SKOPE PEGASUS

PG100/250/400HFr-2

Horizontal Freezer - REMOTE

PG100HFr-2

PG250HFr-2

PG400HFr-2

User Manual

MAN6790O Rev. 2.0 Sept. 2008 edition

SKOPE Refrigeration

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User Manual

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- 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

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- Successors or assigns of the buyer
- Future owners of the product

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INSTALLATION

Safety Information

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

- When used by, or near, young children or infirm persons, close supervision is necessary. Young children should be supervised to ensure that they do not play with the 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.
- Only use this appliance with voltage specified on the rating label.
- Ensure adequate ventilation of the SKOPE refrigeration unit.
- Be careful not to touch moving parts and hot surfaces.
- 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 becomes damaged, it must be replaced by a SKOPE authorised service agent, or similarly qualified person, in order to avoid a hazard.
- This chiller is not designed to be stable in motion. Exercise caution when moving or transporting this chiller.

Caution:

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

Fitting Adjustable Legs

Packed inside the cabinet is a set of adjustable height legs, which can be fitted to the cabinet depending on specific height and manoeuvrability requirements. The adjustable legs should be fitted to the base of the cabinet before final positioning of the cabinet.

Adjustable Legs

The adjustable legs screw into the castor mounting plates attached to the bottom of the cabinet (see Figure 1 below). The adjustable legs can adjust the cabinet height up to 30mm.

To adjust the height of each leg - turn the black plastic foot at the bottom of the leg counter-clockwise to raise the height or clockwise to lower (see Figure 2 below).

Castor Mounting Plates

If the chiller is intended to be mounted on a plinth, the castor mounting plates attached to the bottom of the cabinet can be removed to provide a flat bottom. Each castor mounting plate is held in place by four pozi-drive hexagon head screws (see Figure 1 below).

Figure 1: Castor Mounting Plate

Figure 2: Adjustable Leg

Positioning the Cabinet

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 freezer.

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.

Ventilation

For efficient operation of the freezer, it is essential that adequate ventilation be provided around the front of the refrigeration unit. 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.

The maximum recommended ambient temperature for the freezer (at place of installation) is 43°C (Climatic Class 5).

Never store cardboard cartons or other items in front of the refrigeration unit and the ventilation slots in the unit front cover must be kept clear at all times.

When installing the cabinet:

- Avoid direct sunlight and warm draughts etc.
- Allow adequate space for the door/s to open fully.
- Ensure the cabinet is positioned on a level surface so the door/s shut and seal correctly and to prevent the condensate tray from overflowing.
- The self-closing door/s have internal torsion bars, pretensioned at the factory, and should not require any further adjustment.
- Do not overload the power supply. See the rating label inside the cabinet for power supply and current draw.

Power Supply

The cabinet is supplied with a 1.8m 10A flexible power cord and 3-pin plug, which for transit purposes is located inside a compartment in the rear of the cabinet (see Figure 3 below).

Before final positioning of the cabinet, pull the power cord out from the rear compartment and connect to the power supply. For convenience, any surplus cord length may be left inside the cabinet compartment.

Once the freezer has been installed it can be disconnected from the mains power supply by turning off the cabinet isolating switch and unplugging the unit supply isolation flex, located inside the refrigeration unit compartment (see Figure 4 below).

Warning:

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

Figure 3: Power Cord

Figure 4: Isolating Switch

Shelving

The cabinet is supplied with two sets of shelves and shelf support brackets per door. The shelves can be positioned at different heights to suit various products.

To fit the cabinet shelves:

1. Unpack the shelving items from inside the cabinet.
2. Establish the desired position for each of the shelves, based on the height of the product intended to go on each shelf.

3. Fit the shelf support brackets into the corresponding slots in both the front and back support rails. Each shelf requires two support brackets.

4. Slide each shelf into the support brackets.

Loading Product

The freezer 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.
- 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 75mm 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.
- If the cabinet has been on its back, leave for 30 minutes before running.

Refrigeration System Installation

Specifications

REFRIGERATION OPERATIONAL SPECIFICATIONS *	
Mean product temperature:	-18°C
Condensing temperature:	45°C
Liquid temperature:	40°C
Evaporating temperature:	-30°C
Operation basis:	18 / 24 hours

* Maximum 40°C ambient (optimised at 32°C / 65% RH)

MODEL	REFRIGERATION DUTY - R404A
PG100HFr-2	230 Watts
PG250HFr-2	385 Watts
PG400HFr-2	550 Watts

Table 1: Refrigeration Operational Specifications

Refrigeration Practice

Installation must be performed by a refrigeration tradesperson, to an appropriate standard complying with all local regulations.

Performance depends on the overall installation (including condensing unit). Cabinet suitability must always be quantified for the application. The final responsibility for condensing unit performance and component selection rest with the installer.

