

Cossiga Product Manual - Linear Series



Warning:

All instructions and specifications are intended as a guide only and are subject to change without notice, check the cabinet and any literature supplied with the cabinet for special instructions appropriate to the cabinet before implementing installation and servicing.

Servicing should only be carried out by an approved service agent or a registered Electrician or Refrigeration Engineer.

Full cabinet specifications available at www.cossiga.com

Product Function and Specifications

Linear Series

Common Functions and Specifications

Application	
Internal Air Movement	Internal air movement is kept to a minimum to protect product. Air volume may vary depending on product and performance requirements.
Operating Temperature Measurement	All refrigerated and heated cabinets include temperature measurement devices accurate with +/- 3 deg C.
Compliance	All units are designed for compliance with national codes of compliance food handling Standard units are set up for compliance with Food Standards Australia/New Zealand. Standard 3.2.2 Food Safety Practices and General Requirements.

Electrical	
Testing	All units are tested ex factory and certified for electrical safety.
Connections	Cabinets have external power connection bottom rear right.
Notification	All units have serial number tags with voltage and amperage requirements clearly marked.

Operating Environment	
Temperature and Humidity	All products set up for standard local conditions with a maximum environment of 25 deg C and 60% RH. Product can be factory set for special conditions upon notification of environmental conditions on order placement.

Standards Compliance	
Performance	Standards Australia/New Zealand Standard 3.2.2 Food Safety Practices and General Requirements.
Electrical Standards and Testing	AS/NZS 3100:1997 And in accordance with NZECP 3:2000 NZ Electrical Code of Practice for Electrical Safety of fittings and Electrical Appliances.
Stainless Steel	Stainless Steel SS 304
Glazing	All exposed glass toughened to AS/NZS 2208:96
Light Ballasts	AS 3168 & 2643 Tridonic ATCO 230V 50Hz 15-36W
Fans	CE, TUC and CSA approved, impedance protected SUNCON 220-240V 50-60Hz 0.06-0.125A

Product Function and Specifications

Linear Series

Refrigerated Functions and Specifications (RF Models)

Model	LSRF3	LSRF4	LSRF6
Compressor	Tecumseh 1HP CAJ9510Z 240V/50HZ	Tecumseh CAJ9513Z 9/8HP 240V/50Hz	Tecumseh CAJ9513Z 9/8HP 240V/50Hz
Refrigerant	R404a - 650g	R404A - 700g	R404A - 750g
Controller	Carel PB00F0HA10 240V/50HZ	Carel PB00F0HA10 240V/50Hz	Carel PB00F0HA10 240V/50HZ
Capillary	1.5 (ID)*1000(L)	1.5 (ID)*1000(L)	1.5 (ID)*1000(L)
Evaporating Pressure	300 Kpa	300 Kpa	250 Kpa
Fans	Sheng Kwei BP1725Ap-22-1 34W/240V	Sheng Kwei BP1725AP-22-1 34W/240V	Sheng Kwei BP1725AP-22-A 34W/240V

Operational Range	Refrigerated cabinets are designed to provide a controlled temperature in the 2-15°C range.
Temperature Recovery	All cabinets use forced air movement to assist with temperature recovery. Cabinets have front and rear ducting to reduce temperature loss on door opening.
Temperature Distribution	All units designed for no more than 4°C difference between any two points and have forced air movement to ensure temperature distribution.
Temperature Measurement and Control	All units are supplied with a programmable controller with adjustable offset for measurement and control purposes.
Operating Temperature Visualisation	All units have a digital temperature display on the controller.

