

## BME-N ActiveCore

SKOPE Bottom Mount Fridge  
R290



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R290  
Service Manual

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# 1 Servicing Hydrocarbon

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## Overview

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This fridge uses hydrocarbon (HC) R290 propane as its refrigerant. Hydrocarbon is a natural refrigerant that has a very low environmental impact.

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

### Safety hazards

The main hydrocarbon safety hazards are:

- Flammability
- Venting of hydrocarbon and compressor oil
- Asphyxiation



SKOPE does **not** recommend performing hazardous activities on the refrigeration system. See “Refrigeration Cartridge” on page 30 for more information including examples of hazardous activities.

## 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 HC Service Policy (available from SKOPE), including:

### Hydrocarbon work – SKOPE Service Policy

**It is the responsibility of the service technician to follow SKOPE's Hydrocarbon equipment service policy and by accepting a service work order they agree to the following (where applicable):**

- 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 reference - AIRAH Flammable Refrigerants – Safety Guide
  - New Zealand should reference – Flammable Refrigerant Safety Documentation (Refrigerant License 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; then the entire cabinet MUST be sent 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 recommend attending specific hydrocarbon refrigeration handling training courses). Nitrogen must be used for purging system before commencing “Hot Work” – brazing.
- MUST – Adhere to relevant SKOPE Service Manual. If any contradiction, the local Regulations take precedence over SKOPE requirements
- MUST – Work only in suitable, safe and compliant work spaces. Personal Protective Equipment must always be used when working on Hydrocarbon equipment.
- MUST – Service people diagnosing refrigeration faults must always carry and utilise Flammable Gas detectors when working on Hydrocarbon equipment.
- MUST – Prior to any service work; know where and how to safely and quickly isolate power supply to cabinet
- MUST – Not perform any Hot Work (brazing etc.) in the field. These are to be completed in a suitable service depot / workshop (in a dedicated specific Hazardous Work Area compliant to 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 (with use of Bullet Piercing Valve or Line Tap valves) before transporting. Valves must be removed at the hydrocarbon service depot once repair is completed.
- MUST – All hydrocarbon workshop areas must have emergency plans; that includes suitable evacuation and fire control plans and equipment.
- MUST – Only use refrigerant grade hydrocarbon, to precise mass specified on removable refrigeration system serial label.
- MUST – Be accurate refrigerant charge; The refrigerant mass is ultra-low charge and must only be measured in by accurate scales to +/- 1.0gram. Refrigerant MUST not be overcharged; or added to an already charged system.
- MUST – Use identical drier replacement; as any change will affect gas charge volume; and effect reliability compliance and safety.
- MUST – Any pipework replacement, must be identical to genuine SKOPE parts.
- MUST – Not introduce a sparking device inside a cabinet or inside a removable refrigeration system. Battery drills should not be used.
- 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 Wellington Drive SCS Field app installed on a Bluetooth enabled device carried by the service technician (exception is for cabinets that do not utilise the Wellington Drive Controller). The app should be utilised for safe, accurate diagnosis of the system and it is required to complete a controller replacement in the field.
- RECOMMENDED – Have the Wellington Drive SCS Track app installed on a Bluetooth enabled device carried by the service technician. This passive app collects system data from the Wellington Drive SCS Connect Controller and transmit it to the cloud.
- Logistics companies may be used 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 is applicable to the SKOPE BME ActiveCore bottom mount fridges detailed 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.

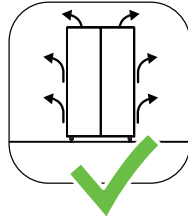
**Table 1: Model specifications**

Series	Model	SKOPE ID
BME600-A ActiveCore	BME600N-A	SM60GYN
	BME600N-AC	SM60BYN
BME1200-A ActiveCore	BME1200N-A	SM12GYN
	BME1200N-AC	SM12BYN

### 3 Installation

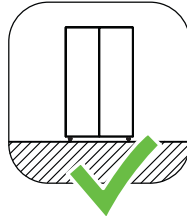
#### Installation Guidelines

When installing this cabinet, ensure the installation guidelines below are considered and met.



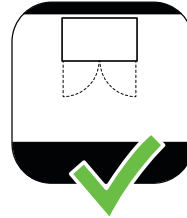
##### Ventilation

Ensure all ventilation requirements below are met.



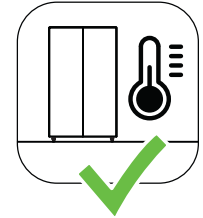
##### Surface

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



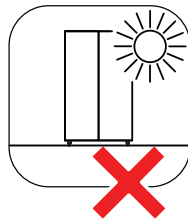
##### Door Opening

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



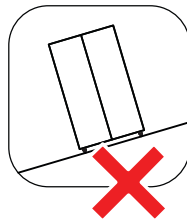
##### Climate Class

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



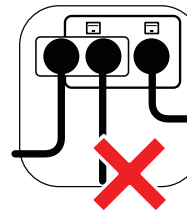
##### Sunlight

Do not install the cabinet in direct sunlight.



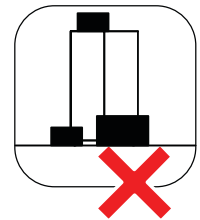
##### Uneven Surface

Do not install the cabinet on an uneven surface.



##### Power Supply

Do not overload the power supply.

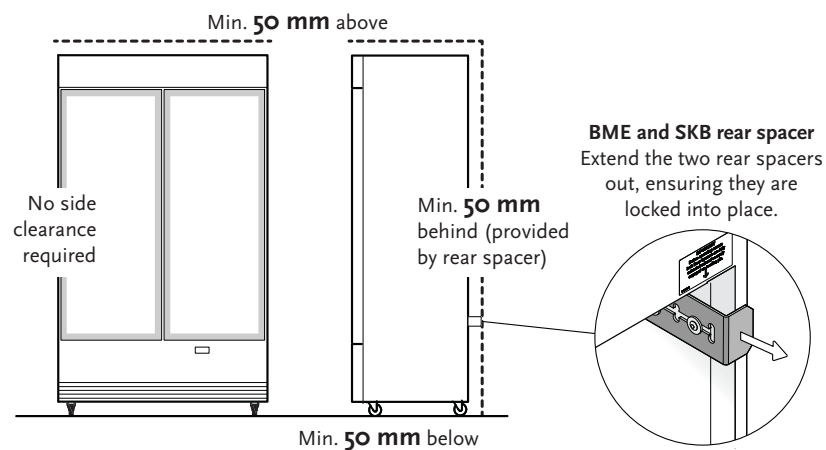


##### Blocking Ventilation

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

#### Ventilation Requirements

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



## Sign Assembly

Depending on the model, the cabinet may be fitted with a lit sign. The sign can be removed for transporting or moving through doorways or confined spaces. Refer to the procedures below to remove and refit the sign assembly.

For sign lighting information, refer to page 24.

### Procedure 1: To remove the sign assembly

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Unplug the sign plug (located behind the sign assembly).
3. Lift the sign assembly off the cabinet.
4. The sign sides can also be removed if required. Remove the sign back strip and loosen the sign side fixing screws to remove the sign sides.

### Procedure 2: To refit the sign assembly

1. Refit the sign sides and sign back strip (if removed).
2. Slot the sign assembly onto the front of the sign sides.
3. Reconnect the sign plug.

## Door Handles

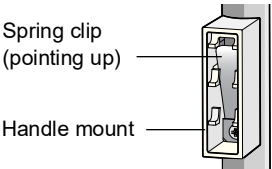
### Fitting Door Handles

For transit purposes the door handles may be packed separately inside the cabinet. If the door handles are packed separately, follow the steps below to fit them to the door/s.

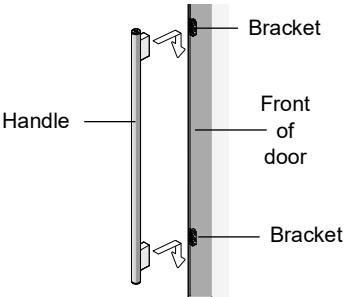
### Procedure 3: To fit a door handle

1. Remove the handle/s from inside the cabinet by carefully cutting the cable ties securing the handle, and remove the packaging.

2. A metal spring clip is fitted inside the handle mounts at each end of the handle. Ensure that the spring clips point up.



3. Place **BOTH** handle mounts simultaneously onto both door brackets.



4. Then push the handle down onto the brackets, until the handle locks into place.

**CAUTION**  
Ensure **BOTH** handle mounts are positioned before pushing down.

### Troubleshooting

- If the handle does not lock into place, check that the spring clips are pointing up and try again.
- If only one end of the handle locks into place, unscrew the door handle (see over page), and refit ensuring both of the handle mounts are located onto the brackets before pushing the handle down and locking into place.

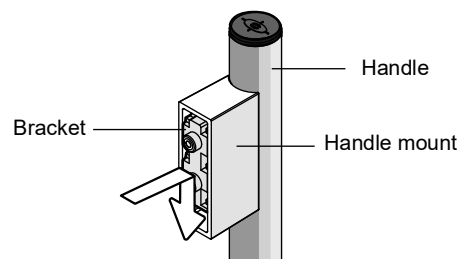
## Removing Door Handles

The door handles can be removed for transporting and moving the cabinet through doorways, or for refitting.

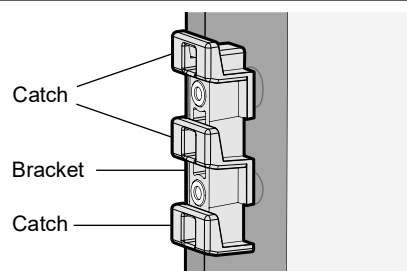
### Procedure 4: To remove a door handle

1. Open the door, and peel back the door gasket from behind the handle mounts on the inside of the door frame.
2. Unscrew the handle mounts through the holes on the inside of the door frame (top and bottom screws only), and remove the handle.

3. Remove the bracket/s from the handle mount by pressing the bracket in and down until it unclips from the handle mount.



4. Fit and screw the bracket/s back onto the door. Ensure the catches are pointing up as pictured.



5. Refit the door gasket by clipping it back into place on the inside of the door frame. If the gasket is out of shape after refitting it, use a hair drier to heat and reshape it.

## Shelves

The cabinet is fitted with five layers of wire shelves which may be positioned at different heights to suit various products.

**Shelf Clips** Each wire shelf is held in place with four shelf clips, which clip in the shelf support strips and slide up and down to the required shelf position.

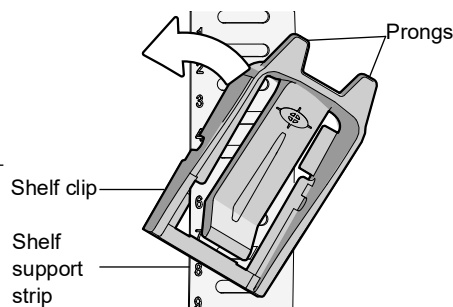
The support strips are numbered to help place the shelf clips. You can see the numbers in the bottom left hand corner of the shelf clip.

### Procedure 5: To fit a shelf clip

The shelf clip twists onto the shelf support strip.

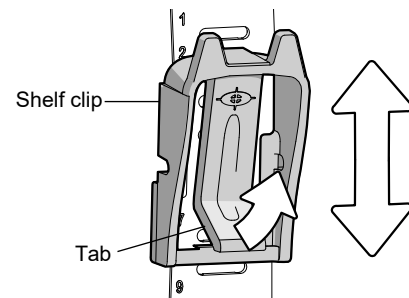
1. Position the shelf clip with the flat side against the shelf support strip and the two prongs pointing up.

2. Twist the top of the clip anticlockwise onto the shelf support strip until it locks in place.



**Procedure 6: To slide a shelf clip up and down**

1. Pull the shelf clip tab up and slide the shelf clip up or down as required.
- 
2. Once in position, ensure the shelf clip is locked into place.
- 

**Procedure 7: To remove a shelf clip**

1. Pull the shelf clip tab up.
- 
2. Twist the top of the clip clockwise off the shelf support strip.
- 

## Repositioning a Shelf

**Procedure 8: To reposition a standard shelf**

1. Unload the shelf and remove it from the cabinet.
- 
2. Slide each shelf clip to the new position in the shelf support strips.
- 
3. Replace the shelf back in the cabinet, and sit it on the shelf clips.
-

4 Electronic Controller

Overview

The cabinet is fitted with an AoFrio SCS Connect electronic controller. The controller is located below the door/s and visible from the outside of the cabinet.

Controller servicing can be performed via the controller faceplate, or the SCS Connect Field app.

Controller Faceplate

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

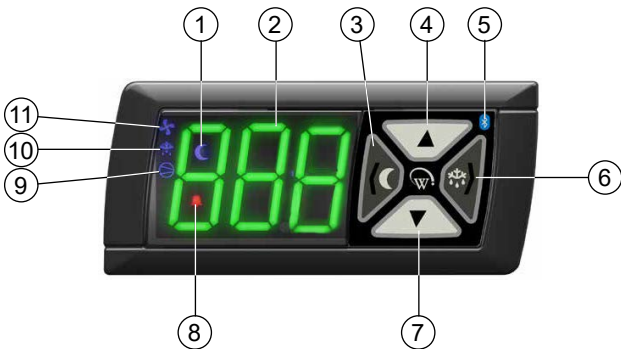


Table 2: Controller faceplate

No.	Description
1	<b>Night Mode:</b> Indicator. On during the cabinet’s night mode.
2	<b>Display:</b> Indicator. Digital display of cabinet air temperature or messages. The temperature is what the sensor inside the cabinet detects, and not necessarily the product temperature. However, they may be very close depending on how the controller is set to sense temperature.
3	<b>Light Switch - Night Mode (back/abort):</b> Button. Press to switch the lights on or off. Press and hold to switch the cabinet between day and night mode. Used during programming.
4	<b>Up:</b> Button. Used for programming.
5	<b>Bluetooth:</b> Indicator. On when ready to connect to a device. Flashing when connected to a device.
6	<b>Defrost Cycle (next/enter):</b> Button. Press and hold to initiate manual defrost. Used during programming.
7	<b>Down:</b> Button. Used for programming.
8	<b>Fault - Alarm:</b> Indicator. On during fault or alarm. Note: Alarm message is also shown on the display during alarm.
9	<b>Compressor:</b> Indicator. On when the compressor is running.
10	<b>Defrost Mode:</b> Indicator. On during defrost cycle.
11	<b>Fan:</b> Indicator. ON when evaporator fan running.

**Service Mode** Service mode can be accessed and used via the SCS Connect Field app (see “AoFrio SCS Field App” on page 13), or the controller faceplate (see below).

**Note:** A 9 digit pin code is required to access service mode via the controller buttons. Contact your User Manager or SKOPE Customer Services to receive your activation code.



**Procedure 9: To enable and use service mode via the controller faceplate**

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1. Press and hold the up and down buttons simultaneously until prompted to enter the 9 digit pin code.
  2. Enter the service mode pin code.
  3. Use the up, down, back/abort and next/enter buttons to navigate to the required category.
- 

The 5 main service mode categories include:

**Parameters**

Allows you to access and edit individual controller parameters.

