

OD300N, OD360N, OD400N, and OD460N

SKOPE Open Deck Fridge
R290



OD460N

OD300N, OD360N, OD400N, and OD460N
SKOPE Open Deck Fridge
R290
Service Manual

MAN80405
Rev. 2.0 Mar. 2024

© 2023 SKOPE Industries Limited. All rights reserved.

SKOPE Industries Limited reserves the right to alter specifications without notice.

SKOPE® is a registered trademark of SKOPE Industries Limited.
SKOPE INDUSTRIES LIMITED

Head Office
PO Box 1091, Christchurch
New Zealand
A.B.N. 73 374 418 306
AU: 1800 121 535
NZ: 0800 947 5673
E-mail: skope@skope.com
Website: www.skope.com

Trademark Infringement

The SKOPE trademark on this product is infringed if the owner, for the time being, does any of the following:

- Applies the trade mark to the product after its state, condition, get-up or packaging has been altered in any manner.
- Alters, removes (including part removal) or obliterates (including part obliteration) the trade mark on the product.
- Applies any other trade mark to the product.
- Adds to the product any written material that is likely to damage the reputation of the trade mark.

Notice of the above contractual obligations passes to:

- Successors or assignees of the buyer.
- Future owners of the product.

Contents

1 Specifications	
Models	5
2 Installation	
Installation Guidelines	6
Climate Class	6
Cabinet Location	6
Ventilation	6
Power Cord	7
Transportation	7
Shelves	7
Dimensions	7
Adjusting the Shelves	7
Gravity Shelf System	9
Security Grille (optional)	9
3 Electronic Controller	
4 Replacement Procedures	
Overview	11
Isolating Electrics	11
Lid and Ambient Topper	11
Lid	11
Ambient Topper	12
Kick Panel	13
Side Glass	13
Lighting	13
Shelf Lights	14
Side Lights	14
DC Power Supply	15
Cabinet Electrics Gear Tray	16
Night Blind	17
Night Blind Assembly	17
Night Blind Sensor	19
Refrigeration System	19
Before Servicing	19
On-site Work	21
Off-site Work	21
Diagnosing Lack of Gas	21
Refrigeration Cartridge	23
Cartridge Removal and Refitting	24
Cartridge Electrics Box	25
Condenser Fan	28
Evaporator Fan	30
Compressor	32
Condensate Tray	33
Electronic Controller	33
Electronic Controller Location	33
Replacing the Controller	33
PIR Sensor	34
Control Probe	35

Evaporator Probe	36
Condenser Probe	37
5 Wiring	
Models: OD300N, OD360N, OD400N, and OD460N	38
6 Spare Parts	
Cabinet	39
Night Blind Assembly	42
Refrigeration Cartridge	43
Ordering	44
Cartridge Electrics Box	45
Cabinet Electrics Gear Tray	46
7 Maintenance	
Cleaning	47
Cabinet	47
Condenser Filter and Coil	47
8 Troubleshooting	
Electronic Controller	49
Cabinet and Refrigeration Cartridge	49

1 Specifications

Models

This service manual is applicable to the Open Deck fridges listed in the table below. Refer to the relevant product specification sheet (available on the SKOPE website: www.skope.com) for specifications.

Table 1: Model specifications

Series	Model	SKOPE ID
	OD300N	O30CLN
Open Deck	OD360N	O36CLN
	OD400N	O40CLN
	OD460N	O46CLN

2 Installation

Installation Guidelines

Climate Class The cabinet is designed to operate within a climate class 3 environment (25°C @ 60% relative humidity), and should not be placed in a location that is likely to exceed these conditions.

IMPORTANT

The cabinet's recommended operating temperature is between 18°C and 24°C and 60% relative humidity.

Be aware that other fridges and freezers can be sources of heat.

Cabinet Location Do not place the cabinet in the direct airpath of doorways, air-conditioning outlets, ventilation fans or any other fan which generates air movement directly into the cabinet opening. This will cause failure of the air curtain and compromise the airflow and product temperature in the open cabinet zone.

Maximum air movement across the cabinet opening must not exceed 0.2 m/s.

IMPORTANT

There must be **no** air movement directly into the cabinet opening.

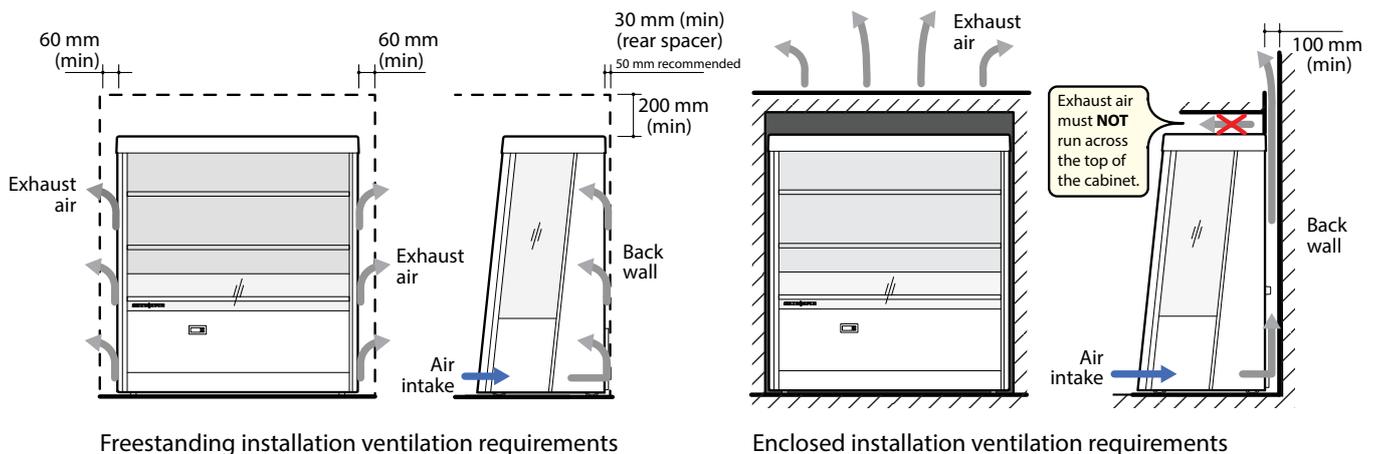
Ventilation Make sure there is adequate ventilation around the refrigeration cartridge and cabinet at all times. Do not store boxes or items where they will block the air intake. Refrigeration exhaust air must not be restricted, and must be able to flow easily out and away from the cabinet.

Free-standing cabinets

- Top: 200 mm
- Sides: 60 mm
- Back: 30 mm minimum (comes with 28 mm rubber rear spacers), but SKOPE recommends 50 mm

Enclosed cabinets

- Back: 100 mm
- Exhaust air must **not** run across the top of the cabinet



IMPORTANT

Never store items in front of the air intake.

Back-to-back cabinets

If you place cabinets with their backs facing each other, make sure that:

- there is a solid divider behind each cabinet.
- the divider extends at least 100 mm above the top of the tallest cabinet.
- the ventilation around each cabinet and divider is adequate (100 mm at the back, no air over the top).
- This will allow the exhaust air at the rear to be guided away up the divider instead of directed at the other cabinets.

CAUTION

To prevent over-heating and conserve energy, ensure that air can flow freely all around the cabinet, including underneath and on top.

Power Cord The cabinet has a flexible power cord fitted with a 3-pin plug, at the rear of the cabinet. Before final positioning of the cabinet, pull the power cord out and connect to the mains power supply.

Transportation The cabinet is not designed to be stable while in motion. Use extreme caution when moving or transporting the cabinet if it has been removed from its original crate.

- Never strap across the glass sides of the cabinet as this may cause damage.
- Ensure appropriate padding or protection is used to prevent damage when strapping.

Shelves

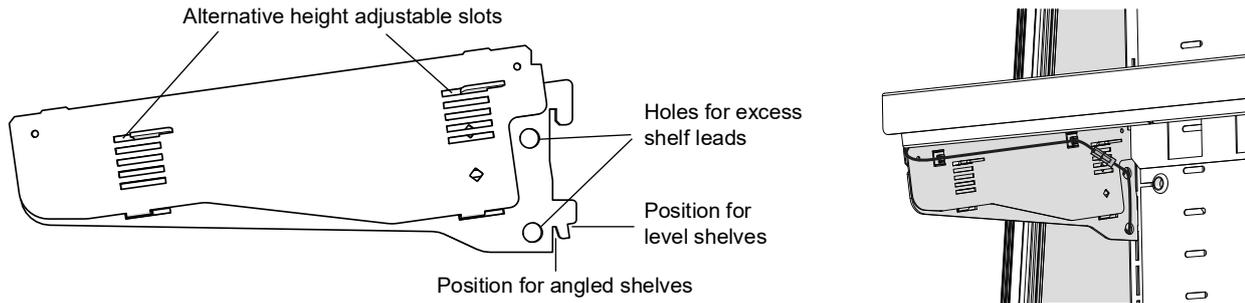
Dimensions The cabinet is fitted with three metal shelves. Optional gravity feed matting and shelf dividers are available for each shelf. See Table 2 for the shelf loading and dimensions.

Table 2: Shelf loading and dimensions

	OD360N		OD300N and OD400N		OD460N	
	<i>Dimensions</i>	<i>Max. load</i>	<i>Dimensions</i>	<i>Max. load</i>	<i>Dimensions</i>	<i>Max. load</i>
<i>Top</i>	Adjustable height and angle (800W × 340D)	45 kg	Adjustable height and angle (800W × 270D)	36 kg	Adjustable height (1100W × 270D)	48 kg
<i>Middle</i>	Adjustable height and angle (800W × 350D)	45 kg	Adjustable height and angle (800W × 295D)	36 kg	Adjustable height (1100W × 295D)	48 kg
<i>Bottom</i>	Flat or angled (805W × 365D)	45 kg	Fixed angle (805W × 330D)	45 kg	Fixed angle (1100W × 330D)	60 kg

Adjusting the Shelves The top two shelves are held in place by two cantilevered shelf brackets which clip into cut-outs in the cabinet's back duct.

- These shelves can be adjusted at 28 mm increments.
- Further 6 mm interval height adjustments can be made by separating the shelf bracket into two parts and slotting it back together using the alternative slots.



Procedure 1: To reposition a shelf

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove product from the shelf that is being moved.
3. If present, lift the gravity feed matting from the shelf and remove from the cabinet.

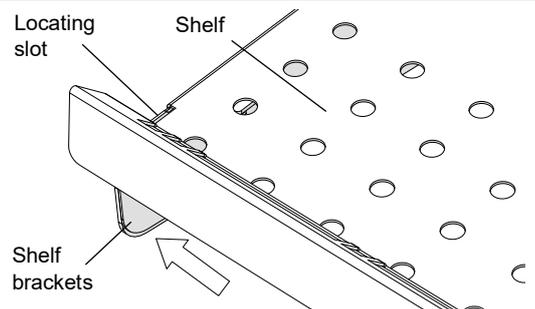
4. Unplug the shelf light lead at the inside of the left hand shelf bracket.



5. Lift the shelf up off the brackets and remove from the cabinet. Be careful not to damage the shelf light lead.
6. Unwind the lead from the back of the shelf bracket.
7. Select the new position and move the shelf brackets. You can reposition the shelves as far as the shelf light lead reasonably allows at:
 - 28 mm increments.
 - further 6 mm increments by using the alternative slots on the shelf bracket.

8. Place the shelf, and if present the gravity feed matting, onto the shelf brackets. Ensure the back of the shelf clips over the rear of the brackets.

9. Push the cantilevered brackets outwards until they clip into the edge locating slots on the side of the shelf.



10. Take up any excess shelf light lead by winding it through the two holes at the rear of the shelf bracket, and reconnect the shelf light lead plug. Make sure that the plug is securely attached to the correct socket.

11. Reconnect the cabinet to the mains power supply, and check for correct operation.

Gravity Shelf System Gravity feed matting, which includes shelf dividers and ticket strips, is available for each shelf.

Procedure 2: To fit the gravity feed matting and shelf dividers

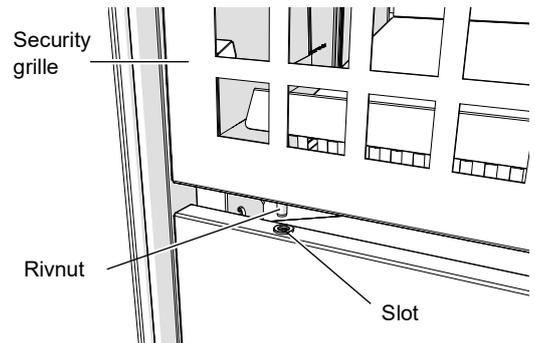
1. Match up the shelf dividers with the corresponding matting.
2. Work across the matting and fit the centre dividers at required intervals.
3. Place the mat and dividers onto the matching shelf inside the cabinet.
4. Repeat for the remaining shelves.
5. To adjust the spacing between dividers:
 - Push the divider towards the rear of the cabinet until it unclips from the matting.
 - Move the divider to the required spacing, and insert it into the slot in the matting kit.
 - Pull the matting towards the front of the cabinet to lock it in place.

Security Grille (optional)

For security purposes an optional lockable security grille is available. The security grille fits in the front opening of the cabinet and is locked by two keyed security bolts. For convenience both locks use the same key.

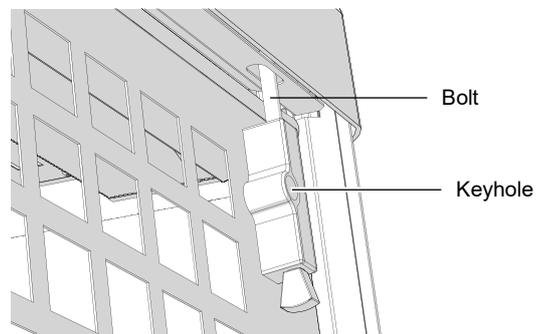
Procedure 3: To fit and remove the security grille

1. Position the security grille (with the rivnuts at the bottom and locks on the top) on top of the cabinet's kick panel.



2. Manoeuvre the security grille into position so that both rivnuts at the bottom of the grille fit into the holes on the top of the kick panel.

3. Position the top of the grille to align both the security lock bolts with the slots under the night blind bracket.



4. Engage both the lock bolts and lock with the security key.

5. To remove the security grille, reverse the fitting instructions (steps 4 to 1 above).

3 Electronic Controller

The cabinet is fitted with an AoFrio SCS Connect electronic controller, which is located in the kick panel.

The electronic controller:

- regulates the cabinet's internal temperature.
- signals alarms.
- captures operational information.
- controls the lights.

The internal temperature is set at the factory for an Open Deck fridge (all shelves maintain temperatures below 5°C).

You can run the electronic controller's Service mode using the faceplate, but SKOPE strongly recommends using the SCS Connect Field app.

See [MAN80199 "SCS Connect Electronic Controller"](https://tinyurl.com/4n2dvury) (<https://tinyurl.com/4n2dvury>) for further details.