Heated Function and Specification (BM Models)

Application	Designed for use with unpacked and packaged product.
Operational Range	Heated cabinets are designed to provide a controlled temperature in the 45-85°C range.
Heating Process	Forced air heated cabinets use a bottom mounted finned element with forced air circulation exhausting into the cabinet through the rear deck and returning through the front deck.
Temperature Measurement and Control	All units supplied with programmable controller with adjustable of offset for measurement and control purposes.
Forced Air Heated Cabinet Controller	Carel - IR33S0ER00, 240/50Hz
Elements	INC840, 900W/240V
Overhead Heating	Halogen Lamp - 300W

Product Function and Specifications

Linear Series

Installation

Common Requirements

Prepare Cabinet Location	1. Prepare installation site allowing for cabinet penetrations as per specifications at rear of manual.
Prepare Cabinet For Installation	2. Check cabinet is damage free. 3. Check all components "doors, shelves and services are available". WARNING : Some units will require facility for drainage of fluid, condensate overflow or provision of remote services.
Install Units	4. Locate cabinet on site. 5. Ensure cabinet is sitting on level floor. WARNING: Failure to ensure cabinet is parallel to location site may result in doors failing to sit in alignment with cabinet sides. 6. Connect relevant services - Power - Waste water to container or drain WARNING: Installation of remote Refrigerated cabinets will require a professional refrigeration engineer with an electrical certificate and. All cabinets have been electrically certified ex factory, however if a remote or hardwired installation is performed additional certification and testing will be required.

Refrigerated Special Requirements

Set Up Cabinet Controller For Food	1. Ensure condensing unit has access to fresh air for the condensing coil (minimum size 300 x 300) and sufficient air access is available on the exhaust side of the coil. 2. After installation, check that the condenser air does not recycle with the air entering the condensing coil. 3. Never load product close to the internal air access vents from the pan base evaporator or to the return access vents (never load product or pricing labels over or under air vents). 4. Adjust controller settings to match product type and loading. WARNING: Product type and loading will effect defrost cycle requirements as the defrost program is time based. It may take two seasons to get the settings correct depending on the range of variances in your environment. Changing product mix within a cabinet or the environmental conditions in which it operates may also require a resetting of operating parameters.
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Controller Programme - Refrigerated

Controller	Instruction
	1. Switch unit on by depressing the power button on the controller until "ON" is displayed. 2. Switch on lights by depressing the light button until lights activate. 3. Change set point by depressing the SET button (2), use the UP/DOWN buttons until desired temperature is displayed. 4. Press the SET button to confirm (Note: Refrigerated minimum set point is 0 deg C, Temperature Controlled minimum set point is 12 deg C).

Product Function and Specifications

Linear Series

Installation

Installation

Heated Special Requirements

Set Up Cabinet Controller For Food	<ol style="list-style-type: none">1. Set controller if applicable to match required food standards storage condition.2. Monitor operation over two seasons and adjust controller settings to match food and environmental conditions. <p>WARNING: Every food group has its own temperature requirements and the cabinet you have purchased has been set up for a generic installation, thus you will need to adjust set points, min/max setting, defrost frequency and duration to your food group and the cabinet environment. It may take two seasons to get the settings correct depending on the range of variances in your environment.</p> <p>Changing product mix within a cabinet or the environmental conditions in which it operates may also require a resetting of operating parameters.</p>
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Controller Programme - Heated

Controller	Instruction
	<ol style="list-style-type: none">1. Switch unit on by pressing the power button (separate from the controller).2. Switch on lights by pressing the light buttons.3. Change the set point by<ol style="list-style-type: none">(a) depressing the SET button until the simple 1 is displayed.(b) press the large PROBE/PRG button(c) use the UP (set 1)/DOWN (set 2) buttons to obtain set point desired (Note: Heated cabinets should not be greater than 85 deg C).4. Press the large PROBE/PRG button to confirm set point.

Lighting (All Cabinets)

Problem	Solution
Ceiling/Column Lights Will Not Work	<ol style="list-style-type: none">1. Check that the lights are switched on either on the controller or via separate light switch.2. Check starters located behind diffusers cover light, replace if necessary.3. Check light bulbs - replace if necessary.
Halogen Lights Will Not Work	<ol style="list-style-type: none">1. Check that the lights are switched on either on the controller or via separate light switch.2. If replacing halogen bulb DO NOT touch bulb with fingers, use cloth.
Flickering Lights	<ol style="list-style-type: none">1. Check starters located behind diffusers cover light - replace if necessary.2. Check light bulbs - replace if necessary.

