

CDe120

RACK CONVEYOR C/W DRYER OPERATOR MANUAL



STARLINE®
PROFESSIONAL WASH SYSTEMS

Warnings



Before installation and commissioning, you must read the safety instructions and warnings carefully and all the warning labels attached to the equipment.

Equipment contains dangerous voltages and can be hazardous if installed or operated incorrectly. Non-compliance with warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

Before installation or repair, you must read the instructions and warnings carefully and all the warning labels attached to the equipment.

All service/repair work must be carried out by qualified personnel only and ensure compliance with all local codes and standards including AS/NZS 3500.1.

Important Information



Failure to comply (even partially) with the instructions given in this manual will invalidate the product warranty and relieves the manufacturer of any responsibility.

The alteration of machine operation, design or the replacement of parts not approved by the manufacturer may void warranties and approvals.

This machine is intended for commercial use only.

Contents

2. Warning
3. Safety Instructions
4. Installation Diagram
5. Installation Instructions
7. Installation Checklist
8. Installation Troubleshooting
9. Operator Use Guide
10. Operator Care – Wash Zone
11. Operator Care – Rinse Zone
12. Operator Care – Curtains
13. Operator Troubleshooting
14. AVB Connections
15. Schematic Diagram
16. Dryer Schematic
17. Accessories
18. Notes

We have checked that the contents of this document correspond to the model described. There may be discrepancies nevertheless, and no guarantee can be given that they are completely identical. The information contained in this document is reviewed regularly and any necessary changes will be included in the next edition. We welcome suggestions for improvement.

Document subject to change without prior notice.

Information supplied in this manual is copyright. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical without the express permission of the author / publisher.

Safety Instructions

Installation

- Use qualified, skilled personnel.
- Follow installation instructions.
- Connect to correct voltage and supply current.
- Provide fully accessible Electrical Isolation Switch & water supply valves.

Training and Supervision

- Read and Understand the Operating instructions and train all staff.
- This appliance must not be operated by children or infirm persons.
- Machine panels must only be removed by suitably qualified and trained personnel – internal hazards include live electrics and very hot surfaces.
- No part of this appliance is not intended for use as a stepladder – do not stand on open door.

Hot Surfaces

- Some surfaces may be hot or very hot.

Chemicals

- Commercial dishwashing detergents are hazardous – handle with care.
- Read and follow the safety information found on the labels of detergent containers and Material Safety Data Sheets.
- Use protective eyewear and clothing if decanting containers.

Hot Water

- Do not put hands in wash water which may be over 60°C and contain hazardous caustic detergent.
- Rinse water can be over 90°C.
- Door safety switches are designed for emergency use only.

Cleaning

- Do not hose down the machine or splash water over the exterior.
- Watch for broken glass etc when cleaning the inside of the machine.

