / nut runner / socket
	8.0mm - Spanner / nut runner / socket
	10.0mm - Spanner / nut runner / socket
	13.0mm – Spanner / nut runner / socket
	24.0mm - Spanner / nut runner / socket
	32.0mm - Spanner / nut runner / socket
	10mm to 18mm - Adjustable spanner
	Pliers
	2.5mm Hex key
	3mm Hex key
	No. 2 - Pozi screw driver
	Electric screw driver (small)
	Flat bladed screw driver (large)
	Wire cutters
	Wire crimpers
	Multi meter capable of measuring: **Volts** (10V ~ 240V AC) **Amps** (0 ~ 50 Amps) **Ohms** (0 ~ 30MΩ) **Continuity**

3. Machine Specifications

Door opening angle		180°
Maximum clear entry height		492mm
Operating noise level*		<70dB
Net weight		180kg
Gross weight		268kg
Built in air gap (WRAS Approved)		Yes
Rinse booster pump		Yes
Built in Detergent dispenser		No
Built in Rinse aid dispenser		No
Auto timer		Yes
Racks per hour		100 - 130
Water connection		G¾" (¾" BSP)
Water inlet height from floor level		170 - 240mm
Required water pressure		2 – 4 bar
Maximum drain height from floor		270 – 320mm
Drain size		Ø40
Amps required – 3 phase	Water fed @ 40°C	33A
	Water fed @ 10°C	50A
Total connected load	Water fed @ 40°C	20.64kW
	Water fed @ 10°C	32.64kW
Operating voltage		380-415V
Wash tank element		2x8.64kW
Rinse boiler element		4x6kW
Rinse boiler capacity		7Lts
Wash pump power		1.1kW
Wash tank capacity		80Lts
Wash water operating temperature		55°C – 60°C
Rinse pump power		0.25kW
Rinse water operating temperature		>82°C
Rinse water consumption		4.7Lts/min
Drive motor		0.37kW
Dryer air temperature		60°C
Blower power		0.5kW
Dryer tunnel amps		+6A
Dryer tunnel connected load		+4kW
Water consuption		282Ltrs/hour

4. Installation Instructions

The site:

- Ensure that there is sufficient space for the installation, servicing and easy access to all mains isolator switches / valves (i.e. electricity and water).
- Ensure that the surface the appliance is going to be installed onto is adequately stable and capable of supporting the appliance during normal operation *(see site requirements).*
- Once installed ensure the appliance is stable, with its weight being distributed equally and does not tilt more than 3° in any direction.

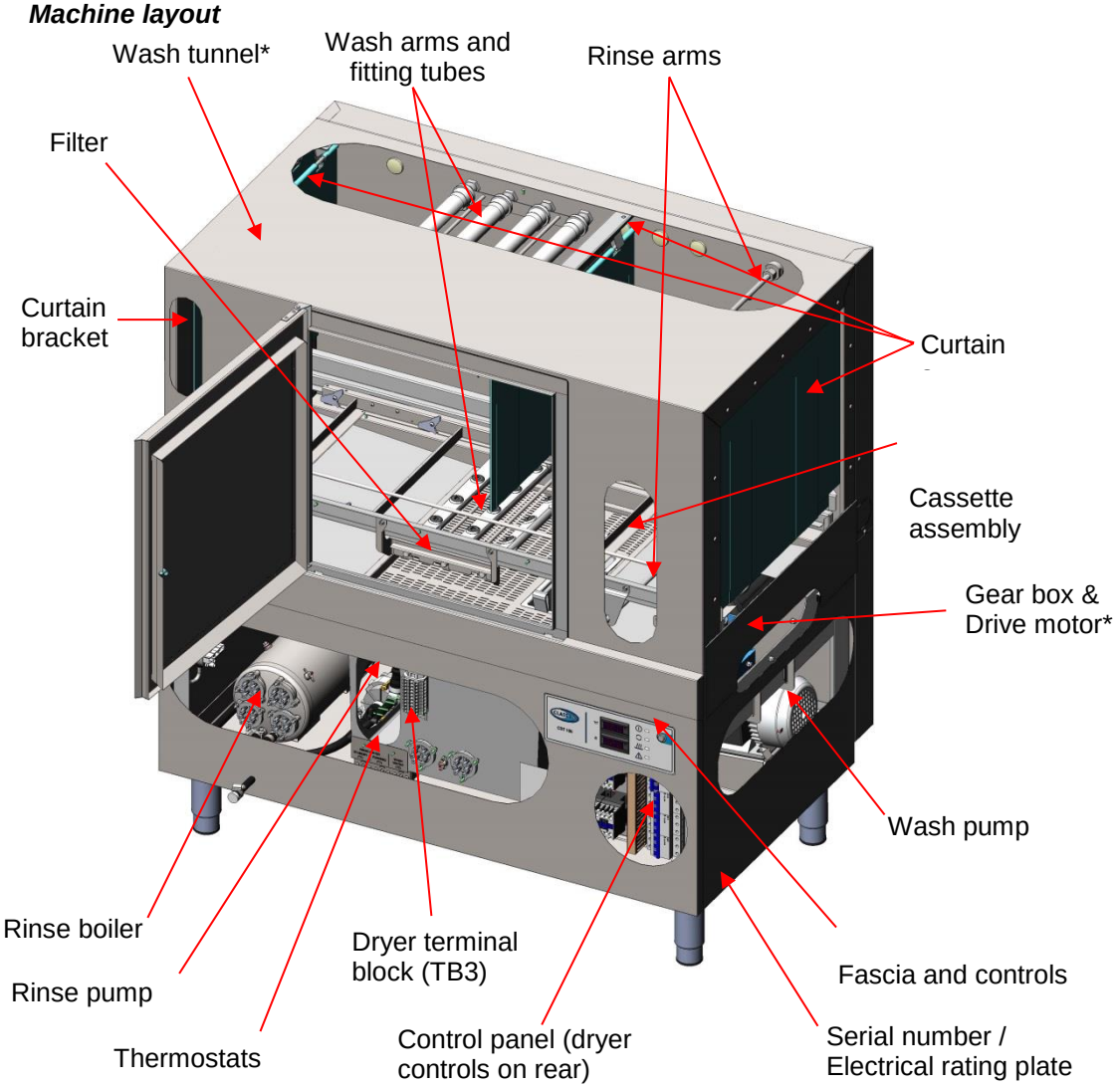
Adjuster feet:

After removing the machine from the transport pallet ensure all the feet are adjusted to suit the surface where the appliance is being installed.

For further instructions see installation and operation manual.

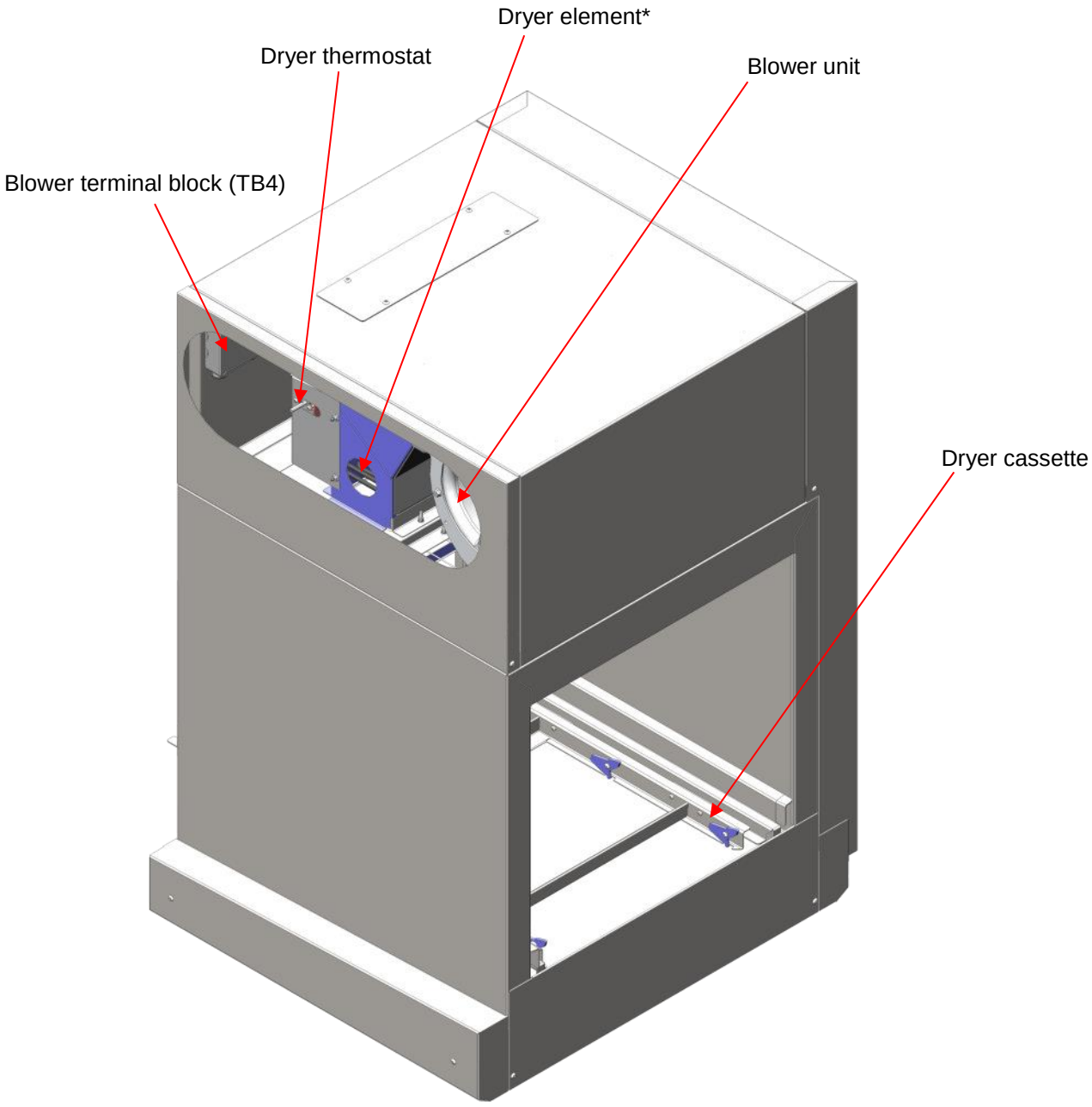
5. Know your unit

Machine layout



* Take note of safety information regarding these components (►6)

Dryer unit layout



6. Warning and safety information

The machine should only be operated at or within the voltage specified on the rating plate (►5). The installer and user are responsible for ensuring the installation and operation of this machine are in accordance with local and national regulations.

- The machine is not fitted with a heat interlock but should be allowed to fully heat to the correct temperatures before use.
- Only use commercial grade detergents and rinse-aids within your machine.
- **DO NOT** use electrical extension lead(s) to supply power to your machine.
- Damage to the machine caused by lime scale, or poor water quality will **NOT** be covered by the Manufacturer's Warranty.
- Children should be supervised to ensure that they do not play with, or operate the machine.
- When disconnecting your machine from the mains electrical supply:
  - Machines hard wired *(i.e. no plug),* this must be disconnected in accordance with local and national regulations; ***Classeq*** recommends this is performed by a qualified electrician.
- Always remove excess food from the dishes before loading.

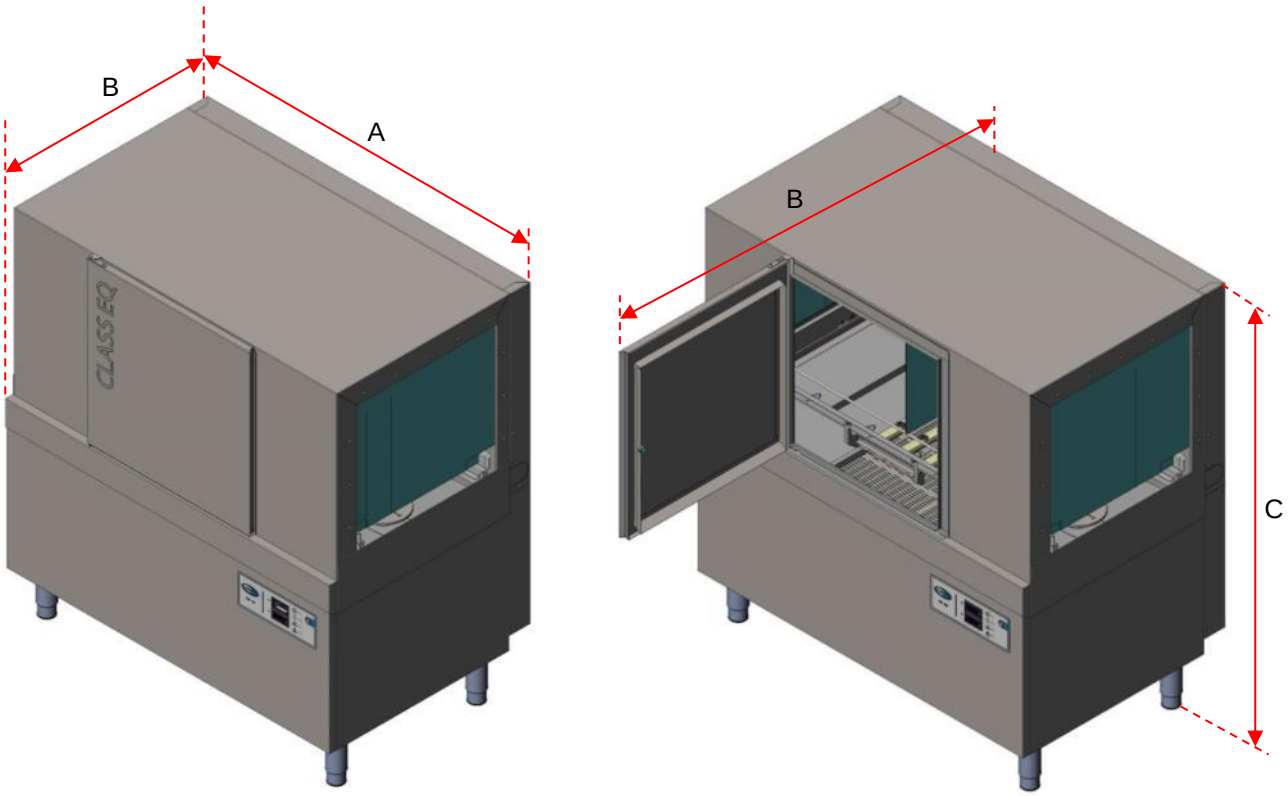
Caution

***DO NOT* use the machine as a waste disposal unit.**

- Do not insert any items or parts of your body between moving components, as this could cause injury.
- Beware of touching or placing items onto the wash tunnel of the machine, as this can get hot during use.
- The drive motor and gearbox assembly weighs over 15kg. When removing these items care must be taken to ensure that the weight is supported correctly.
- The dryer unit weighs more than 50kg and should be handled with care. When installing the unit a lifting trolley should be used.

