

# ReFlex ChefBase

SKOPE ChefBase Fridge  
R290



ReFlex ChefBase  
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R290  
Service Manual

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# 1 Servicing Hydrocarbon

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## Overview

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This appliance uses hydrocarbon R290 as its refrigerant. R290 is a natural refrigerant that has a very low environmental impact.

Special service requirements are needed as R290 is a flammable refrigerant.

### Safety hazards

The main hydrocarbon safety hazards are:

- Flammable refrigerant.
- Venting of hydrocarbon and compressor oil.
- Asphyxiation.



Do not interfere with the refrigeration system. All refrigeration maintenance and repairs must be undertaken according to the SKOPE Hydrocarbon Service Requirements below.

### Electrical safety precautions

Correct wiring routing is as important as use of correct components for compliance with safety and radio interference regulations. In order to maintain safety and compliance with regulations, if you disturb any wiring during servicing you must replace and secure it in its original position.

## SKOPE Hydrocarbon Service Requirements

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Servicing must only be performed by Approved SKOPE Service Technicians, and must meet all requirements in the SKOPE Hydrocarbon Service Policy (available from SKOPE), including the following:

- MUST – Ensure all workers are trained in the **safety** of hydrocarbon products to the appropriate level for the work required.
- MUST – Follow all Local Safety Regulations relevant to flammable refrigerant gases.
  - Australia should refer to AIRAH Flammable Refrigerants – Safety Guide.
  - New Zealand should refer to Flammable Refrigerant Safety Documentation (Refrigerant Licence NZ).
- MUST – Adhere to all on-site (workplace) Health and Safety requirements.
- MUST – Not modify or alter the design of SKOPE equipment in any way.
- MUST – In cases where the refrigeration system is not readily removable from the cabinet, send the entire cabinet to the hydrocarbon workshop for repair.
- MUST – *Only* use SKOPE OEM spare parts or identical replacement parts. Any variation in replacement part may render the system non-compliant and unsafe.
- MUST – Follow all best practice work activities for servicing hydrocarbon refrigerants (SKOPE recommends attending specific hydrocarbon refrigeration handling training courses). Nitrogen must be used for purging the system before commencing brazing (“hot work”).
- MUST – Adhere to relevant SKOPE Service Manual. If there is any contradiction, the local regulations take precedence over SKOPE requirements.
- MUST – Work only in suitable, safe and compliant workspaces. Personal protective equipment (PPE) must always be used when working on hydrocarbon equipment.
- MUST – Always carry and use flammable gas detectors when diagnosing refrigeration faults in hydrocarbon equipment.
- MUST – Know where and how to safely and quickly isolate the power supply to cabinet before undertaking any service work.
- MUST – Not perform any brazing etc. (“hot work”) in the field. This is to be completed in a suitable service depot or workshop (in a dedicated, specific hazardous work area compliant with local flammable gas regulations).
- MUST – Not transport a refrigeration system with a known active leak. If there is an active leak the refrigerant must be safely removed (by using bullet piercing valves or line tap valves) before transportation. Valves must be removed at the hydrocarbon service depot once the repair is completed.
- MUST – Have an emergency plan for the hydrocarbon workshop area, which includes suitable evacuation and fire control plans and equipment.
- MUST – Only use refrigerant grade hydrocarbon to the precise mass specified on removable refrigeration system serial label.
- MUST – Be accurate with the refrigerant charge. The refrigerant mass is ultra-low charge and must only be measured with scales which are accurate to +/- 1.0 gram. Refrigerant must **not** be overcharged or added to an already charged system.
- MUST – Use identical drier replacement, as any change will affect the gas charge volume and affect reliability compliance and safety.
- MUST – Only replace pipework with parts which are identical to genuine SKOPE parts.
- MUST – Not introduce a sparking device inside a cabinet or inside a removable refrigeration system. Never use battery drills.
- MUST – Not perform any activity that could stress a refrigeration pipe (unless in a workshop).
- MUST – Get customer authorisation to permanently swap a removable refrigeration system.
- MUST – Have the AoFrio SCS Field app installed on a Bluetooth-enabled device carried by the service technician. (This does not apply to cabinets that do not use the AoFrio controller.)  
The app should be used for safe, accurate diagnosis of the system, and it is required to complete a controller replacement in the field.
- RECOMMENDED – Have the AoFrio SCS Track app installed on a Bluetooth-enabled device carried by the service technician. This passive app collects system data from the AoFrio SCS Connect controller and transmits it to the cloud.
- PERMITTED – Use a logistics company to transport a complete refrigerator where no separation of the refrigeration system occurs. Logistics companies are not required to be contracted to this SKOPE Service Policy.

## 2 Specifications

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### Models

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This service manual applies to the SKOPE ReFlex ChefBase Fridge models listed in the table below. Refer to the relevant product specification sheet (available on the SKOPE website: [www.skope.com](http://www.skope.com)) for specifications.

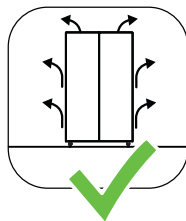
**Table 1: Model specifications**

Model	SKOPE ID	Product description
RF8.CBR.1.2D	RC1R	2-drawer ChefBase Fridge
RF8.CBR.2.4D	RC2R	4-drawer ChefBase Fridge

### 3 Installation

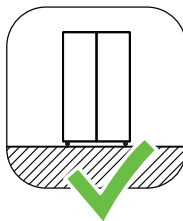
#### Installation Guidelines

When installing this cabinet, ensure you consider and meet the installation guidelines below.



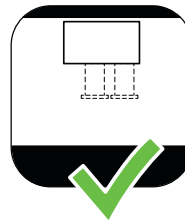
##### Ventilation

Ensure all ventilation requirements below are met.



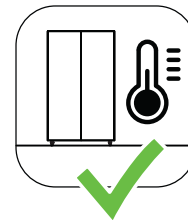
##### Surface

The installation surface must be capable of supporting the loaded cabinet.



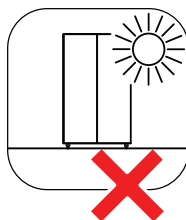
##### Drawer Opening

Allow adequate space for the door/s to open and close properly.



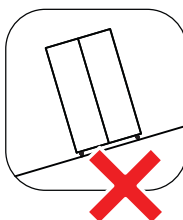
##### Climate Class

The cabinet must be installed in an environment within its climate class. The climate class is stated on the cabinet rating label inside the cabinet.



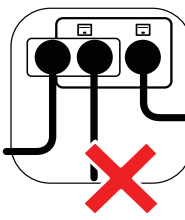
##### Sunlight

Do not install the cabinet in direct sunlight.



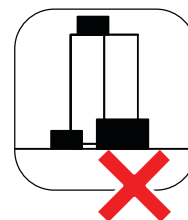
##### Uneven Surface

Do not install the cabinet on an uneven surface.



##### Power Supply

Do not overload the power supply.



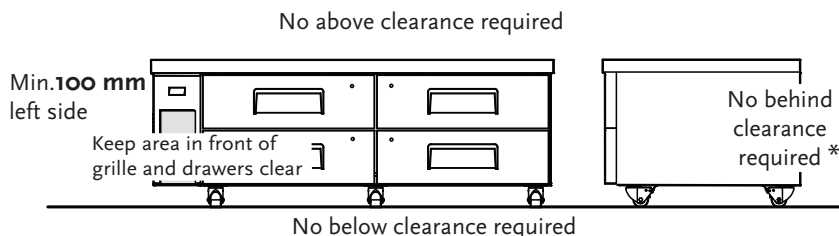
##### Blocking Ventilation

Do not store boxes or items in front of or on top of the cabinet.

#### Ventilation Requirements

This cabinet must have the following ventilation clearances at all times:

##### ChefBase Cabinets



\* When installed for continuous duty in climate class 7 environment (35°C ambient/75% relative humidity), it is recommended to provide 50 mm clearance around the sides and back of the cabinet.



## Cleaning Before First Use

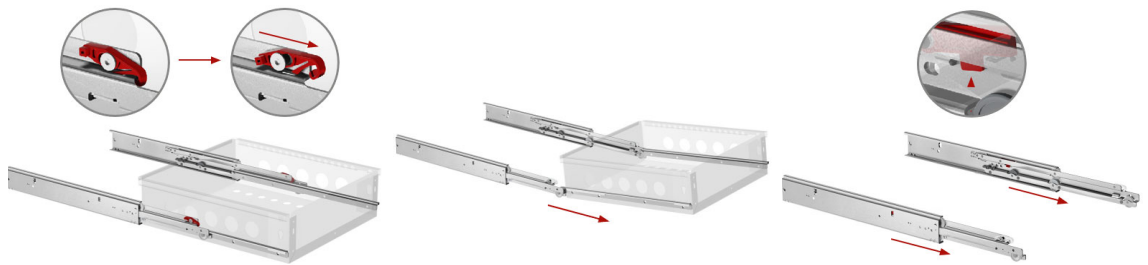
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The cabinet interior and food contact surfaces such as the worktop must be thoroughly cleaned and sanitised before first use. Ensure the cabinet is unplugged from the power supply before cleaning, and use only standard stainless steel cleaners suitable for food preparation areas. If required, the cabinet exterior can be cleaned as instructed in the cleaning section of this service manual (see “Maintenance” on page 40).

## Drawers

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Where fitted, drawers should be removed for cleaning. Pull the drawer out of the cabinet, release latches at side of drawer as shown, and lift the drawer out at an angle. The drawer slider can also be removed by releasing the side catches as shown. Reverse operation to refit drawers to cabinet after cleaning.



## Power Cord

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Before final positioning of the cabinet, pull the power cord out and connect to the mains power supply.

## 4 Electronic Controller

### Overview

The cabinet is fitted with an AoFrio SCS Connect electronic controller. The controller is located in the cartridge compartment and is visible from the outside of the cabinet through the cartridge cover.

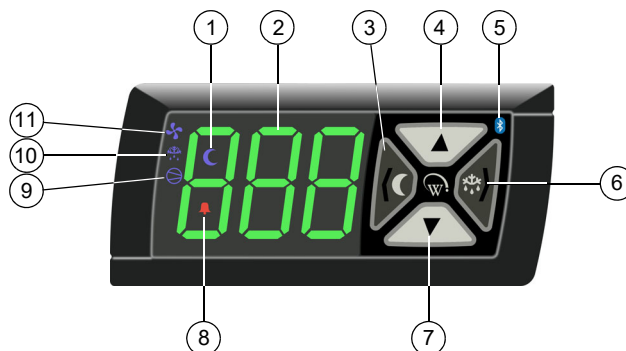
The controller is pre-programmed. SKOPE does not recommend changing the settings unless it is absolutely necessary. To ensure efficient operation, the controller automatically forces a defrost cycle when required.

