

# Gastronorm Roll-in Cabinets

**GRL 1H, GRL 1HP, GRL 1X  
GRL 2H, GRL 2HP, GRLF 1H  
GR 1H, GR 1X & GR 2H**



# Service Manual



# GASTRONORM ROLL-IN CABINETS

CONTENTS	PAGE	INTRODUCTION
Introduction	1	<p>Gastronorm Roll-in Cabinet is a trolley-based unit with two temperature options, refrigerator temperature +1° to +4°C and heated version temperature +75° to 80°C.</p> <p>It is important to note that the heated version is for the storage of cooked food and not for food warming. Lidded containers should be used on the heated range to maintain the moisture content in the food.</p> <p><b>CABINET DESCRIPTION</b></p> <p>The cabinets are manufactured as a one piece foamed shell with 304 grade stainless steel interior and exterior.</p> <p>The GR1 and GR2 stores the 1/1 gastronorm trolley and the GRL 1 and GRL 2 stores the 2/1 gastronorm trolley. Single section models accommodates one trolley and double sections two. A ramp is fitted to the bottom of the cabinet into retaining studs for ease of trolley access.</p> <p>A easy to read digital display is located in the unit cover fitted above the door.</p> <p>The doors are fitted with magnetic gasket on three sides, a rubber wiper gasket is fitted to the bottom to give a positive seal against the ramp. The doors have self-closing hinges incorporating a rising action as the door is opened, this is to avoid the wiper gasket scrapping across the floor.</p> <p>The GR 1 and 2 incorporate R134A refrigerant gas and the GRL 1 and 2 R404A. The refrigeration system is based on the “plug design” housing the air cooled condensing unit, forced air evaporator with capillary refrigerant control.</p> <p>On heated models a fan-assisted heater system is used to maintain the cabinet at the optimum temperature.</p>
2. Operating Instructions	2-4	
3. Controller and Operation	5-10	
4. Controller Settings	11	
5. Electrical Connections	12-13	
6. Technical Data	13	
7. Access	14-30	
8. Wiring Diagrams	31-33	
9. Illustrated Spare Parts List	34-48	

Model Ref:	GR 1H	GR 2H	GRL 1H	GRL 2H	GRL F1H	GR 1X	GRL 1X
Temperature Range	+1° /4°C	+75° /+80°C	+75° /+80°C				
Capacity - Litres (nett)	601	1364	1108	2424	1108	601	1108
Trolley Capacity	1 x 1/1	2 x 1/1	1 x 2/1	2 x 2/1	1 x 2/1	1 x 1/1	1 x 2/1
Floorless Option	n/a	n/a	yes	n/a	n/a	n/a	n/a







## LAE Temperature Controllers FDC 121 - MICROPROCESSOR CONTROLS

### 1.0 The Microprocessor Controller - FDC 121 (15246141)

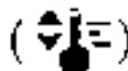
- 1.1 All controller parameters are factory set for optimum storage conditions. The parameters should only be adjusted by persons familiar with the unit operation and controller functions. Certain parameters however may be adjusted within limits, to suit certain storage needs.



- 1.2 **Check set point** - Low point of temperature band.

1. Press button 1 (  )

- 1.3 **Increase Set Point**

1. Press and hold button 1 (  )  
2. Press button 3 (  ) until required temperature is displayed.

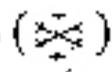
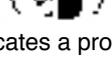
- 1.4 **Decrease Set Point**

1. Press and hold button 1 (  )  
2. Press button 4 (  ) until required temperature is displayed.

- 1.5 **Manual Defrost**

1. Press and hold button 2 (  )  
2. Press button 4 (  ) a timed defrost will follow.

- 1.6 **Indicators**

1. LED 5 Compressor on (  )  
2. LED 6 Evaporator Fan on (  )  
3. LED 7 Defrost on (  )  
4. PF1 or PF2 : Indicates a probe failure - call engineer.

- 1.7 **Adjustment Parameters**

Refrigerator	Fish
+1 / +4.	+1 / +4
Factory setting	
+1 / +4	+1 / +4

# LAE Temperature Controllers

## FDC 121 - THERMOSTAT FUNCTION

### 1.0 Thermostat Function - FDC 121 and FDC 122

- SPL** Minimum set point (°C).  
Maximum allowable low alarm setting (°C).
- SPh** Maximum set point (°C).  
Maximum allowable high alarm setting (°C).
- hyS** Temperature hysteresis (°K).
- coF** Compressor minimum off time (mins).
- con** Compressor minimum on time (mins).
- cdc** Cooler duty cycle. Compressor on duration during a ten minute cycle e.g. **cdc** = 04, 4 min on time, 6 min off time (active only under probe fault conditions **PF1**).
- crS** Compressor start delay (secs).

### 1.1 Defrost Function

- drE** Time between defrosts (hrs).
- dLi** Defrosts termination temperature (°C).
- dto** Defrost termination time (mins). Unused if set to zero.
- drP** Drain down time (mins).
- diS** Display during defrost:-
- |                     |   |   |
|---------------------|---|---|
| <b>00</b>           | = | Temperature display   |
| <b>-01</b>          | = | dEF is displayed during defrost and until air temperature falls below the value setpoint + hysteresis.  |
| <b>1..30 (mins)</b> | = | dEF is displayed during defrost and until the set time has elapsed after defrosting or until air temperature falls below the value setpoint + hysteresis. |
- dtY** Defrost Type
- |            |   |                          |
|------------|---|--------------------------|
| <b>FAn</b> | = | Off cycle defrost.       |
| <b>ELE</b> | = | Electric heater defrost. |
| <b>GAS</b> | = | hot gas defrost.         |
- doP** Defrost Optimisation
- |            |   |  |
|------------|---|--|
| <b>con</b> | = | At regular intervals of <b>drE</b> (hrs).  |
| <b>Acc</b> | = | Defrost timer only runs while evaporator temperature is below 0°C, defrosting occurs when <b>drE</b> time has elapsed e.g. if compressor cycle time is 5 min run and 5 min stop and <b>drE</b> = 4, defrosting will take place every 8 hours approx. |

## LAE Temperature Controllers FDC 121 - THERMOSTAT FUNCTION

### 1.2 Evaporator Fan Control

**Fct** Evaporator fan control during cooling

- 01** = continuous operation.
- 00** = cycle on/off with compressor.
- 1..10 (mins)** = start with compressor, set time delay stop after compressor.

**Frs** Fan delay temperature following defrost (°C).

**Fid** Evaporator fan operation during defrost:-

- 00** = off until fan delay temperature **FrS** (°C) is reached.
- 01** = on while evaporator temperature is below valve **FrS** (°C).
- 02** = on during defrost.

### 1.3 Alarm Function

**Alo** Low temperature alarm setting (°C).

**Ahi** High temperature alarm setting (°C).

**AdL** Alarm delay (min).

- 00** = instantaneous audible alarm.
- 01..120** = duration of delay (min).
- 01** = alarm is disabled.

**Ain** Determines which probe is monitored for alarm functions:-

- 1** = air probe (probe 1).
- 2** = evaporator probe (probe 2).
- 3** = food probe (probe 3)

### 1.4 Thermal Mass Simulation

**oS1** Thermostat (Air probe) offset (°K).

**oS2** Evaporator probe offset (°K).

**oS3** Display offset (°K). - where fitted.

**SiM** Controls the thermal mass volume simulated by the controller and displayed on the fascia. The greater the value the greater the resulting display slow down. The controlling function remains to operate directly on air temperature.

- 00** = instantaneous ir temperature display.
- 01..200** = thermal mass simulation.

**Adr** Controller peripheral number - only used where controllers are networked.

# LAE Temperature Controllers

## FDC 121 - DISPLAY

### 1.0 Display

- 1.1 When the unit is switched on the display shows “- - -” for a period of five seconds, during which the controller performs a self check. The display then shows the air temperature measured by probe 1.

The coil temperature, measured by probe 2 may be viewed by pressing 

- 1.2 Access to the control parameters is achieved by pressing in sequence:-

 +  +  and holding in the keys for a period of 4 seconds.

It is possible to scroll through the parameters by pressing:-

 or 

The value of a selected parameter is checked by pressing:-

 and may be altered by pressing at the same time  +  or 

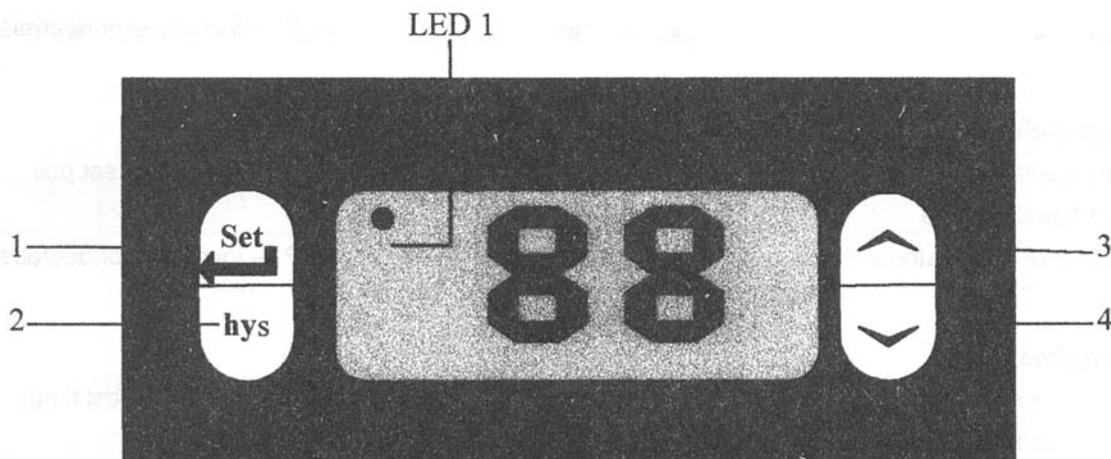
Exit from setup occurs after 10 seconds if no key is pressed.

- 1.3 If an alarm condition is entered the alarm buzzer will sound and ‘ALM’ will flash on the display. The alarm may be acknowledged by pressing any key causing the buzzer to cease and the display to alternate between ‘ALM’ and air temperature while the alarm condition persists. The alarm will also re-sound every 30 minutes while an alarm condition persists.

# MTR 112T1RES HEATED CABINETS

## 1.0 The microprocessor Control — (Part number 00-554020)

All Control parameters are factory set for optimum storage conditions. The parameters should only be adjusted by persons familiar with the Controller functions and unit operation.  
 Certain parameters may be adjusted within limits to suit certain storage needs.



### Operating Procedure

### Button

### Display Shows

#### 1.1 Check set point

Press button 1 and release

Set

Set point flashing

#### 1.2 Increase set point-

Press button 1 and release

Set

Set point flashing

Press button 3 repeatedly

▲

Until required setting displayed

#### 1.3 Decrease set point

Press button 1 and release

Set

Set point flashing

Press button 4 repeatedly

▼

Until required setting displayed

#### 1.4 Check hysteresis

Press button 2 and release

hys

Hysteresis

#### 1.5 Change hysteresis

Press button 2 and release

hys

Hysteresis

Press button 3 repeatedly

▲

Increase hysteresis

Press button 4 repeatedly

▼

Decrease hysteresis

Factory Setting Procedure	Button	Display Shows
<b>1.0 Switch off unit</b>		
Press button 3 and 4 simultaneously	▲ + ▼	nothing
Switch on unit		
Release buttons 2 and 4	▲ + ▼	Par
<b>1.1 Change minimum set point</b>		
Press button 1 and release	Set	v SP (minimum set point)
Press button 1 and release	Set	-50
Press buttons 3 or 4 repeatedly	▲ or ▼	v SP — increases or decreases
<b>1.2 Maximum set point</b>		
Press button 1 and release	Set	^ SP (minimum set point)
Press button 1 and release	Set	150
Press buttons 3 or 4 repeatedly	▲ or ▼	^ SP — increases or decreases
<b>1.3 Minimum off time</b>		
Press button 1 and release	Set	rt1 (minimum rest time)
Press button 1 and release	Set	00
Press buttons 3 or 4 repeatedly	▲ or ▼	rt1 — increases or decreases
<b>1.4 Probe failure</b>		
Press button 1 and release	Set	PF1 (probe failure)
Press button 1 and release	Set	Off
Press buttons 3 or 4 repeatedly	▲ or ▼	Off or On
<b>1.5 Probe offset</b>		
Press button 1 and release	Set	Adj (probe offset)
Press button 1 and release	Set	00
Press buttons 3 or 4 repeatedly	▲ or ▼	+ or - value
<b>1.6 Temperature Hysteresis</b>		
Press button 1 and release	Set	Hyl
Press button 1 and release	Set	10
Press buttons 3 or 4 repeatedly	▲ or ▼	+ or - value
<b>1.7 Exit Procedure</b>		
Press button 1 and release	Set	uSP
Press buttons 3 and release	▲	Par
<b>1.8 Switch off unit to retain changes</b>		
<b>1.9 Switch on unit to commence operation</b>		