The installer must check matters such as:

- Heat and Refrigeration load
- Variable operating conditions (usage, ambient and humidity)
- Refrigeration pipe sizing and length (distance, elevation and pressure drop)
- Location and ventilation (cabinet and condensing unit)
- Drainage and power supply
- Evacuating the unit fully prior to charging

Drain

A 350mm long, 19mm O.D. PVC drain hose is supplied. All drainage is to conform to local regulations, covering removal of condensate to waste water. Ensure the cabinet is level and the drain is trapped with adequate fall. Venting the drain may be required for a restrictive run. Use rigid PVC pipe for the drain and ensure the drain has minimum fall of 50mm per metre of drain length.

Electrical

The cabinet is supplied with a 3-core 10 Amp flexible power cord and 3-pin plug. The cabinet lighting and centre pillar heater elements are protected by a 3 Amp fuse, located in the unit junction box.

Electronic Controller

When the cabinet is connected to the power supply, the electronic controller will display the current cabinet temperature. The LED will indicate the compressor output signal has been initiated and the LED will indicate the evaporator fan is on (see page 12 for controller display).

Refrigeration lines

A 1/4” liquid line and 3/8” suction line are provided to attach pipe lines to. The suction line must be insulated.

The electronic controller supplied with the cabinet can switch a solenoid. No solenoid is supplied with the standard remote unit. If a solenoid is fitted and controlled by the electronic controller, the solenoid will need connected to the connector block inside the unit junction box (see Figure 5 below).

