

FDM Series

SKOPE Food Display Cabinet

Integral models: FDM900i/1200i/1500i



Model FDM1200i

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SKOPE Food Display Cabinet
User Manual

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1 Installation

Safety First When using any electrical appliance, safety precautions should always be observed. Read these instructions carefully and retain for future reference.

- ▣ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- ▣ Children should be supervised to ensure that they do not play with this appliance.
- ▣ Do **NOT** use this appliance for other than its intended use.
- ▣ Do **NOT** cover the grilles or block the entry or exhaust of airflow by placing objects up against the refrigeration unit.
- ▣ Do **NOT** probe any opening.
- ▣ Do **NOT** overload the power supply.
- ▣ Only use this appliance with voltage specified on the rating label.
- ▣ Ensure adequate ventilation of the SKOPE refrigeration unit.
- ▣ Regulations require that all electrical work be carried out by authorised persons. For your own safety, and that of others, ensure this is done.
- ▣ If the supply cord is damaged, it must be replaced by a SKOPE authorised service agent, or similarly qualified person in order to avoid a hazard.
- ▣ If the refrigeration unit is required to be installed or removed from the cabinet, ensure all necessary safety precautions are observed.
- ▣ If this appliance needs to be disposed of, contact SKOPE Industries for information regarding disposal of the appliance.

Caution

Always isolate the cabinet from the power supply before attempting any maintenance.

Introduction

Thank you for choosing a SKOPE Food Display Cabinet. To ensure you get the most out of your product, please read these instructions prior to installation and plugging in of the cabinet.

Operation Although this chiller is very energy efficient further reduction in power consumption can be achieved by turning off the lighting and refrigeration unit when not required.

Saving Power Options	
Level	Action
1	Requires no adjustment. Simply plug in the cabinet for significant power savings.
2	Turn the cabinet interior lights off.
3	Turn the refrigeration unit off (non-perishable product only).
4	Turn the cabinet interior lights and refrigeration unit off.

The cabinet interior lights and refrigeration unit can each be turned off separately using the switches beside the electronic controller (see page 10).

Helpful Tips Below are some helpful tips on how to reduce power consumption and service costs:

1. Turn the cabinet interior lights off when lighting is not required.
2. Turn the refrigeration unit off when the cabinet is being used only for display purposes (not being used for perishable product).
3. Ensure good ventilation of the refrigeration unit by installing in an area away from heated appliances (ovens) and away from direct sunlight (see pages 6-7).
4. Ensure the sliding doors are opened for the minimum of time.
Encourage staff and customers to make product choice prior to opening the doors.
5. Ensure the condenser is kept clean. Check the condenser is clean every month. See page 16 for instructions on cleaning the condenser coil.

Positioning the Cabinet

Cabinet Location When positioning the Food Display Cabinet avoid direct sunlight and warm draughts etc. The cabinet should not be situated where it is affected by hot air from adjacent equipment, as this will compromise the airflow and performance.

The cabinet must be positioned on a level surface for the sliding doors to shut and seal correctly, and to prevent the condensate tray from overflowing.

Installation Guidelines The Climatic Class for the Food Display Cabinet is '4'. This means the Food Display Cabinet is suitable to operate in an ambient temperature (at place of installation) of 30°C at 55% humidity. The cabinet is designed to operate in a maximum ambient of 32°C at 70% humidity but will generally use less power when installed in a cooler location.

When installing the Food Display Cabinet:

- Avoid direct sunlight and warm draughts etc.
- Ensure the cabinet is positioned on a level surface so the sliding doors shut and seal correctly, and to prevent the condensate tray from overflowing.
- Do not overload the power supply (see rating label inside the cabinet for power supply and current draw).

Power Cord The Food Display Cabinet is supplied with a 1.8m flexible power cord fitted with a 3-pin plug, which exits out the rear of the cabinet. The power cord should be retrieved before the cabinet is positioned as walls and partitions may make access difficult.

Ventilation Adequate ventilation is essential. For efficient operation of the Food Display Cabinet, it is essential that adequate ventilation be provided around the refrigeration unit.

- ▣ Do **NOT** cover the rear ventilation panel or block the entry or exhaust of airflow by placing objects up against the refrigeration unit.
- ▣ Do **NOT** block the air vent slots around the bottom of the glass. These air vents are used to keep the glass clear of condensation.

Important:

For efficient operation of the Food Display Cabinet, it is essential that adequate ventilation be provided around the refrigeration unit.