It is not recommended that parameters are changed unless absolutely necessary. If incorrect parameter settings are suspected, reload the complete parameter set.

**Reset**

Returns the controller back to factory settings. The parameter set must be reloaded after performing a reset.

**Manual test**

Allows you to see the input values from 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 cabinet model codes, firmware, hardware and software versions.

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**SKOPE Connect App**

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The SKOPE-connect app is designed for end-users 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/close hours and preset temperature set points for specific product

Download from the Google Play Store, or Apple App Store.



Apple App  
Store



Google Play  
Store

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**AoFrio SCS Field App**

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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:

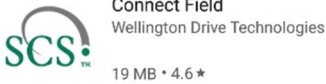
- View the current state of cabinet components (temperatures, compressor and fan motor states).
- View a 7-day history of those states.
- Manually change component states.
- Update and change controller parameters.
- Update controller firmware.

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.

Installation and Connecting

Procedure 10: Installing the SCS Connect Field app

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



Note: The two app versions have minor differences in appearance.

- 2. Enter your unique activation code and press “Activate”. The code is provided to you by your company’s User Manager or SKOPE Customer Services.
- 3. Enter a 4-digit PIN code, re-enter the code, and press “SET PIN CODE”.

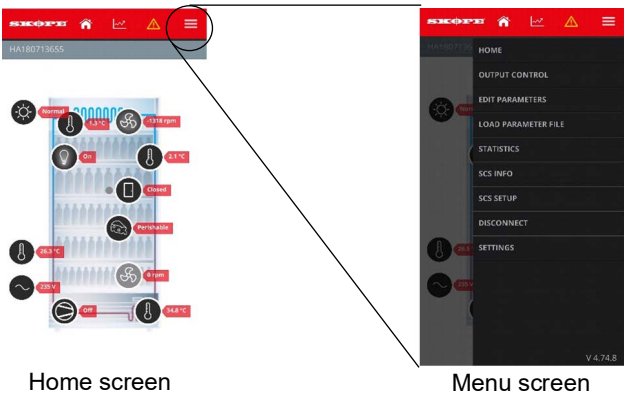
Procedure 11: Connecting to a cabinet

- 1. Ensure Bluetooth is enabled on your mobile device.

- 2. The app shows a list of nearby SKOPE cabinets. The signal bars and number in brackets indicate the proximity of each cabinet.



- 3. Select the cabinet of interest and press ‘CONNECT’.
- 4. When successfully connected, a blue light flashes on the controller faceplate and the home screen is displayed in the app.

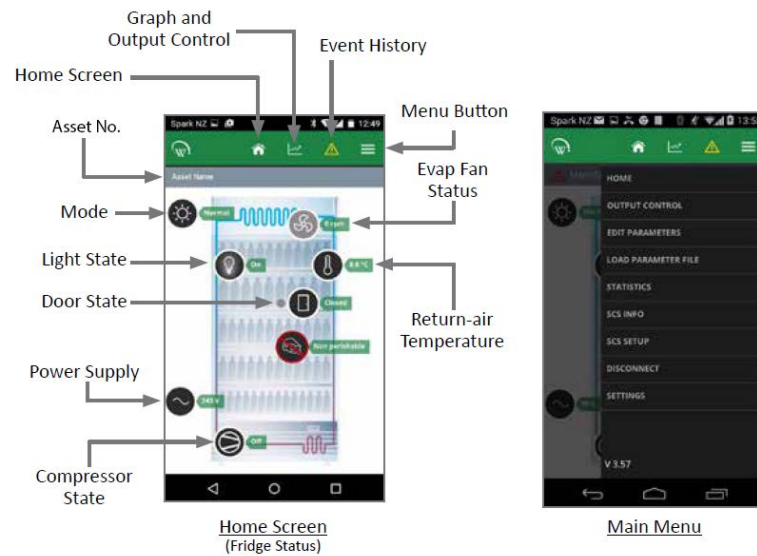


**Note:** Available menu options will differ depending on user access levels

**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 graphic 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 you to reload the default parameter set or change to new parameter set. See "Replacing the Controller" on page 39 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 the cabinet's activity including temperatures, door openings and alarms.

## SCS info

Controller version and asset information.

## SCS setup

Add or change SCS info (see above).

## Disconnect

Disconnect from currently connected controller.

## Settings

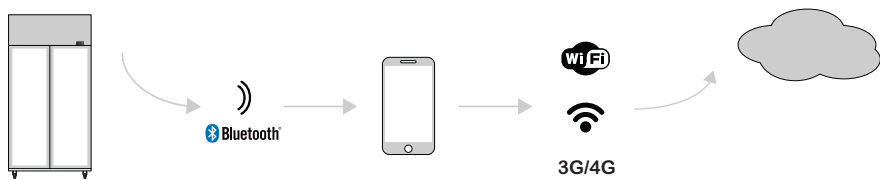
Change app general settings.

# AoFrio 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. All technicians are also required to have the AoFrio Field app installed on their Bluetooth-enabled mobile device.

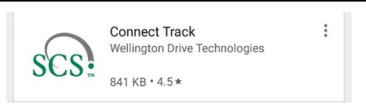


Installation and Use

Procedure 12: Installing the SCS Connect Track app

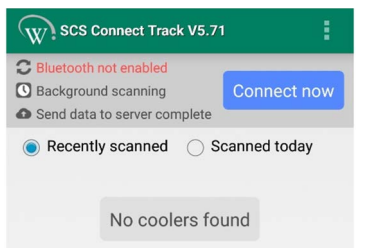
- 1. Download the SCS Connect Track app from Google Play Store or Apple App Store.

**Note:** The two app versions have minor differences in appearance.



- 2. Enter your unique activation code and press “Activate”. The code is provided to you by your company’s User Manager or SKOPE Customer Services.

- 3. Respond to any dialogue boxes that appear and the app should be ready to use.  
If you see the pictured screen you will need to turn on Bluetooth (Android).



- 4. 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 before servicing.

Faults and Alarms

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.

Alarms are logged 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.

If the cabinet is connected to the power supply and has warm product, check the SCS Connect Field app for 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 faults and alarm descriptions and possible causes and actions. The service tech type column refers to the service tech skill level required to complete a task. Refer to the SKOPE HC Service Policy for service tech type details.

Table 3: Faults

Description	Service tech type	Possible root cause
Door left open. The door has been open for several minutes.	1, 2, 3, 4	- Door not self closing (torsion fault)
Excessive door open counts.		- Door switch / circuit - Controller
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 continues: - Line voltage / rural - Voltage setting parameter - Controller
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 continues: - Power supply overloaded / multibox - Line voltage / rural - Voltage setting parameter - Controller
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	NO swap cartridge required - Condenser not clean - Poor installation / ventilation - Condenser fan motor / blade - Controller
Excessive compressor cycling protection. The system has been turning on and off too frequently.	2, 3, 4	Take a spare cartridge in case of refrigeration system fault. - Condenser blocked - Poor installation / ventilation - Cabinet / cartridge gasket seals leaking - Door not self closing / gasket leaking - Product; hot / blocking cabinet airflow - Overloaded from excess door openings / ambient - Fan motor / blade (condenser / evaporator) - Controller - Compressor / gas leak = SWAP cartridge

Table 4: 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 the "Faults" table above).	1, 2, 3, 4	<ul style="list-style-type: none"> <li>- Door not self closing (torsion fault)</li> <li>- Door switch / 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	<p>NO swap cartridge required to be taken (but may be required as fault could still be with sealed refrigeration system)</p> <ul style="list-style-type: none"> <li>- Condenser blocked</li> <li>- Poor installation / ventilation</li> <li>- Frozen blocked evaporator coil</li> <li>- Cartridge gasket leaking (to cabinet seal / lid seal)</li> <li>- Door leaking air (bad gasket / door not self closing)</li> <li>- Product; hot / blocking cabinet airflow</li> <li>- Overloaded from excess door openings / ambient</li> <li>- Fan motor / blade (condenser / evaporator)</li> <li>- App settings</li> <li>- Controller</li> <li>- Compressor / gas leak = arrange SWAP cartridge</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	<p>NO swap cartridge required</p> <ul style="list-style-type: none"> <li>- Condenser not clean</li> <li>- Poor installation / ventilation</li> <li>- Condenser fan motor / 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	<p>NO swap cartridge required</p> <ul style="list-style-type: none"> <li>- Control probe / 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	<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 / ventilation</li> <li>- Cabinet / cartridge gasket seals leaking</li> <li>- Door not self closing / gasket leaking</li> <li>- Product; hot / blocking cabinet airflow</li> <li>- Overloaded from excess door openings / ambient</li> <li>- Fan motor / blade (condenser / evaporator)</li> <li>- Controller</li> <li>- Compressor / gas leak = SWAP cartridge</li> </ul>

Table 4: Alarms (continued)

Code	Description	Service tech type	Possible root cause
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	Take a spare cartridge in case of refrigeration system fault. - Condenser blocked - Poor installation / ventilation - Frozen blocked evaporator coil - Cabinet seal leaking / door / cartridge - Product; hot / blocking cabinet airflow - Overloaded from excess door openings / ambient - Fan motor / blade (condenser / evaporator) - Controller - Compressor / gas leak = SWAP cartridge
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	NO swap cartridge required - Faulty fan motor - Fan blade fault (imbalance / debris / blockage) - Controller
23	Condenser fan over-current protection. The current supplied to the condenser fan motor is too high.	2, 3, 4	NO swap cartridge required - Faulty fan motor - Fan blade fault (imbalance / debris / blockage) - Controller
24	Controller communication error. Controller has lost communication channels.	1, 2, 3, 4	- App - Controller / circuit
25	Controller update failed. Controller update could not be completed.	1, 2, 3, 4	- App - Controller / circuit
26	Controller hardware failure. Controller hardware has failed.	1, 2, 3, 4	- App - Controller / circuit
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	NO swap cartridge required - Evaporator probe / connections - Controller
28	No downward tendency. The temperature is no longer decreasing.	2, 3, 4	Take a spare cartridge in case of refrigeration system fault. - Condenser blocked - Poor installation / ventilation - Cabinet / cartridge gasket seals leaking - Door not self closing / gasket leaking - Product; hot / blocking cabinet airflow - Overloaded from excess door openings / ambient - Fan motor / blade (condenser / evaporator) - Controller - Compressor / gas leak = SWAP cartridge

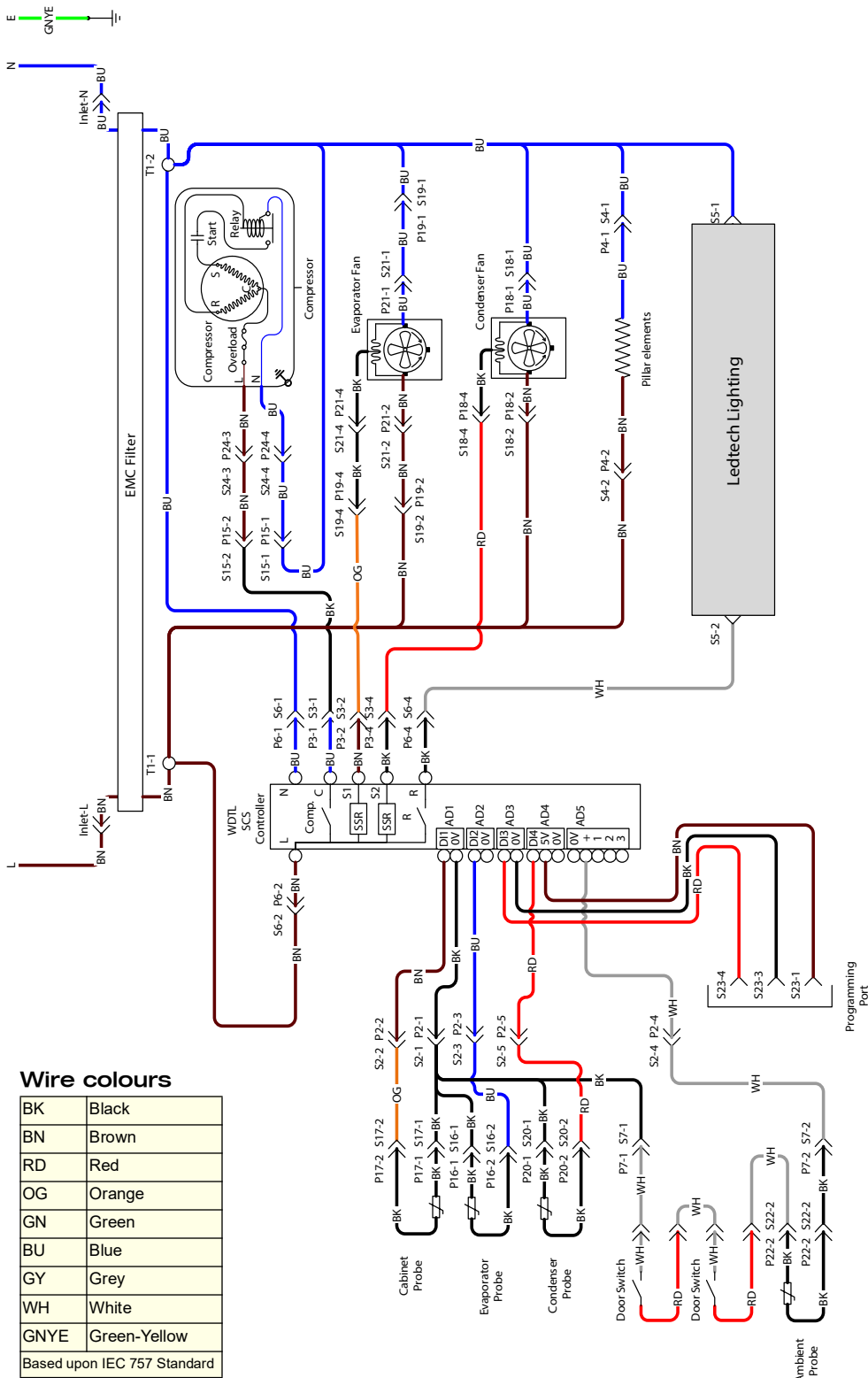
Table 4: Alarms (continued)

Code	Description	Service tech type	Possible root cause
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 / ventilation</li> <li>- Cabinet seal leaking / door / cartridge</li> <li>- Product; hot / blocking cabinet airflow</li> <li>- Overloaded from excess door openings / ambient</li> <li>- Fan motor / blade (condenser / evaporator)</li> <li>- Controller</li> <li>- Compressor / gas leak = SWAP cartridge</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 / gasket leaking</li> <li>- Evaporator probe</li> <li>- Evaporator motor / fan</li> <li>- Controller</li> <li>- Compressor / gas leak = SWAP cartridge</li> </ul>
31	Compressor stalling. The compressor is stalling on start up.	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 / ventilation</li> <li>- Cabinet / cartridge gasket seals leaking</li> <li>- Door not self closing / gasket leaking</li> <li>- Product; hot / blocking cabinet airflow</li> <li>- Overloaded from excess door openings / ambient</li> <li>- Fan motor / blade (condenser / evaporator)</li> <li>- Controller</li> <li>- Compressor / gas leak = SWAP cartridge</li> </ul>



