SKOPE BackBar X

Horizontal Chiller

BB380X-2SW

User Manual

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SKOPE® Refrigeration

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1 Installation

Safety First Always observe safety precautions when using any electrical appliance. Read these instructions carefully and retain them for future reference.

- When the appliance is used by or near young children or infirm persons, close supervision is necessary, especially to ensure children do not play with it.
- 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.
- Only use this appliance with the voltage specified on the cabinet rating label affixed to the inside of the cabinet.
- Ensure the appliance has adequate ventilation as this is essential to economical, high performance.
- Be careful not to touch moving parts and hot surfaces.
- For your own safety and that of others, ensure that all electrical work is done by authorised personnel.
- If the power supply flexible cord becomes damaged, it must be replaced by an authorised service agent or similarly qualified person in order to avoid a hazard.
- Ensure all necessary safety precautions are observed during installation or removal of the refrigeration unit.
- The appliance is not designed to be stable while in motion. Use extreme caution when moving or transporting it.
- Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- Please contact SKOPE customer services for advice regarding disposal of this appliance.

CAUTION

Never overload the power supply, which could damage the cabinet and product. See the rating label inside the cabinet for the safe power supply and current draw.

WARNING

Always disconnect the cabinet from the mains power supply before any cleaning or maintenance.

Locating the Cabinet

Climate Class

The chiller is designed to operate within a climate class 5 environment (40°C @ 40% RH). We recommend that you put the chiller in the coolest place possible because it will use less power and last longer.

Location

When positioning the cabinet, avoid direct sunlight and warm draughts etc. The cabinet must NOT be situated where it is affected by warm or hot air from adjacent equipment, as this will compromise the airflow and performance of the cabinet.

The cabinet must be positioned on a level surface for the doors to shut and seal correctly, and to prevent the condensate tray from overflowing. Adequate allowance should be made for door opening.

Always ensure that the top of the cabinet is shielded from impact and moisture, with either a SKOPE provided bench top, or with a custom or existing bench top.

When installing the cabinet

- Avoid direct sunlight and warm draughts etc.
- Allow adequate space for the doors to open fully.
- Ensure the cabinet is positioned on a level surface so the doors shut and seal correctly and to prevent the condensate tray from overflowing.

Ventilation

For efficient operation of the chiller, it is essential that adequate ventilation be provided around the front of the refrigeration unit. Normal operating conditions should not exceed the rated climate class (see climate class above).

It is critical that the hot refrigeration exhaust air is not restricted and that it can easily flow out and away from the front of the cabinet. Never store cardboard cartons or other items in front of the refrigeration unit. The ventilation slots on the unit front cover must be kept clear at all times.

Power Cord

The chiller is supplied with a flexible power cord and plug, which is located at the rear of the cabinet.

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

> **WARNING:**
> Do **NOT** overload the power supply. See the rating label inside the cabinet for power supply and current draw.

If the chiller does not power up when the cabinet is connected to the power supply, check that the isolation switch is switched on (see page 15).

Integral cabinets

The power cord can be retrieved from either the rear or side power port. Any surplus cord length can be left inside the compartment.

Remote cabinets

The power cord is located behind the unit pipework cover on the back of the cabinet, and should be connected or hardwired to the power supply by a qualified person during installation of the remote refrigeration system.

Positioning the Cabinet

Legs and Castors

The chiller is packed with a set of adjustable height legs and a set of adjustable height castors. The legs can adjust the cabinet height up to 30mm, and the castors can adjust the cabinet height up to 15mm. Depending on specific height and manoeuvrability requirements, either of these sets can be screwed into the mounting plates on the bottom of the cabinet.

Note: If fitting the castors, the lockable castors should be fitted to the front of the cabinet, and the non-locking castors fitted to the rear.

To adjust leg height

1. Turn the black plastic foot at the bottom of the leg counter-clockwise to raise the height or clockwise to lower.

To adjust castor height

1. Rotate the lock nut anti-clockwise to free-up the castor for height adjustment.
2. Turn the castor counter-clockwise to raise the height or clockwise to lower (see image below). Re-tighten each lock nut after final adjustment has been made.

3. After final adjustment has been made, rotate the lock nut clockwise to lock the castor height.

Shelves

The chiller is fitted with wire shelves, which may be positioned at different heights to suit various products.

Fitting the Shelves

Remove all packaging material from the shelves. Clip the shelf support brackets into the shelf support strips, at the desired heights, and fit the shelves. The shelves may be positioned at different heights to suit various products. Always ensure that the shelf clips are securely engaged in each of the shelf support strips. The shelf support strips are marked ‘+’ for easy location of shelf clips and can be lifted up and removed for cleaning purposes.

Remote Cabinet Installation

Only applicable for cabinets with remote refrigeration systems.

SKOPE horizontal remote cabinets are supplied with a seperate instruction sheet: *Guidelines for SKOPE remote Refrigeration* (PRN2362). Refer to this sheet for SKOPE remote refrigeration installation guidelines and specifications.