Shelving

The Food Display Cabinet is supplied with pre-installed shelving and lighting. The shelving consists of two levels of angled adjustable shelves and one bottom level of stainless steel trays. The adjustable shelves can be positioned either horizontal or angled down 5°. The shelving is designed to be easily removed from the cabinet for ease of cleaning.

Before initial operation, the plastic ties that hold the shelving and lighting must be removed allowing the shelf angles to be adjusted.

Adjusting the Shelves

1. Remove both sliding rear doors by lifting each door up and pulling out at the bottom.



2. Cut the plastic ties that hold the shelves in position during transit and remove the shelves from the cabinet. When refitting the wire shelves ensure the bottom rail on each shelf sits against the rear support. This prevents the shelves sliding backwards.



3. Remove the shelf rear support panels and shelf lighting panels by lifting up off the shelf brackets. The lighting panels have power cables connected to the cabinet, limiting how far they can be pulled out from the cabinet.



4. Position the shelf brackets at the required angle. The support brackets can be positioned either horizontal or angled down 5°.

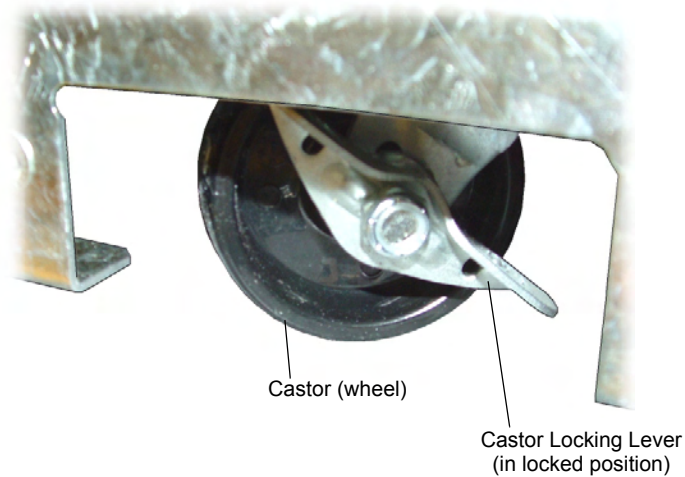


5. Refit the shelf support panels, light panels and wire shelves. Refit the sliding doors by lifting each door up into the top track and placing onto the bottom track.



Locking Castors

After positioning the cabinet, both rear castors (wheels) should be locked to prevent the cabinet from moving. To access the rear castors, remove the ventilation panel from the rear of the cabinet by undoing the two bottom screws. Push the locking lever firmly down on both rear castors (see below). Ensure the ventilation panel is refitted after locking the castors.



Loading Product

The Food Display Cabinet should be left running for 30 minutes before loading with product. When loading the cabinet shelves with product:

- Allow air space around all the product, to ensure even cooling and efficient operation of the chiller.
- Leave an airspace of at least 75mm above product loaded on the top shelf.
- Do not allow products to overhang the rear of the shelves as this could prevent the sliding doors from shutting properly.
- Do not exceed a maximum loading of 20kg per shelf.
- Remove some product if the shelves are flexing or bending.

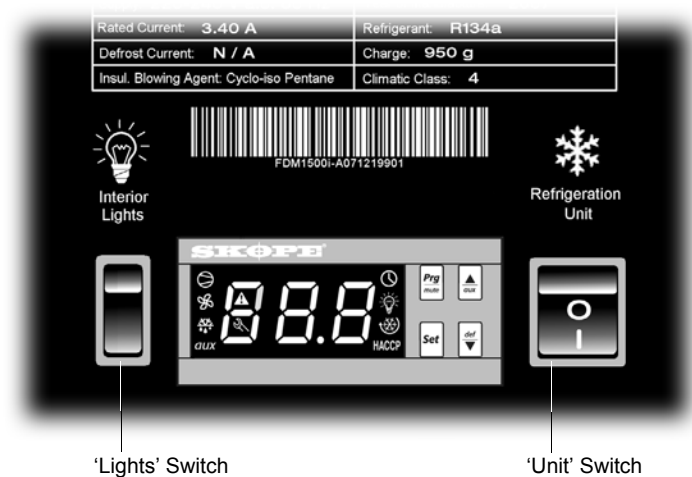
2 Operation

Start-Up

Plug the cabinet into the power supply and check operation of the refrigeration unit, cabinet lighting and electronic controller.

Refrigeration Unit The compressor and condenser fans should all operate within two minutes from the time the cabinet is plugged in. This may be verified by listening for compressor switch on and checking for air movement out of the air vent slots around the bottom of the glass. The compressor and condenser fans should switch off and on, depending on the cabinet temperature.