## 4. CONTROLLER SETTINGS

### FDC CONTROLLER WITH 1 AIR PROBE REFRIGERATOR TEMPERATURE SETTINGS

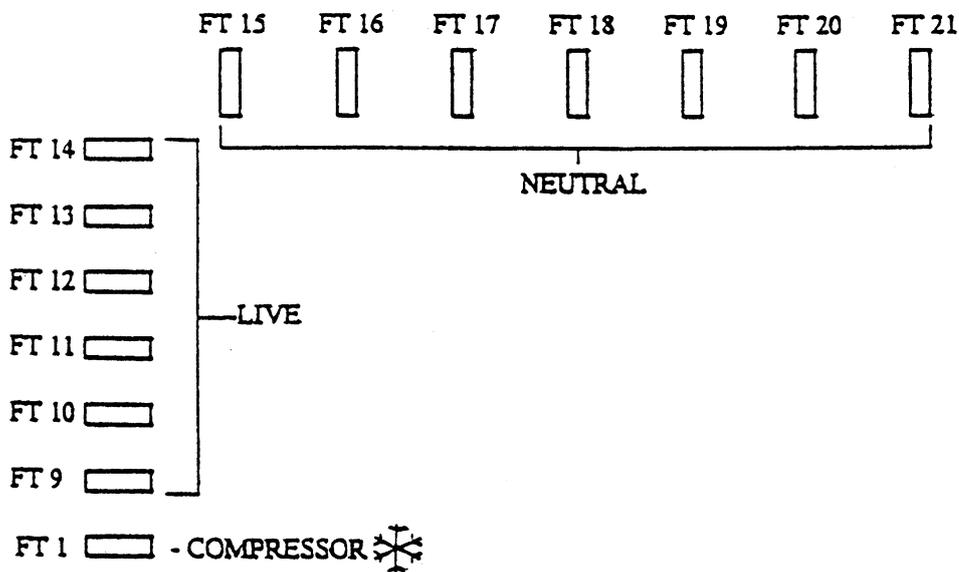
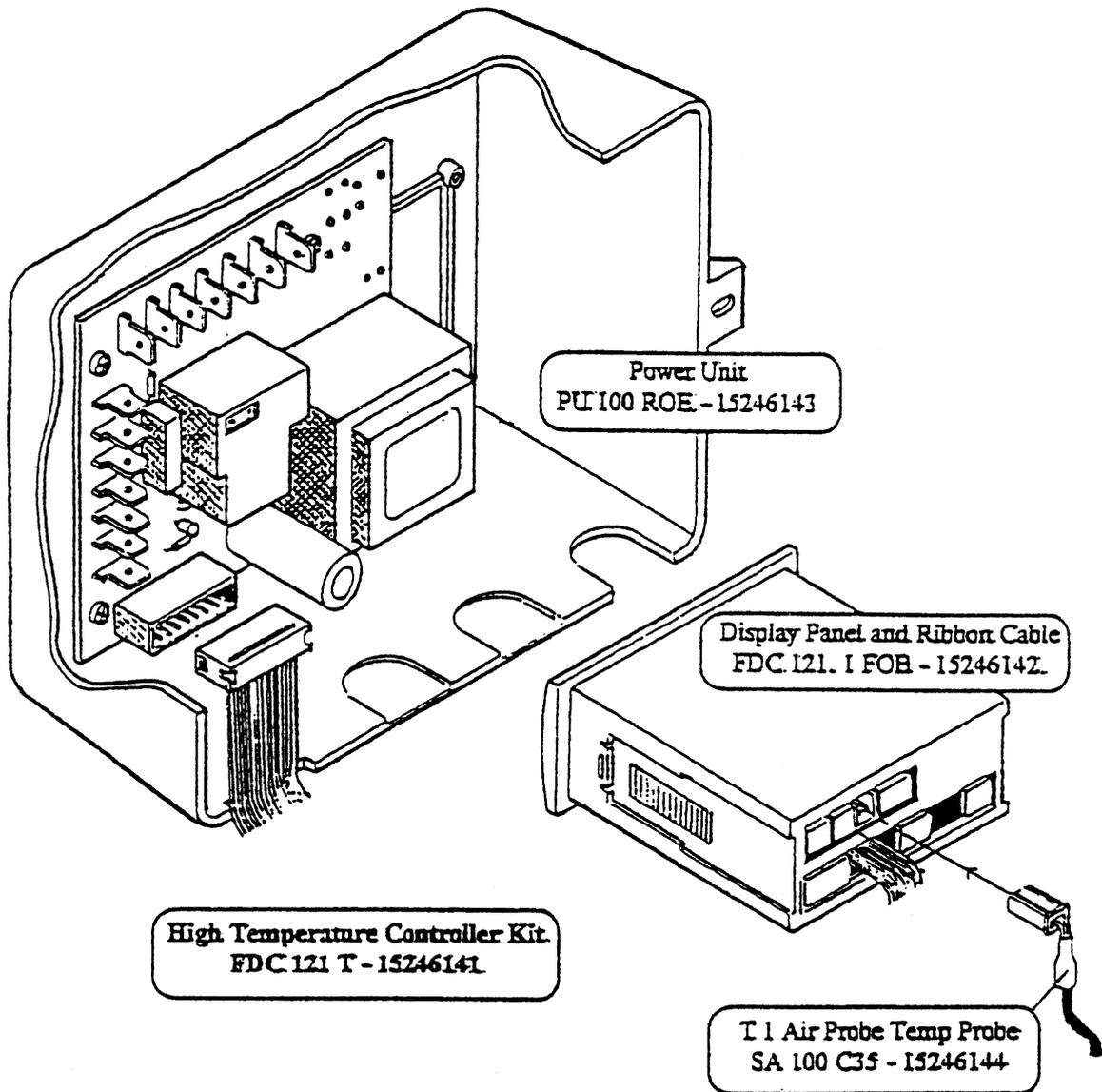
Par. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	Minimum set point	Maximum set point	Temperature hysteresis	Comp min. time off	Comp min. time on	Comp duty cycle at PF	Comp start delay	defrost interval	Defrost end temperature	Defrost duration	Drain down time	Disp. during defrost	Defrost type	Defrost optimisation	Evaporator fan control	Fan delay temperature	Fan operation	Low alarm set	High alarm set	Alarm delay	Alarm probe	Air probe offset	Evaporator probe offset	Display offset	Thermal mass simulation	DO NOT CHANGE
<b>Minemonics</b>	SPL	SPH	hYS	coF	con	cdc	crs	drE	dLI	dto	drP	diS	dtY	doP	Fct	FrS	FiD	Alo	Ahi	Adl	Ain	oS1	oS2	oS3	SiM	Adr
<b>Std. Setting</b>	1	5	3	00	00	6	00	6	30	15	1	00	FAN	con	-1	-5	2	00	10	30	1	00	00	00	00	1
<b>All Models</b>	1	5	3	00	00	6	00	6	30	15	1	00	FAN	con	-1	-5	2	00	10	30	1	00	00	00	00	1

#### MTR 122 TEMPERATURE SETTINGS TO BE CHANGED FROM STANDARD

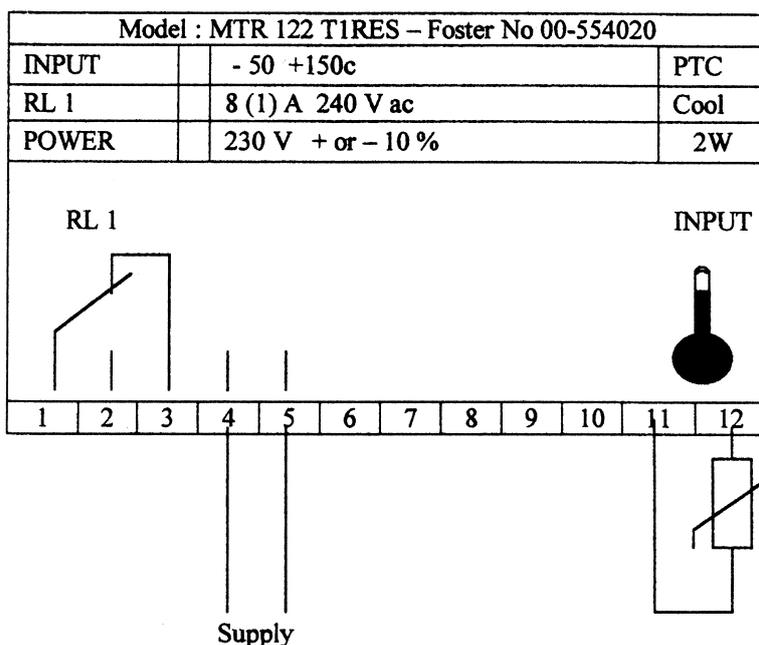
Parameter No.		1	2	3	4	5	6
<b>MTR 122 Temperature Settings</b>	<b>Set Point</b>	<b>Min Set Point</b>	<b>Max Set Point</b>	<b>Comp Min Off Time</b>	<b>Probe Failure</b>	<b>Display Offset</b>	<b>Temp Hysteresis</b>
<b>Minemonics</b>		v SP	sp	rtl	PF1	Adj	Hyl
<b>Std. Settings</b>	10	-50	=150	0	OFF	0	3
<b>PREFIX</b>	<b>Gastronorm Roll-in Cabinets</b>						
<b>GRL/GR</b>							
GRL 1X	87	80	90	0	OFF	0	-2
GR 1X	87	80	90	0	OFF	0	-2

# 5. ELECTRICAL CONNECTIONS

## FDC 121T CONTROLLER KIT AND CONNECTIONS



### ELECTRICAL CONNECTIONS MTR 122 T1RES



## 6. TECHNICAL DATA

### REFRIGERATED CABINET

Model Ref	Storage Temp	Heat Output (W)	Ambient temp °C	Ref Gas standard	Gas charge grams	Capillary size	Electrica 1 Supply (Standard)	Amps (A)	Watts (W)	Extraction Rate (W)	Evap Temp °C	Noise Level dBA
GRL 1H	1 to 4	1290	43°C	R404a	550	2.5mm x 054	230-50-1	2.8	510	620	-8	62
GRL 1HP	1 to 4	1290	43°C	R404a	550	2.5mm x 054	230-50-1	2.8	510	620	-8	62
GRL 2H	1 to 4	1650	43°C	R404a	800	3.5mm x 064	230-50-1	3.7	750	880	-8	64
GRL 2HP	1 to 4	1650	43°C	R404a	800	3.5mm x 064	230-50-1	3.7	750	880	-8	64
GRLF 1H	1 to 4	1290	43°C	R404a	550	2.5mm x 054	230-50-1	2.8	510	620	-8	62
GRL 1H/G	1 to 4	1290	43°C	R404a	550	2.5mm x 054	230-50-1	2.8	510	620	-8	62
GRL 2H/G	1 to 4	1650	43°C	R404a	800	3.5mm x 064	230-50-1	3.7	750	880	-8	64
GR 1H	1 to 4	620	43°C	R134a	360	2.0mm x 042	230-50-1	2.3	305	346	-8	60
GR 2H	1 to 4	1080	43°C	R134a	400	3.0mm x 064	230-50-1	2.8	510	679	-8	64
GR 1H/G	1 to 4	620	43°C	R134a	360	3.0mm x 054	230-50-1	2.3	305	346	-8	60
GR 2H/G	1 to 4	1080	43°C	R134a	400	3.0mm x 064	230-50-1	2.8	510	679	-8	64

### HEATED CABINETS

Model Ref	Storage Temp	Ambient temp °C	Humidity RH	volts	phase	Hz	Amps (A)	Watts (W)	Heat output (W)
GRL 1X	75 to 80	43°C	40%	230	1	50	13	3000	3000
GR 1X	75 to 80	43°C	40%	230	1	50	4.4	1000	1000

# 7. ACCESS

## GRL 1H

(see page 16 for general arrangement)

7.1 The Foster CDC controller is accessible from the front of the unit for all programming functions.

**IMPORTANT - all repairs must be carried out with the mains electrical supply disconnected and by a competent person.**

### 7.1.1 Access to electrical connections.

To gain access to the electrical connections you must firstly remove the unit cover, this is achieved by removing the two fixing screws securing the cover to the side panels at the top and with a sharp forward motion pull the cover from the retaining clips. Once removed the electrical box can be seen on the left hand side. Remove the front cover to gain access to the electrical terminals.

### 7.1.2 Controller replacement

Remove the unit cover as described in 7.1.1. Unplug the ribbon cable from the electrical box and air probe from the controller. Release the two retaining clips fitted to each side of the controller and slide the part forward through the cutout in the unit cover. Remove it from the cover. Reverse the procedure to fit the new controller. Programme the controller using the information stated in the setting up instructions. (see section 4).

### 7.1.3 Temperature probe replacement

Disconnect the probe from the controller. Unscrew the clips securing the probe cable to the cabinet. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). The probe is located in a clip opposite the evaporator fan. Release the probe from the clip and remove from the cabinet. For replacement reverse the procedure ensuring the return airduct baffle is located correctly into the grove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.1.4 Evaporator fan motor replacement

Disconnect the fan wires from the terminal block. Unscrew the clips securing the fan cable to the cabinet. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). Slide the plastic drain tube (located to the left-hand side of the fan) from the drain pan/evaporator fan plate. Remove the two thumbscrews securing the drain pan/fan plate to the evaporator. Gently ease it away from the evaporator allowing the cables to be withdrawn also. Remove the four screws securing the fan to the housing to disengage the fan. To replace the fan reverse the procedure ensuring the return air duct baffle is located correctly into the grove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.1.5 Evaporator replacement

Reclaim the refrigerant gas. Remove the return airduct and drain pan/fan housing as described in 7.1.4 exposing the evaporator. Once the refrigerant gas has been reclaimed from the system cut the suction pipe close to the compressor ensuring enough pipe is left for reconnecting. Unbrazed the capillary from the 1/4 tubing exiting the drier. Seal all refrigerant pipework with tape to avoid moisture ingress into the system. Remove the four screws (two either side) securing the evaporator to the plug interior. Carefully lower the evaporator from the plug box. Once removed unbrazed the lines from the evaporator and reconnect them to the replacement in the same way. Seal all refrigerant pipes with tape after brazing prior to refitting the evaporator into the plug box. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Remove the tape from the ends of the pipes and reconnect all the pipe work. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Once the system has been regassed with refrigerant check for leaks. When completed replace the drain pan/fan plate and refit the plastic drain tube. Refit the air return duct ensuring the baffle is located correctly into the grove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.1.6 Compressor replacement

Remove the unit cover as described in 7.1.1. To give more access the side panels can be removed by releasing the four screws. Reclaim the refrigerant. Disconnect all electrical connections. On satisfactory reclamation of the refrigerant disconnect the pipework from the compressor and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the replacement should be completed within fifteen minutes to avoid moisture ingress. With the pipes disconnected remove the four bolts securing the compressor to the base plate and remove it. Fit the anti-vibration rubber mounts to the compressor prior to re-installation ensuring that the metal spacers are fitted correctly. Locate the bolts into the threaded nutserts and tighten. Remove the tape from the ends of the pipes and reconnect the pipework. It is good practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of refrigerant as shown in the technical data. Reconnect all electrical connections. Once the system has been recharged check for leaks. When completed replace all covers ensuring they are all fitted correctly.

#### **7.1.7 Condenser fan replacement**

Remove the unit cover as described in 7.1.1. To give more access the side panels can be removed by releasing the four screws. Disconnect the fan cables from the compressor terminal box located on the right hand side of the unit compartment. Remove the four screws securing the grid mount fan motor to the condenser. Reverse the procedure for replacing the fan ensuring that all screws and covers are fitted tightly and securely.