Warnings



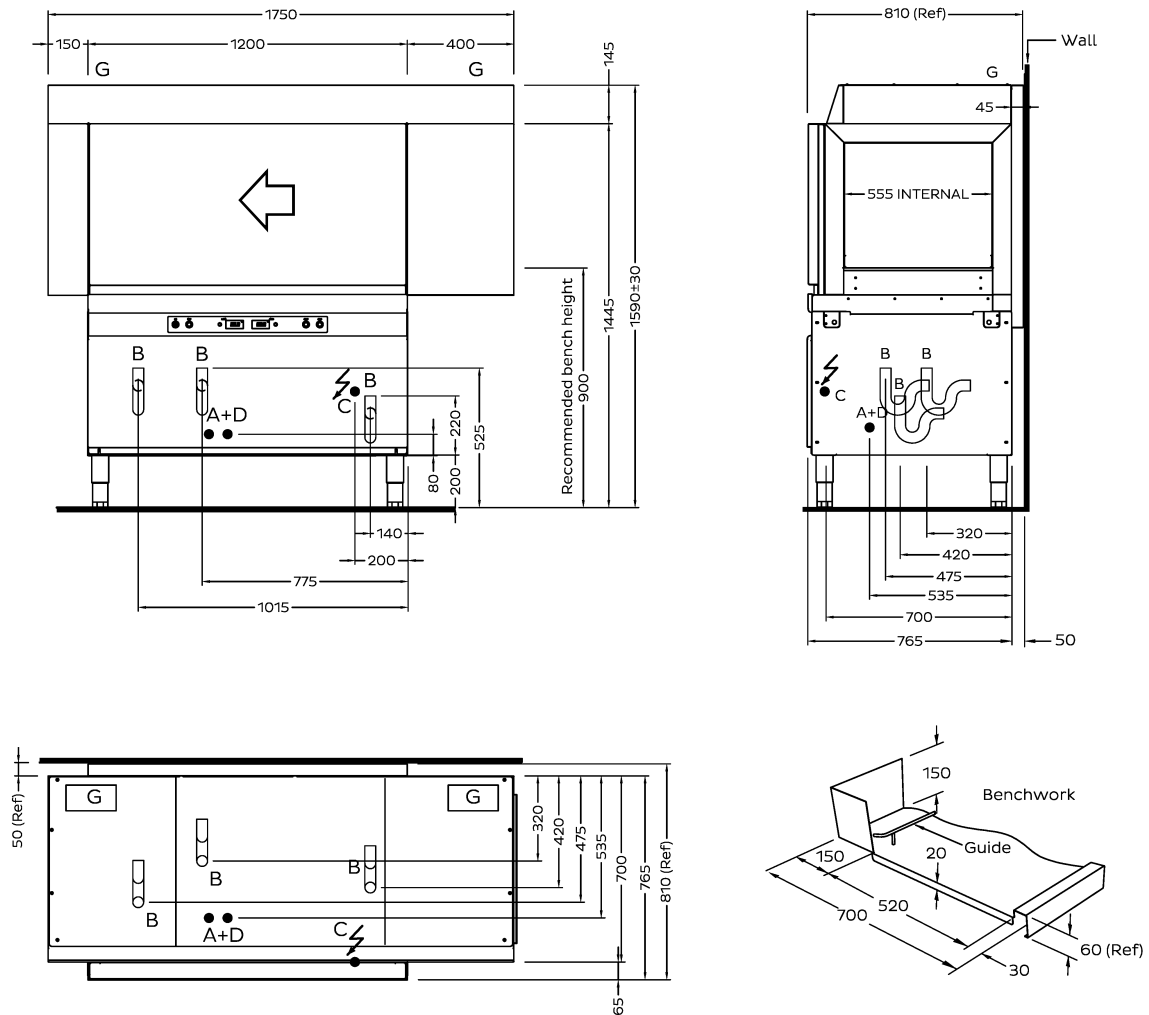
Equipment contains dangerous voltages and can be hazardous if installed or operated incorrectly. Non-compliance with Warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

Installation and servicing must be carried out by a suitably qualified person in compliance with all local codes and standards including AS/NZS 3500.1.

Installation Diagram

CDE120 Installation

- Part #: CDE120 RL Installation
- Date: 28/08/2018
- Version: 1-A



Services

- | | | | |
|---|--|-------------------------|------|
| A | Hot water 65°C | 200-350 kPa | 3/4" |
| B | Waste - tank drainage point | 2" BSP | 50mm |
| C | Electrical connection | 400-415V, 50Hz, 3P-N+E- | 35A |
| D | Cold water inlet | 200-350 kPa | 3/4" |
| G | Air Outlet - No direct connection permitted. SEED certified for installation without dedicated extraction subject to minimum background ventilation provided: 1.1 square metres free area opening or 350L/S mechanical ventilation or air change. If necessary consult a Ventilation Engineer re overhead canopy only. | | |

Note: Isolating switch must be within 1m of, and not directly behind the machine. Isolating water valve must be readily accessible

Installation Instructions

Machine Positioning

- Unpack machine, check for damage and complete delivery.
- Install machine on sound waterproof self-draining floor and use adjustable feet to level machine.



NOTE: Failure to level the machine correctly may result in leaking during the cycle, overflowing from the door sill, poor hygiene through the wash tank not being able to drain correctly, and/or visibly uneven door.

- Allow room for detergent to one side of machine or in adjacent cupboard. 20 litre container requires approximately 450H x 250W x 350D, but smaller containers are available from many suppliers.

Inlet Water Operation - Cold

Incoming water should be within the following standard requirements:

- Temperature: 20°C.
- Connection: 20 mm (3/4" BSP) male



NOTE: Flush supply line before connection. Poor quality supply or excessive water hardness may affect performance or damage machine – filtration and/or softening is recommended.

- Flow rate: minimum 20 litres per minute
- Pressure: between 200 and 350 KPa



NOTE: This machine is not equipped with a rinse booster pump as standard and relies on incoming water pressure to drive the rinse cycle.

NOTE: Above this range fit pressure limiter. Below this range fit a rinse booster pump. Do not use small diameter plastic supply lines

- Backflow prevention: Watermark approved Atmospheric Vacuum Breaker (AVB) fitted standard. Watermark Certification #08603

Inlet Water Fill - Hot

Incoming water should be within the following standard requirements:

- Temperature: 65°C.