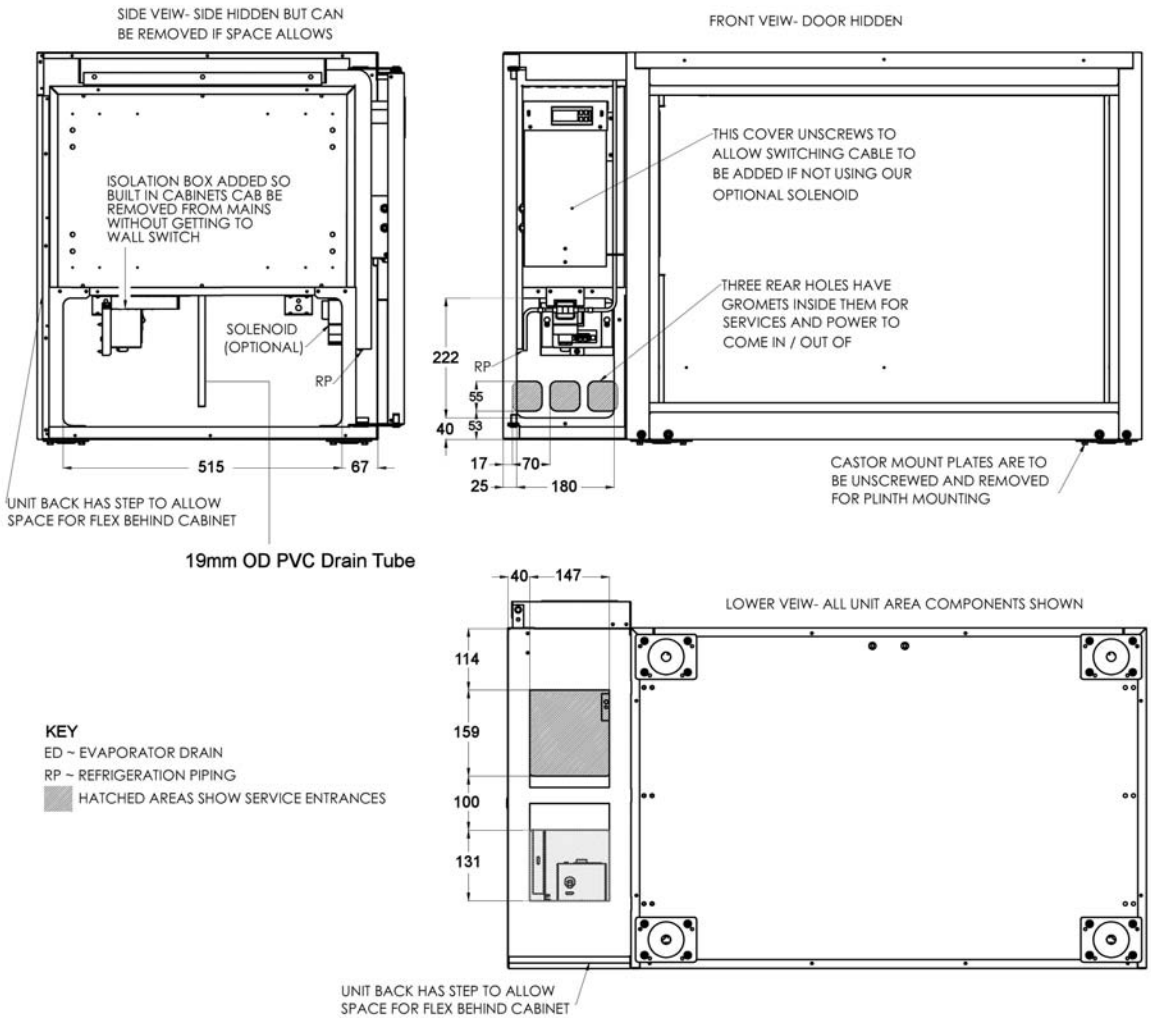


Figure 5: Refrigeration Services

ELECTRONIC CONTROLLER

Controller Display

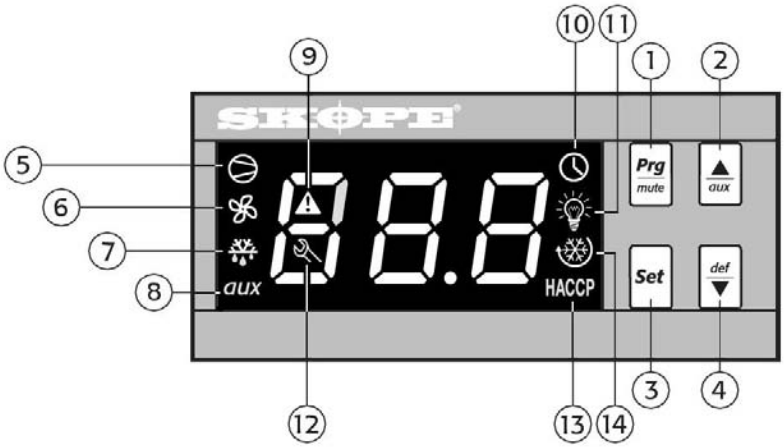


Figure 6: Controller Display

ITEM	ICON	FUNCTION
1	Prg / mute	**Prg / mute:** n.a
2	▲ / aux	**UP / aux:** To scroll settings **UP** (in programme mode).
3	Set	**Set:** If pressed for more than 2 seconds displays and / or enables changing the temperature setpoint (see page 13).
4	def / ▼	**DOWN / def:** To scroll settings **DOWN** (in programme mode). Press for more than 5 seconds to initiate manual defrost.
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	aux	**AUX:** n.a.
9		**ALARM:** Flashes in the event of alarms and when a door is opened.
10		**CLOCK:** n.a.
11		**LIGHT:** n.a.
12		**SERVICE:** Flashes in the event of malfunctions.
13	HACCP	**HACCP:** On if HACCP function is enabled. Flashes if HACCP alarm has occurred.
14		**CONTINUOUS CYCLE:** n.a.

Table 2: Controller Functions

Controller Overview

Function

The CAREL ir33 electronic controller controls and displays the internal cabinet temperature. The preset temperature setting controls the product temperature between -18°C and -21°C. The electronic controller also signals temperature alarms (see Table 3 on pages 14-15).

Operation

For general operation, the electronic controller requires no initial setup or additional programming, but there is the ability to alter the temperature setpoint (see below).

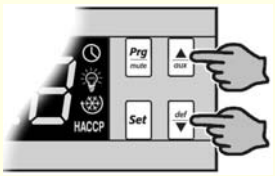
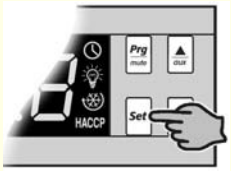
To ensure efficient operation, the electronic controller forces four hourly defrosts. During the defrost cycle, the compressor and condenser fan switches off and the evaporator fan stays on.

Temperature Setpoint

The chiller temperature setpoint is factory set at 2.0°C. If necessary the standard setting can be adjusted between 1.5°C and 3.5°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

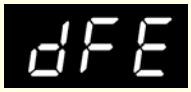
CODE	DISPLAY LED	BUZZER	ALARM DESCRIPTION
	Flashing	on	Product HIGH temperature alarm (auto reset)
	Flashing	on	Product LOW temperature alarm (auto reset)
	Flashing	off	Ambient probe fault (also flashes ‘rE’)
	Flashing	off	Evaporator probe fault
	Flashing	off	Condenser probe fault
	None	off	Defrost over-time limit
	Flashing	off	Real-time clock fault
	Flashing	off	Controller E prom error
	Flashing	off	Controller E prom error
	None	-	Start defrost request
	None	-	End defrost request
	Flashing	on	Door open alarm
	Flashing	on	High pressure switch activation alarm

Table 3: Controller Alarms

NOTE: The audible alarm buzzer cannot be turned off manually.