The 'Unit' switch (on the right hand side of the controller) turns the refrigeration unit off (O) and on (I). The refrigeration unit should not be turned off unless the cabinet is being used for display purposes only (no perishable product).

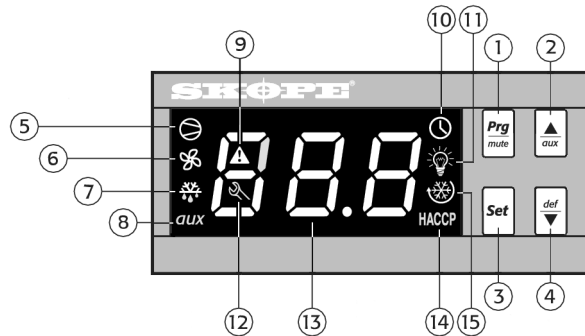


Cabinet Lighting All three interior lights will operate continuously unless they are manually switched off using the 'Lights' switch on the left hand side of the controller. The cabinet fluorescent lights will require a period of time to stabilise following initial start up.

Electronic Controller At initial start up, the electronic controller will display the current cabinet temperature (see pages 11-12 for controller display).

Electronic Controller

Faceplate



Keypad

Item	Key	Function
1		Prg / mute: To initiate programme sets, press for 5 seconds. Mutes the audible alarm (buzzer) and deactivates the alarm relay.
2		UP / aux: To scroll settings UP (in programme mode).
3		Set: If pressed for more than 2 seconds displays and / or enables changing the temperature setpoint (see page 12).
4		DOWN / def: To scroll settings DOWN (in programme mode).

Icons

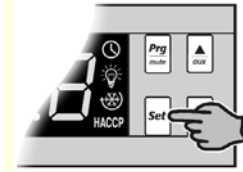
Item	Icon	Function
5		COMPRESSOR: ON when the compressor and condenser fan starts. Flashes when activation of the compressor is temporarily delayed.
6		FAN: ON when the internal cabinet fans are activated. Flashes when activation of the fans is temporarily delayed.
7		DEFROST: ON when the defrost is activated. Flashes when the activation of the defrost is temporarily delayed due to procedures in progress.
8	<i>aux</i>	AUX: n.a.
9		ALARM: Flashes in the event of alarms.
10		CLOCK: n.a.
11		LIGHT: ON when the cabinet lighting is activated.
12		SERVICE: Flashes in the event of malfunctions.
13		DISPLAY: Shows the cabinet temperature.
14	HACCP	HACCP: n.a.
15		CONTINUOUS CYCLE: n.a.

Temperature Setpoint

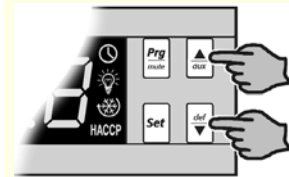
The chiller temperature setpoint is factory set at 1.0°C. If necessary the standard setting can be adjusted between 1.0°C and 5°C.

SKOPE do not recommend that the setpoint be changed unless it is absolutely necessary, and then only by small increments at a time.

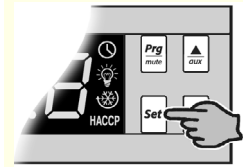
To view and adjust the temperature setpoint



1. To view the setpoint:
press and hold the **Set** key for 2 seconds, until the setpoint value flashes.

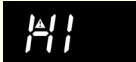





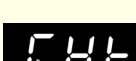








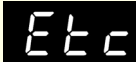









2. To adjust the setpoint:
press either the **Aux** or **Def** keys to display the required setpoint value.



3. Press the **Set** key again to memorise the new setpoint value. If this is not done within 60 seconds, changes will be lost and you will need to repeat the above procedure.

Controller Alarms

Code	Display Icon	Alarm Description	Initial Action	Final Action
	 Flashing	Product HIGH temperature alarm	1. Check the cabinet product loading to ensure ventilation slots are not blocked and that product does not overhang the shelves. 2. Ensure the cabinet is installed with good refrigeration unit ventilation.	If alarm persists, contact SKOPE
	 Flashing	Product LOW temperature alarm	3. Check and clean the condenser coil (see page 16). 4. To reset the alarm, unplug cabinet from the power supply for 1 minute then reconnect to power supply.	
	 Flashing	Refrigeration system high temperature pre-warning	1. Clean the condenser coil (see page 16). 2. Check refrigeration ventilation. Ensure there is adequate ventilation around the refrigeration unit (see page 7).	
	 Flashing	Refrigeration system high temperature shutdown	3. Ensure the cabinet is installed in a suitable environment (see page 6). 4. To reset the alarm, unplug cabinet from the power supply for 1 minute then reconnect to power supply.	
	 Flashing	Ambient probe fault	To reset the alarm, unplug cabinet from the power supply for 1 minute then reconnect to power supply.	If alarm persists, contact SKOPE
	 Flashing	Evaporator probe fault		
	 Flashing	Condenser probe fault		
	None	Defrost over-time limit		
	 Flashing	Real-time clock fault		
	 Flashing	Controller E prom error		
	 Flashing	Controller E prom error		
	None	Start defrost request	None	None
	None	End defrost request		