NOTE: Excessively high temperatures may damage the solenoid which can result in flooding should this component fail. High temperature solenoids are available and can be retrofitted if necessary.

- Connection: 20 mm (3/4" BSP) male



NOTE: Flush supply line before connection. Poor quality supply or excessive water hardness may affect performance or damage machine – filtration and/or softening is recommended.

- Flow rate: minimum 20 litres per minute
- Pressure: between 200 and 350 KPa

NOTE: Above this range fit an approved pressure limiter. Below this range fit a rinse booster pump. Do not use small diameter plastic supply lines

- Backflow prevention: Watermark approved Atmospheric Vacuum Breaker (AVB) fitted standard. Watermark Certification #08603

Installation Instructions

Water Quality Requirements

The incoming water should also be within the following parameters:

Hardness	ppm		pH			
min	20		7			
max	100		8			
Ions	Cl ⁻	SO ₄	Fe	Mn	Cu	Cl ₂
Max mg/L	100	400	0.1	0.5	0.05	0.1



NOTE: Levels above or below the stated requirements can be expected to increase component wear and reduce the expected useful life of the dishwasher. If in doubt, it is best to consult a water specialist and have the incoming water professionally tested and treated if necessary.

Power

- Electrical supply required is 3p/35A 415V 50Hz via switched outlet adjacent to machine.



NOTE: Equipment contains dangerous voltages and can be hazardous if installed or operated incorrectly. Non-compliance with warnings or failure to follow the instructions contained in this manual can result in loss of life, severe personal injury or serious damage to property.

Chemical

- Detergent and rinse aid pumps are not supplied with the CDe120. We recommend you consult your chemical supplier and/or a local chemical expert for their recommended detergent and Rinse Fluid injector pumps.



NOTE: Commercial detergents can be hazardous – read instructions, store safely and handle with care. Care needs to be taken when changing chemicals, ensuring that the detergent is not accidentally connected to the rinse fluid inlet line.

NOTE: If uncertain, please consult a chemical specialist for assistance in selecting the right chemicals and calibrating machine settings to suit this along with your unique site conditions and requirements.

Waste

- 50mm connection required to point B as specified on install diagram. An S-trap must be fitted on each of these points.



NOTE: Either copper or P.V.C. may be used for the waste connection – P.V.C. is more resistant to some harsh detergents. Some authorities however suggest that copper is required because the machine rinses at up to 90°C. It is important to note that rinse water mixes with the 65°C wash water before discharge and then flows into the sink trap where the water is further cooled before entering the drainage plumbing. We recommend consulting your local authority to ensure your site remains compliant.

Installation Checklist

- Complete attached Installation Checklist to ensure machine is installed and running correctly, and operator is familiar with operating procedures.