4 Replacement Procedures

Overview

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

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

Safety hazards

The main R290 safety hazards are:

- Flammability
- Venting of R290 and compressor oil
- Asphyxiation

SKOPE does **not** recommend performing hazardous activities on the refrigeration system.



Isolating Electrics

Caution

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

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

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

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

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

Lid and Ambient Topper

The cabinet comes fitted with either a lid or an ambient topper.

Lid

Procedure 5: To remove the lid

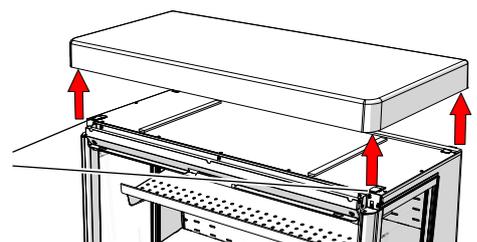
Before you start

The lid is attached with 3M Dual Lock tape at each of the four corners.

1. Disconnect the cabinet from the mains power supply (see Procedure 4 above).

2. Start from one side of the cabinet and, using a little force, detach the lid from the tape.

Dual Lock
tape



3. Remove the lid by lifting it up and off the cabinet.

Procedure 6: To refit the lid

Before you start

The topper attaches with 3M Dual Lock tape at each of the four corners.

1. Disconnect the cabinet from the mains power supply (see page 11).
 2. Position the lid so that the tape on its underside will clip into the tape on the top of the cabinet.
 3. Push down firmly on the corners of the lid, so the two sides of the tape clip together.
-
-

**Ambient
Topper**

Procedure 7: To remove the ambient topper

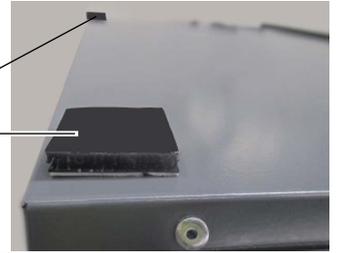
Before you start

The topper is attached with 3M Dual Lock tape at each of the four corners.

1. Disconnect the cabinet from the mains power supply (see page 11).
 2. Remove the gravity matting from the top of the cabinet and place it aside.
 3. Start from one side of the cabinet and, using a little force, detach the topper from the tape.
-

4. Remove the topper by lifting it up and off the cabinet.
-

Dual Lock
tape



Procedure 8: To refit the ambient topper

Before you start

The topper attaches with 3M Dual Lock tape at each of the four corners.

1. Disconnect the cabinet from the mains power supply (see page 11).
-

2. Position the topper so that the tape on its underside will clip into the tape on the top of the cabinet.

Dual Lock
tape



3. Push down firmly on the corners of the topper, so the two sides of the tape clip together.
 4. Replace the gravity matting on top of the topper.
-
-

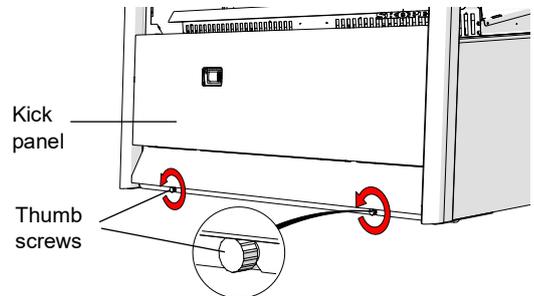
Kick Panel

The fridge is fitted with a kick panel that hooks onto the front of the cabinet.

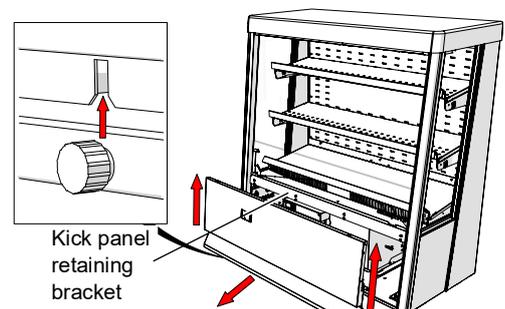
Procedure 9: To remove the kick panel

1. Disconnect the cabinet from the mains power supply (see page 11).

2. Loosen the 2 × thumb screws at the bottom of the kick panel.



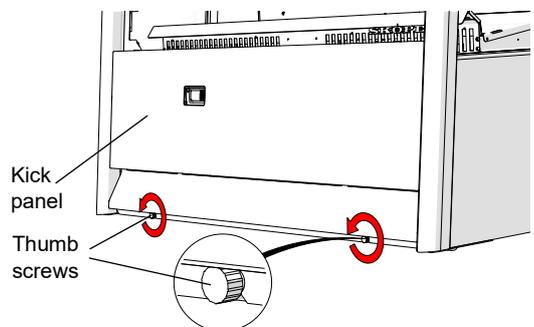
3. Lift the panel up and off the retaining bracket on the cabinet.



Procedure 10: To refit the kick panel

1. Lift the kick panel up, and clip it over the lip of the kick panel retaining bracket.

2. Tighten the 2 × thumb screws at the bottom of the kick panel.



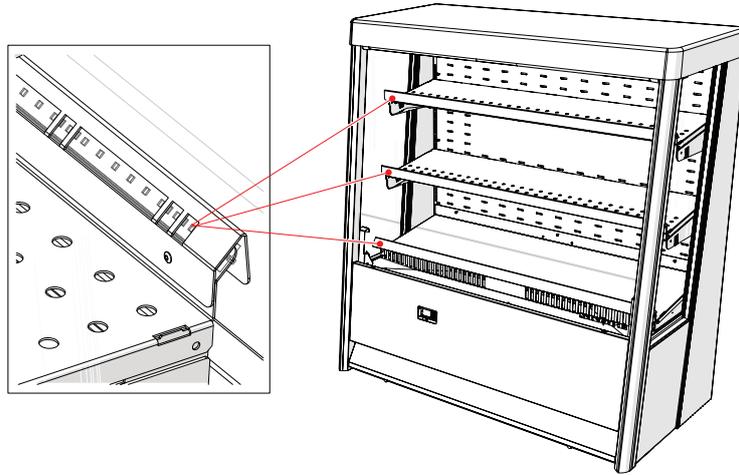
Side Glass

The side glass can be replaced. If the glass is damaged or cracked, or the glazing seal is breached, contact SKOPE for information on how to proceed.

Lighting

The cabinet is fitted with either shelf lights or side lights. The lights will switch on when the cabinet is plugged in, and can be dimmed and turned off using the SKOPE-connect app, or the electronic controller. Note that the controller is only accessible by removing the kick panel.

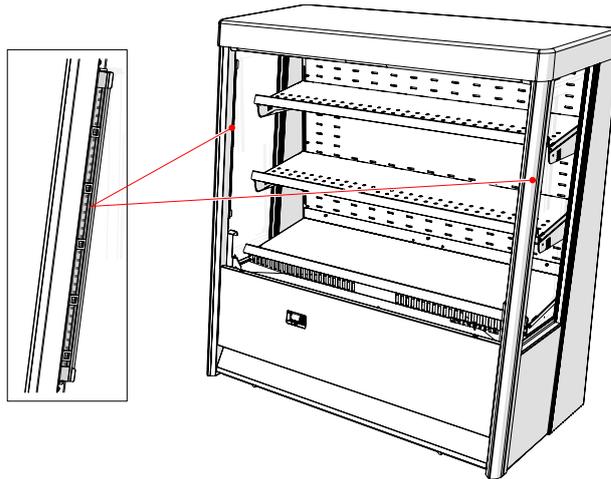
Shelf Lights Shelf lights are fitted at the front of each shelf. The lights connect to the power supply via leads which run under the left hand side of each shelf. The leads are fitted with plugs which must be disconnected when moving the shelves or replacing the lights.



Procedure 11: To replace a shelf light

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove product from the shelf.
3. If present, lift the gravity feed matting and dividers from the shelf and remove from the cabinet.
4. Unplug the light, and remove the shelf from the cabinet (see page 8).
5. Replace the light by sliding it out of the side of the shelf, and sliding the new light in.
6. Refit the shelf and connect the light lead plug. Make sure that the plug is securely attached to the correct socket.
7. If present, refit the gravity feed matting and dividers (see page 9).
8. Test and tag as per standard procedure.
9. Reconnect the cabinet to the mains power supply and check for correct operation.
10. Reload product.

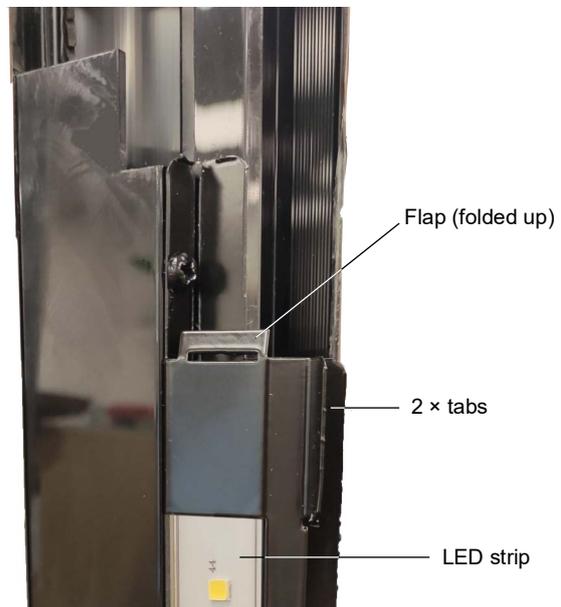
Side Lights The light strips are located on either side of the cabinet's front opening. They clip into the LED brackets and are held in place with metal flaps. The lights connect to the power supply via leads. The leads run down into the cabinet area, then under the upstand into the cartridge compartment. The left hand lead goes directly to the electrics panel. The right hand lead runs in front of the cartridge under the plinth front cross member flange to the electrics panel. It is secured by push tie mounts. The leads are fitted with plugs which must be disconnected when replacing the lights.



Procedure 12: To replace a side light

1. Disconnect the cabinet from the mains power supply (see page 11).

2. Remove the failed LED strip by opening the tabs slightly and pulling out the strip.



3. Unplug the LED strip from the light cable plug.
4. Fit the new LED light strip by pushing the two tabs apart and slotting the strip into the bracket.
5. Connect the LED strip to the light cable plug.
6. Test and tag as per standard procedure.
7. Reconnect the cabinet to the mains power supply and check for correct operation.

DC Power Supply The DC power supply is located in the cartridge electrics box.

Procedure 13: To replace the DC power supply

Before you start

You will need some very high bond (VHB) tape.

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Access the inside of the cartridge electrics box (see page 28).

Procedure 13: To replace the DC power supply (continued)

3. Disconnect the power supply from both of the LED driver's connections inside the junction box:
 - white, 3-way plug
 - red, 2-way plug
-

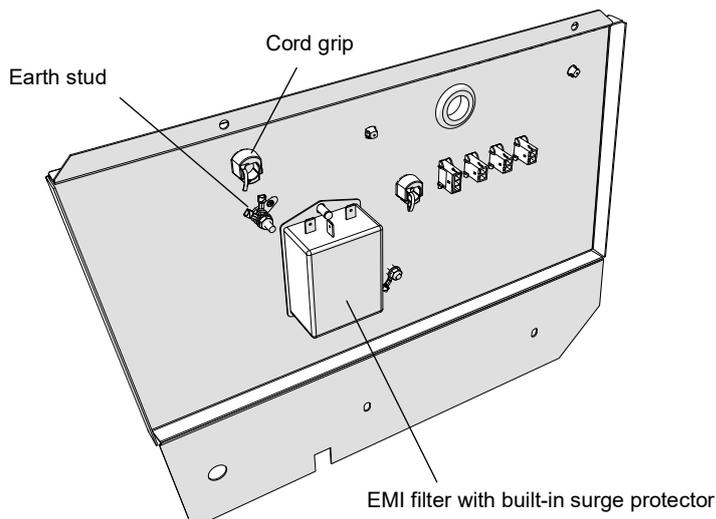
The power supply is stuck in place with VHB tape.

4. Pry the power supply off the bottom of the electrics box and remove any excess VHB.
 5. Stick the replacement LED driver power supply in place with VHB tape, and connect it to the electrical connections.
 6. Reassemble the cabinet.
 7. Perform a safety test before reconnecting the cabinet to the mains power supply.
-
-

Cabinet Electrics Gear Tray

The cabinet is fitted with an electrics gear tray housing the EMI filter, which has a built-in surge protector.

The surge protector protects the cabinet from voltage spikes, and the EMI filter eliminates possible electromagnetic interference, before feeding power into the refrigeration cartridge.

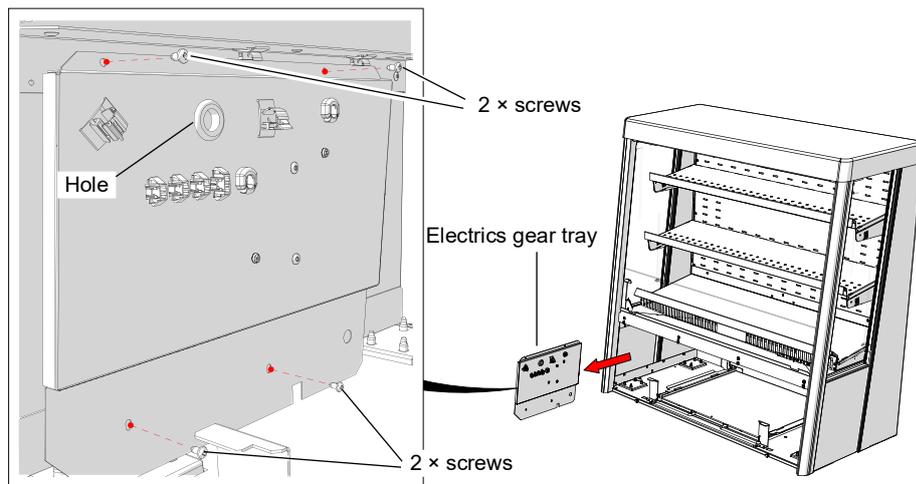


Procedure 14: To remove the cabinet electrics gear tray

1. Disconnect the cabinet from the mains power supply (see page 11).
 2. Remove the kick panel (see page 13).
 3. Remove the refrigeration cartridge (see page 24).
 4. Pull the mains flex into the cartridge compartment.
-
-

Procedure 14: To remove the cabinet electrics gear tray (continued)

5. Unscrew the electrics gear tray.

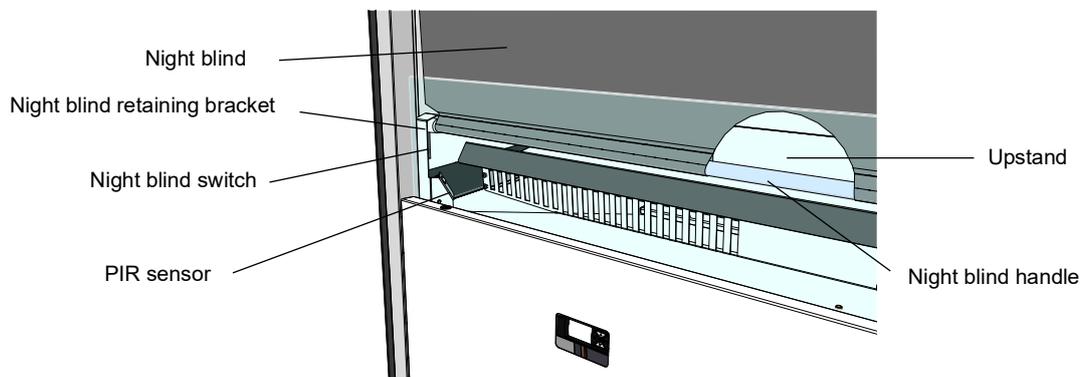


6. Disconnect all the element and light sockets, and pull them through the hole in the tray.

7. Remove the electrics gear tray from the cabinet.

Night Blind

The cabinet is fitted with a manual night blind which should be pulled down into the closed position during store closing hours to save power. The night blind has a switch which automatically tells the electronic controller to run the cabinet in Night mode (with the lights off) when the blind is in the closed position, or Day mode (with the lights on) when in the open position.