7. Site requirements

Machine dimensions:



Dishwashers			***CST***	***With dyer***
Machine (mm)	A = width	(mm)	1300	2000
	B = depth	Closed *(mm)*	810	
		Open *(mm)*	1490	
	C = height	(mm)	1380-1440	1730-1790
Basket size (mm) (square basket)			500	
Load capacity *(dishes)*			18	
Load capacity *(pint glass)*			30	
Basket rate (Baskets/hour)			100 / 130	
Rinse running water temperature			82°C	
Rinse standby water temperature			60°C	
Wash water temperature			55°C	

Electric Supply:

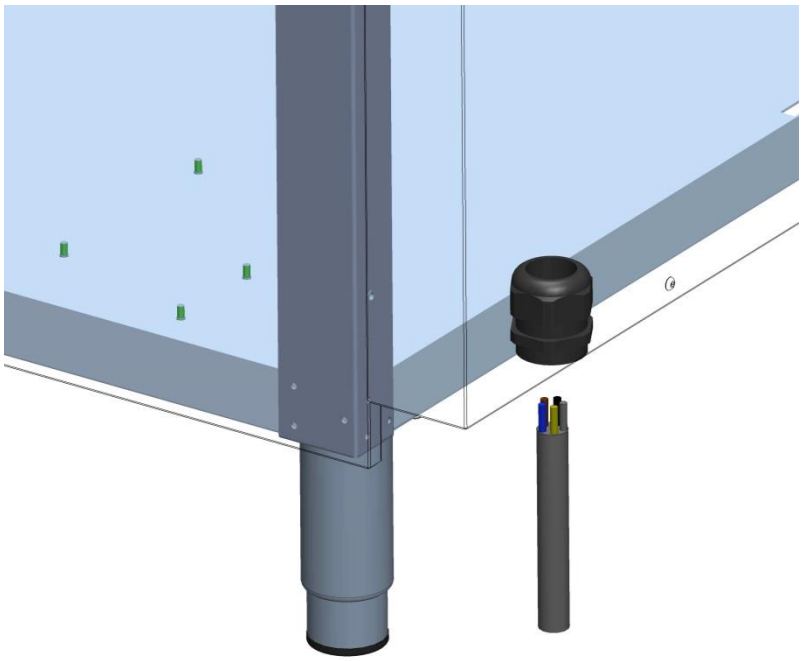
Electrical connection:
Electrical connections MUST be carried out by an authorized technician and in accordance with local and national regulations.
As a minimum ***Classeq*** recommends the following standards are maintained:

All appliances are connected via a residual current device (R.C.D.) or earth leakage protection device.

EN60204:
Supply isolator switch has all pole separation of more than 3mm.

EN60335:
Connect to an equi-potential conductor, connection stud located at bottom of the appliance to the rear; this is in addition to the earthed electrical supply.

Prior to connecting the appliance, ensure voltage and supply fuse comply with rating plate.



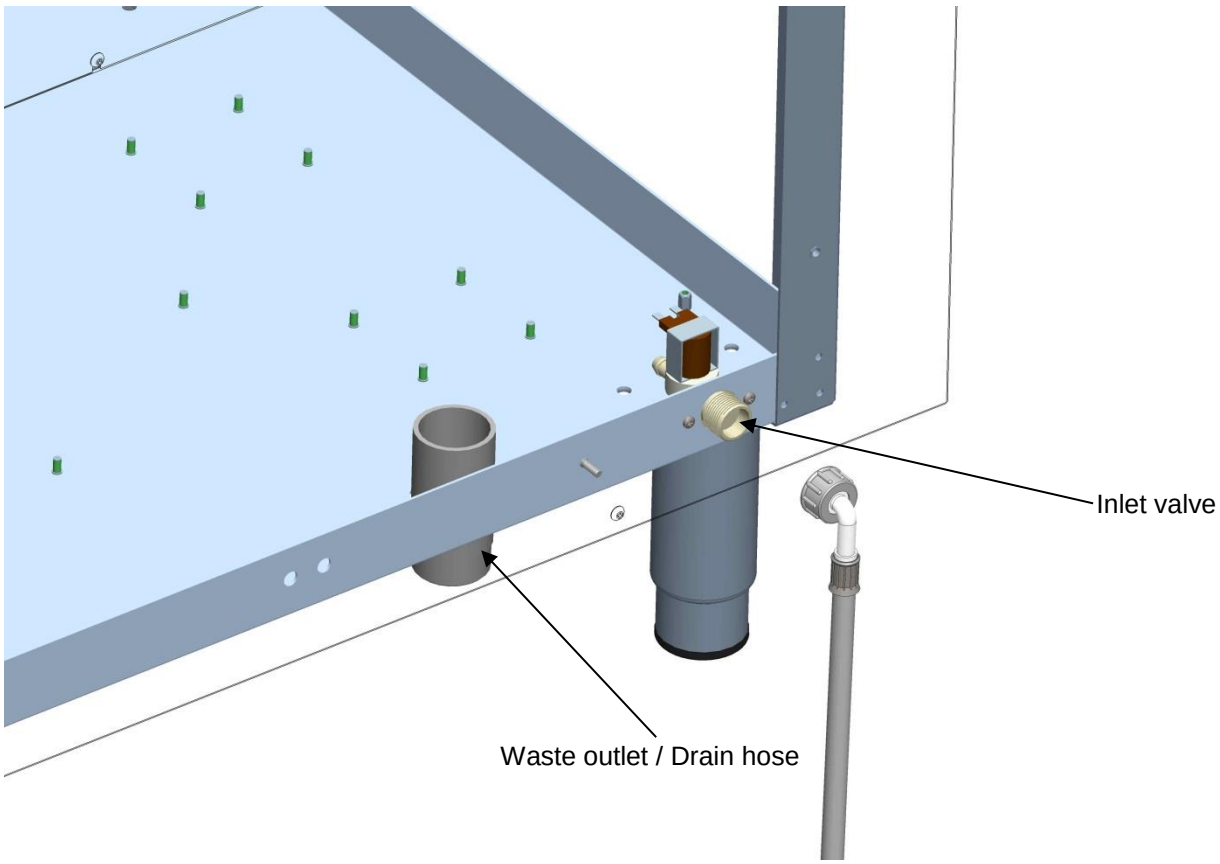
Electrical rating:

Electrics		***CST***	***Dryer unit***
Volts		380 – 415V (3 Phase)	380 – 415V (3 Phase)
Amps	Hot fill	33A per phase	+6A per phase
	Cold Fill	50A per phase	
Max total load	Hot fill	20.64kW	+4kW
	Cold Fill	32.64kW	

Note: Electrical supply can be either side of the appliance. The appliance not supplied with the electrical plugs.
If the supply cable is damaged , it must be replaced by a cable or cord assembly supplied by ***Classeq*** or its service agents or to the following minimum specification.

Cable type	Temperature rating	Length of cable	Confirm to / standard
H07RN-F 5G10	80°C minimum	5m	IEC 60335-2-58 & IEC 60227 types 56 & 57

Water Inlet and Waste out let:



Water connection:

The appliance comes with a water supply hose requiring a G¾" (¾" BSP) male threaded connection at the mains water supply, upon installation and commissioning all water joints must be checked for leaks.

Old existing, defective or damaged water supply hoses are **NOT** to be used when installing the appliance.

Commercial appliance wash results will be affected by external conditions such as incoming water temperature, pressure, harness and choice of chemicals.

		CST 100 / 130
Temperature range		5-55°C
Pressure	0~2 bar	Booster pump required
	2~4 bar	No modification
	4~6 bar	Flow restrictor required
	6 bar +	Pressure reducing valve required
Flow rate		8 Lts / min
Water connection		G ¾" (¾" BSP)

For the longevity of any water related devices and to ensure you get consistently good results it is essential your machine is either fed from a soft water supply , or your **Classeq** appliance is connected to an appropriate water softener.
Note: Water supply can be either side of the machine.

IMPORTANT:
All supplier warranties are void if lime scale is present within an appliance

If the above requirements are not adhered to, the performance of the appliance will be impaired

Waste outlet:

The CST is a gravity drain machine, upon installation the waste must be configured as stated in this manual.
All installations should be fitted with a running 'P' trap to ensure hygiene.

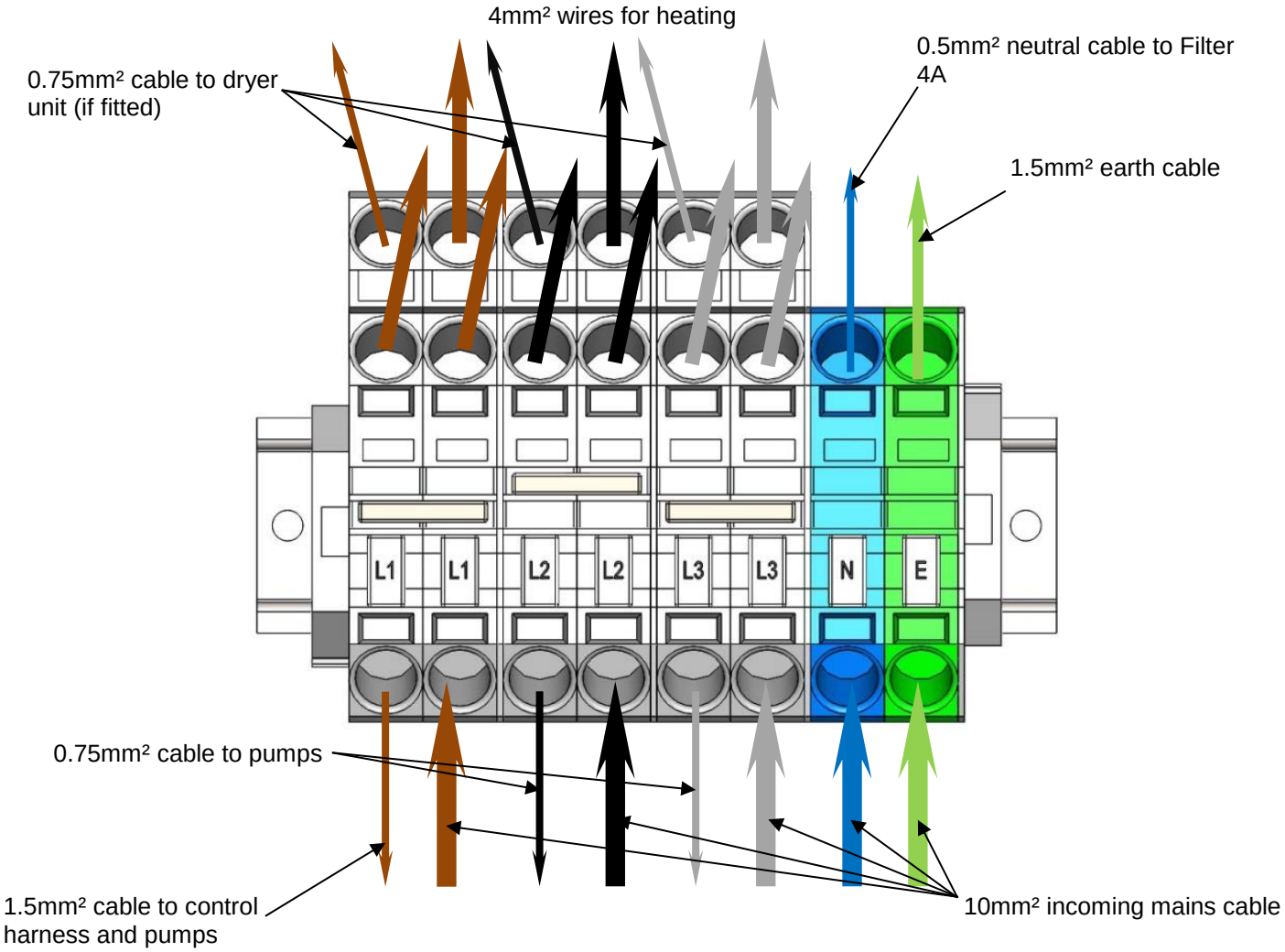
Drainage dimensions (mm)	CST
Drain stand pipe diameter	Ø40
Maximum drain pipe height (Gravity drain) (Depending on height adjustment)	270 - 330mm

- Ø40mm (1 ½") standpipe required, must be lower than the baseline of the wash tank.
- Drain hose must be a close / tight fit into the drain pipe to reduce odours from the drain system.
- To ensure correct drainage, the height the sites drain is from the floor / surface the machine sits upon MUST be within the following
- Waste hose must flow down from the waste outlet to the drain.
- Joint between standpipe and waste hose must be water tight.

If you have any doubts about the drainage system on the machine, please contact either ***Classeq*** or your dealer/agent.

Terminal block layout

Terminal block (TB1) configuration (Mains supply):



8. Commissioning Instructions

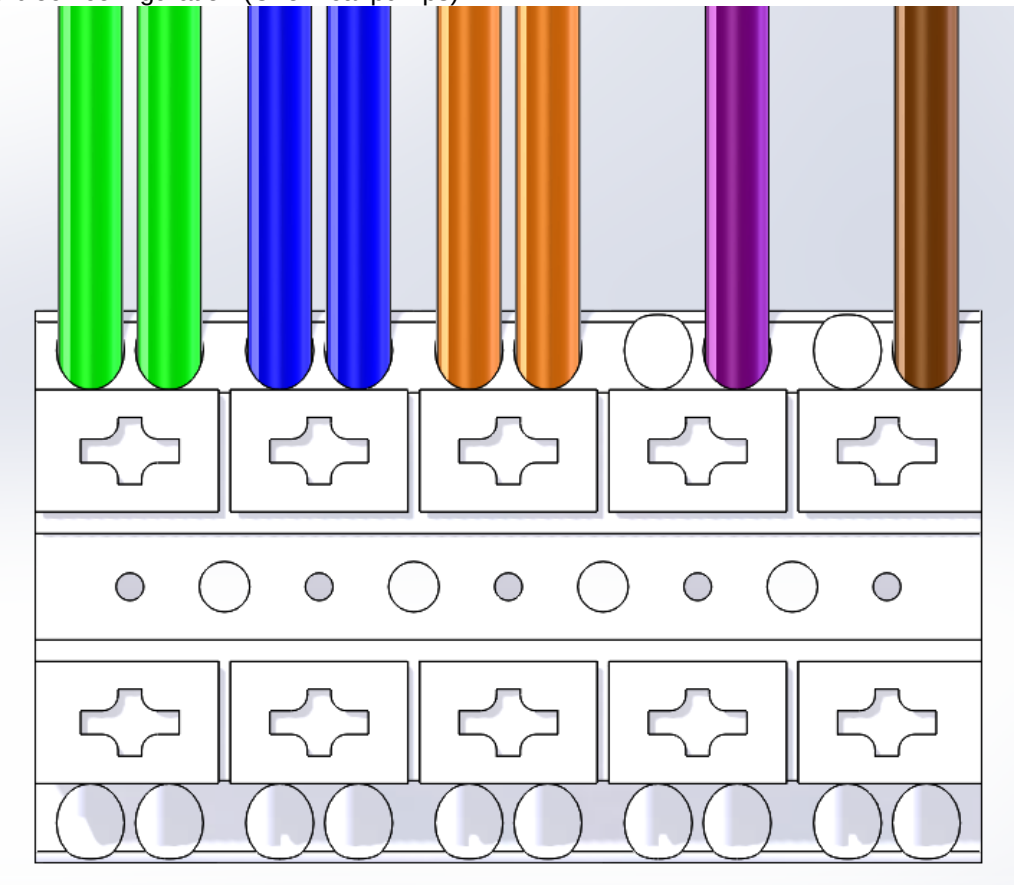
Rinse aid & Detergent:

The CST is not fitted with internal chemical dosing pumps, these will need to be fitted during the installation.
A terminal block is provided on right hand side of the wash tank for connecting the electrics of the chemical pumps.