Installation Checklist

Check	Notes
DELIVERY	
SUPPLIED COMPLETE?	<input type="checkbox"/> CHECK THERE HAS NOT BEEN ANY TRANSIT DAMAGE
POSITION	
LEVEL AND STABLE?	<input type="checkbox"/> ON SOUND, WATERPROOF, SELF-DRAINING FLOOR
WATER	
ISOLATOR VALVE FITTED?	<input type="checkbox"/> ACCESSIBLE, ALL FITTINGS SOUND, AND NO LEAKS
TEMPERATURE CORRECT	<input type="checkbox"/> COLD WATER INLET 20 °C, HOT WATER INLET 65 °C
PRESSURE CORRECT (200 – 350 kPa)?	<input type="checkbox"/> LIMITER FITTED IF ABOVE RANGE, RINSE PUMP IF BELOW
FLOW RATE CORRECT (> 20L per min)?	<input type="checkbox"/> RINSE PUMP FITTED IF BELOW REQUIREMENT
QUALITY WITHIN REQUIREMENTS?	<input type="checkbox"/> FILTER OR SOFTENER IN PLACE IF OUTSIDE REQUIREMENTS
POWER	
ISOLATING SWITCH (3p/35A 415V 50Hz)?	<input type="checkbox"/> FITTED, FUNCTIONAL AND ACCESSIBLE
CORRECT SUPPLY	<input type="checkbox"/> VOLTAGE, CURRENT, CIRCUIT BREAKER ALL CORRECT
WASTE	
CONNECTION TO 50mm PIPE?	<input type="checkbox"/> CORRECT CONNECTION TO PLUMBING.
SUITABLE AIR GAP?	<input type="checkbox"/> REFER OPERATOR MANUAL.
CHEMICALS	
	CHEMICAL NAME CONTAINER NO LEAKS PRIMED CALIBRATED
DETERGENT	<div><div></div><div></div></div>
RINSE FLUID	<div><div></div><div></div></div>
MACHINE OPERATION	
MACHINE RUNNING CORRECTLY?	<input type="checkbox"/> MULTIPLE CYCLES RUN, NO ISSUES
CHEMICAL DOSAGE CORRECT?	<input type="checkbox"/> CORRECTLY FLOWING INTO MACHINE, NO FOAMING
ALL OPERATIONS CORRECT?	<input type="checkbox"/> FILL LEVEL CORRECT, NO DRAINAGE ISSUES
OPERATOR TRAINING	
ENSURE THAT THE CUSTOMER HAS BEEN GIVEN THE OPERATION MANUAL AND WALL CHART, AND IS AWARE OF THE IMPORTANCE OF BOTH USING AND CLEANING THE MACHINE CORRECTLY.	
START UP	<input type="checkbox"/>
PRE-RINSE AND RACKING	<input type="checkbox"/> BETTER TO RINSE PLATES THAN REMOVE WASTE FROM MACHINE
MACHINE USE AND CYCLE SELECTION	<input type="checkbox"/> USE LONG CYCLE WHERE POSSIBLE
DRAINING THE MACHINE	<input type="checkbox"/> DRAIN THE MACHINE DAILY
SHUT-DOWN AND DAILY CLEANING	<input type="checkbox"/> CHECK WASH ELEMENTS HAVE COOLED BEFORE CLEANING
WEEKLY MAINTENANCE	<input type="checkbox"/> FULL MACHINE CLEAN INCLUDING WASH/RINSE ARMS
PLANNED SERVICING	<input type="checkbox"/> IMPORTANCE OF HAVING MACHINE SERVICED REGULARLY

Installation Troubleshooting

Machine not starting or filling

- Ensure water supply to machine is turned on.
- Ensure power supply to machine is turned on.
- Check that the water inlet hose isn't twisted or kinked.

Poor wash results

- Check that there are adequate pre-rinse processes in place.
- Ensure high quality non-foaming commercial dishwasher detergent has been connected at the correct dosage for your site, water quality and application. If uncertain, [consult a chemical specialist](#).
- Ensure that the wash temperature is between 60°C and 65°C.

Chemical residue on items after the cycle

- Check water pressure, this is likely too low and below the minimum 200kPa required.
- Check that nothing is obstructing the wash & rinse arms.
- Check the rinse fluid dosage is not too high. If uncertain, please [consult a chemical specialist](#).

Dishwasher is foaming

- Ensure high quality non-foaming commercial dishwasher detergent has been connected at the correct dosage for your site and application. If uncertain, please [consult a chemical specialist](#).
- Allow wash water to heat to at least 60 °C prior to starting the first cycle as some commercial dishwasher chemical will foam at low temperatures.
- Low water pressure can result in above average detergent concentrations. As low water pressure also impacts rinse results, we recommended this is solved by installing a rinse pump rather than compensating by reducing chemical dosages.

Other equipment in the kitchen has needed filters or has scale

- Due to the high temperatures in dishwashers, scale will build up in the wash tank, on the arms and in the rinse tank. The incoming water should be treated. If uncertain, please [consult a water specialist](#).

Other equipment in the kitchen has needed an RO water filter

- As with the Combi-Oven, high chloride levels will do irreversible damage to a number of the components inside a commercial dishwasher. The incoming water should be appropriately treated. If uncertain, please [consult a water specialist](#).

Pawl drive not operating

- Clear the area around the limit switch on the roller table.
- Adjust the clutch tension of the Pawl Drive motor, the Pawl drive clutch tension can be tightened by turning the 2 nuts at the bottom of the pawl drive shaft clockwise or loosened by turning the 2 nuts anticlockwise.

(Note: the tension must be at a level where a person can grab the pawl drive with both hands and stop the pawl drive motion).

Too much steam escaping the machine

- By default the wash thermostat is set to 65 °C, reduce this temperature 60 °C if required.
- Check the hot/cold water solenoids connections are connected to the correct water mains outlet.