The night blind is located in the ceiling of the cabinet behind the sign, and is not visible when it is open.

- To close the night blind, use the handle to pull the blind down and hook it under the night blind retaining brackets at the bottom of the cabinet opening.
- To open the night blind, use the handle to release the blind from the retaining brackets and control the blind as it opens.

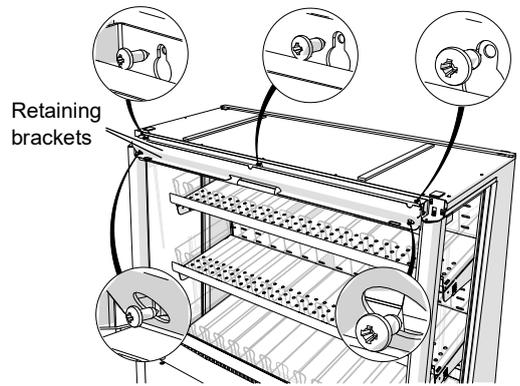
Night Blind Assembly The night blind assembly is made up of:

- two retaining brackets (bracket and stop bracket)
- the night blind
- a spigot bush
- a handle (including the magnet)

Procedure 15: To replace the night blind assembly

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the lid (see page 11) or ambient topper (see page 12).

3. Unscrew the night blind retaining brackets (5 × screws).

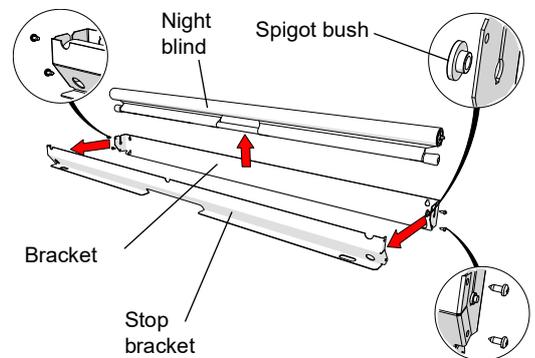


4. Remove the night blind assembly from the cabinet.
5. Screw the new night blind assembly retaining brackets into the cabinet.
6. Reassemble the cabinet and check for correct operation.

Procedure 16: To replace the night blind or spigot bush

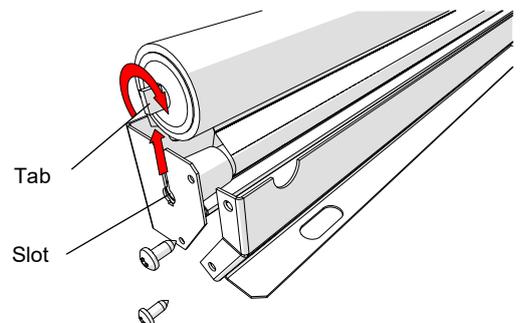
1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the night blind assembly (see Procedure 15 above).
3. Unscrew 4 × screws on the night blind assembly to disconnect the stop bracket from the bracket.

4. Remove the faulty part (night blind, and/or spigot bush).



5. Replace the faulty part. Mount the spigot bush first, then the night blind.
6. Reattach the stop bracket using the 4 × screws.

7. Slide the night blind up in the slot, and rotate the tab 10 to 12 times clockwise, then insert the blind back into the slot in the bracket.



8. Screw the night blind assembly retaining brackets back into the cabinet.
9. Reassemble the cabinet and check for correct operation.

Night Blind Sensor The night blind switch mechanism is made up of a magnet in the night blind handle and a switch fitted to a bracket at the bottom left hand side of the cabinet opening. The switch lead is connected to the refrigeration cartridge electrics box.

Procedure 17: To replace the night blind sensor

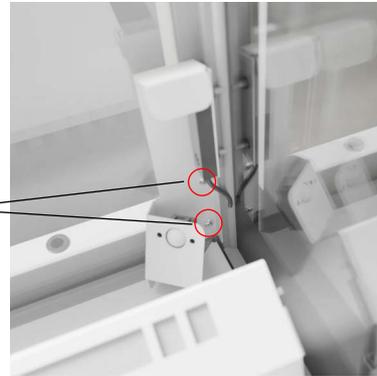
Before you start

The screws in Step 7 holding the night blind sensor are attached with two very small plastic nuts. Be careful not to lose these nuts.

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Gain access to the sockets on the outer left hand side of the refrigeration cartridge electrics box (see page 26).
3. Undo the 8 × fixing screws from the upstand and kick panel retaining bracket and remove them both from the cabinet.
4. Disconnect the night blind sensor lead from the left hand side of the cartridge electrics box (blue, 4-way plug).
5. Pull the night blind sensor lead up into the cabinet.

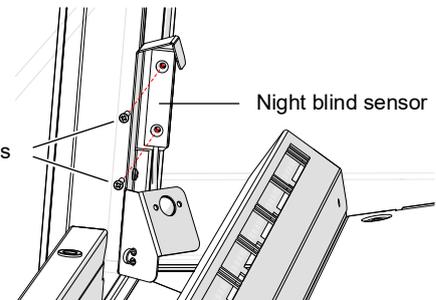
6. Undo the 2 × screws and remove the left hand night blind bracket, with the night blind sensor fitted.

2 × screws



7. Undo the 2 × fixing screws and remove the night blind sensor from the bracket.

2 × fixing screws



8. Fit the new night blind sensor to the bracket.
9. Run the new night blind sensor lead back and reconnect it to the cartridge electrics box (blue, 4-way plug).
10. Reassemble the cabinet and check for correct operation.

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

Diagnosing Lack of Gas The following test is useful to do in a hydrocarbon-compliant workshop (see “Off-site Work” on page 21) to work out if the system is short of gas. Always perform it before opening the refrigeration system.

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

Note: This diagnostic procedure is indicative only.

Procedure 18: To diagnose lack of gas

Before you start

- If a customer reports a “not cooling” fault, and it has been established that the cabinet is not cooling, follow the “On-site Work” protocol on page 21.
- Make sure a suitable workshop is available (see page 21).
- SKOPE recommends using 2 × temperature probes during this procedures for best results.

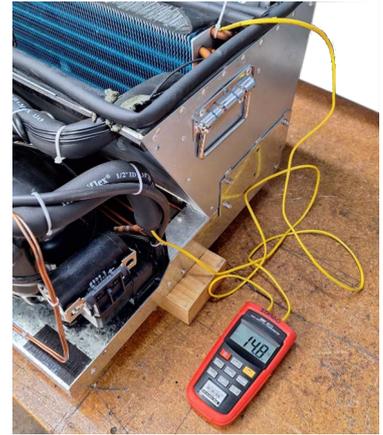
-
1. Disconnect the cabinet from the mains power supply (see page 11).
 2. Remove the refrigeration cartridge (see page 24).
 3. Ensure you are in a suitable workshop (see “Off-site Work” on page 21).
 4. Gain access to the sockets on the outer right hand side of the cartridge electrics box (see page 27).
 5. Unplug the evaporator probe (black, 2-pin plug) from the electrics box.
-

Procedure 18: To diagnose lack of gas (continued)

6. Remove the control probe and its bracket from the rear of the evaporator tub.

7. Fit a temperature probe to the compressor suction pipe 100 mm from the compressor body.

8. Fit a temperature probe to the top right evaporator bend.



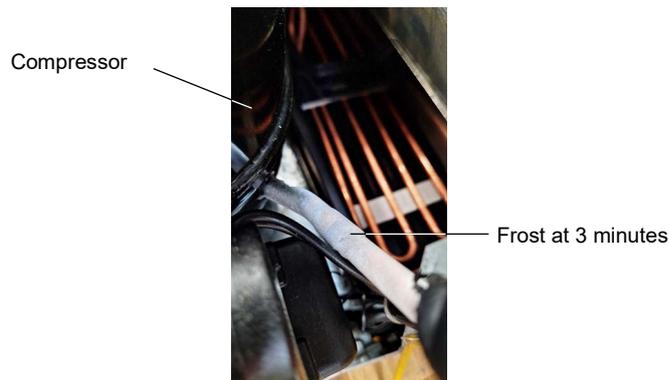
9. Start a stopwatch and connect the refrigeration cartridge to the mains power supply.

- The compressor will start at approximately 16 seconds.
- A red alarm indicator will show on the controller face shortly afterwards. This indicates the absence of the cabinet PIR sensor, but may also mean other missing probes or an alarm. To check:
 - Plug in a spare PIR sensor, or
 - Connect to the controller with your phone.

10. Compare the system operation to Table 3 below.

Table 3: Cartridge UBQENI-0056

Time (min:sec)	Suction pipe temperature	Suction pipe description	Evaporator bend temperature	Evaporator description
1:00	24	Ambient	0	Cold
1:30	20	Cool	-7	Fins start frosting
2:00	7	Cold	-12	Fins start frosting
2:30	-2	Frost starts	-14	Fins frosted
3:00	-6	Frost to body	-17	Fins frosted
3:30	-7	Frost to body	-18	Fins frosted
4:00	-7	Frost to body	-19	Fins frosted
4:30	-8	Frost to body	-20	Fins frosted
5:00	-8	Frost to body	-20	Fins frosted



Procedure 18: To diagnose lack of gas (continued)

11. If the probes do not measure the correct temperatures and/or the frost doesn't match Table 3 above, there may be a fault with the refrigerant charge, compressor, or capillary.
12. If possible, diagnose and repair the fault, then re-test.
13. When testing is complete:
 - Remove the temperature probes.
 - Replace the control probe bracket into the evaporator tub.
 - Plug the evaporator probe back in to the electrical box (black 2-pin socket).
 - Replace the compressor cover.
 - Test run.

Refrigeration Cartridge

The refrigeration cartridge is a bottom-mounted, electronically controlled (see page 10), removable cartridge.

For servicing or transportation, the refrigeration cartridge unplugs and pulls out of the cabinet.

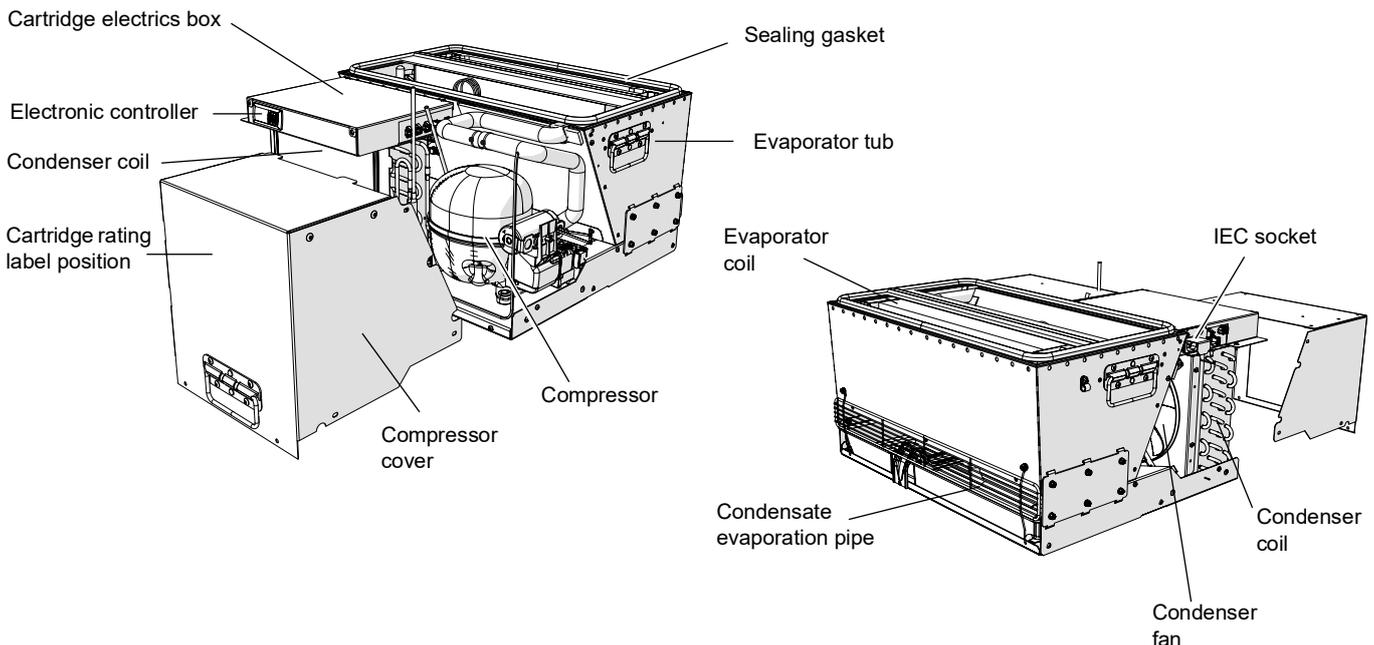
For safety and compliance, only repair the cartridge with SKOPE-supplied parts made specifically for this cabinet. Other parts may appear to be suitable, but may not be approved or safe for use in a fridge with hydrocarbon refrigerant.

The model and serial number are both printed on the cartridge rating label attached to the front of the cartridge.

Before ordering spare parts, take note of the model and serial numbers. Specifications for the model are in the following table. Verify the model and basic requirements before servicing.

Table 4: Cartridge specifications

Cartridge model	UBQENI-0056
Compressor	Embraco EHU6214U
Nominal capacity (W)	940 (EN12900 MBP)
Refrigerant	R290
Charge (g)	150 g



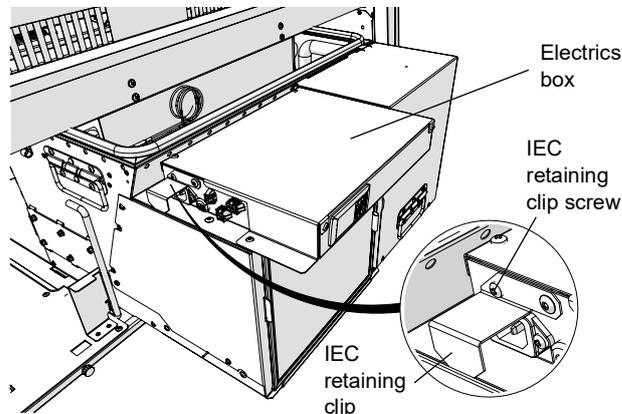
Cartridge Removal and Refitting

Follow the steps below to remove the refrigeration cartridge.

