SKOPE

REFRIGERATION SOLUTIONS

YARRA

SKOPE YARRA

YA850r & YA1700r
REMOTE
Glass Door Refrigerated Merchandisers

Operating
and
Service Manual

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SKOPE

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S K O P E

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CABINET CONSTRUCTION

Exterior / Interior finish:	White powdercoat on galvanised steel.
Insulation:	50mm thick, polyurethane foam. Cyclo-isopentane blowing agent: C_5H_{10}/C_5H_{12}

DIMENSIONS

Models:	YA850r	YA850rRD	YA1700r	YA1700rRD
	Solid Back	Rear Door	Solid Back	Rear Door
Height (adjustable):	2470 - 2485mm		2470 - 2485mm	
Width:	800mm	800mm	1600mm	1600mm
Depth:	765mm	830mm	765mm	830mm
Floor area:	0.61m²	0.66m²	1.22m²	1.33m²
Internal volume:	825 litres	825 litres	1765 litres	1765 litres

ELECTRICAL

230-240 Volts a.c. 50 Hz, single phase. Separate power supply per refrigeration unit.

Cooler rated current:	4.6 Amps	4.9 Amps	2 x 4.6 Amps	2 x 4.9 Amps
Freezer rated current:	6.0 Amps	6.3 Amps	2 x 6.0 Amps	2 x 6.3 Amps

HEATING ELEMENTS

Cabinet heater wire:	21-24 Watts / m (switched off on coolers)			
Door heater wire:	n.a.	12-14 W/m	n.a.	2 x 12-14 W/m
Centre pillar element:	n.a.	n.a.	2 x 13-14 W/m (1 switched off)	

LIGHTING

Vertical Interior lights:	2 x 58 W fluorescent tubes	4 x 58 W fluorescent tubes

ILLUMINATED SIGN - optional

410mm high sign box, with 1.5mm thick acrylic curved sign panel.
Refer to SKOPE Cool Book for installation details.

Sign light :	18 Watt fluorescent tube	58 Watt fluorescent tube

DOOR/S

Glass Front Door: Self-closing, aluminium framed, triple glazed with heated film and toughened safety glass. Heated door frame (freezer only).
Glass door size: 1851mm high x 786mm wide.

Solid Rear Door: Self-closing, foam filled and painted with internal duct.
Solid door size: 1626mm high x 726mm wide.

SHELVING

White plastic coated, adjustable cantilevered, steel wire shelves.

Optional speedfeed matting system.

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

SPECIFICATIONS

REFRIGERATION OPERATING SPECIFICATIONS

Electronically controlled, top mounted, SKOPE Cyclone® refrigeration unit/s.
Each unit has a dedicated electronic controller with its own separate power supply.
Refrigeration cabinet operating temperature: 32°C ambient.

COOLER

Models:	YA850r	YA850rRD	YA1700r	YA1700rRD
	Solid Back	Rear Door	Solid Back	Rear Door
Refrigeration capacity:	825 W @ -5°C SST	825 W @ -5°C SST	1650 W total. Two evaporators rated at 825 W @ -5°C SST	1650 W total. Two evaporators rated at 825 W @ -5°C SST
Mean product temp:	+2°C to +4°C			
Condensing temp:	55°C			
Liquid temp:	32°C			
Evaporating temp:	-5°C			
Operating basis:	18/24 hours running			

Compressor must be rated 'High Start Torque'. Liquid and suction connection pipes are run to outside of evaporator housing. If more then one cabinet is connected to condensing units, an 'E.P.R.' is recommended to ensure system balance.

FREEZER

Models:	YAF850r	YAF850rRD	YAF1700r	YAF1700rRD
	Solid Back	Rear Door	Solid Back	Rear Door
Refrigeration capacity:	950 W @ -30°C SST	950 W @ -30°C SST	1900 W total. Two evaporators rated at 950 W @ -5°C SST	1900 W total. Two evaporators rated at 950 W @ -30°C SST
Mean product temp:	-18°C to -21°C			
Condensing temp:	55°C			
Liquid temp:	32°C			
Evaporating temp:	-30°C			
Operating basis:	18/24 hours running			

Compressor must be rated 'Low Temp R404A: High Start Torque'. Liquid and suction connection pipes are run to outside of evaporator housing. If more then one cabinet is connected to condensing units, an 'E.P.R.' is recommended to ensure system balance.

INSTALLATION

• Installation must be performed by a refrigeration tradesman, to recommended trade practice. The entire system, including evaporator, must be leak tested.
• A full evacuation is essential (min. 6 microns).
• Ensure the cabinet is level. Ensure the drain is trapped, with adequate fall. Venting the drain may be required for a restrictive run.
• Wire the cabinet to local wiring regulations.
• The suction line MUST be insulated (Coolers: min. 13mm wall, Freezers: min. 19mm wall).
• The performance of a SKOPE Cooler depends on the characteristics of the installation. Cabinet suitability must always be qualified for the application. The final responsibility for condensing unit performance and component selection rests with the installer, who must check such matters as: Heat load; refrigeration load; Variable operating conditions; Refrigerant tube diameter and length; Location and ventilation.

SHOP FITTING DETAILS

Opening Width

It is recommended that any opening that is to constrain any number of cabinets have clearance to allow for:

- slight variations in cabinet width.

- accuracy variations in the opening width.

- a clearance that will allow un-hindered cabinet placement.

As a general rule:

Minimum opening width=(total of cabinet widths) + (number of cabinets x 5mm) + 10mm.

Constraints

The height, position and construction of any pelmets / bulkheads / beams etc., should be considered prior to the installation of SKOPE YARRA cabinets.

Allowance must be made for on site positioning of the cabinets, i.e. physical constraints such as the height and position of the sign assembly (if fitted), and top mounted refrigeration units will need to be considered to facilitate installation.

The construction and fitting of pelmets / Bulkheads must allow for servicing access to refrigeration evaporator unit components.

Provision for clearance above and in front of the SKOPE Cyclone® units must be made so that servicing can be achieved.

Assembly

When SKOPE YARRA cabinets are to be positioned adjacent to each other, the following sequence of steps should be taken to ensure correct alignment:

1. Adjust castors and feet so that the cabinets are aligned vertically, and close to the final installed height.

2. Carefully position and align the bottom front corners of each cabinet. Bolt the front corners together, using the M8 bolts, washers and nuts provided. Use M8 x 50mm bolts on the top, and M8 x 30mm bolts on the bottom.

3. Bolt together any rear bottom joins

NOTE:

As there is sometimes a slight bow in the cabinet sides, adjacent cabinets should be bolted together in such a way that any gaps at the top and bottom of the cabinets are even in width.

4. Align the top front of each cabinet by raising or lowering the rear adjustable castors or feet.

5. Bolt the top, front and back of each cabinet together.

6. Where solid back cabinets are to be positioned against a wall, or with limited final rear access space, the bottom corners should be bolted together away from (as near as possible) and in a straight line to its final intended position.

7. All the castors should then be aligned so that they point in the direction that the cabinets are to be moved for final positioning. The entire joined assembly can then be pushed into place.

8. Finally adjust castors and feet to ensure they are in contact with the ground, and the assembled cabinets are level. The feet are designed to take the full load of the cabinet, and must therefore be adjusted.

9. All front castors should be rotated so that they run parallel to the front of the cabinet (once cabinets in final position) with the castor locking plate pointing inwards. This provides positive locking and aids the installation of the coving assemblies

REFRIGERATION UNITS

Summary

It is important to completely read the Installation requirements before Installation is attempted. Due to the nature of the installation involving the movement of heavy refrigeration units onto a tall cabinet great care must be used.

COOLER UNIT weight = 30 kg.

FREEZER UNIT weight = 35 kg.

CABINET height = 2085mm

The Yarra refrigeration unit (Cooler and Freezer) is delivered in a crated wooden box.

On opening the wooden box first visually check the entire unit to confirm there is no freighting damage.

With the YARRA Cabinet as delivered the Refrigeration Cabinet Wiring Junction Box can be found on the top of the refrigeration cabinet. This box must be first removed for clear installation of the refrigeration unit; loosen the 2 screws at the top handle end (45º fold end) of the box, securing it to the cabinet roof, and slide clear of the screws. It is IMPORTANT to tighten these screws again, when the box is clear, to minimise their protrusion out of the cabinet roof top.

The Cabinet Wiring Junction Box and its electrical cables must be supported in a stable location that allows clear access for the installation of the refrigeration unit. Ensure there is no tension placed on the electrical cables.

Remove unit fixings and prepare to lift refrigeration unit from shipping box. The unit will be required to be lifted onto the top of the refrigeration cabinet (Note cabinet height). It is important that the unit is not then dragged into position on top of the cabinet as this will damage the unit

seals; therefore lifting must be in a controlled fashion.

Lifting the Refrigeration Unit

Requirements: Two physically fit people (note weight of unit). Work Platform and Steps (note height of cabinet) The unit is heavy and to prevent injury care must be taken to ensure correct lifting techniques are used. Each person lifts one of the two unit handles (one on each side of unit).

NOTE: Ensure all work is done in accordance with Occupational Safety and Health regulations.

First place the unit on a stable work platform (this must be safe and capable of supporting the weight of the installation personnel and the refrigeration unit. The platform must be level and secured in position). Check the integrity of the unit seal around the perimeter of the evaporator box (it must be a complete airtight seal). Remove paper tape from unit seal on evaporator box. From the work platform the refrigeration unit is then carefully lifted into place, ensure (a) and (b) below are followed.

Lift the refrigeration unit on top of the cabinet in a careful controlled manner; it should be guided into correct position by a person on a secure step ladder. Ensure (a) and (b) below are followed.

a) To prevent damage to the Unit base, the unit must be placed on the cabinet top and not slid.

b) Confirm that the unit is in the correct position. The two unit mounting brackets must align with the mounting holes on the cabinet top (small holes in bracket). Pipework and drain MUST face front of cabinet.

It is important to then ensure that the unit is square to the cabinet top (confirm parallel 80mm clearance from cabinet side to unit side, and parallel 10mm clearance from cabinet back to unit back. Secure the

unit in place through the two brackets with
two 14g screws (as supplied).

Fit Cabinet Wiring Junction Box

Ensure the refrigerator is NOT connected to the power supply.

With the unit installed the cabinet junction box can be positioned in place (hooked) on the 45° mounting bracket situated on the RHS of the unit evaporator box above the unit handle.

Before this is achievable a locking screw at the centre of the 45° cabinet wiring junction box mounting bracket must be removed. If suitable/necessary for the given installation access requirements it is recommended that the locking screw be replaced once the junction box is in position.

Fit Unit Control Box

Ensure the refrigerator is NOT connected to the power supply.

This can be fitted to either the front or rear of the refrigeration unit. For a solid back cabinet the Control Box must be fitted to the front of the unit (as supplied). For a rear door cabinet the control box must be shifted to the rear of the refrigeration unit.

To achieve this: first remove the control box cover, then remove the control box fixing screw (central location). The control box can then be lifted up and away from its locating keyholes (this will initially include the electronic controller).

Carefully drape the power cables to the rear of the refrigeration unit, and locate the control box on the back of the evaporator box to its fixed keyhole mounts. Refit control box fixing screw and control box cover.

Fit Electronic Controller (display)

Ensure the refrigerator is NOT connected to the power supply.

This has several optional locations. As supplied it is mounted vertically upwards on the end of the Control Box (this is only for production and freighting purposes).

For a rear door machine the controller can remain mounted to the control box with it rotated to either a horizontal facing position or a downward facing position.

Alternately for either a rear door or solid back machine the electronic controller (display) can be mounted to the front of the cabinet.

Using the controller locating bracket (one per unit); screw bracket to cabinet top with two screws. Fit controller to the locating bracket using four screws. Once in place the controller can then be adjusted vertically and horizontally for optimum placement.

IMPORTANT:

Check and confirm all electrical cables are in a satisfactory location.
All exposed electrical cables should be double insulated non-stressed and secured away from sharp or hot surfaces.

CABINET WIRING JUNCTION BOX

The refrigeration Cabinet Wiring Junction Box is the source of power to all primary electrics within the refrigeration cabinet. The only exception being the door activated switches and corresponding neons incorporated in the cabinet. These are supplied direct from the refrigeration unit. The door activated switches (blue 'Ensto' plugs) are not used for a cooler.

A Junction Box exists for each separate refrigeration unit (and hence front door) incorporated in a Yarra. A one- door Yarra has one refrigeration Junction Box, a two-door Yarra has two. For a two-door Yarra, all electrics located within a given side (left front door or right front door side) of

the cabinet are effectively supplied through the Junction Box situated on that side of the cabinet.