Common Operational Troubleshooting

Linear Series

NOTE: The Linear product range is designed as display cabinets only - product must enter all cabinets at the correct temperature.

Refrigerated

Problem	Solution
Cabinet will not reach desired temperature	<ol style="list-style-type: none"> 1. Check the set point on the controller and adjust if necessary. 2. Make sure product in cabinet is not blocking air vents, front or back. 3. Check that the evaporator coil is not iced up. If so press manual defrost on the controller and check defrost settings they may need adjusting to current environmental and product conditions. 4. Check that the condensing unit is well ventilated and the front of the condensing coil has access to cool free air). Note : A complete shut down may be required. 5. Check that the condensing unit is working (Note the condenser will not work and the temperature will rise during defrost the display will show "DEF" and will take approximately 20 minutes to return to set point). 6. Check fans are working - replace if necessary. 7. Check the temperature of the rear air vents. <ol style="list-style-type: none"> a. If cold air is coming out of air vents adjust the controller set point to a correct level. b. If air is cool/warm but not cold, request a service agent to check the refrigeration.
Cabinet Temperature Does Not Match Controller	<ol style="list-style-type: none"> 1. Make sure product in cabinet is not blocking air vents or the circulation of air around the controller temperature probe. 2. Check that environmental temperature has not changed. If so adjust controller settings to match changes. 3. Check fans are working - replace if necessary. 4. Adjust controller offset to match average differential over a period of time.
Uneven Cabinet Temperature	<ol style="list-style-type: none"> 1. Make sure product in cabinet is not blocking air vents. 2. Check fans are working - request a service agent to change the fans if necessary. 3. Check that environmental temperatures have not changed - if so correct environmental influences.
Evaporator Icing Up	<ol style="list-style-type: none"> 1. Adjust the defrost settings to match the local environment and the product loading. (Most common adjustment will be an increase in defrost length from factory setting of 8 minutes to 12 minutes).

Heated Model

Problem	Solution
Cabinet will not reach desired temperature	<ol style="list-style-type: none"> 1. Check the set point on the controller and adjust if necessary.
Cabinet Temperature Does Not Match Controller	<ol style="list-style-type: none"> 1. Check that environmental temperature has not changed. If so adjust controller settings to match changes. 2. Check elements are working - replace if necessary. 3. Adjust controller offset to match average differential over a period of time.
Uneven Cabinet Temperature	<ol style="list-style-type: none"> 1. Ensure water is in base pan. Filled to just below bain marie dish.

Service

Linear Series


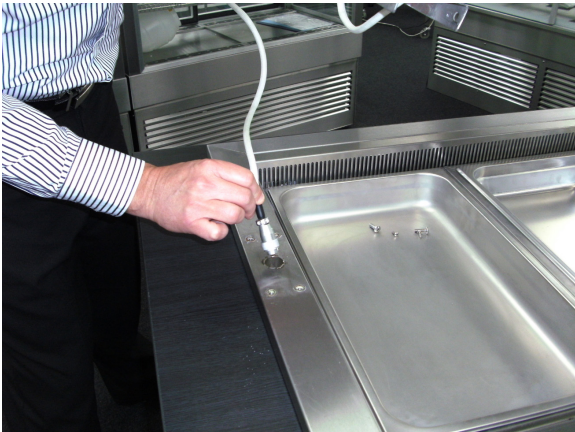

WARNING: All procedures require the cabinet to be isolated from the power supply before being carried out. As all units have an electrical component DO NOT soak or spray fluid within or around the cabinets.