3 Servicing

Isolating Electrics

The chiller must be isolated from the mains power supply before attempting any cleaning or maintenance. To isolate the chiller, unplug the power cord plug from the power supply socket.

Cleaning

When necessary, the interior and exterior of the cabinet can be wiped with a damp cloth. The sliding doors, wire shelves, shelf support panels, shelf lighting and floor panels can all be removed from the cabinet for ease of cleaning.

Caution:

Isolate the cabinet from the mains power supply before attempting any cleaning or maintenance.

Cabinet

- 1. Isolate the chiller from the mains power supply (see above).

- 2. The sliding doors can be removed from the cabinet by lifting each door up and pulling out at the bottom. To refit the doors, lift each door up into the top track and place onto the bottom track.



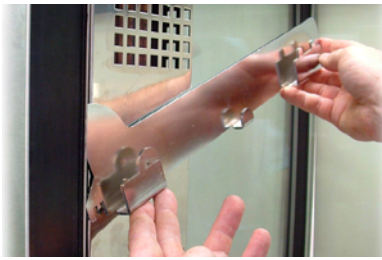

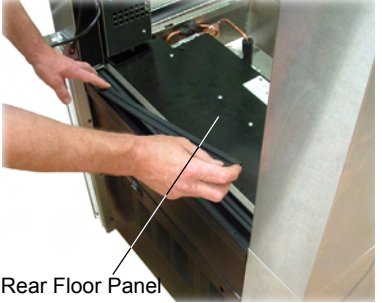
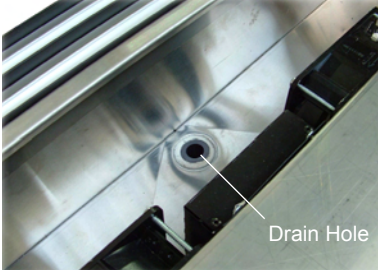

- 3. The wire shelves can be lifted out of the cabinet for cleaning. When refitting the wire shelves ensure the bottom rail on each wire shelf sits against the rear support. This prevents the shelves sliding backwards.



- 4. The shelf rear support panels and shelf lighting can be removed from the cabinet by lifting up, off the shelf brackets. The power supply cable will remain attached to the lighting panels.



Continued over page

<p>5. Remove the shelf brackets by lifting up at the front and pulling out from the cabinet.</p>	
<p>6. The floor panels can be removed from the cabinet by lifting each panel up. The floor of the cabinet can now be accessed for cleaning.</p> <p>Warning: Be careful not to touch the exposed evaporator coil fins as they are very sharp and damage easily.</p>	
<p>7. Both door guide bottom runners can be lifted out for cleaning.</p>	 <p>Rear Floor Panel</p>
<p>8. The evaporator drain should be regularly checked and cleaned to prevent blockage. To access the drain hole, remove the rear floor panel from inside the cabinet (see photo above). If using water to clear the drain, care should be taken not to overflow the condensate tray (see below).</p>	 <p>Drain Hole</p>
<p>9. The evaporator drain tube should also be checked for blockage. To access the drain tube, remove the ventilation panel from the rear of the cabinet by undoing the two bottom screws and unhooking from the cabinet. To clear the drain tube, pull the drain tube out from the cabinet and drain the water into a bucket.</p>	 <p>Drain Tube</p>

Condenser Coil The condenser coil **MUST** be kept clean for reliable operation and to minimise power consumption (a blocked condenser can double power consumption).

To ensure trouble free performance, the condenser coil should be brushed clean once a month. If the electronic controller display flashes '**cht**' the condenser coil must be cleaned immediately.

Over time, dust may accumulate within the condenser that cannot be removed with a brush. If this occurs, contact SKOPE to arrange for a SKOPE Authorised Service Agent to clean the condenser with compressed air.