#### IMPORTANT

The controller must only be adjusted by an authorised service agent.

### Controller Faceplate

**Buttons and Display** The faceplate includes the front display panel and interface buttons.



**Table 2: Controller faceplate**

No.	Description			Use
1	Night mode	Indicator	On during Night mode.	
2	Display	Indicator	Digital display of: <ul style="list-style-type: none"> <li>the cabinet's air (not product) temperature.</li> <li>alarm messages.</li> </ul>	
3	Light switch - Night mode (back/abort)	Button	Used during programming.	<ul style="list-style-type: none"> <li>Press to switch the lights on or off.</li> <li>Press and hold to switch the cabinet between Day and Night modes.</li> </ul>
4	Up	Button	Used during programming.	
5	Bluetooth	Indicator	<ul style="list-style-type: none"> <li>On when ready to connect to a device.</li> <li>Flashing when connected to a device.</li> </ul>	
6	Defrost cycle (next/enter)	Button	Used during programming.	Press and hold to start a manual defrost.
7	Down	Button	Used during programming.	
8	Fault - Alarm	Indicator	On during a fault or alarm.	
9	Compressor	Indicator	On when the compressor is running.	
10	Defrost mode	Indicator	On during the defrost cycle.	
11	Fan	Indicator	On when the fans are running.	

**Service Mode** The service mode can be run using the controller faceplate, but SKOPE strongly recommends using the SCS Connect Field app. You will need a 9-digit PIN to enter the service mode via the controller. If you don't have one, contact your User Manager (Corporate) or SKOPE Customer Services (General Market) to request a PIN.

Service mode includes:

#### **Parameters**

Allows you to access and edit individual controller parameters.

#### **Reset**

Returns the controller back to factory or default settings.

#### **Manual test**

Allows you to see the input values from the sensors, check the effects of output adjustments to peripherals, and run preset test routines.

#### **Statistics**

Displays logged values and event counts for diagnostics and fine tuning.

#### **About**

Lists the properties of the refrigeration system and the controller, including fridge model codes, and firmware, hardware and software versions.

Refer to AoFrio documentation or [MAN80199 "SCS Connect Electronic Controller"](https://tinyurl.com/2s7macbk) (<https://tinyurl.com/2s7macbk>) for further information.

### **Apps**

**SCS Connect Field App** The AoFrio Field app for mobile devices allows technicians to connect and interact with SKOPE equipment that uses the AoFrio SCS Connect electronic controller. The app allows technicians to:

- view the current state of cabinet components (temperatures, compressor and fan motor states).
- view a 7-day history of those states.
- manually change component states.
- update and change controller parameters.
- update controller firmware.

All technicians who service SKOPE equipment fitted with the AoFrio SCS Connect electronic controller are required to have the AoFrio Field app installed on their Bluetooth-enabled mobile device. SKOPE also recommends that all technicians have the AoFrio Track app installed.

See "SCS Connect Field App and Track App" on page 12 for information on setting up and using the app.

**SCS Connect Track App** The AoFrio Track app for mobile devices transfers data from SKOPE equipment that uses the SCS Connect controller to a cloud-based server.

The app works automatically in the background. When the app detects a controller, it connects via Bluetooth to receive data from the controller and send data to the cloud. If no mobile data connection is available, the app stores data until a connection becomes available.

SKOPE recommends that all technicians who service SKOPE equipment fitted with the AoFrio SCS Connect electronic controller have the AoFrio Track app installed on their Bluetooth-enabled mobile device.

**SKOPE -connect App** The SKOPE-connect app is designed for end-users only, and provides wireless access to the controller from mobile devices with Bluetooth capability.

The app allows end users to adjust some electronic controller settings, including energy saving modes, open and closing hours, and pre-set temperature set points for specific product.

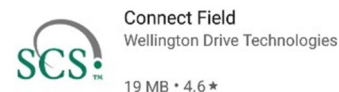
## SCS Connect Field App and Track App

**Connecting** Follow the procedures below to install and set-up the app, and connect to a controller.

**Note:** The SCS Connect Field app and Track app are separate from the SKOPE-connect app.

### Procedure 1: To install the SCS Connect Field app

1. Download the SCS Connect Field app from Google Play Store or Apple App Store.



2. Enter your unique Activation Code, provided by SKOPE customer services, and press "Activate".
3. Enter a 4-digit PIN code, re-enter the code, and press "SET PIN CODE".

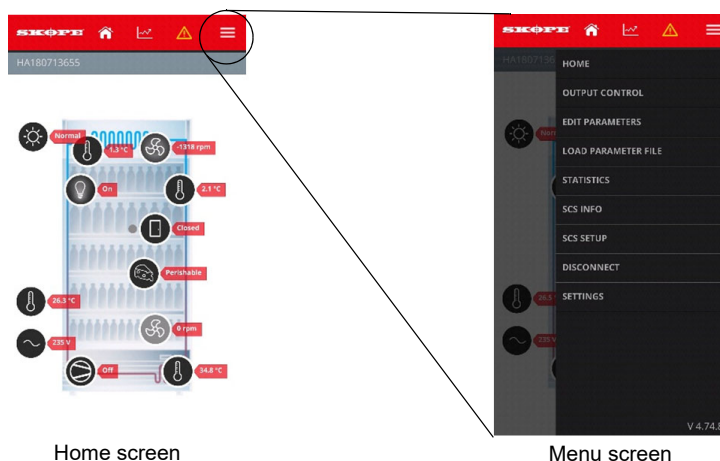
### Procedure 2: To connect to a cabinet

1. Ensure Bluetooth is enabled and you have internet access on your mobile device.

2. The app shows a list of nearby SKOPE cabinets. The signal bars indicate how close each cabinet is.



3. Select the relevant cabinet and press "CONNECT".
4. When successfully connected, a blue light flashes on the controller faceplate and the home screen is displayed in the app.



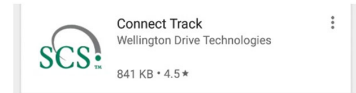
Home screen

Menu screen

**Note:** Available menu options will differ depending on user access levels

### Procedure 3: To install and use the SCS Connect Track app

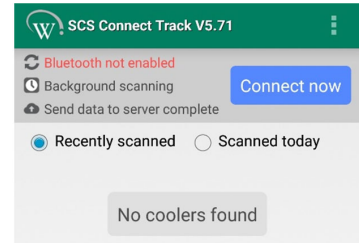
1. Download the SCS Connect Track app from Google Play Store or Apple App Store.



2. Enter your unique Activation Code (the same code as used for SCS Connect Field app) and press "Activate". The activation code is provided by SKOPE Customer Services.

3. Ensure Bluetooth is turned on.

4. Respond to any dialogue boxes that appear and the app should be ready to use.



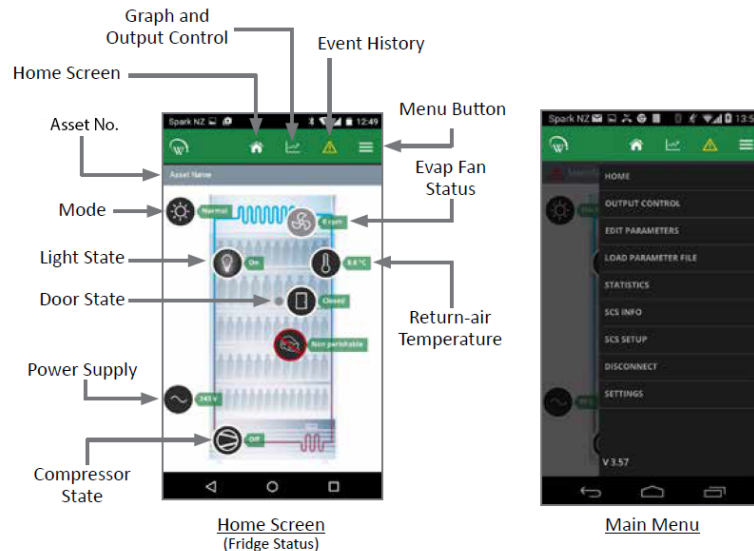
5. The app is passive and runs in the background (it can track automatically). When servicing a cabinet, the app should be opened to ensure tracking has finished prior to servicing.

### App Categories

Various options are available in the app menu to provide information about the connected controller and its cabinet. Depending on user access level, some menu options may not be available.

#### Home screen

The home screen shows a graphical representation of the current state of the cabinet being controlled.



#### Output control

Provides control of the controller input sensors and switches, and output relays.

#### Edit parameters

Provides access and editing of individual controller parameters.

**Note:** Parameter changes must be recorded on warranty/job card.

It is not recommended that parameters are changed unless absolutely necessary. If incorrect parameter settings are suspected, reload the complete parameter set. **Note:** Updated parameters are not applied until DISCONNECT has been selected from the menu (after loading new parameter set).

**Load parameter file**

Allows reloading of model default parameter set or changing to new parameter set. See “Replacing the Controller” on page 31 for instructions. **Note:** Updated parameters are not applied until DISCONNECT has been selected from the menu (after loading new parameter set).

**Statistics**

Information from the past seven days on cabinet activity including temperatures, drawer openings and alarms.

**SCS info**

Controller version and cabinet asset information.

**SCS setup**

Add or change SCS info (see above).

**Disconnect**

Disconnect from currently connected controller.

**Settings**

Change app general settings.

**Table 3: Parameter numbers**

Model number		RF8.CBR.1.2D	RF8.CBR.2.4D
Parameters number	626	✓	✓

## Faults and Alarms

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The following table explains faults and alarms that the electronic controller may log and display.

If a fault occurs, the Fault - Alarm indicator is lit on the controller faceplate, but no message is displayed. Faults do not affect product temperature, and require no action from the shop owner, unless they turn into an alarm.

If an alarm occurs, it is logged, the Fault - Alarm indicator is lit, and the alarm message is displayed on the controller faceplate. Alarms may result in abnormal product temperature.

Some faults and alarms can be cleared by the shop owner, and others can only be cleared by a service technician. Faults and alarms can be cleared by the shop owner by power-cycling the cabinet. However the fault or alarm will only clear if the problem has been fixed. If the problem still exists after a power-cycle, a service technician will need to fix the problem.