Common Procedures - Cleaning

Item	Instruction
Exterior Cleaning	Use a mild or professional food grade stainless cleaner. Stainless should be cleaned daily using a suitable proprietary stainless steel polish in accordance with the manufacturers' instructions.
Glass Cleaning	All glass should be cleaned using methylated spirits or a quality glass cleaner and a clean cloth. DO NOT clean glass with abrasive pads or cleaners (eg Scotchbrite pads or Jif) - this will damage the glass.
Interior Cleaning	Wipe out wells with mild detergent. Water can be drained. Rinse to remove any detergent residue. DO NOT wet halogen bulbs.




Common Servicing - Electrical

Item	Instruction
Removing the controller	1. The controller can be removed by clipping off the end trim on the controller the removal of the two retaining screws. 2. Pull controller out as far as the cable will allow and remove cable connections.
Halogen Bulbs	DO NOT touch bulbs with fingers, use cloth.

Item	Instruction
Assembly	<p data-bbox="480 427 727 450">1. Place unit into counter.</p>  <p data-bbox="480 936 954 987">2. Feed electrical lead through hole on top flange. This plugs into socket on base.</p>  <p data-bbox="480 1447 874 1469">3. Place gantry on to well. Line up holes.</p> 


Unit Assembly

Linear Series

Item	Instruction
Assembly	<p data-bbox="478 421 734 448">4. Screw gantry into place.</p>  <p data-bbox="478 929 798 956">5. Remove glass support bracket.</p>  <p data-bbox="478 1467 686 1494">6. Place black rubber.</p> 

Unit Assembly

Linear Series

Item	Instruction
Assembly	<p data-bbox="481 398 884 427">7. Set glass in place. Ensure it is straight.</p>  <p data-bbox="481 936 671 965">8. Place top rubber.</p>  <p data-bbox="481 1496 740 1525">9. Re-screw glass support.</p> 

Accessing Fans

Linear Series

Servicing Fans

1. Remove gastro pans and support.
2. Lift base panels.
3. Lift fan panel.

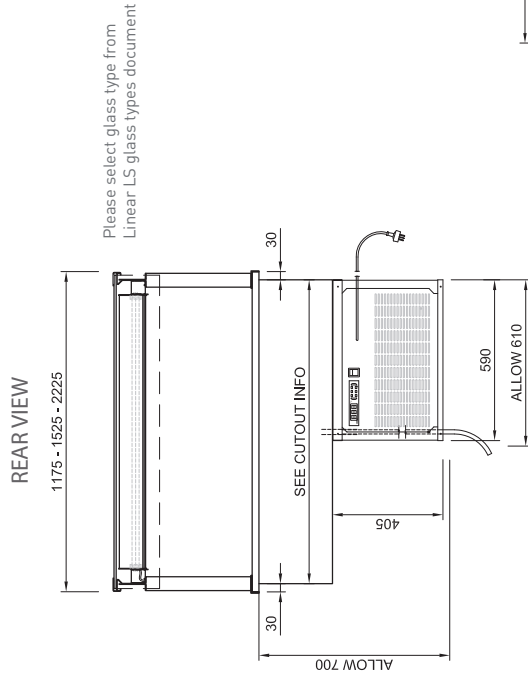
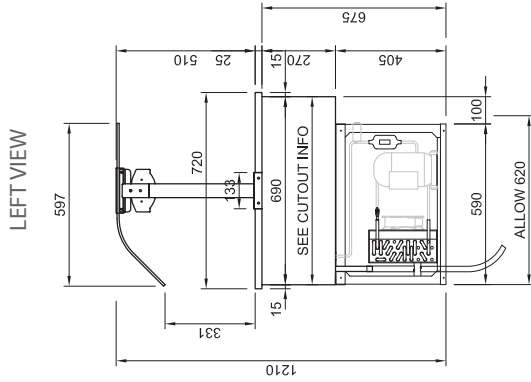