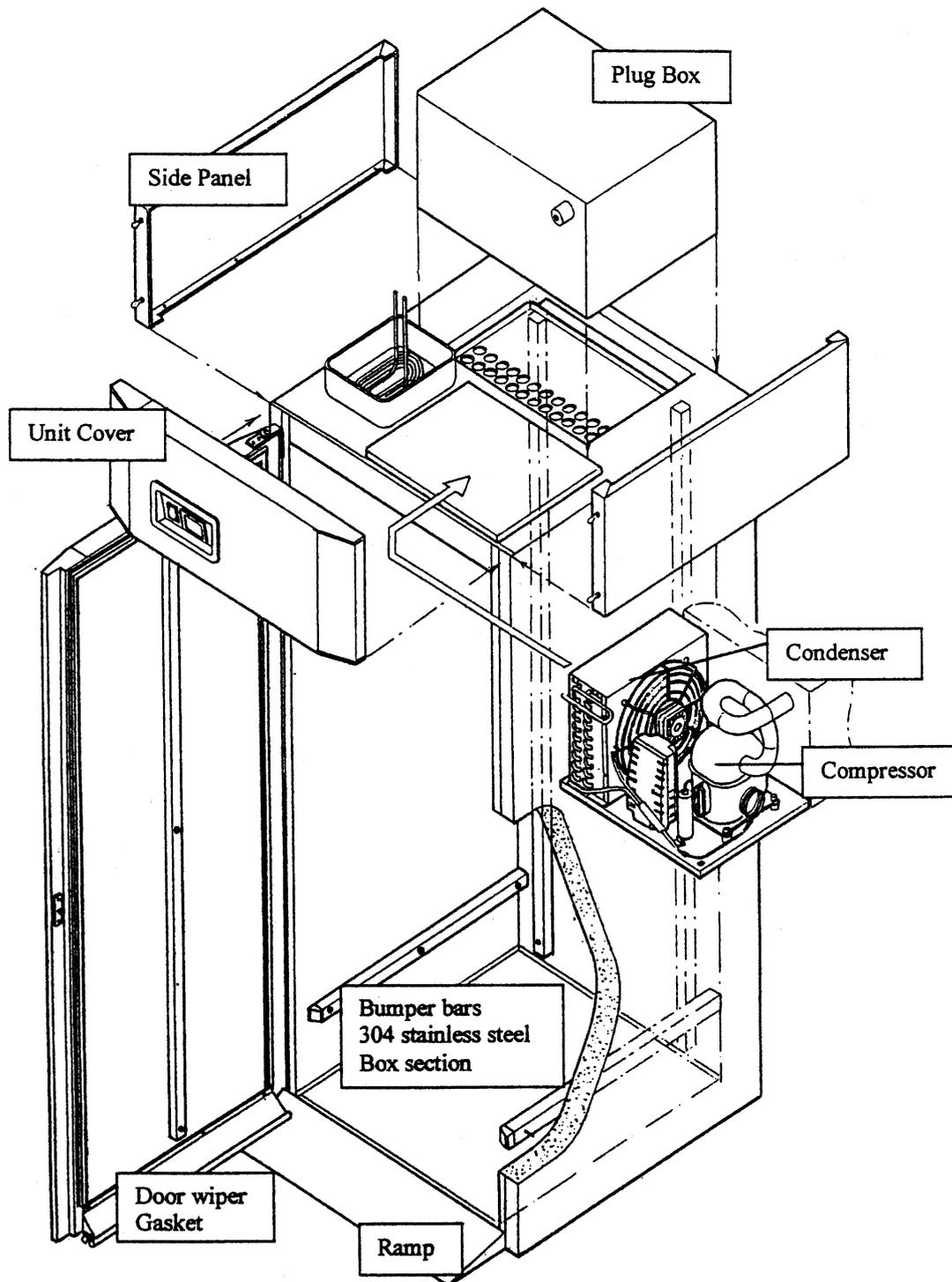
#### **7.1.8 Condenser replacement**

Remove the unit cover as described in 7.1.1. To give more access the side panels can be removed by releasing the four screws. Reclaim the refrigerant gas. Remove the grid mount fan motor from the condenser. On satisfactory reclamation of the gas disconnect the pipework from the condenser and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the change over should be completed within fifteen minutes to avoid moisture ingress. Once the pipes have been disconnected undo the screws securing the condenser to the base plate and remove it. Fit the replacement condenser. Remove the tape from the ends of the pipes and reconnect the pipework. It is good practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Refit the fan. Once the system has been regassed check for leaks. When satisfied replace all covers ensuring they are all fitted correctly.

#### **7.1.9 Complete refrigeration plug replacement**

Remove the unit cover as described in 7.1.1. To give more access the side panels can be removed by releasing the four screws. Remove the air duct as described in 7.1.3. Remove the brackets located to the rear of the return air duct, these are secured by four screws in each. The front of the plug is secured externally. The plug is secured to the top of the cabinet, through the condensing unit plate at the front by an 1 1/4 x no 8 screw located under the drier. A strip of white foam tape is stuck to the top of the cabinet to provide a vapour seal. The complete plug can now be removed from the cabinet taking care not to damage the foam material. It is recommended that at least two people carry out this procedure. Reverse the procedure to fit the replacement taking care that the vapour seal is not damaged ensuring that all screws and covers are fitted tightly and securely.

# General Arrangement GRL 1H



## GRL 2H

(see page 19 for general arrangement)

7.2 The Foster CDC controller is accessible from the front of the unit for all programming functions.

**IMPORTANT - all repairs must be carried out with the mains electrical supply disconnected and by a competent person.**

### 7.2.1 Access to electrical connections.

To gain access to the electrical connections remove the unit cover, this is achieved by removing the two fixing screws securing the cover to the side panels at the top and the two screws located to the bottom edge of the cover located centrally to the doors, with a sharp forward motion pull the cover from the retaining clips. Once removed the electrical box can be seen on the left hand side. Remove the front cover to gain access to the electrical terminals.

### 7.2.2 Controller replacement

Remove the unit cover as described in 7.2.1. Unplug the ribbon cable from the electrical box and air probe from the controller. Release the two retaining clips fitted to each side of the controller and slide the part forward through the cutout in the unit cover. Remove it from the cover. Reverse the procedure to fit the new controller. Programme the controller using the information stated in the setting up instructions. (see section 4).

### 7.2.3 Temperature probe replacement

Disconnect the probe from the controller. Unscrew the clips securing the probe cable to the cabinet. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). The probe is located in a clip centrally between the fans. Release the probe from the clip and remove from the cabinet. For replacement reverse the procedure ensuring the return airduct baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.2.4 Evaporator fan motor replacement

Disconnect the fan wires from the terminal block. Unscrew the clips securing the fan cable to the cabinet. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). Slide the plastic drain tube (located to the right-hand side of the fan) from the drain pan/evaporator fan plate. Remove the two thumbscrews securing the drain pan/fan plate to the evaporator. Gently ease it away from the evaporator allowing the cables to be withdrawn also. Remove the four screws securing the fan to the housing to disengage the fan. To replace the fan reverse the procedure ensuring the return air duct baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.2.5 Evaporator replacement

Reclaim the refrigerant gas. Remove the return airduct and drain pan/fan housing as described in 7.2.4 exposing the evaporator. Once the refrigerant gas has been reclaimed from the system cut the suction pipe close to the compressor ensuring enough pipe is left for reconnecting. Unbrazed the capillary from the  $\frac{1}{4}$  tubing exiting the drier. Seal all refrigerant pipework with tape to avoid moisture ingress into the system. Remove the four screws (two either side) securing the evaporator to the plug interior. Carefully lower the evaporator from the plug box. Once removed unbrazed the pipes from the evaporator and reconnect them to the replacement in the same way. Seal all refrigerant pipes with tape after brazing prior to refitting the evaporator into the plug box. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Remove the tape from the ends of the pipes and reconnect all the pipe work. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Once the system has been recharged with refrigerant check for leaks. When completed replace the drain pan/fan plate and refit the plastic drain tube. Refit the air return duct ensuring the baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### **7.2.6 Compressor replacement**

Remove the unit cover as described in 7.2.1. To give more access the side panels can be removed by releasing the four screws. Reclaim the refrigerant. Disconnect all electrical connections. On satisfactory reclamation of the refrigerant disconnect the pipework from the compressor and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the replacement should be completed within fifteen minutes to avoid moisture ingress. With the pipes disconnected remove the four bolts securing the compressor to the base plate and remove it. Fit the anti-vibration rubber mounts to the compressor prior to re-installation ensuring that the metal spacers are fitted correctly. Locate the bolts into the threaded nutserts and tighten. Remove the tape from the ends of the pipes and reconnect the pipework. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Reconnect all electrical connections. Once the system has been regassed check for leaks. When satisfied replace all covers ensuring they are all fitted correctly.

### **7.2.7 Condenser fan replacement**

Remove the unit cover as described in 7.2.1. To give more access the side panels can be removed by releasing the four screws. Disconnect the fan cables from the compressor terminal box located on the right hand side of the unit compartment. Remove the four screws securing the grid mount fan motor to the condenser. Reverse the procedure for replacing the fan ensuring that all screws and covers are fitted tightly and securely.

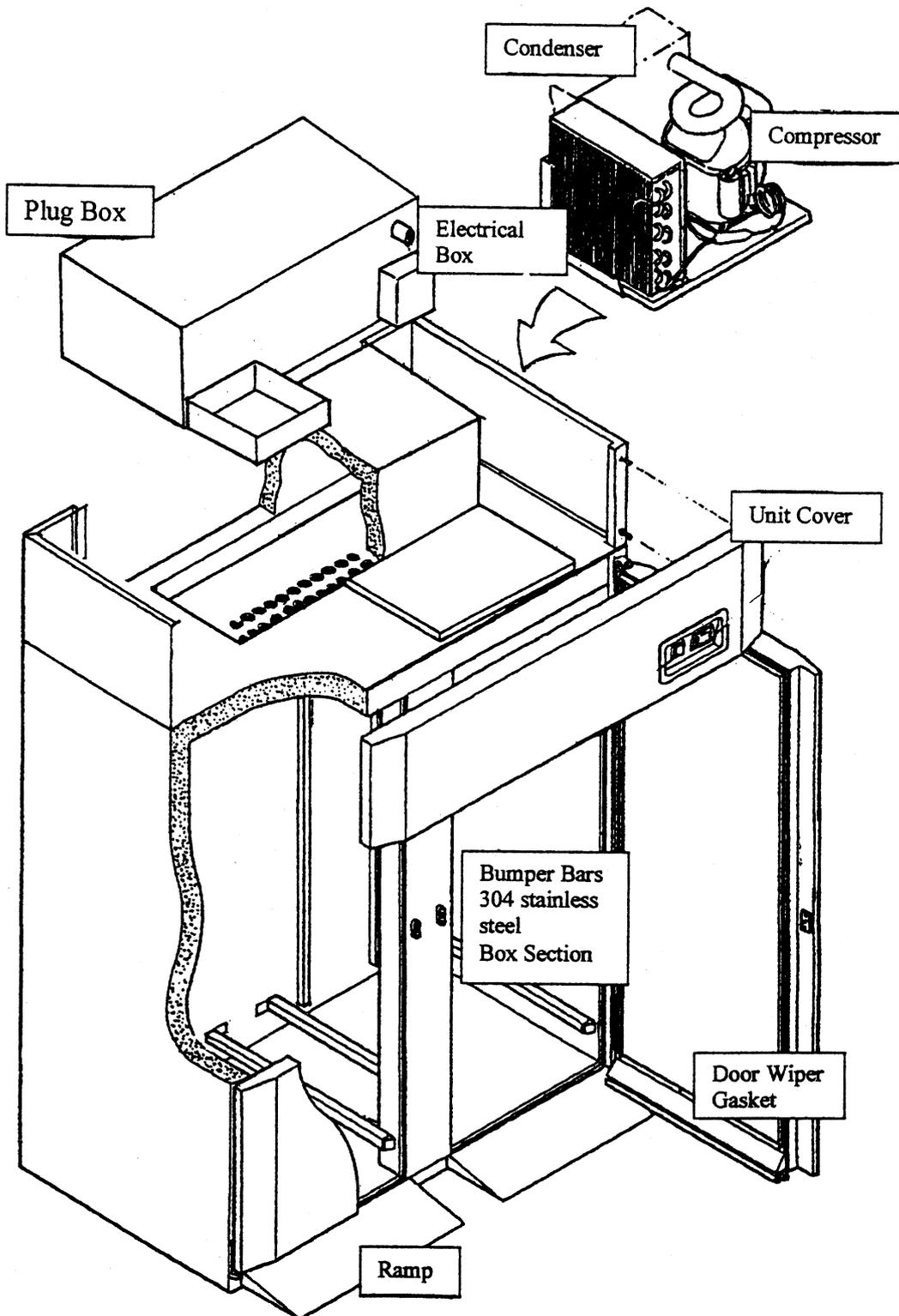
### **7.2.8 Condenser replacement**

Remove the unit cover as described in 7.2.1. To give more access the side panels can be removed by releasing the four screws. Reclaim the refrigerant gas. Remove the grid mount fan motor from the condenser. On satisfactory reclamation of the gas disconnect the pipework from the condenser and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the change over should be completed within fifteen minutes to avoid moisture ingress. Once the pipes have been disconnected undo the screws securing the condenser to the base plate and remove it. Fit the replacement condenser. Remove the tape from the ends of the pipes and reconnect the pipework. It is good practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Refit the fan. Once the system has been regassed check for leaks. When satisfied replace all covers ensuring they are all fitted correctly.

### **7.2.9 Complete refrigeration plug replacement**

Remove the unit cover as described in 7.2.1. To give more access the side panels can be removed by releasing the four screws. Remove the air duct as described in 7.2.3. Remove the brackets located to the rear of the return air duct, secured by four screws in each. The front of the plug is secured externally. The plug is secured to the top of the cabinet, via an angle attached to the front edge of the plug box. A strip of white foam tape is stuck to the top of the cabinet to provide a vapour seal. The complete plug can now be removed from the cabinet taking care not to damage the foam material. It is recommended that at least three people carry out this procedure. Reverse the procedure to fit the replacement taking care that the vapour seal is not damaged ensuring that all screws and covers are fitted tightly and securely.

# General Arrangement GRL 2H



## GR 1H

(see page 22 for general arrangement)

7.3 The Foster CDC controller is accessible from the front of the unit for all programming functions.

**IMPORTANT - all repairs must be carried out with the mains electrical supply disconnected and by a competent person.**

### 7.3.1 Access to electrical connections.

To gain access to the electrical connections remove the unit cover, with a sharp forward motion pull the cover from the retaining clips. Once removed the electrical box can be seen on the left hand side. Remove the front cover to gain access to the electrical terminals.

### 7.3.2 Controller replacement

Remove the unit cover as described in 7.3.1. Unplug the ribbon cable from the electrical box and air probe from the controller. Release the two retaining clips fitted to each side of the controller and slide the part forward through the cutout in the unit cover. Remove it from the cover. Reverse the procedure to fit the new controller. Programme the controller using the information given in the setting up instructions. (see section 4).

### 7.3.3 Temperature probe replacement

Disconnect the probe from the controller. Unscrew the clips securing the probe cable to the cabinet. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). The probe is located in a clip opposite the evaporator fan. Release the probe from the clip and remove from the cabinet. For fitting the replacement reverse the procedure ensuring the return airduct baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.3.4 Evaporator fan motor replacement

Disconnect the fan wires from the terminal block. Unscrew the clips securing the fan cable to the cabinet. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). Slide the plastic drain tube (located to the left-hand side of the fan) from the drain pan/evaporator fan plate. Remove the two thumbscrews securing the drain pan/fan plate to the evaporator. Gently ease it away from the evaporator allowing the cables to be withdrawn also. Remove the four screws securing the fan to the housing to disengage the fan. To replace the fan reverse the procedure ensuring the return air duct baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.3.5 Evaporator replacement

Reclaim the refrigerant gas. Remove the return airduct and drain pan/fan housing as described in 7.3.4 exposing the evaporator. Once the refrigerant gas has been reclaimed from the system cut the suction pipe close to the compressor ensuring enough pipe is left for reconnecting. Unbraid the capillary from the 1/4 tubing exiting the drier. Seal all refrigerant pipework with tape to avoid moisture ingress into the system. Remove the four screws (two either side) securing the evaporator to the plug interior. Carefully lower the evaporator from the plug box. Once removed unbraid the pipes from the evaporator and reconnect them to the replacement in the same way. Seal all refrigerant pipes with tape after brazing prior to refitting the evaporator into the plug box. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Remove the tape from the ends of the pipes and reconnect all the pipe work. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Once the system has been regassed with refrigerant check for leaks. When completed replace the drain pan/fan plate and refit the plastic drain tube. Refit the air return duct ensuring the baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### **7.3.6 Compressor replacement**

Remove the unit cover as described in 7.3.1. To give more access the refrigeration plug system can be moved forward approximately 100mm. Remove the air return duct as described in 7.3.3. Remove the brackets located to the rear of the return air duct, by four screws in each. The front of the plug is secured externally. The plug is secured to the top of the cabinet, through the condensing unit plate at the front by an 1 1/4 x no 8 screw located under the drier. A strip of white foam tape is stuck to the top of the cabinet to provide a vapour seal. Taking care not to damage the white in seal slide the complete plug forward. Reclaim the refrigerant gas. Disconnect all electrical connections. On satisfactory reclamation of the refrigerant disconnect the pipework from the compressor and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the replacement should be completed within fifteen minutes to avoid moisture ingress. With the pipes disconnected remove the four bolts securing the compressor to the base plate and remove it. Fit the anti vibration rubber mounts to the compressor prior to re-installation ensuring that the metal spacers are fitted correctly. Locate the bolts into the threaded nutserts and tighten. Remove the tape from the ends of the pipes and reconnect the pipework. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of refrigerant as shown in the technical data. Reconnect all electrical connections. Once the system has been recharged check for leaks. When completed reposition the plug and replace all covers ensuring they are all fitted correctly.