ACTION
1. Check the cabinet product loading to ensure ventilation slots are not blocked, and that product does not overhang the shelves. Ensure the doors are closed. 2. Ensure the cabinet is installed with good refrigeration unit ventilation. 3. If immediate alarm recovery is required - unplug the cabinet from the power supply for 1 minute, then reconnect to power supply. If alarm persists, contact SKOPE. **NOTE:** The 'HI' and 'LO' alarms deactivate the cabinet lighting and trim heaters.
To reset alarm - unplug the cabinet from the power supply for 1 minute, then reconnect to power supply. If alarm persists, contact SKOPE.
None
Check that a door has not be left open. **NOTE:** The audible alarm buzzer cannot be turned off manually.
Check ventilation and manually reset alarm - unplug the cabinet from the power supply for 1 minute, then reconnect to power supply. If alarm persists, contact SKOPE.

Table 3: Controller Alarms (continued)

Lighting

Cabinet Interior Lights

The cabinet interior is lit by a 15 Watt light bulb (OSRAM PYGMY CL 15 E14), fitted behind each centre pillar. The interior light will go on when a cabinet door is opened. The single door model, without a centre pillar, has the interior light fitted on the ceiling of the cabinet.

To replace the interior light bulb:

1. Disconnect the cabinet from the mains power supply.
2. Reach inside the cabinet and turn the screw holding the bottom of the light cover a 1/4 turn.

3. Remove the light cover by lifting it out and pulling down until it disengages from the top screw.

4. Unscrew the light bulb and replace with SKOPE part no. ELL2478.

Cleaning

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

The chiller chiller can be disconnected from the mains power supply by turning off the cabinet isolating switch and unplugging the unit supply isolation flex - located inside the refigeration unit compartment (see Figure 7 below).

Caution:

Disconnect the cabinet from the mains power supply before washing the cabinet with water.