If the cabinet is connected to the power supply and has warm product, check the SCS Connect Field App for an active fault or alarm, and investigate. If the cabinet does not have an active fault or alarm, check the app statistics to determine if and when the controller signalled a fault or alarm.

Refer to the tables below for fault and alarm descriptions and possible causes and actions. The service tech type column defines the service tech skill level required to complete a task. Refer to the SKOPE Hydrocarbon Service Policy (available from SKOPE) for service tech type details.

Table 4: Faults (alarm indicator lit, no message displayed)

Description	Service tech type	Possible root cause
Door left open. The door has been open for several minutes.	1, 2, 3, 4	<ul style="list-style-type: none"> <li>• Door not self closing (torsion fault)</li> <li>• Door switch or circuit</li> <li>• Controller</li> </ul>
Excessive door open counts		
Over-voltage protection The maximum allowable mains supply voltage has been exceeded. The cabinet has temporarily shut down to prevent damage and will restart once the supply voltage decreases.	1, 2, 3, 4	Should be a one off. If it continues, consider: <ul style="list-style-type: none"> <li>• Line voltage/rural</li> <li>• Voltage setting parameter</li> <li>• Controller</li> </ul>
Under-voltage protection The mains supply voltage has dropped below the minimum allowable level. The cabinet has temporarily shut down to prevent damage and will restart once the supply voltage increases.	1, 2, 3, 4	Should be a one off. If it continues, consider: <ul style="list-style-type: none"> <li>• Power supply overloaded or multi-box</li> <li>• Line voltage/rural.</li> <li>• Voltage setting parameter</li> <li>• Controller</li> </ul>
High condensing temperature protection The system was operating at an elevated temperature and has temporarily shut down to prevent damage. Extended operation in this condition may result in ALARM 15, increased energy consumption and a reduction in cabinet life. This alarm may be caused by very high ambient temperature.	2, 3, 4	<ul style="list-style-type: none"> <li>• Cabinet installed in location outside rated conditions</li> <li>• Condenser not clean</li> <li>• Poor installation or ventilation</li> <li>• Condenser fan motor or blade</li> <li>• Controller</li> </ul>
Excessive compressor cycling protection The system has been turning on and off too frequently.	2, 3, 4	<ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Cabinet gasket seals leaking</li> <li>• Door not self-closing or gasket leaking</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>

Table 5: Alarms

Code	Description	Service tech type	Possible root cause
dor	Door left open. The door has been open for several minutes. Will revert to door left open FAULT after 10 minutes (see faults table on previous page).	1, 2, 3, 4	<ul style="list-style-type: none"> <li>• Door not self closing (torsion fault)</li> <li>• Door switch or circuit</li> <li>• Controller</li> </ul>
8	Estimated product temperature below allowable range The estimated product temperature has been below the allowable range for longer than the permissible time. Potential causes are: an empty or partially filled cabinet, or low ambient temperature.	1, 2, 3, 4	<ul style="list-style-type: none"> <li>• Low ambient</li> <li>• App settings</li> <li>• Controller</li> </ul>
9	Estimated product temperature above allowable range The estimated product temperature has been above the allowable range for longer than the permissible time. Potential causes are: excessive door openings, door being left open, or warm product loaded into cabinet.	2, 3, 4	<ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Frozen blocked evaporator coil</li> <li>• Door leaking air (bad gasket or door not self-closing)</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• App settings</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>
15	Excessive condensing temperature protection The system was operating at an excessive temperature and has shut down to prevent permanent damage. This alarm may occur due to very high ambient temperature.	2, 3, 4	<ul style="list-style-type: none"> <li>• Cabinet installed in a location outside rated conditions</li> <li>• Condenser not clean</li> <li>• Poor installation or ventilation</li> <li>• Condenser fan motor or blade</li> <li>• Controller</li> </ul>
17	Control probe failure A critical system sensor has failed and the cabinet can no longer operate.	2, 3, 4	<ul style="list-style-type: none"> <li>• Control probe or circuit</li> <li>• Controller</li> </ul>
18	Electrical over-current protection activated The compressor was drawing too much current and has shut down to prevent permanent damage.	2, 3, 4	<ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Cabinet gasket seals leaking</li> <li>• Door not self-closing or gasket leaking</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>
19	Failed to reach set temperature The refrigeration system has been operating continuously for a long period without reaching the set temperature.	2, 3, 4	<p>Take a spare cartridge in case of refrigeration system fault.</p> <ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Frozen blocked evaporator coil</li> <li>• Cabinet seal leaking or door</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>



Table 5: Alarms (continued)

Code	Description	Service tech type	Possible root cause
20	Over cooling product The internal temperature is too low. The system has temporarily shut down until the temperature has returned to normal. This can occur if the set temperature has been raised by a large amount.	1, 2, 3, 4	Confirm if really too cold; change parameters accordingly.
22	Evaporator fan over-current protection The current supplied to the evaporator fan motor is too high.	2, 3, 4	<ul style="list-style-type: none"> <li>Faulty fan motor</li> <li>Fan blade fault (imbalance, debris or blockage)</li> <li>Controller</li> </ul>
23	Condenser fan over-current protection The current supplied to the condenser fan motor is too high.	2, 3, 4	<ul style="list-style-type: none"> <li>Faulty fan motor</li> <li>Fan blade fault (imbalance, debris or blockage)</li> <li>Controller</li> </ul>
24	Controller communication error Controller has lost communication channels.	1, 2, 3, 4	<ul style="list-style-type: none"> <li>App</li> <li>Controller or circuit</li> </ul>
25	Controller update failed Controller update could not be completed.	1, 2, 3, 4	<ul style="list-style-type: none"> <li>App</li> <li>Controller or circuit</li> </ul>
26	Controller hardware failure Controller hardware has failed.	1, 2, 3, 4	<ul style="list-style-type: none"> <li>App</li> <li>Controller or circuit</li> </ul>
27	Probe failure A non-critical system probe has failed. The cabinet will continue to operate with partial function but requires service.	2, 3, 4	<ul style="list-style-type: none"> <li>Evap probe or connections</li> <li>Controller</li> </ul>

Table 5: Alarms (continued)

Code	Description	Service tech type	Possible root cause
28	No downward tendency The temperature is no longer decreasing.	2, 3, 4	<ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Cabinet or cartridge gasket seals leaking</li> <li>• Door not self-closing or gasket leaking</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>
29	Compressor cutting out The compressor cut out on its internal protection or pressure switch.	2, 3, 4	<p>Take a spare cartridge in case of refrigeration system fault.</p> <ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Cabinet, door or cartridge seal leaking</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>
30	Excessive automatic defrosting The system is automatically defrosting too frequently.	2, 3, 4	<p>Take a spare cartridge in case of refrigeration system fault.</p> <ul style="list-style-type: none"> <li>• Door not self-closing or gasket leaking</li> <li>• Evaporator probe</li> <li>• Evaporator motor or fan</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>
31	Compressor stalling The compressor is stalling on start up.	2, 3, 4	<ul style="list-style-type: none"> <li>• Condenser blocked</li> <li>• Poor installation or ventilation</li> <li>• Cabinet gasket seals leaking</li> <li>• Door not self-closing or gasket leaking</li> <li>• Product hot or blocking cabinet airflow</li> <li>• Overloaded from excess door openings or ambience</li> <li>• Fan motor or blade (condenser or evaporator)</li> <li>• Controller</li> <li>• Compressor or gas leak = remove cabinet</li> </ul>

## Notes

[illegible]

## 5 Replacement Procedures

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### Electrical Safety

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#### Caution

Disconnect the cabinet from the mains power supply before attempting **any** maintenance.

Correct wiring routing is as important as using the correct components for compliance with safety and radio interference regulations.

In order to maintain safety and compliance with regulations, make sure you replace any wiring that is disturbed during servicing and secure it back in its original position.

#### Procedure 4: To disconnect the cabinet from the mains power supply

---

1. Switch the cabinet off at the mains power supply.
  2. Unplug the power cord from the mains power supply.
- 

### Drawers

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**Alignment Adjustment** If a drawer is out of alignment, realign it by loosening the top and/or bottom drawer bracket fixing screws, move the drawer as required, and re-tighten the bracket screws.

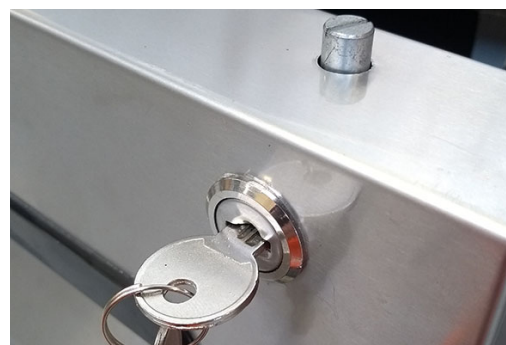
**Drawer Gasket** The one-piece drawer gasket clips into the drawer frame and runs around the perimeter of the drawer. Remove the gasket by peeling it from the drawer frame, starting at a corner.  
If the gasket is out of shape after refitting, use a hair dryer to heat and reshape it.

**Drawer Locks** Each drawer is fitted with a key lock. The lock bolt can be removed and replaced. The lock is foamed into the drawer and cannot be removed.

#### Procedure 5: To replace a drawer lock bolt

---

1. Unlock and open the drawer.
  2. Use a slotted screwdriver to remove or fit the lock bolt to the lock mechanism inside the drawer.
- 



## Castors and Legs

The cabinet is supplied fitted with swivel castors. The front castors are lockable, the rear castors are free. A set of adjustable height legs is also included in the cabinet.

The castors can be removed for plinth mounting or for fitting the height adjustable legs.

### Procedure 6: To remove the castors

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).

2. Raise the cabinet off the ground.

3. Unbolt the castors from the bottom of the cabinet.



### Procedure 7: To fit the height adjustable legs

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).

2. Raise the cabinet off the ground.

3. Fit the supplied legs onto the castor mounting holes.



## Cartridge End Panel

The panel at the left hand end of the cabinet can be replaced.

### Procedure 8: To replace the end panel

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Unscrew and remove the front panel.
  - 2 × screws at the bottom
  - 2 × screws at the top
3. To remove the left hand end panel, unscrew 8 × screws from the side of the cabinet.
4. Fit the replacement end panel.
5. Refit the front panel.

## Refrigeration System

### Before Servicing Overview

Ensure you have read and understood this manual before starting any servicing.