### **7.3.7 Condenser fan replacement**

Remove the unit cover as described in 7.3.1. Disconnect the fan cables from the compressor terminal box located at the front of the compressor. Remove the four screws securing the grid mount fan motor to the condenser. Reverse the procedure for replacing the fan ensuring that all screws and covers are fitted tightly and securely.

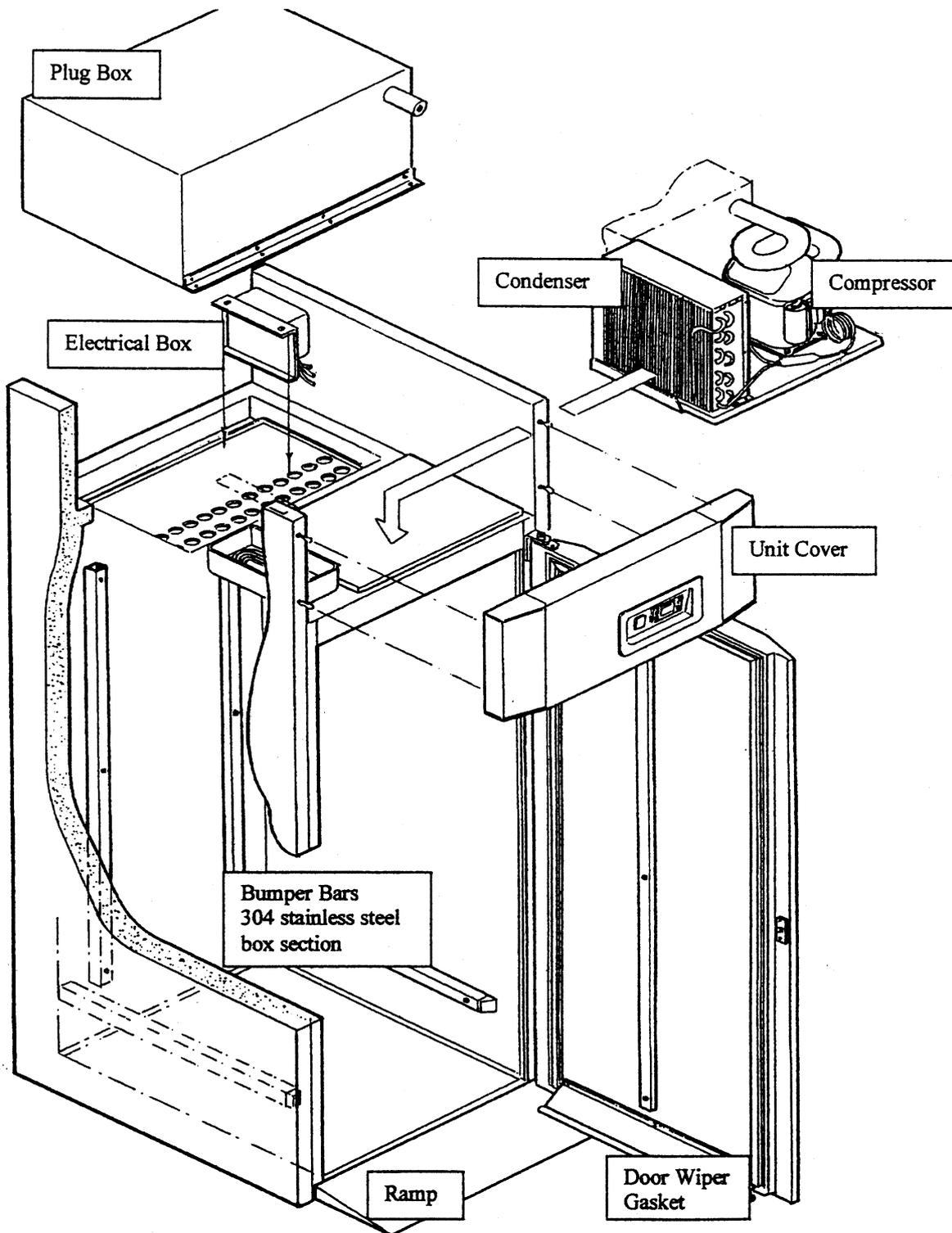
### **7.3.8 Condenser replacement**

Remove the unit cover as described in 7.3.1. Reclaim the refrigerant gas. Remove the grid mount fan motor from the condenser. On satisfactory reclamation of the gas disconnect the pipework from the condenser and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the change over should be completed within fifteen minutes to avoid moisture ingress. Once the pipes have been disconnected undo the screws securing the condenser to the base plate and remove it. Fit the replacement condenser. Remove the tape from the ends of the pipes and reconnect the pipework. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Refit the fan. Once the system has been regassed check for leaks. When satisfied replace all covers ensuring they are all fitted correctly.

### **7.3.9 Complete refrigeration plug replacement**

Remove the unit cover as described in 7.3.1. Remove the air duct as described in 7.3.3. Remove the brackets located to the rear of the return air duct, secured by four screws in each. The front of the plug is secured externally. The plug is secured to the top of the cabinet, through the condensing unit plate at the front by an 1 1/4 x no 8 screw located under the drier. A strip of white foam tape is stuck to the top of the cabinet to provide a vapour seal. The complete plug can now be removed from the cabinet taking care not to damage the foam material. It is recommended that at least two people carry out this procedure. Reverse the procedure to fit the replacement taking care that the vapour seal is not damaged ensuring that all screws and covers are fitted tightly and securely.

# General Arrangement GR 1H



## GR 2H

(see page 25 for general arrangement)

7.4 The Foster CDC controller is accessible from the front of the unit for all programming functions.

**IMPORTANT - all repairs must be carried out with the mains electrical supply disconnected and by a competent person.**

### 7.4.1 Access to electrical connections.

To gain access to the electrical connections remove the unit cover, with a sharp forward motion pull the cover from the retaining clips. Once removed the electrical box can be seen on the left hand side. Remove the front cover to gain access to the electrical terminals.

### 7.4.2 Controller replacement

Remove the unit cover and electrical box cover as described in 7.4.1. Unplug the ribbon cable from the electrical box and air probe from the controller. Release the two retaining clips fitted to each side of the controller and slide the part forward through the cutout in the unit cover. Remove it from the cover. Reverse the procedure to fit the new controller. Programme the controller using the information stated in the setting up instructions. (see section 4).

### 7.4.3 Temperature probe replacement

Disconnect the probe from the controller. Unscrew the clips securing the probe cable to the cabinet. Remove the rear airduct. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). The probe is located in a clip central to the evaporator fans. Release the probe from the clip and remove it from the cabinet. For replacement reverse the procedure ensuring the return airduct baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.4.4 Evaporator fan motor replacement

Disconnect the fan wires from the terminal block. Unscrew the clips securing the fan cable to the cabinet. Remove the rear airduct. Remove the return airduct from the cabinet by removing the four fixing screws (two each side). Slide the plastic drain tube (located to the right-hand side of the fans) from the drain pan/evaporator fan plate. Remove the two thumbscrews securing the drain pan/fan plate to the evaporator. Gently ease it away from the evaporator allowing the cables to be withdrawn also. Remove the four screws securing the fan to the housing to disengage the fan. To replace the fan reverse the procedure ensuring the return air duct baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

### 7.4.5 Evaporator replacement

Reclaim the refrigerant gas. Proceed to remove the airduct and return airduct and drain pan/fan housing as described in 7.4.4 exposing the evaporator. Once the refrigerant gas has been reclaimed from the system cut the suction pipe close to the compressor ensuring enough pipe is left for reconnecting. Unbrazed the capillary from the 1/4 tubing exiting the drier. Seal all refrigerant pipework with tape to avoid moisture ingress into the system. Remove the four screws (two either side) securing the evaporator to the plug interior. Carefully lower the evaporator from the plug box. Once removed unbrazed the lines from the evaporator and connect them to the replacement in the same way. Seal all refrigerant pipes with tape after brazing prior to refitting the evaporator into the plug box. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Remove the tape from the ends of the pipes and reconnect all the pipe work. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Once the system has been regassed with refrigerant check for leaks. When completed replace the drain pan/fan plate and refit the plastic drain tube. Refit the rear airduct and air return duct ensuring the baffle is located correctly into the groove at the rear of the drain pan forming a duct to stop short circuiting of the airflow.

#### **7.4.6 Compressor replacement**

Remove the unit cover as described in 7.14.1. Reclaim the refrigerant gas. Disconnect all electrical connections. On satisfactory reclamation of the refrigerant disconnect the pipework from the compressor and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the replacement should be completed within fifteen minutes to avoid moisture ingress. With the pipes disconnected undo the four bolts securing the compressor to the base plate and remove it. Fit the anti-vibration rubber mounts to the compressor prior to re-installation ensuring that the metal spacers are fitted correctly. Locate the bolts into the threaded nutserts and tighten. Remove the tape from the ends of the pipes and reconnect the pipework. It is good refrigeration practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of refrigerant as shown in the technical data. Reconnect all electrical connections. Once the system has been recharged check for leaks. When completed reposition the plug and replace all covers ensuring they are all fitted correctly.

#### **7.4.7 Condenser fan replacement**

Remove the unit cover as described in 7.4.1. Disconnect the fan cables from the compressor terminal box located at the front of the compressor. Remove the four screws securing the grid mount fan motor to the condenser. Reverse the procedure for replacing the fan ensuring that all screws and covers are fitted tightly and securely.

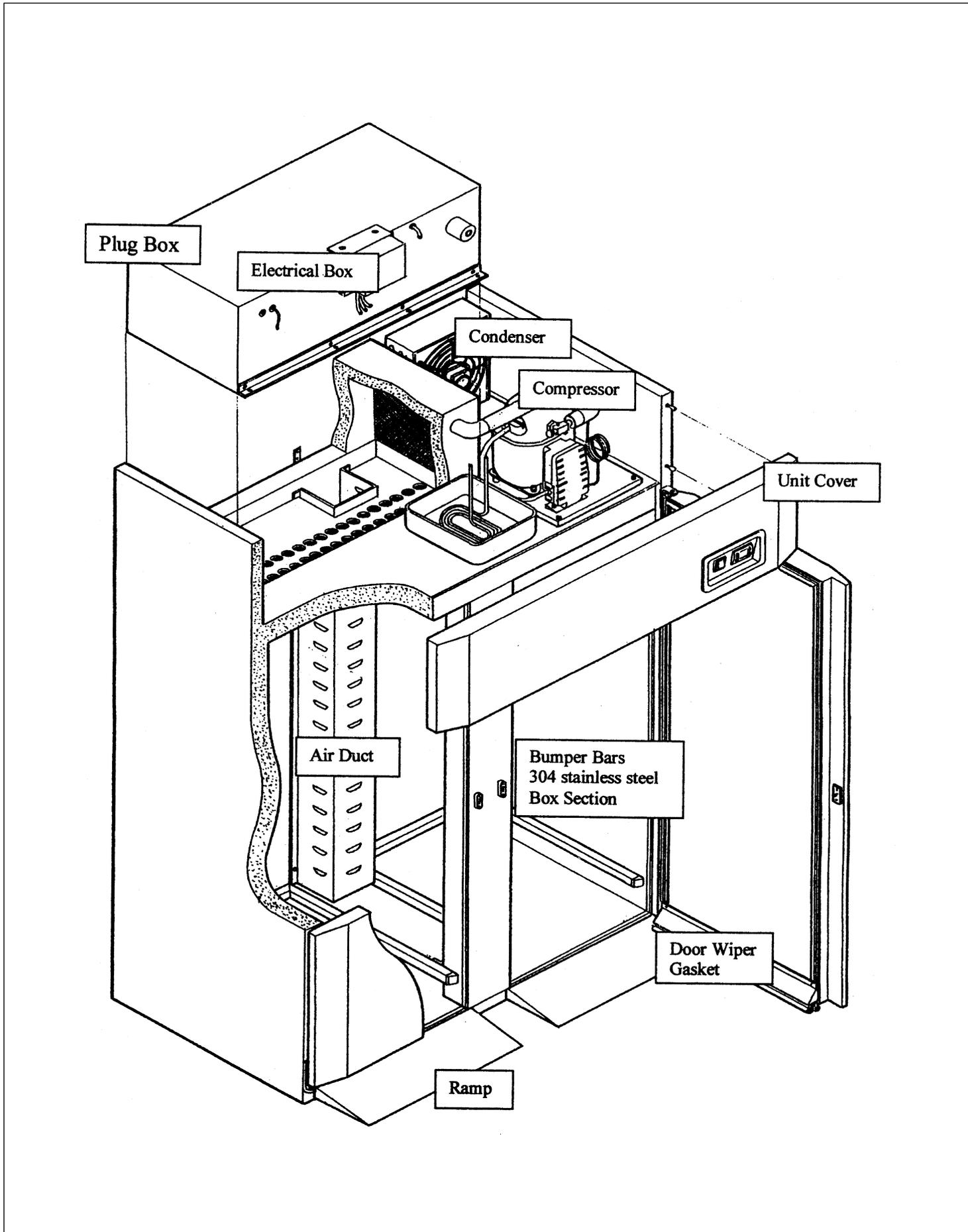
#### **7.4.8 Condenser replacement**

Remove the unit cover as described in 7.4.1. Reclaim the refrigerant gas. Remove the grid mount fan motor from the condenser. On satisfactory reclamation of the gas disconnect the pipework from the condenser and tape the ends of the pipes to avoid moisture ingress into the system. It is important to note that the compressor manufacturers recommend that the change over should be completed within fifteen minutes to avoid moisture ingress. Once the pipes have been disconnected undo the screws securing the condenser to the base plate and remove it. Fit the replacement condenser. Remove the tape from the ends of the pipes and reconnect the pipework. It is good practice to replace the drier when replacing component parts in the refrigeration system. Evacuate the system and charge with the correct amount of gas as shown in the technical data. Refit the fan. Once the system has been regassed check for leaks. When satisfied replace all covers ensuring they are all fitted correctly.

#### **7.4.9 Complete refrigeration plug replacement**

Remove the unit cover as described in 7.4.1. Remove the rear and air return duct as described in 7.4.3. Remove the brackets located to the rear of the return air duct, secured by four screws in each. The front of the plug is secured externally. The plug is secured to the top of the cabinet, via an angle attached to the front edge of the plug box. A strip of foam tape is stuck to the top of the cabinet to provide a vapour seal. The complete plug can now be removed from the cabinet taking care not to damage the foam material. It is recommended that at least two people carry out this procedure. Reverse the procedure to fit the replacement taking care that the vapour seal is not damaged ensuring that all screws and covers are fitted tightly and securely.