Note: Isolate the machine prior to the access and connection of the chemical pump terminal block.

WARNING: Only rinse aids and detergents developed for commercial glass and dishwashers are to be used, rinse aids must be suitable for water temperatures down to 40°C.

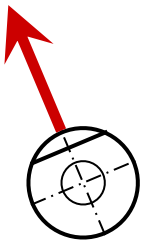
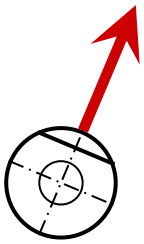
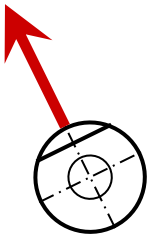
Terminal block configuration (Chemical pumps):



Yellow/green	Blue	orange	Purple	Brown
Earth	Neutral	Running	WT full	Live

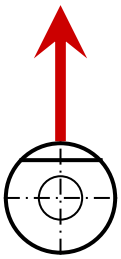
Machine temperature settings:

The water temperatures on '***Classeq***' range of machines are adjustable, but have been pre-set to:

Thermostat positions		
Rinse thermostat – standby (ST1)	Rinse thermostat – Running (ST2)	Wash thermostat (ST3)
60ºC 	82ºC 	55ºC – 60°C 

Dryer temperature setting

The air temperature on the '***Classeq***' dryer range is adjustable, but have been pre-set to:

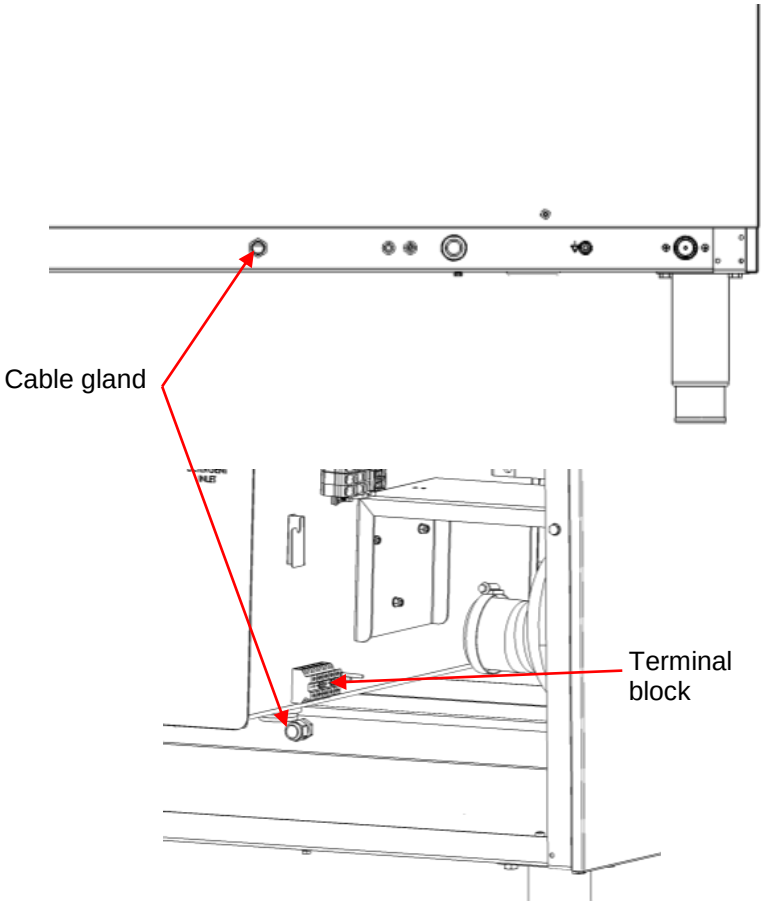
Dryer air temperature (ST4)
60ºC 

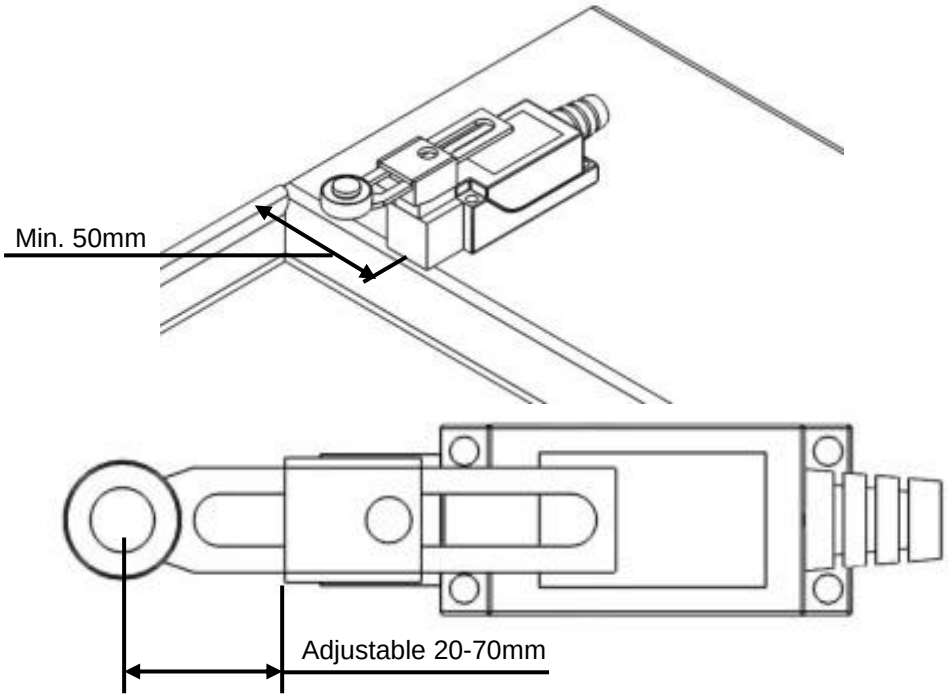
The manual reset safety thermal trips on the machine are set to the following values and cannot be adjusted:

- Wash tank – 85°C
- Rinse boiler – 95°C
- Air blower – 85°C

Table end limit switch

It is very important that the table end limit switch be installed at the end of the exit table and the arm adjusted so that it is activated by the basket before it reaches the end of the table. The cable should be routed through the small cable gland at the rear of the machine and plugged into the harness at the connector near the small terminal block. The switch should be wired on the normally closed circuit.

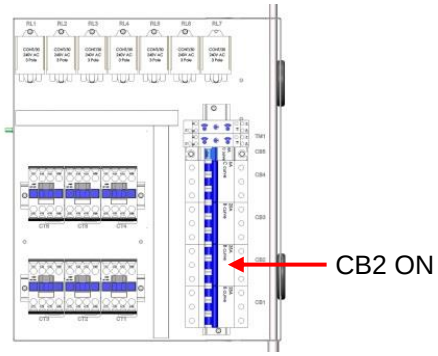




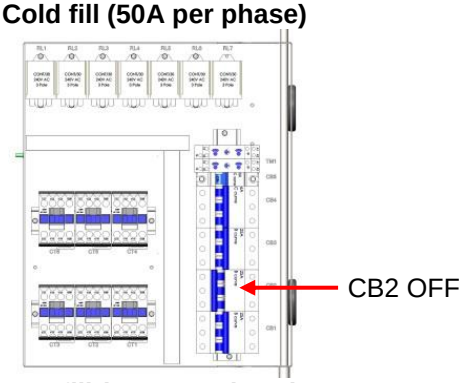
This switch will stop the machine when activated allowing the operator time to remove the clean baskets before more baskets are pushed through the machine.

Electrical supply setup

If the machine is fitted to a hot water supply (maximum temperature of 55°C) then the electrical supply to the machine can be changed (▶7). This is done by turning off CB2, this turns off one of the banks of elements used in the rinse boiler and reduces the current required.



Cold fill (50A per phase)

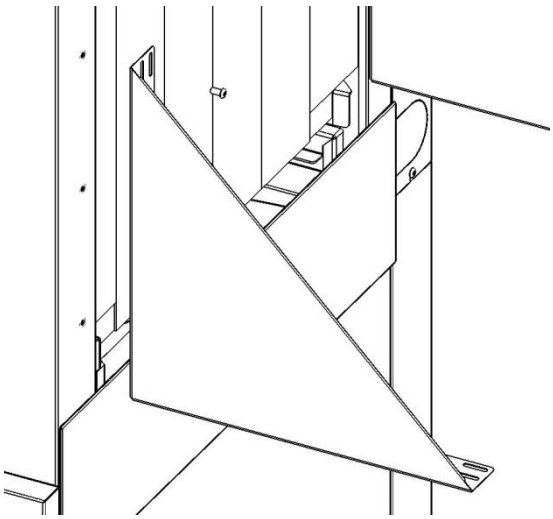


Hot fill (33A per phase)

Installing the splash guard (only if not dryer fitted)

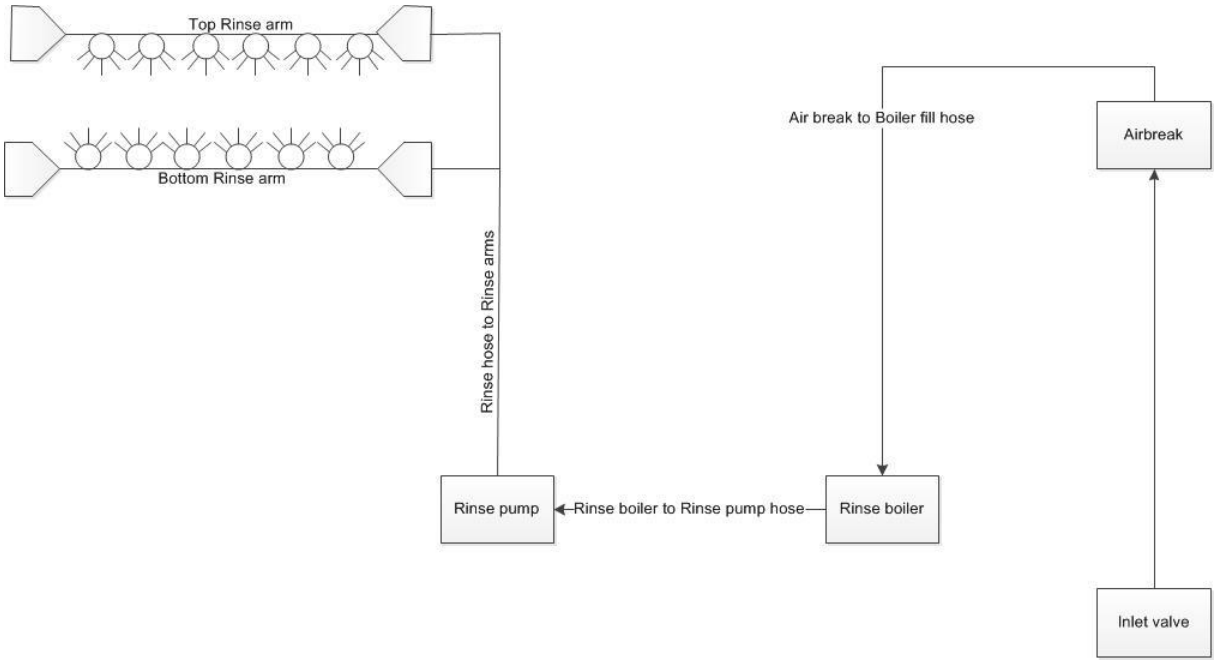
Once the machine has been installed and all tabling has been aligned the splash guards should be fitted to the exit of the machine.

Remove the 3x M5 screws on either side of the exit and use these to fasten the splash guard in place. Align the splash guard to the front of the machine and the side of the exit as best as possible. Once fitted the splash guards should be sealed against the tabling.

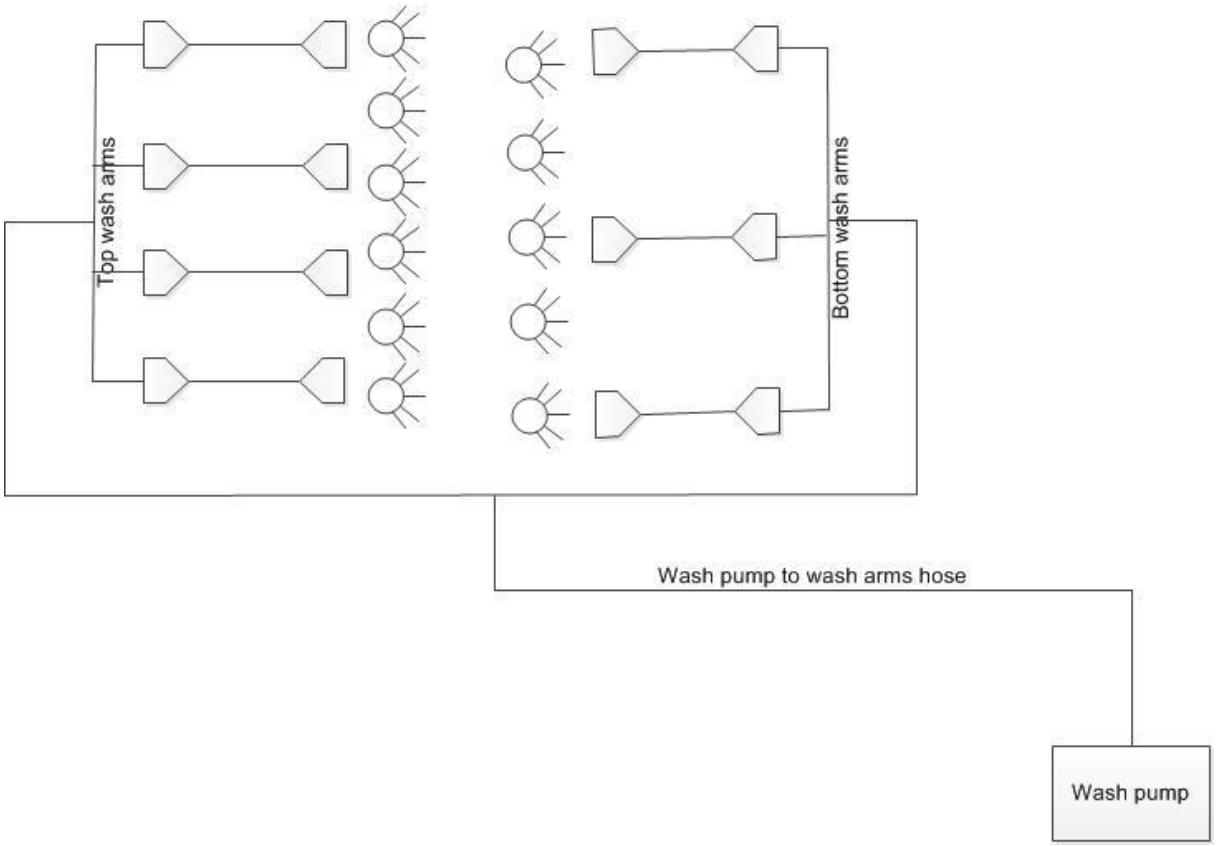


9. Water Systems

Rinse system (Also used for filling the wash tank):