Additional to the electrics located within the corresponding side of cabinet; the left hand Cabinet Wiring Junction Box also controls the pillar anti-sweat heater wires (two-door model only), whilst the right hand Junction Box controls the cabinet front perimeter heater wires.

With the Yarra fully powered a clear coloured neon (indicator light) located on the cabinet control panel is illuminated (orange/yellow) signalling power supply to the refrigeration Cabinet Wiring Junction Box. For a two-door cabinet the neon is located on the control panel at the same side of the cabinet as the Junction Box to which it relates.

The mains supply for the refrigeration Cabinet Wiring Junction Box is connected through a socket (white 'Ensto' socket) located on the refrigeration unit. Connections for all primary electrical components within the refrigeration cabinet (lights, heater wires & neons etc) can be traced back to and checked within the Junction Box. In addition to electrical connections the Junction Box houses a fuse for the mains supply to the box and ballasts for the cabinet lighting (starters are located on the lamp holders within the extruded side-light assemblies).

An important feature of the Cabinet Wiring Junction Box is the 'Cabinet Heating Switch'. The switch is located on the underside of the box (where the electrical flexes exit the box).

COOLER - Where cooler refrigeration units are fitted to the refrigeration cabinet, to form a Yarra cooler, the Cabinet Heating Switch must be set to the LOW setting.

FREEZER – Where Freezer refrigeration units are fitted to the refrigeration cabinet, to form a Yarra freezer, the Cabinet Heating Switch must be set to the HIGH setting.

IMPORTANT:

The Cabinet Wiring Junction Box power supply plug (white 'Ensto' plug) MUST be plugged into a (white 'Ensto') socket only on the refrigeration unit to which the Junction Box is mounted. To ensure correct functioning only one Junction Box should ever be plugged into a single given Yarra refrigeration unit at any given time.

Cabinet Door Activated Switches - Freezer Only

Cabinet _____ e incorporated _____ cabinet toward _____ r (front or rear _____ trol the evapora _____ units. When a _____ ned the switch s _____ the unit installe _____ eon (indicator _____ itch illuminates to signal cool air is no longer being circulated from the unit to that side of the cabinet. Figure 1

Power supply plugs (blue 'Ensto' plugs) for the cabinet door activated switches require to be connected at the control boxes of the refrigeration units once refrigeration units and Cabinet Wiring Junction Boxes have been assembled in their correct operating locations.

It is important that a supply plug for a given cabinet door activated switch MUST be plugged into a socket (blue 'Ensto' socket) on the refrigeration unit mounted at the same side of the cabinet as that door activated switch. This is essential to ensure efficient cooling air flows within the refrigeration cabinet when a cabinet door is opened. The power supply flex (electrical

cord) for a door activated switch typically exits the cabinet at a location closest to the switch it supplies.

SOLID PELMET INSTALLATION

1. Make sure the refrigeration units are correctly positioned on top of the cabinet (refer to 'Refrigeration Units' p. 9).

2. Position pelmet support frames to each side of the cabinet top, by fitting screws to the first set of holes from the back. Ensure the hinge spacers, on the top of support frames, face inwards.

3. Attach the solid pelmet by lifting up at a 45° angle, and locating both the top corners over the hinge spacers on the pelmet support frames.

OPTIONAL LIGHTED SIGN BOX INSTALLATION

The installation procedure for fitting the optional lighted sign box is initially the same as for fitting of the solid pelmet. Follow the solid pelmet installation instructions, then continue sign box installation as following:

1. Remove the solid pelmet by lifting up at 45° angle, and then lifting up and off both the support frame hinge spacers (see figure 1 below).

2. Lift sign assembly up and connect sign box supply flex to the 'Ensto' socket on the control box.

3. Attach the lighted sign assembly by lifting up at 45° angle and locating both the top corner slots over the hinge spacers on the pelmet support frames.

4. Screw into place at the bottom of sign assembly (three screws).

OPTIONAL SIDE PANEL INSTALLATION

Optional left and right hand side panels are generally fitted to each of the end cabinets in a row, or when required to hide the unit from view (see figure 1 below).

1. loosen the rear screw on top of cabinet side, and fasten the side panel to the front of pelmet support frame with three screws.

2. Fasten to bottom of the pelmet support frame with two screws.

3. Fasten to top of the cabinet with two screws.

4. Screw bracing bracket onto the back of sign side, and locate onto back of unit evaporator box.

Figure 2

COMMISSIONING OF MACHINE

Completely assemble the cabinet as per the Installation Instructions.

Ensure all electrical safety instructions are adhered to: including all local electrical safety regulations.

I M P O R T A N T :

It is important to note that each Yarra door has its own refrigeration system and its own 10A power supply. Therefore a two-door Yarra cabinet does have two separate power supplies. For any service or detailed maintenance it is important to unplug both power supplies to the Cabinet.

Commissioning the Unit

Ensure that the remote condensing set installation is complete and the drainage from the evaporator boxes is complete. Ensure adequate drainage and consistent fall in all drains. Drainage should be checked by pouring a cup of water into bottom of evaporator box and ensuring the water drains out.

Electrically test both the Condensing sets and the cabinet prior to first plugging unit in. Note: Remove the leads from the RFI capacitors prior to electrically testing the cabinet so no false readings can occur (reconnect prior to operation).

Plug the 10A plug in to the correct power supply. Note there is one refrigeration unit and power supply per cabinet door.

Confirm operation of each refrigeration unit

1.   Once power is connected the display on the controller module should turn on and display the current temperature inside the cabinet.

2.   Press the set button for 5 seconds to display current set point for the controller. Adjust if necessary (see 'Electronic Controller' section, pp. 16-26).

3.   If current temperature is above set point, then the green indicator light should be shown behind the up/refrigerate button on the controller. There should be power supplied to the solenoid valve coil and the valve should be open.

4.   The solenoid valve will continue to operate until the controller set point is reached. (SKOPE set point Cooler = 2ºC, Freezer = -21ºC)

5.   The evaporator fans will not start until the coil reaches a set temperature (parameter F1) .

Confirm Door Switch Operation

The SKOPE Yarra Freezer cabinet is fitted with evaporator fan motor door switches, which cycle the fan motors with the opening of the doors. This may not be immediately obvious due to the nature of the fan motor, which will take approx 30 seconds to slow down (see figure 2 below).

1.   Ensure that blue 'Ensto' plugs are connected to the blue female plugs off the control box, which is attached to the evaporator box (freezer only).

2.   Open each door individually and check operation of the red indicating neon above the door. The door should be left open for approximately 1 minute, and the evaporator fan motor checked to ensure that it has stopped.

SAFETY INFORMATION

When using any electrical appliance, basic safety precautions should always be observed.

READ THESE INSTRUCTIONS CAREFULLY. Do not use this appliance for other than its intended use.

IMPORTANT:

Yarra cabinets have a separate power supply per unit. The two-door Yarra cabinet has two separate power supplies. Ensure both cabinet supply cords are disconnected from mains power supply before attempting to perform any electrical service or maintenance.

- Do NOT overload power supply.

- Use this appliance only on the voltage specified on the rating plate, or in these instructions.

- Operate under adequate cover from corrosive moisture and heat.

- Be very careful not to touch moving parts.

- Do not cover the grilles or block the entry or exhaust of airflows.

- Do not probe any opening.

- Regulations require that all electrical work be carried out only by authorised persons. For your own safety and that of others, ensure this is done.

- If the refrigeration unit is required to be installed or removed from the cabinet, ensure all necessary safety precautions are observed.

OPERATION OF MACHINE

Refrigeration Run Cycle

Initiated by controller when the cabinet Space Probe is warmer than the setpoint minus the differential temperature (e.g. cooler setpoint = 2°C; differential 3°C; therefore refrigeration run initiates at temperatures warmer than 5°C. e.g. freezer setpoint = -21°C; differential 3°C; therefore refrigeration run initiates at temperatures warmer than -18°C).

The solenoid will open and run until setpoint is reached (except during defrost).

Control Display: Refrigeration indicator light ON.

The Evaporator fan will only start after the evaporator coil probe is chilled and will remain running while the evaporator is below this temperature (except during defrost).

Refrigeration Off Cycle

Initiated by controller when the cabinet Space Probe reaches the Setpoint.

- Compressor: OFF.

- Evaporator Fan: ON.

Defrost Cycle

Initiated by controller, 4 defrosts every 24 hours (1am, 7am, 2pm, 8pm).

- Compressor: OFF.

- Cooler evaporator fan: ON.

- Freezer evaporator fan: OFF.

- Defrost elements: ON (freezer only, cooler does not have defrost elements).

Control display: Defrost Indicator Light ON.

Terminated when the evaporator coil temperature reaches 10°C (defrost will usually take approx. 12 minutes, dependent on ice build-up).

After defrost termination there is a 3 minute drip time where all refrigeration components are off. The '**Refrigeration Run Cycle**' will then continue (as above).

NOTE:

During Defrost the Controller display will hold the temperature detected before the defrosting cycle began.

Cabinet Door Activated Switches

A cabinet door activated switch is located above each door (front and rear door). The switch directly controls the internal cabinet fan (freezer ONLY). When a Yarra freezer cabinet door is opened, the switch turns off the internal cabinet fan for that door. The fan turnng off reduces the loss of cold air during door openings.

A red WARNING neon indicator is located above the door switch, on the cabinet control panel. The red light signals cool air is no longer being circulated inside the cabinet, for that particular door.

LOADING

Shelves may be positioned at different heights to suit various products.

For even cooling and efficient operation, allow air space around packages etc.

• Do not block air entry or exit holes.

• Do not store product on bottom of cabinet.

• Do not allow products to overhang the front of the shelf as this could prevent the door from shutting or cause glass breakage. Leave an airspace of at least 50mm (2") above packages etc. on the top shelf.

• Do not load product above the 'Load Limit', as indicated by the labels on each side of the cabinet.

CLEANING

When necessary, wash both interior and exterior of cabinet with soapy water. Exterior of cabinet may be waxed with automobile polish for extra protection.

SHELVING

The standard cantilevered shelving can be adjusted downwards at three 5° increments. This feature can aid product presentation and improve gravity feed for suitable product.

ELECTRONIC CONTROLLER

MICROPROCESSOR DISPLAY
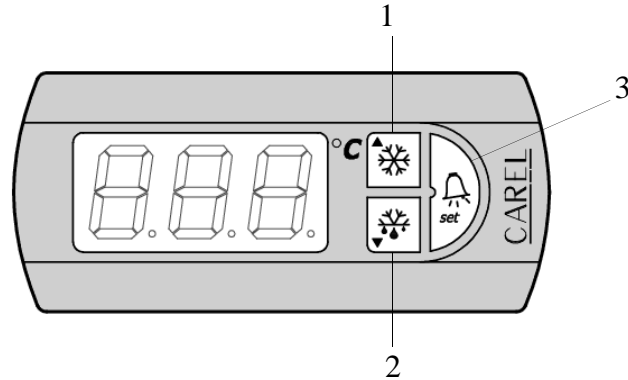
There are three LED buttons which display the operating status of the controller:

Key	Button	Function
1	❄	**'UP'** key.
		Light indicates COMPRESSOR is running.
		Blinking indicates manual request of Continuous Cycle is delayed by the compressor timed routine.
		INCREASES Set-Point values.
		Enables compressor CONTINUOUS CYCLE when pressed for more than 5 seconds.
2	❄	**'DOWN'** key.
		Light indicates DEFROSTING.
		DECREASES Set-Point values.
		Activates a manual DEFROST CYCLE when pressed for more than 5 seconds.
3	🔔	**'SET'** key.
		Light indicates an ALARM (Press to mute audible alarm).
		The blinking status indicates the corresponding function is delayed by a timed routine.
		DISPLAYS the Set-Point value.

During normal working conditions, the display shows the value measured by the regulation probe or by the second probe (parameter /4). If the alarm is activated, the relative code is displayed.

ALARMS AND SIGNALS

The CAREL Electronic Controller will indicate and sound an audible alarm during fault conditions. The audible alarm can be turned off by pressing its "mute" button. The alarm code will be flashed every few seconds with cabinet temperature.

Alarm Codes

A blinking LED indicates a time delay on the indicated function.

1d or 1A blinks ….

- Refrigeration Unit over pressure alarm (and over temperature). The refrigeration unit has tripped on its high Pressure Switch. Note: This alarm is non-resetting.

- The activation of this alarm is a serious event. The ventilation to the refrigeration system is not adequate; possible cause is – blocked air filter; ventilation failure or refrigeration mechanical fault (see Fault Finding section).

- The "1d" and "1A" alarm will also turn off power to the cabinet lighting; and the cabinet fascia anti sweat wires. This will assist keeping cabinet stock cool for the maximum period of time. In some instances the alarm may reset itself; the cause of the alarm should still be investigated. Refer to "Fault Finding" Section.