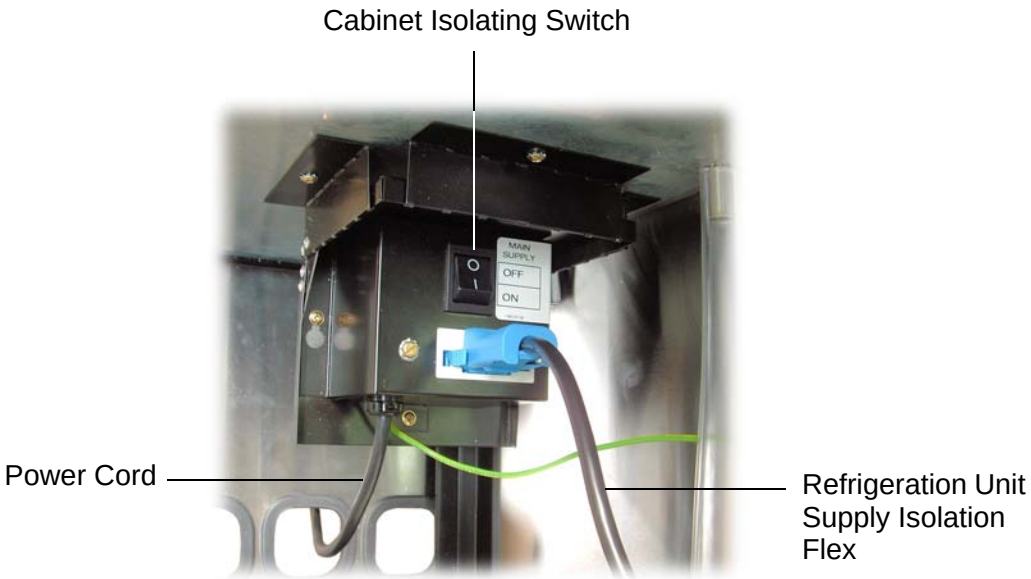
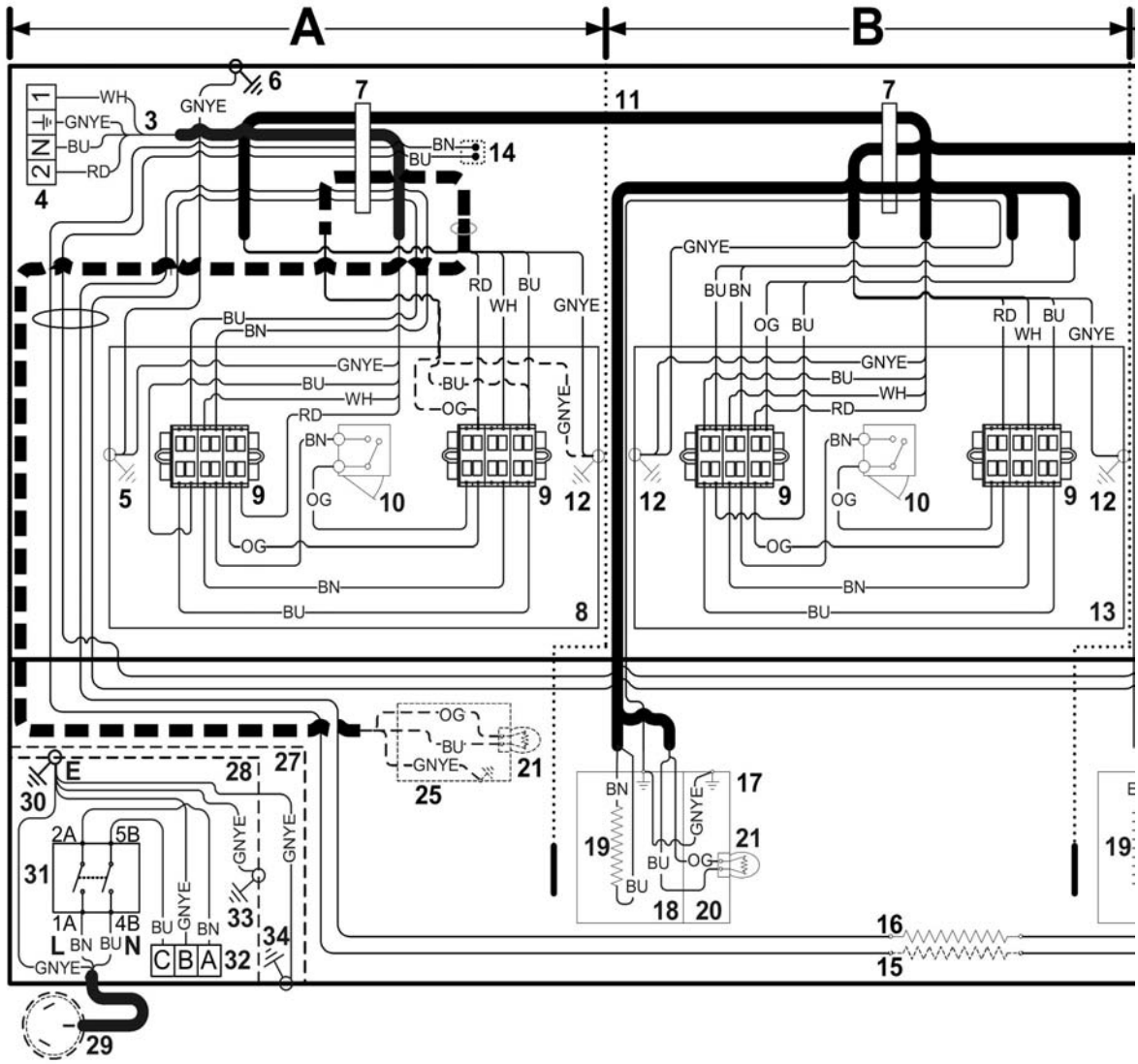