#### Important

- SKOPE hydrocarbon refrigeration systems must only be serviced by appropriately skilled and qualified refrigeration mechanics.
- Servicing a sealed refrigeration system must occur at a hydrocarbon workshop or service area with dedicated hydrocarbon equipment and personal protective equipment (PPE).
- All local hydrocarbon storage and handling regulations and procedures must be followed at all times.

Ensure all electronic controller alarms diagnostics and refrigeration system diagnostics are performed to confirm a refrigeration system fault is present.

Check all components including the electronic controller and electrical systems.

Ensure your work area is well ventilated.

#### IMPORTANT

Use only dedicated hydrocarbon SKOPE OEM spare parts.

**DO NOT** use alternative parts.

For safety compliance, use only SKOPE-supplied components specified for the appliance.



#### Safety hazards

The main hydrocarbon safety hazards are:

- Flammability
- Venting of hydrocarbon and compressor oil
- Asphyxiation

#### Refrigerant identification

Correctly identifying the refrigerant is critical to maintain safety and the correct functioning of the cabinet.

- The cabinet rating label (located in the upper inside of the cabinet) states the refrigerant type.
- Warning labels are fitted to hydrocarbon refrigeration cabinets to indicate the use of hydrocarbon refrigerant.

#### Personal protective equipment (PPE)

Correctly wear or use all PPE required by local regulations and procedures during servicing.

#### Service equipment

Only use dedicated hydrocarbon service equipment which is hydrocarbon-compliant. Electrical equipment that could be exposed to the refrigerant must be intrinsically safe.

In addition to standard tools for accessing and removing parts, specialist tools are required for completing the refrigeration system service tasks in this manual:

- Intrinsically safe refrigeration vacuum pump, rated by the manufacturer as suitable for use with hydrocarbon refrigerant
- Dedicated hydrocarbon gauge set
- Flammable gas detector to warn if flammable refrigerant is present
- Charging scales, rated by the manufacturer as suitable for use with hydrocarbon refrigerant, accurate to 1 gram

**Leak detector**

A leak detector is used to track and locate the source of hydrocarbon gas leaks. It is:

- recommended for servicing hydrocarbon units on-site.
- required for servicing hydrocarbon units off-site.

**Service vehicle**

- Must be suitable for transporting flammable gas.
- Vehicle cargo area:
  - Must be well ventilated to outside the vehicle only.
  - Must have no ignition sources, nor any areas where the gas may pool.
- Must be able to transport swap units.
- Should carry minimum SKOPE hydrocarbon service parts.

**On-site Work** The service technician must have required knowledge, skills, qualifications, and tools before beginning any on-site work on the refrigeration sealed system.

**Minimum knowledge and skills**

- Qualifications and certifications required by local/state regulatory bodies to service hydrocarbon refrigeration systems
- Safe working practices, including a safe working environment at all times

**Minimum tools and equipment**

- Safety signs and/or barrier – suitable to create a safe work zone 1.5 m around the cabinet
- Hydrocarbon gas detector
- Dedicated hydrocarbon gauge set
- Bullet valves/line piercing valves suitable for a 6 mm tube

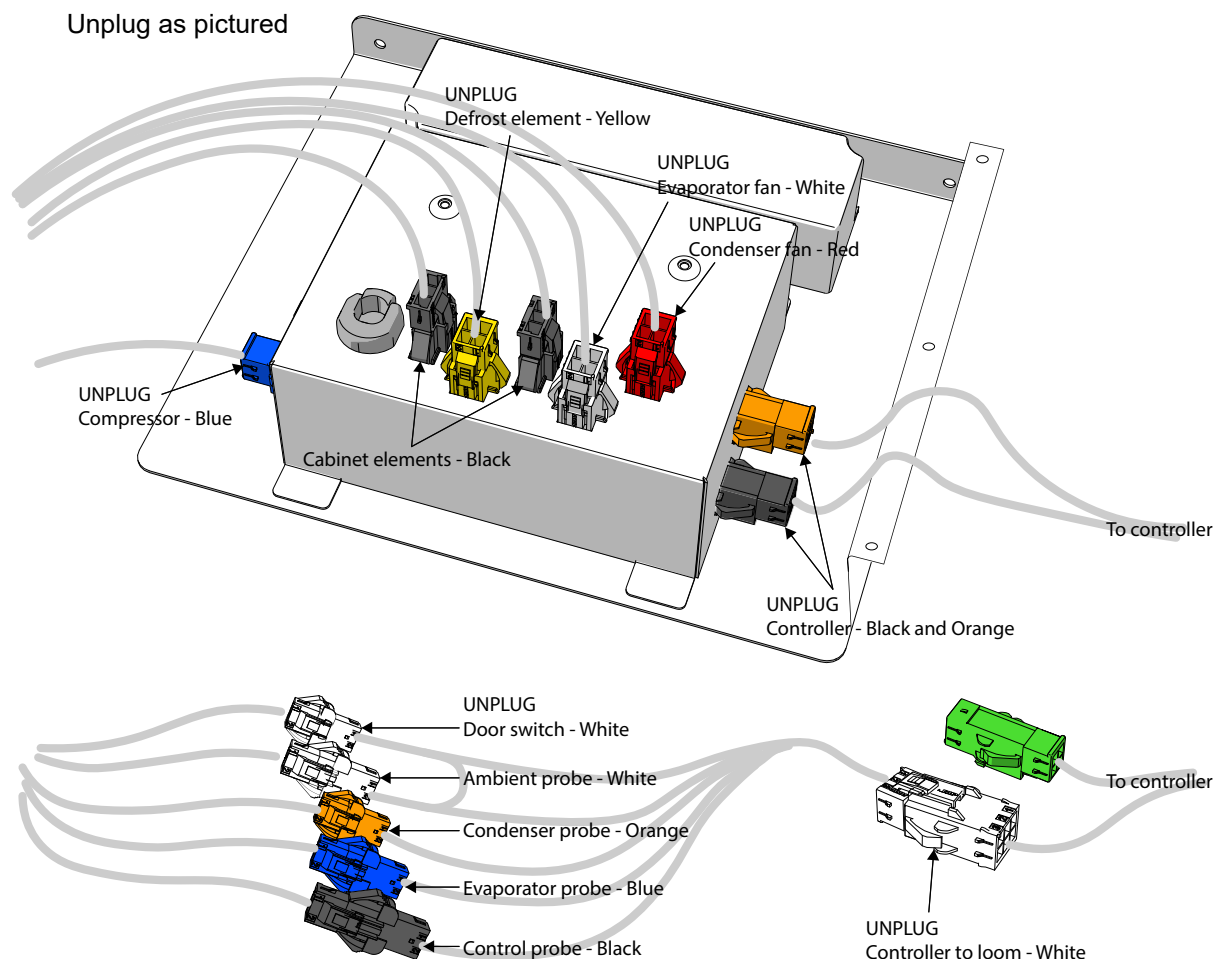
**Off-site Work Hydrocarbon workshop**

The following tools and equipment are required in the hydrocarbon workshop:

- Dedicated area for hazardous work – suitable for servicing and releasing flammable hydrocarbon refrigerant
- Hydrocarbon leak detector
- Refrigeration gauge set – suitable for flammable hydrocarbon refrigerant
- Dry nitrogen – suitable for purging and high pressure testing
- Intrinsically safe refrigeration vacuum pump, rated by the manufacturer as suitable for use with hydrocarbon refrigerant
- Charging scales, rated by the manufacturer as suitable for use with hydrocarbon refrigerant, accurate to 1 gram
- Hydrocarbon refrigerant supply cylinder

## Electrics Panel and Loom Electrical Connections

**Manufactured Feb. 2020 onwards** Due to the use of limited colour connectors, 2 × red 4-way and 2 × yellow 4-way connectors have been used. **Always** ensure you reconnect plugs correctly or operational faults may occur.

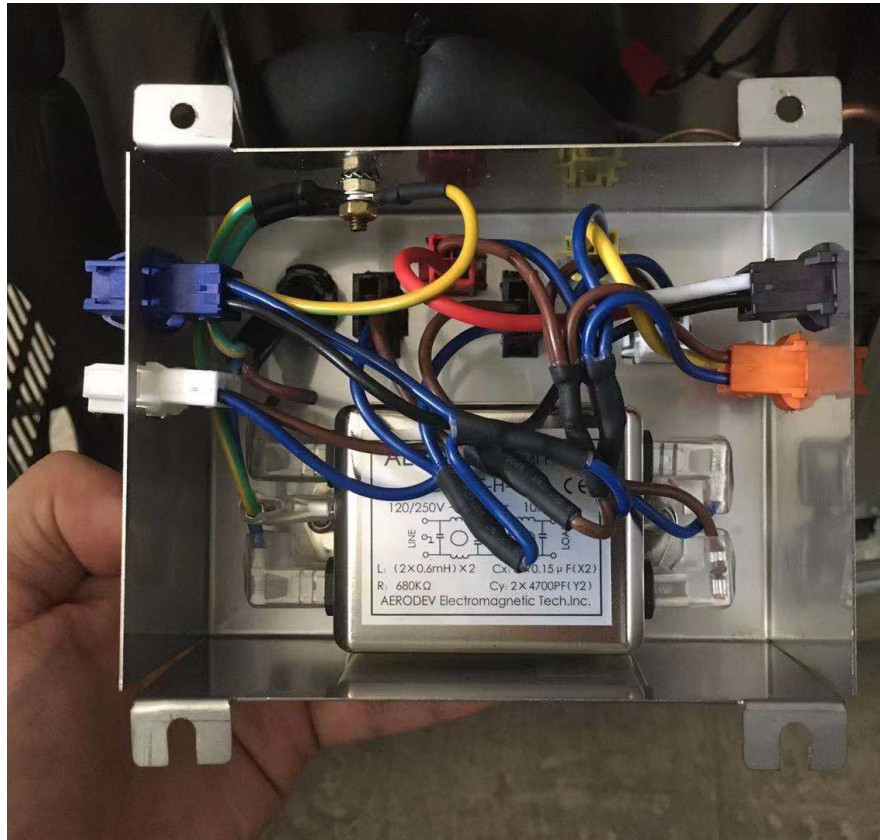


**Cartridge Electrics Panel** The cartridge electrics panel is matched to the cabinet, and must be left with the cabinet when servicing the refrigeration cartridge.

The cartridge electrics panel assembly contains the EMI filter and panel mount socket connectors for the integrated cartridge and cabinet.