- The Yarra cooler and freezer operate in different ways during the high pressure alarm:

Yarra FREEZER - 1d alarm

The alarm is locked on by a latching relay; and the compressor will continue to operate for strictly limited intervals (to keep product frozen for as long as possible). Once the cause of the fault has been eliminated the Alarm can be only be overridden by unplugging then re-plugging the refrigeration unit to the power supply.

Yarra COOLER - 1A alarm

The alarm is locked on by a manual reset High pressure Switch. This permanently shuts off the entire refrigeration system. Once the cause of the fault has been eliminated the Alarm can only be reset by pressing the RED Pressure Switch button on the side of the refrigeration unit (located approx. centre of left hand side – as viewed from the front of the cabinet).

dA blinks .... (FREEZER only)

- Indicates cabinet door has remained open in excess of 30 minutes.

- The refrigeration evaporator fan has been off for 30 minutes, and at alarm activation the compressor shuts off.

- The cabinet door must be closed; check sealing (if applicable check rear doors).

E1 blinks ....

- Indicates faulty evaporator probe.

- The probe cable is interupted or short circuited.

- Faulty sensor: remove probe and verify resistance (NTC: 25°C=10K ohms).

EO blinks ....

- Indicates a faulty regulation probe.

- The probe cable is interupted or short circuited.

- Faulty sensor: remove probe and verify resistance (NTC: 25°C=10K ohms).

LO blinks ....

- Indicates low temperature alarm.

- The alarm is overridden when temperature returns to 'normal'.

HI blinks ....

- Indicates high temperature alarm. The cabinet has been warmer than alarm temperature for over 60 minutes.

• The alarm is overridden when the temperature returns to 'normal'.

Ed blinks ....

• Defrost has terminated on "maximum defrost time" function(dP). Confirm dt, dP and d4 parameters are to SKOPE specification. Possible causes of Ed alarm:

• High cabinet usage / high humidity, causing excessive ice build up.

• Defrost failure (Freezer only): If one or more of the defrost elements have failed; check element connections and cables. Check element resistance.

• Faulty defrost probe: When this has occurred E I and Ed blinks. If a faulty defrost probe occurs, the controller will only terminate the defrost cycle on time (see E I fault above).

df blinks ....

• To indicate defrost in progress if parameter d6 =0 (If programmed to SKOPE settings, d6 =1).

EA,EB or EE displayed

• Data acquisition failure. Reset procedure must be performed.

CONFIGURATION PARAMETERS

1. Press SET key for 5 secs; until "PS" is displayed.

2. Repress SET key and then UP or DOWN keys until "22" (password) is displayed. Press SET key to confirm.

3. Press UP or DOWN keys to scroll to parameter codes (see relevant SKOPE Control Parameters, pp. 17-22).

Programming mode is now accessed. Great care must be used to ensure operational parameters are not altered.

To exit modifying parameters and set values; press and hold SET key for at least 5 seconds.

NOTE:
If during the above programming mode, no key is pressed for 60 seconds the electronic controller will return to normal operation mode and no changes will be effected.

YARRA – Real Time clock

The Yarra Type 2 Coolers and Freezers use a real time clock. This offers the benefits of real time defrost (controlled defrosting for off-peak times) and real time temperature alarm and power failure monitoring (HACCP compliant).

WARNING:
The procedures below, fully access the SKOPE programming of the Electronic Controller. This programming should only be performed by competent people. Non SKOPE authorised modification of the Operational parameters could cause Yarra failure and loss of stored product.

At commissioning of machine the Electronic Controllers time clock should be checked to confirm it is set to the correct time. During Yarra manufacture the 'real time clock' is set in the SKOPE factory to current New Zealand time. In the summer months this would be to daylight saving time. The electronic controller features a battery back-up for maintaining time when the Yarra is unplugged.

Confirmation of the 'real time clock' settings is done by pressing a combination of the three controller display buttons (keys).

As an example, if it was Thursday 2.47pm, when programming the electronic controller 'real time clock', do the following:

t

1. Enter configuration parameters (see instructions this page). Refer to relevant SKOPE Control Parameters (pp. 17-22).

2. Press the DOWN key once, to display "td" (actual DAY) parameter. Press SET key to display associated value for "td".

3. Press UP and DOWN keys to set DAY value for "td" (range 1…7 = Monday … Sunday). As Example "td" would be programmed to 4 (4 = Thursday). Press SET key to display parameter "td".

4. Press DOWN key once to display "th" parameter (actual HOUR – as 24 hour clock). Press SET key to display associated value for "th".

5. Press UP and DOWN keys to set HOUR value for "th". As Example "th" would be programmed to 14 (14 = 14:00 hours being in the hour of 2pm). Press SET key to display parameter "th".

6. Press DOWN key once to display "tΠ" parameter (actual minute). Press SET key to display associated value for "tΠ"

7. Press UP and DOWN keys to set MINUTES value for "tP". As Example "tP" would be programmed to 47. Press SET key to display parameter "tP"

8. To exit modifying parameters and Set values: press and hold SET key for at least 5 seconds.

NOTE:
If during the above programming mode no key is pressed for 60 seconds the electronic controller will return to normal operation mode and no changes will be effected.

Real Time Defrost

Controlled 'real time defrosting' for Yarra freezers and coolers is standard set for every day at 1am, 7am, 2pm, and 8pm. This should correspond with off-peak times for Yarra usage. This relies on the 'real time clock' being set correctly as outlined above; note that it would need to be altered at daylight saving change-over (if applicable).

The time of defrost can be altered; however SKOPE recommend this only be done by experienced refrigeration service engineers. Correct defrosting is fundamental to reliable efficient Yarra operation. In normal circumstances this requires 4 spaced defrost events per 24 hours.

HACCP FUNCTIONALITY

The Yarra Type 2 electronic controller has HACCP functionality (Hazard Analysis Critical Control Points). This is designed to help the Yarra owner monitor food storage temperature in order to comply with the checking and recording phases required by the HACCP standards on correct food storage.

The Yarra electronic controller is HACCP compliant due to its ability to record alarm situations due to the exceeding of the maximum temperature thresholds for significant periods, which may derive from operating anomalies either with the Yarra refrigeration system or due to power failures.

As SKOPE standard the HACCP function is deactivated so the electronic controller will operate as follows:

• All standard system and temperature alarms are active. When an alarm event occurs the associated unit with the fault will turn off cabinet lighting and trim heaters; the electronic controller indicates alarm status with an audible and visual alarm.

• If the alarm status ends (e.g. the refrigeration system recovers to 'normal' temperature) the alarm status is overidden and any record of the alarm event is lost.

HACCP Alarm

If the HACCP function is activated (see below) it will maintain alarm status, with the day and time of the alarm event retrievable from the electronic controller memory. In addition to the normal alarms as above the HACCP function adds the following features:

• "HA" HACCP alarm signal is activated if the cabinet temperature is warmer than the programmed high temperature alarm (see relevant program sheet parameter "AH") for an extended period of time (see relevant Program sheet parameter "Ad" PLUS "tr" = total delay time. Note to be active "tr" must be at a value of one or greater). As an example for the Yarra Freezer alarm "HA" will activate once the freezer has been warmer than – 11°C for 70minutes (assuming "Ad" = 60 and "tr" = 10).

• "HF" HACCP alarm signal is activated if the cabinet has a power failure of over one minute duration combined with (at power resumption) temperature warmer than the programmed high temperature alarm (as per relevant Program Sheet parameter "AH").

To enable HACCP

Ensure the Real Time clock is correct.

1. Enter Configuration Parameters (see relevant SKOPE Control Parameters, pp. 17-22).

2. Press UP or DOWN keys until "tr" parameter is displayed (HACCP time delay. Note this value of time is a further time extension on normal alarm delay time; where "ad" = 60). Press SET key to display associated minute time value for "tr" (0 = HACCP disabled).

3. Press UP or DOWN keys for desired additional delay time (0< required for HACCP activation). Press SET key to redisplay "tr" parameter.

4. Press UP or DOWN keys until "to" parameter is displayed (HACCP enable parameter). Press SET key to display "to" parameter value.

5. Press UP or DOWN keys to display "1" (1 = HACCP enabled… 0 = HACCP disabled). To exit modifying parameters press and Set values by holding SET key down for at least 5 seconds.

NOTE:
If during the above programming mode no key is pressed for 60 seconds the

Control Parameters

CAREL Power Split Electronic Controller (type 2)

		SKOPE Settings	Type	Min	Max	Def	PARAMETER
SETPOINT: =2 (Cycling 2°C to 5°C)						
PS	22		F	0	199	22	Password
							PROBE PARAMETERS
/2	4	-	C	1	15	4	Probe reading stability (1=quick, 15=slow).
/4	0	Not used. Must be 0	C	0	100	0	Virtual probe (diff between regulation and product probe).
/7	0	Display probe.	C	0	4	0	Display of display probe.
/t	1	Ambient probe.	C	1	4	4	Temp display (normal 1=Amb probe. Service 2=Evap coil probe).
/5	0	°C	C	0	1	0	Units of temperature measurement.
/6	0	Yes	C	0	1	0	Decimal point display.
/8	0.0	Not used. Must be 0	C	-200	200	0	Calibration probe 3.
/9	0	Defrost probe	C	0	1	0	Defrost probe designation.
/A	2	Yes, only defrost Probe	C	0	3	2	Existance of Product and Defrost probe.
/C	3.0	Offset = +3°C	C	-199	199	0	Calibration of Ambient probe.
/d	0.0	Offset = Zero	C	-199	199	0	Calibration of Defrost probe.
							ALARM PARAMETERS
A0	1.0	1°C	C	0	199	2	Alarm and Fan differential.
A4	1	Not used	C	0	9	0	Digital input One.
A5	0	Not used	C	0	9	0	Digital input Two.
A7	0	Not used	C	0	199	0	Door open alarm delay time (digital input Two).
Ad	60	60 minutes delay	C	0	199	120	Temperature alarm delay.
AH	7.0	10°C	F	0	199	0	High temp alarm (On=Setpoint+AH+AO) (Off=Setpoint+AH).
AL	4.0	-3°C	F	0	199	0	Low temp alarm (On=Setpoint -AL -AO) (Off=Setpoint -AL).
							COMPRESSOR PARAMETERS
c0	0	0 minutes	C	0	15	0	Compressor start delay at power on.
c1	0	0 minutes	C	0	15	0	Minimum time between compressor starts.
c2	0	0 minutes	C	0	15	0	Minimum compressor OFF time.
c3	0	0 minutes	C	0	15	0	Minimum compressor ON time.
c4	0	0 minute runtime	C	0	100	0	Comp. runtime for HP alarm & probe failure (offtime =15 mins).
c6	2	2 hours	C	0	15	4	Duration of alarm override after 'Continuous Refrigeration Mode'.
cc	2	2 hours	C	0	15	2	Duration of 'Continuous Refrigeration Mode'.
							DEFROST PARAMETERS
d0	0	Electric	C	0	1	0	Type of defrost.
d2	1	Generic defrost control	C	0	1	0	Defrost control (0=generic, 1=slave of powersplit).
d4	0	No	C	0	1	0	Defrost at cabinet plug in.
d5	0	No delay	C	1	199	0	Defrost delay.
d6	1	Yes	C	0	1	1	lock in temperature display during defrost.
d8	1	1 hour	F	0	15	0	Alarm delay time after defrost.
d9	0	No	C	0	1	0	Defrost priority on compressor run times.
dd	5	5 minutes	F	0	15	2	Defrost drip time, before compressor and evaporator fan start.
dl	0	Deactivated	F	0	199	8	Interval between defrosts - NOT USED in lieu of real time defrost.
dP	40	40 minutes	F	1	199	30	Maximum defrost time.
dt	5.0	5°C	F	-50	199	40	Defrost termination temperature (resolution=0.1°C).

Parameters continued on next page.