Figure 7: Cleaning the Condenser Coil

Cabinet Wiring Diagram

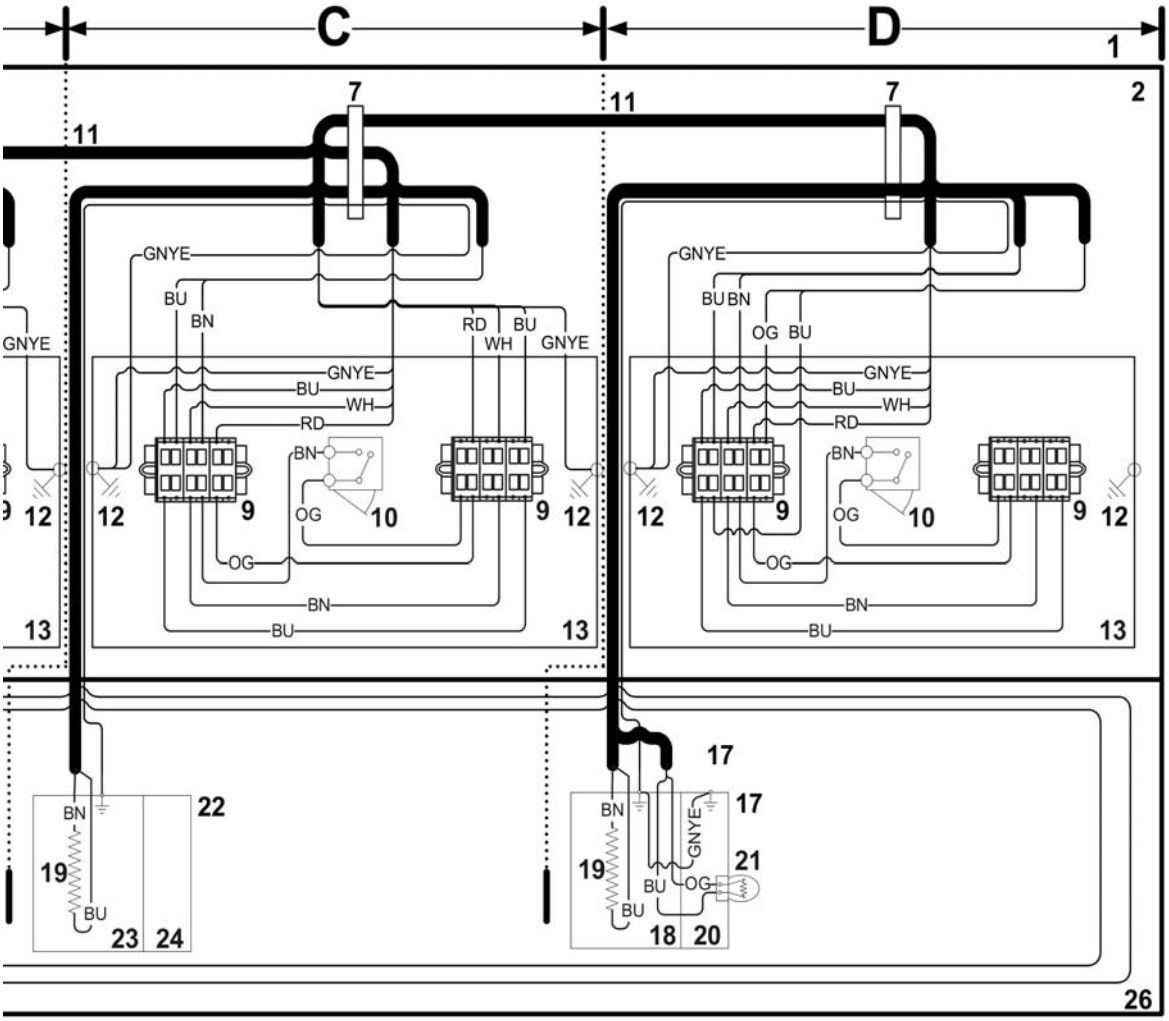
Models: PG100/250/400HFr-2



Wiring Key

Cabinet Model	Portions of Wiring Diagram	Single Door Roof Mount Light Assembly (Item 25)
1-Door	Portion A	Included
2-Door	Portions A & D	Excluded
3-Door	Portions A, B & D	Excluded
4-Door	Portions A, B, C & D	Excluded

Figure 8: Cabinet Wiring Diagram



Wire Colour Key

BK	Black
BN	Brown
RD	Red
OG	Orange
GN	Green
BU	Blue
GY	Grey
WH	White
GNYE	Green-Yellow
Based upon IEC 757 Standard	

For component key see page 20

Figure 8: Cabinet Wiring Diagram (continued)

Cabinet Wiring Component Key

Item	Description	Item	Description
5	Foamed Cabinet	25	Incandescent Cabinet Light (15W)
6	Cabinet Front Top	26	Heated Centre Pillar Assembly (no light)
7	Cabinet Supply Flex (with 4-pole ENSTO plug)	27	Heated Centre Pillar Fascia Assembly
8	4-Pole ENSTO Plug *	28	Heated Centre Pillar Back Assembly
9	Cabinet Supply Flex Earth Connection	29	Single Door Cabinet Roof Mounted Light Assembly
10	Main Cabinet Chassis Earth Connection	30	Cabinet Fascia
11	Flex Tie (to guide wires and flexes on stepped cabinet front top)	31	Refrigeration Unit Enclosure
12	Cabinet Wiring Switched Supply Tray	32	Mains Isolation Box Assembly (part of refrigeration unit assembly) **
13	3-Pole Screw-Less Connector Block	33	Mains Supply Flex (with 3-pin plug fitted)
14	Single-Pole Door Activated Switch	34	Mains Supply Earth Connection
15	4-Core Link Flex	35	2-Pole Isolation Switch
16	Link Flex Earth Connections	36	3-Pole Blue Panel Mount ENSTO Socket (Isolation Socket)
17	Cabinet Wiring Switched Extension Tray	37	Mains Isolation Box Cover Earth Connection
18	Spare Cabinet Fascia Heater Wire Supply Wires (if available)	38	Refrigeration Unit Enclosure Earth Connection
19	Spare Cabinet Fascia Heater Wire (not connected - if available)		
20	Cabinet Fascia Heater Wire (Chiller - otherwise Freezer)		
21	Heated Lit Centre Pillar Assembly		
22	Heated Lit Centre Pillar Fascia Assembly		
23	Centre Pillar Fascia Heater Wire (Chiller - otherwise Freezer)		
24	Heated Lit Centre Pillar Back Assembly		