Grinding noise escaping from the machine

- Wash pump rotation must be checked after installation to ensure correct direction (excessive noise and damage with incorrect direction)

Machine stops and refills during the commissioning stage

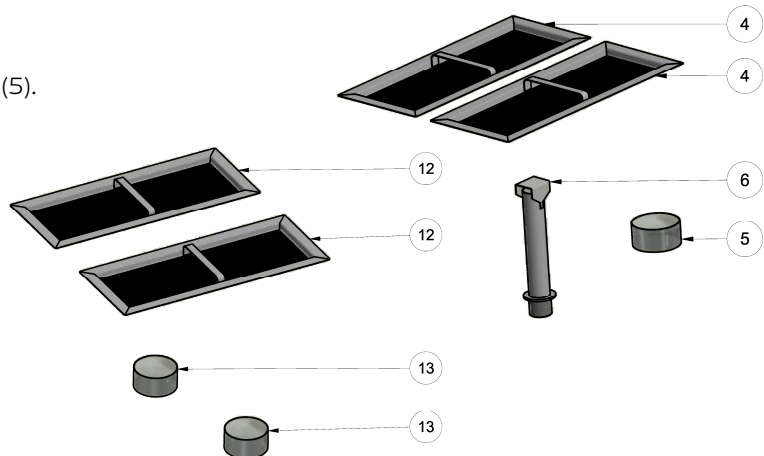
- Fit the curtains according to the Operator Care – curtain diagram (page 13).
- Ensure the Scrap Trays are fitted in the Wash and Rinse Zones.

Operator Use Guide



START

- Turn on at wall.
- Wash Zone:
 - Fit Wash Pump Inlet Filter (5).
 - Drain Upstand (6) .
 - Scrap Trays (4).



- Rinse Zone:
 - Rinse Pump Filter(13) .
 - Scrap Trays (12).
- Shut all doors and turn wall and Machine Power on.
- Machine begins filling. Full light amber when tanks are full.
- Ready light glows amber when the machine is up to required temperature.

OPERATION

- Press Start button to operate machine.
- Cycle light glows green while the machine is running.
- Cycle light glows green while machine operates.
- Stack one rack with items. Using a second empty rack, push the first rack into the inlet zone of the machine - ensure the rack is pushed fully into the inlet to engage pawl drive.
- Repeat for all consecutive racks.
- For quicker washing, press Fast button to toggle faster washing speed.

NOTE: Pumps and conveyor will stop operating if the machine is left idle for 2 minutes. To restart the pump and conveyor simply feed a new rack into the inlet of the machine.

SHUT DOWN – END OF EACH DAY

- Press Stop button
- Take out Drain Upstands to gravity drain the machine.
- When tanks are visibly empty switch Power button off.
- Proceed with Operator Care Wash Zone and Rinse Zone cleaning instructions.

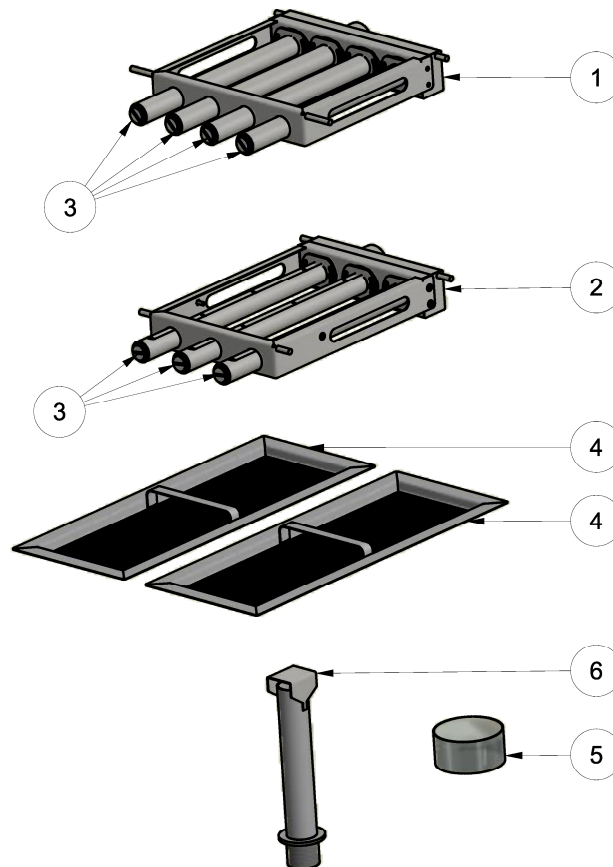
SUGGESTED BEST PRACTICE

- | | |
|-----------|--|
| Pre-rinse | Scrape and/or rinse trays, plates & glasses in cool water |
| Chemical | Use a good quality non foaming commercial detergent and drying agent – do not use domestic detergents which will cause the machine to foam |

Operator Care – Wash Zone

CDE120 Wash Zone

- Part #: CDE120 Wash Zone
- Date: 28/08/2018
- Version: 1-A



Daily Cleaning

- Remove Scrap Trays (4) and clean with a brush and water to clear grid.
- Remove Wash Pump Inlet Filter (5) and clean with a brush and water to clear grid.
- Return Scrap Trays (4), Drain Upstand (6) and Wash Pump Inlet Filter (5) to the machine.