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SKOPE YARRA REMOTE COOLER

Control Parameters
CAREL Power Split Electronic Controller (type 2)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
							FAN PARAMETERS
F0	1	Fan control to evap. temp	C	0	1	0	Fan control (0=always on. 1=controlled on evap. temperature).
F1	5.0	Fan on at 5°C	F	-40	50	50	Fan start temperature (resolution=0.1°C).
F2	0	No	C	0	1	1	Fan OFF when compressor is off.
F3	0	No	C	0	1	1	Fan OFF during defrost.
Fd	0	No	F	0	15	1	Fan delay after drip time.
							AUXILLARY PARAMETERS
H0	1	Address	C	0	19.9	1	Serial address (0=master, 1-199=slave).
H1	7	Alarm relay	C	0	7	5	Aux 1 relay function - 7=alarm relay (INVERSE SWITCHED).
(H2)	0	N/A	C	0	7	6	Aux 2 relay function - Not available.
H3	0	Enable keypad	C	0	1	0	Disables keypad (0=enable, 1=disable).
In	0	Slave	C	0	1	1	Master / slave unit configuration (0=slave, 1=master).
L1	0	Disabled	C	0	2	0	Light sensor adjustment - Not used.
Lt	10	N/A	C	1	15	10	Light duration - Not used.
Lo	0	Disabled	C	0	3	0	Enable "Local" keyboard.
LL	0	Disabled	C	0	199	0	Enable "net - LAN or Supervisor".
Ld	0	Not used	C	0	1	0	Use of LAN on Digital input 2.
							CYCLE PARAMETERS
r1	0	0°C	C	-500	r2	-500	Minimum Setpoint.
r2	10	10°C	C	r1	1999	900	Maximum Setpoint.
r3	1	Yes enable "Ed" alarm	C	0	1	0	Enabling "Time out Defrost Alarm" 'Ed'
r4	-19	Not used	C	-19	199	30	NOT USED - Night "Setpoint" (Resolution=0.1°C).
r5	1	Enabled	C	0	1	0	Min. & Max. temp. monitoring (Note: unplugging looses memory).
r6	0	Not used	C	0	1	0	Night regulation with product probe - Not used.
rd	3	3.0°C	F	0	199	20	Setpoint differential (Resolution=0.1°C).
rH	-	-	F	0	0	0	Max. temp. measured during 'rt' (Resolution=0.1°C).
rL	-	-	F	0	0	0	Min. temp. measured during 'rt' (Resolution=0.1°C).
rt	-	-	F	0	0	0	Real time interval for temp. monitoring (as 'r5').
S8	1	19200 Baud	C	0	1	1	Serial speed: RS485 (0=9600 Baud, 1=19200 Baud).
Sn	1	Operates as Slave	C	0	5	1	Number of slaves (for Master unit only: 0=no slaves). As slave=1.
St	**2**	**SETPOINT=2°C**	**C**	**r1**	**r2**	**-100**	**Setpoint (Resolution=0.1°C).**
							HACCP PARAMETERS
to	**0**	**NOT ACTIVE**	**C**	**0**	**1**	**0**	0=HACCP alarm not active.
							1=HACCP alarm active (0 to reset).
*tu	-	-	C	1	7	0	Day of 'HA' activation (temp. alarm) 1 to 7 days (1=Monday etc.).
*th	-	-	C	0	23	0	Hour of 'HA' activation (temp. alarm) 0 to 23 hours (0=Midnight).
t	-	-	C	0	59	0	Minute of 'HA' activation (temp. alarm) 0 to 59 minutes.
ltu	-	-	C	1	7	0	Day of 'HF' activation (power failure) 1 to 7 days (1=Monday etc.).
lth	-	-	C	0	23	0	Hour of 'HF' activation (power failure) 0 to 23 hours (0=Midnight).
lt*	-	-	C	0	59	0	Minute of 'HF' activation (power failure) 0 to 59 minutes.
tr	0	Disabled	C	0	199	0	HACCP alarm delay (0=disabled).

SETPOINT: =2 (Cycling 2°C to 5°C)

ELECTRONIC CONTROLLER

SKOPE YARRA REMOTE COOLER

Control Parameters
CAREL Power Split Electronic Controller (type 2)

	SETPOINT: =2 (Cycling 2°C to 5°C)						
	SKOPE Settings		Type	Min	Max	Def	PARAMETER
User settings for optional Defrost - WARNING: Ensure adequate Defrosts							REAL TIME DEFROST
"^T1	10	Every day	C	0	10	0	Defrost event 1 - DAY (see table 1 below for day code).
"-T1	7	7 am	C	0	23	0	Defrost event 1 - HOUR.
"_T1	0	-	C	0	59	0	Defrost event 1 - MINUTE.
"^T2	10	Every day	C	0	10	0	Defrost event 2 - DAY (see table 1 below for day code).
"-T2	14	2 pm	C	0	23	0	Defrost event 2 - HOUR.
"_T2	0	-	C	0	59	0	Defrost event 2 - MINUTE.
"^T3	10	Every day	C	0	10	0	Defrost event 3 - DAY (see table 1 below for day code).
"-T3	20	8 pm	C	0	23	0	Defrost event 3 - HOUR.
"_T3	0	-	C	0	59	0	Defrost event 3 - MINUTE.
"^T4	10	Every day	C	0	10	0	Defrost event 4 - DAY (see table 1 below for day code).
"-T4	1	1 am	C	0	23	0	Defrost event 4 - HOUR.
"_T4	0	-	C	0	59	0	Defrost event 4 - MINUTE.
"^T5	0	-	C	0	10	0	Defrost event 5 - DAY (see table 1 below for day code).
"-T5	0	-	C	0	23	0	Defrost event 5 - HOUR.
"_T5	0	-	C	0	59	0	Defrost event 5 - MINUTE.
"^T6	0	-	C	0	10	0	Defrost event 6 - DAY (see table 1 below for day code).
"-T6	0	-	C	0	23	0	Defrost event 6 - HOUR.
"_T6	0	-	C	0	59	0	Defrost event 6 - MINUTE.
	IMPORTANT TO CONFIRM:						REAL TIME CLOCK SETTINGS
tM	-	Set clock	C	0	59	0	Clock - Current minute
th	-	Set clock	C	0	23	0	Clock - Current hour
td	-	Set clock	C	1	7	0	Clock - Current day: 1=Monday ..... 7=Sunday.

Table 1 - Day Codes:

0	= Disabled
1 to 7	= Monday to Sunday
8	= Monday to Friday
9	= Saturday and Sunday
10	= Every day

WARNING:

1. This programming sheet is set exclusively for the SKOPE remote cooler program, with its dedicated Carel controller.

2. Any alteration from this program may adversely affect the SKOPE cooler operation.

3. Alteration of REAL TIME DEFROST MAY VOID WARRANTY.

4. A detailed controller manual is available for full HACCP specifications.

5. The SKOPE refrigeration units are configured for independent operation. The master / slave configuration must be set as "slave".

SKOPE YARRA REMOTE FREEZER

Control Parameters
CAREL Split Power Electronic Controller (type 2)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
PS	22		F	0	199	22	Password
							PROBE PARAMETERS
/2	4	-	C	1	15	4	Probe reading stability (1=quick, 15=slow).
/4	0	Not used. Must be 0	C	0	100	0	Virtual probe (diff between regulation and product probe).
/7	0	Display probe.	C	0	4	0	Display of display probe.
/t	1	Ambient probe.	C	1	4	4	Temp display (normal 1=Amb probe, Service 2=Evap coil probe).
/5	0	°C	C	0	1	0	Units of temperature measurement.
/6	0	Yes	C	0	1	0	Decimal point display.
/8	0.0	Not used. Must be 0	C	-200	200	0	Calibration probe 3.
/9	0	Defrost probe	C	0	1	0	Defrost probe designation.
/A	2	Yes, only defrost probe	C	0	3	2	Existance of Product and Defrost probe.
/C	3.0	Offset = +3°C	C	-199	199	0	Calibration of Ambient probe.
/d	0.0	Offset = Zero	C	-199	199	0	Calibration of Defrost probe.
							ALARM PARAMETERS
A0	1.0	1°C	C	0	199	2	Alarm and Fan differential.
A4	8	HP alarm activation	C	0	9	0	Digital input One.
A5	2	Door open alarm	C	0	9	0	Digital input Two.
A7	30	Door alarm delay 30 mins	C	0	199	0	Door open alarm delay time (digital input Two).
Ad	60	60 minutes delay	C	0	199	120	Temperature alarm delay.
AH	9.0	-11°C / -12°C	F	0	199	0	High temp alarm (On=Setpoint+AH+AO) (Off=Setpoint+AH).
AL	10	-32°C / -31°C	F	0	199	0	Low temp alarm (On=Setpoint -AL -AO) (Off=Setpoint -AL).
							COMPRESSOR PARAMETERS
c0	0	0 minutes	C	0	15	0	Compressor start delay at power on.
c1	0	0 minutes	C	0	15	0	Minimum time between compressor starts.
c2	0	0 minutes	C	0	15	0	Minimum compressor OFF time.
c3	0	0 minutes	C	0	15	0	Minimum compressor ON time.
c4	0	0 minute runtime	C	0	100	0	Comp. runtime for HP alarm & probe failure (offtime =15 mins).
c6	2	2 hours	C	0	15	4	Duration of alarm override after "Continuous Refrigeration Mode".
cc	2	2 hours	C	0	15	2	Duration of "Continuous Refrigeration Mode".
							DEFROST PARAMETERS
d0	0	Electric	C	0	1	0	Type of defrost.
d2	1	Generic defrost control	C	0	1	0	Defrost control (0=generic, 1=slave of powersplit).
d4	0	No	C	0	1	0	Defrost at cabinet plug in.
d5	0	No delay	C	1	199	0	Defrost delay.
d6	1	Yes	C	0	1	1	lock in temperature display during defrost.
d8	1	1 hour	F	0	15	0	Alarm delay time after defrost.
d9	0	No	C	0	1	0	Defrost priority on compressor run times.
dd	3	3 minutes	F	0	15	2	Defrost drip time, before compressor and evaporator fan start.
dl	0	Deactivated	F	0	199	8	Interval between defrosts - NOT USED in lieu of real time defrost.
dP	25	25 minutes	F	1	199	30	Maximum defrost time.
dt	12	12°C	F	-50	199	40	Defrost termination temperature (resolution=0.1°C).

SETPOINT: -21 (Cycling -21°C to -18°C)

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SKOPE YARRA REMOTE FREEZER

Control Parameters
CAREL Power Split Electronic Controller (type 2)

	SKOPE Settings		Type	Min	Max	Def	PARAMETER
SETPOINT: =-21 (Cycling -21°C to -18°C)
							FAN PARAMETERS
F0	1	Fan control to evap. temp	C	0	1	0	Fan control (0=always on. 1=controlled on evap. temperature).
F1	-8.0	Fan on at -8°C	F	-40	50	50	Fan start temperature (resolution=0.1°C).
F2	0	No	C	0	1	1	Fan OFF when compressor is off.
F3	1	Yes	C	0	1	1	Fan OFF during defrost.
Fd	0	No	F	0	15	1	Fan delay after drip time.
							AUXILLARY PARAMETERS
H0	1	Address	C	0	19.9	1	Serial address (0=master, 1-199=slave).
H1	7	Alarm relay	C	0	7	5	Aux 1 relay function - 7=alarm relay (INVERSE SWITCHED).
(H2)	0	N/A	C	0	7	6	Aux 2 relay function - Not available.
H3	0	Enable keypad	C	0	1	0	Disables keypad (0=enable, 1=disable).
In	0	Slave	C	0	1	1	Master / slave unit configuration (0=slave, 1=master).
L1	0	Disabled	C	0	2	0	Light sensor adjustment - Not used.
Lt	10	N/A	C	1	15	10	Light duration - Not used.
Lo	0	Disabled	C	0	3	0	Enable "Local" keyboard.
LL	0	Disabled	C	0	199	0	Enable "net - LAN or Supervisor".
Ld	0	Not used	C	0	1	0	Use of LAN on Digital input 2.
							CYCLE PARAMETERS
r1	-26	-26°C	C	-500	r2	-500	Minimum Setpoint.
r2	-12	-12°C	C	r1	1999	900	Maximum Setpoint.
r3	1	Yes enable "Ed" alarm	C	0	1	0	Enabling "Time out Defrost Alarm" 'Ed'
r4	-19	Not used	C	-19	199	30	NOT USED - Night "Setpoint" (Resolution=0.1°C).
r5	1	Enabled	C	0	1	0	Min. & Max. temp. monitoring (Note: unplugging looses memory).
r6	0	Not used	C	0	1	0	Night regulation with product probe - Not used.
rd	3	3.0°C	F	0	199	20	Setpoint differential (Resolution=0.1°C).
rH	-	-	F	0	0	0	Max. temp. measured during 'rt' (Resolution=0.1°C).
rL	-	-	F	0	0	0	Min. temp. measured during 'rt' (Resolution=0.1°C).
rt	-	-	F	0	0	0	Real time interval for temp. monitoring (as 'r5').
S8	1	19200 Baud	C	0	1	1	Serial speed: RS485 (0=9600 Baud, 1=19200 Baud).
Sn	1	Operates as Slave	C	0	5	1	Number of slaves (for Master unit only: 0=no slaves). As slave=1.
St	**-21**	**SETPOINT=-21°C**	**C**	**r1**	**r2**	**-100**	**Setpoint (Resolution=0.1°C).**
							HACCP PARAMETERS
to	**0**	**NOT ACTIVE**	**C**	**0**	**1**	**0**	**0=HACCP alarm not active.**
							1=HACCP alarm active (0 to reset).
*tu	-	-	C	1	7	0	Day of 'HA' activation (temp. alarm) 1 to 7 days (1=Monday etc.).
*th	-	-	C	0	23	0	Hour of 'HA' activation (temp. alarm) 0 to 23 hours (0=Midnight).
t	-	-	C	0	59	0	Minute of 'HA' activation (temp. alarm) 0 to 59 minutes.
ltu	-	-	C	1	7	0	Day of 'HF' activation (power failure) 1 to 7 days (1=Monday etc.).
lth	-	-	C	0	23	0	Hour of 'HF' activation (power failure) 0 to 23 hours (0=Midnight).
lt*	-	-	C	0	59	0	Minute of 'HF' activation (power failure) 0 to 59 minutes.
tr	0	Disabled	C	0	199	0	HACCP alarm delay (0=disabled).