4. Tilt evaporator cover to expose coil.



LSRF LINEAR SERIES

SERVICES REQUIREMENTS

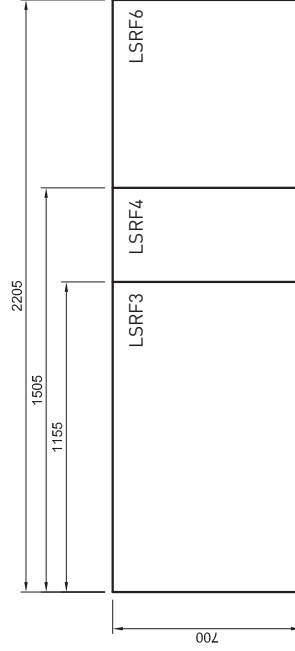


CONDENSATE DRAINAGE

- Drain pipe position as shown
- 55 mm Stainless steel spigot to plastic flexible waste pipe 20mm dia. 1000 mm length
- See drainage specifications
- Maximum ambient operating conditions
25° C / 60% Relative Humidity

ELECTRICAL POWER

- Electrical power cord 1500mm
- All units 3 pin 10 amp 1 phase
- Clean condenser face at two weekly intervals**



LSRF - Refrigerated Unit Services

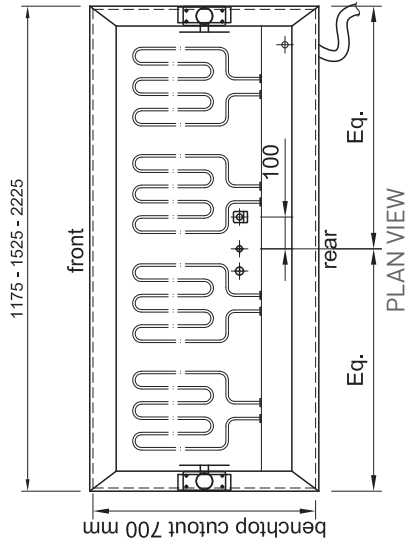
LSRF Cut out size table

LSBM LINEAR SERIES

BAIN MARIE SERVICES REQUIRMENTS

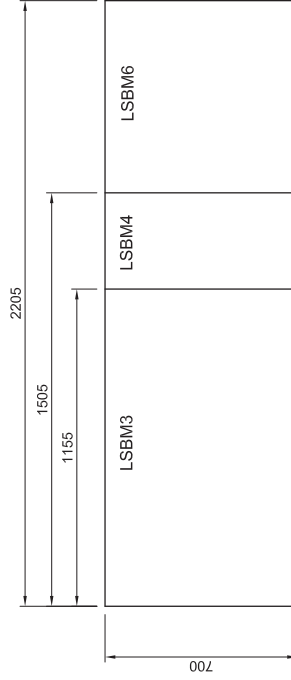
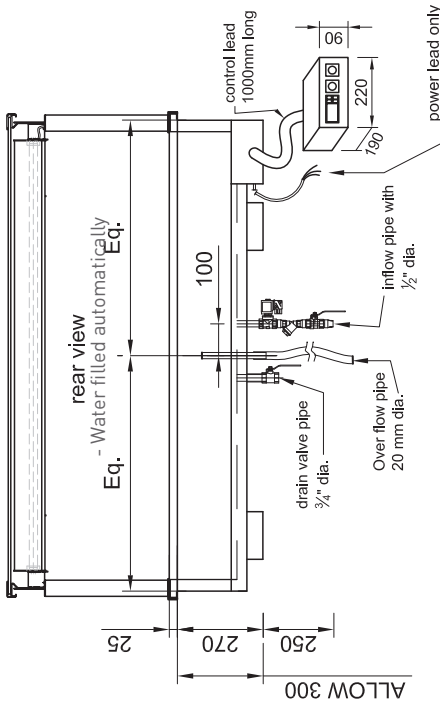
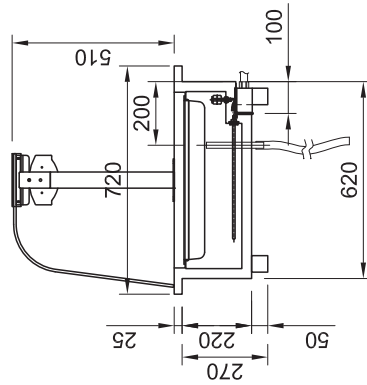
DRAINAGE