Wash system:



10. Electrical Component Data

Component		Voltage (V)	Frequancy (Hz)	Current (A)	Power (W)	Resistance (Ω)
Inlet solenoid valve		220 ~ 240	50 ~ 60	-	-	-
Rinse elements	4 x (3x2kW)	230	50 ~ 60	8.7 / leg	2000 / leg	26.42 / leg
Wash elements	2 x (3x2.88kW)	230	50 ~ 60	12.5 / leg	2880/ leg	18.4 / leg
Rinse pump		220 ~ 240	50	1.2 (Running)	250	
Wash pump		380 ~ 415	50	2.8	1100	
Drive motor		380 ~ 415	50	1.23	370	
Contactors		220 ~ 240	50			
Timer		220 ~ 240	50			
Relays - (Finder)		220 ~ 240	50			
Indicator lamps	White (LED)	220 ~ 240	50 ~ 60			
	Amber	220 ~ 240	50 ~ 60			
	Blue	220 ~ 240	50 ~ 60			
	Red	220 ~ 240	50 ~ 60			
Air pressure switches		220 ~ 240	50 ~ 60			
Temperature display		220 ~ 240	50 ~ 60			
Blower unit		380 ~ 415	50	1.05	500	
Air heater element	2x 2kW	380 ~ 415	50 ~ 60	6	2000	80

11. Changing orientation

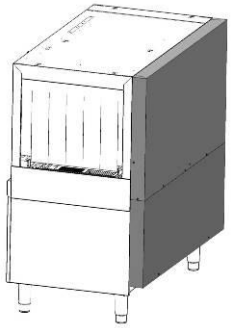
CST is designed to allow adaption to a change in direction of travel during the commissioning of the machine.

Ensure the machine is fully drained prior to commencing any changes.

Remove all the curtains and the cassette assembly from the machine.

Danger ***For safety reason turn off all electrical supplies to your machine before following these steps.***

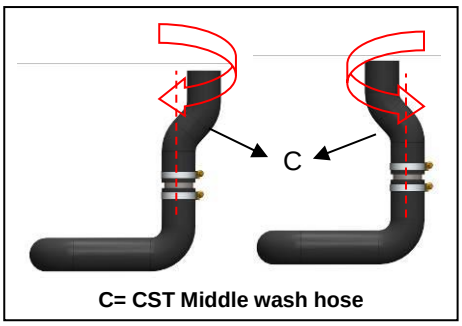
Remove rear top and rear bottom panels in order to get access to wash and rinse hoses.



When changing the direction of the CST care must be taken not to misplace or damage the sealing O-rings.

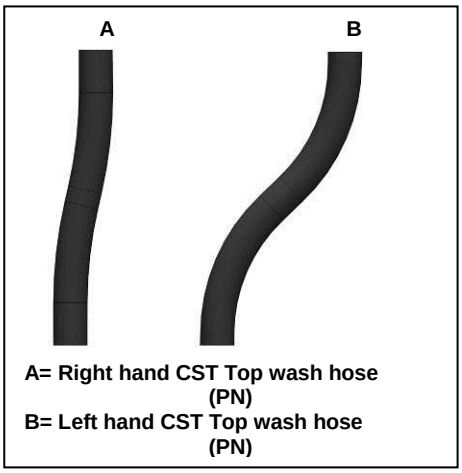
11.1 Changing wash and rinse arms system.

- Remove the wash arms and cassette from the machine.
- Remove wash arm brackets and fixing tubes. Take note shorter fixing tubes used at bottom and longer fixing tube used at top.
- Remove rinse arm hose from rinse bush.
- Remove rinse arms and associated brackets.
- Loosen and remove the top wash manifold.
- Remove the blanking covers from the remaining holes
- Loosen the jubilee clips for the bottom wash manifold.
- Rotate the bottom wash manifold 180° to the new position and fasten using long fixing tubes.



C= CST Middle wash hose

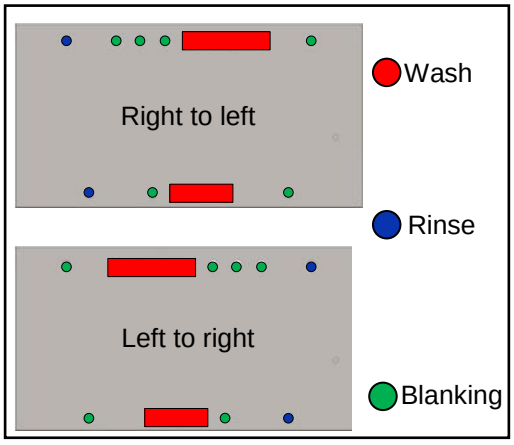
- Tighten jubilee clips
- Replace wash top wash hose with the hose required for the direction of travel.



A= Right hand CST Top wash hose (PN)
B= Left hand CST Top wash hose (PN)

- Fit top manifold and wash arm. Fasten into place using short fixing tubes and tighten jubilee clips.
- Fit rinse arms into outer most holes. Align holes to face directly vertical and fasten into place.
- Fit rinse hose to rinse bushes and tighten jubilee clips.
- Fit blanking covers into remaining holes.
- Fit rinse and wash arm brackets. Note fixing ring orientation.
- Fit wash arms.
- Move curtain bracket to front edge of entry side of machine (►5).

The below image shows the orientation of the wash arms, rinse arms and blanking covers for both directions of travel.



Caution ***Classeq recommend that any changes to the machine be carried out by trained field technician.***

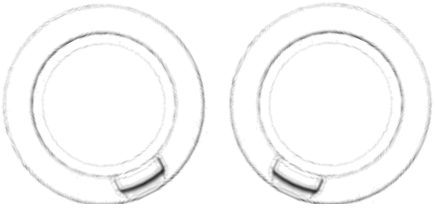
11.2 Setting orientation of the wash arms

Note the orientation of the locating ring for the wash arms. These are fitted in different orientations in the machine as show below

Orientation 1:
Pointing directly down

Orientation 2:
Tilted slightly inward from entrance

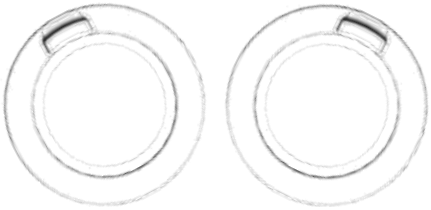
Left to right Right to left



Orientation 3:
Pointing directly up

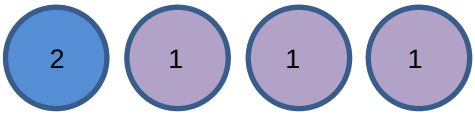
Orientation 4:
Tilted slightly outward towards entrance

Left to right Right to left

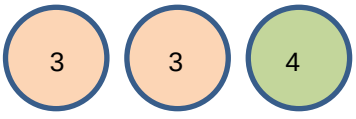


The above orientations are used in the assembly of the wash arms as below:

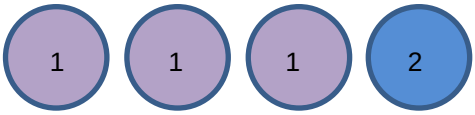
Top wash arms shown with entrance to the left:



Bottom wash arms shown with entrance to the left:



Top wash arms shown with entrance to the right:



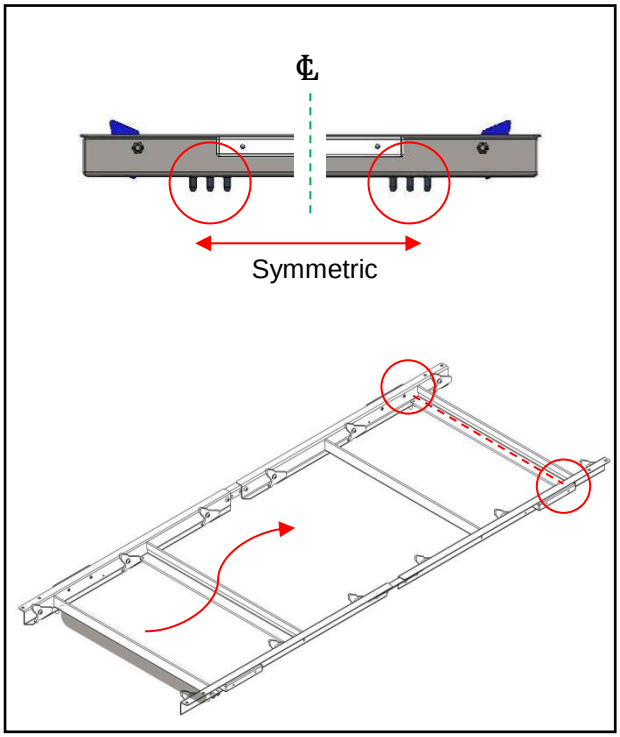
Bottom wash arms shown with entrance to the right:

11.3 Changing cassette assembly setting.

Once CST's hoses have been changed, the cassette assembly needs to be rotated to move the baskets in the required direction.

Remove the nuts holding centre plate.

Relocate the centre plate to opposite side of cassette assembly and fasten it with nuts. Ensure centre plate is fitted to the correct speed setting (►10).



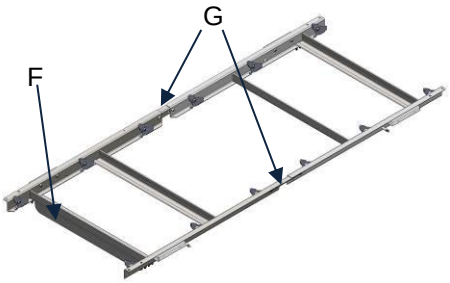
Place cassette assembly back into machine and fasten into place with the fixing screws.

Fit the curtains back into machine

Turn on all electrical supplies to your machine.

Damage to the machine caused by failure to follow steps will **NOT** be covered by the Manufacturer's Warranty.

12. Speed setting

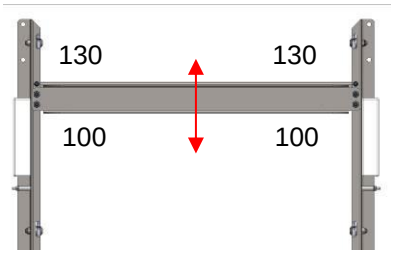


F = 1 x Centre plate

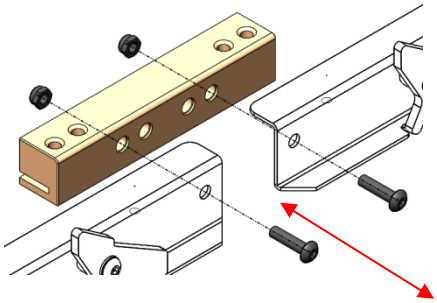
G = 2 x Speed variable plate

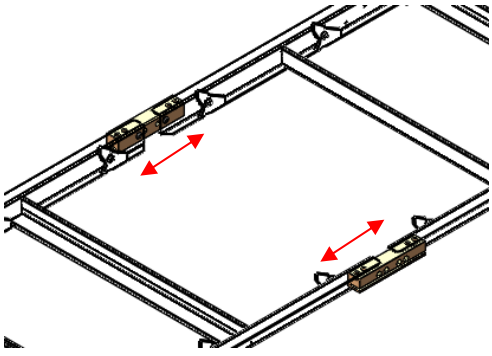
The CST is available at two speed settings of **100 or 130** baskets per hour. In order to change the setting, remove cassette assembly from the machine and follow the steps below:

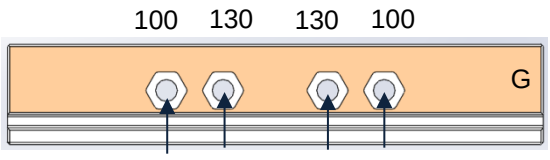
Step 1: Remove 4x M5 nuts holding centre plate (F) then re-locate centre plate (F) to the correlating stud and tighten it back with the 4 x M5 nuts.



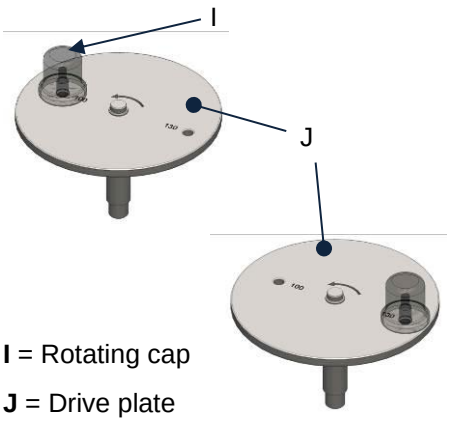
Step 2: Loosen and remove 2 screws attached to the holes of speed adjustment block (G) on each side. Then adjust therequired speed and re-screw back through the holes of speed adjustment block (G).







Step 3: Remove bolt attaching rotating cap (I) to drive plate (J) in the machine and re-locate rotating cap (I) to require speed setting onto drive plate (J) and tighten the bolt.

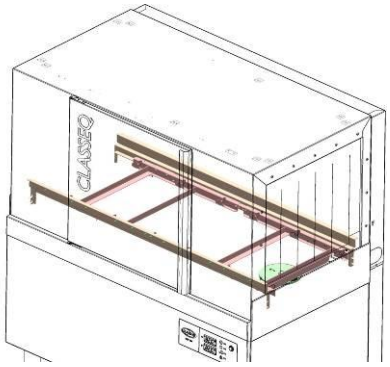


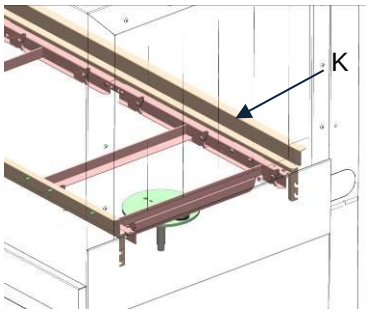
I = Rotating cap

J = Drive plate

Step 4: Place cassette assembly back into the machine as follow. Ensure centre plate (F) fits onto rotating cap (I) and plastic guides (H) sit into the drive rail (K) properly.