5 Wiring

Model: BME600/1200N-A Series



Legend

Internal Unit	Unit Junction Box Sockets/Plugs	S9/P9	Not Used	S19/P19	Evaporator Motor Unit Socket/Plug (White 4-way)
Inlet	IEC Cabinet Socket/Plug	S10/P10	Not Used	S20/P20	Condenser Sensor Socket/Plug (Red 2-way)
S1/P1	Not Used	S11/P11	Not Used	T1	Unit Terminals
S2/P2	Unit Junction Box to Controller Signal Socket/Plug (6-way)	S12/P12	Not Used	External Sockets/Plugs	
S3/P3	Unit Junction Box to Controller Power Socket/Plug (Blue 4-way)	S13/P13	Not Used	S21/P21	Evaporator Motor Extension Socket/Plug (Red 4-way)
S4/P4	Heater Wire Unit Socket/Plug (Black 3-way)	S14/P14	Not Used	S22/P22	Ambient Sensor Socket/Plug (White 2-way)
S5/P5	Light Unit Socket/Plug (White 3-way)	S15/P15	Compressor Unit Socket/Plug (Blue 4-way)	S23/P23	Programming/Comms Port Socket (Blue 4-way)
S6/P6	Unit Junction Box to Controller Power Socket/Plug 1 (Red 4-way)	S16/P16	Evaporator Sensor Socket/Plug (Black 2-way)	S24/P24	Compressor Electrics Plug
S7/P7	Door Sensor Socket/Plug (White 2-way)	S17/P17	Cabinet Sensor Socket/Plug (Blue 2-way)	S25/P25	LED Driver DC Output Socket/Plug (Red 2-way)
S8/P8	Not Used	S18/P18	Condenser Motor Unit Socket/Plug (Red 4-way)	S26/P26	Heater Wire Extension Flex Socket/Plug (Black 3-way)

## 6 Replacement Procedures

### 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 13: 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.

## Lighting

The cabinet is fitted with LED modular interior lights, and BME-AC models are also fitted with an LED modular sign light. Ensure the light is replaced with the same light type. Fluorescent or LED tubes cannot be used in place of LED modular lights.

### IMPORTANT

Replace the light with the same SKOPE OEM part.

**DO NOT** use alternative LED strip or tube lights, or fluorescent tubes.

Refer to the table below for replacement light specifications.

**Table 5: Light specifications**

Model	Interior light		Sign light	
	Description	Part No.	Description	Part No.
BME600N-A	Interior light	ELL11799	n.a.	n.a.
BME600N-AC			Sign light	ELL11772
BME1200N-A			n.a.	n.a.
BME1200N-AC			Sign light	ELL11800

The lighting is made up of three components which are replaceable:

- LED modular light
- Light power supply (1 per cabinet)
- Interior wiring loom (1 per door)

Power is supplied to the lights by the power supply (located in the refrigeration cartridge compartment) via the wiring loom/s which run up the sidelight channel.

Lighting components are all non-serviceable items. If a component is faulty, it should be removed and a SKOPE OEM new replacement component fitted.

Refer to the diagnostics table below to determine what component may be at fault, and the procedures over the next few pages for component replacement instructions.

Ensure the cabinet is isolated from the mains power supply before cleaning or removing parts.

**Table 6: Lighting fault diagnostics**

Problem	Possible cause	Repair
No lights working. Cabinet is dark.	Lights switched off.	Switch the lights on via the electronic controller faceplate (see page 12), or the app.
	Controller is in Energy Saving mode.	Open the door to bring the controller into Normal mode.
	Controller alarm.	Check the controller for the alarm code.
	Plug not connected properly.	Check and clean the plugs on top of the cabinet.
	Light power supply fault.	Replace the light power supply.
Light component not working.	Plug not connected properly.	Check and clean the plug connection in the side light channel, behind the loom cover.
	Faulty light.	Replace the light.
Segment of light not working.	Faulty light.	Replace the light.

**Procedure 14: To replace an interior light component**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Unplug the light, and remove the light from the plastic casing.
3. Clip the replacement light into place on the plastic casing, ensuring the male end of the light is at the bottom, and plug the light in.
4. Ensure the light is firmly and completely clipped in.
5. Reconnect to the mains power supply and check for correct operation.

**Procedure 15: To replace the light power supply**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the front panel to gain access to the refrigeration cartridge compartment. If required (one door models), remove the refrigeration cartridge (see page 32).
3. Remove the light power supply.
4. Replace the light power supply and reassemble.

**Procedure 16: To replace an interior wiring loom**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Unplug the light from the wire loom.
3. Gain access to the light power supply (see procedure above).
4. Unplug the wiring loom from the light power supply, and if applicable the sign light.
5. Remove the loom by pulling it through the hole in the cabinet interior base.
6. Refit the new loom and reassemble. Ensure that:
  - all plugs are clean, correctly fitted and plugged in.
  - the hole is completely sealed with putty.

**Sign Light** The sign is lit by an LED modular light which can be replaced by following the steps below.

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**Procedure 17: To replace the sign light**

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1. Disconnect the cabinet from the mains power supply (see page 22).
  2. Undo the two fixing screws from the sign top cover and remove the top cover.
  3. Remove the front sign panel/decals by sliding them up and out of the sign.
  4. Remove the sign cover from the top of the sign.
  5. Remove additional sign panel by sliding up and out of the sign.
  6. Cut the cable tie holding the light cable at the back of the sign.
- 

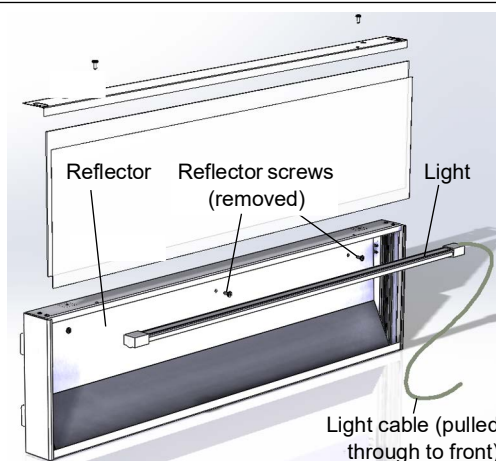
7. Undo the two most right hand sign reflector screws.
- 

8. Carefully pull the light plug and cable through to the front of the sign, manipulating the reflector as required.
- 

9. Unclip and replace the light.
- 

10. Push the light plug and cable back through behind the reflector and hole at the back of the sign, and cable-tie in place.
- 

11. Reassemble the sign, reconnect to the mains power supply and check for correct operation.
- 




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## Doors

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**WARNING**

For safe door operation the door bottom hinge bracket must always be fitted with a split pin.

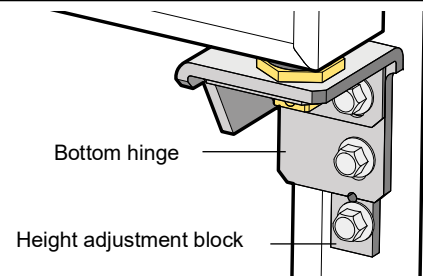
**Alignment Adjustment** If a door is out of alignment, realign it by loosening the top hinge bracket fixing screws, and move the top of the door as required.

**Height Adjustment** A height adjustment block is fitted below the bottom hinge. As standard, the notched edges on the bottom of the hinge and the top of the height adjustment block align to set the door to the correct level.

**Procedure 18: To adjust the door height**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Unscrew and remove the kick panel.

3. Loosen the bottom hinge, and remove the height adjustment block.



4. Set the door to the correct height, rotate and refit the height adjustment block to the most appropriate setting and tighten up the bottom hinge screws.
5. Refit the kick panel.

**Replacing the Gasket**

The one-piece door gasket clips into the door frame and runs around the perimeter of the door. Remove the gasket by peeling it from the door frame, starting at a corner.

If the gasket is out of shape after refitting, use a hair dryer to heat and reshape it.

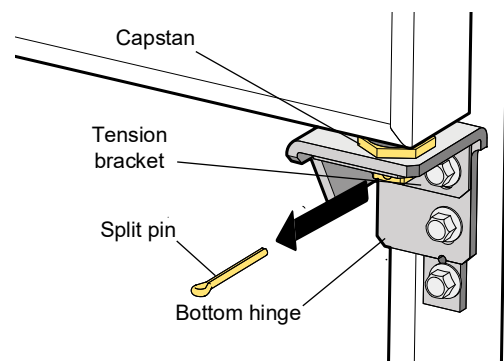
**Removing and Refitting the Door**

For ease of servicing and to reverse the hinging (hinge reversal on one-door cabinets only), you can remove the door from the cabinet. Refer to image below for door hinging components.

**Procedure 19: To remove the door**

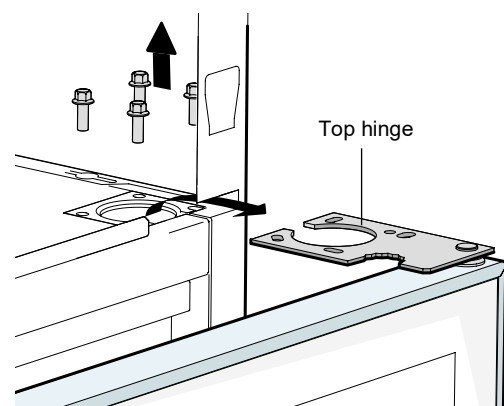
1. Disconnect the cabinet from the mains power supply (see page 22).
2. If present, remove the sign panel and kick panel.

3. Remove the split pin from the capstan at the bottom hinge.



4. Undo the top bolt from the hinge, and carefully remove the tension bracket. **Warning:** Take care of the capstan, which will spin as tension is relieved.

5. Unscrew the top hinge, and lift the door up and off the cabinet.



**Procedure 20: To refit the door**

1. Lift the door onto the bottom hinge.
2. Fit the top hinge spacer to the top of the door, to fit under the top hinge.
3. Fit the top hinge on top of the spacer, and partially fix in place on the top of the cabinet. Align the door with the cabinet and tighten the fixing screws.
4. Apply tension to the door (see steps 3, 4 and 5 in Procedure 22).

Outside doors only, not applicable to a middle door:

5. Fit the height adjustment block to the bottom screw hole. As standard, the notched edges on the bottom of the hinge and the top of the height adjustment block align to set the door to the correct level.
6. If necessary, rotate the height adjustment block to level the door.

**Procedure 21: To replace the top hinge bracket**

1. Remove the door (see Procedure 19, on page 25).
2. Remove the top hinge from the top of the door and replace.
3. Refit the door (see Procedure 20, on page 26).

**Adjusting Door Tension** The door has an internal torsion bar, pre-tensioned at the factory, that lets the door self-close. If necessary, the door tension can be further adjusted by rotating the capstan mounted in the bottom hinge bracket.

**Procedure 22: To adjust the door tension**

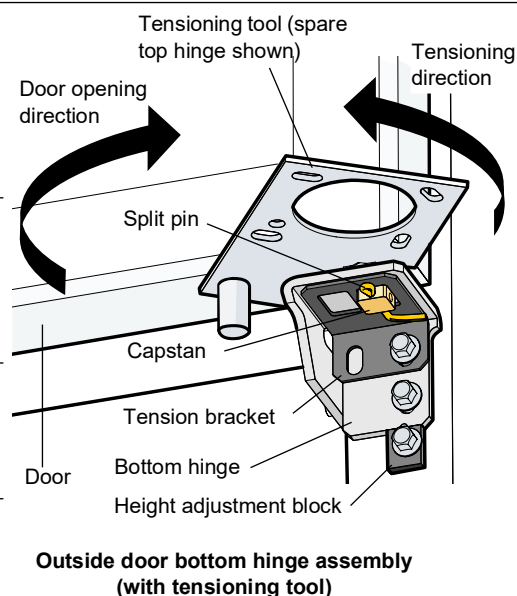
1. Remove the split pin from the capstan at the bottom hinge.
2. Remove the tension bracket from the bottom hinge.
3. Use a tool to apply tension to the door via the capstan. The top hinge has a cut out for tensioning (if a spare top hinge is available), however this is not suitable for the middle door bottom hinge on three door models.

4. First, rotate the capstan against the door opening direction to remove any slack. Once resistance is felt, continue to rotate 180° to provide tension.

5. While holding door tension on the capstan, fit the tension bracket so that it supports the door tension on the capstan.

6. Fit the split pin through the hole in the capstan to lock the door in place.

7. Check door tension by holding the door open about 100 mm and letting it go. The door should gently close, with the gasket forming an airtight seal with the cabinet.



## Replacing the Torsion Bar

When the door tension can no longer be adjusted, replace the torsion bar.

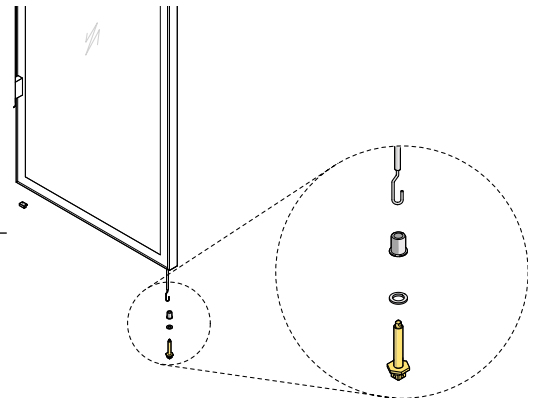
### Procedure 23: To replace the torsion bar

1. Remove the door from the cabinet (see Procedure 19, on page 25).

2. Lever the capstan, bush and bush washer from the bottom of the door, and unhook from the torsion bar.

**Note:** The torsion bar cannot easily be removed from the door. Push it into the door frame.

3. Fit the capstan, bush and bush washer to the new torsion bar, and fit this assembly into the bottom of the door.



4. Refit the door (see Procedure 20, on page 26).

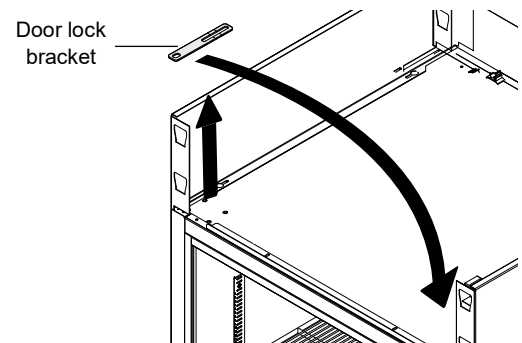
## Hinge Reversal

Single glass door standard (non-tropical) cabinets only. The cabinet is supplied with the door hinged on the right hand side. If required, the hinge can be swapped to the left hand side. Some spare parts are required to complete the procedure, and are available in the Left Hand Hinge Reversal Kit (see page 45 for part kit numbers).