Power Supply

The power cord and isolation switch is located in the evaporator unit compartment. The power supply should be connected or hardwired by a qualified person during installation of the remote refrigeration system. If the chiller does not power up when the cabinet is connected to the power supply, check that the isolation switch in the evaporator unit compartment is switched on (see page 15).

Electronic Controller

When the cabinet is connected to the power supply, the electronic controller will display the current cabinet temperature. On the controller display, the ⊖ symbol will indicate the compressor output signal has been initiated and the ✠ symbol will indicate the evaporator fan is on.

Pipe Locations

Refer to the images below for component locations and unit access points.

2 Operation

Automatic Start-Up

Connect the cabinet to the mains power supply and check operation of the refrigeration unit and electronic controller.

Item	Activity
Electronic Controller	An electronic controller runs the chiller and is visible behind the front panel. The display panel first flashes start-up messages before stabilising on the cabinet temperature.
Lighting	The light that illuminates the cabinet interior will come on approximately two seconds after the chiller is turned on.
Compressor and Condenser Fan	The compressor and condenser fan will start approximately three seconds after the chiller is turned on. To verify, listen for the compressor and check that the COMPRESSOR light is lit on the electronic controller. The compressor and condenser fan will turn off when the product temperature reaches around +1°C, and on again when it reaches about +3°C (SKOPE default settings).
Evaporator Fan	The evaporator fan starts approximately three seconds after the compressor and condenser fan. To verify, check that the FAN light is lit on the electronic controller.

IMPORTANT

If the cabinet has been on its back, leave for 30 minutes before running.

Lighting

The cabinet interior is lit by one LED tube top light. The lights can be manually switched on and off using the light button on the electronic controller faceplate (see page 12). See page 17 for service instructions.

Loading Product

The chiller should be left running for 30 minutes before loading with product.

When loading product

- Allow air space around all the product to ensure even cooling and efficient operation of the chiller.
- Product may be loaded on the floor of the cabinet, however this may result in warmer than specified product temperatures.
- Do not allow products to overhang the front of the shelf as this could prevent the doors from shutting. Leave an airspace of at least 25mm above product loaded on the top shelf.
- Do not exceed a maximum loading of 20kg per shelf.
- Remove some product if the shelves are flexing or bending.

Door Locks

The cabinet may be fitted with optional door locks. Use the supplied keys to lock and unlock the doors as necessary.

Electronic Controller

Introduction

The chiller is fitted with a Carel S4 Evo electronic controller which is visible through a cutout in the cabinet front panel. The electronic controller is pre-programmed and requires no initial setup or additional programming. SKOPE does not recommend that the settings be changed unless absolutely necessary.

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

To achieve energy efficient operation, the electronic controller uses temperature probes to control and display the chiller temperature, collect data, signal temperature alarms and force a defrost cycle when required.

Faceplate

Because the electronic controller plays such an important role, it's helpful to know the parts of the faceplate you may use.

No.	Item	Description
1		Digital display of cabinet temperature or messages. The temperature is what the sensor inside the chiller detects, and not necessarily the product temperature. However, they may be very close depending on how the controller is set to sense temperature.
2	ES	**Up:** Button. Used for programming.
3	mute set	**Mute (set):** Button. Press to mute the alarm. Press and hold to access parameters.
4		**Light (down):** Button. Press to switch the cabinet interior light on and off.
5		**Defrost:** Indicator. ON when the defrost is activated. Flashes when the activation of the defrost is temporarily delayed due to procedures in progress.
6		**Compressor:** Indicator. ON when the compressor and condenser fan starts. Flashes when activation of the compressor is temporarily delayed.
7		**Fan:** Indicator. ON when the internal cabinet fans are activated. Flashes when activation of the fans is temporarily delayed.
8		**Alarm:** Indicator. ON when alarm is signalled.

Lights

Press the Light button on the electronic controller faceplate to manually switch the cabinet light on and off.

Temperature Setpoint

The chiller temperature setpoint is factory set at 1.5°C, and can be adjusted between 0.0°C and 3.5°C for other specialist applications if required (see below).

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. Press and hold the ***set*** button for 3 seconds until **PS** is shown on the display, indicating entry into the controller settings menu.	
2. Press the ***up*** or ***down*** button to scroll the menu until **St** is shown on the display.	
3. Press the ***set*** button. The current setpoint value is shown on the display.	
4. Press the ***up*** or ***down*** button to increase or decease the setpoint value to the required temperature.	
5. Press the ***set*** button to temporarily save the setpoint value.	
6. Press and hold the ***set*** button for 3 seconds to permanently save the setpoint value and exit the controller settings menu.	

Messages and Alarms

The following table explains messages and alarms that the electronic controller displays.