Due to the confined space within the electrics box, plugs may come loose as a result of movement and vibrations during servicing. Take care when refitting to ensure all plugs are securely attached to the correct sockets.



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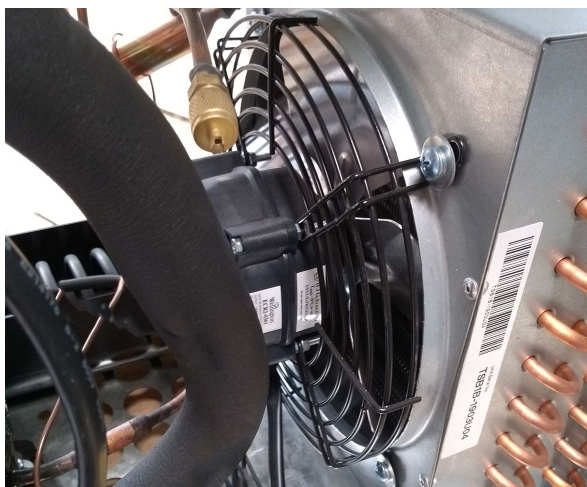
**Procedure 9: To remove the cartridge electrics panel and open the electrics box**

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1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
  2. Remove the left hand end panel (see Procedure 8, "To replace the end panel", on page 21). This will give access to the cartridge electric box.
  3. Unscrew the 4 × screws and lift the electrics box off the cabinet side wall.
-

**Condenser Fan** The condenser fan assembly is made up of a fan motor, fan blade and mounting brackets which can be replaced if necessary.

If the fan stops for any reason, check all connections to ensure no plugs have come loose.



#### **IMPORTANT**

Replace the motor with the same SKOPE OEM part.

**DO NOT** use alternative parts.

It is important that you replace the fan blade and/or fan motor with the same part to ensure safety, correct alignment, refrigeration performance, and compliance. Tighten fan blades to the recommended torque settings (shown in Table 6 below).

**Table 6: Fan motor manufacturer recommended torque settings**

Fan motor manufacturer	Torque setting
Wellington Drive	1.4 Nm

#### **Procedure 10: To access and remove the condenser fan assembly**

##### **Before you start**

Make sure you take note of the cable's routing. SKOPE recommends taking a photograph.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the cartridge cover.
3. Remove the left hand panel (see Procedure 8, "To replace the end panel", on page 21).
4. Remove the centre pillar by unscrewing 2 × screws on the top and 2 × screws on the bottom.
5. Take note of cable routing, then cut the cable ties holding the condenser fan motor cable along the cartridge, and free up the condenser fan motor cable.
6. Unscrew the condenser fan assembly from the condenser coil, and remove the assembly (fan motor, fan blade, mounting brackets) from the cartridge by lifting the shroud up and out.

**Procedure 11: To replace the condenser fan blade**

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the condenser fan assembly (see Procedure 10 on page 26).
3. Remove the screw and washer from the centre of the fan blade, and lift the blade from the motor.
4. Fit the new blade and fix with the 12 mm flat washer and serrated head screw. Tighten the blade screw to the recommended torque setting of 1.4 Nm.
5. Refit the condenser fan assembly to the cartridge.
6. Following the same path as the original cable, secure the condenser fan motor cable with cable ties as necessary.
7. Reassemble the cartridge and test for correct operation.

**Procedure 12: To replace the condenser fan motor**

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the condenser fan assembly (see Procedure 10 on page 26).
3. Remove the condenser fan blade (see Procedure 11 above).
4. Detach the fan motor from the fan mounting brackets by removing the 4 × screws from the mounting bracket.
5. Fit the new condenser fan motor and reattach the fan blade with the 12 mm flat washer and serrated head screw. Tighten the blade screw to the recommended torque setting of 1.4 Nm.
6. Refit the condenser fan assembly to the cartridge.
7. Following the same path as the original cable, secure the condenser fan motor cable with cable ties as necessary.
8. Reassemble the cartridge and test for correct operation.

**Evaporator Fan**

The evaporator fan assembly is a one-piece assembly which can be replaced if necessary.

If the fan stops for any reason, check all connections to ensure no plugs have come loose. Refer to the label on the electrics box cover to identify the evaporator fan plug and socket in the electrics box.

The fan assembly is fixed to evaporator shroud with screws and metal bars.

**IMPORTANT**

Replace the motor with the same SKOPE OEM part.

**Do not** use alternative parts.

It is important that you replace the assembly with the same part to ensure safety, correct alignment and refrigeration performance, and compliance.

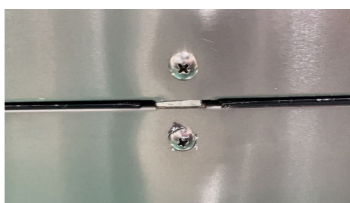
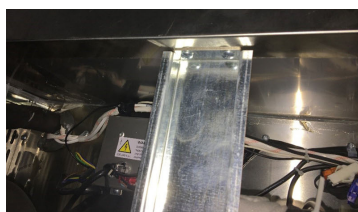
### Procedure 13: To access and replace the evaporator fan assembly

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).

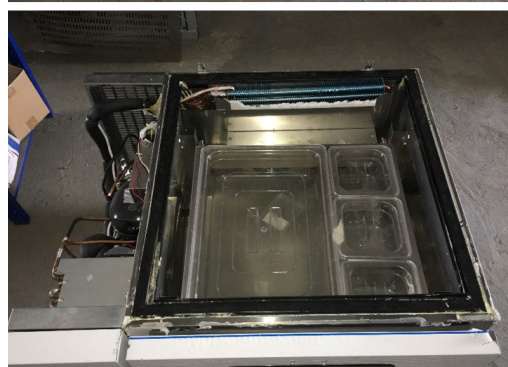
2. Remove the left hand panel (see Procedure 8, "To replace the end panel", on page 21).



3. Remove the benchtop.
  - Unscrew the 2 × bolts on the centre pillar.
  - Unscrew all the benchtop mounting screws on the front and rear of the cabinet.
  - Lift the benchtop off the cabinet.



4. Unscrew the duct mounting screws and remove the duct.



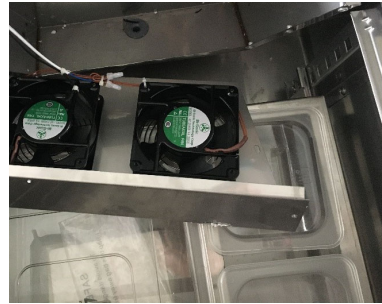
**Procedure 13: To access and replace the evaporator fan assembly (continued)**

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5. Unscrew all the evaporator fan shroud mounting screws.



6. Remove the evaporator assembly.



- 
7. Fit the replacement evaporator fan assembly.
- 
8. Reassemble the cartridge.
- 
9. Reassemble the cabinet following the steps above in reverse, and test for correct operation.
- 

**Compressor** The compressor is located at the back of the refrigeration cartridge. If the compressor is causing excessive noise, check the mountings to ensure there is no damage to the rubber or the washers, nuts and screws.

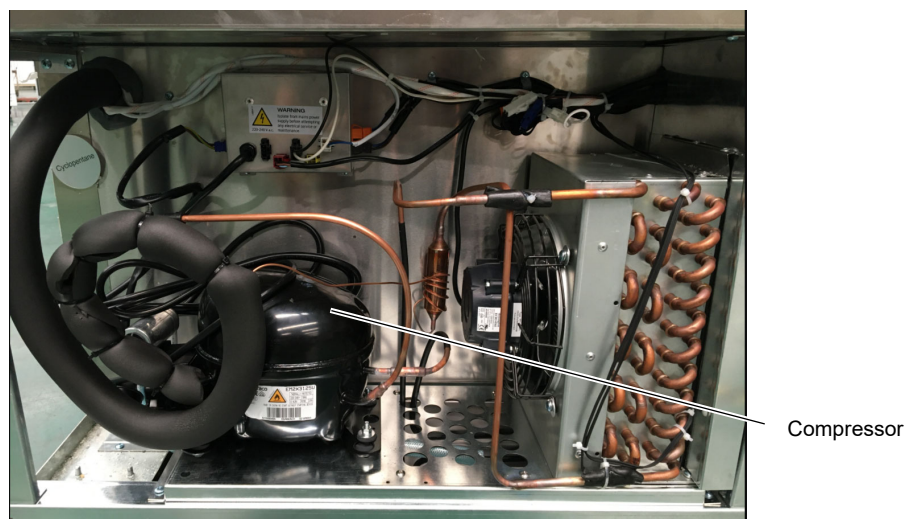
**Before replacing the compressor**

- Check all plug connections and ensure the compressor electrics are operating correctly. The compressor must be supplied with consistent voltage over 220 volts.
- Ensure that the voltage does not drop at start-up. If the voltage does drop, ensure the cartridge has a direct power supply (not from a multi-box or extension cord).
- Generally a faulty compressor may have a distinct hissing sound and run with a very hot body temperature.

**IMPORTANT**

To eliminate possible vibration noise, ensure no pipes touch the cartridge housing or condenser assembly.





## Electronic Controller

The electronic controller and electrics panel are matched to the cabinet, and must be left with the cabinet when servicing the refrigeration cartridge. Only specific components can be replaced in the cartridge.

Different controller parameter sets are used across different cabinet models. Ensure the controller is set up with the correct parameter set for the cabinet model.

**Controller Location** The electronic controller is located on the electrics panel at the front of the refrigeration cartridge.



### Procedure 14: To access and remove the controller

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the cartridge cover from the cabinet.
3. Remove the controller.
  - Press and hold the tabs on each side of the electronic controller to unlock it, and push the controller through the front of the controller box.
  - Unplug the electronic controller from the cartridge.

## Replacing the Controller

Follow the steps below to replace the controller.

**Note:** Replacement spare part electronic controllers are not supplied with the parameter set loaded. This must be loaded via the SCS Connect Field app after replacing the controller. Internet access may be required.

### Procedure 15: To replace the controller

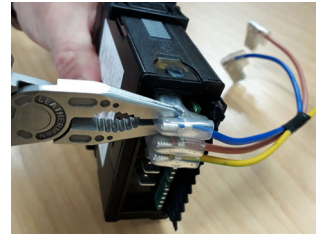
#### Before you start

Make sure you have the appropriate parameter file to load into the new controller.