### Procedure 24: To reverse the door hinging

1. Remove the door from the cabinet (see Procedure 19, on page 25).

2. Remove the door lock bracket from the top of the cabinet and fit to the other side.



**Procedure 24: To reverse the door hinging (continued)**

3. Remove the bottom hinge, tension bracket and height adjustment block. Retain the tension bracket and height adjustment block (these are fitted to the opposite side once the door is refitted). You can discard the bottom hinge.

4. Unplug the door switch cable from the cabinet. The door switch bracket is fitted to the door switch bracket, below the door.

5. Fit the new bottom hinge.  
**Note:** The topmost screw can be left off until the tension bracket is fitted, later on in the procedure.

6. Remove the door lock bracket, and fit to the opposite end of the door.

7. Remove the bush and keep for the opposite end of the door.

8. Remove the capstan, bush, and bush washer, and unhook from the torsion bar.  
**Note:** The torsion bar cannot easily be removed from the door. Push the torsion bar into the door frame.

9. Fit the capstan, bush and bush washer to the new torsion bar, and fit this assembly to the opposite end of the door.

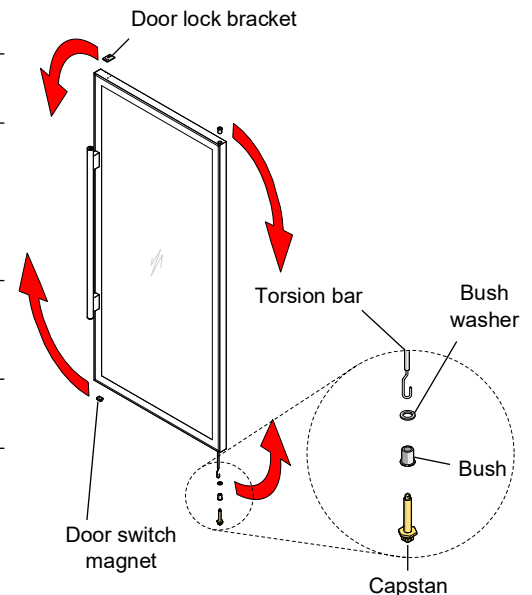
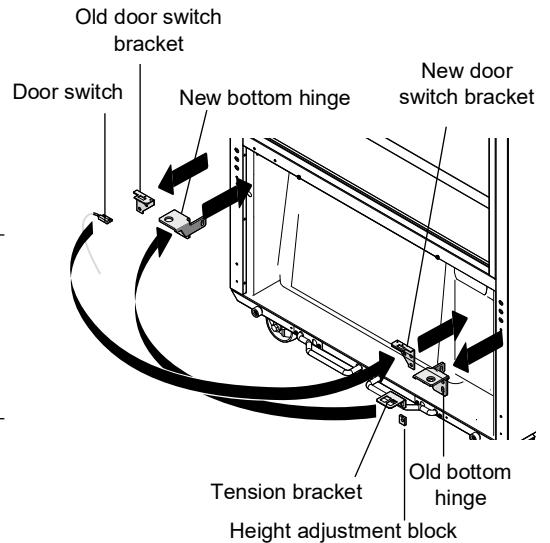
10. Fit the bush (retained from step 7) to the end of the door, opposite the capstan.

11. Remove the door switch magnet from the end of the door, and fit to the opposite end.  
**Note:** Ensure the magnet is orientated correctly and does not protrude past the frame edge.

12. Refit the door (see page 25).

13. Apply the SKOPE logo label to the top left hand corner of the door. Use the label backing to align the label as pictured.

14. Apply the blanking labels over the upside down logos at the bottom of the door.





# 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

## Refrigeration Cartridge

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### Refrigeration Cartridge Assembly

The refrigeration cartridge is a bottom-mounted, electronically controlled, removable cartridge.

For safety and compliance, only SKOPE-supplied parts specifically for this appliance may be used for repairs. Other parts may appear to be suitable, but may not be approved or safe for use in an appliance with hydrocarbon refrigerant.

The cartridge must only be used on a SKOPE hydrocarbon-compliant cabinet. Refer to the cabinet rating label to determine if the cabinet is suitable for use with a hydrocarbon cartridge.

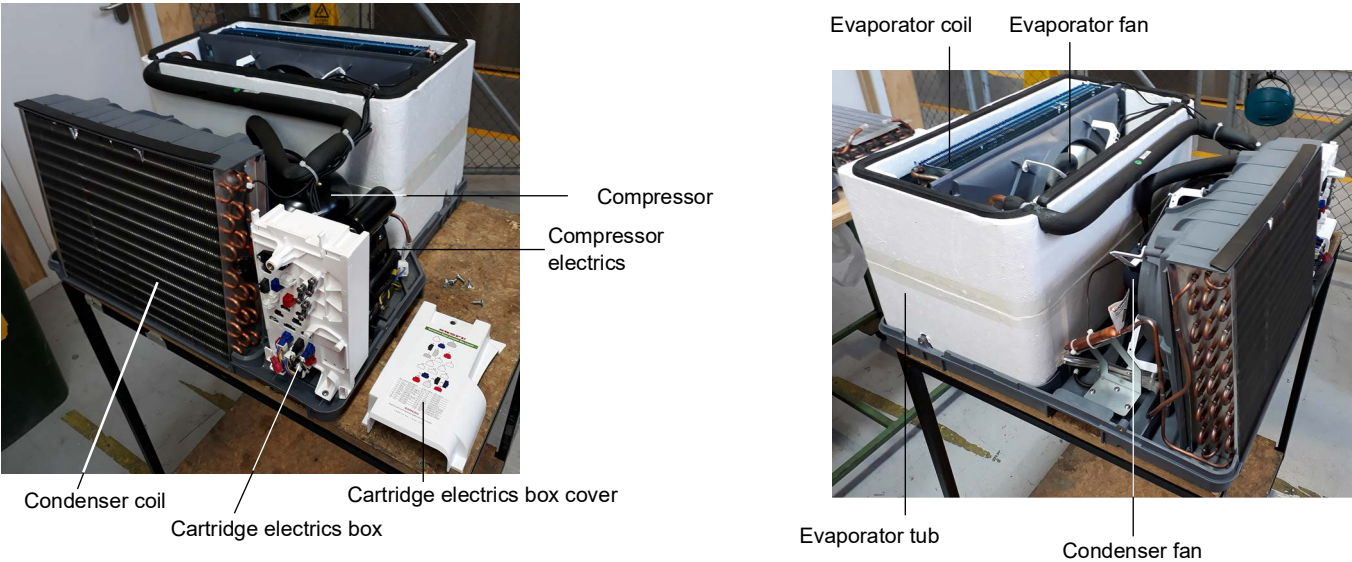
The rating label **MUST** state refrigerant as R290. If the label states a different refrigerant, or does **NOT** state a refrigerant, it is **not** suitable for a hydrocarbon cartridge.

**WARNING**

The hydrocarbon cartridge must only be used on a hydrocarbon-compliant cabinet.

For servicing or transportation, the refrigeration cartridge unplugs and slides out of the cabinet. Some minor servicing can be performed without removing the refrigeration cartridge.

The model and serial number are both printed on the unit rating/serial number label attached to the side of the cover.



Specifications for the model are in the following table. Verify the model and basic requirements before servicing.

Table 7: Cartridge specifications

Cartridge model	UBHCNI-0008 (spare part number HB0070832517)
Compressor	Wanbao FN90M
Compressor capacity	740 watts
Refrigerant / charge	R290/99 g

**Not Cooling Fault** If a customer reports a “not cooling” fault, and it has been established that the cabinet is not cooling, follow the procedure on page 56 when making the service visit.

**Diagnostics** The following test is useful in the workshop to diagnose a short of gas situation. Perform the test before opening the refrigeration system.

It is useful to have a correctly operating cartridge running beside the cartridge being serviced to compare behaviour.

**Note:** These diagnostic procedures are indicative only.

Procedure 25: Refrigeration system diagnostic test

Before you start

Make sure you are in a suitable workshop (see page 30).

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the refrigeration cartridge.
3. Remove the cartridge cover.

**Procedure 25: Refrigeration system diagnostic test (continued)**

4. Place the cartridge on bench and connect the service probe to the red plug on the cartridge.
5. Connect the refrigeration cartridge to the mains power supply and allow to run for approximately 10 minutes until the evaporator temperature stabilises.
6. Refer to the table below to determine if the system charge is correct.

A system with the correct refrigerant charge will frost back towards the compressor. The point where the frost stops is affected by the ambient temperature.

The table below details the frost stop point on a correctly charged system running on the bench.

Ambient	50% charged	75% charged	100% charged
10°C	Cold with light sweat	Cold with light sweat	Frosting to compressor
20°C	Cold with light sweat	Sweating 50mm from compressor	Frosting to compressor
30°C	Dry	Dry	Frosting 20mm from compressor
40°C	Dry	Dry	Sweating 50mm from compressor

7. If the suction pipe frosts to the appropriate frost stop point, the charge is likely correct. If the frost does not go back to the point shown there may be a capillary blockage or compressor fault.
8. Use the table below to determine whether the system is short of refrigerant or has a blocked capillary.

Diagnosis	Frost back (after 10 mins)
Blocked capillary	None
Normal operation	Refer to table above

9. After fault has been diagnosed and repaired, reassemble the refrigeration system and test run.

**Removing the Cartridge**

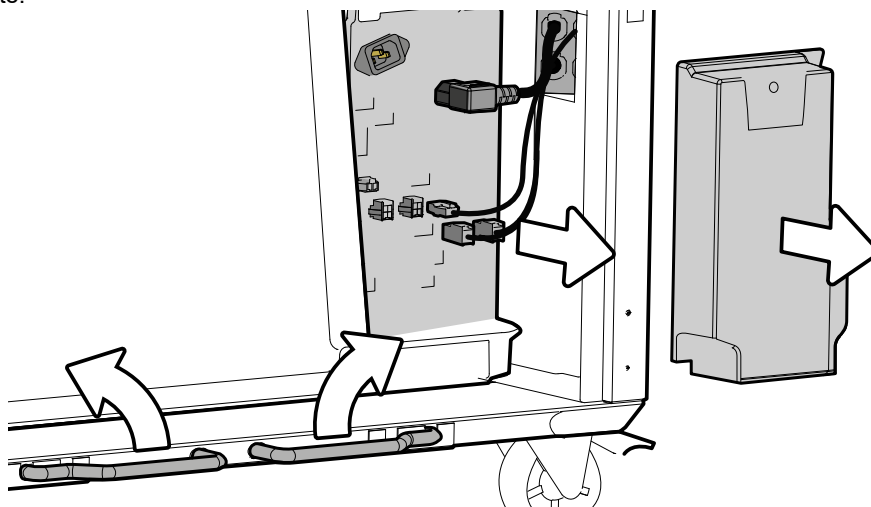
Follow the steps below to remove the refrigeration cartridge from the cabinet. Ensure the cabinet is disconnected from the mains power supply before removing the cartridge (see page 22).

**Procedure 26: To remove the refrigeration cartridge**

1. Disconnect the cabinet from the mains power supply (see page 22). If you are unable to access the plug, refer to the on-site work procedure on page 56.
2. Remove the front kick panel, and unplug the ambient probe (located on the back of the panel).
3. Detach the electronic controller assembly from the front kick panel. To do this, **PUSH** at the base of the electronic controller assembly where it meets the front kick panel. See the arrow on the front kick panel label.
4. Remove electrics cover and unplug the mains supply plug and cabinet plugs.  
**Note:** The cartridge and electronic controller plugs do not need to be unplugged.

**Procedure 26: To remove the refrigeration cartridge (continued)**

5. Pull the two cassette lifting levers forward to release, and rotate outwards to lower the refrigeration cassette.



6. Pull the refrigeration cartridge from the cabinet. Take care of the cables when removing the cartridge.
7. When refitting the cartridge, ensure that:
  - the gasket is in good condition.
  - the electronic controller is refitted to the front kick panel.
  - all plugs are securely reconnected.
  - the electrics cover is refitted.
  - the cartridge lifts up and seals correctly.

**WARNING**

- Ensure no wires or plugs are trapped or damaged.
- Fully insert and lock all plugs. Pull the plugs to check.
- Refit and secure the electrics cover with screws **before** reconnecting the mains power supply.
- Follow all applicable local regulations.

**Cartridge Inter-changeability**

The SKOPE ActiveCore refrigeration cartridge is interchangeable between bottom and top mount hydrocarbon (R290) ActiveCore fridges.

**WARNING**

The hydrocarbon cartridge must only be used on a hydrocarbon-compliant cabinet.

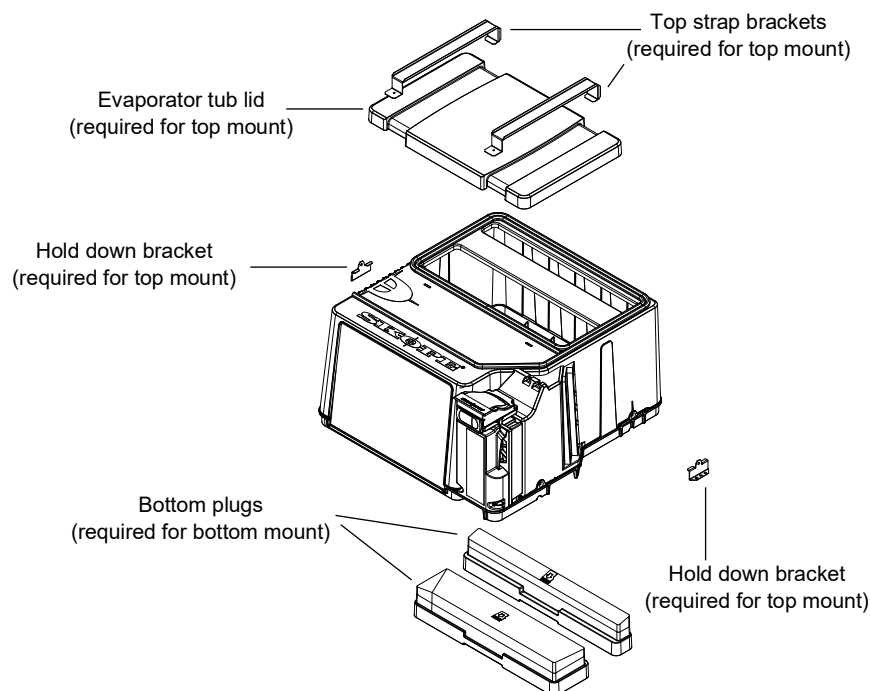
**Top mount to bottom mount**

When changing a cartridge from a top mount cabinet to a bottom mount cabinet, 2 bottom plugs are required to seal the base of the cartridge. The plugs can be ordered in addition to the refrigeration cartridge if required.

The plugs are included with new replacement cartridges.

**Bottom mount to top mount**

When changing from a bottom mount cabinet to a top mount cabinet, an evaporator lid, strap brackets and hold down brackets must be fitted to seal the top of the evaporator tub, and to fix the cartridge to the top of the cabinet. See the TME-N ActiveCore service manual ([MAN80128](#)) for more information.