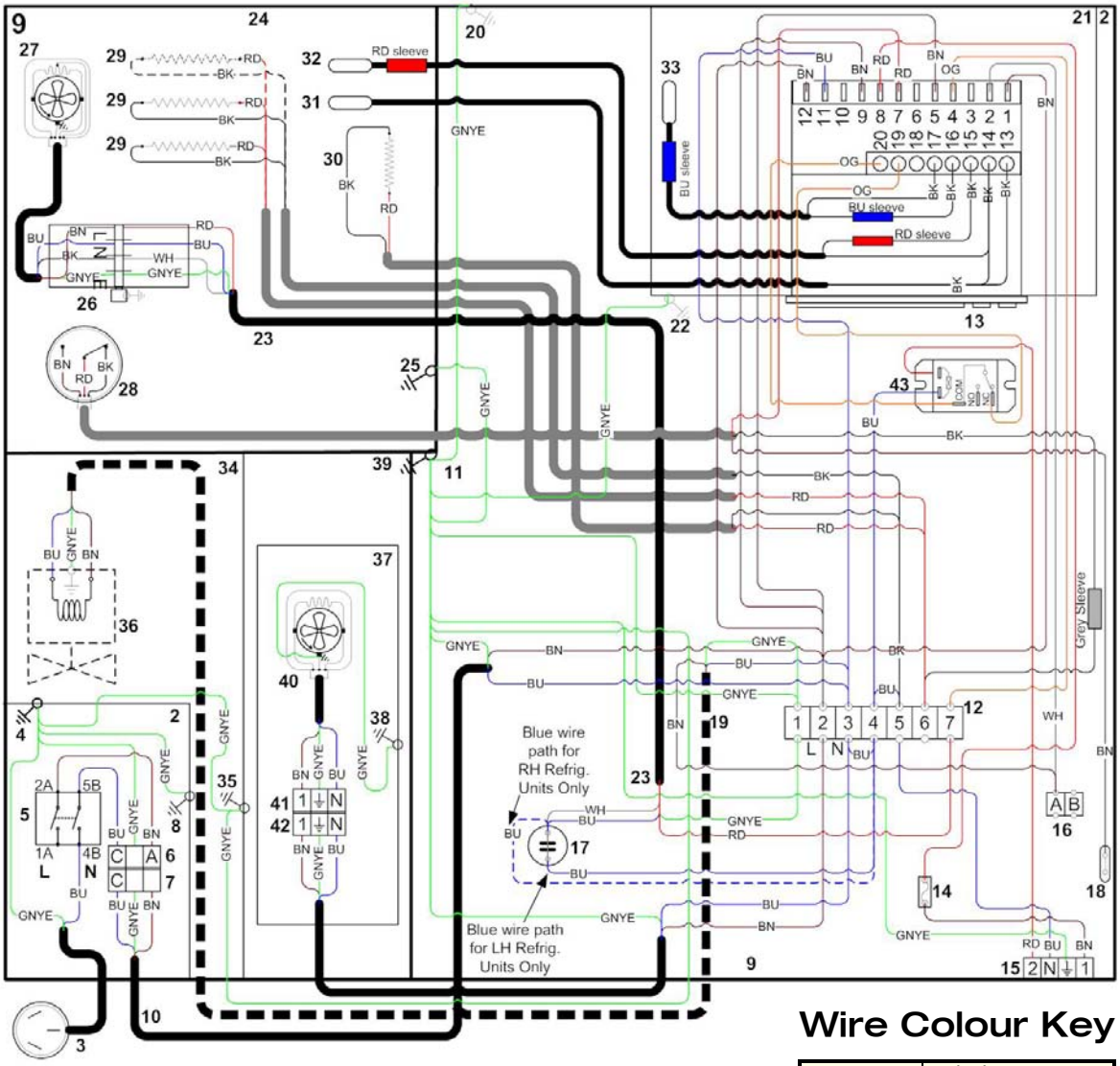
NOTES:
* For refrigeration unit wiring details, refer to 'Unit Wiring Diagram' on the following pages.
** The Mains Isolation Box Assembly is part of the refrigeration unit assembly.