ELECTRONIC CONTROLLER

SKOPE YARRA REMOTE FREEZER

Control Parameters
CAREL Power Split Electronic Controller (type 2)

		SKOPE Settings	Type	Min	Max	Def	PARAMETER
							SETPOINT: =-21 (Cycling -21°C to -18°C)
	User settings for optional Defrost - WARNING: Ensure adequate Defrosts						**REAL TIME DEFROST**
"^T1	10	Every day	C	0	10	0	Defrost event 1 - DAY (see table 1 below for day code).
"-T1	7	7 am	C	0	23	0	Defrost event 1 - HOUR.
"_T1	0	-	C	0	59	0	Defrost event 1 - MINUTE.
"^T2	10	Every day	C	0	10	0	Defrost event 2 - DAY (see table 1 below for day code).
"-T2	14	2 pm	C	0	23	0	Defrost event 2 - HOUR.
"_T2	0	-	C	0	59	0	Defrost event 2 - MINUTE.
"^T3	10	Every day	C	0	10	0	Defrost event 3 - DAY (see table 1 below for day code).
"-T3	20	8 pm	C	0	23	0	Defrost event 3 - HOUR.
"_T3	0	-	C	0	59	0	Defrost event 3 - MINUTE.
"^T4	10	Every day	C	0	10	0	Defrost event 4 - DAY (see table 1 below for day code).
"-T4	1	1 am	C	0	23	0	Defrost event 4 - HOUR.
"_T4	0	-	C	0	59	0	Defrost event 4 - MINUTE.
"^T5	0	-	C	0	10	0	Defrost event 5 - DAY (see table 1 below for day code).
"-T5	0	-	C	0	23	0	Defrost event 5 - HOUR.
"_T5	0	-	C	0	59	0	Defrost event 5 - MINUTE.
"^T6	0	-	C	0	10	0	Defrost event 6 - DAY (see table 1 below for day code).
"-T6	0	-	C	0	23	0	Defrost event 6 - HOUR.
"_T6	0	-	C	0	59	0	Defrost event 6 - MINUTE.
	IMPORTANT TO CONFIRM:						**REAL TIME CLOCK SETTINGS**
tM	-	Set clock	C	0	59	0	Clock - Current minute
th	-	Set clock	C	0	23	0	Clock - Current hour
td	-	Set clock	C	1	7	0	Clock - Current day: 1=Monday ..... 7=Sunday.

Table 1 - Day Codes:

0	= Disabled
1 to 7	= Monday to Sunday
8	= Monday to Friday
9	= Saturday and Sunday
10	= Every day

WARNING:

1. This programming sheet is set exclusively for the SKOPE remote freezer program, with its dedicated Carel controller.

2. Any alteration from this program may adversely affect the SKOPE freezer operation.

3. Alteration of REAL TIME DEFROST MAY VOID WARRANTY.

4. A detailed controller manual is available for full HACCP specifications.

5. The SKOPE refrigeration units are configured for independent operation. The master / slave configuration must be set as "slave".

DOORS - GLASS

Glass Front Door/s

The glass front door/s are self-closing with triple glazed, heated, toughened safety glass. The door frame (on freezer models only) is also heated to prevent condensation. The total resistance for the standard door is approximately 350 Ohms. Performance rated at 32°C ambient / 75% R.H. / -20°C internal cabinet temperature. The standard door is distinguished by its wattage being labelled at 8.5W/sq.ft.

Door Alignment

Each door can be adjusted so that it lines up with any adjacent door. In general, the doors are best adjusted so that the top section is parallel to the control panel. Adjustment is achieved by opening the door as far as possible. This allows access to the door position adjustment screw. By loosening this screw the door can be slid along to a position that provides best alignment. The locking screw is then re-tightened.

Door Removal

1. Slacken off door tension and remove pin from the bottom hinge.

2. Remove control panel and disconnect door flex wires at in-line connectors.

3. Remove step front cover (4 screws), to access hinge screws.

4. Unscrew top hinge and lift door clear of bottom pivot (care must be taken to avoid electrical wires around top hinge).

NOTE: Glass replacement is not considered economical as the glass is fixed to the frame for integral strength. Door replacement is recommended.

Door Reversal

To reverse the opening side of a door, the door must be replaced with one of the opposite hinging. The top and bottom hinge assemblies must also be replaced.

Gasket Replacement

The door gaskets simply clip into the door frame extrusion and may be removed for repair or replacement simply by peeling from frame, starting at corner.

New gaskets, when fitted, may be lightly lubricated with a clear silicone grease or similar compound. This will lessen the possibility of the gasket rolling. Should the gasket be out of shape when in place, use hot air (i.e. from hair drier) to realign.

Door Tension Adjustment

IMPORTANT: Doors should only be tensioned enough that they self-close, with the door gasket forming an air tight seal. Over tensioning could result in deformation of the internal torsion bar.

5. Turn capstan with steel rod (Ø3mm), to remove tension on the split pin.

6. Using another steel rod, turn the capstan in the direction that the door closes, to increase the tension.

7. Replace split pin when the required tension adjustment has been made.

In the event the door tension can no longer be adjusted, the torsion bar may need replacing (see 'Torsion Bar Replacement' p. 28).

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Torsion Bar Replacement

1. Remove door from cabinet (see 'Door Removal' p. 27). Lay door down on a flat surface with the gasket facing up.

2. Peel door gasket away from the hinge side of the door frame. Start at each corner and peel gasket off the gasket retainer, working towards the centre of the frame.

3. Remove the section of gasket retainer from hinge side of door frame. Lift from one corner, and peel away from the door frame.

4. Remove old torsion bar by carefully levering out the bottom bush from the door frame. Pull old torsion bar out from door frame. The end of the torsion bar will need manoeuvred, to allow the 'flat hook' end to clear the hinge hole.

5. Remove existing capstan and bush from old torsion bar.

6. Thread the capstan, complete with the bush, over the 'round hook' end of the new torsion bar (see figure 3).

7. Ensure the aluminium tube, moves freely up and down the torsion bar.

8. Fit the new torsion bar into the door frame. Ensure the open end of the 'flat hook' points upwards, and manoeuvre the torsion bar through the bottom hinge hole. After the torsion bar is inside the frame, press the open end of the 'flat hook' firmly under the outside lip of the door frame. When the torsion bar is correctly installed, the capstan should not turn.

9. Hammer bottom of capstan into hinge hole, until the bush is flush with frame.

10. Refit the gasket retainer into frame.

11. Refit the gasket into the gasket retainer, starting at the corners and working towards the middle of the door frame.

12. Refit door to cabinet.

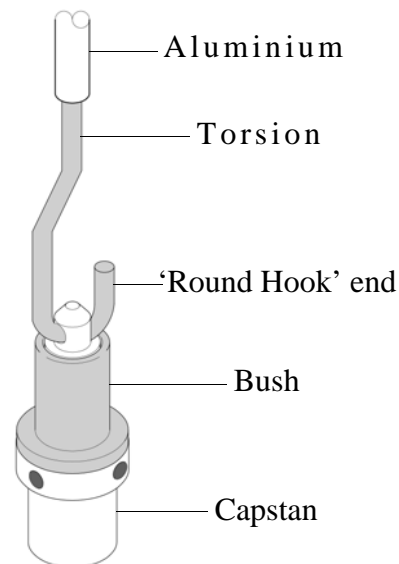13. Adjust door tension (see 'Door Tension Adjustment' p. 27).

Figure 3

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DOORS - SOLID

Solid Rear Door/s

Solid rear door/s are fitted to rear loading machines. The solid rear door uses a different hinge mechanism to the glass door (see figure 4 below).

Door Removal

Unscrew bottom hinge bracket, and slide door down to remove from top hinge.

Door Tension

The solid door hinge mechanism has a preset tension and is non-adjustable. Insure that the square notch in the hinge bracket mates correctly with the door hinge mechanism when replacing.
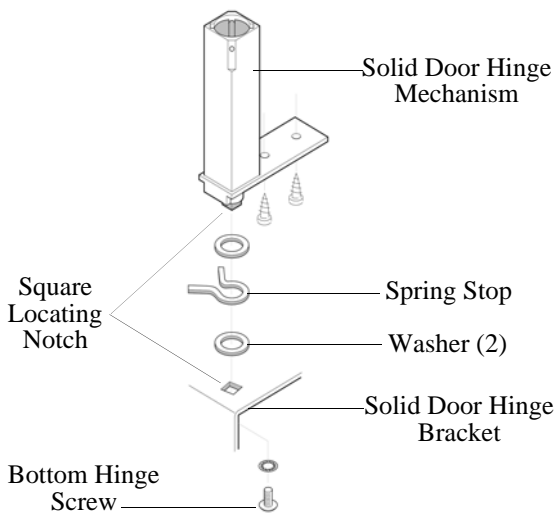
Figure 4

Door Gasket Replacement

The door gaskets simply clip into the door gasket retainer, and may be removed for repair or replacement simply by peeling from gasket retainer, starting at the corners. New gaskets, when fitted, may be lightly lubricated with a clear silicone grease or similar compound. This will lessen the possibility of the gasket rolling. Fit gasket by pushing corners in first, and then work inwards to position the remaining gasket. Should the gasket be out of

shape when in place, use hot air (i.e. from hair drier) to realign.
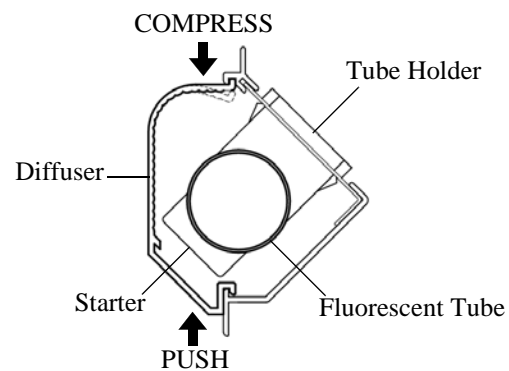
Figure 5
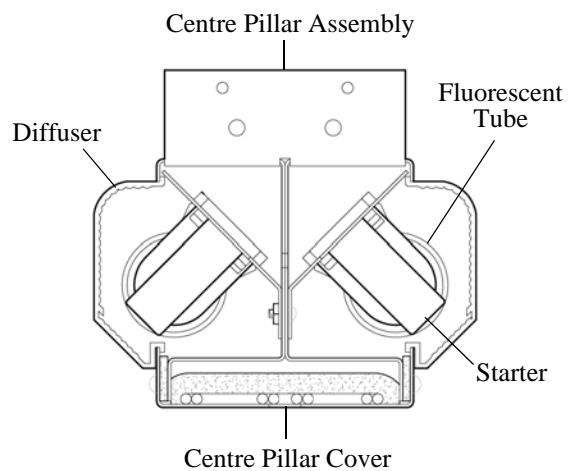
Figure 6

INTERIOR LIGHTS

Side Lights

To replace fluorescent tube or starter, compress the back section of the diffuser so that it disengages from the side light housing, and push back to gain access to light.

When refitting, engage back section of the diffuser into housing. Compress and snap front section of diffuser into place, progressively down its full length (see figure 5).

Centre Pillar Light

Double door model YA1700, as well as having vertical side lights, is also fitted with centre pillar lights. The centre pillar houses two additional fluorescent tube lights and starters, accessed from each side of the centre pillar. The replacement procedure for the fluorescent tube and starters is the same as for the side lights, detailed above.

LIGHTED SIGN BOX (Optional)

Removal

1. Firstly, disconnect machine from power supplies (see 'Safety Information' p. 14).

2. Remove screws from bottom of sign assembly.

3. Tilt the sign box up, approx. 45°, and lift clear of the pivot screws.

4. Unplug the sign assembly from the control box located on the refrigeration unit.

5. Refitting the sign assembly is reversal of the procedure above.

Servicing

Accessing the fluorescent tube, starter and fuse can be done with the sign box either in place or removed from the cabinet. Remove the curved sign panel by pulling out the panel from the top corners of the sign box (see 'Spares' section p. 46, for replacement parts).