### Cartridge Electrics Box Assembly

The cartridge electrics box assembly contains the mains supply socket, EMI filter, and panel mount socket connectors for the cartridge and cabinet. Refer to the diagram over the page or label on the electrics box cover for socket connection identification.

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



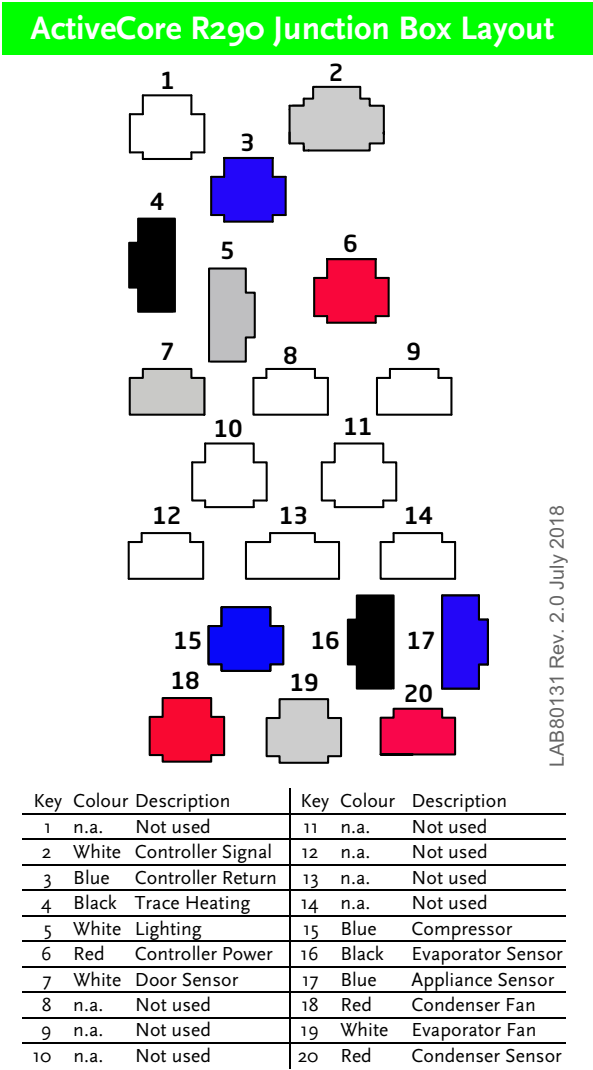
#### Procedure 27: To remove and open the cartridge electrics box assembly

1. Disconnect the cabinet from the mains power supply (see page 22).
2. If present, unclip the electronic controller from the top of the electrics box.
3. Undo the fixing screw at the top of the electrics box cover, and remove the cover.



**Procedure 27: To remove and open the cartridge electrics box assembly (continued)**

- 4. Unplug all cartridge plugs from the cartridge electrics box.
- 5. Undo the two fixing screws at the base of the electrics box, and detach the electrics box from the cartridge.
- 6. To open the electrics box, undo the two fixing screws on the back of the electrics box and swing the back cover off.



**Cartridge Cover** Remove the cartridge cover to access parts within the cartridge assembly.

**Procedure 28: To remove the cartridge cover**

- 1. Disconnect the cabinet from the mains power supply (see page 22).
- 2. Remove the refrigeration cartridge (see page 32).

- 3. Unscrew the four machine screws from the sides of the refrigeration cartridge and lift the cover off the cartridge.





**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. Refer to the label on the electrics box cover to identify the condenser fan plug and socket in the electrics box.

**IMPORTANT**

Replace the motor with the same SKOPE OEM part.  
**DO NOT** use alternative parts.

It is important that the fan blade and/or fan motor is replaced with the same part to ensure safety, correct alignment and refrigeration performance, and compliance. Tighten fan blades to the fan motor manufacturer's recommended torque settings (shown in the table below).

**Table 8: Fan motor manufacturer recommended torque settings**

Fan motor manufacturer	Torque setting
AoFrio	1.5 Nm

**Procedure 29: To access and remove the condenser fan assembly**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the refrigeration cartridge (see page 32).
3. Remove the cartridge cover (see page 35).
4. Open the electrics box and unplug the condenser fan motor plug (see page 34).

5. Cut the cable ties holding the cables along the cartridge, and free up the condenser fan motor cable.



6. Remove the fan assembly (fan motor, fan blade, mounting brackets) from the cartridge by lifting the shroud up and out.

**Procedure 30: To replace the condenser fan blade**

1. Remove the condenser fan assembly (see Procedure 29).
2. Remove the screw and washer from the centre of the fan blade, and lift the blade from the motor.
3. Replace the new blade and fix with a 12 mm flat washer and serrated head screw. Tighten the blade to fan motor manufacturer recommended torque setting.
4. Reassemble the cartridge and test.

**Procedure 31: To replace the condenser fan motor**

1. Remove the condenser fan assembly (see Procedure 29) and the fan blade (see Procedure 30).
2. Unplug the fan flexible cord from the electrics box (see page 34).
3. Detach the fan motor from the fan mounting brackets by removing the four screws from the mounting bracket.



**Procedure 31: To replace the condenser fan motor (continued)**

4. Fit the new motor and reattach the fan blade with a 12 mm flat washer and serrated head screw. Tighten the blade to 1.5Nm.
5. Reassemble the cartridge, ensuring all cables are neatly cable-tied away from the fan blade.
6. Test for correct operation.

**Evaporator Fan**

The evaporator fan assembly is made up of a fan motor and fan blade, both of which can be replaced when necessary. The evaporator fan flexible cord has a white plug.

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 motor and fan blade are fixed to the evaporator shroud via the brackets. The shroud (complete with fan motor and fan blade) can be lifted off the evaporator tub once the refrigeration cartridge cover has been removed.

**IMPORTANT**

Replace the motor with the same SKOPE OEM part.  
**DO NOT** use alternative parts.

It is important that the fan blade and/or fan motor is replaced with the same part to ensure safety, correct alignment and refrigeration performance, and compliance. Tighten fan blades to the fan motor manufacturer's recommended torque settings (shown in the table below).

**Table 9: Fan motor manufacturer recommended torque settings**

Fan motor manufacturer	Torque setting
AoFrio	1.5 N m

**Procedure 32: To access the evaporator fan assembly**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the refrigeration cartridge (see page 32).
3. Remove the refrigeration cartridge cover.
4. Free the cables from the putty on the evaporator tub edge.
5. Cut the cable ties to release the control probe from the fan bracket.

6. Lift the assembly up and out of the evaporator box.

**Procedure 33: To replace the evaporator fan blade**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the refrigeration cartridge (see Procedure 26, on page 32).
3. Gain access to the evaporator fan assembly (see Procedure 32).

**Procedure 33: To replace the evaporator fan blade (continued)**

4. Remove the screw and washer from the centre of the fan blade, and lift the blade from the motor.
5. Fit the new blade, ensuring it is centred within the evaporator shroud. Tighten the blade to fan motor manufacturer recommended torque setting.
6. Reassemble the cartridge and test for correct operation.

**Procedure 34: To replace the evaporator fan motor**

1. Access the evaporator fan assembly (see Procedure 32, on page 37).
2. Remove the evaporator fan blade (see Procedure 33).
3. Free the fan's flexible cord by cutting the cable ties, trace the cable back to the connector (near the compressor electrics), and unplug.
4. Detach the fan motor from the fan mounting brackets by removing the four screws from the mounting bracket.
5. Attach to the replacement motor. Ensure that the flexible cord points towards the bottom of the evaporator tub once reinstalled. Take care to re-cable tie the fan and temperature probe flexible cords back onto the mounting bracket to prevent high frequency vibration.
6. Fit the fan blade, ensuring it is centred within the evaporator shroud. Tighten the blade to 1.5 Nm.
7. Reassemble cartridge and test for correct operation.

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

Before replacing the compressor, check all plug connections and ensure the compressor electrics are operating correctly (see "Compressor Electrics" on page 39). The compressor must be supplied with consistent voltage over 220 volts. Ensure 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 plastic base and condenser assembly.

- Compressor Electrics** The compressor electrics are located on the front of the compressor.
- To access the compressor electrics, remove the refrigeration cartridge (see page 32) and cartridge cover (see page 35). The capacitor unclips from the relay cover, and the relay cover unclips from the compressor.

## Electronic Controller

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- Controller Location** The electronic controller is located within the electronic controller box assembly.

### Procedure 35: To access the controller

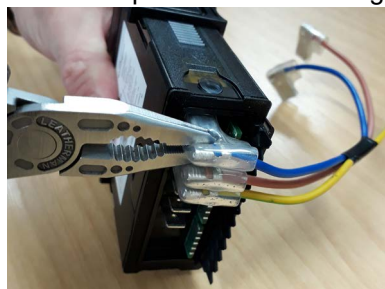
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1. Disconnect the cabinet from the mains power supply (see page 22).
  2. Open the electronic controller box assembly by undoing the two fixing screws at the rear of the assembly.
- Note:** On one-door cabinets you need to move the cartridge back to access the controller box assembly.
- 



- QC Terminals** The terminals at the back of the controller are locking QC terminals, which cannot be pulled off without pressing in the locking tabs.

Use needle nose pliers to unlock and gently remove the terminals.

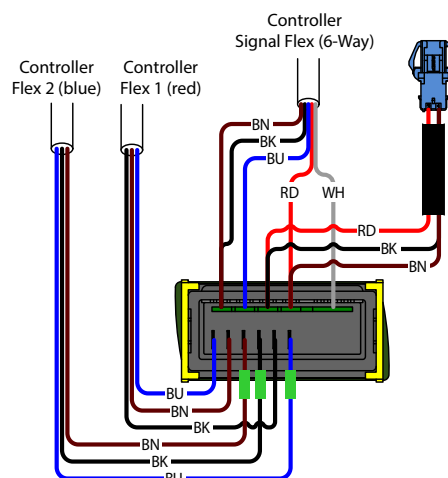


- Replacing the Controller** Follow the steps below to replace the controller.
- Note:** Replacement spare part electronic controllers are not supplied with the parameter set loaded. This must be loaded via the SCS Connect Field app after replacing the controller. Internet access may be required.

**Procedure 36: To replace the controller**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Access the electronic controller (see "Controller Location" on page 39).
3. Remove the cable clamps and disconnect the terminals from the back of the controller.

4. Fit the new replacement controller, and connect the terminals at the back of the controller. Fit low voltage terminals before high voltage terminals.



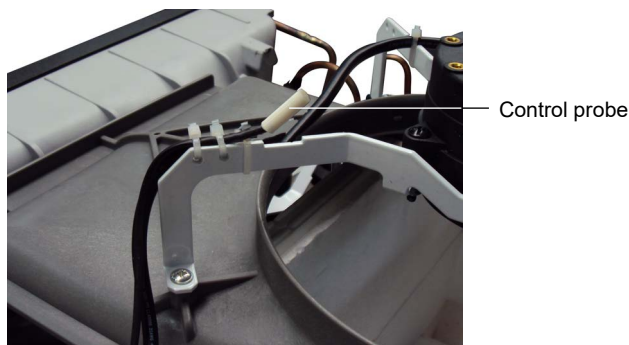
5. Reassemble the controller box and cabinet, perform electrical safety test as required, and reconnect to the mains power supply.
6. Use a mobile device to connect to the controller with the SCS Connect Field app (see "AoFrio SCS Field App" on page 13).
7. Navigate to the LOAD PARAMETER FILE menu.
8. Select the appropriate parameter file from LOCAL. If it is not available in LOCAL, search for the parameter file in SERVER (internet access required), and download to LOCAL.
9. Confirm it is the correct file and WRITE TO SCS.
10. After WRITE TO SCS is complete, select MENU DISCONNECT to save parameter set on SCS.
11. Power cycle the controller and check that the correct parameter set has been applied
12. 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).

**Door Switch** The cabinet is fitted with a door switch below each door, which tells the electronic controller when a door is opened. A small magnet in the door frame activates the switch. A cable connects the switch to the electronic controller via an inline connector.

**Procedure 37: To replace a door switch**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Disconnect the door switch cable plug from the inline connector.
3. Unscrew the two fixing screws from the door switch and remove.
4. Fit the replacement door switch and connect via the inline connector.

**Control Probe** The control probe is cable-tied to a bracket on the evaporator fan motor bracket.



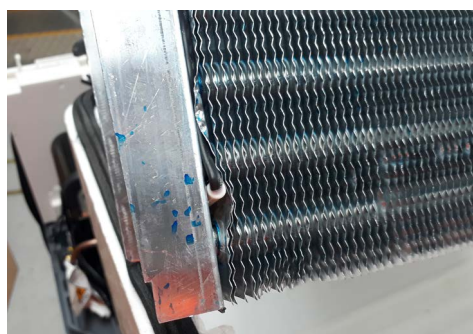

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**Procedure 38: To replace the control probe**

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1. Remove the evaporator fan assembly (see page 37).
  2. Detach the probe from the evaporator fan shroud bracket and trace the probe cable back to the cartridge electrics box and unplug (see page 34).
  3. Following the same path as the original probe, fit the new probe with cable ties as necessary. Ensure the probe cable is securely plugged into the rear of the cartridge junction box, and that it is cable-tied to the evaporator fan shroud bracket, with the probe bent away from the fan bracket at a 45° angle.
- 

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




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**Procedure 39: To replace the evaporator probe**

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1. Disconnect the cabinet from the mains power supply (see page 22).
  2. Remove the refrigeration cartridge.
  3. Remove the cartridge cover (see page 35).
  4. Remove the evaporator fan assembly (see page 37).
- 

5. Remove both pieces of putty securing the pipes and cables on the evaporator tub edge.
- 

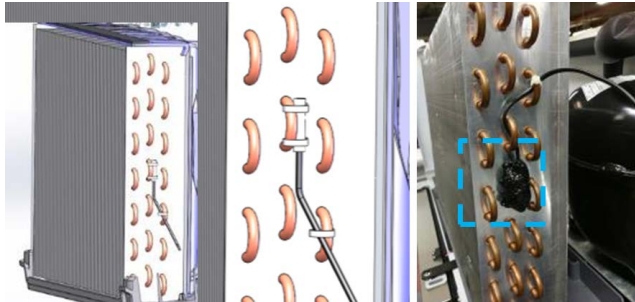
6. Carefully lift the coil up and out of the evaporator tub. Take care of pipes and cables when lifting out.
- 



**Procedure 39: To replace the evaporator probe (continued)**

7. Detach the probe from the side of the evaporator coil, and trace the probe cable back to the cartridge electrics box, cutting cable ties as required, and unplug (see page 34).
8. Following the same path as the original probe, run the new probe to the evaporator coil and secure with cable ties. Locate the probe in the same location as the original probe (against the side of the coil above the bottom pipe as pictured above). Plug the probe cable securely into the electrics box.
9. Reassemble the cartridge and test for correct operation.