# General Arrangement GR 2H



## GR 1X

(see page 29 for general arrangement)

7.5 The MTR 122 controller is accessible from the front of the unit for all programming functions.

**IMPORTANT - all repairs must be carried out with the mains electrical supply disconnected and by a competent person.**

### 7.5.1 Access to electrical connections.

To gain access to the electrical connections remove the perforated panel at the top of the cabinet. This is achieved by removing the two screws securing the panel to the cabinet. Remove the rubber grommet from the panel and slide the mains cable through the slot allowing the panel to be removed. For refitting reverse the procedure ensuring the mains cable and grommet are fitted correctly. The electrical connections are located on the right-hand side viewed from the rear. Remove the four screws securing the lid to access the terminal block and overtemperature thermostat.

### 7.5.2 Controller replacement

Remove the unit cover and electrical box cover as described in 7.5.1. Disconnect the cables ensuring that all cables are correctly identified for correct refitting. Release the two retaining clips fitted to each side of the Controller and slide the part forward through the cutout in the unit cover. Remove it from the unit. Reverse the procedure to fit the new Controller. Programme the controller using the information given in the setting up instructions. (see section 4).

### 7.5.3 Temperature probe replacement - see page 13 for detail

Disconnect the probe from the controller. Unclip the probe wire from the top of the unit. Inside the unit at the top remove the fan housing by releasing the three screws along the front edge. Release the airduct with a sharp forward motion releasing the spring clips from their retainers and remove the duct. The sensor is fitted to the air deflector located between the fan and the heater. Remove it from its retaining clip and withdraw it from the unit. Fit the replacement by reversing the procedure ensuring all covers are refitted correctly.

### 7.5.4 Red overtemperature light illuminated

With the top perforated panel removed as described in 7.5.1 reset the thermostat by depressing the green switch on the top right hand side above the temperature scale. If the unit starts immediately check if the fan is working, normally. If not disconnect the mains supply and check for free rotation of the fan motor and test the motor windings for open circuit condition. If satisfactory reconnect the electrical supply and check connections. If the fan is working check that the air ducts are not obstructed. If the overtemperature thermostat can not be reset it is possible it will need replacing.

### 7.5.5 Overtemperature thermostat replacement

Remove the top perforated panel and cover as described in 7.5.1. Unscrew the two screws above and below the temperature scale attaching the stat to its bracket. Unclip the thermostat capillary from the top of the unit. Inside the unit at the top remove the fan housing by releasing the three screws along the front edge. Release the airduct with a sharp forward motion releasing the spring clips from their retainers and remove the duct. The thermostat sensor is fitted to the air deflector plate located between the fan and the heater. Remove it from its retaining clip and withdraw it from the unit. To fit a replacement reverse the procedure ensuring that all covers are refitted correctly.

### 7.5.6 Heater replacement

Remove the rear airduct as described in 7.5.4. Remove the heater from its retainers. Fit the replacement heater to retainer. If reconnection is being made close to the heater and not in the external terminal block ensure the correct connectors are used and that the joints are sealed using a heat shrink sleeve or an approved alternative.

### 7.5.7 Fan motor replacement

Remove the top perforated panel and cover as described in 7.5.1. The fan motor cover is located externally on the top of the cabinet. Remove the four screws securing the cover into place. Remove the cover exposing the fan motor and the electrical connections. Disconnect the cables. Proceed to the inside of the cabinet and remove the fan housing as described in 7.5.2. Unscrew the three screws holding the fan assembly in place and remove it from the housing. Refit, place the new assembly into the housing ensuring that the electrical connections are at the rear with the V shape pointing forward. Remake the electrical connections and replace all covers securely.

## GRL 1X

(see page 30 for general arrangements)

7.6 The MTR 122 controller is accessible from the front of the unit for all programming functions.

**IMPORTANT - all repairs must be carried out with the mains electrical supply disconnected and by a competent person.**

### 7.6.1 Access to electrical connections.

To gain access to the electrical connections remove the unit cover. This is achieved by releasing the two fixing screws securing the cover to the side panels at the top. With the screws removed exert a sharp forward motion to release the cover from the retaining clips. On removal, the electrical box can be seen on the left-hand side. Remove the front cover to gain access to the electrical terminals.

### 7.6.2 Controller replacement

Remove the unit cover as described in 7.6.1. Disconnect the cables ensuring that all cables are correctly identified for correct replacement. Release the two retaining clips fitted to each side of the Controller and slide the part forward through the cutout in the unit cover. Remove it from the unit. Reverse the procedure to fit the new Controller. Programme the controller using the information given in the setting up instructions. (see section 4).

### 7.6.3 Temperature probe replacement

Disconnect the probe from the Controller. Unclip the probe wire from the top of the unit. Remove the vent/phial guard to expose the probe. Remove it from its retaining clip and withdraw it from the unit. To fit a replacement reverse the procedure ensuring that all covers are refitted correctly.

### 7.6.4 Red overtemperature light illuminated

Access the electrical connections as described in 7.6.1. Reset the thermostat by depressing the green switch on the top right hand side above the temperature scale. If the unit starts immediately check if the fan is working, normally. If not disconnect the mains supply and check for free rotation of the fan motor and test the motor windings for open circuit condition. If satisfactory reconnect the electrical supply and check connections. If the fan is working check that the air ducts are not obstructed. If the overtemperature thermostat can not be reset it is possible it will need replacing.

### 7.6.5 Cabinet overtemperature stat replacement

Access the electrical connections as described in 7.6.1. Unscrew the two screws above and below the temperature scale attaching the stat to its bracket. Remove the vent/phial guard to expose the probe. Remove it from its retaining clip and withdraw it from the unit. To refit a replacement reverse the procedure ensuring that all covers are refitted correctly.

### **7.6.6 Heater assembly replacement**

Remove the insulated metal cage covering the heater assembly. A “U” shaped cover at the fan end of the assembly and a closing plate at the opposite end, they are both screwed in position securing the assembly into place. Remove the cage from the top taking care not to damage the insulation. Disconnect the electrical cables. Release the four fixing screws attaching the heater assembly to the top of the cabinet and remove it. To refit a replacement reverse the procedure making sure that all covers are refitted correctly ensuring that the insulation in the metal cage is not damaged when refitting.

### **7.6.7 Heater duct safety thermostat replacement**

Access the electrical connections and remove the insulated metal cage covering the heater assembly as described in 7.6.6. release the two screws above and below the temperature scale attaching the thermostat to its bracket. The thermostat stat phial is located centrally beneath the heater assembly attached to a bracket. Remove the phial from its clip. To refit a replacement reverse the procedure making sure that all covers are refitted correctly ensuring that the insulation in the metal cage is not damaged when refitting.

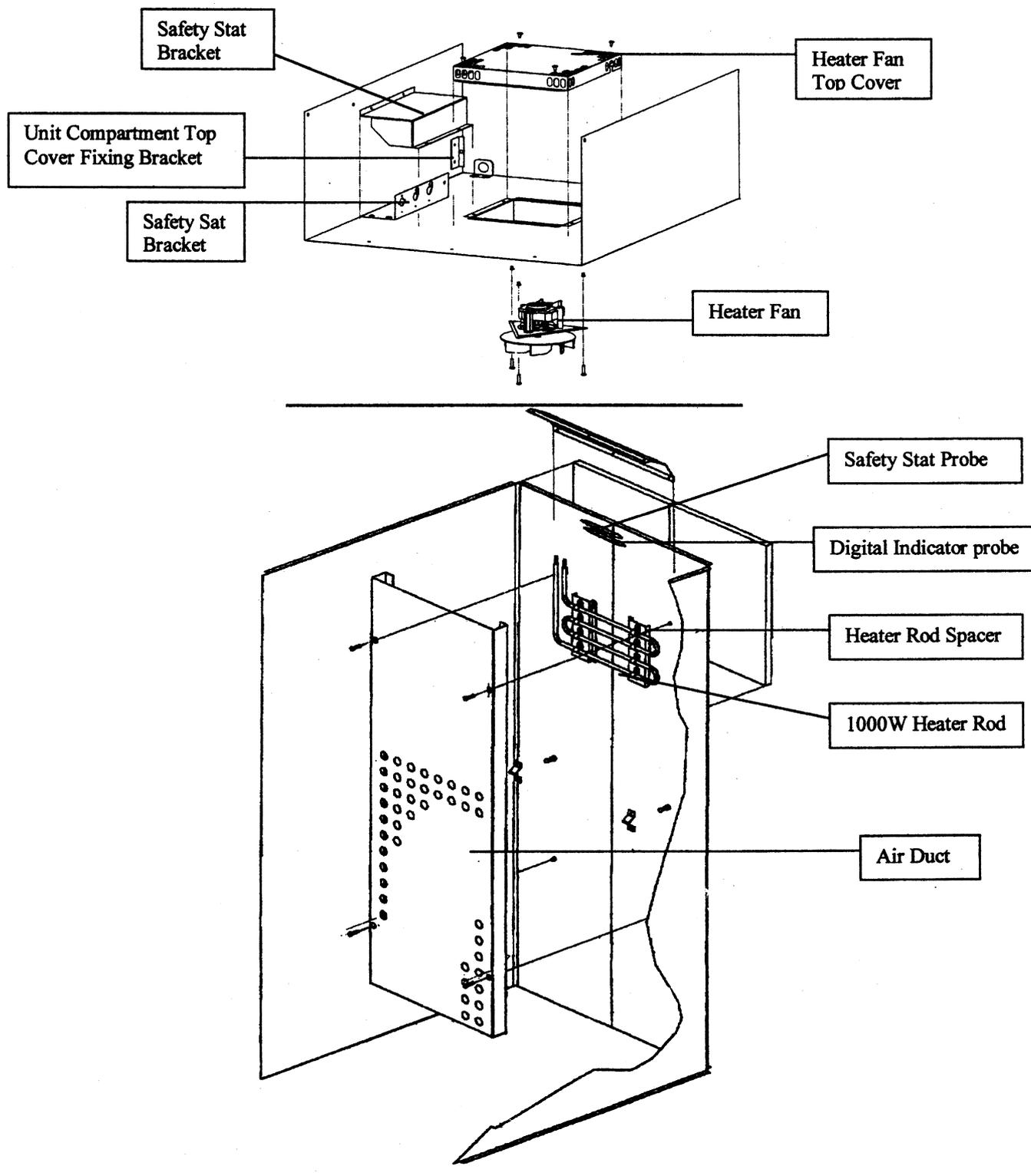
### **7.6.8 Fan motor replacement**

Remove the insulated metal cage covering the heater assembly as described in 7.6.6. Release the four fixing screws attaching the heater assembly to the top of the cabinet and remove it. Disconnect the fan wires. The fan motors is attached to the heater duct by four screws and nuts, remove the screws to separate the two parts. To refit a replacement reverse the procedure making sure that all covers are refitted correctly ensuring that the insulation in the metal cage is not damaged when refitting.

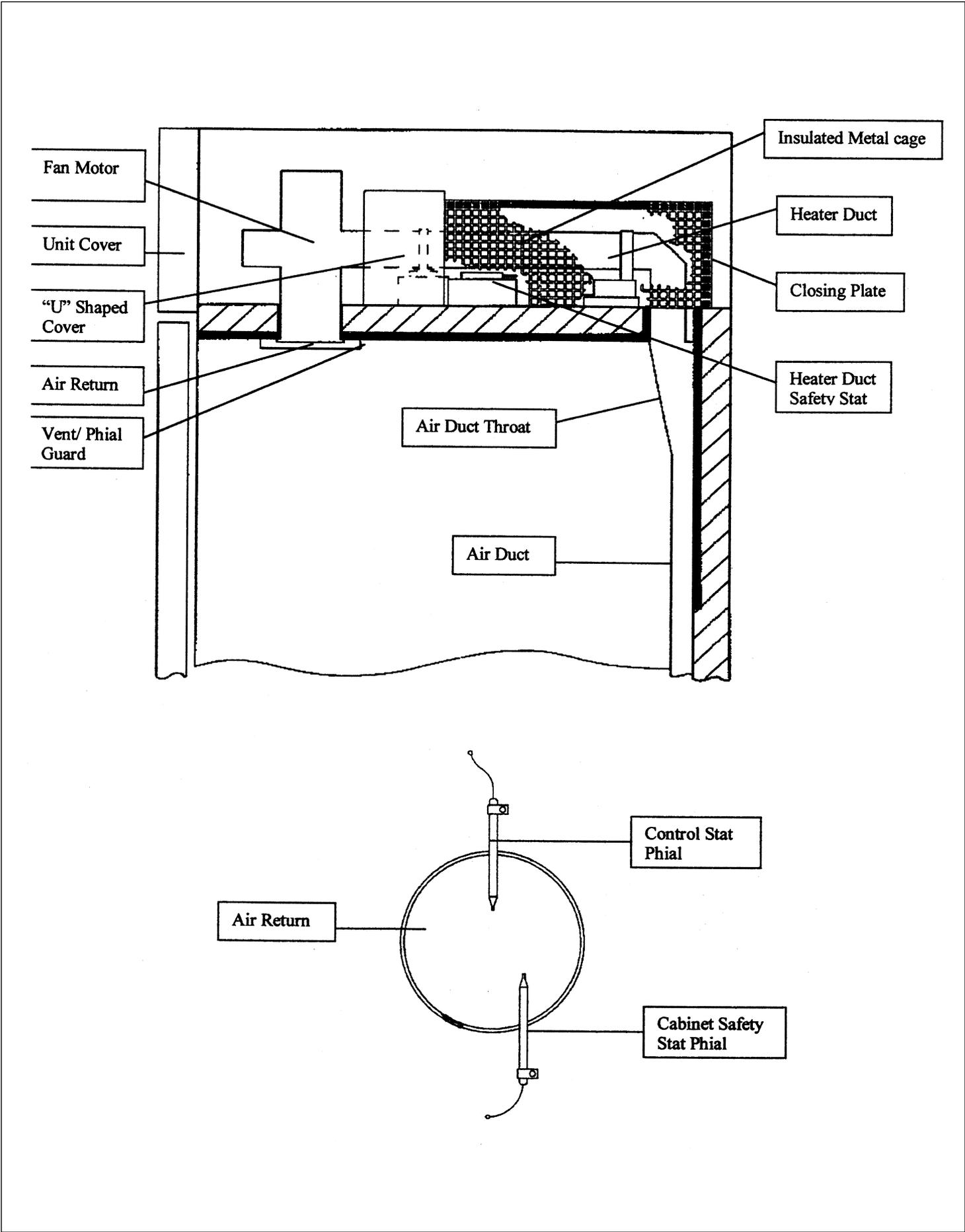
### **7.6.9 Heater replacement**

Remove the insulated metal cage covering the heater assembly as described in 7.6.6. Release the four fixing screws attaching the heater assembly to the top of the cabinet and remove it. The heater duct is attached to the fan motor by four screws and nuts, remove the screws to separate the two parts. Unbolt the cables from the heater terminals. Release the two nuts securing the heater to the duct and extract it. To refit a replacement reverse the procedure making sure that all covers are refitted correctly ensuring that the insulation in the metal cage is not damaged when refitting.