Messages

Display	Description
2.0	The chiller is in 'Normal' mode and the electronic controller displays the chiller temperature.
--	The chiller internal temperature is above 13°C.
CCP	The chiller is in Cold Climate Protection mode. The chiller enters cold climate protection mode if the room ambient temperature gets too cold. The lights remain on and cannot be switched off.

Alarms

E0	Probe fault. An alarm sounds. Contact a service agent.	
E1		
E2		
LO	Low temperature alarm. An alarm sounds. The temperature inside the chiller is too cold and an alarm sounds. The controller will automatically reset the alarm once the temperature inside the chiller raises.	
HI	High temperature alarm. An alarm sounds. The temperature inside the chiller is too warm and an alarm sounds. The controller will automatically reset the alarm once the temperature inside the chiller drops.	
cht	Refrigeration system high temperature Pre-warning (auto reset)	1. Check refrigeration ventilation and ensure the cabinet is installed in a suitable environment (see page 5). 2. To reset the 'CHt' alarm - unplug the cabinet from the power supply for 1 minute, then reconnect to power supply. If alarm persists, contact a service agent.
CHt	Refrigeration system high temperature Shutdown (manual reset)	
ELO	Low voltage alarm. An alarm sounds. The mains voltage is low. An alarm sounds and the controller switches off the compressor. The controller will automatically reset the alarm once the mains voltage raises.	
EHI	High voltage alarm. An alarm sounds. The mains voltage is high. An alarm sounds and the controller switches off the compressor. The controller will automatically reset the alarm once the mains voltage drops.	
EE	Electronic controller fault. Contact a service agent.	
EF		

3 Servicing

Isolating Electrics

To isolate the chiller from the power supply, either unplug the cabinet from the wall, or use the isolation switch to turn off electrics to the cabinet and refrigeration unit. The isolation switch is located behind the unit cover, inside the refrigeration unit compartment.

To isolate the electrics (integral cabinet pictured)

1. Unscrew the two screws at the top of the unit cover, and lift the unit cover off the cabinet to remove.

   Note: The electronic controller is attached to the unit cover. Take care of cables when removing the unit cover, and if necessary, detach the electronic controller.

2. Switch off (O) the power at the isolation switch, and unplug the IEC plug. Note: On remote cabinets, the isolation switch and IEC plug is located towards the bottom of the compartment.

3. Once the maintenance work has been completed, reconnect the plug and turn the isolation switch back on (I) before refitting the unit cover.

Cleaning

Condenser Coil

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

The condenser coil is located at the front of the refrigeration unit, behind the bottom grille on the unit cover. Take care of the condenser coil fins when cleaning.

To clean the condenser coil

1. Lift the grille up and out of the unit cover to gain access to the coil.
2. Brush the condenser coil with a soft brush to remove any dust and fluff.

3. Refit the grille to the closed position.

Cabinet

When necessary, wipe both the interior and exterior of the cabinet with a damp cloth. Ensure the cabinet is unplugged from the mains power supply before cleaning the cabinet.

CAUTION

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

Lighting

This chiller is designed for use with LED tube lights and is not compatible with fluorescent tubes.

IMPORTANT
DO NOT use fluorescent tubes.

The chiller is fitted with one T8 LED tube light, which can be replaced without moving shelves or product. See the table below for light tube specifications.

Interior light tube specifications

Model	Light specification	SKOPE part number
BB380X	20 Watt T8 frosted LED tube (Ø26mm x 900mm, 5500K)	ELL10742
BB580X	24 Watt T8 frosted LED tube (Ø26mm x 1500mm, 5500K)	ELL10743
BB780X	24 Watt T8 frosted LED tube (Ø26mm x 1500mm, 5500K)	ELL10743

To replace the interior LED light tube

1. Disconnect the cabinet from the power supply (see page 15).
2. Remove the top light diffuser by squeezing it until it is released from the housing.
3. Rotate the LED tube until the pins on the ends of the tube align with the slots, then slide it out.
4. Fit a new LED tube and clip the diffuser back into place.

Troubleshooting

Complaint	Possible Cause	Repair
1. Cabinet not operating and no controller display:	• Loss of power supply.	• Check that the isolation switch is turned on (see page 15). • Check mains power supply.
2. Power consumption is higher than expected:	• Unit operating too hot. • Cabinet doors are opened excessively.	• Clean condenser. • Ensure the cabinet is installed with good ventilation around the refrigeration unit. • Keep door/s open for minimum time.
3. Product is too warm and spoiling:	• Restricted cabinet airflow. • Temperature setpoint is too warm.	• Ensure product is not blocking airflow slots. • Adjust setpoint (see page 13).
4. Warm cabinet temperatures and/or compressor operating for long periods (more than 1 hour):	• Blocked condenser. • Poor refrigeration unit ventilation. • Door seal damaged.	• Clean condenser coil (see page 16). • Ensure the cabinet is installed with good ventilation around the refrigeration unit. • Arrange service call.

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