- Screw on stop cock valve drain pipe Ideally drain connected to waste
- Overflow flexible waste pipe 20mm dia. 1000 mm length from valve must be connected to waste
- Please select glass type from Linear FSS glass types document



ELECTRICAL POWER

- Electrical power cord 1500mm lead only
- LSBM3 = 15 amp 1 phase - lead only
 LSBM4 = 20 amp 1 phase - lead only
 LSBM6 = 30 amp 1 phase - lead only



Linear - Drop In Cut Outs

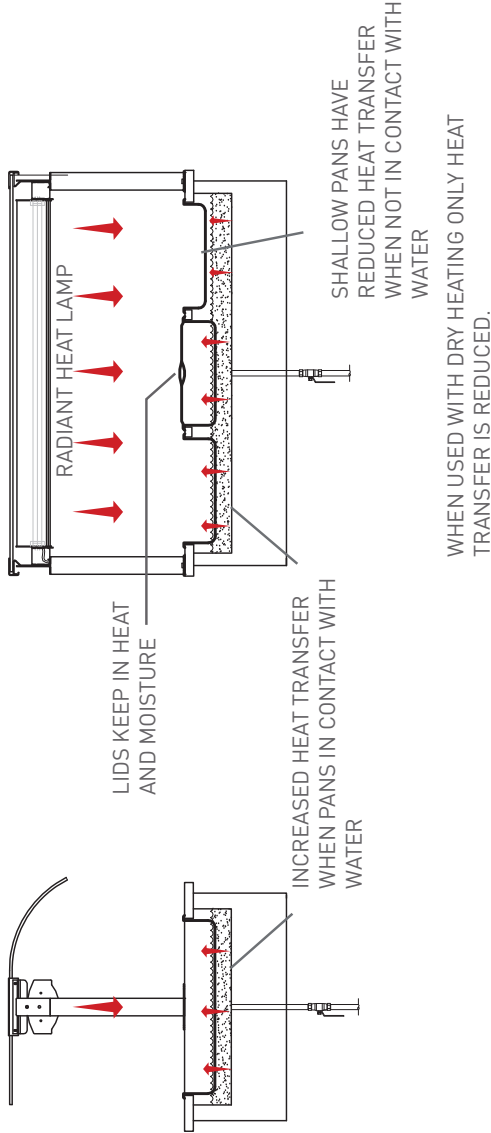


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For further information, contact us on **T +649 580 8471 F +649 580 2514 E info@cossiga.com**
 To download C.A.D. blocks please visit www.cossiga.com

BAIN MARIE BASICS

A Bain Marie is sometimes called a water bath because the food is put into a Stainless Steel insert. The Bain Marie is filled with water and the insert rests in the water. The water is then heated, and the heat is transferred to the food. As a food warmer, this is ideal, because there is no direct heat on the food.



When changing Halogen light bulbs do not touch glass on the bulb

- The general rule is that hot food is kept at 65 degrees and above. Food ready to be placed in cabinets should be the at required temperature.
- It is important where the food display cabinets are located. It is important to have some space between cabinets that operate at different temperatures (cold, ambient and hot).
- If the food is held for long periods temperature will drop.

- The food in the pans will have to be turned over on a regular basis to keep all food in the pan at the same heat, as it is always hotter on the bottom and the sides of the pans. Lids can be used to extend the time period.

- The Bain Marie water should be kept at a level so the pans sit slightly into the water for the best heat transfer into the pan.