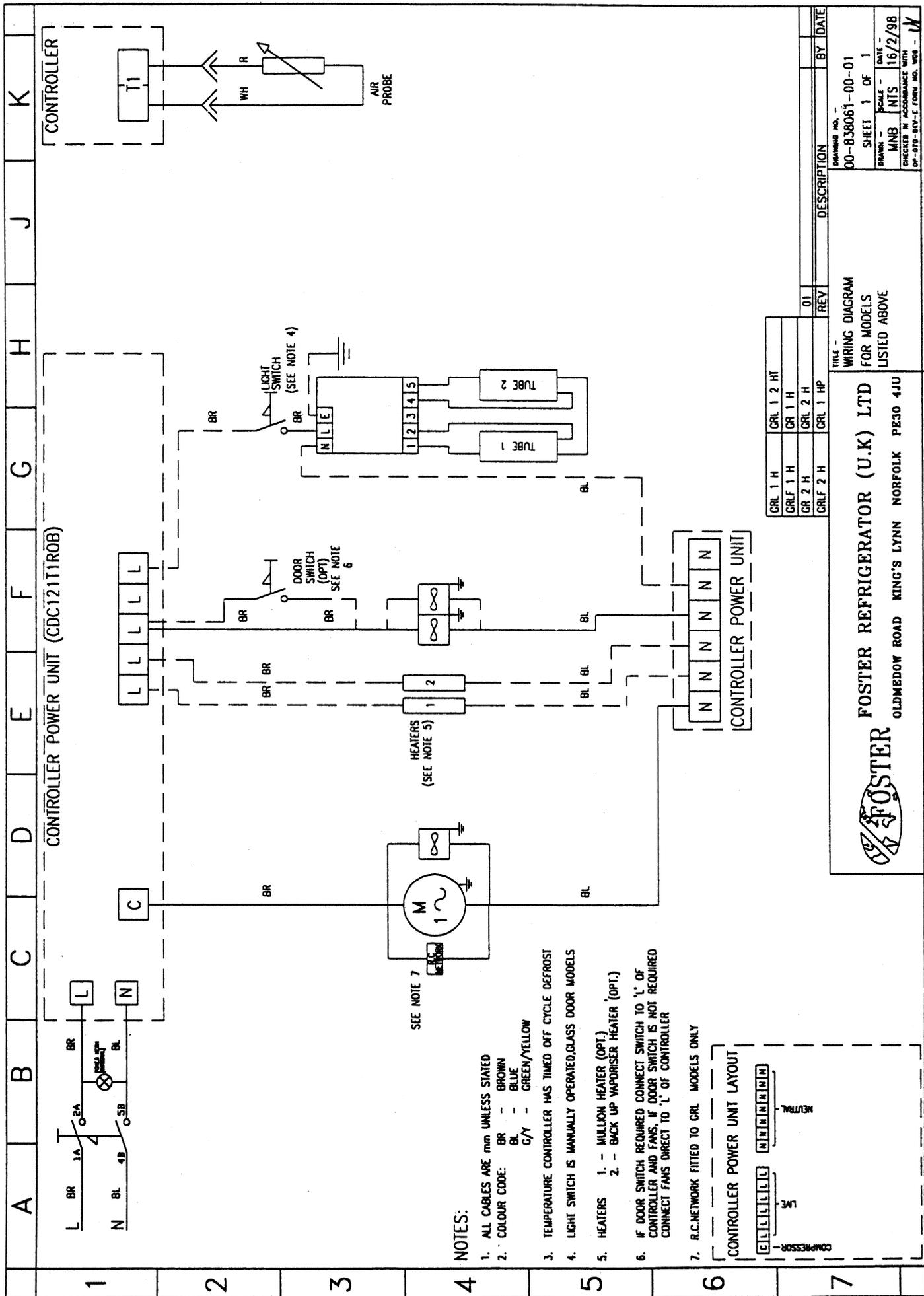
## General Arrangement HEATER FAN AND HEATER ROD ASSEMBLY - GR 1X



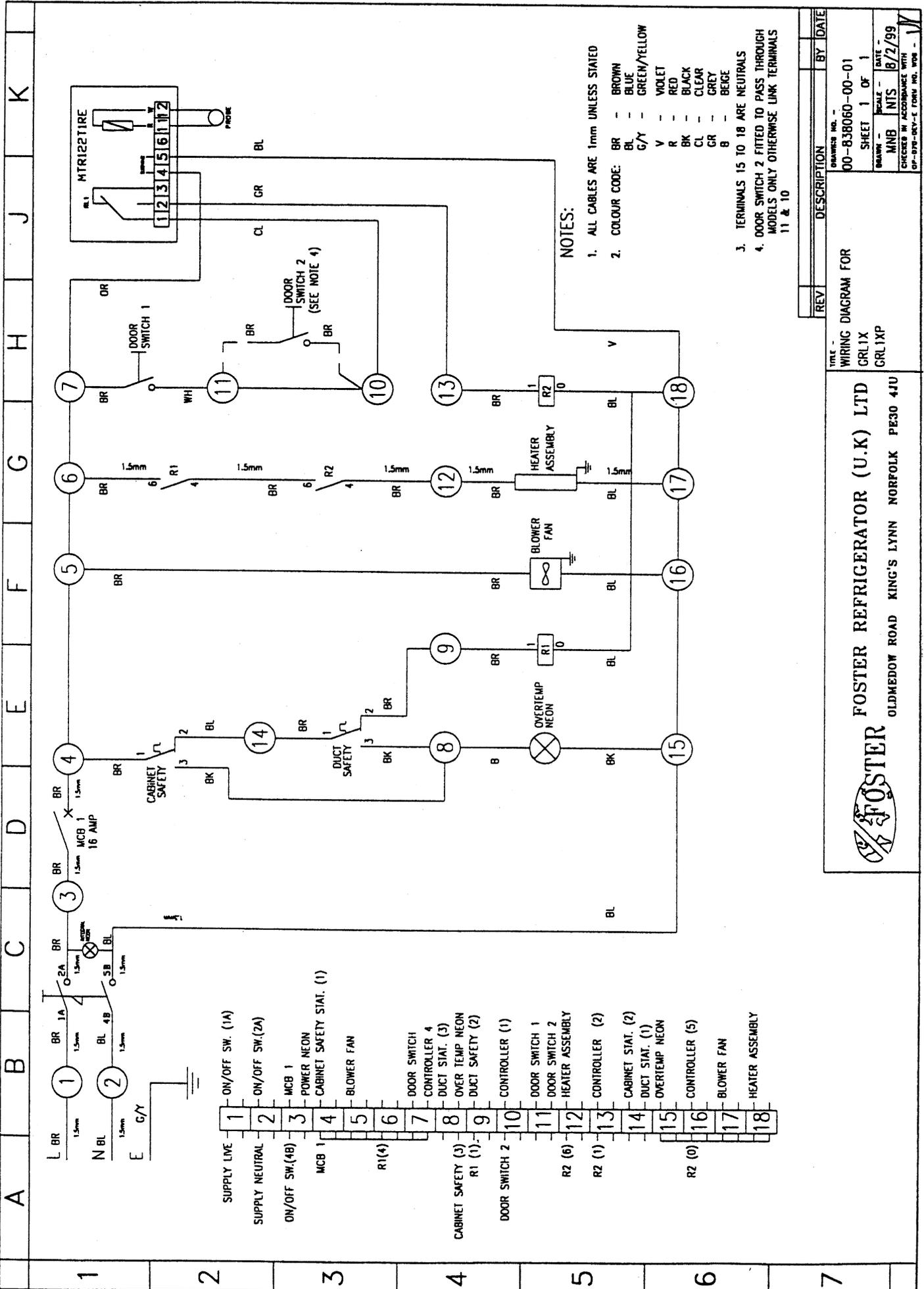
# General Arrangement HEATER DETAIL - GRL 1X



# WIRING DIAGRAM



# WIRING DIAGRAM



REV	DESCRIPTION	BY	DATE

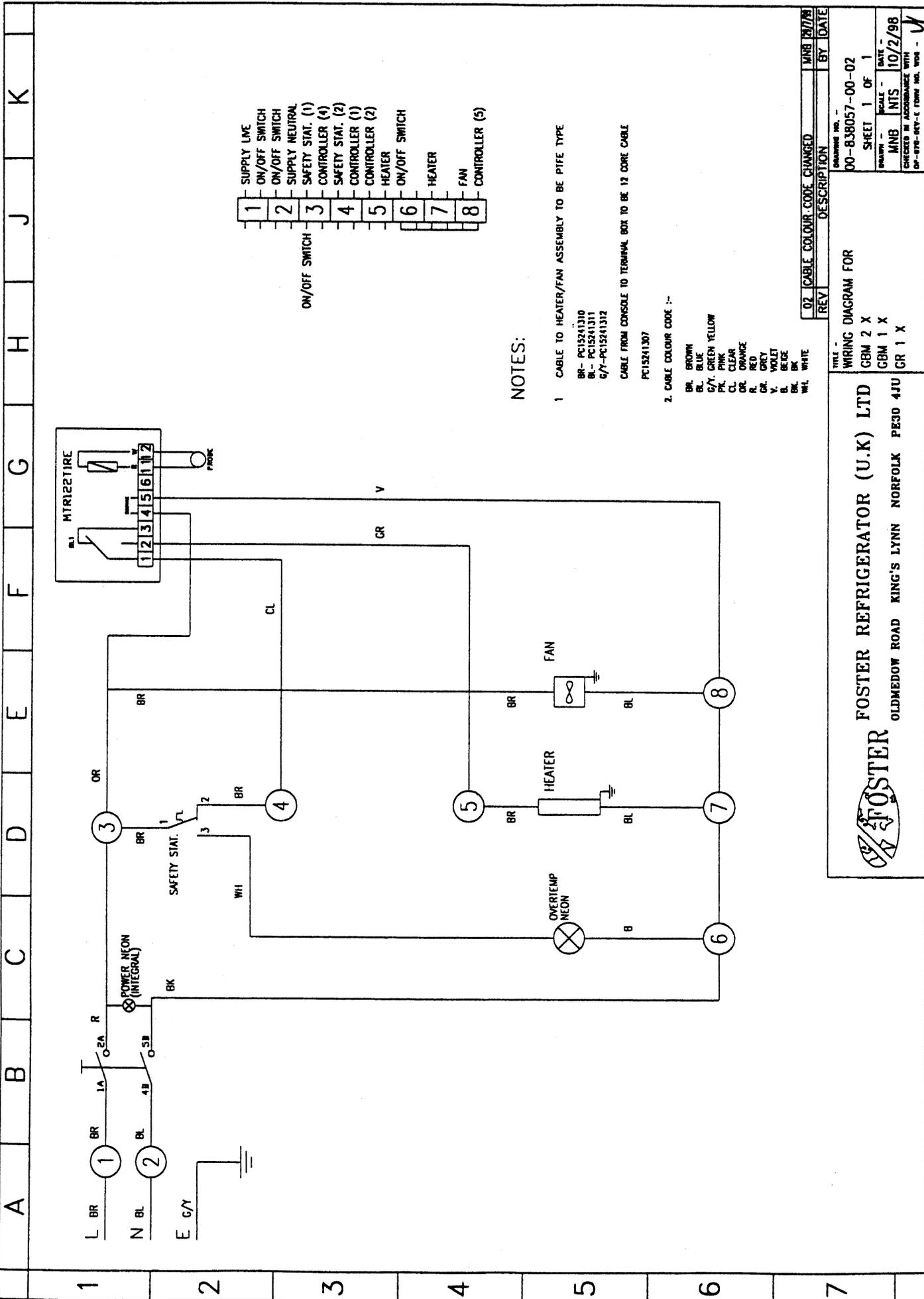
**FOSTER**

**FOSTER REFRIGERATOR (U.K.) LTD**  
 OLDMEADOW ROAD KING'S LYNN NORFOLK PE30 4JU

DRAWING NO. 00-838060-00-01  
 SHEET 1 OF 1

SCALE: MNB NTS 8/2/99  
 CHECKED IN ACCORDANCE WITH  
 OP-978-97V-E FORM NO. 008

# WIRING DIAGRAM



- |    |                  |
|----|------------------|
| 1  | SUPPLY LIVE      |
| 2  | ON/OFF SWITCH    |
| 3  | ON/OFF SWITCH    |
| 4  | SUPPLY NEUTRAL   |
| 5  | SAFETY STAT. (1) |
| 6  | CONTROLLER (4)   |
| 7  | SAFETY STAT. (2) |
| 8  | CONTROLLER (1)   |
| 9  | CONTROLLER (2)   |
| 10 | HEATER           |
| 11 | ON/OFF SWITCH    |
| 12 | HEATER           |
| 13 | FAN              |
| 14 | CONTROLLER (5)   |

**NOTES:**

- CABLE TO HEATER/FAN ASSEMBLY TO BE PIPE TYPE  
BR- PC15241310  
BL- PC15241311  
G/Y- PC15241312  
CABLE FROM CONSOLE TO TERMINAL BOX TO BE 12 CORE CABLE  
PC15241307
- CABLE COLOUR CODE :-  
BR. BROWN  
BL. BLUE  
G/Y. GREEN YELLOW  
P/K. PINK  
CL. CLEAR  
OR. ORANGE  
R. RED  
GR. GREY  
V. VIOLET  
B. BEIGE  
BK. BK  
WH. WHITE

REV	DESCRIPTION	MNB	DD/MM	BY	DATE
02	CABLE COLOUR CODE CHANGED				

DRAWING NO. - 00-838057-00-02  
 SHEET 1 OF 1  
 DRAWN - MNB  
 DATE - 10/2/98  
 CHECKED IN ACCORDANCE WITH  
 DP-870-871-1 FROM VOL. WORK - ✓