Assembling Sign

To re-assemble the lighted sign box after servicing:

1. Ensure the central tie wire, connecting the top and bottom of the sign, is fitted correctly.

2. Check that the sign panel end strips are correctly fitted to both ends of the sign panel.

3. Fully insert bottom edge of sign panel into the bottom of the sign box.

4. Horizontally curve the sign panel by pressing on its top edge, and manoeuvre one of the corners into the top opening of the sign box.

5. Work your way along the top edge of the sign panel, pushing the panel into the top opening of the sign box using your thumbs.

6. Check that the sign panel end strips are correctly located in the gap in each of the top corners of the sign box.

CABINET

Fuse and Ballast Replacement

The cabinet fuse and lighting ballasts are located inside the Cabinet Wiring Junction Box, attached to the side of each unit.

1. Remove the centre locking screw (nearest the unit) from on top of corresponding Cabinet Wiring Juction Box, and lift the Junction Box off the side of the refrigeration unit (see figure 7 below).

2. To remove cover: remove the centre screw, and loosen the two outside screws on top of Junction Box.

3. The fuse and ballasts can now be accessed and replaced (see 'Spares' section, p. 44, for part descriptions).

Figure 7

PRESSURE TEMPERATURE CHART

TEMPERATURE		R134a		R404A	
°F	°C	KPa	psig	Kpa	psig
-38.2	-39	-47	14.0	37	5.4
-36.4	-38	-45	13.2	44	6.3
-34.6	-37	-42	12.3	50	7.3
-32.8	-36	-38	11.4	57	8.3
-31.0	-35	-35	10.4	64	9.3
-29.2	-34	-32	9.4	71	10
-27.4	-33	-28	8.4	79	11
-25.6	-32	-25	7.3	86	13
-23.8	-31	-21	6.2	94	14
-22.0	-30	-17	5.0	103	15
-20.0	-29	-13	3.8	111	16
-18.4	-28	-9	2.6	120	17
-16.6	-27	-4	1.3	129	19
-14.8	-26	0	0.0	138	20
-13.0	-25	5	0.7	148	21
-11.2	-24	10	1.4	158	23
-9.4	-23	15	2.2	168	24
-7.6	-22	20	2.9	179	26
-5.8	-21	26	3.7	189	27
-4.0	-20	31	4.5	200	29
-2.2	-19	37	5.4	212	31
-0.4	-18	43	6.3	224	32
1.4	-17	49	7.2	236	34
3.2	-16	56	8.1	248	36
5.0	-15	63	9.1	261	38
6.8	-14	69	10	274	40
8.6	-13	77	11	288	42
10.4	-12	84	12	302	44
12.2	-11	91	13	316	46
14.0	-10	99	14	331	48
15.8	-9	107	16	346	50
17.6	-8	116	17	361	52
19.4	-7	124	18	377	55
21.2	-6	133	19	393	57
23.0	-5	142	21	410	59
24.8	-4	151	22	427	62
26.6	-3	161	23	445	65
28.4	-2	171	25	463	67
30.2	-1	181	26	481	70
32.0	0	192	28	500	73
33.8	1	202	29	519	75
35.6	2	213	31	539	78
37.4	3	225	33	559	81
39.2	4	237	34	580	84
41.0	5	249	36	601	87
42.8	6	261	38	623	90
44.6	7	274	40	645	94
46.8	8	287	42	668	97
48.2	9	300	44	691	100
50.0	10	314	46	715	104
53.6	12	342	50	776	113
57.2	14	372	54	828	120
60.8	16	403	58	881	128
64.4	18	436	63	938	136
68.0	20	471	68	996	145
77.0	25	565	83	1154	167
86.0	30	670	97	1327	193
95.0	35	787	114	1518	220
104.0	40	916	133	1728	251
113.0	45	1060	154	1957	284

Complaint	Possible Cause	Repair
1. Compressor will not start - no hum.	Fuse removed or blown, no power.	Replace fuse, Check reason.
	Overload protector tripped.	Refer to electrical section.
	Thermostat stuck in open position.	Repair or replace control.
	Thermostat off due to cold location.	Relocate control.
	Wiring improper or loose.	Check wiring against diagram.
2. Compressor will not start - hums but trips on overload protector.	Improperly wired.	Check wiring against diagram.
	Low voltage to unit.	Determine reason and correct.
	Start capacitor defective on CSIR or CSR motor.	Determine reason and replace.
	Run capacitor defecive on PSC motor.	Determine reason and replace.
	Relay failing to close.	Determine reason and correct, replace if necessary.
	Compressor motor has a winding open or shorted.	Check resistance values. Replace compressor if necessary.
	Internal mechanical trouble in compressor.	Replace compressor.
3. Compressor starts, but does not switch off - starts winding.	Improperly wired.	Check wiring against diagram.
	Low voltage to unit.	Determine reason and correct.
	Relay failing to open, due to welded contacts or relay incorrectly mounted.	Determine reason and correct, replace if necessary.
	Run capacitor defective on CSR motor.	Determine reason and replace.
	Excessively high discharge pressure.	Clean condenser.
		Check power input watts.
		Possible overcharge, insufficient condenser cooling, or non-condenible gasses.
	Compressor motor has winding open or shorted. Check continuity and resistance.	Replace compressor if faulty.
	Internal mechanical trouble in compressor (tight). May be lubrication.	Replace compressor.

| Complaint	Possible Cause	Repair
4. Compressor starts and runs but short cycles on overload protector (relay may chatter on RSIR, CSIR and CSR motors).	Additional current passing through overload protector.	Check wiring diagram. Check for added fan motors etc., connected to wrong side of protector.
	Low voltage to unit.	Determine reason and correct.
	Overload protector defective.	Check current, replace protector.
	Run capacitor defective on CSR motor.	Determine reason and replace.
	Excessive discharge pressure.	Clean condenser, check ventilation, check for restrictions in refrigeration system.
	Suction pressure too high.	Check for possibility of misapplication.
	Compressor too hot - insufficient suction gas cooling.	Check refrigerant charge (fix leak), add if necessary. Check return vapour temperature and suction superheat.
	Compressor motor has a winding shorted.	Replace compressor.
5. Unit runs OK, but short cycles.	Overload protector.	See 4 above.
	Thermostat: requires adjustment or incorrectly positioned.	Adjust or relocate thermostat.
	Incorrect refrigerant charge.	Adjust refrigerant charge.
6. Unit operates long or continuously. Unsatisfactory cabinet temperature.	Short of refrigerant.	Fix leak, add charge.
	Overcharge of refrigerant.	Remove refrigerant to correct charge.
	Thermostat not cooling correctly.	Adjst thermostat (clockwise colder).
	Chiller has excessive load.	Establish load within limits.
	Evaporator coil iced.	Defrost evaporator, check refrigeration.
	Restriction in refrigeration system.	Determine location and clear restriction. Flush with dry nitrogen. Replace component if blockage will not clear.
	Dirty condenser.	Clean condenser. Advise client how to regularly clean condenser.

Complaint	Possible Cause	Repair
6. (continued) Unit operates long or continuously. Unsatisfactory cabinet temperature.	Inadequate air circulation.	Internal: Improve air movement, allow airflow around stock. External: Remove any restrictions to condensing ventilation.
	Compressor not pumping efficiently.	Replace compressor.
	Filter dirty (if applicable).	Clean or replace.
	Faulty fan motor.	Check rotation. Replace if necessary.
7. Start capacitor open, shorted or blown.	Relay contacts not opening properly.	Clean contacts or replace relay if necessary.
	Prolonged operation on start cycle due to: (a) Low voltage to unit.	(a) Determine reason and correct.
	(b) Improper relay.	(b) Replace.
	Excessive short cycling.	Determine reason for short cycling (see 5 above), and correct.
	Improper capacitor.	Determine correct size and replace.
8. Relay defective or burned out.	Incorrect relay.	Check and replace.
	Line voltage too high or too low.	Determine reason and correct.
	Excessive short cycling.	Determine reason for short cycling (see 5 above), and correct.
	Relay being influenced by loose vibrating mount.	Remount rigidly.
9. Suction line frosted.	Evaporator fan not running.	Determine reason and correct.
	Overcharge of refrigerant capillary systems.	Correct charge.
10. Unit noisy.	Loose parts or mountings.	Find and tighten.
	Tubing rattle.	Reform to be free of contact.
	Bent fan blade causing vibration.	Replace blade.
	Fan motor bearings worn.	Replace motor.
11. Cabinet surfaces excessively hot.	If operating as standard cooler, cabinet heat may be set on HIGH, as opposed to Low.	Set cabinet heating switch, located on Cabinet Wiring Junction Box, to LOW.
12. Cabinet surfaces excessively cool and sweating.	If operating as freezer cabinet, heating may be set at LOW as opposed to High.	Set cabinet heating switch, located on Cabinet Wiring Junction Box, to HIGH.
13. Cabinet not going.	Fuse in Cabinet Wiring Junction Box blown.	Replace fuse.
	Over-pressure cutout at refrigeration unit.	See electronic controller 'Alarms and Signals' pp. 17-20.
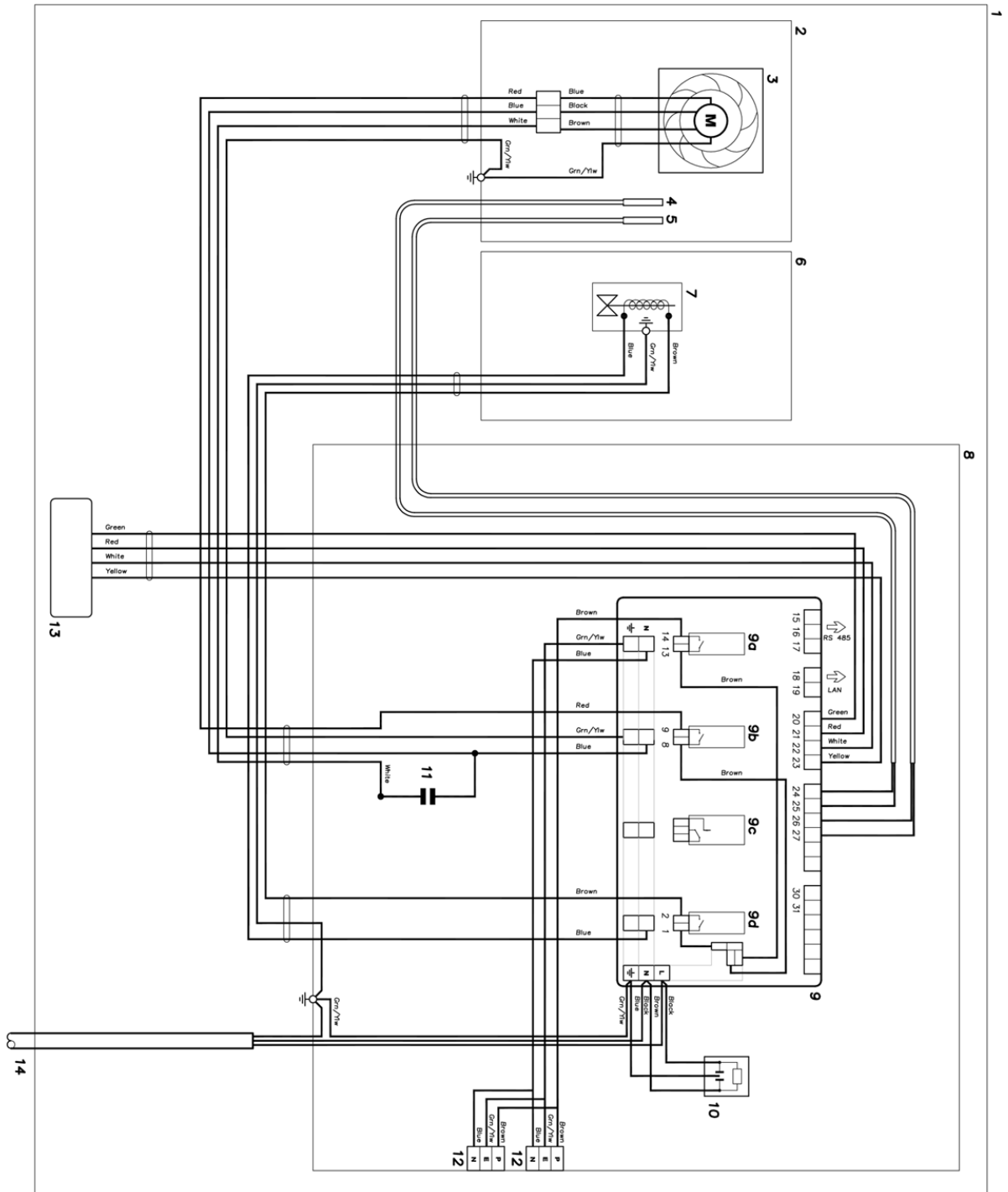
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REFRIGERATION REMOTE COOLER UNIT - Type 2 Controller