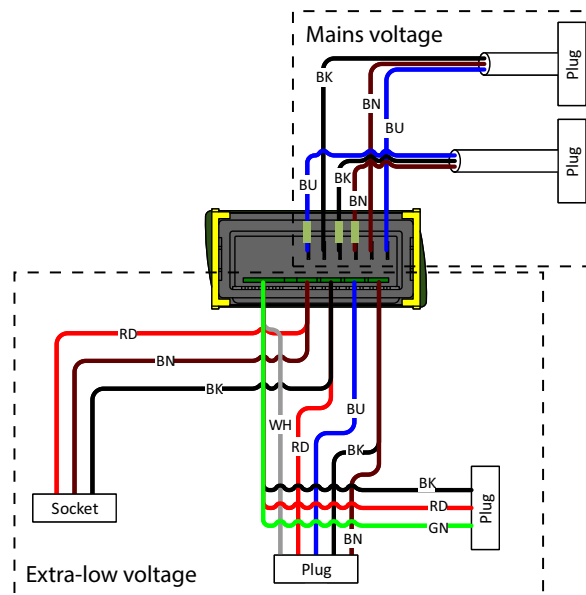
- Open SCS Connect Field app (see “SCS Connect Field App and Track App” on page 12) and check if the parameter file is LOCAL.
- If it is not available in LOCAL, ensure you are connected to the internet, search for it in SERVER, and download to LOCAL.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the electronic controller (see “Controller Location” on page 30).

3. Disconnect the QC terminals from the back of the controller by gently unlocking and removing them with needle nose pliers.



4. Fit the new replacement controller, and connect up the terminals at the back of the controller. Connect extra-low voltage terminals before mains voltage terminals.



5. Reassemble the cartridge, perform an electrical safety test, and reconnect the cabinet to the mains power supply.
6. Use a mobile device to connect to the controller with the SCS Connect Field app (see “SCS Connect Field App and Track App” on page 12).
7. Navigate to the LOAD PARAMETER FILE menu.
8. Select the appropriate parameter file from LOCAL.
9. Confirm you have the correct file and select WRITE TO SCS.

### Procedure 15: To replace the controller (continued)

10. After WRITE TO SCS is complete, select MENU > DISCONNECT to save parameter set on SCS Connect Field app.
11. Power cycle the controller, reconnect via SCS Connect Field app and check that correct parameter set has been applied.
12. Navigate to the SCS SETUP menu and select the model (as per the cabinet rating label).
13. Set up controller and cabinet links as required:
  - Corporate:  
The service tech must link the controller to the cabinet serial number in the SCS Connect Field app.
  - General Market:  
The owner must set up SKOPE-connect (if in use).

**Control Probe** The control probe is clipped to the inside of the evaporator assembly.



### Procedure 16: To replace the control probe

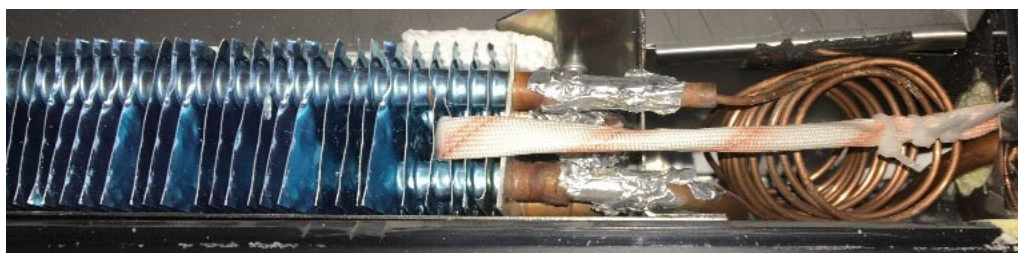
#### Before you start

Make sure you take note of the cable's routing. SKOPE recommends taking a photograph.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Gain access to the evaporator fan assembly (see steps 2 to 3 in Procedure 13, "To access and replace the evaporator fan assembly", on page 28).
3. Take note of cable routing, then carefully cut the cable ties to release the probe cable.
4. Detach the probe from the evaporator assembly, trace it back to its connector and unplug it.
5. Replace the probe.
  - Following the same path as the original probe, fit the new probe with cable ties as necessary.
  - Ensure the probe cable is securely connected and cable-tied in place.
6. Reassemble the cartridge and test for correct operation.



**Evaporator Probe** The evaporator probe is located within the evaporator coil. It controls the refrigeration system defrost initiation and termination.



#### Procedure 17: To replace the evaporator probe

##### Before you start

Make sure you take note of the cable's routing. SKOPE recommends taking a photograph.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Gain access to the evaporator fan assembly (see steps 1 to 2, Procedure 13, "To access and replace the evaporator fan assembly", on page 28).
3. Take note of cable routing, then carefully cut the cable ties to release the probe cable.
4. Carefully separate the coil fins around the probe, remove the probe from the evaporator coil, trace the cable back to its connector and unplug it.
5. Replace the probe, ensuring it is in the same position as the original probe and held securely between the 4th and 5th fins.
6. Following the same path as the original probe cable, fit the new probe cable with cable ties as necessary and plug it in securely to the connector.
7. Reassemble the cartridge and test for correct operation.

**Condenser Probe** The condenser probe is located on the side of the condenser coil.



#### Procedure 18: To replace the condenser probe

##### Before you start

Make sure you take note of the cable's routing. SKOPE recommends taking a photograph.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the left hand end panel (see Procedure 8, "To replace the end panel", on page 21).
3. Take note of the cable routing, then carefully cut the cable ties to release the probe cable.

**Procedure 18: To replace the condenser probe (continued)**

4. Detach the probe from the side of the condenser coil, trace the probe cable back to its connector, and unplug it.
5. Following the same path as the original probe, run the new probe to the condenser coil and secure with cable ties. Position the probe in the same location as the original probe.
6. Reassemble the cartridge and test for correct operation.

**Ambient Probe** The ambient probe is located in front of the condenser coil. It monitors the temperature around the refrigeration cartridge.

**Note:** The ambient probe is wired in series with the door switch.

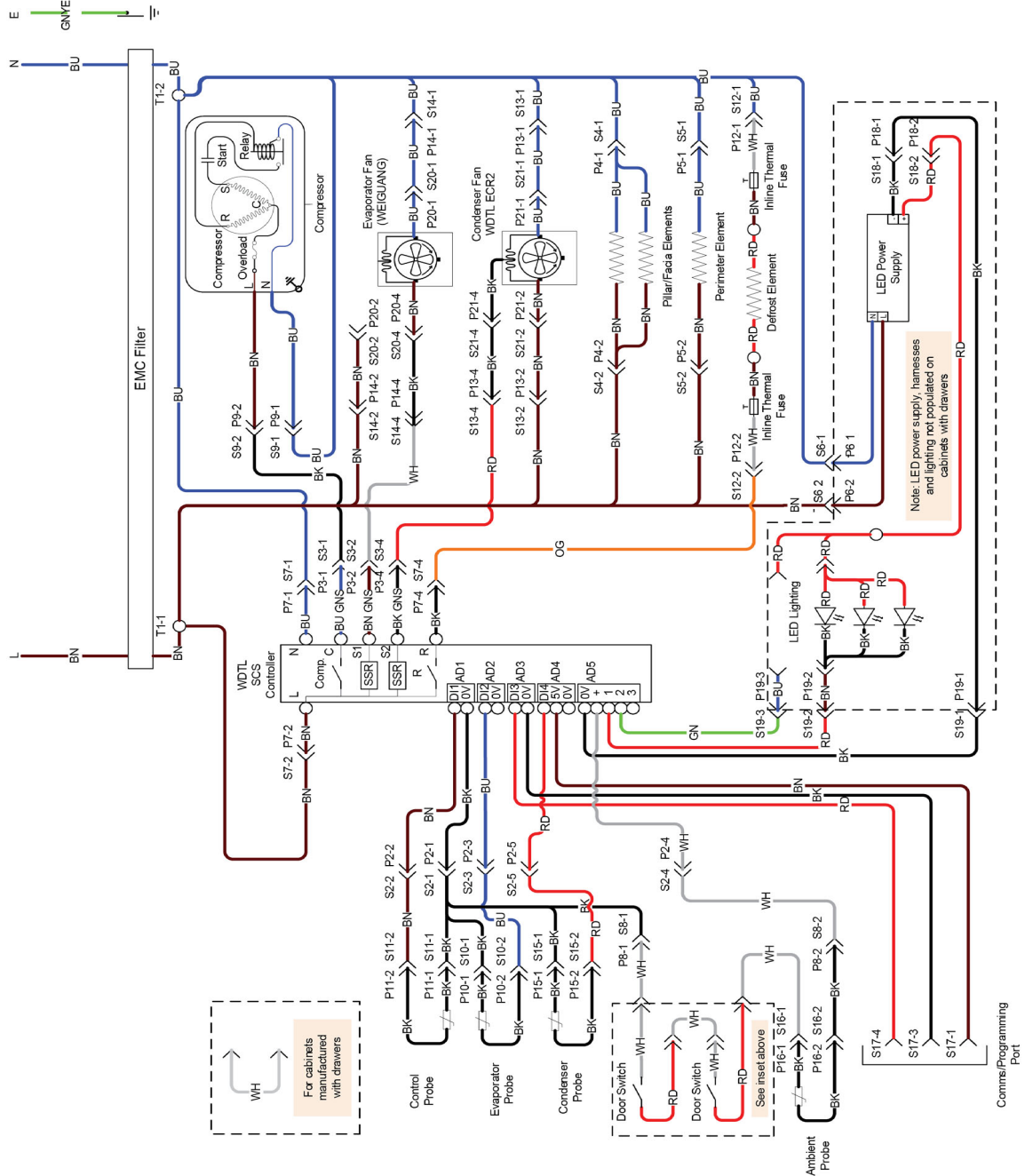
**Procedure 19: To replace the ambient probe****Before you start**

Make sure you take note of the cable's routing. SKOPE recommends taking a photograph.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).
2. Remove the cartridge cover.
3. Remove the left hand panel (see Procedure 8, "To replace the end panel", on page 21).
4. Take note of cable routing, then carefully cut the cable ties to release the probe cable.
5. Detach the probe from the front of the cartridge, trace the probe cable back to its connector and unplug it.
6. Following the same path as the original probe, run the new probe to the condenser coil and secure with cable ties. Position the probe in the same location as the original probe.
7. Reassemble the cartridge and test for correct operation.