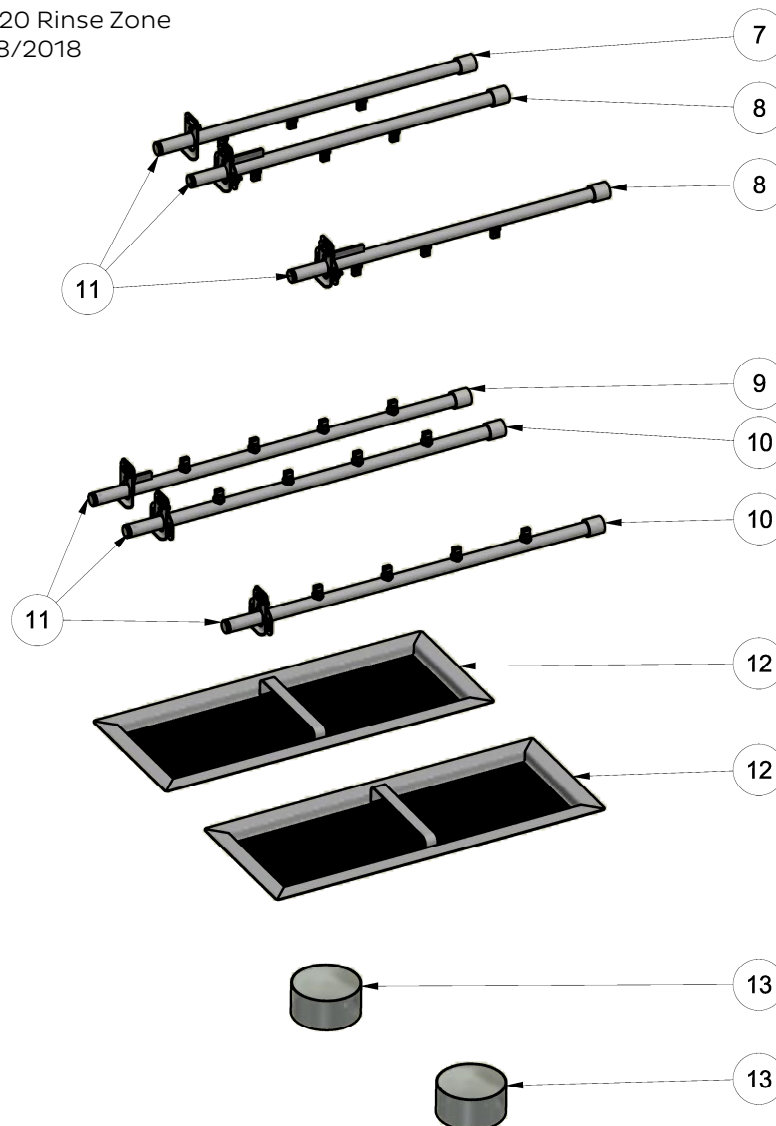
Weekly Cleaning

- To be done in conjunction with Daily cleaning.
- Remove Lower Wash Arms (2) – lift up to unhook the arm and then withdraw.
- Remove Upper Wash Arms (1) – push the cap up and then withdraw.
- Remove End Cap Screws (3) from Wash Arms using a blunt object.
- Flush Arms (1 & 2) with water. Use a toothpick or paper clip if necessary to clear jets.
- Return the Wash Pump Inlet Filter (5), the Drain Upstand (6), Scrap Trays (4), Lower Wash Arms (2) and Upper Wash Arms (1) to the machine.

Operator Care – Rinse Zone

CDE120 Rinse Zone

- Part #: CDE120 Rinse Zone
- Date: 28/08/2018
- Version: 1-A



Daily Cleaning

- Remove Scrap Trays (12) and clean with a brush and water to clear grid.
- Remove Rinse Pump Filter (13) and clean with a brush and water to clear grid.
- Return Scrap Trays (12) and Rinse Pump Filter (13) to the machine.