REFRIGERATION REMOTE COOLER UNIT - Type 2 Controller

Item	Part Description
1	Refrigeration Unit
2	Evaporator Box
3	Evaporator Fan Assembly
4	Ambient Probe
5	Defrost Probe
6	Condenser Box
7	Solenoid Valve
8	Control Box Assembly
9	Power Board ELZ0018 (PSB0001000)
9a	Alarm Relay
9b	Fan Relay
9c	Defrost Relay
9d	Compressor Relay
10	R.F.I. Suppression Capacitor
11	Fan Capacitor
12	ENSTO Connector x 2
13	CAREL Processor (type 2) ELZ0017 (PST00SR00)
14	Mains Flex
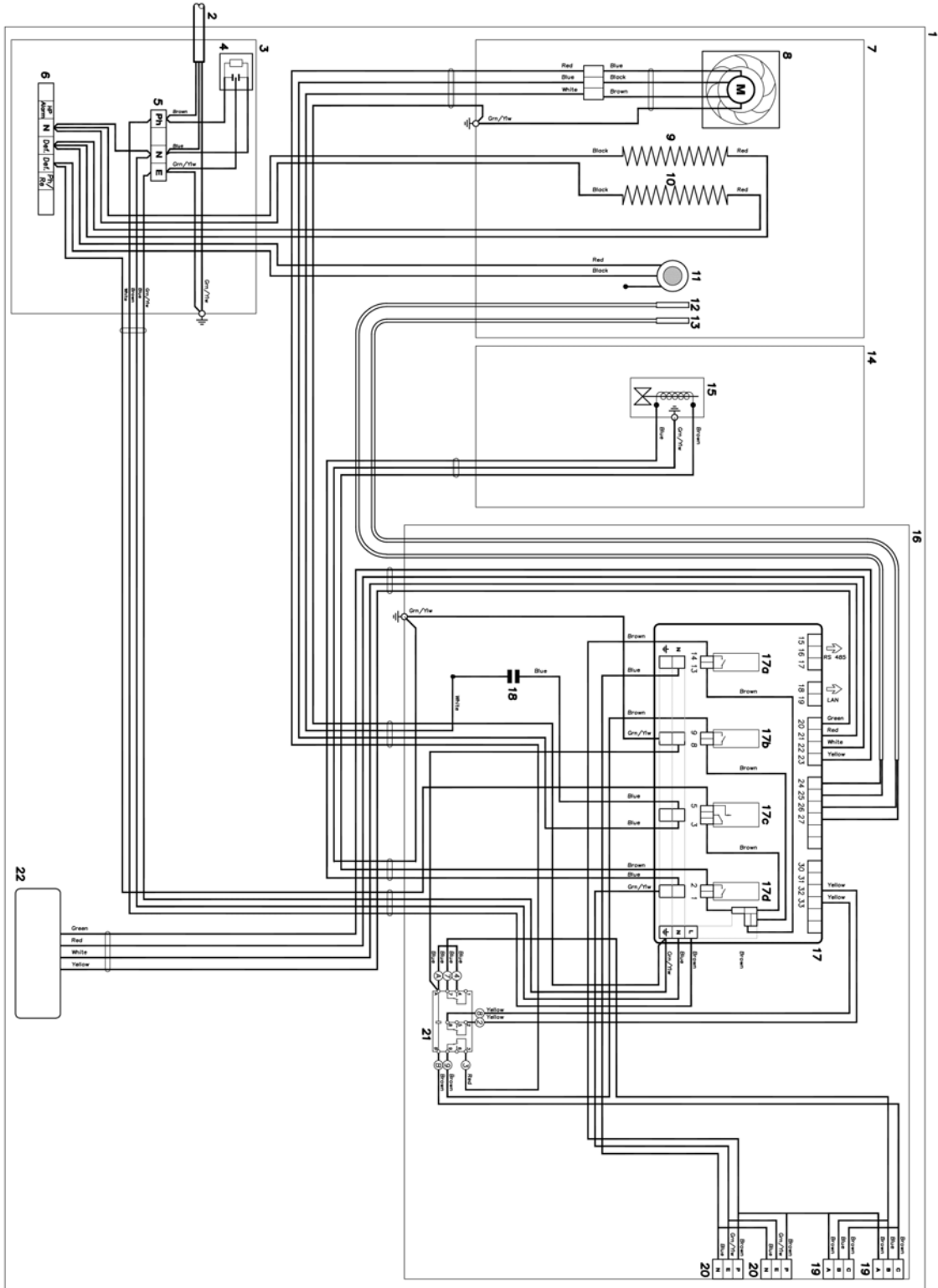
REFRIGERATION REMOTE FREEZER UNIT - Type 2 Controller

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## REFRIGERATION REMOTE FREEZER UNIT - Type 2 Controller

Item	Part Description
1	Refrigeration Unit
2	Mains Flex
3	Unit Junction Box
4	R.F.I. Suppression Capacitor
5	4-Way Terminal Block
6	7-Way Terminal Block
7	Evaporator Box
8	Evaporator Fan Assembly
9	Sump Element
10	Defrost Element
11	Defrost Overtemp Safety Switch
12	Ambient Probe
13	Defrost Probe
14	Condenser Box
15	Solenoid Valve
16	Control Box Assembly
17	Power Board ELZ0018 (PSB0001000)
17a	Alarm Relay
17b	Fan Relay
17c	Defrost Relay
17d	Compressor Relay
18	Fan Capacitor
19	ENSTO Connector (blue) x 2
20	ENSTO Connector (white) x 2
21	Fan / Door Control Relay
22	CAREL Processor (Type 2) ELZ0017 (PST00SR300)

ONE DOOR CABINET - YARRA 850

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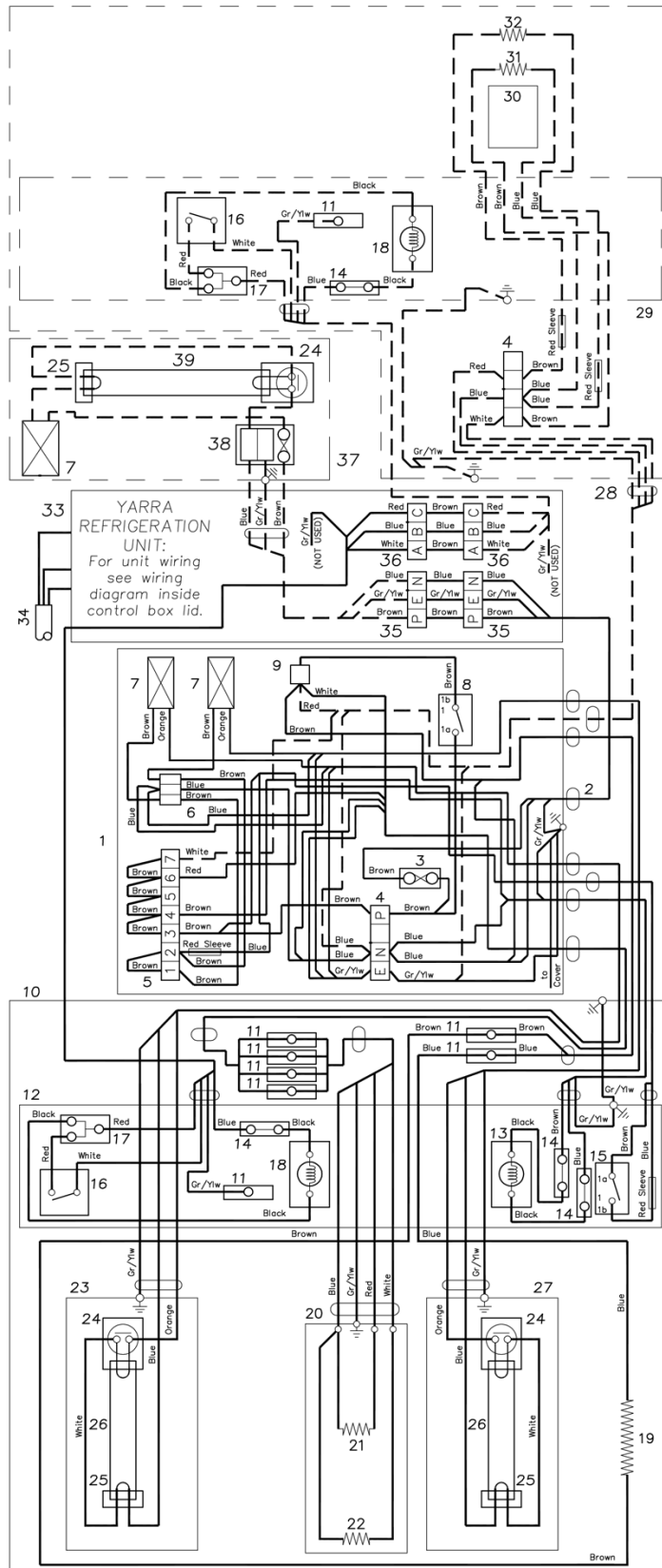
ONE DOOR CABINET - YARRA 850

Item	Part Description
1	Yarra Refrigeration Cabinet Wiring Junction Box Assembly
2	Cabinet Wiring Junction Box Power Supply Flex
3	Single Pole Fused Connector Block (with spare fuse)
4	4-Pole Terminal Block (2)
5	7-Pole Terminal Block
6	3-Pole Connector Block
7	58/65 Watt Fluorescent Lighting Ballast (3)
8	Refrigeration Cabinet Heating Switch (LOW/HIGH)
9	1-Pole Terminal Block
10	Yarra Refrigeration Cabinet Front Assembly
11	Inline Insulator (8)
12	Control Panel Assembly
13	Cabinet Power Supply Neon (Indicator Light)
14	2-Way Insulated Connector (4)
15	Fluorescent Lighting Switch (ON/OFF)
16	Door Activated Refrigeration Unit Fans Control Switch (2)
17	3-Way Insulated Connector (2)
18	Refrigeration Unit Fans Power OFF Warning Neon (Indicator Light) (2)
19	Cabinet Facia Door Entrance Perimeter Heater Wire
20	Heated Front Door Assembly
21	Front Door Glass Heated Film
22	Front Door Frame Heater Wire
23	Left Cabinet Fluorescent Side Light Assembly
24	Lamp and Starter Holder with Starter (3)
25	Lamp Holder (3)
26	58 Watt Fluorescent Lighting Tube (2)
27	Right Cabinet Fluorescent Side Light Assembly
28	Yarra Refrigeration Cabinet Rear Assembly (option)
29	Cabinet Rear Wiring Cover Assembly
30	Cabinet Rear Door Entrance
31	Rear Door Entrance Perimeter Cabinet Facia 'Primary' Heater Wire
32	Rear Door Entrance Perimeter Cabinet Facia 'Booster' Heater Wire
33	YARRA Refrigeration Unit (see wiring diagram inside unit control box lid)
34	Refrigeration Unit Power Supply Flex
35	White Ensto Power Supply Socket (on unit control box) (2)
36	Blue Ensto 3-Pole Socket (on freezer unit control box only. Not on cooler) (2)
37	Lighted Sign Box (option)
38	3-Pole Fused Terminal Block with 3A Fuse plus Spare Fuse
39	18 Watt Fluorescent Lighting Tube