K = Drive rail





Caution ***It is very important to follow the steps; failure to it will lead to potential damage to the cassette assembly.***

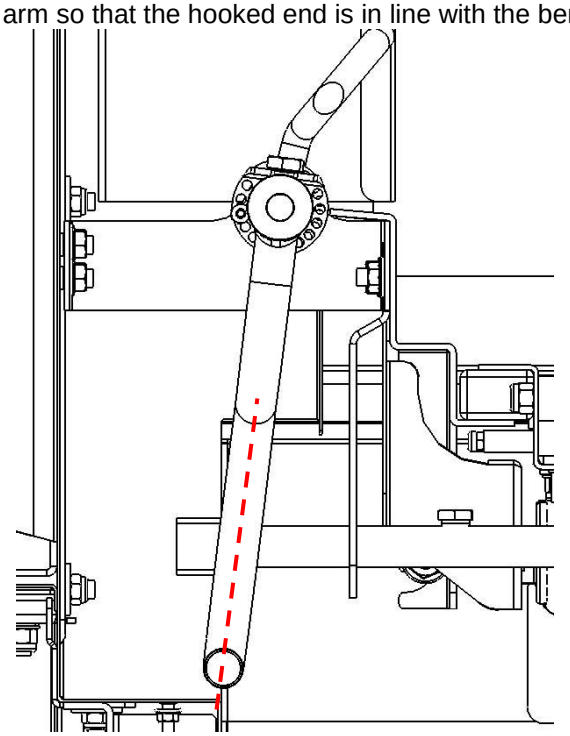
If in doubt then contact *Classeq* or your local dealer.

13. Setting basket arm

The basket arm is factory set to work with all ***Classeq*** baskets and should not need to be adjusted. However should baskets from a different manufacturer be used that is not being picked up by the machine or are causing the machine to stop in the cylce then the arm can be adjusted to suite these.

At the right hand side of the basket arm is a bracket to allow for adjustment.

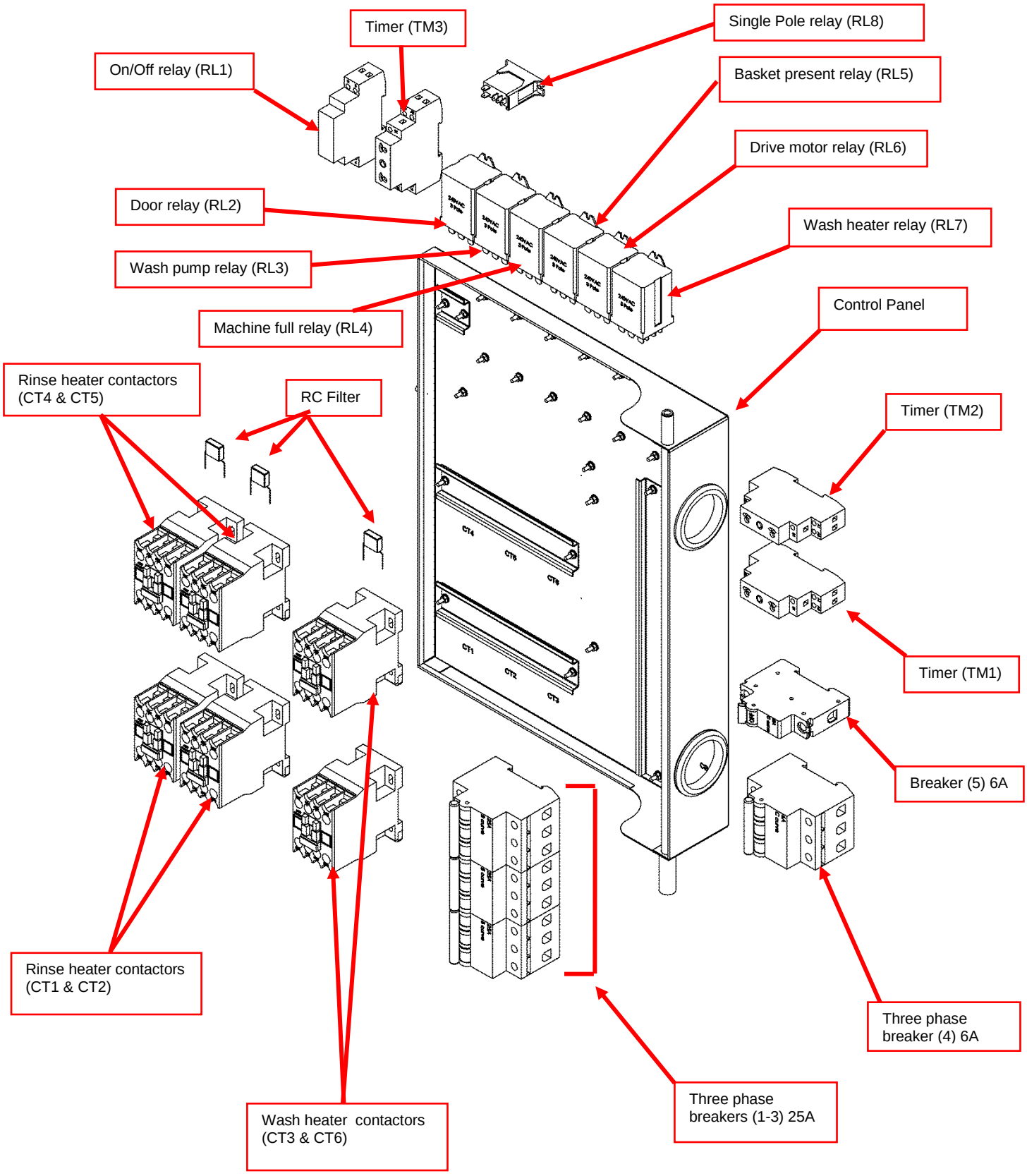
1. Isolate the machine.
2. Insert the off sized basket into the centre of the machine
3. Remove the M3 screw and nylock nut.
4. Rotate the magnet arm so that the hooked end is in line with the bend in the cabinet.



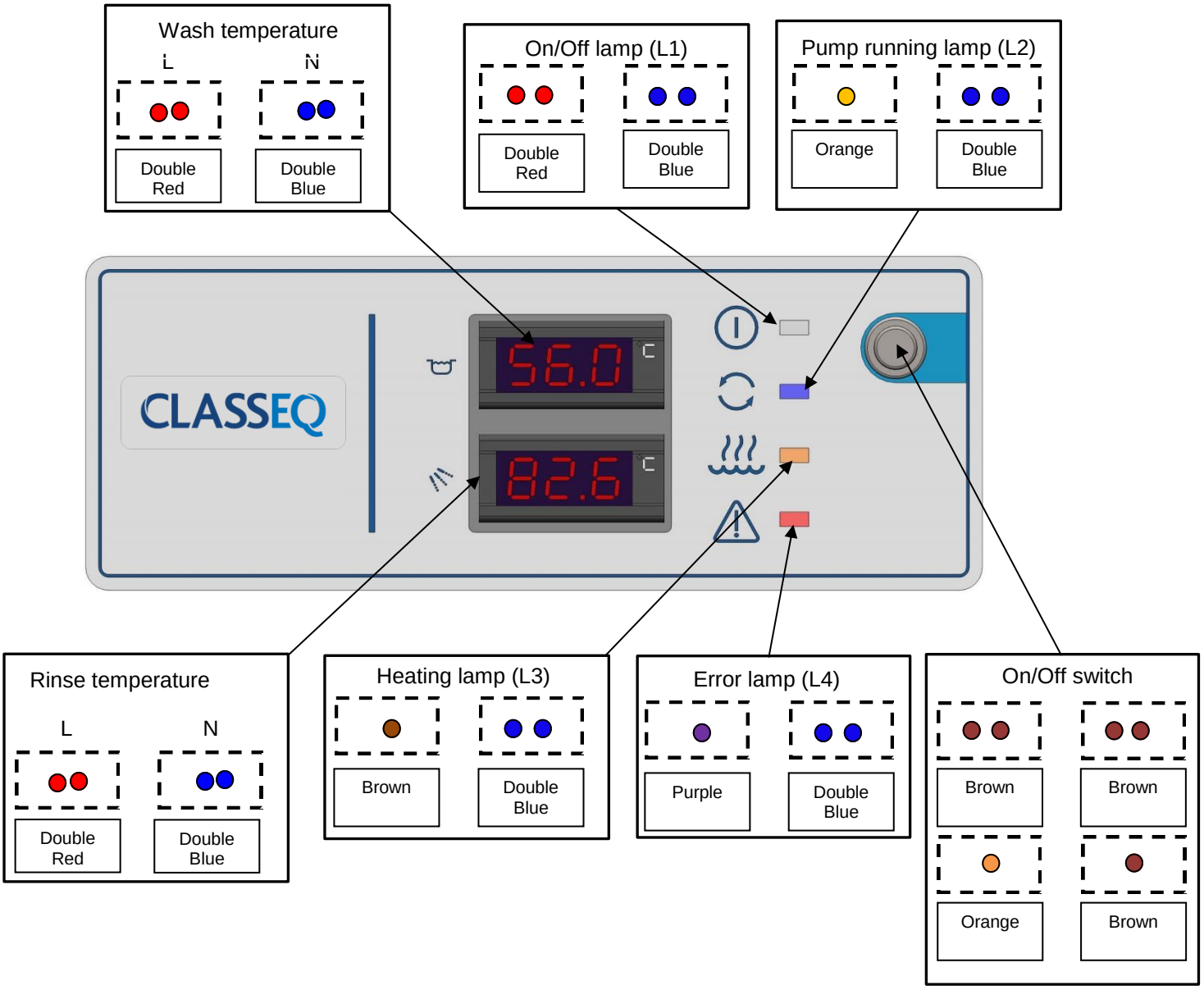
5. Find a matching pair of holes for the fastener and tighten in place.
6. Turn on machine, fill and test operation. Readjust if required.

14. Machine wiring and layout

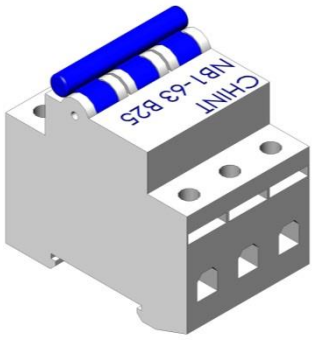
Machine control panel layout

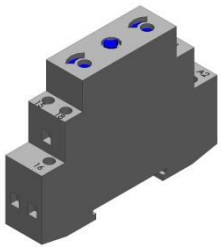
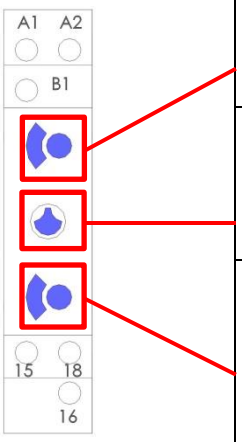


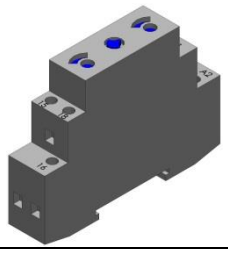
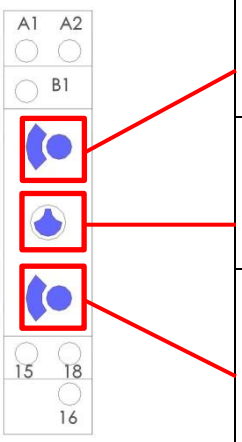
Front panel

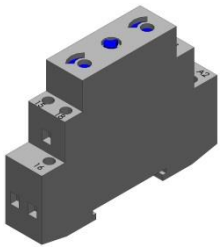
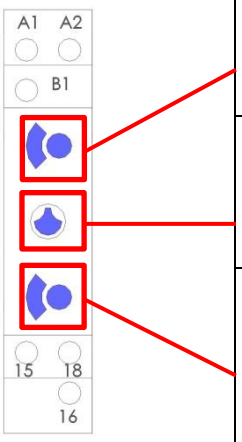

Wash temperature
L
N
Double Red
Double Blue
On/Off lamp (L1)
Double Red
Double Blue
Pump running lamp (L2)
Orange
Double Blue
CLASSEQ
56.0
82.6
Rinse temperature
L
N
Double Red
Double Blue
Heating lamp (L3)
Brown
Double Blue
Error lamp (L4)
Purple
Double Blue
On/Off switch
Brown
Brown
Orange
Brown

Machine breakers and timer wiring

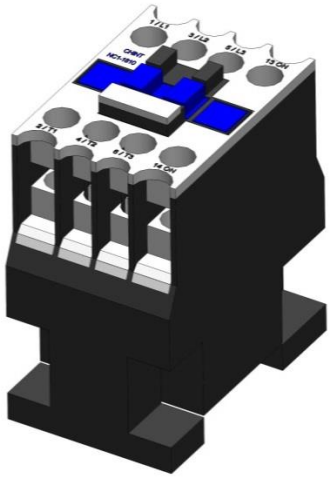
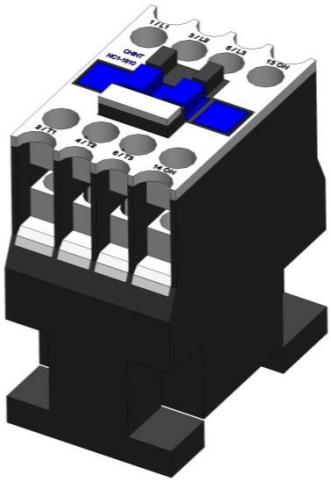
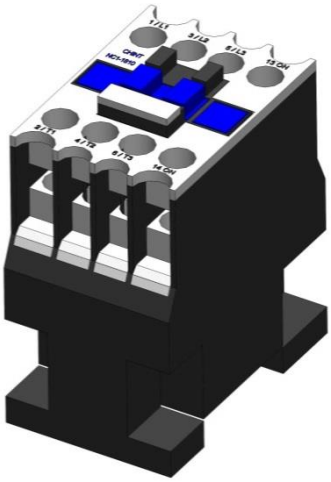
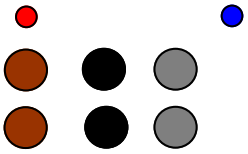
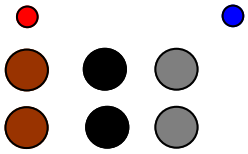
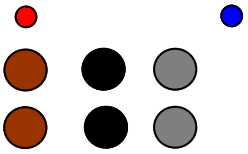
Type	Breaker size	Breaker number	Wire colour / Connection configuration	
	6A	Circuit breaker 5 CB5	●	Incoming wire (Black) from Filter 4A (P1)
			●	Out going wire (Brown) to On/Off switch
	6A	Breaker 4 (3 phase breaker) CB4	●	Incoming wire from Terminal block (TB1)
			●	Out going wire to Drive motor relay (RL6)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to Drive motor relay (RL6)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to Drive motor relay (RL6)
	25A	Breaker 1 (3 phase breaker) CB1	●	Incoming wire from terminal block (TB1)
			●	Out going wire to heating contactor (CT1)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT1)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT1)
		Breaker 2 (3 phase breaker) CB2	●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT2)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT2)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT2)
		Breaker 3 (3 phase breaker) CB3	●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT3)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT3)
			●	Incoming wire from Terminal block (TB1)
			●	Out going wire to heating contactor (CT3)