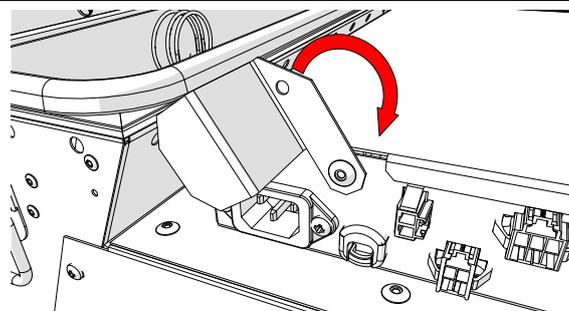
Procedure 19: To remove the refrigeration cartridge

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Gain access to the sockets on the outer left hand side of the refrigeration cartridge electrics box (see page 26).

3. Remove the screw holding the IEC retaining clip.



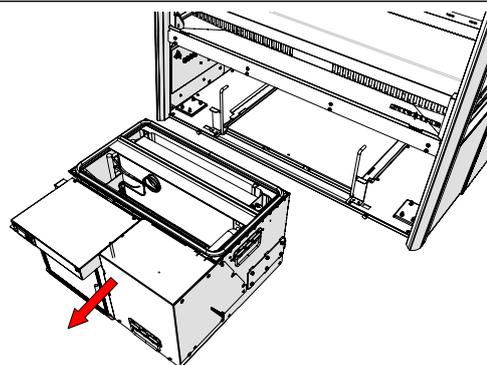
4. Rotate the clip 90°, and pull out the IEC plug.



5. Unplug all the electrical connections at the front left of the cartridge.
6. Continue pulling the cartridge out until you can reach the evaporator fan connection at the rear of the cartridge's left hand side. Unplug it.

7. Using the handles, remove the cartridge from the cabinet. When removing, take care with loose plugs, leads, and the cartridge sealing gasket.

Important: Ensure the cartridge remains level when it is removed from the cabinet to avoid damage to the cartridge seals.

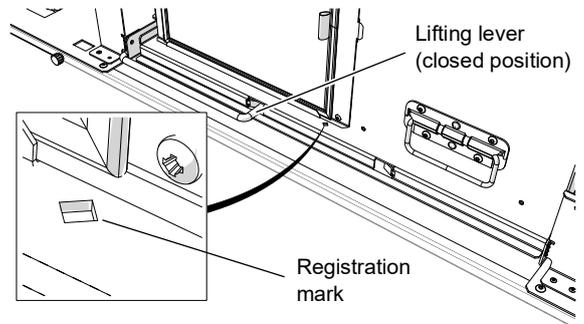


Procedure 20: To refit the refrigeration cartridge**Before you start**

When moving the cartridge, take care of the sealing gasket, and any loose plugs and leads.

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Check that the sealing gasket on top of the cartridge is in good condition.

3. Take note of the registration mark punched into the plinth. When in place, the cartridge must be positioned behind this mark.



4. Lift the back and push the cartridge far enough into the cabinet to plug in the evaporator fan at the rear of the cartridge's left hand side.

Note: Take care not to damage the sealing gasket.

5. Push the cartridge in further until you can plug in all the electrical connections on the front left hand side.
6. Flip down the IEC retaining clip and replace the screw.
7. Push the cartridge in until it is behind the registration mark on the plinth (see step 3).
8. Rotate the two lifting levers inwards to a horizontal position to raise the cartridge and seal it against the cabinet. Push the levers in, making sure they are fully engaged.
9. Loosely screw the 2 × kick panel thumb screws into the plinth cross member.
10. Refit the kick panel (see page 13).
11. Test and tag as per standard procedure.
12. Reconnect the cabinet to the mains power supply, and check for correct operation.

Cartridge Electrics Box The cartridge electrics box contains the:

- electronic controller
- IEC socket
- DC power supply
- panel-mounted socket connectors

The lights socket, night blind socket, and PIR sensor socket are on the outer left hand side of the cartridge electrics box, and the evaporator fan motor socket is on a lead at the rear of the cartridge. You need to disconnect these when you remove the cartridge.

The compressor, condenser fan, and three probe sockets (condenser, evaporator and control) are on the outer right hand side of the electrics box under the compressor cover. You can access these by removing the compressor cover, or by:

- pulling the cartridge forward.
- removing the cartridge electrics box cover.
- undoing the electrics box and pulling it to the left slightly.

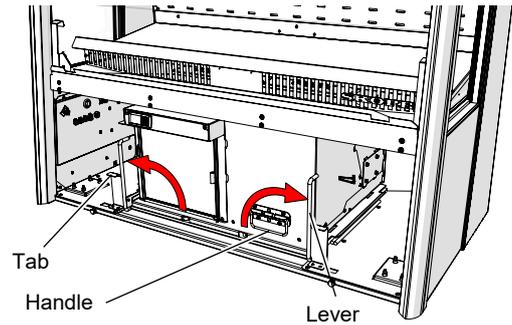
Important

Plugs may come loose as a result of movement and vibrations. When refitting the cartridge electrics box, take care that all plugs are securely attached to the correct sockets.

Procedure 21: To access the outer left side of the cartridge electrics box

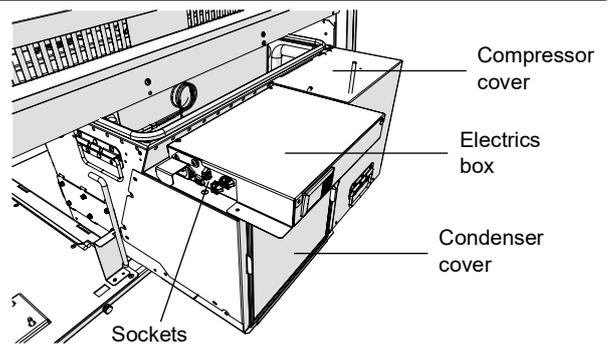
1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the kick panel (see page 13).
3. Remove the 2 × kick panel thumb screws from the plinth cross member.

4. Pull the two lifting levers and rotate outwards to a vertical position to lower the whole refrigeration cartridge. Push them hard to lock them against the tabs, so they don't fall down.



5. Partially pull the cartridge out approximately 200 mm. The cartridge weighs 35 kg, so use the handles.

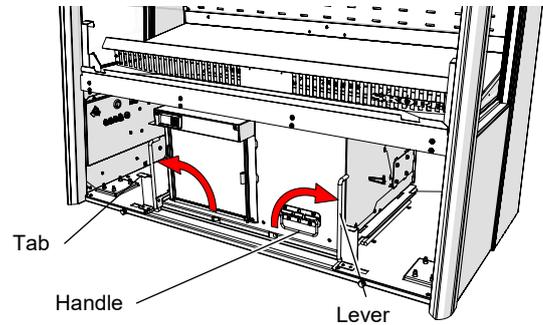
You can now access the sockets on the left hand outer side of the electrics box.



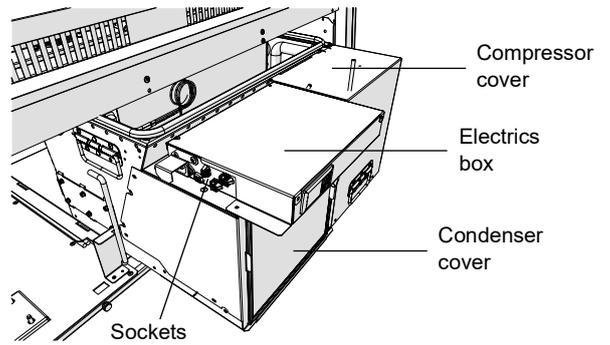
Procedure 22: To access the outer right side of the cartridge electrics box

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the kick panel (see page 13).
3. Remove the 2 × kick panel thumb screws from the plinth cross member.

4. Pull the two lifting levers and rotate outwards to a vertical position to lower the whole refrigeration cartridge. Push them hard to lock them against the tabs, so they don't fall down.

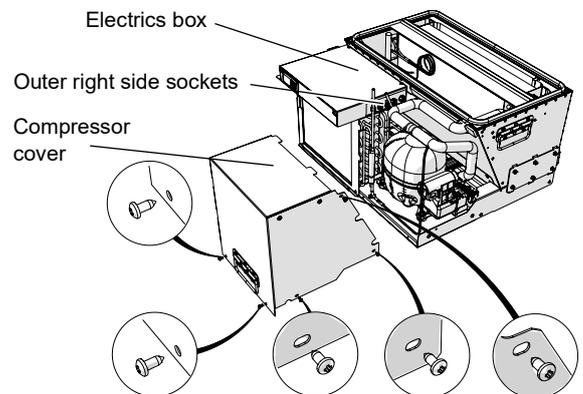


5. Partially pull the cartridge out approximately 200 mm. The cartridge weighs 35 kg, so use the handles.



6. Remove the compressor cover:
 - 2 × screws at the front.
 - 3 × screws at the side.

You can now access the connectors on the outer right hand side of the electrics box.



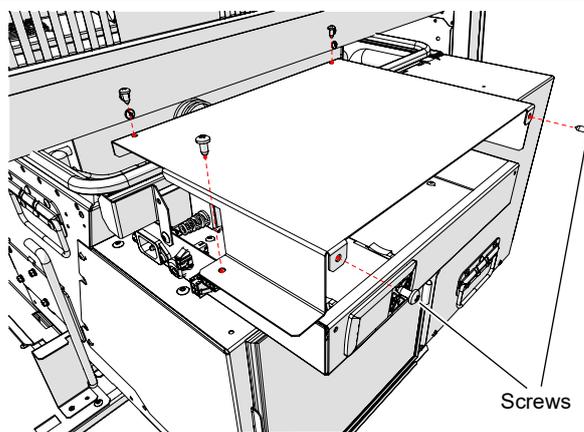
Procedure 23: To access the inside of the cartridge electrics box

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Gain access to the sockets on the outer left side of the refrigeration cartridge electrics box (see page 26), then remove all the electrical connections.

Note: You can leave the IEC plug connected.

3. Pull the cartridge forward so that the cover of the electrics box is fully accessible.

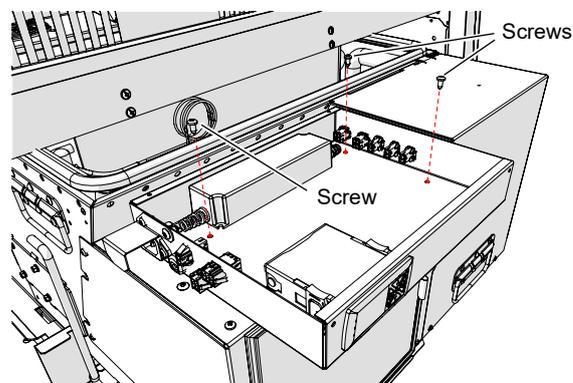
4. To get inside the electrics box, remove the:
 - 2 × screws from the front of the box.
 - 2 × screws on top of the box.
 - 1 × screw connected to the condenser cover.



Procedure 24: To remove the cartridge electrics box

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the kick panel (see page 13).
3. Remove the refrigeration cartridge (see page 24).
4. Remove the cartridge electrics box cover (see Procedure 23 above).

5. Remove the 3 × screws from the bottom of the electrics box.



6. Unplug all the electrical connections on the right of the cartridge.
You can now remove the electrics box.

Condenser The condenser fan assembly is made up of:

- Fan**
- 1 × high speed electronically commutated (EC) fan motor
 - 1 × fan blade
 - 2 × mounting brackets
 - 1 × mounting plate

These are removed from the refrigeration cartridge as a complete assembly. The fan blade, fan motor and mounting brackets can be serviced or replaced if necessary. The condenser fan plug is red.

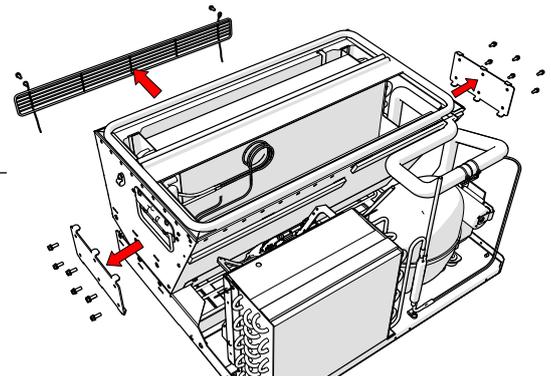
IMPORTANT
 Replace the motor with the same SKOPE OEM part.
DO NOT use alternative parts.

It is important that you replace fan blades and fan motors with the same part to ensure safety, correct alignment and refrigeration performance, and compliance. When refitting or replacing fan motors, ensure that you tighten the blade screw to 1.5 Nm.

Procedure 25: To access and remove the condenser fan assembly

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the refrigeration cartridge (see page 24).
3. Gain access to the sockets on the outer right hand side of the cartridge electrics box (see page 27).
4. Unplug the connectors from the right hand side of the electrics box:
 - 3 × probes (control, evaporator, condenser)
 - condenser fan
 - compressor
5. Remove the electrics box (see Procedure 24 on page 28).

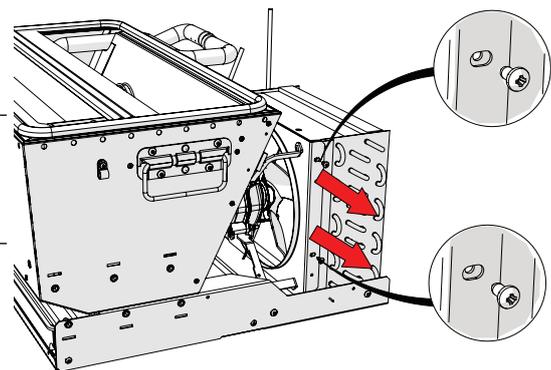
6. Remove the evaporator tub brackets (6 × screws on each side).