TWO DOOR CABINET - YARRA 1700

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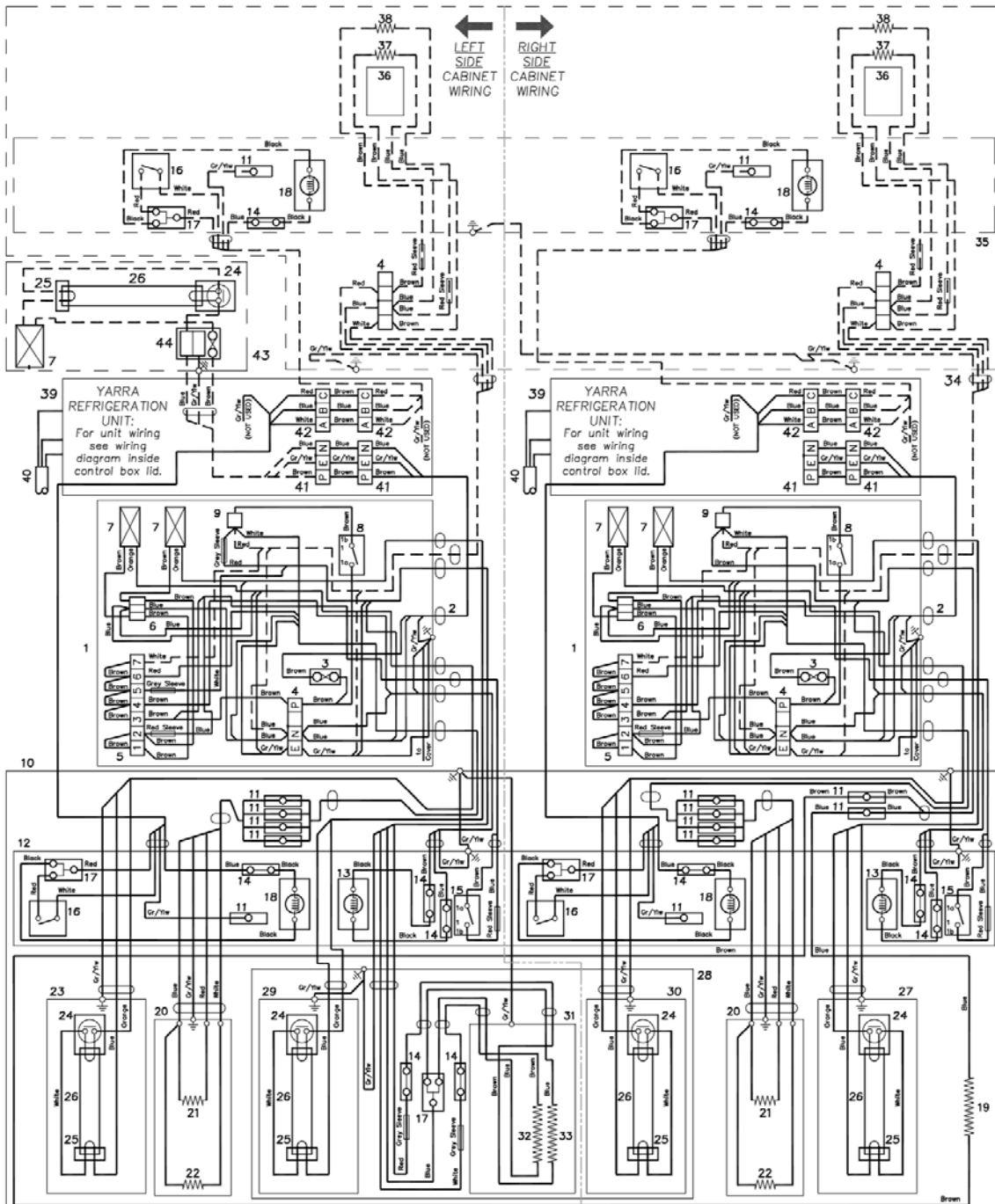
TWO DOOR CABINET - YARRA 1700

Item	Part Description
1	Yarra Refrigeration Cabinet Wiring Junction Box Assembly (2)
2	Cabinet Wiring Junction Box Power Supply Flex (2)
3	Single Pole Fused Connector Block (with spare fuse) (2)
4	4-Pole Terminal Block (4)
5	7-Pole Terminal Block (2)
6	3-Pole Connector Block (2)
7	58/65 Watt Fluorescent Lighting Ballast (5)
8	Refrigeration Cabinet Heating Switch (LOW/HIGH) (2)
9	1-Pole Terminal Block (2)
10	Yarra Refrigeration Cabinet Front Assembly
11	Inline Insulator (14)
12	Control Panel Assembly
13	Cabinet Power Supply Neon (Indicator Light) (2)
14	2-Way Insulated Connector (10)
15	Fluorescent Lighting Switch (ON/OFF) (2)
16	Door Activated Refrigeration Unit Fans Control Switch (4)
17	3-Way Insulated Connector (5)
18	Refrigeration Unit Fans Power OFF Warning Neon (Indicator Light) (4)
19	Cabinet Facia Door Entrance Perimeter Heater Wire
20	Heated Front Door Assembly (2)
21	Front Door Glass Heated Film (2)
22	Front Door Frame Heater Wire (2)
23	Left Cabinet Fluorescent Side Light Assembly
24	Lamp and Starter Holder with Starter (5)
25	Lamp Holder (5)
26	58 Watt Fluorescent Lighting Tube (5)
27	Right Cabinet Fluorescent Side Light Assembly
28	Cabinet Front Lighted Centre Pillar Assembly
29	Centre Pillar Left Side Fluorescent Light Assembly
30	Centre Pillar Right Side Fluorescent Light Assembly
31	Centre Pillar Cover Assembly
32	Centre Pillar Cover Facia 'Primary' Heater Wire
33	Centre Pillar Cover Facia 'Booster' Heater Wire
34	Yarra Refrigeration Cabinet Rear Assembly (option)
35	Cabinet Rear Wiring Cover Assembly
36	Cabinet Rear Door Entrance (2)
37	Rear Door Entrance Perimeter Cabinet Facia 'Primary' Heater Wire (2)
38	Rear Door Entrance Perimeter Cabinet Facia 'Booster' Heater Wire (2)
39	Yarra Refrigeration Unit (see wiring diagram inside unit control box lid) (2)
40	Refrigeration Unit Power Supply Flex (2)
41	White Ensto Power Supply Socket (on unit control box) (4)
42	Blue Ensto 3-Pole Socket (on freezer unit control box only. Not on cooler) (4)
43	Lighted Sign Box (option)
44	3-Pole Fused Terminal Block with 3A Fuse plus Spare Fuse

CABINET ASSEMBLY

Part Description	YA850	YA1700
CABINET		
Control Panel Assembly	Y1100/797	Y1200/797
Top Hinge Blank (R/H)	V5301/390A	V5301/390A
Top Hinge Assembly (L/H)	n.a.	C1200/389
Top Hinge Assembly (L/H)	V5301/389	V5301/389
Top Hinge Blanking Bracket	n.a.	C1200/390A
Door Adjuster Assembly	A1100/A42-49 (1)	A1100/A42-49 (2)
Door Bottom Hinge Shim	V5000/115B	V5000/115B
Bottom Hinge (R/H)	A1100/393-49	A1100/393-49
Bottom Hinge (L/H)	A1100/394-49	A1100/394-49
Wire Shelf	Y1100/162	A1301/163
Adjustable Shelf Bracket (R/H)	R1101/598L	R1101/598L
Adjustable Shelf Bracket (L/H)	R1101/598R	R1101/598R
Cabinet Wiring Junction Box Ass'y	Y1100/G29	Y1100/G29
SKOPE Name Badge	NAM8016-GY/SV	NAM8016-GY/SV
Neon/Switch Encapsulated Label	LAB0088	LAB0088
Swivel Castor - Mounting Plate	SXX6180 (4)	SXX6180 (6)
Adjustable Swivel Castor - Standard	SXX6181 (2)	SXX6181 (3)
Adjustable Swivel Castor - Locking	SXX6182 (2)	SXX6182 (3)
Adjustable Stability Foot	Y1100/314-49 (4)	Y1100/314-49 (6)
REAR DOOR CABINET		
Solid Door Bottom Hinge (R/H)	V5000/D55R	
Solid Door Bottom Hinge (L/H)	V5000/D55L	
Solid Door Top Hinge (R/H)	V7000/110	
Solid Door Top Hinge (L/H)	V7000/111	
Solid Door Top Hinge (Blank)	V7000/112	
Rear Door Wiring Cover Assembly	Y1101/F79	Y1201/F79
CABINET WIRING JUNCTION BOX		
Cabinet Wiring Junction Box Ass'y	Y1100/G29	
58/65 Watt Ballast (2)	ELZ8103	
Rocker Switch	ELS7513	
3 Amp Ceramic Fuse	ELZ9654	
Fused Terminal Block	ELZ9655	
Cabinet Wiring Diagram Label	LAB0051	LAB0052

When ordering spare parts: please specify colour (white, black etc.), finish (anodised or painted), and sign panel artwork (if applicable).

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CABINET ASSEMBLY

Part Description	YA850	YA1700
GLASS DOOR		
Glass Door Assembly (R/H)	Y2100/740R	
Glass Door Assembly (L/H)	Y2100/740L	
Glass Door Gasket	GKT9653	
Door Adjuster Assembly	A1100/A42-49	
Torsion Bar	REF0092	
Capstan	TUR7635	
Bush	PLM5073 (2)	
SOLID DOOR		
Solid Door Assembly (R/H)	Y6500/D40	
Solid Door Assembly (L/H)	Y6500/D41	
Solid Door Gasket	GKT4888	
Plastic Handle	PLM7823BK	
Hinge Mechanism	HIN5780	
Top Mount Bush	C1300/D56	
INTERIOR LIGHTS		
Side Light Assembly (R/H)	Y1100/670R-32	Y1100/670R-32
Side Light Assembly (L/H)	Y1100/670L-32	Y1100/670L-32
Centre Pillar Light Assembly	n.a.	Y1200/L46
Light Diffuser	Y1100/E71	Y1100/E71
58 Watt Fluorescent Tube (5ft):		
L58W/21-840 4000K 'Coolwhite'	ELL6267	
L58W/11-860 6000K 'Daylight'	ELL9390	
58/65 Watt Ballast	ELZ8103	ELZ8103
Starter	ELZ2840	ELZ2840
Lamp Holder	ELZ6270	ELZ6270
Starter Holder	ELZ6271	ELZ6271
Tube Protector (freezers only)	PLM6268	PLM6268
Protector Tube End Cap (2 per tube)	PLM5155	PLM5155

S P A R E S

OPTIONAL PARTS

Part Description	YA850	YA1700
LIGHTED SIGN BOX		
Sign Assembly (packed)	Y1100/S01	Y1200/S01
Curved Sign Panel - Clear	PLY0118	PLY0116
Curved Sign Panel - Opal	PLY0120	PLY0117
58 Watt Fluorescent Tube (5ft)	n.a.	ELL6267
58/65 Watt Ballast	n.a.	ELZ8103
Starter	ELZ2840	ELZ2840
20 Watt Ballast	ELZ1039	n.a.
18 Watt Fluorescent Tube	ELL5065	n.a.
3 Amp Ceramic Fuse	ELZ6467	ELZ6467
Fused Connector Block	ELZ6461	ELZ6461
Fuse Holder	ELZ6462NC	ELZ6462NC
PELMET		
Pelmet Hinged Front Panel	YC1100/R71	YC1200/R71
Pelmet Support Frame	Y1100/R85	
SHELVING		
Shelf Frame	Y1101/162/1	A1301/163/1
Shelf Divider	Spares available on request.	
Acrylic Front	Spares available on request.	
'Speedfeed' Matt	Spares available on request.	

S P A R E S

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REFRIGERATION UNIT - COOLER

Part Description			SKOPE P/No.
COOLER UNIT			
Refrigeration Unit Assembly			Y1120R-128Z2
Control Box Assembly			Y1100/E50X2
Suction Line Assembly			Y1100/378
Evaporator Coil			CLS8839
Unit Handle			HAN0000
Evaporator Fan Assembly			YC2100/484Z
Evaporator Fan Capacitor			YC2100/X27
R.F.I. Suppression Capacitor			B3100/E65
Solenoid Valve			VAL7653
Solenoid Coil			ELZ7654
T.X. Valve			VAL7923
Unit Wiring Diagram Label (Type 2 Controller)			LAB0060
COOLER CONTROLLER	Type	Model No.	SKOPE P/No.
Electronic Controller Display	2	PST00300	ELZ0017
Controller Power Board		PSB0001000	ELZ0018
Controller Connector Cable		PSTCON0300	ELZ0019
Probe x 2		NTC015WP00	ELZ7644

S P A R E S

REFRIGERATION UNIT - FREEZER

Part Description	SKOPE P/No.
FREEZER UNIT	
Refrigeration Unit Assembly	Y2197R-130X2
Unit Junction Box Assembly	Y2100/R86
Control Box Assembly	Y2100/E50X2
Evaporator Coil	CLS9681
Chest Handle	HAN0000
Sump Element	ELE8850
Defrost Element	ELE8851
Evaporator Fan Assembly	YC2100/484Z
Evaporator Fan Capacitor	YC2100/X27
R.F.I. Suppression Capacitor	ELC8068
Solenoid Valve	VAL7653
Solenoid Coil	ELZ7654
Unit Wiring Diagram Label (Type 2 Controller)	LAB0059

FREEZER CONTROLLER	Type	Model No.	SKOPE P/No.
Electronic Controller Display		PST00300	ELZ0017
Controller Power Board	2	PSB0001000	ELZ0018
Controller Connector Cable		PSTCON0300	ELZ0019
Probe x 2		NTC015WP00	ELZ7644