	Motor timer (TM1)		A2	Neutral from Terminal block (TB1)
			A1	From timer (TM2)
			B1	Incoming wire from Door relay (RL2)
			18	To Drive motor (DM1)
			15	Incoming wire from Door relay (RL2)
	Time segment	Select time segment to be used		Default: 2m (2 minutes)
	Time	Adjust time within time segment		Default: 20 (Full)
	Timer type	Select type of timer		Default: BE (On delay) **DO NOT CHANGE**

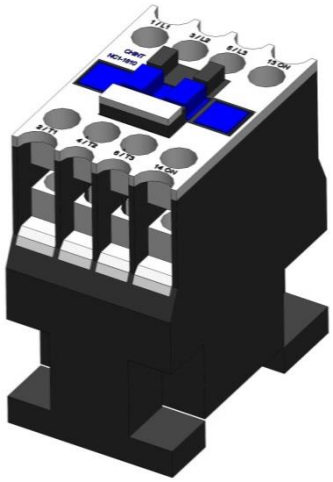
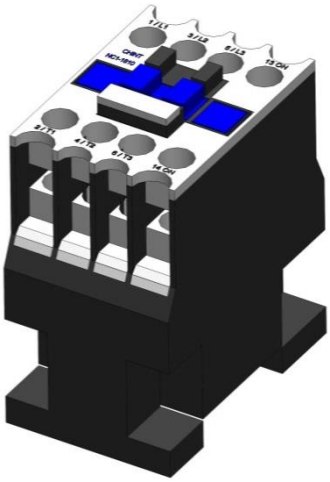
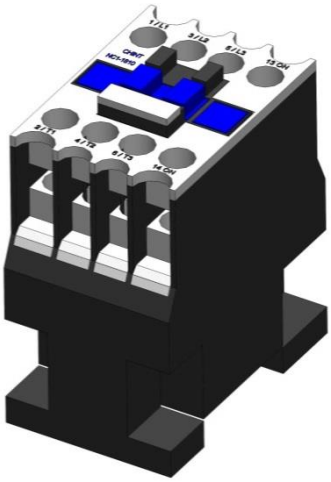
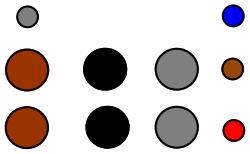
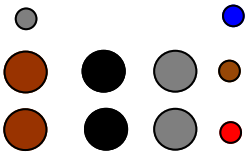
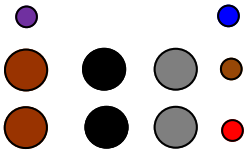
	Delay timer (TM2)		A2	Neutral from Terminal block (TB1)
			A1	Incoming wire from Door relay (RL2)
			B1	Incoming wire from Basket switch (Sw4)
			18	To Basket pressent relay (RL5)
			15	From timer (TM2)
	Time segment	Select time segment to be used		Default: 2m (2 minutes)
	Time	Adjust time within time segment		Default: 10 (Half)(1 minute)
	Timer type	Select type of timer		Default: BE (On delay) **DO NOT CHANGE**

<table>
<tr><td rowspan="6">  </td><td rowspan="6">Delay timer (TM3)</td><td></td><td>A2</td><td>Neutral from Door switch (SW3)</td></tr>
<tr><td></td><td>A1</td><td>From CB5</td></tr>
<tr><td></td><td>B1</td><td>From on/off switch</td></tr>
<tr><td></td><td>18</td><td>To Rinse pump</td></tr>
<tr><td></td><td>16</td><td>To Control circuit</td></tr>
<tr><td></td><td>15</td><td>ON OFF relay (4) (RL1)</td></tr>
<tr><td rowspan="3"> 
</td><td>Time segment</td><td colspan="2">Select time segment to be used</td><td>Default:
20s (20 seconds)</td></tr>
<tr><td>Time</td><td colspan="2">Adjust time within time segment</td><td>Default:
5 (Quarter)(5 Seconds)</td></tr>
<tr><td>Timer type</td><td colspan="2">Select type of timer</td><td>Default:
BE (On delay)
DO NOT CHANGE</td></tr>
</table>

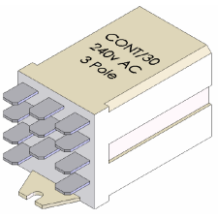
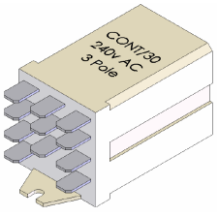
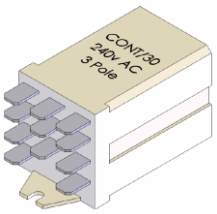
Machine contactors

Rinse heating contactor (CT1)	Rinse heating contactor (CT2)	Wash heating contactor (CT3)
		
		
Red / Brown / Brown — Black — Grey — Blue	Red / Brown / Brown — Black — Grey — Blue	Red / Brown / Brown — Black — Grey — Blue
A1 — 2T1 — 1L1 — 4T2 — 3L2 — 6T3 — 5L3 — A2 — 14NO — 13NO	A1 — 2T1 — 1L1 — 4T2 — 3L2 — 6T3 — 5L3 — A2 — 14NO — 13NO	A1 — 2T1 — 1L1 — 4T2 — 3L2 — 6T3 — 5L3 — A2 — 14NO — 13NO

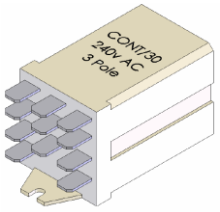
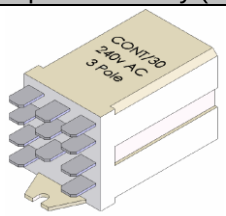
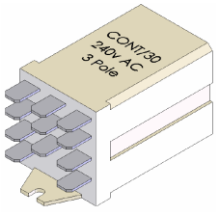
Machine contactors

Rinse heating contactor (CT4)	Rinse heating contactor (CT5)	Wash heating contactor (CT6)
		
		
Grey / **Brown** / **Brown** — **Black** — **Grey** — Blue / Brown / Red	Grey / **Brown** / **Brown** — **Black** — **Grey** — Blue / Brown / Red	Purple / **Brown** / **Brown** — **Black** — **Grey** — Blue / Brown / Red
A1 / **2T1** / **1L1** — **4T2** — **3L2** — **6T3** — **5L3** — A2 / 14NO / 13NO	A1 / **2T1** / **1L1** — **4T2** — **3L2** — **6T3** — **5L3** — A2 / 14NO / 13NO	A1 / **2T1** / **1L1** — **4T2** — **3L2** — **6T3** — **5L3** — A2 / 14NO / 13NO

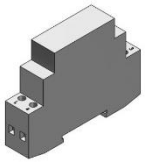
Machine relays

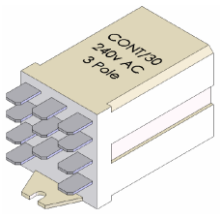
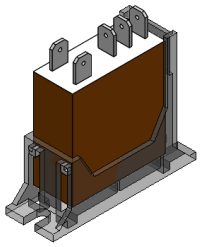
	Wash heater Relay (RL7)	Safety Relay (RL2)	Wash pump Relay (RL3)
			
Red cover	● ● —	— ● —	— — —
Black cover	● — —	● ● ●	● ● ●
White cover	● ● —	● ○ ●	● ● ●
Green cover	● — ●	● — ●	● — ●
Red cover	Purple Purple —	— Purple —	— — —
Black cover	Purple — —	Purple Red Orange	Purple Black Grey
White cover	Purple Red —	Purple White Black	Brown Black Grey
Green cover	Grey — Blue	Red — Blue	Orange — Blue
Normally closed	12 22 32	12 22 32	12 22 32
Normally open	14 24 34	14 24 34	14 24 34
Common	11 21 31	11 21 31	11 21 31
Coil	A1 — A2	A1 — A2	A1 — A2

Machine relays

	Machine full Relay (RL4)	Basket present Relay (RL5)	Drive motor Relay (RL6)
			
Red cover	—	—	—
Black cover	●	●	●
White cover	●	●	●
Green cover	○	●	○ ●
Red cover	—	—	—
Black cover	Purple	Purple	Brown
White cover	Brown	Purple	Brown
Green cover	White	Brown	White
Red cover	—	Black	—
Black cover	White	Black	Black
White cover	Red	White	Black
Green cover	Blue	Orange	Grey
		Grey	Grey
		Blue	Blue
Normally closed	12 22 32	12 22 32	12 22 32
Normally open	14 24 34	14 24 34	14 24 34
Common	11 21 31	11 21 31	11 21 31
Coil	A1 A2	A1 A2	A1 A2

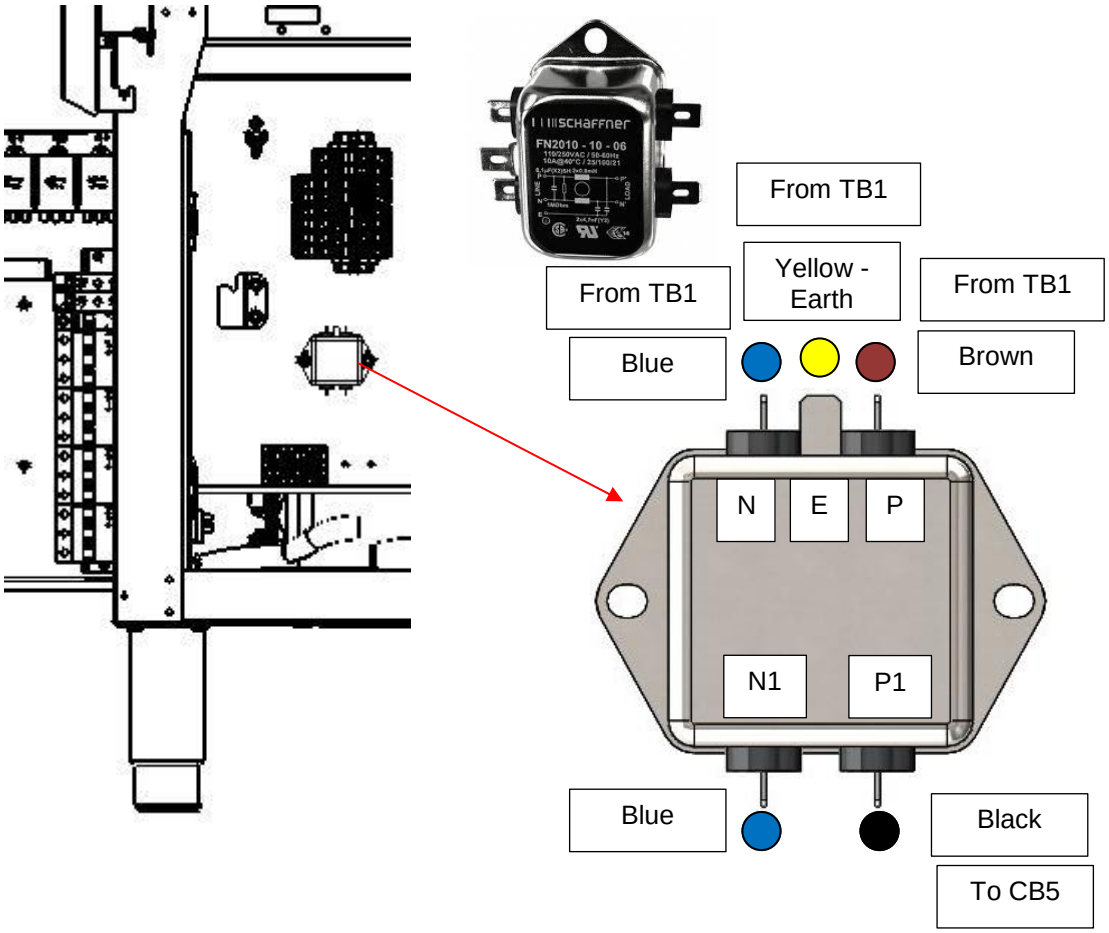
Machine relays

ON / OFF Relay (RL1)

Brown — From SW1 — To control unit — White — Blue — 3 — N — L — 4 — Brown — From CB5 — From Filter F1 — N

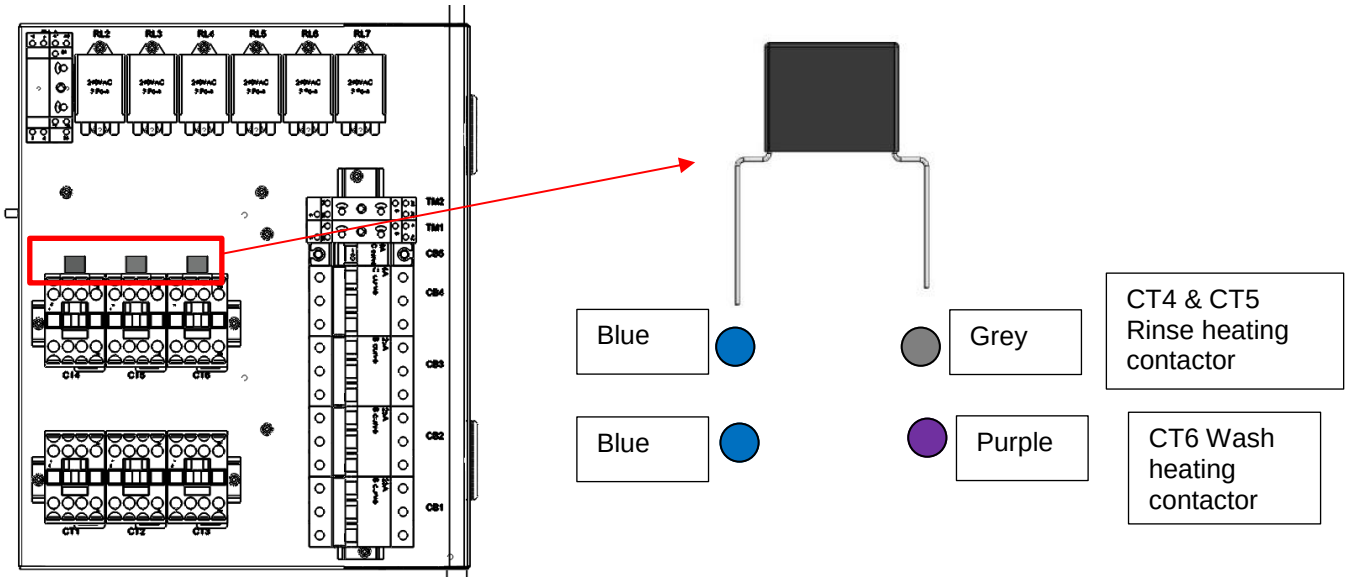
	Wash heater Relay (RL7) **No Neutral machine only**	Wash heater Relay (RL8)
		
Red cover		
Black cover		
White cover		
Green cover		
Red cover	Purple	White
Black cover		White
White cover	Purple	
Green cover	Grey / Blue	Brown / Blue
Normally closed	12 / 22 / 32	14 / open
Normally open	14 / 24 / 34	11 / Common
Common	11 / 21 / 31	12 / Closed
Coil	A1 / A2	A1 / A2