**FOSTER REFRIGERATOR (U.K.) LTD**  
 OLDMEDOW ROAD KING'S LYNN NORFOLK PE30 4JU

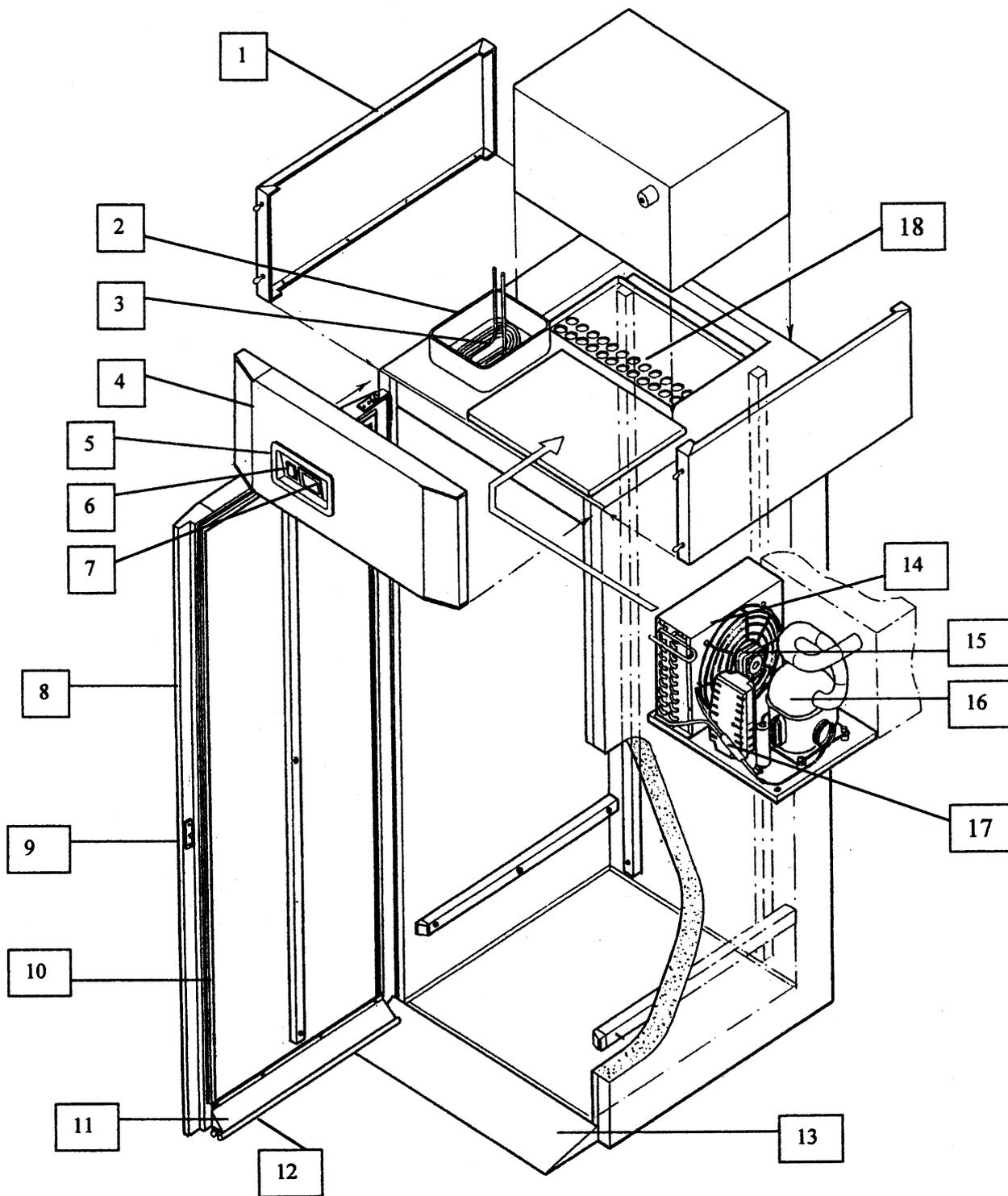


## 9. ILLUSTRATED SPARE PARTS LIST GRL 1H

No.	Item	Description	Part Number	GRL 1H
1	Unit Compartment Side Panel		00-744789	2
2	Vaporiser Tray	Plastic	F15271004	1
3	Hot Gas Vap Coil	Copper	F16012000	1
4	Unit Cover GRL1H		ML-120049	1
NI	Unit Cover GRL1H/G	Glass Door Option	ML-120052	1
5	Control Panel	Single Switch Option	F15680260	1
NI	Control Panel GRL 1H/G	Double Switch Option	F15680261	1
6	On/Off Switch	Green	F15243565	1
7	FDC 121 Controller Complete	High Temperature Controller Kit	F15246141	1
NI	FDC 121	Display and Ribbin Cable	F15246142	1
NI	FDC 121	Power Unit	F15246143	1
NI	FDC 121	Air/Coil Probes	F15246144	2
8	Door Complete with Bumper Bar	Standard Right Hand	ML-120053	1
NI	Door Complete with Bumper Bar	Standard Left Hand	ML-120054	1
NI	Glass Door Complete	Standard Right Hand	ML-120056	1
NI	Glass Door Complete	Standard Left Hand	ML-120057	1
9	Door Lock	Gast 2000	F15230366	1
10	Door Gasket	Black	F15211751	1
11	Wiper Gasket Assembly	304 Stainless Steel	ML-120058	1
NI	Wiper Gasket Retainer		F15711052	1
12	Wiper Gasket Kit	Rubber	00-554211	1
13	Ramp	304 Stainless Steel	ML-120059	1
14	Condenser	No. 18 CCX	F15431180	1
15	Condenser Fan Motor	Ring Mount	F15470027	1
16	Compressor R404A	CAE 9460Z	F15422049	1
NI	Compressor R22	CAE 9460T	F15422048	1
17	Drier R404A	1/4"	F15480908	1
NI	Drier R22	1/4"	F15480904	1
NI	Accumulator	3/8 Inlet 1/2 Outlet	F15480002	1
NI	Evaporator	Lacquered Coil No. 42	F15463042	1
NI	Evaporator Fan	Ring Mount 7 watt	F15470015	1
NI	Evap Fan/Plate/Drip tray	Aluminium	F16020435	1
18	Top baffle Duct	Aluminium	F14207261	1
NI	Vap Tray Heater Mat	20 Watt 240 Volts	F15240300	1
NI	Interior Light	1200mm 36 Watt	F15244118	2
NI	Interior Light Control Gear Box	Including Ballast	F15244118	1
NI	Interior Light Diffuser	1521mm cut to length	F15244119	2
NI	Interior Light Switch	Rocker	F15243562	1
NI	Ref/Plugs System Complete GRL1H	R404A	ML-120079	1
NI	Ref/Plugs System Complete GRL1H/G	R404A	ML-120080	1
NI	Capillary R404A and R22 GRL1H/GRL1HG	2.5M x 054		1
NI	Gas Charge GRL1H/GRL1HG	R404a 550grms R22 480 grms		

**NI = NOT ILLUSTRATED**

# General Arrangement GRL 1H

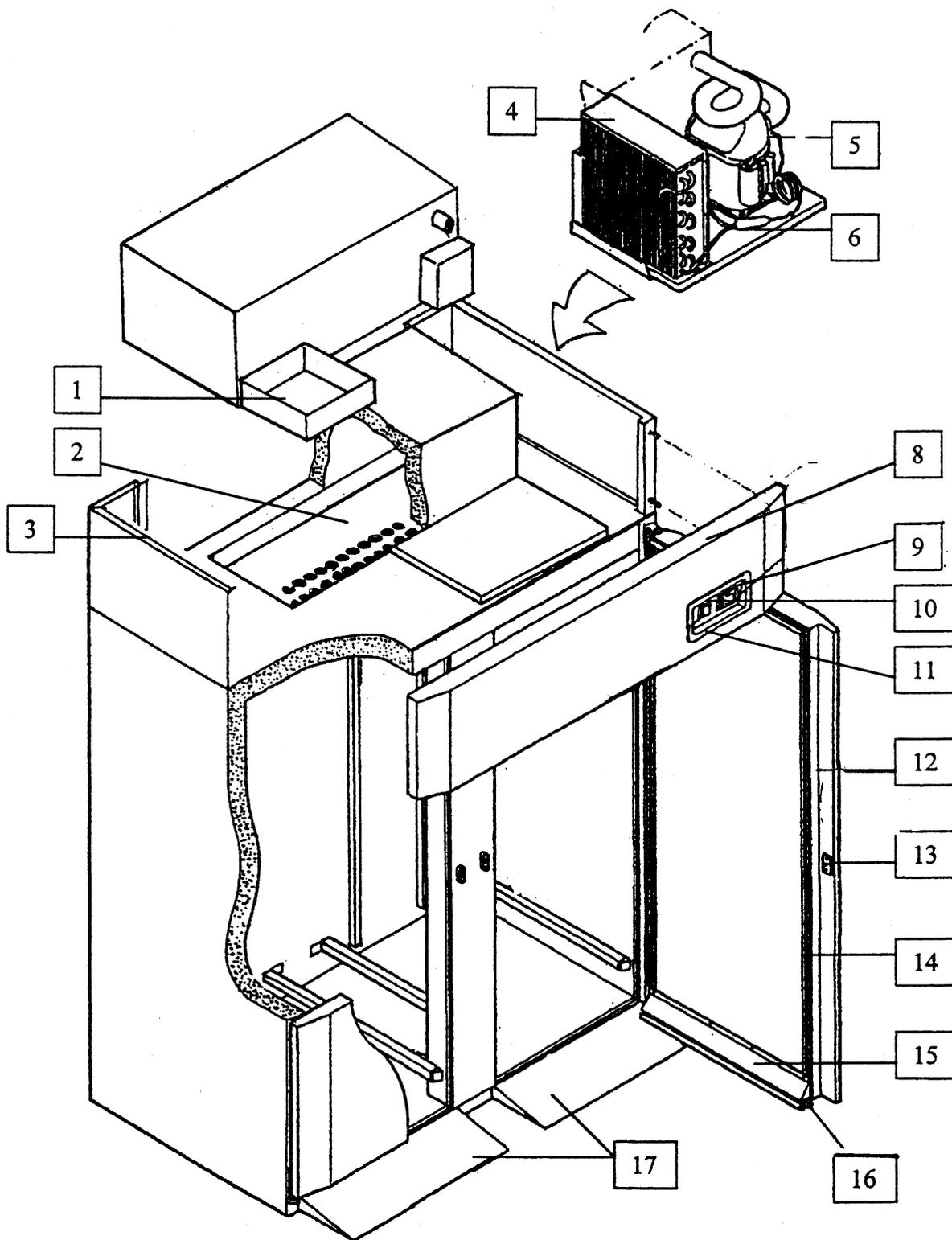


## GRL 2H

No.	Item	Description	Part Number	GRL 2H
1	Vaporiser Tray	Plastic	F15271004	1
NI	Hot Gas Vap Coil	Copper	F16012000	1
NI	Vap Tray Heater Mat	20 Watt 240 Volts	F15240300	1
2	Top Baffle Duct	Aluminium	00-745138	1
3	Unit Compartment Side Panel		00-744789	2
4	Condenser	No. 18 CCX	F15431180	1
NI	Condenser Fan Motor	Grid Mount	F15470027	1
5	Compressor R404A	CAE 9480Z	F15422116	1
NI	Compressor R22	CAE 9480T	F15422122	1
6	Drier R404A	1/4"	F15480908	1
NI	Drier R22	1/4"	F15480904	1
NI	Accumulator	3/8 Inlet 1/2 Outlet	F15480002	1
NI	Evaporator	Lacquered Coil No. 46	F15463046	1
NI	Evaporator Fan	Ring Mount 7 Watt	F15470015	2
NI	Evap Fan Plate/Drip tray	Aluminium	F16020482	1
7	Unit Cover GRL2H		ML-120055	1
NI	Unit Cover GRL2HG	Glass Door Option	ML-120060	1
8	FDC 121 Controller Complete	High Temperature Controller Kit	F15246141	1
NI	FDC 121	Display and Ribbon Cable	F15246142	1
9	FDC 121	Power Unit	F15246143	1
NI	FDC 121	Air/Coil Probes	F15246144	2
10	On/Off Switch	Green	F15243565	1
11	Control Panel	Single Switch Option	F15680260	1
NI	Control Panel GRL1H/G	Double Switch Option	F15680261	1
12	Door Complete with Bumper Bar	Standard Right Hand	ML-120053	1
NI	Door Complete with Bumper Bar	Standard Left Hand	ML-120054	1
NI	Glass Door Complete	Standard Right Hand	ML-120056	1
NI	Glass Door Complete	Standard Left Hand	ML-120057	1
13	Door Lock	Gast 2000	F15230366	2
14	Door Gasket	Black	F15211751	2
NI	Wiper Gasket Retainer		F15711052	2
15	Wiper Gasket Kit	Rubber	00-554211	2
16	Wiper Gasket Assembly	304 Stainless Steel	ML-120058	2
17	Ramp	304 Stainless Steel	ML-120059	2
NI	Interior Light	1200mm 36 Watt	F15244118	4
NI	Interior Light Control Gear Box	Including Ballast	F15244118	2
NI	Interior Light Diffuser	1521mm cut to length	F15244119	4
NI	Interior Light Switch	Rocker	F15243562	1
NI	Ref/Plugs System Complete	R404A	ML-120061	1
NI	Capillary R404A and R22	3.5M x 054		1
NI	Gas Charge R404A	800grms		
NI	Gas Charge R22	575 grms		