## 6 Wiring

### ReFlex ChefBase Fridge



#### Wire colours

BK	Black
BN	Brown
RD	Red
OG	Orange
GN	Green
BU	Blue
GY	Grey
WH	White
GNYE	Green-Yellow

Based upon IEC 757 Standard

**CAUTION**

Some connector colours vary depending on date of manufacture.  
 Refer to the Plug type/colour column in Table 7 below for colour variations.  
 After unplugging connectors, **ALWAYS** ensure reconnection has been undertaken correctly or operational faults may occur. SKOPE recommends that you photograph the wiring setup before unplugging for future reference.

Table 7: Wiring legend

Internal unit junction box sockets/plugs			
Name	Description	Plug type/colour	
		Before Feb. 2020	From Feb. 2020
Inlet	IEC cabinet socket/plug	IEC	IEC
S1/P1	Not used	–	–
S2/P2	Unit junction box to controller signal socket/plug	White 6-way	White 6-way
S3/P3	Unit to controller power socket/plug	Blue 4-way	Black 4-way
S4/P4	Heater wire unit socket/plug	Black 3-way	Black 3-way
S5/P5	Heater wire unit socket/plug 2	Black 3-way	Black 3-way
S6/P6	Light unit socket/plug	White 3-way	White 3-way
S7/P7	Unit to controller power socket/plug 1	Red 4-way	Orange 4-way
S8/P8	Door sensor socket/plug	White 2-way	White 2-way
S9/P9	Compressor unit socket/plug	Blue 4-way	Blue 4-way
S10/P10	Evaporator sensor socket/plug	Black 2-way	Black 2-way
S11/P11	Cabinet sensor socket/plug	Blue 2-way	Blue 2-way
S12/P12	Defrost element socket/plug	Yellow 4-way	Yellow 4-way
S13/P13	Condenser motor unit socket/plug	Red 4-way	Red 4-way
S14/P14	Evaporator motor unit socket/plug	White 4-way	White 4-way
S15/P15	Condenser sensor socket/plug	Red 2-way	Orange 2-way
S16/P16	Ambient sensor socket/plug	White 2-way	White 2-way
S17/P17	Programming/comms port socket	Blue 4-way	Blue 4-way
S18/P18	LED driver DC output socket/plug	Red 2-way	Red 2-way
S19/P19	LED lighting loom socket/plug	Yellow 4-way	Green 4-way
S20/P20	Evaporator extension flex socket/plug	White 4-way	White 4-way
S21/P21	Condenser extension flex socket/plug	Red 4-way	Red 4-way
T1	Unit terminals	–	–

## 7 Spare Parts

### ChefBase Cabinet Assembly

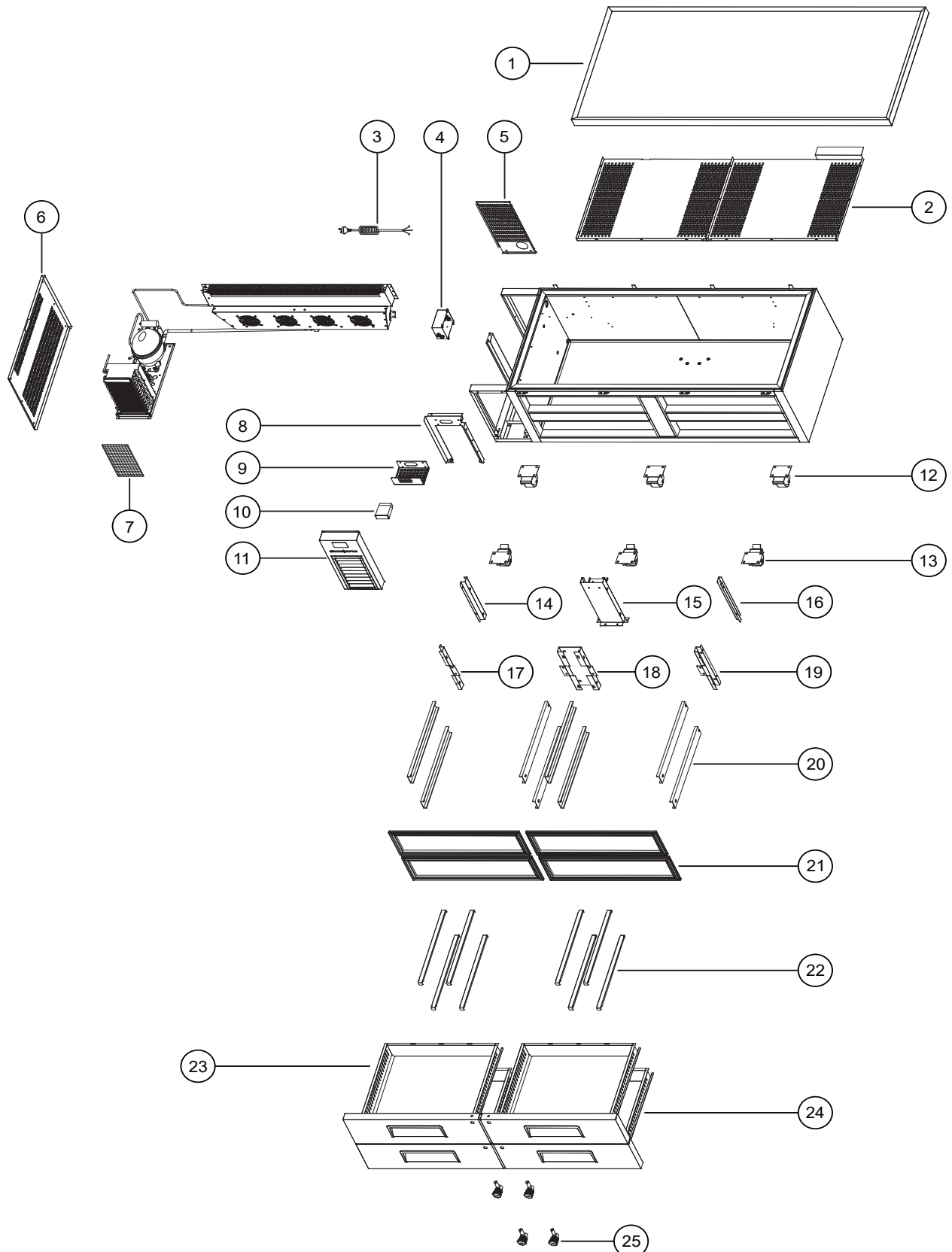
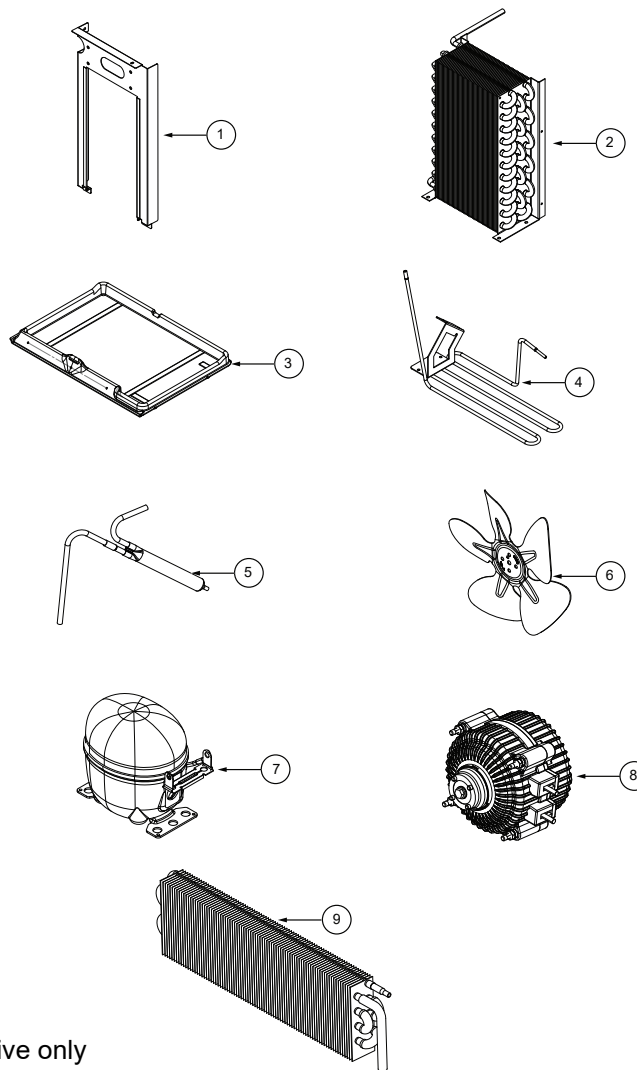


Table 8: Parts – ReFlex ChefBase cabinet assembly

No.	Description	Part No.	RF8.CBR.1.2D	RF8.CBR.2.4D
1	2-drawer bench top (with heat shield)	KN-SSY12433	✓	
	4-drawer bench top (with heat shield)	KN-SSY12406		✓
2	Air duct	KN-SSY12432	✓	✓
3	Mains flex AUS/NZ UP 3M	KN-FLX12382	✓	✓
4	Wiring box – underbench	KN-ELZ12383	✓	✓
5	Cartridge rear panel	KN-CLS12378	✓	✓
6	Cartridge left panel – ChefBase	KN-SSY12404	✓	✓
7	Condenser filter	KN-FIL12387	✓	✓
8	Condenser shield	KN-SXX12379	✓	✓
9	Controller mounting plate – ChefBase	KN-SXX12381	✓	✓
10	WDTL SCS firmware	ELZ11749-1629	✓	✓
11	Louvre panel – ChefBase	KN-SSY12405	✓	✓
12	Castor – unbraked	KN-SXX12408	✓	✓
13	Castor – braked	KN-SXX12407	✓	✓
14	Left back rail – 2-drawer	KN-SSY12429	✓	
	Left back rail – 4-drawer	KN-SSY12393		✓
15	Centre back rail	KN-SSY12394		✓
16	Right back rail – 2-drawer	KN-SSY12430	✓	
	Right back rail – 4-drawer	KN-SSY12395		✓
17	Left front rail – 2-drawer	KN-SSY12428	✓	
	Left front rail – 4-drawer	KN-SSY12396		✓
18	Centre front rail	KN-SSY12397		✓
19	Right front rail – 2-drawer	KN-SSY12427	✓	
	Right front rail – 4-drawer	KN-SSY12398		✓
20	Guide	KN-STY12411	✓	✓
21	Drawer gasket – ChefBase	KN-GKT12413	✓	✓
22	Pan holder	KN-SSY12447	✓	✓
23	Drawer component – left hand lock	KN-SSY12399L		✓
24	Drawer component – right hand lock	KN-SSY12431R	✓	
		KN-SSY12400R		✓
25	Lock pin and key kit	KN-SXX12401	✓	✓
–	Capillary Ø1.0 × 1950 (not shown)	KN-COT12994	✓	✓

## Integrated Cartridge Components



**Note:** Images are indicative only

**Table 9: Parts – Integrated cartridge components**

No.	Description	Part No.	RF8.CBR.1.2D	RF8.CBR.2.4D
1	Condenser shield	KN-SSY12435	✓	✓
2	Condenser coil	KN-CLS12391	✓	✓
3	Condenser tray	KN-ELZ12384	✓	✓
4	Condensate line	KN-FIL12387	✓	✓
5	Filter dryer	KN-DRY12386	✓	✓
6	Condenser fan blade	KN-COT12385	✓	✓
7	Compressor	KN-CPR12100	✓	✓
8	Condenser fan motor	ELM11309	✓	✓
9	Evaporator coil	KN-CLS12392	✓	
		KN-CLS12378		✓
–	Evaporator fan motor (not shown)	KN-ELM12390	✓	✓



## 8 Maintenance

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### Drawers

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Where fitted, remove drawers for cleaning. Pull the drawer out of the cabinet, release the latches at the side of drawer, and lift the drawer out at an angle. You can also remove the drawer slider by releasing the side catches. Reverse the operation to refit drawers to cabinet after cleaning (see "Drawers" on page 9).