Table 4: Cabinet Wiring Component Key

Notes

Refrigeration Unit Wiring Diagram

Models: UE50/60FCR



Wire Colour Key

BK	Black
BN	Brown
RD	Red
OG	Orange
GN	Green
BU	Blue
GY	Grey
WH	White
GNYE	Green-Yellow
Based upon IEC 757 Standard	

Figure 9: Refrigeration Unit Wiring Diagram

Component Key

Models: UE50/60FCR

Item	Description	Item	Description
1	Refrigeration Unit Assembly	23	Evaporator Fan 4-Core Extension Flex
2	Mains Isolation Box Assembly	24	Evaporator Box Assembly
3	Mains Supply Flex (with 3-pin plug fitted)	25	Evaporator Box Exterior Earth Connection
4	Mains Supply Earth Connection	26	Terminal Box (for evaporator fan flex extension)
5	2-Pole Isolation Switch	27	Evaporator Fan (CW rotation LE* for LH unit, CCW rotation LE* for RH)
6	3-Pole Blue Panel Mount ENSTO Socket (isolation socket)	28	Thermal Cutout
7	3-Pole Blue Free ENSTO Plug	29	Defrost Element (182W) (2 for UE50FCR unit, 3 for UE60FCR unit)
8	Mains Isolation Box Cover Earth Connection	30	Defrost Sump Element (312W at 230V)
9	Wiring Junction Box Assembly	31	Cabinet Ambient Temperature Probe
10	Refrigeration Unit Supply Isolation Flex (3-pole blue plug fitted)	32	Evaporator Coil Temperature Probe (red sleeve)
11	Refrigeration Unit Supply Isolation Flex Earth Connection	33	Condenser Coil Temperature Probe (blue sleeve)
12	7-Pole Terminal Block	34	Lower Unit Area Assembly
13	Electronic Controller (programmed)	35	Lower Unit Area Assembly Earth
14	Cabinet Supply Fuse (3A)	36	Liquid Line Solenoid Valve (normally closed in de-energised/rest state)
15	4-Pole Panel Mount ENSTO Socket (cabinet supply socket)	37	Anti-Condensation Fan Assembly
16	2-Pole Terminal Block	38	Anti-Condensation Fan Ass'y Earth
17	Evaporator Fan Capacitor	39	Refrig. Unit Compartment Door
18	In-Line Insulator	40	Anti-Condensation Fan (with 3-pole ENSTO plug) (CW rotation LE*)
19	3-Core Solenoid Valve Supply Flex	41	3-Pole Free ENSTO Plug
20	Unit Wiring Junction Box Cover Earth Connection	42	3-Pole Free ENSTO Socket
21	Electronic Controller Enclosure Assembly	43	Relay - HONGFA (door open/close feedback)
22	Electronic Controller Enclosure Earth Connection	44	Anti-Condensation Fan 3-Core Socket Flex (with 3-pole socket)

NOTES:
* LE denotes the motor rotation direction as viewed from the lead end.
** For refrigeration cabinet wiring details, refer to 'Cabinet Wiring Diagram' on the previous pages.

Table 5: Refrigeration Unit Wiring Component Key

Servicing

Servicing should be carried out by an authorised service agent. Detailed service and spares information is available in the SKOPE Pegasus Service Manual (MAN6790S) and detailed technical information on the SKOPE ir33 Controller can be found in the SKOPE Pegasus Technicians Manual (MAN3224).

Troubleshooting

Complaint	Possible Cause	Repair
1. Cabinet not operating and no controller display:	• Loss of power supply.	• Check mains power supply. Check the cabinet isolating switch is turned on (see page 7).
2. Cabinet lights not operating:	• Failed light bulb.	• Replace light bulb (see page 16).
3. Power consumption is higher than expected:	• Unit operating too hot. • Cabinet doors are opened excessively.	• Ensure the chiller is installed with good ventilation around the refrigeration unit (see page 6). • Keep door/s open for minimum time.
4. Product is too warm and spoiling:	• Restricted cabinet airflow. • Temperature setpoint is too warm.	• Ensure product is not blocking airflow slots and the product is no closer than 75mm from the cabinet top. • Adjust setpoint (see page 13).

Table 6: Troubleshooting

HACCP

If Hazard Analysis Critical Control (HACCP) functions are required, to monitor food storage temperature, please contact SKOPE to arrange for an authorised SKOPE service technician to setup the electronic controller.

Contact Addresses

New Zealand

SKOPE INDUSTRIES LIMITED
Head Office
PO Box 1091, Christchurch
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Freephone: 0800 947 5673
Fax: (03) 983 3896
E-mail: enquiry@skope.co.nz
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Australia

SKOPE AUSTRALIA PTY LTD
A.C.N. 000 384 270
PO Box 7543, Baulkham Hills B.C.
NSW 2153, Australia
Freephone: 1800 121 535
Fax: 1800 121 533
E-mail: enquiry@skope.com.au
Website: www.skope.com.au

Warranty

To receive a warranty for your purchased cabinet, you MUST register your cabinet within four weeks from the date of invoice either by:

- filling out the in-cabinet warranty form and posting or faxing it back to SKOPE
- or filling out the online warranty form.

Cabinets that are not registered within the four weeks are not eligible for a warranty.