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

**Procedure 40: To replace the condenser probe**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the refrigeration cartridge.
3. Remove the cartridge cover (see page 35).
4. Detach the probe from the side of the condenser coil, and trace the probe cable back to the cartridge electrics box, cutting cable ties as required, and unplug (see page 34).
5. Following the same path as the original probe, run the new probe to the condenser coil and secure with cable ties. Place the probe in the same location as the original probe (as pictured above) and insulate with cork tape. Plug the probe cable securely into the electrics box.
6. Reassemble the cartridge and test for correct operation.

**Ambient Probe** The ambient probe is located on the back of the front kick panel, in front of the condenser coil.

**Procedure 41: To replace the ambient probe**

1. Disconnect the cabinet from the mains power supply (see page 22).
2. Remove the front kick panel to access the probe.
3. Unplug and replace probe. Ensure the probe is located in the same location as the original probe and secured in place with a cable tie.
4. Reassemble and test for correct operation.



7 Spare Parts

Main Assembly – BME600N-A Series

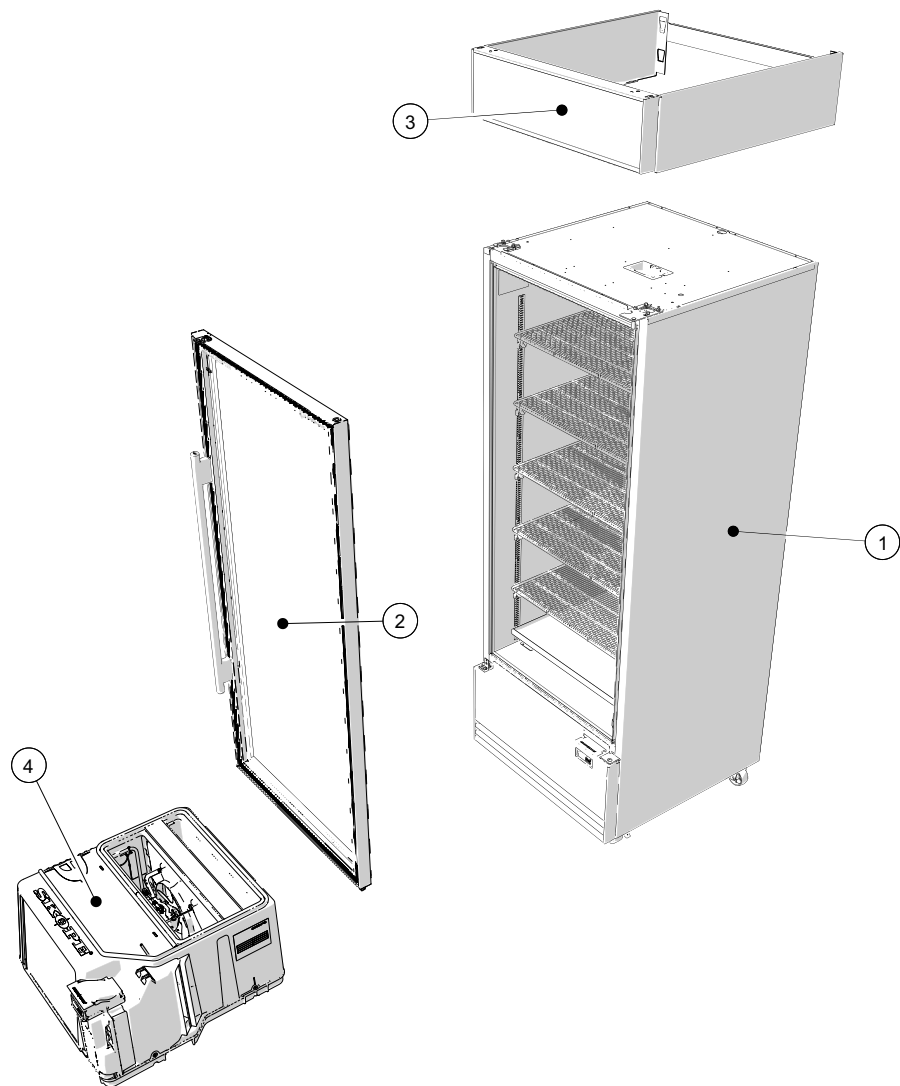


Table 10: Parts – Main assembly: BME600N-A series

No.	Description	Page
1	Cabinet assembly	Page 45
2	Door assembly	Page 49
3	Sign assembly	Page 50
4	Cartridge assembly	Page 51

## Main Assembly – BME1200N-A Series

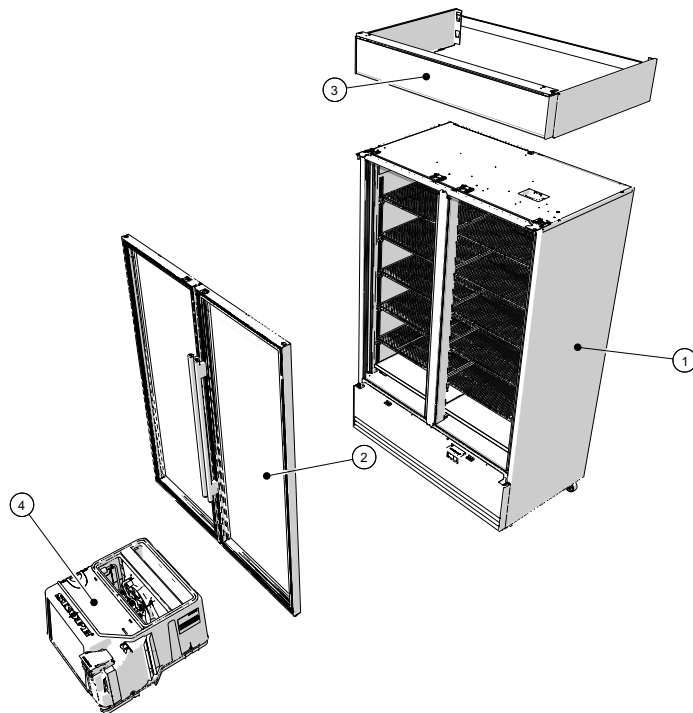


Table 11: Parts – Main assembly: BME1200N-A series

No.	Description	Page
1	Cabinet assembly	Page 47
2	Door assembly	Page 49
3	Sign assembly	Page 50
4	Cartridge assembly	Page 51



## Cabinet Assembly – BME600N-A Series

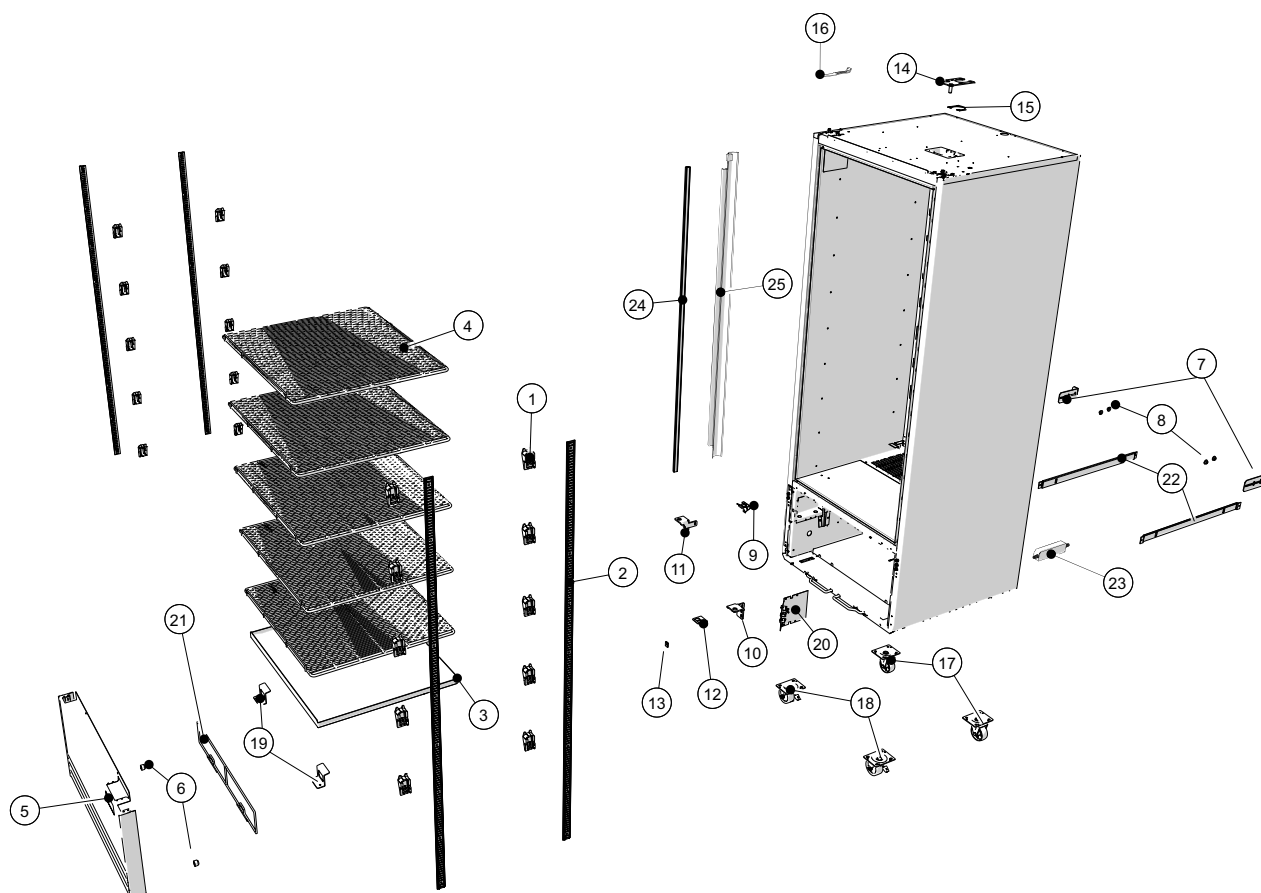


Table 12: Parts – Cabinet assembly: BME600N-A series

No.	Description	SKOPE Part No.		
		Unpainted/standard	Colour: White	Colour: Black
1	Shelf clip		HB0070205867	
2	Shelf support strip	HB0070110331		
3	Bottom Shelf Solid	HB0070109270		
4	Wire shelf		HB0070109245	
5	Kick panel		HB0070833176B	HB0070833176C
6	Kick panel stop	HB0070203535		
7	Rear stopper	HB0070110666		
8	Rear stopper bush	HB0070110592		
9	Door sensor bracket	HB0070110662		
10	Bottom hinge – right hand		HB0070110578	
11	Bottom hinge – left hand (hinge reversal kit)		SM60BYN/D100-32	SM60BYN/D100-49
12	Tension bracket		HB0070110580	
13	Vertical lock nut		HB0070110581	
14	Top hinge – right hand		HB0070110582B	

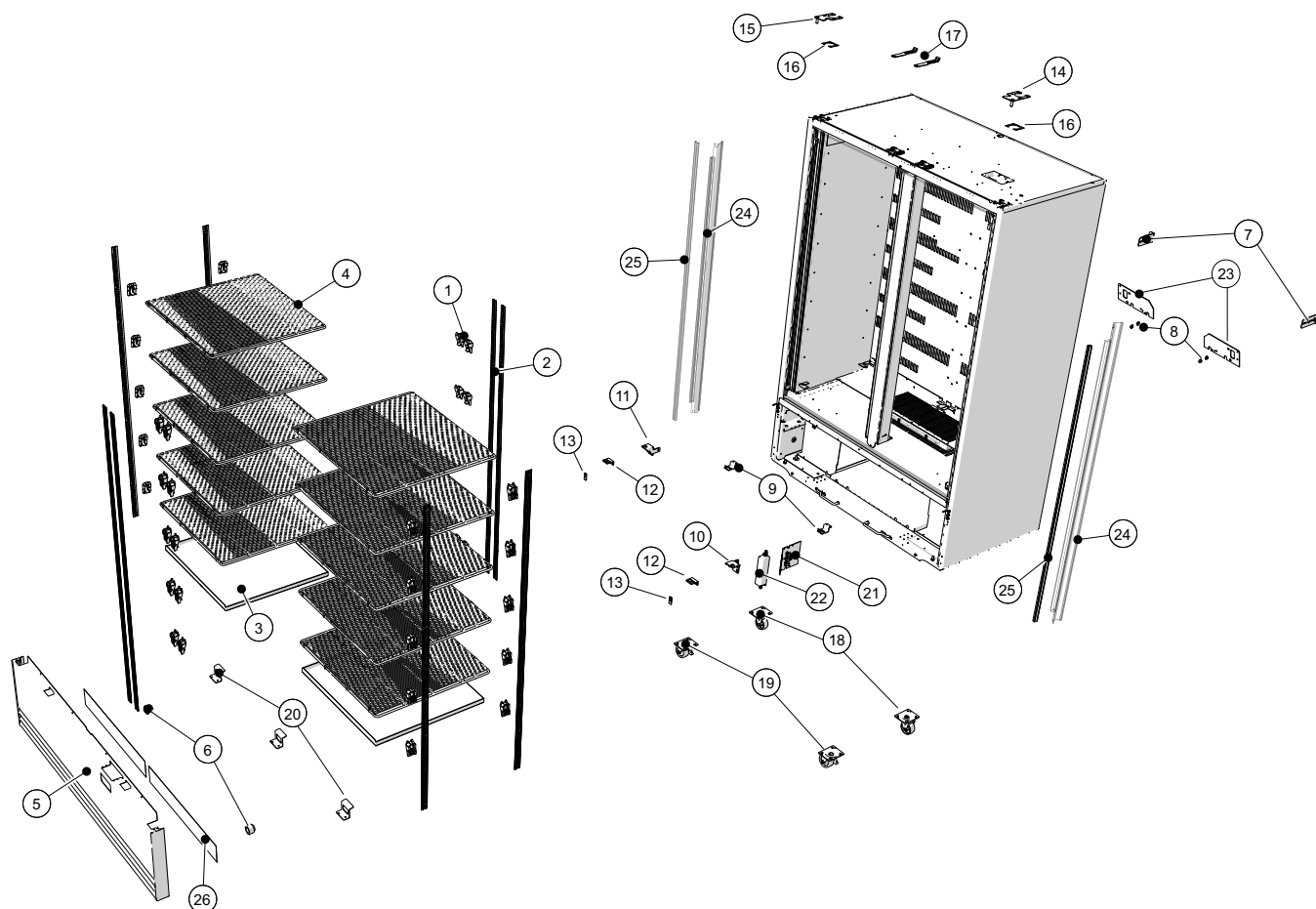
Table 12: Parts – Cabinet assembly: BME600N-A series (continued)

No.	Description	SKOPE Part No.		
		<i>Unpainted/standard</i>	<i>Colour: White</i>	<i>Colour: Black</i>
15	Top hinge spacer		B15RW/115	
16	Door lock bracket – cabinet piece		HB0070111623	
17	Rear castor	HB0070105066		
18	Front castor – lockable	HB0070105065		
19	Bottom shelf support bracket	HB0070110664		
20	Mains electrical box assembly	HB0070833872		
21	Condenser filter	HB0070204892		
22	Cartridge rear stop	SM12BV/327		
23	Light power supply	ELZ11887		
24	LED light bar – 1370 mm	ELL11799		
25	Light holder – no notches	HB0070208596		

**Note:** Check the part colour before ordering. If the colour differs from the list above, state the specific colour when ordering.