Machine Filters

1) Suppression filter (4 Amp)

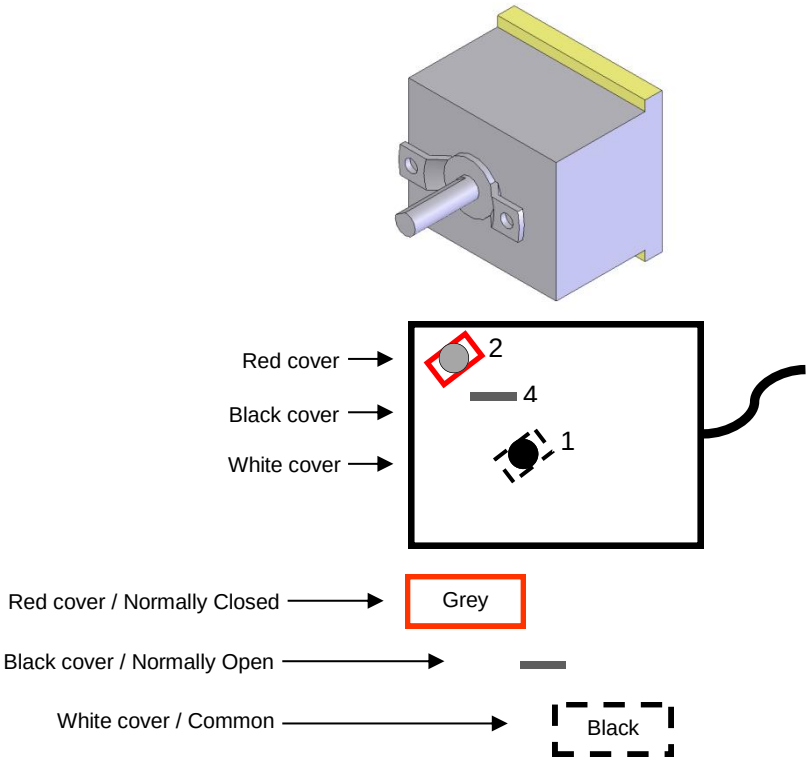


2) RC Filters

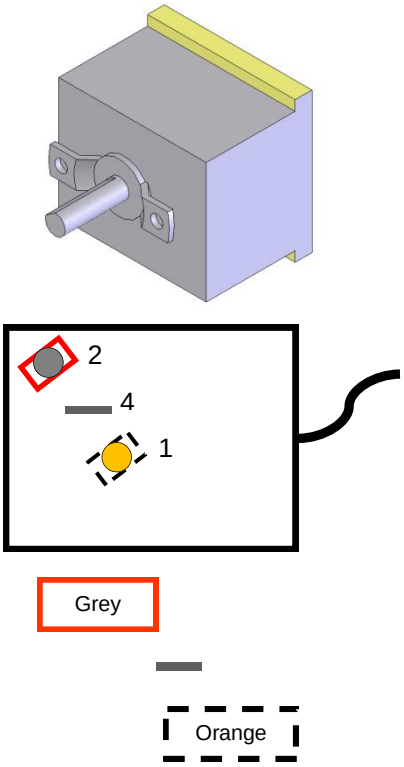


Machine thermostat wiring

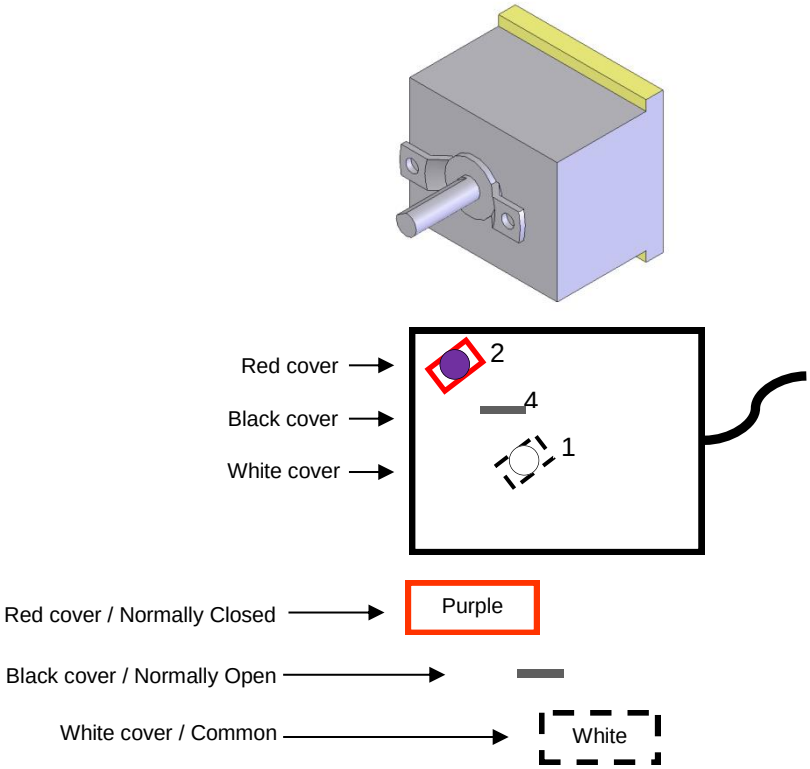
Rinse standby thermostat (ST1)



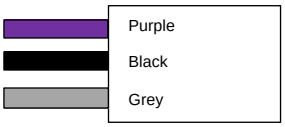
Rinse run thermostat (ST2)



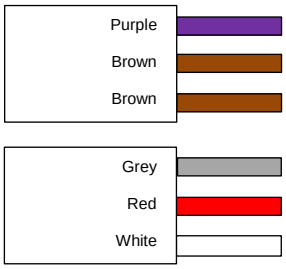
Wash thermostat (ST3)



Machine options / Selection

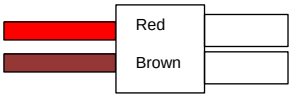


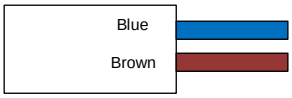
Common



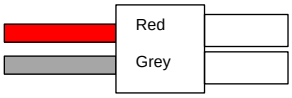
Pressurised

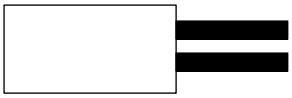
Table end switch (CC4 and CC5) connector plug



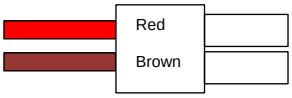


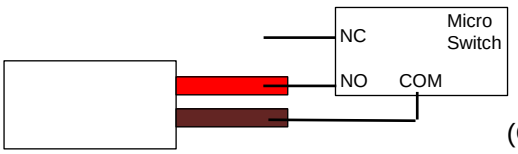
Basket present switch (SW4) connector plug





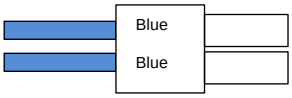
Motor clutch switch (SW2) connector plug

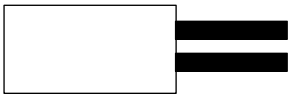




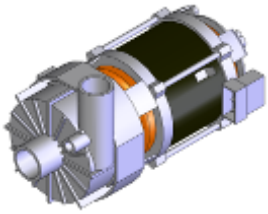
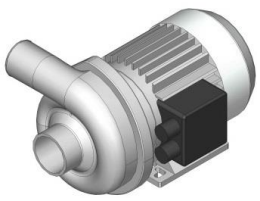
(Cover spare terminal)

Door switch (SW3) connector plug





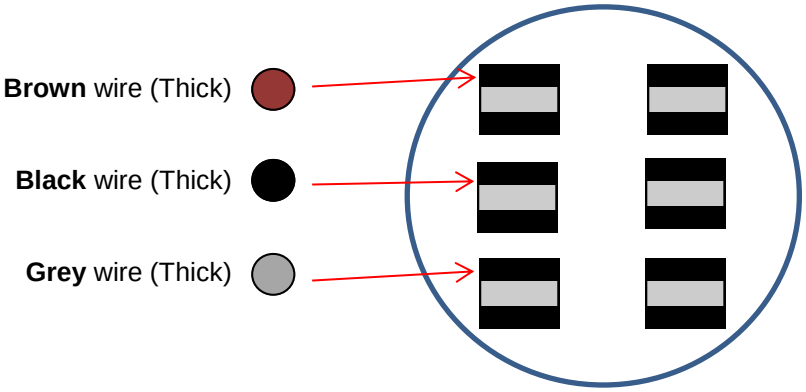
Components wiring

Component	Part number & Description	Wiring configuration
	Inlet Solenoid Valve	Blue Wire White Crimp Grey wire White Crimp
	Rinse safety Thermostat (95°C)	Blue Wire White Crimp Double blue Wire White Crimp
	Wash safety Thermostat (85°C)	Blue Wire White Crimp Double blue Wire White Crimp
	Wash Air pressure Switch	11 / 14 / 12 22 / 24 / 21 Brown White Purple Black
	Rinse Air pressure Switch	11 / 14 / 12 22 / 24 / 21 Red Brown Grey Red
	Rinse Pump	Brown → D Purple Blue → Blue **Note:** Connect capacitor terminals with the wires coming from Rinse pump
	Wash pump	U1 Purple V1 Black W1 Grey
	Drive motor	U1 Brown V1 Black W1 Grey

Element wiring

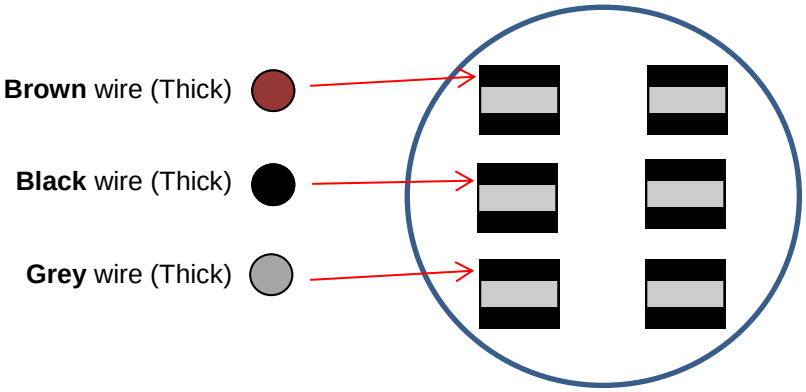
6kW Rinse elements, using LM-CST-HEATING

Element 1, 2, 3 & 4:

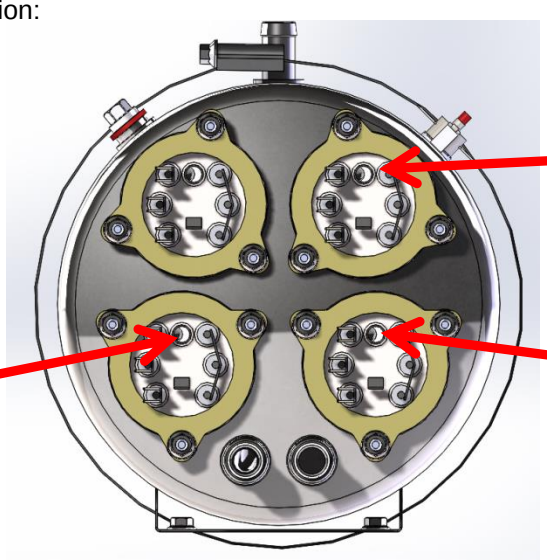


8.64 kW Wash elements, using LM-CST-HEATING

Element 5 & 6:



Temperature probes Location:



Temperature gauge

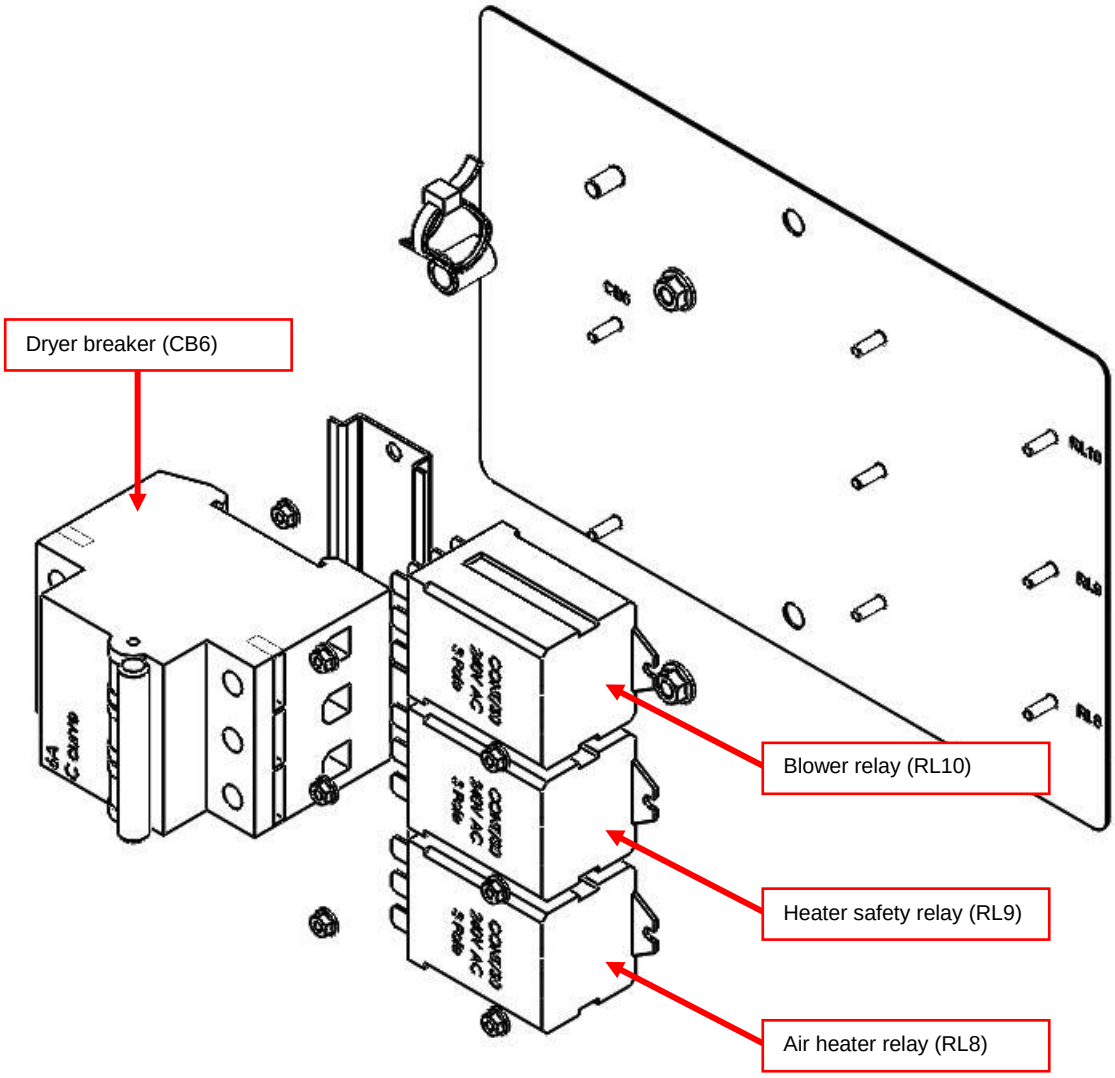
Standy Temperature:
55-58 degrees

Running temperature:
82-85 degrees

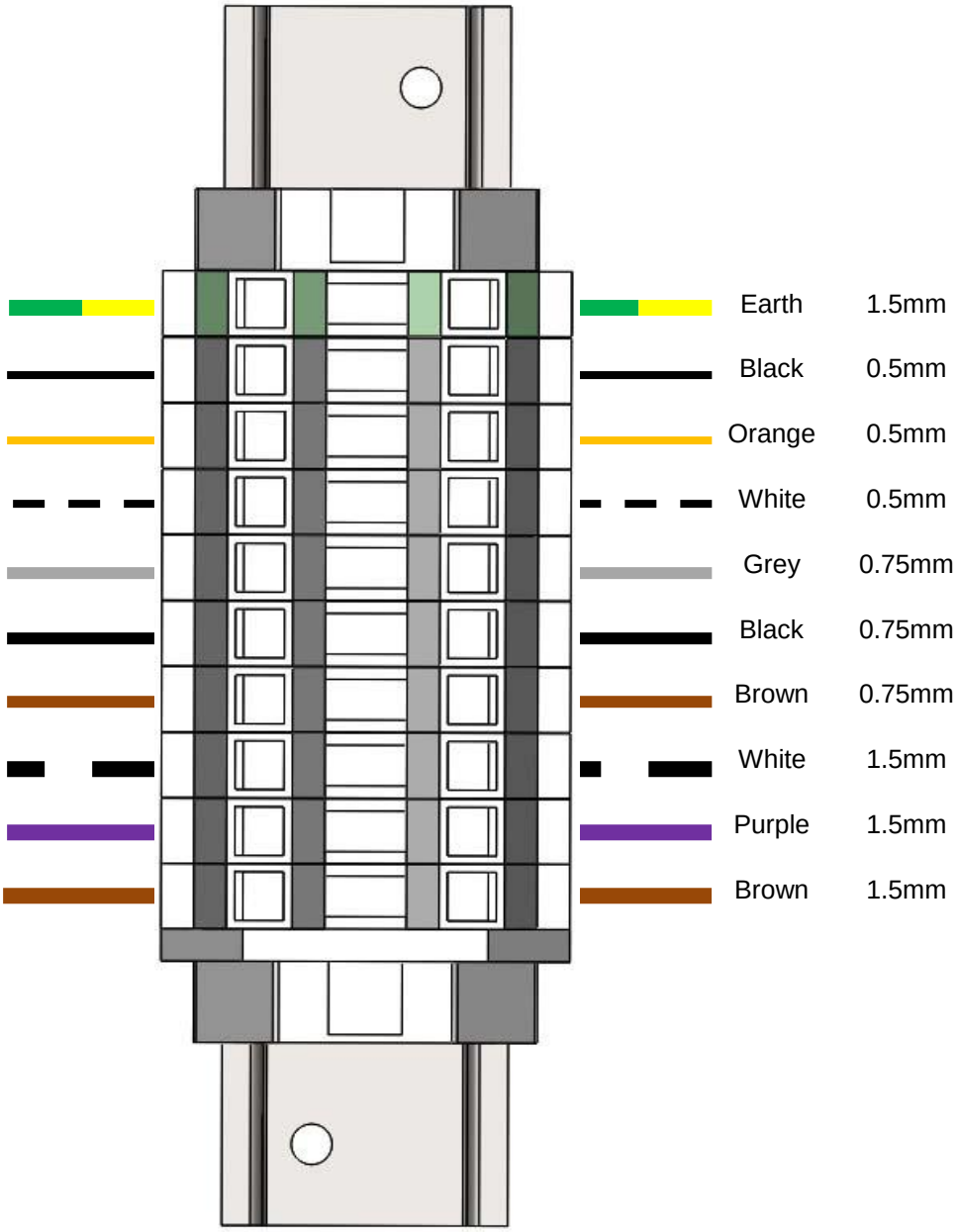
15. Dryer unit wiring and layout

Dryer control panel layout

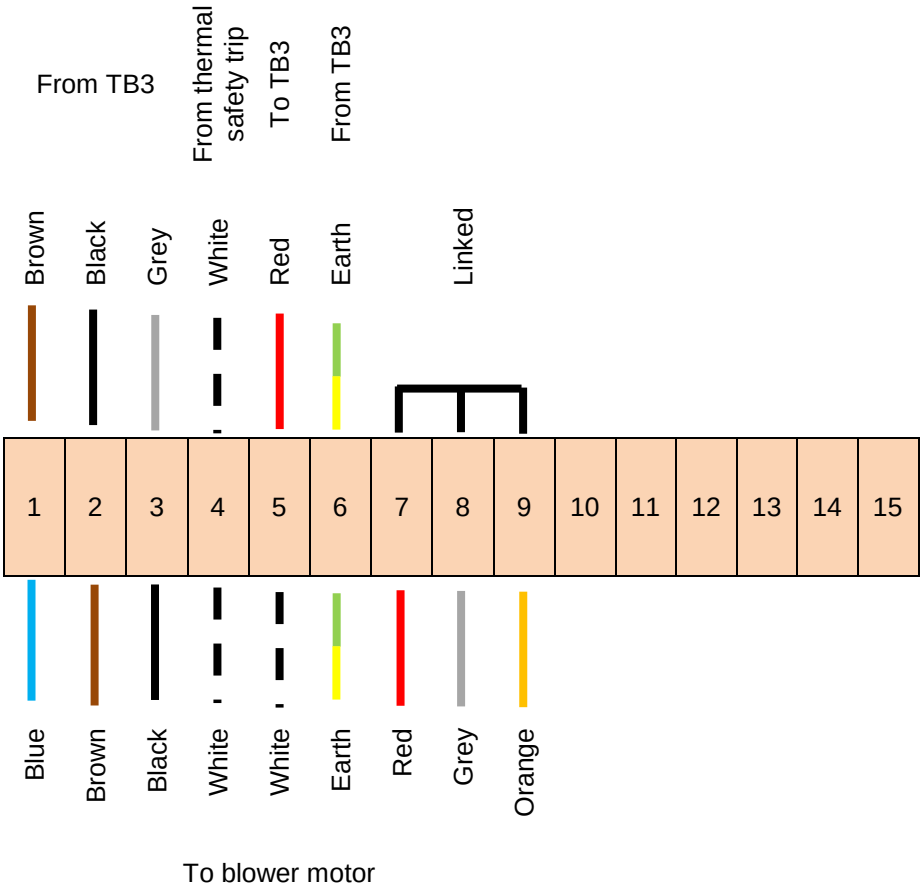
Tempraure rdfd



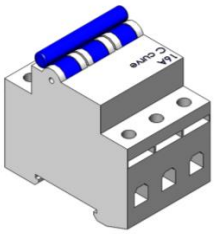
Dryer terminal block (TB3)



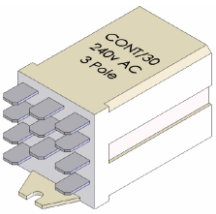
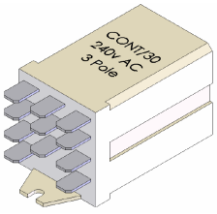
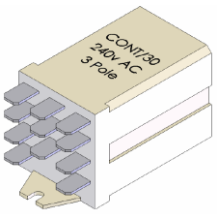
Blower terminal block



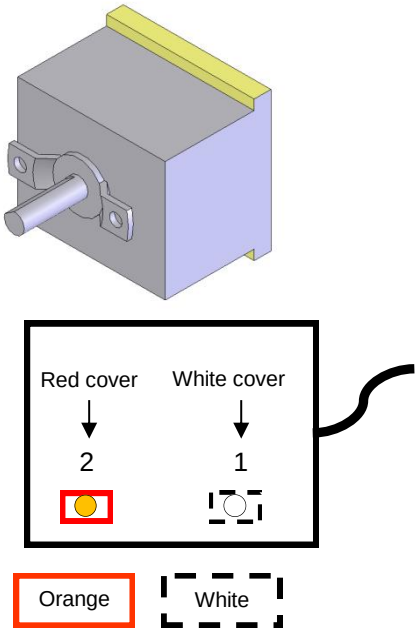
Dryer breakers

Type	Breaker size	Breaker number	Wire colour / Connection configuration	
	16A	Breaker 6 (3 phase breaker)	●	Incoming wire from Terminal block (TB3)
			●	Out going wire to Drive motor relay (RL8)
			●	Incoming wire from Terminal block (TB3)
			●	Out going wire to Drive motor relay (RL8)
			●	Incoming wire from Terminal block (TB3)
			●	Out going wire to Drive motor relay (RL8)

Dryer relays

	Air heater relay (RL8)	Heater safety relay (RL9)	Blower relay (RL10)
			
Red cover			
Black cover			
White cover			
Green cover			
Red cover			
Black cover	Brown	Brown	Brown
White cover	Brown	Brown	Brown
Green cover	Orange	Black	Black
	Purple / Black	Purple / Purple	Black / Black
	White / Grey	White / White	Grey / Grey
	Blue	Blue	Blue
Normally closed	12 / 22 / 32	12 / 22 / 32	12 / 22 / 32
Normally open	14 / 24 / 34	14 / 24 / 34	14 / 24 / 34
Common	11 / 21 / 31	11 / 21 / 31	11 / 21 / 31
Coil	A1 / A2	A1 / A2	A1 / A2

Dryer thermostat

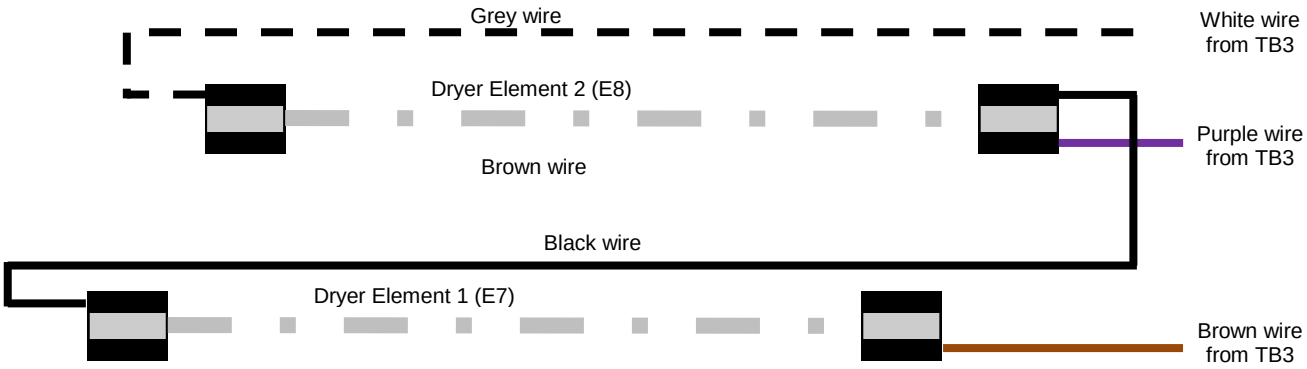


Dryer safety thermostat

	Rinse safety Thermostat (100°C)	

Dryer elements

6kW Delta connection



16. Trouble shooting

I. Machine does not fill:

- Check water supply is turned ON.
- Check water supply hose is not trapped or kinked.
- Check that the machine is switched ON.
- Check that door is closed.
- Check table end switch has not been activated.
- Check there is no obstruction around the drive plate or cassette.
- Check that the air pressure switches are switched correctly (see wiring diagram)
- Check solenoid valve and rinse pump are getting powered up.

II. Cycle does not start:

- Check that the machine is switched ON.
- Check wash tank is full.
- Check that the error lamp is not illuminated.
- Check basket arm rod touching the basket.
- Check water supply is turned ON.
- Check water supply hose is not trapped or kinked.
- Check that the rinse boiler is full.
- Check that breaker 4 and 5 are both on.

III. Machine fills slowly:

- Check water supply tap is fully open.
- Check water supply hose is not trapped or kinked.
- Check water supply pressure and remove any pressure regulator or reducer.
- Check and clean rinse jets *(located on the rinse arms within the machine).*
- Check drain plug securely fitted and sealing.
- Check the correct flow restrictors are fitted:
    - Purple (4l/min) in rinse hose
    - Orange (8l/min) in solenoid

IV. Machine not heating:

- Check machine is ON.
- Ensure enough time has been allowed for machine to reach correct temperatures.
- Check that the machine is full of water.
- Check that breaker 3 is ON.
- Check breaker 1 and 2 are on as relivent.

V. Machine not draining:

- Check and clean all filters within the machine.
- Check that the drain is not clogged / blocked / kinked.
- Check waste hight is below the base of the machine.

VI. Poor wash results:

- Check and replenish chemicals.
- Ensure chemical dosing is corect.
- Check and clean wash and rinse jets on the wash and rinse arm assemblies.
- Clean filters within machine and check that they are fitted correctly.
- Check water supply is ON and fully open.
- Rinse dishes of food debris before placing into the dishwasher.

VII. Overfilling:

- Drain machine fully, then try again to fill the machine.
- Check and clean all filters within the machine.
- Check drain height is configured correctly.
- Check that drain is not clogged / blocked / kinked.
- Check and clean drain plug.
- Check wash APS is switching correctly.

VIII. Wash water foaming:

- Check chemicals are manufactured for use in commercial dishwashers.
- Check wash water is up to temperature.
- Check chemical dosing is set according to the chemical manufacturers requirements.
- Check wash tank thermal trip.
- Drain, refill and allow re-heating.

IX. Will not turn ON:

- Check and reset circuit breaker within the sites fuse board.
- Check and reset breaker 5.
- Check on/off relay (RL1).

X. Basket not moving:

- Check for obstructions on the drive rail and at the drive plate.
- Check cassette is fitted correctly and flat.
- Check that machine error lamp is not illuminated.
- Check breaker 4 is ON.
- Check both timers are opperating.
- Check drive motor relay (RL5).

XI. Machine stopping and starting while in a cycle:

- Check water supply hose is not trapped or kinked.
- Check water supply tap is fully open.
- Check dynamic water pressure is above 2 bar.
- Check table end switch has not been activated.
- Check the correct flow restrictors are fitted:
  - Purple (4l/min) in rinse hose or Fitted Flow restrictor
  - Brown (5l/min) in solenoid
- Check over run timer (TM2) is set and working correctly.

XII. Red (Error) lap illuminated:

- Check door is closed.
- Check driving cassette is not jammed.
- Check table end switch has not been activated.

XIII. Blower unit not blowing air:

- Check blower wiring.
- Check dryer unit breaker (6).

XIV. Dryer not heating air:

- Check dryer unit breaker (6).
- Check dryer heater thermal trip.

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