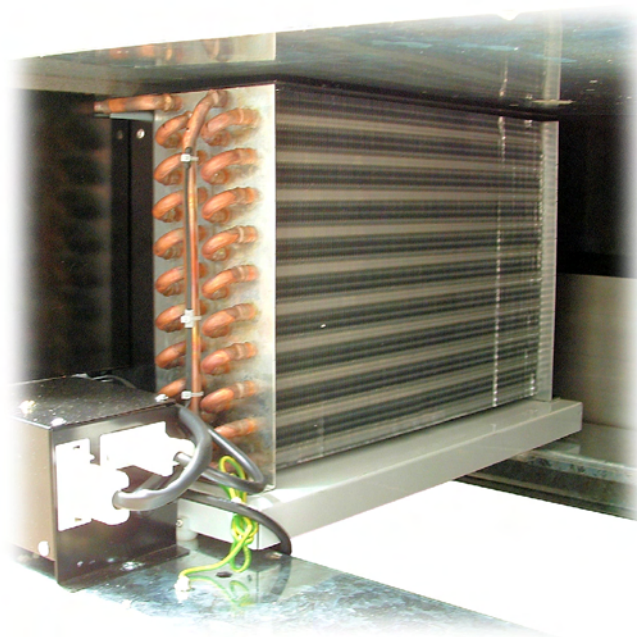
Important:

If the electronic controller flashes '**cht**' the condenser coil must be cleaned immediately.

The condenser coil is situated inside the refrigeration unit compartment at the bottom of the cabinet.

To access the condenser coil

1. Disconnect the cabinet from the mains power supply.
2. Remove the ventilation panel from the rear of the cabinet by undoing the two bottom screws.
3. Be careful when cleaning the coil fins as they are very sharp.
4. Ensure the ventilation panel is refitted.



Caution:

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

Lighting

The Food Display Cabinet is fitted with three fluorescent tube interior lights. One light is located in the ceiling of the cabinet. The other lights are located underneath the front of each shelf. See the chart below for fluorescent tube specifications.

Model	Fluorescent Tube Specifications
FDM900i	14 Watt T5 fluorescent tube (Ø16mm x 550mm) Warm White 830
FDM1200i	21 Watt T5 fluorescent tube (Ø16mm x 850mm) Warm White 830
FDM1500i	28 Watt T5 fluorescent tube (Ø16mm x 1150mm) Warm White 830

Ceiling Light To replace the ceiling fluorescent tube

1. Disconnect the cabinet from the mains power supply.
2. Remove the light diffuser, by compressing one end of the diffuser until it disengages from the housing (see below).
3. The fluorescent tube can now be removed. Revolve the tube until the pin position allows withdrawal.
4. When refitting the diffuser, engage the back section into the housing and then compress and snap the front section of diffuser back into place working along the full length of the light.



Shelf Light To replace a shelf light

1. Remove both sliding rear doors by lifting each door up and pulling out at the bottom. Remove the wire shelves (see page 20).



2. Lift the light assembly panel up off both shelf end supports and remove from the cabinet. The power supply cable will remain attached.



Continued over page

3. Remove the light diffuser, by compressing one end of the diffuser until it disengages from the housing. The fluorescent tube can now be removed. Revolve the tube until the pin position allows withdrawal.



Troubleshooting

Complaint	Possible Cause	Repair
1. Cabinet not operating and no controller display:	<ul style="list-style-type: none"> • Loss of power supply. 	<ul style="list-style-type: none"> • Check mains power supply.
2. Cabinet lights not operating:	<ul style="list-style-type: none"> • Blown cabinet fuse. • Failed fluorescent tube. • Lights are manually turned off. • Controller alarm. 	<ul style="list-style-type: none"> • Requires technical repair by a SKOPE Authorised Service Agent. • Check fluorescent tubes (see page 17). • Switch the lights on (see page 10). • Determine cause and eliminate (see pages 12-13).
3. Power consumption is higher than expected:	<ul style="list-style-type: none"> • Unit operating too hot. • Cabinet doors are opened excessively. 	<ul style="list-style-type: none"> • Clean condenser. Ensure the chiller is installed with good ventilation around the refrigeration unit. • Keep doors open for minimum time.
4. Product is too warm and spoiling:	<ul style="list-style-type: none"> • Restricted cabinet airflow. • Temperature setpoint is too warm. 	<ul style="list-style-type: none"> • Ensure product is not blocking cabinet airflow slots. • Adjust setpoint (see page 12).
5. Warm cabinet temperatures, and/or compressor operating for long periods (more than 1 hour):	<ul style="list-style-type: none"> • Blocked condenser. • Poor refrigeration unit ventilation. 	<ul style="list-style-type: none"> • Clean condenser (see page 16). • Ensure the cabinet is installed with good ventilation round the refrigeration unit.