7. Remove the rear grille (2 × screws).

8. Push the evaporator tub back slightly.

9. Undo the 2 × screws on the side of the condenser fan shroud.



10. Pull the fan assembly (fan motor, fan blade, mounting brackets and mounting plate) sideways out of the cartridge.

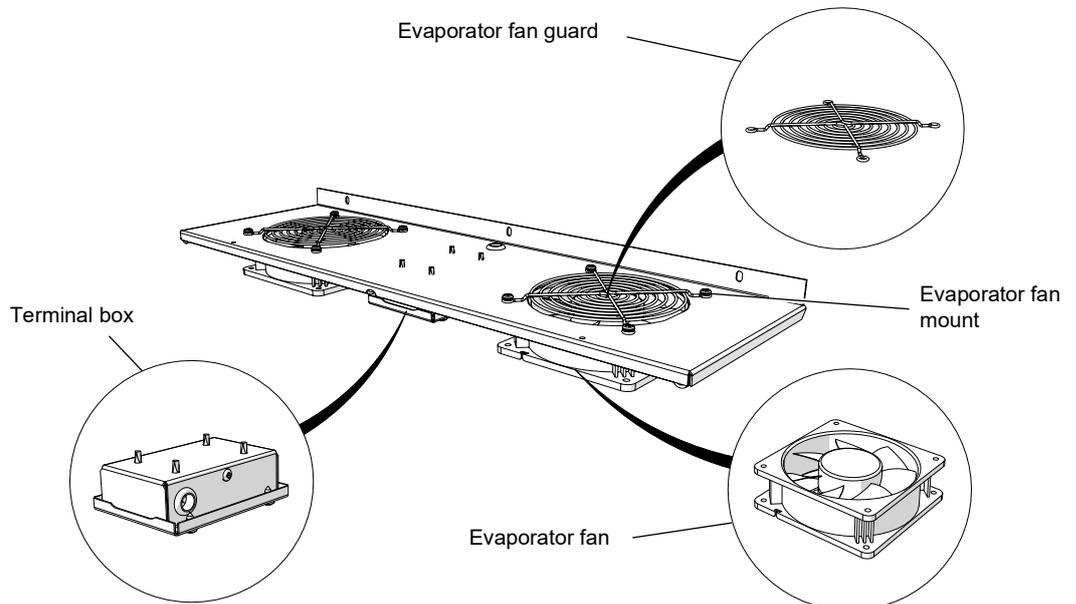
Procedure 26: To replace the condenser fan blade

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the condenser fan assembly (see Procedure 25 above).
3. Remove the screw and washer from the centre of the fan blade, and lift the blade from the motor.
4. Fit the new blade and fix with the washer and screw removed in Step 3. Tighten the screw to 1.5 Nm.
5. Reassemble the cartridge and test for correct operation:
 - “To diagnose lack of gas” on page 21.
 - Test and tag.

Procedure 27: To replace the condenser fan motor

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the condenser fan assembly (see Procedure 25 on page 29).
3. Remove the condenser fan blade (see Procedure 26 above).
4. Detach the condenser fan motor from the fan mounting brackets by removing the 2 × nuts and spring washers from each mounting bracket.
5. Fit the new motor and reattach the fan blade with the 12 mm flat washer and serrated head screw from Procedure 26. Tighten the screw to 1.5 Nm.
6. Reassemble the cartridge and test for correct operation.
 - “To diagnose lack of gas” on page 21.
 - Test and tag.

Evaporator Fan The evaporator fan assembly is inside the cabinet body, under the bottom shelf. It is made up of two fan motors with integrated fan blades, both of which can be replaced if necessary. The flex to the assembly has a white plug and is connected to the cartridge electrics box by the evaporator fan lead. The plug is at the back of the refrigeration cartridge on the left hand side. The fan motors are fitted to the evaporator fan motor mount. The entire assembly can be lifted off the bottom of the cabinet. It is important that you replace the fan motors with the same part to ensure safety, refrigeration performance and compliance.

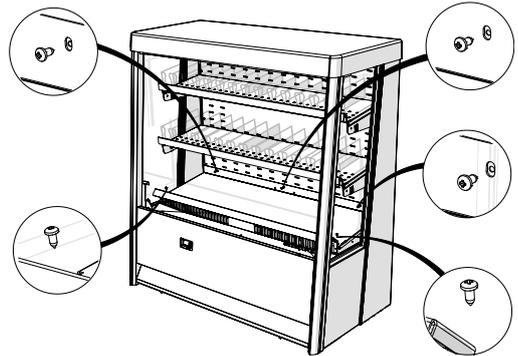


IMPORTANT
 Replace the motor with the same SKOPE OEM part.
DO NOT use alternative parts.

Procedure 28: To access the evaporator fan assembly

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Unload the bottom shelf.

3. Undo the five screws on the bottom shelf.



4. Remove the bottom shelf. You can now access the evaporator fan assembly.

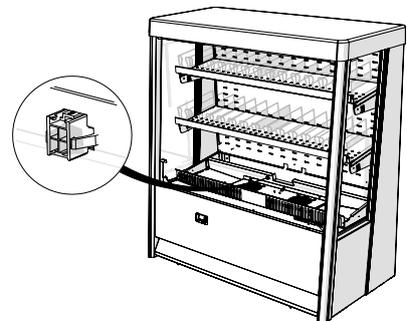
Procedure 29: To replace the evaporator fan motors

Before you start

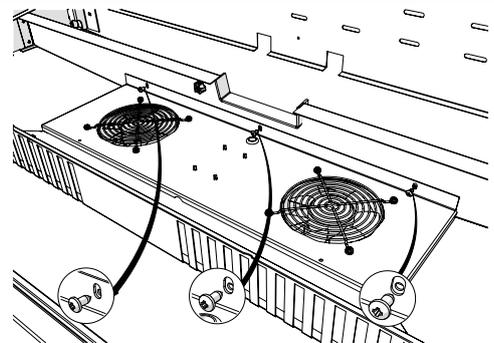
Each evaporator fan is connected via a lead that plugs into the evaporator fan motor.

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Access the evaporator fan assembly (see Procedure 28 above).

3. Disconnect the evaporator fan assembly plug from the socket in the bottom shelf baffle.



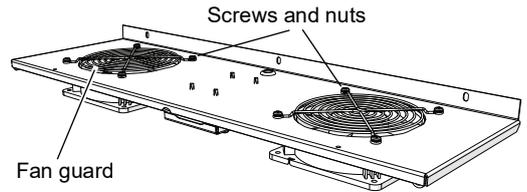
4. Unscrew and remove the three screws at the back of the evaporator fan assembly connecting it to the bottom shelf baffle.



5. Lift the evaporator fan assembly out of the cabinet.
6. Disconnect the lead from the motor you need to replace.

Procedure 29: To replace the evaporator fan motors (continued)

7. Remove the 4 × screws and nuts holding the motor in place. Note that this will also remove the fan guard.



8. Attach the new motor along with the fan guard onto the evaporator fan assembly with the 4 × screws and nuts.
9. Connect the lead to the new motor.
10. Refit the evaporator fan assembly back in the cabinet.
11. Reconnect the evaporator fan assembly plug to the socket in the bottom shelf baffle.
12. Refit the bottom shelf.
13. Test and tag the cabinet as per standard procedure.

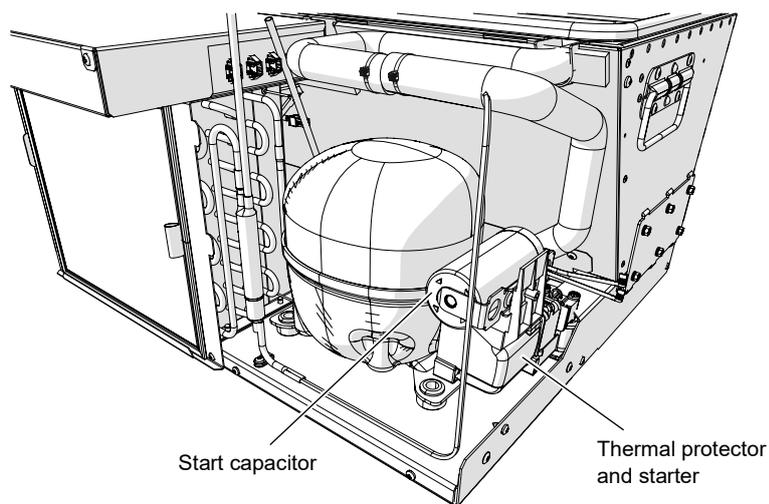
Compressor The cartridge is designed to be used with the specified compressor only. If you need to replace the compressor, ensure that you use the SKOPE-specified compressor. Do not use other compressors in this refrigeration cartridge.

IMPORTANT
 Replace the compressor with the same SKOPE OEM part.
DO NOT use alternative parts.

The compressor is located at the front of the refrigeration cartridge, beside the condenser coil. It must be supplied with consistent voltage over 220 volts.

If considering replacing the compressor (e.g. it's not going):

- Check all plug connections and ensure that the compressor electrics are operating correctly.
- 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).

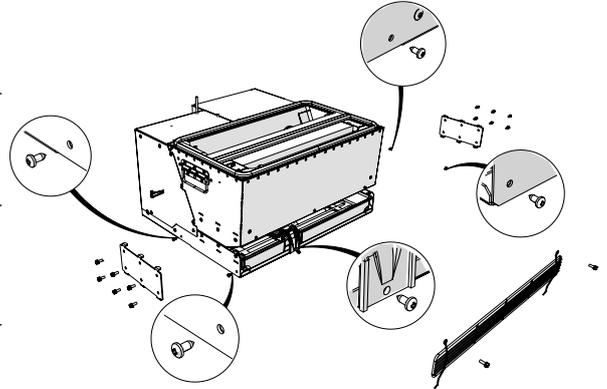


IMPORTANT
 To eliminate possible vibration noise, ensure no pipes touch the evaporator tub bottom surface or condenser coil assembly.

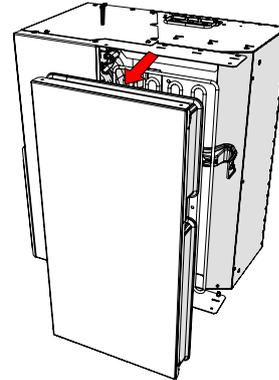
Condensate Tray The condensate tray is at the back of the cartridge, under the evaporator tub. It collects and holds condensation, which is evaporated by the discharge line.

Procedure 30: To remove the condensate tray

1. Disconnect the cabinet from the mains power supply.
2. Remove the refrigeration cartridge (see Procedure 19 on page 24).
3. Remove the evaporator tub brackets (6 × screws on each side).
4. Undo the condensate tray (2 × screws on each side).
5. Remove the rear grille (2 × screws).
6. Undo the condensate pipe brace (1× screw at the back of the tray).
7. If the condensate tray has water in it, mop it up.



8. Carefully tilt the cartridge onto its left side (so the compressor is up).
9. Pull the condensate tray base and pipe brace off the compressor base.



Electronic Controller

Electronic Controller Location The electronic controller is located within the cartridge electrics box, which is attached to the front of the refrigeration cartridge behind the kick panel.

Replacing the Controller

Procedure 31: To replace the controller

Before you start

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

- Open SCS Connect Field app (see [MAN80199 SCS Connect Electronic Controller \[https://tinyurl.com/4n2dvury\]](https://tinyurl.com/4n2dvury)) and check if the parameter file is LOCAL.
- If it is not available in LOCAL, ensure you are connected to the internet, search for it in SERVER, and download it to LOCAL.

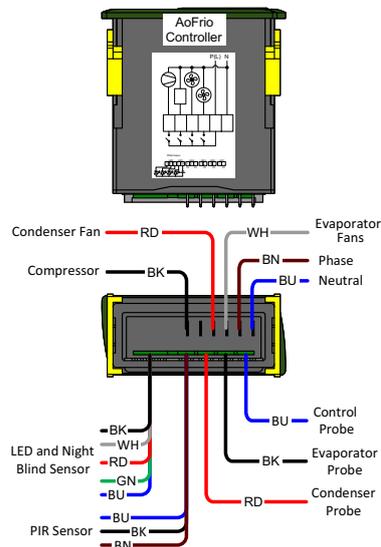
1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the kick panel (see page 13).
3. Remove the cartridge electrics box cover (see page 28).
4. Remove the clips, and disconnect the controller from its mounting.

Procedure 31: To replace the controller (continued)

5. Use needle nose pliers to press in and unlock the tabs, and gently remove the QC terminals at the back of the controller.



6. Fit the new electronic controller.



7. Reassemble the cabinet.
8. Perform an electrical safety test.
9. Connect the cabinet to the mains power supply and use a mobile device to connect to the controller with the SCS Connect Field app.
10. Navigate to the LOAD PARAMETER FILE menu.
11. Select the appropriate parameter file from LOCAL.
12. Confirm you have the correct file and select WRITE TO SCS.
13. After WRITE TO SCS is complete, select MENU > DISCONNECT to save the parameter set on SCS Connect Field app.
14. Power cycle the controller and check that the parameter set has been applied.
15. Open the SCS Connect Field app and re-connect to the controller.
16. Refer to [MAN80199 "SCS Electronic Controller"](https://tinyurl.com/4n2dvury) (<https://tinyurl.com/4n2dvury>) to configure the SCS Info fields of the controller.

PIR Sensor The electronic controller is fitted with a passive infrared (PIR) sensor to monitor activity inside the cabinet. The PIR sensor is located at the bottom left of the cabinet opening.

Procedure 32: To replace the PIR sensor

Before you start

Make sure you take note of the original PIR sensor lead's path.

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the kick panel (see page 13).

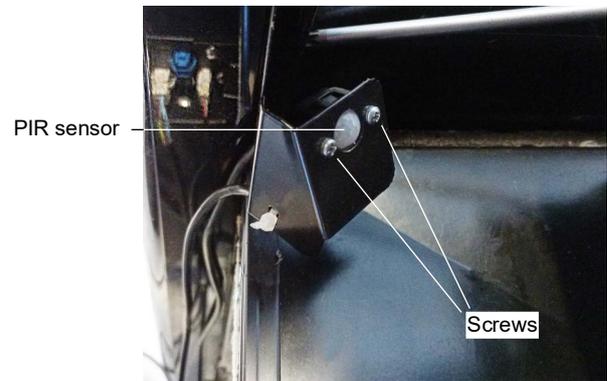
Procedure 32: To replace the PIR sensor (continued)

3. Undo the 8 × fixing screws from the upstand and kick panel retaining bracket and remove both of them from the cabinet.



4. Gain access to the sockets on the outer left hand side of the refrigeration cartridge electrics box (see page 26).
5. Undo the 2 × screws and remove the PIR sensor bracket.
6. Trace the lead back from the sensor bracket to the cartridge electrics box.
7. Unplug the PIR sensor lead from the cartridge electrics box (blue, 4-way plug).

8. Undo the 2 × screws and remove the PIR sensor from the bracket.



9. Following the same path as the original lead, fit the replacement PIR sensor assembly.
 - Connect the lead to the electrics box.
 - Attach the sensor to the bracket.
 - Attach the bracket to the cabinet.
10. Reassemble the cabinet and check for correct operation. Connect to the fridge with the SCS Field app and confirm that:
 - “Motion” appears when waving in front of the PIR sensor.
 - “No Motion” appears when there is no motion.

Control Probe The control probe is located on a bracket at the rear of the evaporator tub.

Procedure 33: To replace the control probe

Before you start

Make sure you take note of the original control probe lead's path.