\*If key lock/s are fitted, please contact SKOPE for a part number.

## Cabinet Assembly – BME1200N-A Series



**Table 13: Parts – Cabinet assembly BME1200N-A series**

No.	Description	SKOPE Part No.		
		Unpainted/standard	Colour: White	Colour: Black
1	Shelf clip		HB0070205867	
2	Shelf support strip	HB0070110331		
3	Bottom Shelf Solid	HB0070108452		
4	Wire shelf		HB0070108448	HB0070112271
5	Kick panel		HB0070833179B	HB0070833179C
6	Kick panel stop	HB0070203535		
7	Cabinet rear stand-off	HB0070110666		
8	Rear stopper bush	HB0070110592		
9	Door sensor bracket		HB0070110663	HB0070110663A
10	Bottom hinge – right hand		HB0070110578	
11	Bottom hinge – left hand		HB0070110579	
12	Tension bracket		HB0070110580	
13	Vertical lock nut		HB0070110581	

Table 13: Parts – Cabinet assembly BME1200N-A series (continued)

No.	Description	SKOPE Part No.		
		<i>Unpainted/standard</i>	<i>Colour: White</i>	<i>Colour: Black</i>
14	Top hinge – right hand		HB0070110582B	
15	Top hinge – left hand		HB0070110583B	
16	Top hinge spacer		B15RW/115	
17	Door lock bracket – cabinet piece		HB0070111623	
18	Rear castor	HB0070105066		
19	Front castor – lockable	HB0070105065		
20	Bottom shelf support bracket	HB0070110664		
21	Mains electrical box assembly	HB0070833872		
22	Light power supply	ELZ11887		
23	Cartridge rear stop	SM60BV/327		
24	Light holder – no notches	HB0070208596		
25	LED light bar – 1370 mm	ELL11799		

**Note:** Check the part colour before ordering. If the colour differs from the list above, state the specific colour when ordering.

\*If key lock/s are fitted, please contact SKOPE for a part number.

## Glass Door Assembly

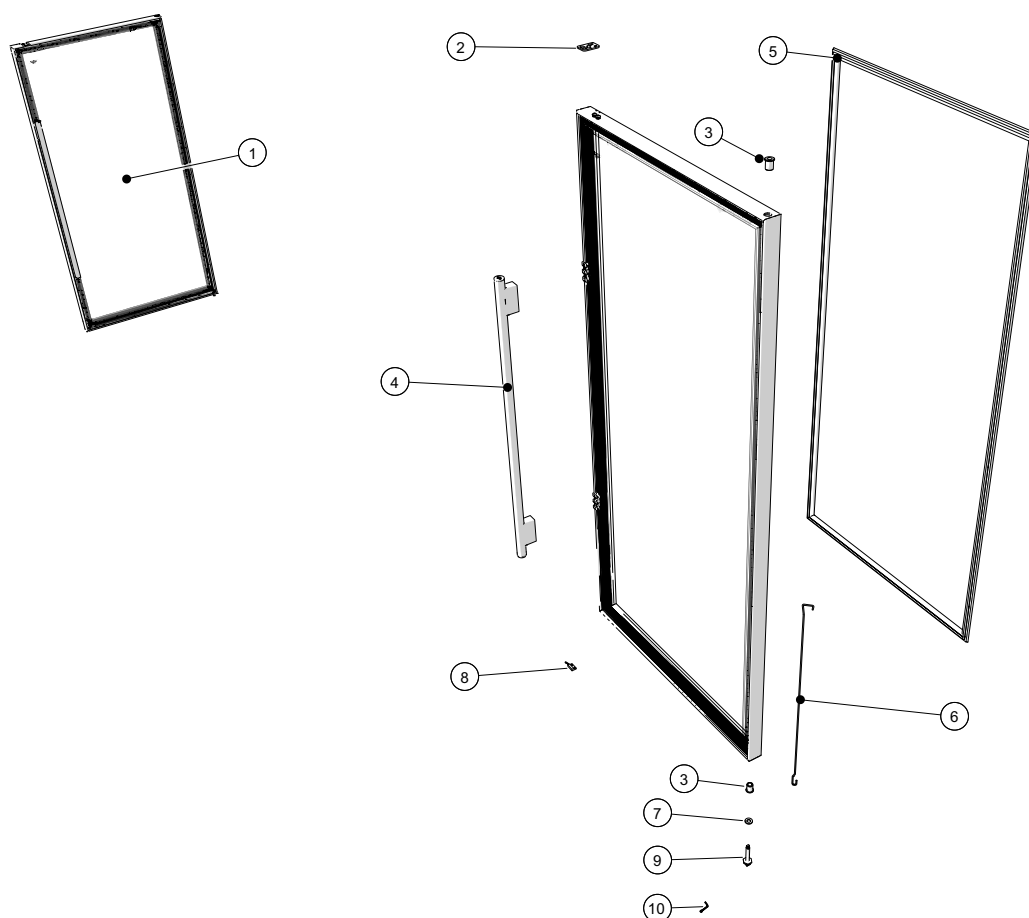
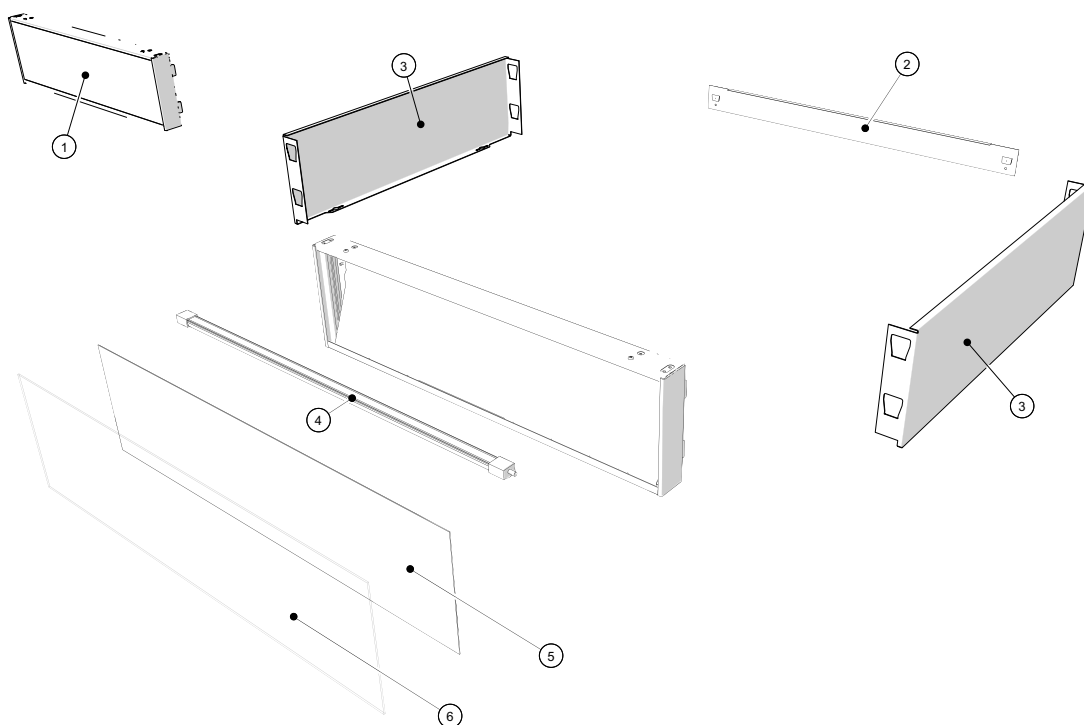


Table 14: Parts – Glass door assembly

No.	Description	SKOPE Part No.		
		Unpainted/standard	Colour: White	Colour: Black
1	BME6000N-A Series door assembly – right hand	–	HB0070832963	–
	BME12000N-A Series door assembly – right hand	–	HB0070832964	–
	BME1200N-A Series door assembly – left hand	–	HB0070832965	–
2	Door lock bracket – door piece	–	HB0070111623	–
3	Bush	PLM5075	–	–
4	Door handle	–	HAN11195/0844-AS (silver, for white door)	HAN11195/0844-49
5	BME600N-A Magnetic gasket	GKT0482SN	–	–
	BME1200N-A Magnetic gasket	GKT04899N	–	–
6	Torsion bar	REF5014	–	–
7	Bush washer	PLM11298	–	–
8	Door sensor switch	HB0074091496	–	–
9	Capstan	TUR11299	–	–
10	Split pin	FAS5076	–	–
–	Hinge reversal kit (right to left hand) (single door only, not shown)	–	SM60BYN/D100-32	SM60BYN/D100-49

**Note:** Check the part colour before ordering. If the colour differs from the list above, state the specific colour when ordering.

## Lit Sign Assembly



**Table 15: Parts – Lit sign assembly: BME600N-AC**

No.	Description	SKOPE Part No.		
		Unpainted/standard	Colour: White	Colour: Black
1	Lit sign assembly	–	MB60BYN/T61-32/00	MB60BYN/T61-49/00
2	Sign back strip	–	HB0070105692P	HB0070105692Q
3	Sign side	–	SM12BV/S20-32	SM12BV/S20-49
4	Sign light bar	ELL11772	–	–
5	Sign panel (transparent) (lit sign)	PLY11241-MB60	–	–

**Table 16: Parts – Lit sign assembly: BME1200N-AC**

No.	Description	SKOPE Part No.		
		Unpainted/standard	Colour: White	Colour: Black
1	Lit sign assembly	–	MB12BYN/T61-32/00	MB12BYN/T61-49/00
2	Sign back strip	–	HB0070108524P	HB0070108524R
3	Sign side	–	SM12BV/S20-32	SM12BV/S20-49
4	Sign light bar	ELL11800	–	–
5	Sign panel (transparent) (lit sign)	PLY11241-MB12	–	–

## Cartridge Assembly – UBHCNI-0008

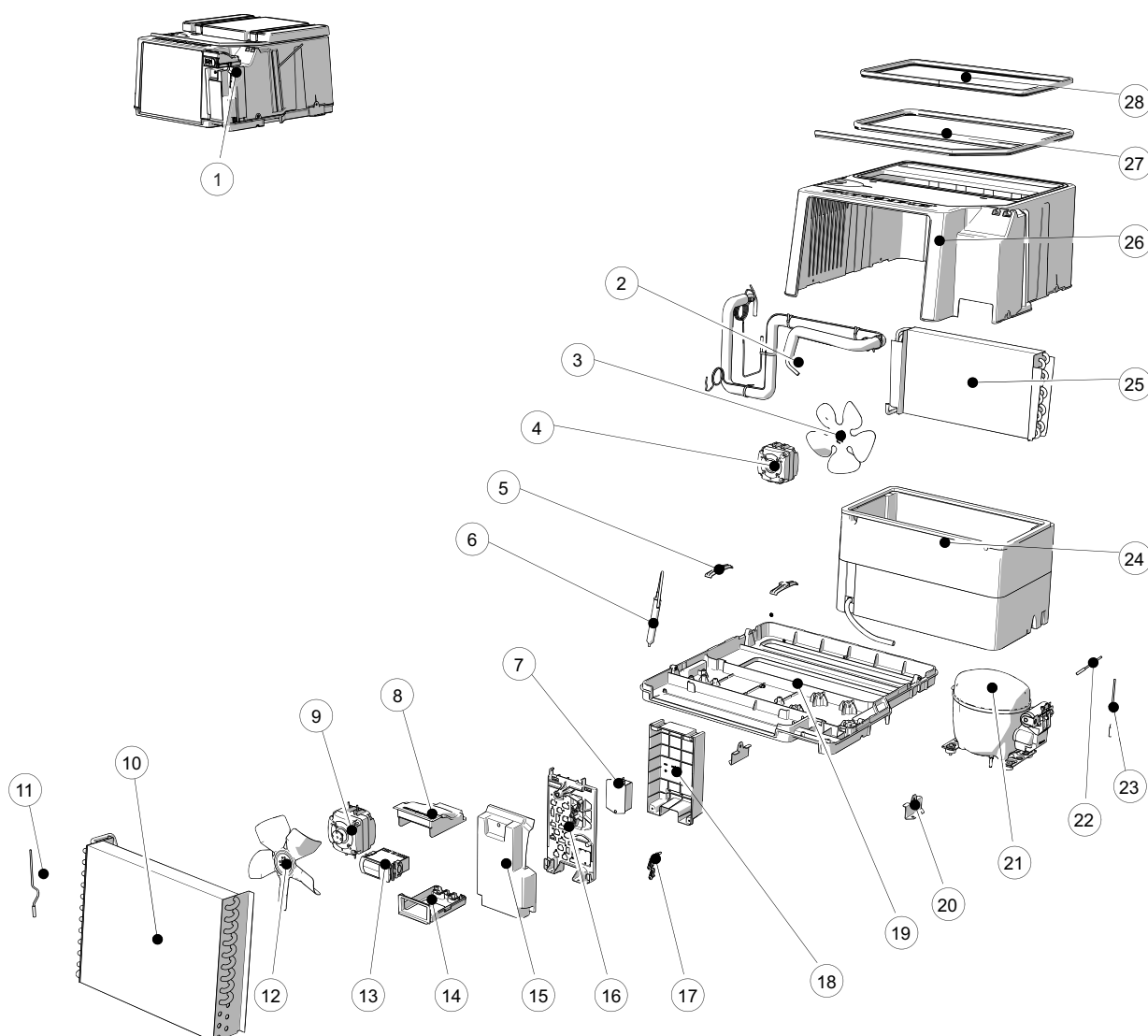


Table 17: Parts – Cartridge assembly

No.	Description	SKOPE Part No.
1	Cartridge assembly*	HB0070832517
2	Suction line assembly	HB0070702718
3	Evaporator fan blade	HB0074000313A
4	Evaporator fan motor	ELM11309
–	Evaporator fan shroud (not shown)	HB0070206123
5	Condensate pipe support	HB0070206128
6	Drier	HB0074180006
7	EMI filter	HB0074600001
8	Controller box cover	HB0070206126
9	Condenser fan motor	ELM11309
10	Condenser coil	HB0070702720
11	Condenser temperature probe	HB0070401693B
12	Condenser fan blade	HB0074000313

Table 17: Parts – Cartridge assembly (continued)

No.	Description	SKOPE Part No.
–	Condenser fan shroud (not shown)	HB0070206124
13	W/Drive SCS Connect electronic controller	ELZ11749-1626
14	Controller box base	HB0070206125
15	Cartridge electrics box enclosure front	HB0070207012A
16	Cartridge electrics box enclosure	HB0070207014
–	Electrical box assembly – ActiveCore R290 Fridge (not shown)	HB0070833377
17	Cable clamp	HB0070206127
18	Cartridge electrics box enclosure rear	HB0070207013A
19	Cartridge plastic bottom	HB0070206212B
20	Hold down bracket	HB0070110815A
21	Compressor – Wanbao FN90M	HB0074000848
22	Control temperature probe	HB0070400542
23	Evaporator temperature probe	HB0070400506
24	Evaporator box	HB0070510928A
25	Evaporator coil	HB0070702232
26	Cartridge plastic top cover	HB0070206133
27	Cartridge gasket seal 2306 mm	PLE11052-2306
28	Cartridge gasket seal 1571 mm	PLE11052-1571
–	Ambient temperature probe (not shown)	HB0070401693A
–	Mains power cord (not shown)	HB0070400636
–	Controller wire loom – blue (not shown)	HB0070401063
–	Controller wire loom – red (not shown)	HB0070401062
–	Controller wire loom – white (not shown)	HB0070401111



## 8 Maintenance

### Cleaning

Ensure the cabinet is disconnected from the mains power supply before cleaning (see page 22).