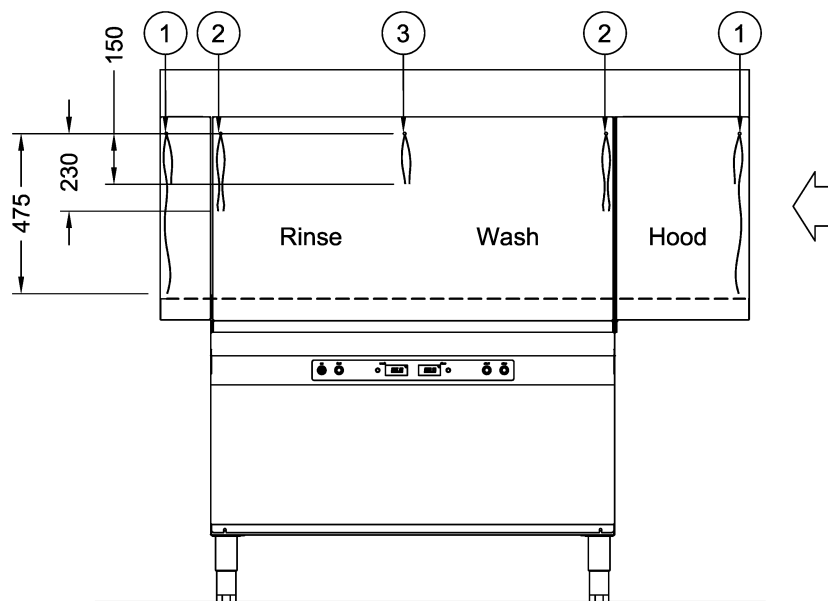
Weekly Cleaning

- To be done in conjunction with Daily cleaning.
- Remove Lower Rinse Arms (9 & 10) – lift up to unhook the arm and then withdraw.
- Remove Upper Rinse Arms (7 & 8) – push the cap up and then withdraw.
- Remove End Cap Screws (11) from Rinse Arms using a blunt object.
- Flush Arms (7, 8, 9, 10) with water. Use a toothpick or paper clip if necessary to clear jets.
- Return the Rinse Pump Filter (13), Scrap Trays (12), Lower Rinse Arms (9 & 10) and Upper Rinse Arms (7 & 8) to the machine.

Operator Care – Curtains

CDE120 Curtains

- Part #: CDE120 RL Curtains
- Date: 28/08/2018
- Version: 1-A



Types Of Curtains

1. Long anti splash curtain 600 x 475 (Part number: 840 90011)
2. Medium anti splash curtain 600 x 230 (Part number: 840 90012)
3. Short anti splash curtain 600 x 150 (Part number: 840 90013)

The Purpose of Curtains:

- To keep the heat inside the zones of the machine
- To stop water splashing from one zone to another. This prevents wash and rinse water mixing. If this happens the water quality will be reduced.
- Curtains must be placed in their correct positions to work properly. They must also be the correct way around.
- Broken curtains need to be replaced promptly.

Weekly Cleaning

- Remove curtains from hooks
- Place each curtain into a dishrack and wash through the machine

Operator Troubleshooting

Issue	Cause										
	POOR PRE-SCRAPING	CARRY OVER OF SOAP FROM SINK	OVERLOADING RACKS	POOR MACHINE CARE	JETS BLOCKED OR ARMS OBSTRUCTED	CURTAINS NOT FITTED CORRECTLY	WATER SUPPLY PRESSURE LOW	POOR WATER QUALITY**	RINSE TEMPERATURE LOW <75 °C	PAWL DRIVE NOT OPERATING	CRASHING SOUND AGAINST DOOR
DISHES NOT CLEAN	●		●	●	●		●	●	●		
STAINING	●				●		●	●	●		
FOAMING		●		●							
PROTEIN BLOOM	●		●	●	●		●		●		
DIRTY MACHINE	●			●	●		●	●	●		
FOOD RESIDUE ON WARE	●		●	●	●		●	●	●		
FILM/SPOTS ON WARE			●	●	●		●	●	●		
DETERGENT RESIDUE					●	●	●				
GREASY FILM/NO FIZZ			●				●	●			
WET WASHWARE			●	●			●				
SCALE BUILD UP IN MACHINE				●				●			
FILTERS ON OTHER EQUIPMENT								●			
LIMIT SWITCH ACTIVATED										●	
WASH ARM NOT FITTED PROPERLY											●
MACHINE STOPS & REFILLS CONSTANTLY						●					

● Likely cause

● Possible cause

* For issues most likely due to incorrect chemical dosages or other chemical issues, we recommend you consult your chemical supplier and/or a local chemical expert prior to calling in a dishwasher technician.