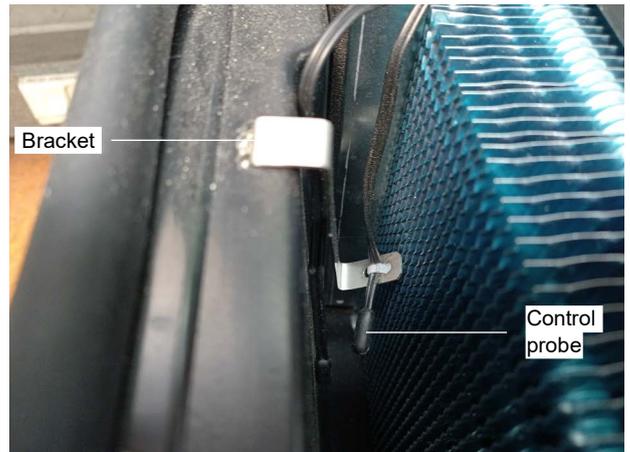
1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the refrigeration cartridge (see page 24).
3. Gain access to the sockets on the outer right hand side of the cartridge electrics box (see page 27).
4. Trace the control probe lead back to the cartridge electrics box, cutting cable ties where necessary, and unplug the control probe from the right hand side (blue socket).

Procedure 33: To replace the control probe (continued)

5. Remove the control probe and its bracket from the cartridge.

6. Following the same path as the original probe, run the new probe to the original location:

- Cable-tie the probe to the bracket, leaving the probe free in the air.
- Clip the bracket back into the hole in the evaporator tub.
- Re-cable-tie the cable to the suction line.



7. Plug the control probe cable in to the electrics box (blue socket), and replace any cable ties.

8. Reassemble the cartridge and test and tag as per standard procedure.

9. Reconnect to the mains power supply and check for correct operation.

Evaporator Probe The evaporator probe is located in the evaporator coil, at the bottom on the right hand side.

Procedure 34: To replace the evaporator probe

Before you start

Make sure you take note of the original evaporator probe lead's path.

1. Disconnect the cabinet from the mains power supply (see page 11).

2. Remove the refrigeration cartridge (see page 24).

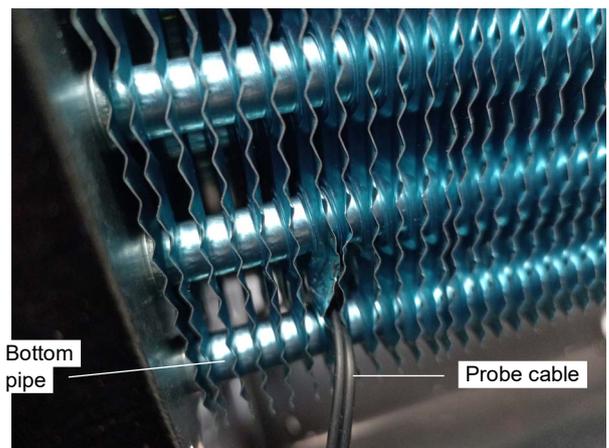
3. Gain access to the sockets on the outer right hand side of the cartridge electrics box (see page 27).

4. Trace the lead back to the cartridge electrics box, cutting cable ties where necessary, and unplug the evaporator probe from the right hand side (black plug).

5. Carefully pull the evaporator probe out of the fins, and remove it from the cartridge.

6. Following the same path as the original probe, run the new probe to the original location:

- Push the probe into the original hole between the fins above the bottom tube, approximately 30 mm from the right hand panel.
- Close the fins behind the probe.



7. Reassemble the cartridge and test and tag as per standard procedure.

8. Reconnect to the mains power supply and check for correct operation.

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

Procedure 35: To replace the condenser probe

Before you start

Make sure you take note of the original condenser probe lead's path.

1. Disconnect the cabinet from the mains power supply (see page 11).
 2. Remove the refrigeration cartridge (see page 24).
 3. Gain access to the sockets on the outer right hand side of the cartridge electrics box (see page 27).
 4. Trace the condenser cable back to the cartridge electrics box, cutting cable ties where necessary, and unplug the condenser probe from the right hand side (red plug).
 5. Detach the condenser probe from the right side of the condenser coil by cutting the cable tie.
-

6. Replace the condenser probe.
 - Following the same path as the original probe, run the new probe to the same position on the condenser coil and secure it with a cable tie.
 - Use cork tape to insulate the probe.
 - Ensure the probe lead is securely plugged into the right hand side of the cartridge electrics box.

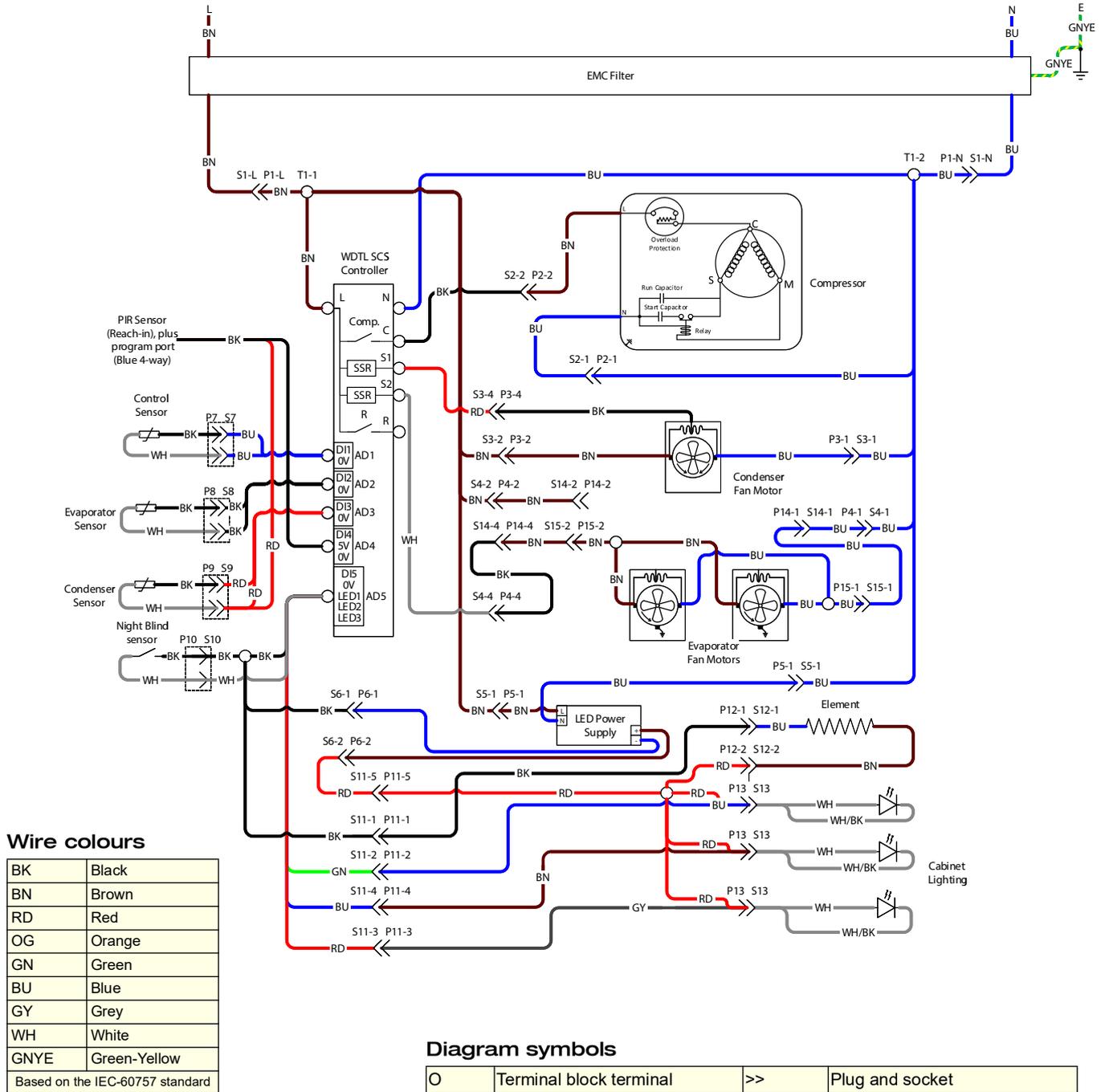
Condenser probe



7. Reassemble the cartridge, and test and tag as per standard procedure.
 8. Reconnect the cabinet to the mains power supply and check for correct operation.
-

5 Wiring

Models: OD300N, OD360N, OD400N, and OD460N



6 Spare Parts

Cabinet

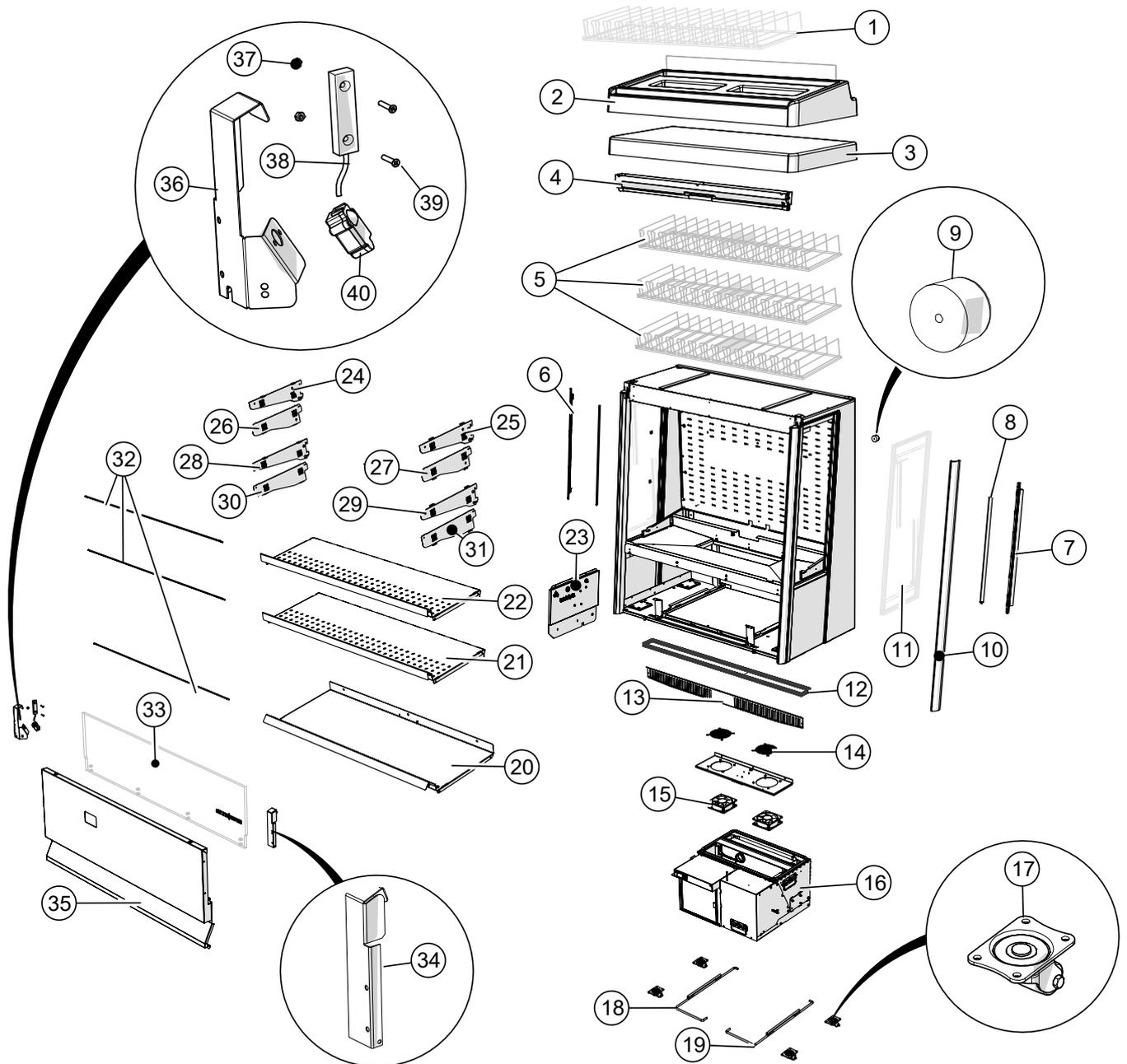


Table 5: Colour coding

Description	Code	Number
White	WH	32
Black	BK	49
Stainless steel	SS	SS or S

Table 6: Parts – Cabinet

Item	Description	Part number				
		OD300N	OD360N	OD400N	OD460N	
1	Gravity matting for ambient topper	Think Retail	SXX12676	SXX12675	SXX12676	SXX12677
		Uniplas	SXX12671	SXX12674	SXX12671	SXX12673
2	Ambient topper	PLM12660-32/49	PLM12659-32/49	PLM12660-32/49	PLM12661-32/49	
3	Plastic lid	PLM12535-32/49	PLM12607-32/49	PLM12535-32/49	PLM11103-32/49	
4	Night blind assembly	See "Night Blind Assembly" on page 42				
5	Gravity matting for cabinet	Think Retail	SXX11216-NB	SXX12502	SXX11216-NB	SXX11163-OD460
		Uniplas	SXX12654-32/49	SXX12657-32/49	SXX12654-32/49	SXX12655-32/49
-	Ticket strip (not shown)	PLE2470-0800	PLE2470-0800	PLE2470-0800	PLE2470-1115	
6	Side light bracket – left hand	O40CLN/L95L-32/49	O40CLN/L95L-32/49	O40CLN/L95L-32/49	O46CLN/L95L-32/49	
7	Side light bracket – right hand	O40CLN/L95R-32/49	O40CLN/L95R-32/49	O40CLN/L95R-32/49	O46CLN/L95R-32/49	
8	LED side light	ELL12682	ELL12682	ELL12682	ELL12684	
9	Rear spacer	RUM4105	RUM4105	RUM4105	RUM4105	
10	Bumper strip	PLE4077BK	PLE4077BK	PLE4077BK	PLE4077BK	
11	Side glass	GLA12754	GLA12611	GLA12591	GLA12590	
12	Top honeycomb air guide	PLX12586	PLX12586	PLX12586	PLX12585	
13	Return air grill	O40CLN/586	O40CLN/586	O40CLN/586	O46CLN/586	
14	Evaporator fan wire guard	WRK11151	WRK11151	WRK11151	WRK11151	
15	Evaporator fan	ELM12557	ELM12557	ELM12557	ELM12605	
16	Refrigeration cartridge (UBQENI-0056)	See "Refrigeration Cartridge" on page 43.				
17	Swivel castor	SXX12567	SXX12567	SXX12567	SXX12567	
18	Lifting arm – left	WRK12534L	WRK12534L	WRK12534L	WRK12534L	
19	Lifting arm – right	WRK12534R	WRK12534R	WRK12534R	WRK12534R	
20	Bottom shelf – lit	*O30CLN/590A-32/49/S	O36CLN/590A-32/49/S	*O40CLN/590A-32/49/S	*O46CLN/590A-32/49/S	
	Bottom shelf – unlit	-	O36CLN-591G-32/49	*O40CLN/590G-32/49	*O46CLN-590G-32/49	
21	Middle shelf – lit	O40CLN/590C-32/49/S	O36CLN/590C-32/49/S	O40CLN/590C-32/49/S	O46CLN/590C-32/49/S	
	Middle shelf – unlit	-	O36CLN-591J-32/49	O40CLN/590J-32/49	O46CLN-591J-32/49	
22	Top shelf – lit	O40CLN/590B-32/49/S	O36CLN/590B-32/49/S	O40CLN/590B-32/49/S	O46CLN/590B-32/49/S	
	Top shelf – unlit	-	O36CLN-591H-32/49	O40CLN/590H-32/49	O46CLN-591H-32/49	
23	Electrics gear tray assembly	See "Cabinet Electrics Gear Tray" on page 46				
24	Top shelf support bracket – left	STY12642L	STY12646L	STY12642L	STY12642L	
25	Top shelf support bracket – right	STY12642R	STY12646R	STY12642R	STY12642R	
26	Top shelf adjustment bracket – left	STY12643L	STY12648L	STY12643L	STY12643L	
27	Top shelf adjustment bracket – right	STY12643R	STY12648R	STY12643R	STY12643R	
28	Middle shelf support bracket – left	STY12644L	STY12647L	STY12644L	STY12644L	
29	Middle shelf support bracket – right	STY12644R	STY12647R	STY12644R	STY12644R	
30	Middle shelf adjustment bracket – left	STY12645L	STY12649L	STY12645L	STY12645L	
31	Middle shelf adjustment bracket – right	STY12645R	STY12649R	STY12645R	STY12645R	
-	Shelf bracket wire clip	PLM12298	PLM12298	PLM12298	PLM12298	
32	LED shelf light	ELL12563	ELL12563	ELL12563	ELL12564	
33	Upstand	PLY12572	PLY12572	PLY12572	PLY12571	
34	Night blind bracket – right	O46CLN/748R-32/49/S	O46CLN/748R-32/49/S	O46CLN/748R-32/49/S	O46CLN/748R-32/49/S	
35	Kick panel	O40CLN/131A-32/49/S	O40CLN/131A-32/49/S	O40CLN/131A-32/49/S	O46CLN/131A-32/49/S	
36	Night blind and PIR sensor bracket – left	O46CLN/748L-32/49/S	O46CLN/748L-32/49/S	O46CLN/748L-32/49/S	O46CLN/748L-32/49/S	
37	M3 nylon nut – black	FAS11918	FAS11918	FAS11918	FAS11918	
38	Night blind sensor	HB0074091444	HB0074091444	HB0074091444	HB0074091444	
39	M5 × 10 mm thumb screw	FAS12275	FAS12275	FAS12275	FAS12275	
40	PIR sensor	O332N/X03	O332N/X03	O332N/X03	O332N/X03	