- Any adverse influence from external ambient temperatures such as drafts from doors etc. will also hinder with the holding temperature, especially on the top of the food.

- Product such as wedges, chips and roasts will have a limited holding time of about 20min after which they will drop below serving temperature due to their larger surface area.

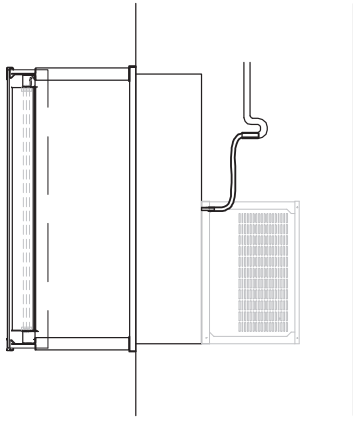
- Bain Maries are not suitable for holding large joints of meat. These are best kept in a humidified holding cabinet.

Heat transfer for all bain marie units



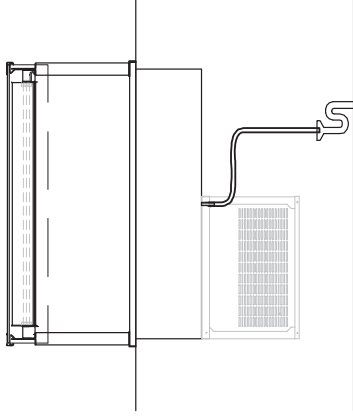
LSRF LINEAR SERIES

REFRIGERATED UNITS DRAINAGE OPTIONS



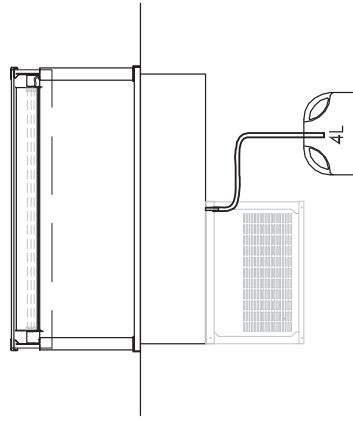
PLUMBED DRAINAGE

- Drainage to building waste
- Building waste by client



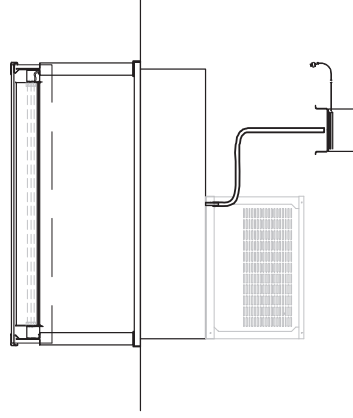
PLUMBED TUN DISH DRAINAGE

- Maximum 150 mm above finished floor level
- Drainage to building waste
- Building waste by client



FREE STANDING RECIPIENT

- Supplied with all chilled units in range
- Receptacle placed under unit to receive condensate waste
- Dispose of waste water daily

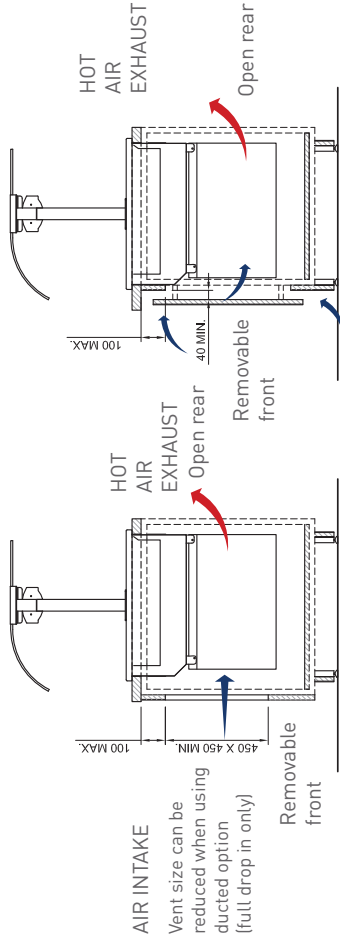


ELECTRICAL EVAPORATOR PAN

- Proprietary electrical unit to evaporate condensate waste.
- Will require power source
- Available as accessory from cossiga
- Additional 10 amp socket required