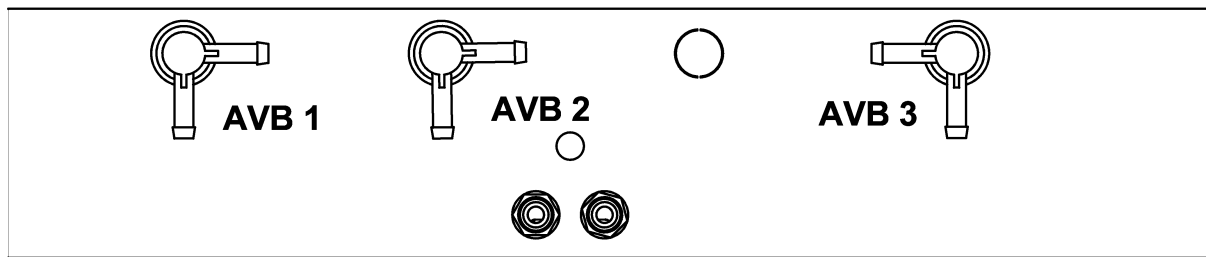
** For issues that are likely due to poor water quality (scale building up, filters being required on other kitchen equipment etc.), we recommend you consult a local water specialist prior to calling in a dishwasher technician.

IF PROBLEMS PERSIST CONTACT MOFFAT SERVICE ON 1300 264 217

AVB Connections

CDE120 AVB Connections

- Part #: CDE120 AVB Connections
- Date: 28/08/2018
- Version: 1-A



The CDe120 are supplied with Atmospheric Vacuum Breaker as the source of backflow prevention to prevent contamination of supply water as required. These AVBs and associated systems within the CDe120 have been tested and confirmed as compliant with latest WMTS 101:2016 – Appliances (low hazard rating).

Washtech holds Watermark Certification in Australia for plumbing safety for its products as per Watermark Licence Number WMKT08603. This certification has been held since 29th March 2000 and was most recently reissued on the 24th of July 2017.

No additional backflow prevention devices are required to be installed with Washtech dishwashers.

Purpose of each AVB

AVB 1

Water Source: Cold water supply
Water Output: Heat Recovery Unit

AVB 2:

Water Source: Heat Recovery Unit
Water Output: Rinse tank

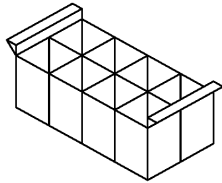
AVB 3:

Water Source: Hot water supply
Water Output: Wash tank

Accessories

CDE120 Accessories

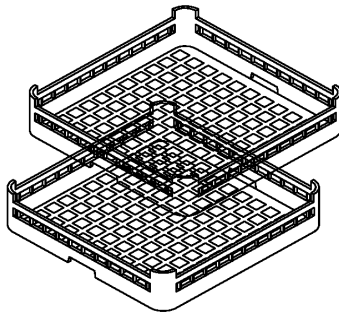
- Part #: CDE120 ACW
- Date: 28/08/2018
- Version: 1-A



C660508
CUTLERY BASKET CP8 for 500mm

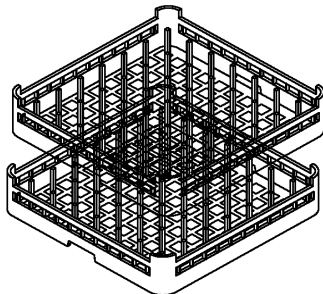
QTY

1



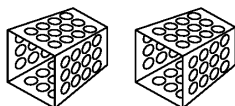
600 70029
CUPRACK CB 500mm X 75mm high

2



600 70028
DISHRACK P12/18 500mm 18 DISH

2



C660503
CUTLERY CONTAINER G

2

Notes

Notes

Information supplied in this manual is copyright. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical without the express permission of the author/publisher

Manufactured in New Zealand by Washtech Ltd.

WASHTECH

414 Rosebank Road
Avondale
Auckland 1026
New Zealand

PO Box 90548, Auckland

24HR Service 0800 Starline

Tel 09 829 0930

Fax 09 829 0935

E-mail info@washtech.co.nz

web www.starline.co.nz

ISO9001

All Washtech products are designed and manufactured by Washtech using the internationally recognised ISO9001 quality management system, covering design, manufacture and final inspection, ensuring consistent high quality at all times.

In line with policy to continually develop and improve its products, Washtech Ltd reserves the right to change specifications and design without prior notice.

an Ali Group Company



The Spirit of Excellence