Table 6: Parts – Cabinet (continued)

Item	Description	Part number			
		<i>OD300N</i>	<i>OD360N</i>	<i>OD400N</i>	<i>OD460N</i>
-	Dual Lock lid fastener (not shown)	SXX2418	SXX2418	SXX2418	SXX2418
-	Side light lead – left hand (not shown)	O46CLN/X06	O46CLN/X06	O46CLN/X06	O46CLN/X06
-	Side light lead – right hand (not shown)	O720/X01	O720/X01	O720/X01	O720/X01
-	Top shelf lighting lead (not shown)	O720/X03	O720/X03	O720/X03	O720/X03
-	Middle shelf lighting lead (not shown)	O46CLN/X03	O46CLN/X03	O46CLN/X03	O46CLN/X03
-	Bottom shelf lighting lead (not shown)	O46CLN/X02	O46CLN/X02	O46CLN/X02	O46CLN/X02
-	Cartridge to cabinet lighting lead (not shown)	O46CLN/X01	O46CLN/X01	O46CLN/X01	O46CLN/X01
-	IEC flex (not shown)	O720/X06	O720/X06	O720/X06	O720/X06
-	Mains flex (not shown)	O720/E53	O720/E53	O720/E53	O720/E53

* The bottom shelves for the OD300N, OD400N, and OD460N are assemblies, because they have a duct mounted on them.

Night Blind Assembly

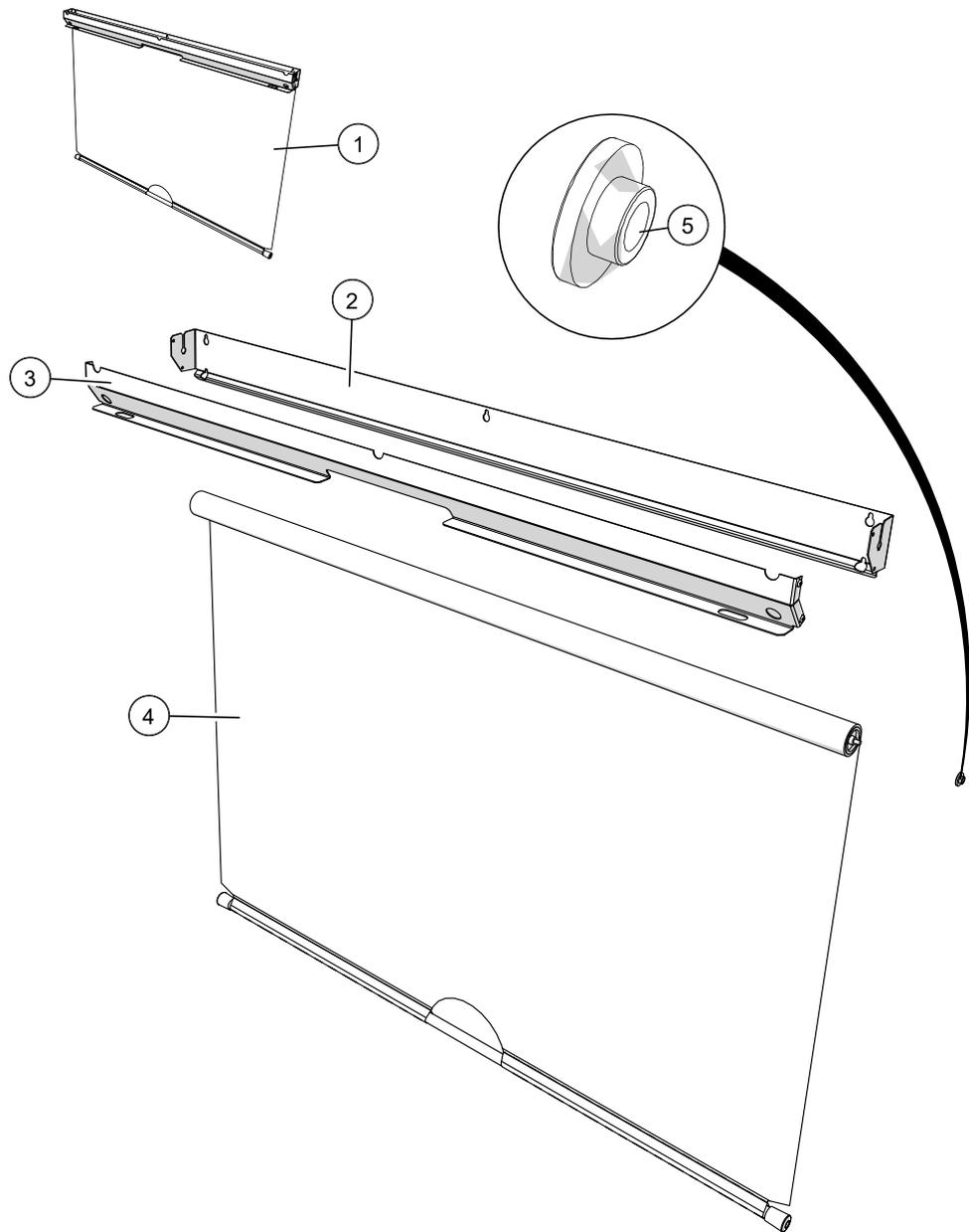
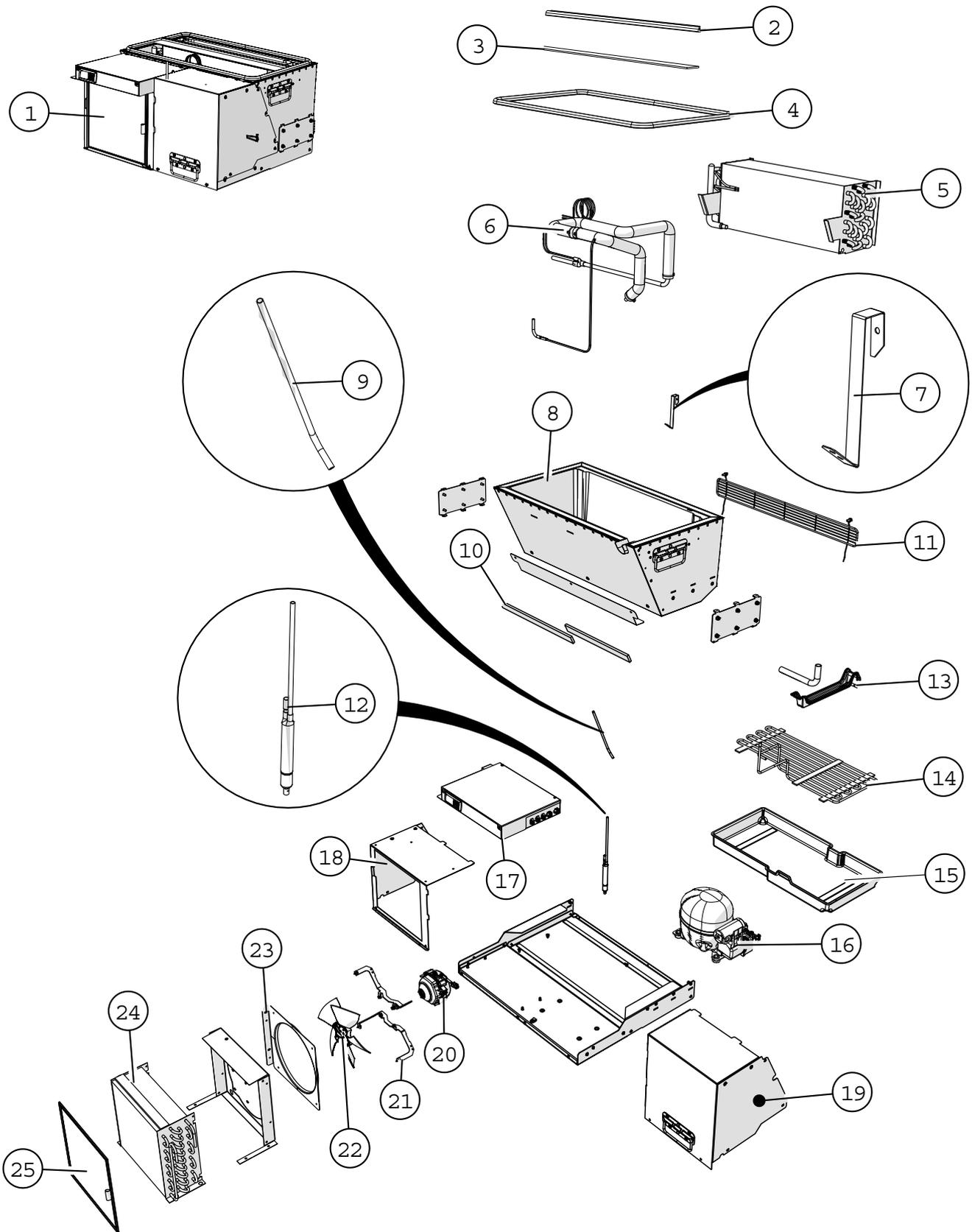


Table 7: Parts – Night blind assembly

Item	Description	Part number	
		OD300N, OD360N, OD400N	OD460N
1	Night blind assembly	O40CLN/N97-32/49	O46CLN/N97-32/49
2	Night blind bracket	–	–
3	Night blind stop bracket	–	–
4	Night blind	SXX12595	SXX11107
5	Spigot bush	PLM10342	PLM10342

Refrigeration Cartridge



Ordering The model and serial number are both printed on the cartridge rating label attached to the front of the cartridge. Before ordering spare parts, take note of the model and serial numbers.

Table 8: Parts – Refrigeration cartridge

Item	Description	Part number
1	Cartridge	UBQENI-0056
2	PE inseal	RUE12210-550
3	38 × 3 PE inseal 550 mm	RUE12288-550
4	Perimeter seal – 1800 mm	RUE12210-1800
5	Evaporator coil	CLS12526
6	Suction line assembly	UA0400027
7	Probe bracket	US09N00002
8	Evaporator tub assembly	UA0500020
9	Process tube	UT04N00001
10	24 mm × 6 mm PE inseal	RUE3991-310
11	Rear grille	UX02N00004
12	Filter dryer	DRY11210
13	Condensate tray hold-down bracket	UP10N00010
14	Discharge line assembly	UT03N00035
15	Condensate tray	UP10N00009
16	Compressor	CPR12608
17	Cartridge electrics box (UA0300048)	See “Cartridge Electrics Box” on page 45
18	Condenser cover	US05N00043
19	Compressor cover	US05N00044
20	Condenser fan motor	ELM11309
21	Fan motor brackets	US01N00001
22	Condenser fan blade	FAN12481
23	Condenser fan shroud	US02N00025
24	Condenser coil	CLS12525
25	Condenser filter	FIL1258
–	Condenser probe (not shown)	UW0300037-150RD
–	Control probe (not shown)	UW0300037-150BU
–	Evaporator probe (not shown)	UW0300037-150BK