### Cabinet

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Ensure you unplug the cabinet from the mains power supply before cleaning.

Wipe the outside of the cabinet, including the gaskets, with a damp cloth, and the inside of the cabinet with standard stainless steel cleaners suitable for food preparation areas. Take care to keep moisture away from electrical parts.

#### **IMPORTANT**

Do **NOT** use abrasive, corrosive or solvent-based cleaners, as they could damage the protective coating on the cabinet exterior.

### Condenser Coil

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The condenser coil must be kept clean. SKOPE strongly recommends monthly cleaning of the condenser coil and air filter. Do **not** use hard or sharp tools to clean the coil as these may cause damage.

#### **WARNING**

Unplug the cabinet from the mains power supply before cleaning the condenser coil.

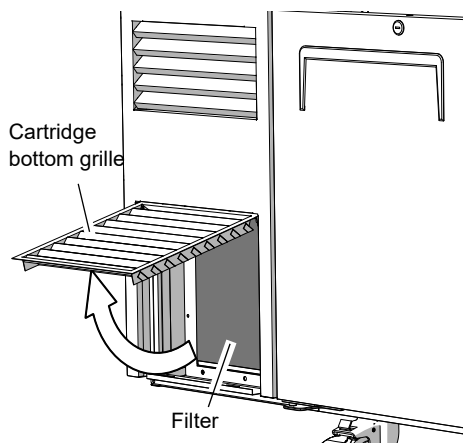


**Procedure 20: To clean the condenser coil and condenser filter**

1. Disconnect the cabinet from the mains power supply (see Procedure 4 on page 20).

The filter is located behind the cartridge bottom grille.

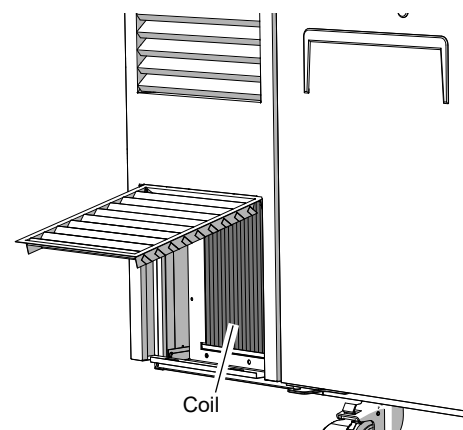
2. Rotate the grille out and slide the filter up and off the cabinet.



3. Clean the filter with a vacuum cleaner, wash with cold water and shake off any excess water before refitting.

- Do **NOT** apply hot water, blow-dry or place in a dishwasher.
- If necessary, discard and refit a new filter.

4. With the cabinet unplugged from the power supply and the filter removed (see steps above), brush the condenser coil with a soft brush to remove any dust and fluff.



5. Refit the filter, close the bottom grille and reconnect the cabinet to the mains power supply.

## 9 Troubleshooting and Diagnostics

### Electronic Controller

Alarms signal unexpected operational changes in the cabinet or cartridge. When an alarm is activated, use the electronic controller app to diagnose the fault, and service as necessary. See "Faults and Alarms" on page 14 for information.

### General Operation

For problems with the cabinet and refrigeration cartridge use Table 10 below. Refer to the relevant section in this service manual for repair instructions.

**Table 10: Cabinet and refrigeration cartridge troubleshooting**

Problem	Possible cause	Repair
<ul style="list-style-type: none"> <li>Cabinet not operating</li> <li>No controller display</li> </ul>	<ul style="list-style-type: none"> <li>Loss of power supply</li> </ul>	<ul style="list-style-type: none"> <li>Check the mains power supply.</li> </ul>
	<ul style="list-style-type: none"> <li>Loose plug</li> </ul>	<ul style="list-style-type: none"> <li>Check that all plugs are connected correctly.</li> </ul>
<ul style="list-style-type: none"> <li>Excess noise vibration</li> </ul>	<ul style="list-style-type: none"> <li>Refrigeration pipes transferring vibration into the cartridge</li> </ul>	<ul style="list-style-type: none"> <li>Re-align pipes away from other parts.</li> </ul>
<ul style="list-style-type: none"> <li>Frozen evaporator coil</li> </ul>	<ul style="list-style-type: none"> <li>Set point is too low</li> </ul>	<ul style="list-style-type: none"> <li>Check and raise the set point.</li> </ul>
	<ul style="list-style-type: none"> <li>Evaporator probe fault</li> </ul>	<ul style="list-style-type: none"> <li>Check and replace the evaporator probe.</li> </ul>
	<ul style="list-style-type: none"> <li>Controller fault</li> </ul>	<ul style="list-style-type: none"> <li>Replace the controller.</li> </ul>
	<ul style="list-style-type: none"> <li>Short of refrigerant</li> </ul>	<ul style="list-style-type: none"> <li>Perform refrigeration system diagnostics (see See "Refrigeration System" on page 43) and service as required.</li> </ul>
<ul style="list-style-type: none"> <li>Power consumption is higher than expected</li> </ul>	<ul style="list-style-type: none"> <li>Refrigeration cartridge is operating too hot</li> </ul>	<ul style="list-style-type: none"> <li>Clean the condenser.</li> <li>Ensure the cabinet has good ventilation around the refrigeration cartridge.</li> <li>Ensure the cabinet is within the maximum operating temperature.</li> </ul>
	<ul style="list-style-type: none"> <li>Cabinet door is opened excessively</li> </ul>	<ul style="list-style-type: none"> <li>Ensure door is closed more often.</li> </ul>
	<ul style="list-style-type: none"> <li>Set point is too low</li> </ul>	<ul style="list-style-type: none"> <li>Raise the set point.</li> </ul>
<ul style="list-style-type: none"> <li>Product is too warm.</li> </ul>	<ul style="list-style-type: none"> <li>Frequent door opening</li> </ul>	<ul style="list-style-type: none"> <li>Limit door openings.</li> </ul>
	<ul style="list-style-type: none"> <li>Recently loaded</li> </ul>	<ul style="list-style-type: none"> <li>Allow time for the product to cool down.</li> </ul>
	<ul style="list-style-type: none"> <li>Door not closing properly</li> </ul>	<ul style="list-style-type: none"> <li>Check and clean the door gasket.</li> </ul>
	<ul style="list-style-type: none"> <li>Refrigeration cartridge is operating too hot</li> <li>Excessive door opening or refrigeration heat load</li> </ul>	<ul style="list-style-type: none"> <li>Ensure the cabinet has good ventilation around the refrigeration cartridge.</li> <li>Ensure the cabinet is within the maximum operating conditions.</li> </ul>
	<ul style="list-style-type: none"> <li>Set point is too high</li> </ul>	<ul style="list-style-type: none"> <li>Lower the set point.</li> </ul>
<ul style="list-style-type: none"> <li>Moisture build-up on door or exterior</li> </ul>	<ul style="list-style-type: none"> <li>High humidity</li> </ul>	<ul style="list-style-type: none"> <li>Check the ambient operating temperature and ventilation requirements, and reposition the cabinet if necessary.</li> </ul>
	<ul style="list-style-type: none"> <li>Frequent door opening</li> </ul>	<ul style="list-style-type: none"> <li>Limit door openings.</li> </ul>
	<ul style="list-style-type: none"> <li>Door not closing properly</li> </ul>	<ul style="list-style-type: none"> <li>Check and clean the door gasket.</li> </ul>

**Table 10: Cabinet and refrigeration cartridge troubleshooting (continued)**

<ul style="list-style-type: none"> <li>• Cabinet door does not shut properly</li> </ul>	<ul style="list-style-type: none"> <li>• Cabinet is on an uneven surface</li> </ul>	<ul style="list-style-type: none"> <li>• Level the cabinet.</li> </ul>
	<ul style="list-style-type: none"> <li>• Door is obstructed</li> </ul>	<ul style="list-style-type: none"> <li>• Check the shelves and product.</li> </ul>
<ul style="list-style-type: none"> <li>• Warm cabinet temperatures</li> <li>• Compressor operating for long periods (more than 1 hour)</li> </ul>	<ul style="list-style-type: none"> <li>• Blocked condenser</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the condenser.</li> </ul>
	<ul style="list-style-type: none"> <li>• Poor ventilation around the refrigeration cartridge</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure the cabinet has good ventilation around the refrigeration cartridge.</li> <li>• Ensure the cabinet is within the maximum operating temperature.</li> </ul>

## Refrigeration System

Unlike other SKOPE cabinets, the ChefBase refrigeration system is integrated into the cabinet and can not be easily removed.

The condensing unit can be easily accessed by removing the side panels. The evaporator can only be removed safely by degassing the entire unit, detaching the entire benchtop, and cutting or detaching the suction line.

A frost-back check can be completed by unplugging cabinet, unplugging the evaporator fan motor (white 4-pin plug) from the electrics box, and then connecting the cabinet back to the power supply. The suction pipe at the compressor should become cold and start to frost up if the cartridge is correctly charged with refrigerant.

# SKOPE Contacts

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