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DROP IN CUTOUTS AND VENTILATION REQUIREMENTS

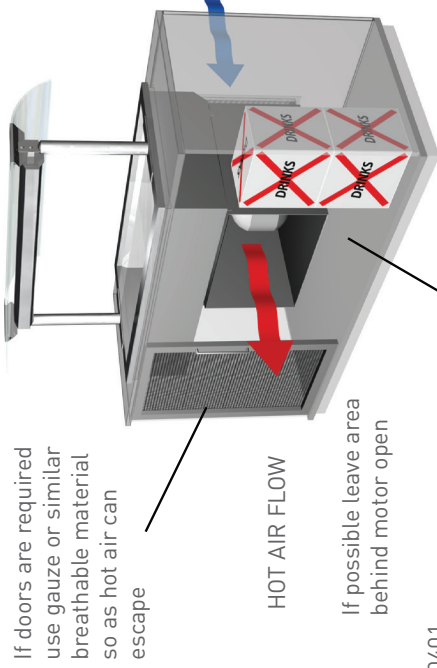


For most efficient air flow use a duct system to direct the ambient air intake directly onto the face of the condenser unit

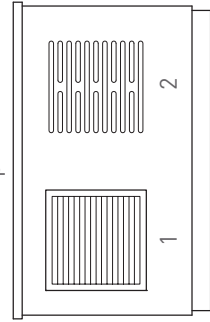
This allows for the condenser to be placed some distance from the front face

Ducted ventilation system built and supplied by customer. Use Cossiga grill X000401

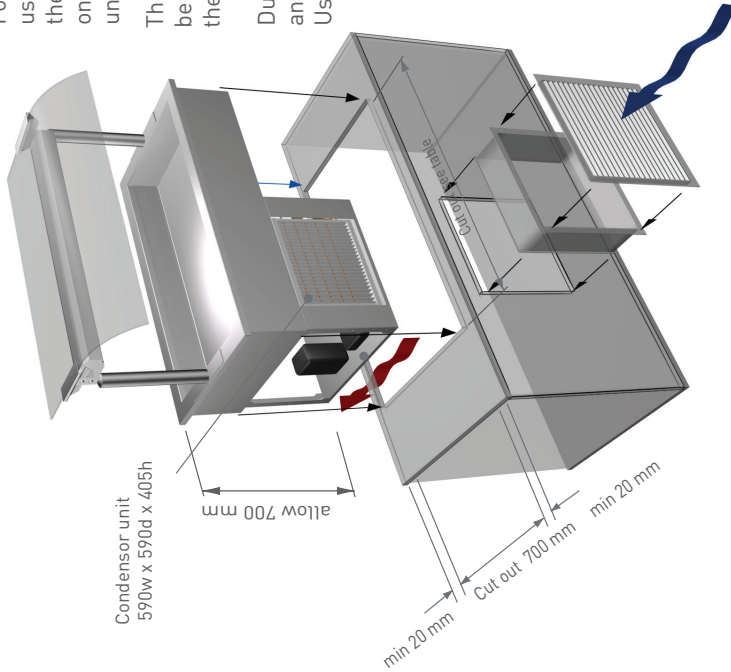
Ventilation option with front grill



If doors are required use gauze or similar breathable material so as hot air can escape



1. Cossiga stainless grills model X000401
2. Routed vent into joinery



* Front joinery or duct must be easily removable for regular cleaning of condenser face

Linear LSRF Drop In Cut Outs

- Vent in standard joinery carcass
- Ducted ventilation system for drop in unit