Cartridge Electrics Box

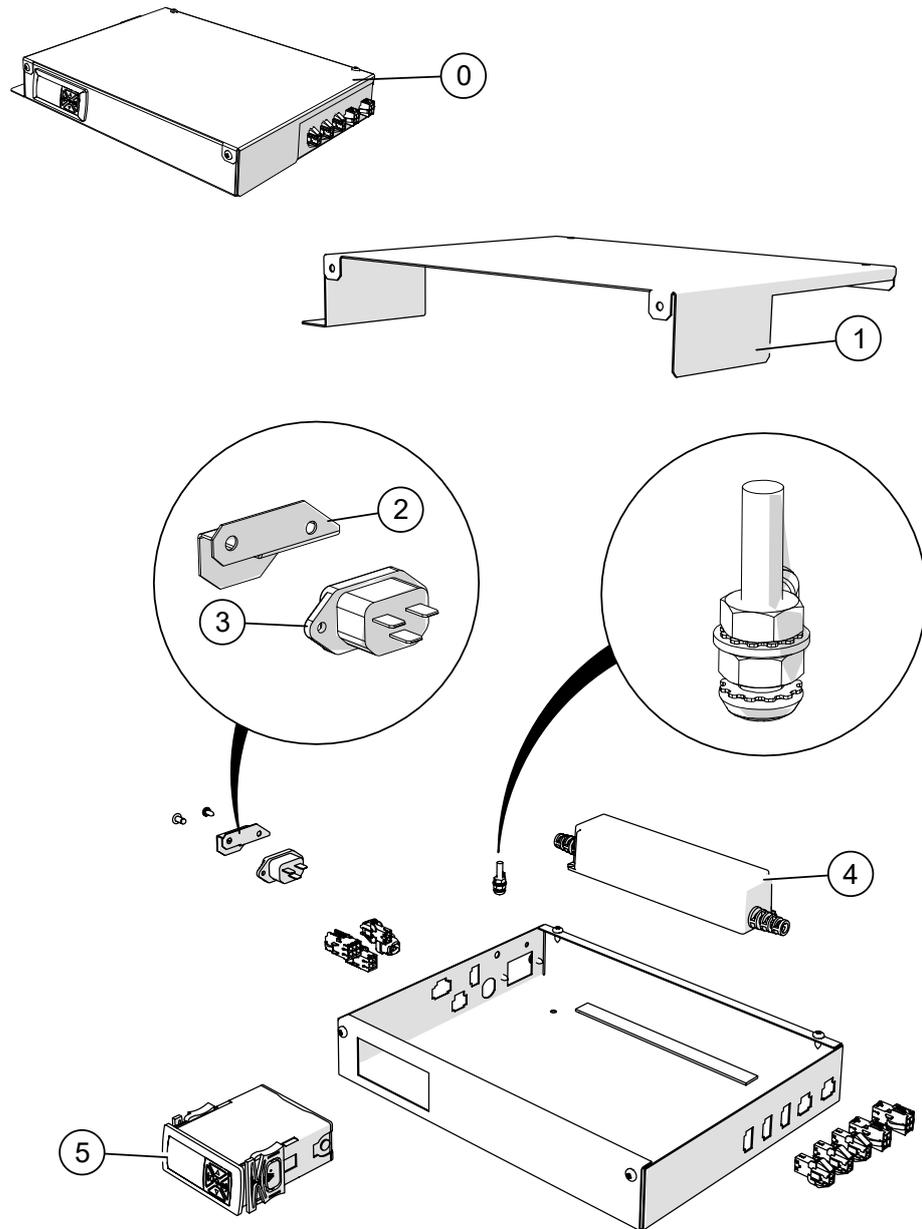


Table 9: Parts – Cartridge electrics box

Item	Description	Part number
0	Cartridge electrics box	UA0300048
1	Electrics box lid	US07N00025
2	IEC retaining clip	US07N00017
3	Inlet IEC C14	ELK12222
4	Mean Well LPF-60-24	ELZ12205
5	AoFrio SCS controller	ELZ11749
–	Electrics box power loom (not shown)	UW0300041A
–	Electrics box signal loom (not shown)	UW0300041B
–	Evaporator motor unit flex (not shown)	UW0100058

Cabinet Electrics Gear Tray

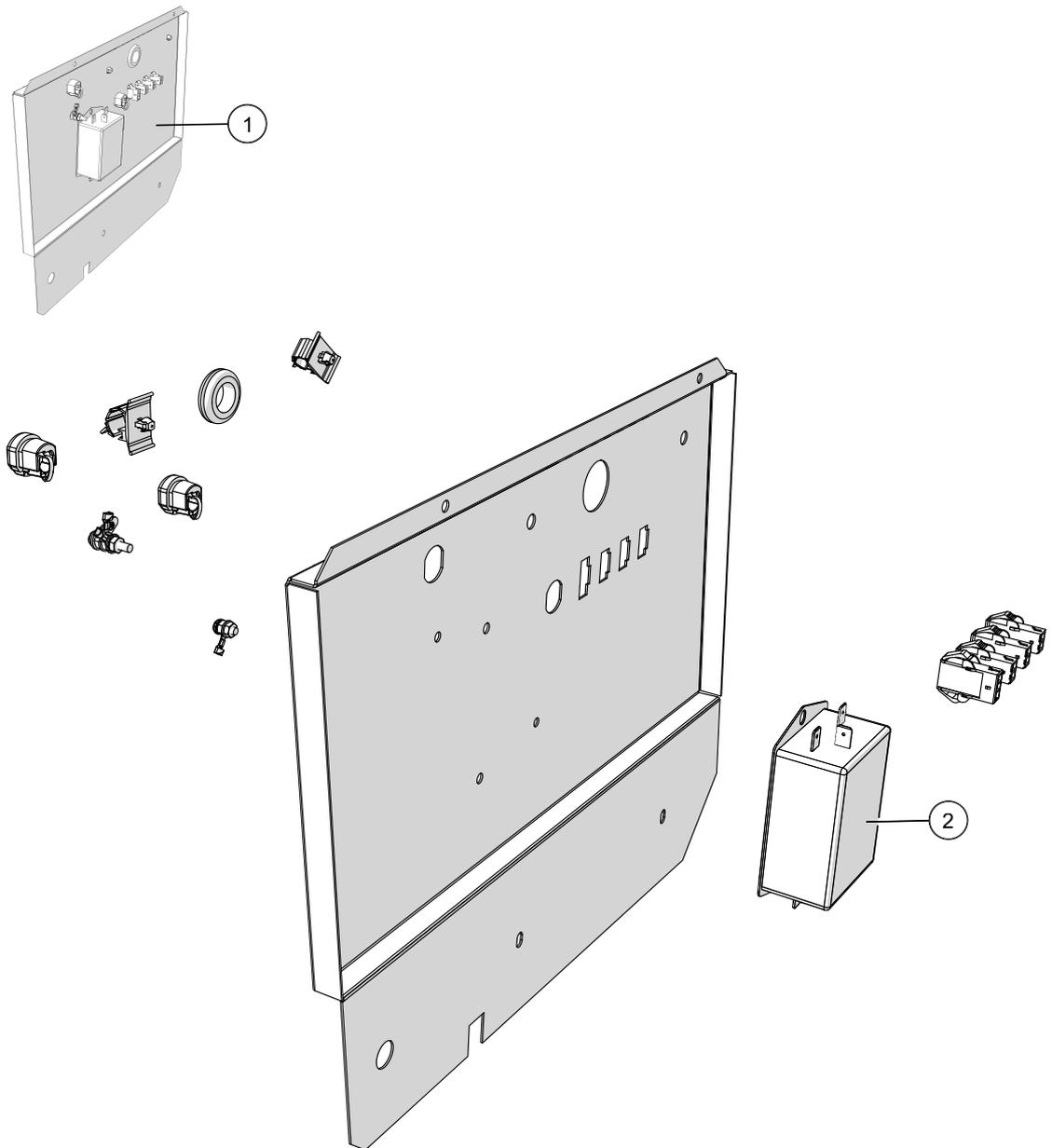


Table 10: Parts – Cabinet electrics gear tray

Item	Description	Part number
1	Cabinet electrics gear tray	O40CLN/G29
2	EMI filter	ELZ10136

7 Maintenance

Cleaning

Before any maintenance, unplug the cabinet from the mains power supply.

Cabinet The owner should periodically wipe the inside and outside of the cabinet with a damp cloth, taking care to keep moisture away from electrical parts.

Condenser Filter and Coil To ensure trouble-free performance, SKOPE strongly recommends the cleaning schedule in Table 11, which will depend on:

- the cabinet’s location and environment.
- the condition of the condenser coil.

Table 11: Cleaning schedule

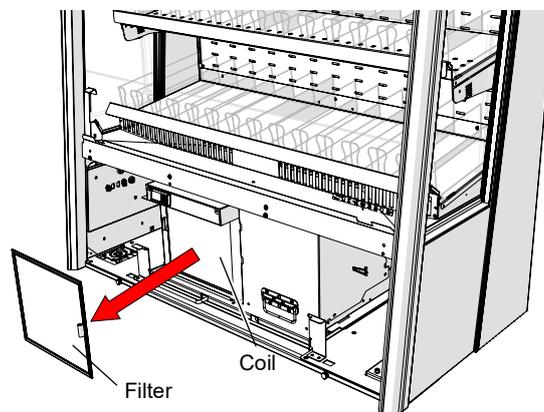
Timeframe	Performed by	Action
At least once a month	Owner	<p>Filter Clean with a vacuum cleaner, and wash with cold water.</p> <p>Condenser coil Brush with a soft brush to remove dust and fluff. If debris can no longer be removed, arrange a service call for comprehensive maintenance and coil clean.</p>
Every 6 months, or as required	Service technician	<p>Filter Clean with a vacuum cleaner and wash with cold water. If necessary, discard the old filter and replace it.</p> <p>Condenser coil Comprehensive maintenance based on the condition of the coil, which may include:</p> <ul style="list-style-type: none"> • a nitrogen blow-out. • a PH-neutral chemical clean.

The condenser coil and air filter **must** be kept clean for efficient and reliable operation. Do **not** use hard or sharp tools to clean the coil as these may cause damage.

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

Procedure 36: To clean the condenser filter and coil

1. Disconnect the cabinet from the mains power supply (see page 11).
2. Remove the kick panel (see page 13).
3. Unclip the filter from the condenser coil.
4. 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 the filter and fit a new one.
5. Brush the condenser coil with a soft brush to remove any dust and fluff.
6. Re-clip the filter to the condenser coil.
7. Refit the kick panel (see page 13).
8. Reconnect the cabinet to the mains power supply and check for correct operation.



8 Troubleshooting

Electronic Controller

Alarms signal unexpected operational changes in the cabinet. When an alarm is activated, use the electronic controller app to help diagnose the problem, and service as necessary.

Cabinet and Refrigeration Cartridge

For problems with the cabinet and refrigeration cartridge use Table 12.

Table 12: Cabinet and cartridge troubleshooting

Problem	Possible cause	Recommended action
<ul style="list-style-type: none"> Cabinet not operating No controller display 	<ul style="list-style-type: none"> Loss of power supply 	Check the mains power supply.
	<ul style="list-style-type: none"> Loose plug 	Check that all plugs are connected correctly.
<ul style="list-style-type: none"> Cabinet not operating as usual Defrost cycle incorrect length 	<ul style="list-style-type: none"> Incorrect parameters 	AoFrio: Reload the parameter set.
<ul style="list-style-type: none"> Fan not working 	<ul style="list-style-type: none"> Loose plug 	Check all plugs are connected correctly.
<ul style="list-style-type: none"> Lights not on 	<ul style="list-style-type: none"> Electronic controller is in Night mode 	<ul style="list-style-type: none"> Switch the light on while keeping the cabinet in Night mode by pressing the light button on the electronic controller faceplate. Change the cabinet into Day mode by pressing and holding the light button on the electronic controller faceplate.
	<ul style="list-style-type: none"> Light switched off/night blind closed 	<ul style="list-style-type: none"> Switch the light on via the light button on the electronic controller faceplate, or the app. Open the night blind.
	<ul style="list-style-type: none"> Failed LED light 	Replace the light.
	<ul style="list-style-type: none"> Refrigeration system error (indicated by the electronic controller) 	Diagnose and repair. If a system fault is found contact SKOPE for information on how to proceed.
	<ul style="list-style-type: none"> Plug not connected properly 	Check and clean the plugs.
	<ul style="list-style-type: none"> Power supply fault 	Replace the light's power supply.
<ul style="list-style-type: none"> Light component not working 	<ul style="list-style-type: none"> Plug not connected properly Faulty light 	<ul style="list-style-type: none"> Check and clean the plug connection. Replace the light.
<ul style="list-style-type: none"> Segment of light not working 	<ul style="list-style-type: none"> Faulty light 	Replace the light.
<ul style="list-style-type: none"> Excess noise vibration 	<ul style="list-style-type: none"> Refrigeration pipes transferring vibration into the cartridge 	Re-align the pipes to ensure they are not touching the evaporator tub bottom surface, or condenser coil assembly.
<ul style="list-style-type: none"> Excess compressor noise 	<ul style="list-style-type: none"> Damaged mountings 	Check the mountings to ensure there is no damage to the rubber, or the washers, nuts or screws.

Table 12: Cabinet and cartridge troubleshooting (continued)

Problem	Possible cause	Recommended action
<ul style="list-style-type: none"> Compressor not operating 	<ul style="list-style-type: none"> Compressor electrics 	<ul style="list-style-type: none"> Check all plug connections and ensure that the compressor electrics are operating correctly. Make sure the compressor is 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).
	<ul style="list-style-type: none"> Failed compressor 	Replace the compressor.
<ul style="list-style-type: none"> Frozen evaporator coil 	<ul style="list-style-type: none"> Evaporator probe fault 	Replace the evaporator probe.
	<ul style="list-style-type: none"> Setpoint is too cold 	Check and raise the setpoint.
	<ul style="list-style-type: none"> Electronic controller fault 	Replace the controller.
	<ul style="list-style-type: none"> Short of refrigerant 	Perform refrigeration system diagnostics and service as required.
<ul style="list-style-type: none"> Ice build-up inside the evaporator tub 	<ul style="list-style-type: none"> Leaking cartridge seal 	Check that the evaporator tub seals are fully clamped, and the cabinet top seal is good without gaps. Micro-gaps will allow ice build-up in the cabinet.
<ul style="list-style-type: none"> Power consumption is higher than expected 	<ul style="list-style-type: none"> Cartridge is operating too hot 	<ul style="list-style-type: none"> Clean the condenser. Ensure the cabinet has good ventilation around the refrigeration cartridge. Ensure the cabinet is within the maximum operating temperature.
	<ul style="list-style-type: none"> Product is too cold 	Raise the setpoint.
<ul style="list-style-type: none"> Product is too warm 	<ul style="list-style-type: none"> Electronic controller is in Night mode 	Change the cabinet into Day mode by pressing and holding the light button on the electronic controller faceplate.
	<ul style="list-style-type: none"> Refrigeration system error (no active fault alarm) 	Check the SCS Connect Field app statistics to see if and when the controller signalled a fault or alarm.
	<ul style="list-style-type: none"> Cartridge is operating too hot 	<ul style="list-style-type: none"> Ensure the cabinet has good ventilation around the refrigeration cartridge.
	<ul style="list-style-type: none"> Excessive refrigeration heat load 	<ul style="list-style-type: none"> Ensure the cabinet is within the maximum operating conditions.
	<ul style="list-style-type: none"> Setpoint is too high 	Lower the setpoint.
	<ul style="list-style-type: none"> The cabinet is recently loaded 	Allow the product time to cool down.
	<ul style="list-style-type: none"> The cabinet is overstocked 	<ul style="list-style-type: none"> Remove some product. Do not allow product to hang over the shelves, or be stocked above the load limit label.
	<ul style="list-style-type: none"> Refrigeration system error (indicated by the electronic controller) 	Diagnose and repair. If a system fault is found contact SKOPE for information on how to proceed.
<ul style="list-style-type: none"> Moisture build up on cabinet exterior 	<ul style="list-style-type: none"> High humidity 	Check the ambient operating temperature and reposition the cabinet if necessary.
<ul style="list-style-type: none"> Warm cabinet temperatures Compressor operating for long periods (more than 1 hour) 	<ul style="list-style-type: none"> Blocked condenser coil 	Clean the condenser coil.
	<ul style="list-style-type: none"> Poor ventilation around the refrigeration cartridge 	<ul style="list-style-type: none"> Ensure the cabinet has good ventilation around the refrigeration cartridge. Ensure the cabinet is within the maximum operating temperature.

SKOPE Contacts

SKOPE Industries Limited

ABN: 73 374 418 306

AU: 1800 121 535

NZ: 0800 947 5673

skope@skope.com

www.skope.com