**Cabinet** Periodically wipe the inside and outside of the cabinet with a damp cloth, taking care to keep moisture away from electrical parts.

**Condenser and Air Filter** To ensure trouble-free performance, we strongly urge monthly cleaning with a soft brush to remove dust and fluff. A more thorough cleaning is required by qualified service personnel every six months. The condenser and filter **must** be kept clean for efficient and reliable operation.

The condenser coil is located on the front of the refrigeration cartridge. The optional filter is located on the front panel in front of the condenser coil.

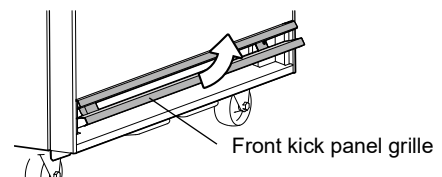
The filter is disposable and should be replaced when it shows signs of wear. Do **not** apply hot water, blow dry, or place in dishwasher.

#### WARNING

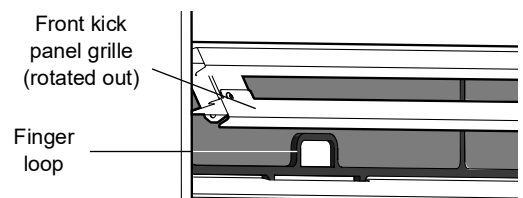
Unplug the cabinet from the mains power supply before cleaning the condenser coil.

#### Procedure 42: To clean the optional filter

1. Rotate the grille at the bottom of the front kick panel out to gain access to the filter.



2. To remove the filter, use the finger loops to pull the filter up and detach from the front kick panel.

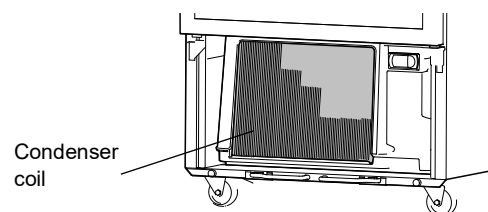


3. Clean the filter with a vacuum cleaner, wash with cold water and shake excess water off before refitting. Do not apply hot water, blow dry, or place in dishwasher. If necessary, discard and refit new air filter.
4. To refit the filter, insert it up into the front kick panel vent with the finger loops facing out. Then clip the into the slots on the bottom face of the front kick panel vent.

#### Procedure 43: To clean the condenser coil

1. Disconnect the cabinet from the mains power supply (see page 22).

2. Remove the front panel and brush the condenser coil with a soft brush to remove any dust or fluff.



3. Refit the front panel and reconnect to the mains power supply.

## 9 Troubleshooting

### Electronic Controller

Alarms signal unexpected operational changes in the cabinet. When an alarm is activated, use the electronic controller app to assist with fault diagnosis and service as necessary. See page 13 for information.

### Cabinet and Refrigeration Cartridge

**Diagnostic Table** For problems with the cabinet and refrigeration cartridge use the following table.

**Table 18: Troubleshooting**

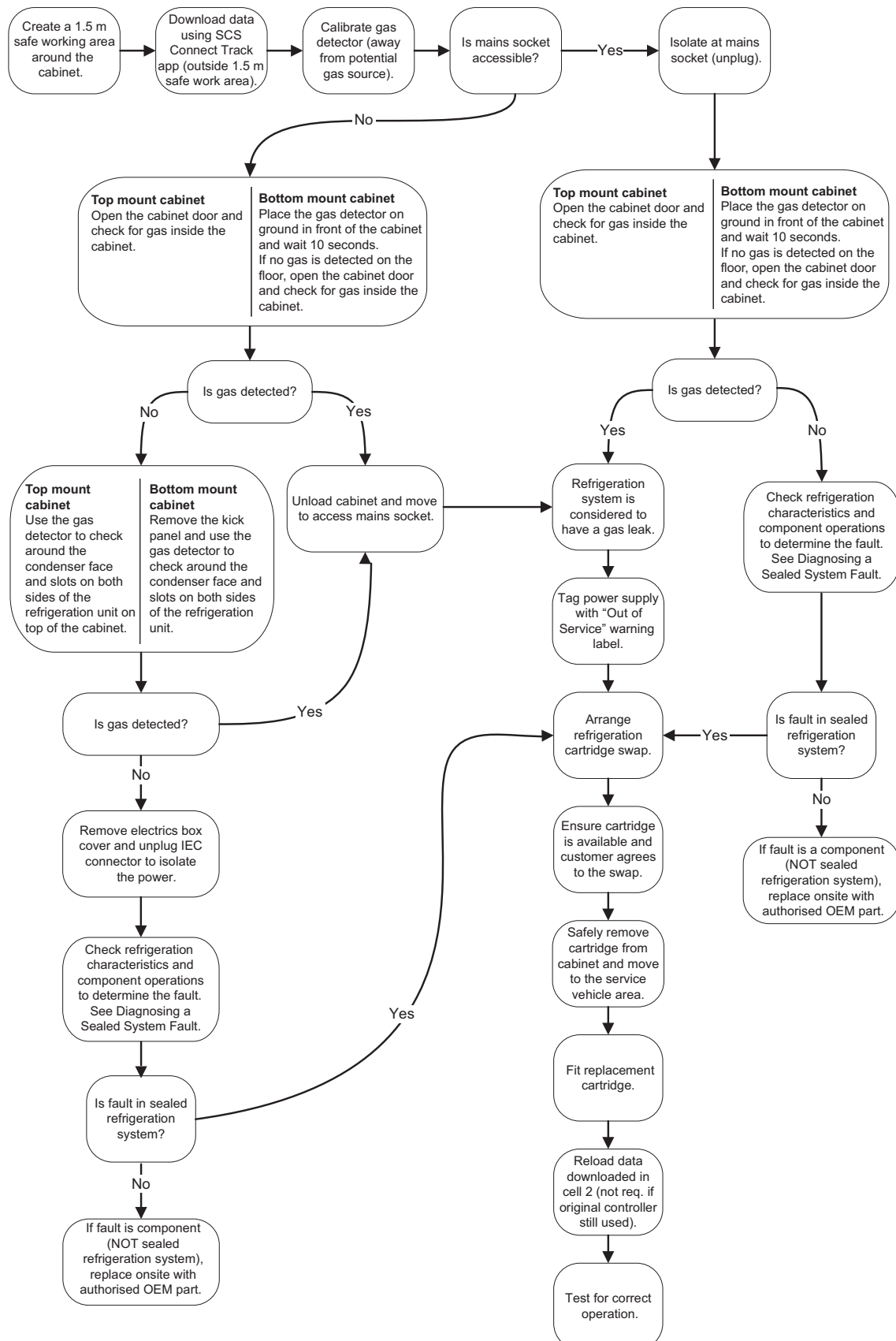
Problem	Possible cause	Repair
<ul style="list-style-type: none"> <li>Cabinet not operating</li> <li>No controller display</li> </ul>	<ul style="list-style-type: none"> <li>Loss of power supply</li> </ul>	<ul style="list-style-type: none"> <li>Check mains power supply.</li> </ul>
	<ul style="list-style-type: none"> <li>Loose plug in electrics box</li> </ul>	<ul style="list-style-type: none"> <li>Check all plugs in electrics box are connected correctly.</li> </ul>
<ul style="list-style-type: none"> <li>Sign and/or Interior lights not on</li> </ul>	<ul style="list-style-type: none"> <li>Electronic controller is in 'Night' mode.</li> </ul>	<ul style="list-style-type: none"> <li>Switch the light on while keeping the cabinet in night mode by pressing the light button on the electronic controller faceplate.</li> <li>Change the cabinet into Day mode by pressing and holding the Day-Night button on the electronic controller faceplate, or hold the door open for ten seconds.</li> </ul>
	<ul style="list-style-type: none"> <li>Light switched off.</li> </ul>	<ul style="list-style-type: none"> <li>Switch light on via button on the electronic controller faceplate.</li> </ul>
	<ul style="list-style-type: none"> <li>Electronic controller displays alarm indicating a refrigeration system error.</li> </ul>	<ul style="list-style-type: none"> <li>Diagnose and repair. If a system fault found, return to SKOPE.</li> </ul>
	<ul style="list-style-type: none"> <li>Failed LED light.</li> </ul>	<ul style="list-style-type: none"> <li>Service the light.</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 cartridge.</li> </ul>	<ul style="list-style-type: none"> <li>Re-align pipes.</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 cold</li> </ul>	<ul style="list-style-type: none"> <li>Check and raise.</li> </ul>
	<ul style="list-style-type: none"> <li>Evaporator probe fault.</li> </ul>	<ul style="list-style-type: none"> <li>Check and replace evaporator probe.</li> </ul>
	<ul style="list-style-type: none"> <li>Controller fault</li> </ul>	<ul style="list-style-type: none"> <li>Replace 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 page 31) 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>Cartridge 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 the door is closed more often.</li> </ul>
	<ul style="list-style-type: none"> <li>Product too cold.</li> </ul>	<ul style="list-style-type: none"> <li>Raise the set point</li> </ul>

Table 18: Troubleshooting (continued)

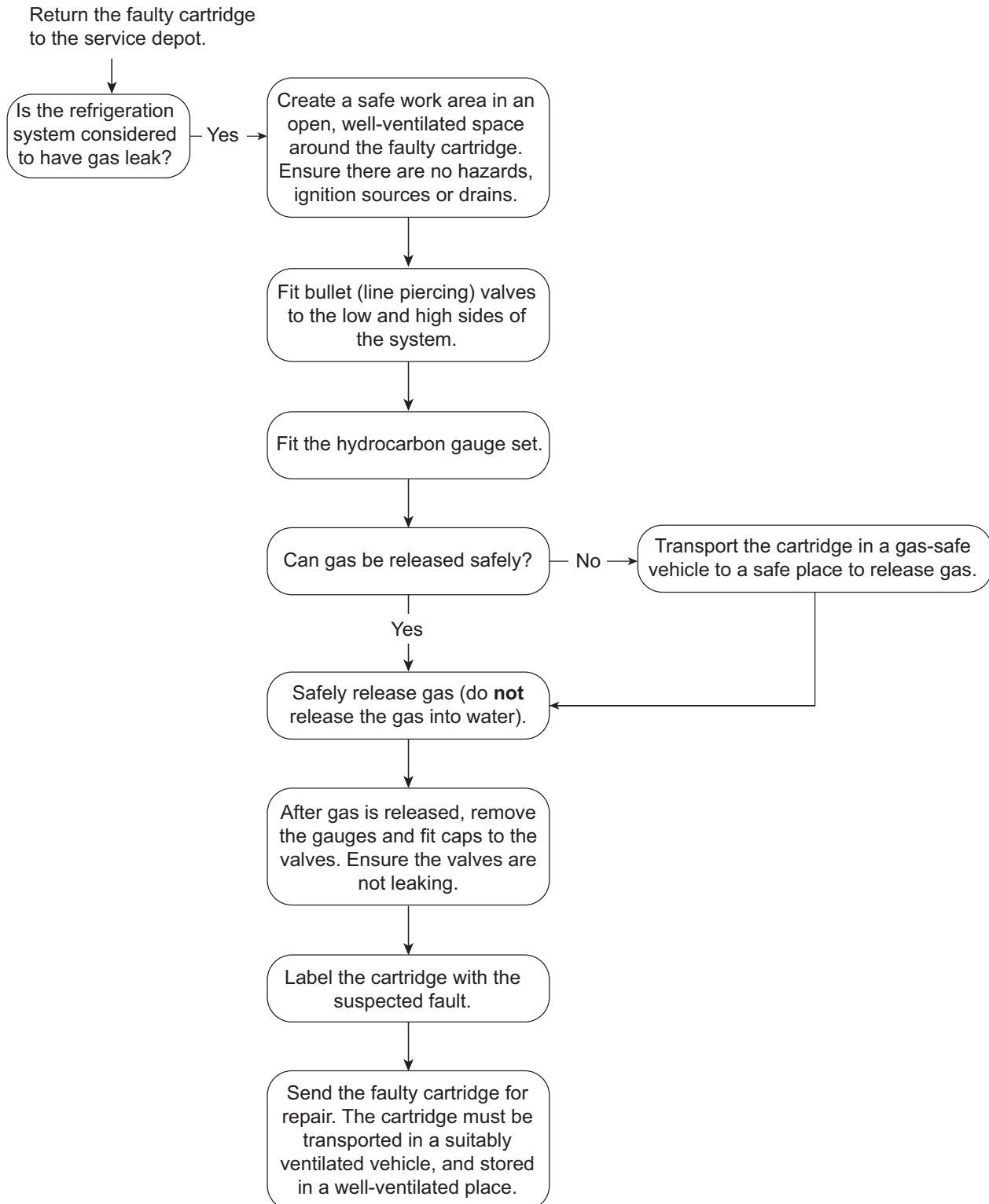
Problem	Possible cause	Repair
• Product is too warm	• Frequent door opening.	• Limit door openings.
	• Recently loaded.	• Allow time for the product to cool down.
	• Door not closing properly.	• Check and the clean door gasket.
	• Refrigeration cartridge operating too hot.	• Ensure the cabinet has good ventilation around the refrigeration cartridge.
	• Excessive door opening or refrigeration heat load.	• Ensure the cabinet is within the maximum operating conditions.
• Moisture build up on door or exterior	• Set point is too high.	• Lower the set point.
	• High humidity.	• Check ambient operating temperature and reposition cabinet if necessary.
	• Frequent door opening.	• Limit door openings.
• Cabinet door does not shut properly.	• Door not closing properly.	• Check and clean door gasket.
	• Cabinet is on an uneven surface.	• Level the cabinet.
• Warm cabinet temperatures • Compressor operating for long periods (more than 1 hour)	• Door is obstructed.	• Check shelves and product.
	• Blocked condenser	• Clean the condenser.
	• Poor ventilation around refrigeration cartridge	• Ensure the cabinet has good ventilation around the refrigeration cartridge. • Ensure the cabinet is within the maximum operating temperature.

## On-site Work Procedure

If a customer reports a “not cooling” fault, and it has been established that the cabinet is not cooling, follow the procedure below when making the service visit.



## On-site Work Procedure (continued)



# SKOPE Contacts

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