**NI = NOT ILLUSTRATED**

# General Arrangement GRL 2H

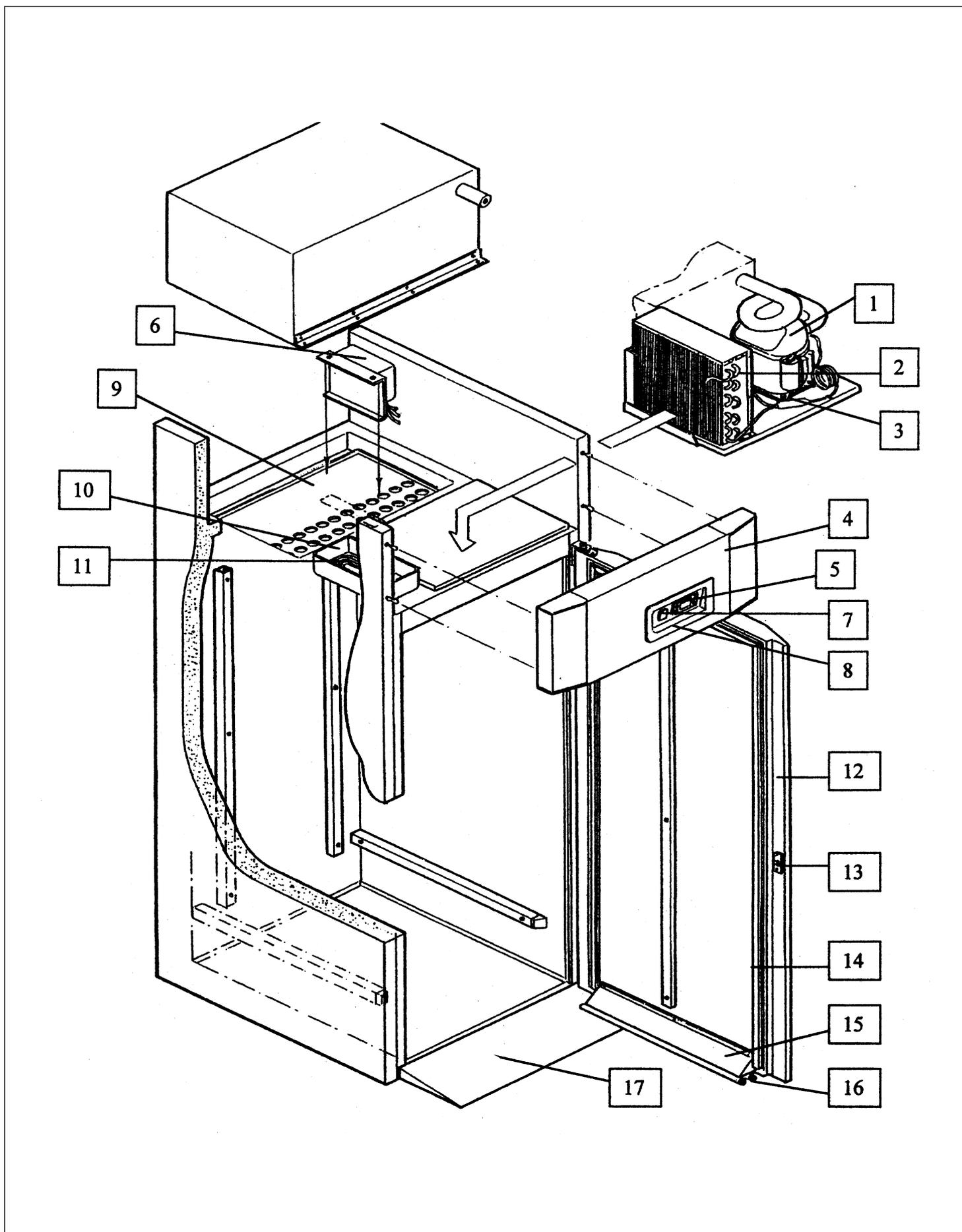


## GR 1H

No.	Item	Description	Part Number	GR 1H
1	Compressor R134A	AEZ 4430Y - GR1H	F15422024	1
NI	Compressor R22	AEZ 4430E - GR1H	F15422026	1
NI	Compressor R134A	AEZ 444Y - GR1H/G Glass Door	F15422044	1
2	Condenser GR1H and GR1H/G	No. 16BCX	F15431160	1
NI	Condenser Fan Motor GR1H & R1H/G	Ring Mount	F15470026	1
3	Drier R134A	1/4"	F15480908	1
NI	Drier R22	1/4"	F15480904	1
NI	Accumulator	9.6 x 9.6 x 30 x 175mm	F15480001	1
NI	Evaporator	Lacquered Coil No. 17	F15463017	1
NI	Evaporator Fan	Ring Mount 7 Watt	F15470031	1
NI	Evap Fan Plate/Drip tray	Aluminium	F16020435	1
4	Unit Cover GR1H	Standard	ML-120062	1
NI	Unit Cover GR1H/G	Glass Door Option	ML-120063	1
5	FDC 121 Controller Complete	High Temperature Controller Kit	F15246141	1
NI	FDC 121	Display and Ribbon Cable	F15246142	1
6	FDC 121	Power Unit	F15246143	1
NI	FDC 121	Air/Coil Probes	F15246144	2
7	On/Off Switch	Green	F15243565	1
8	Control Panel	Single Switch Option	F15680260	1
NI	Control Panel GRL1H/G	Double Switch Option	F15680261	1
9	Top Baffle Duct	Aluminium	00-745041	1
10	Vaporiser Tray	Plastic	F15271004	1
11	Hot Gas Vap Coil	Copper	F16012000	1
12	Door Complete with Bumper Bar	Standard Right Hand	ML-120064	1
NI	Door Complete with Bumper Bar	Standard Left Hand	ML-120065	1
NI	Glass Door Complete	Standard Right Hand	ML-120066	1
NI	Glass Door Complete	Standard Left Hand	ML-120067	1
13	Door Lock	Gast 2000	F15230366	1
14	Door Gasket	Black	F15211731	1
15	Wiper Gasket Assembly	304 Stainless Steel	ML-120068	1
NI	Wiper Gasket Retainer		F15711052	1
16	Wiper Gasket Kit	Rubber	00-554211	1
17	Ramp	304 Stainless Steel	ML-120069	1
NI	Interior Light	1050mm 38 Watt	F15244124	2
NI	Interior Light Control Gear Box	Including Ballast	F15244122	1
NI	Interior Light Diffuser	1270mm Cut to Length	F15244123	2
NI	Interior Light Switch	Rocker	F15243562	1
NI	Ref/Plugs System Complete GR1H	R134A	ML-120070	1
NI	Capillary R134A and R22 GR1H	3.0m x 042		1
NI	Gas Charge R134A GR1H	360 grms		
NI	Gas Charge R22 GR1H	310 grms		
NI	Ref/Plugs System Complete GR1H/G	R134A	ML-120071	1
NI	Capillary R134A GR1H/G	3.0m x 054		1
NI	Gas Charge R134A GR1H/G	360 grms		

**NI = NOT ILLUSTRATED**

# General Arrangement GR 1H

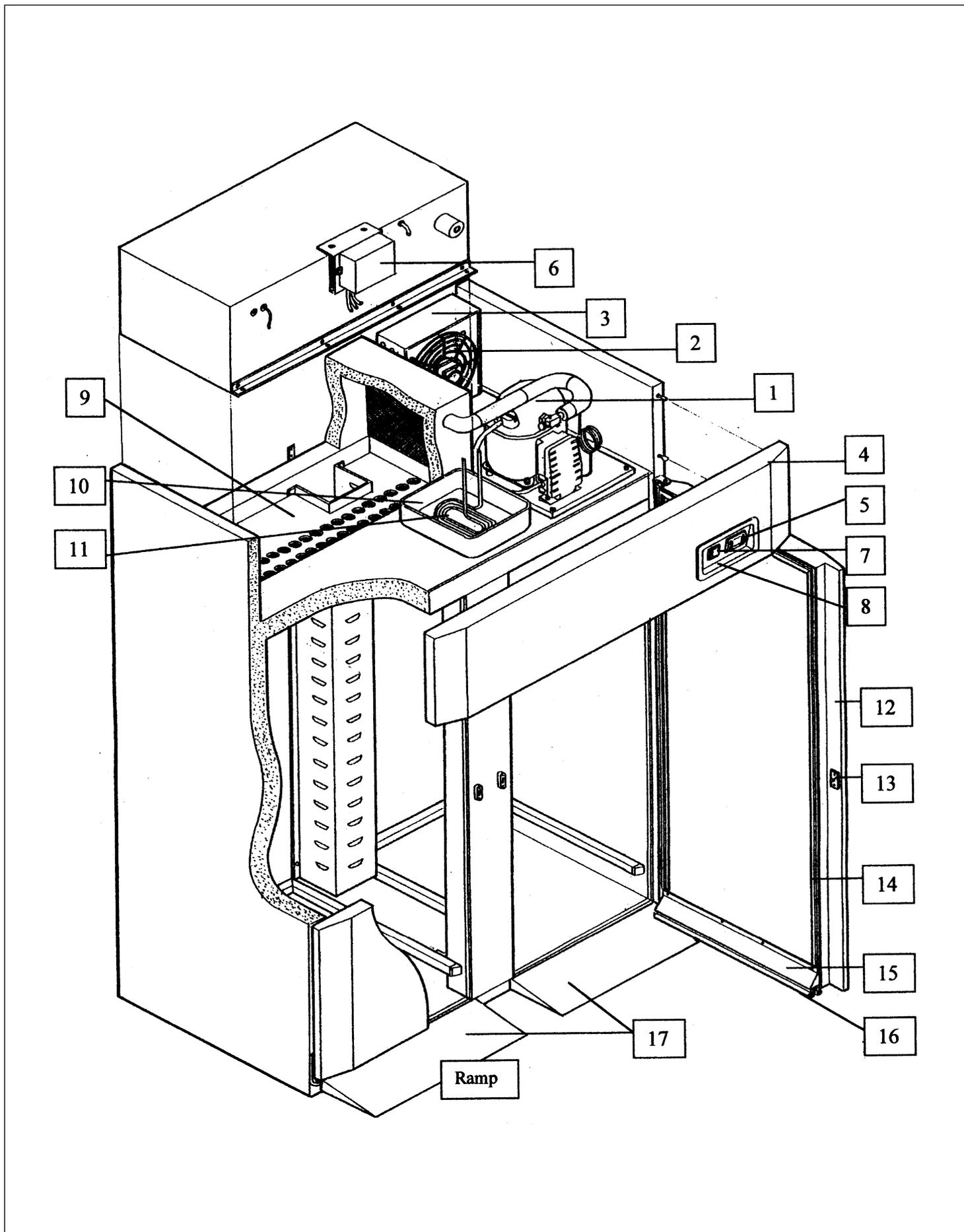


## GR 2H

No.	Item	Description	Part Number	GR 2H
1	Compressor R134A GR2H & GR2HG	CAJ 4461 Y	F15422062	1
NI	Compressor R22 GR2H & GR2HG	CAE 9460T	F15422048	1
2	Condenser Fan Motor GR2H & GR2HG	Ring Mount	F15470027	1
3	Condenser GR2H	No. 16BCX	F15431160	1
NI	Condenser GR2HG	No. 18CCX	F15431180	1
NI	Drier R134A	1/4"	F15480908	1
NI	Drier R22	1/4"	F15480904	1
NI	Accumulator	3/8 Inlet 1/2 Outlet	F15480002	1
NI	Evaporator	Lacquered Coil No.31	F15463031	1
NI	Evaporator Fan	Ring Mount 7 Watt	F15470031	2
NI	Evap Fan Plate/Drip tray	Aluminium	F16020481	1
NI	Air Supply Duct	White Plastic	F15271050	1
4	Unit Cover GR2H	Standard	ML-120072	1
NI	Unit Cover GR2H/G	Glass Door Option	ML-120073	1
5	FDC 121 Controller Complete	High Temperature Controller Kit	F15246141	1
NI	FDC 121	Display and Ribbon Cable	F15246142	1
6	FDC 121	Power Unit	F15246143	1
NI	FDC 121	Air/Coil Probes	F15246144	1
7	On/Off Switch	Green	F15243565	1
8	Control Panel	Single Switch Option	F15680260	1
NI	Control Panel GRL1H/G	Double Switch Option	F15680261	1
9	Top Baffle Duct	Aluminium	F14200085	1
10	Vaporiser Tray	Plastic	F15271005	1
11	Hot Gas Vap Coil	Copper	F16012000	1
12	Door Complete with Bumper Bar	Standard Right Hand	ML-120064	1
NI	Door Complete with Bumper Bar	Standard Left Hand	ML-120065	1
NI	Glass Door Complete	Standard Right Hand	ML-120066	1
NI	Glass Door Complete	Standard Left Hand	ML-120067	1
13	Door Lock	Gast 2000	F15230366	2
14	Door Gasket	Black	F15211731	2
15	Wiper Gasket Assembly	304 Stainless Steel	ML-120068	2
NI	Wiper Gasket Retainer		F15711052	2
16	Wiper Gasket Kit	Rubber	00-554211	2
17	Ramp	304 Stainless Steel	ML-120069	2
NI	Interior Light	1050mm 38Watt	F15244124	2
NI	Interior Light Control Gear Box	Including Ballast	F15244122	1
NI	Interior Light Diffuser	1270mm Cut to Length	F15244123	2
NI	Interior Light Switch	Rocker	F15243562	1
NI	Ref/Plugs System Complete GR2H	R134A	ML-120081	1
NI	Gas Charge R134A and Capillary GR2H	400 grms Capillary 3.0m x 064		
NI	Gas Charge R22 and Capillary GR2H	310 grms Capillary 2.5m x 054		
NI	Ref/plugs System Complete GR2H/G	R134A	ML120082	1
NI	Gas Charge R134A & Capillary GR2H/G	360 grms Capillary 3.0m x 064		

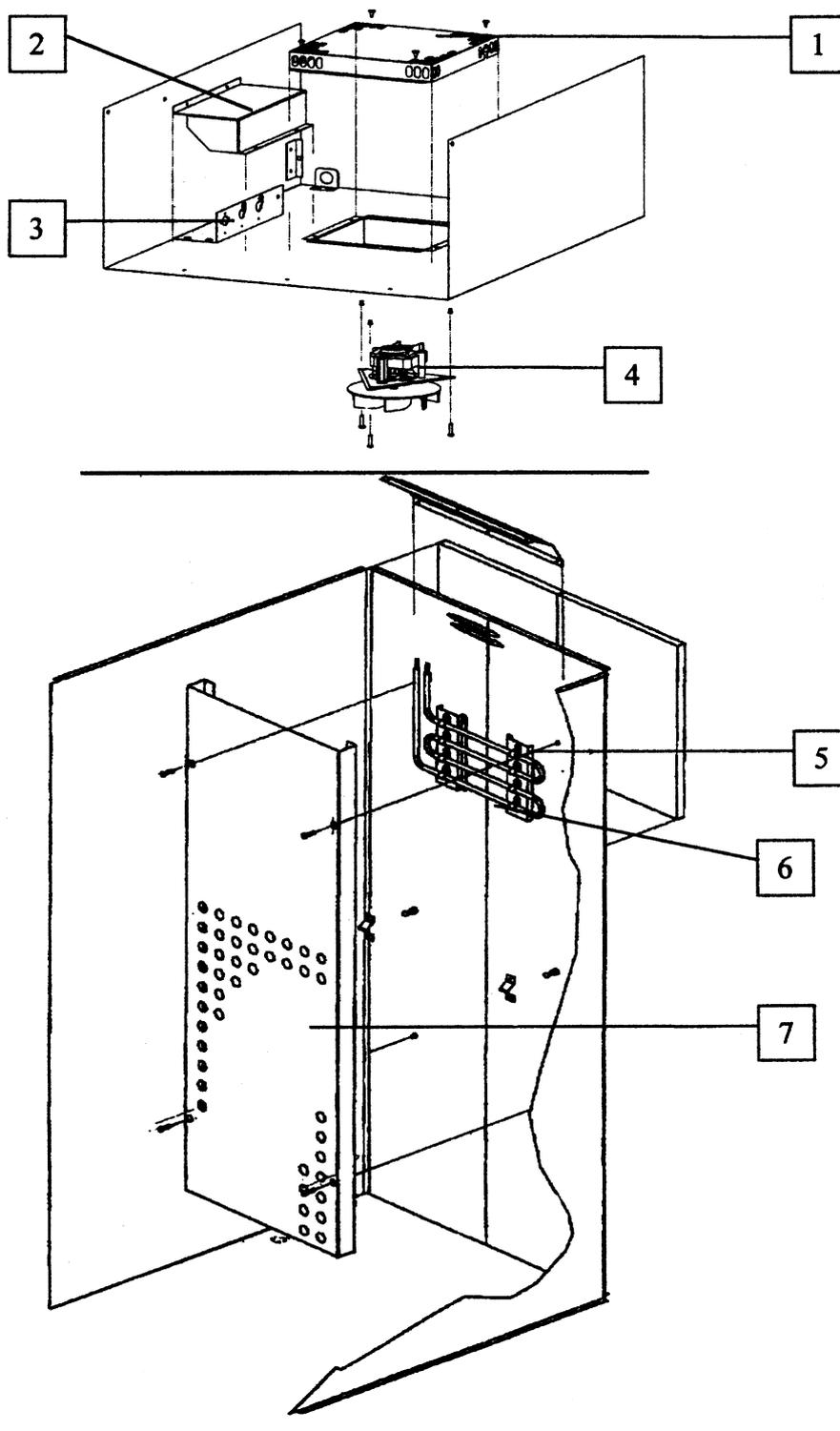
**NI = NOT ILLUSTRATED**

# General Arrangement GR 2H



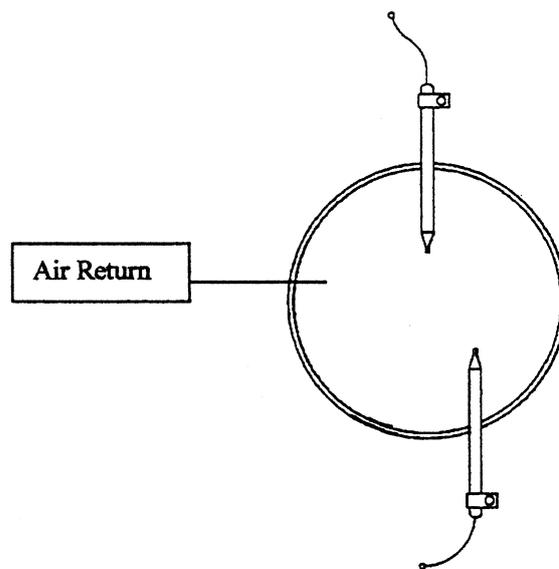
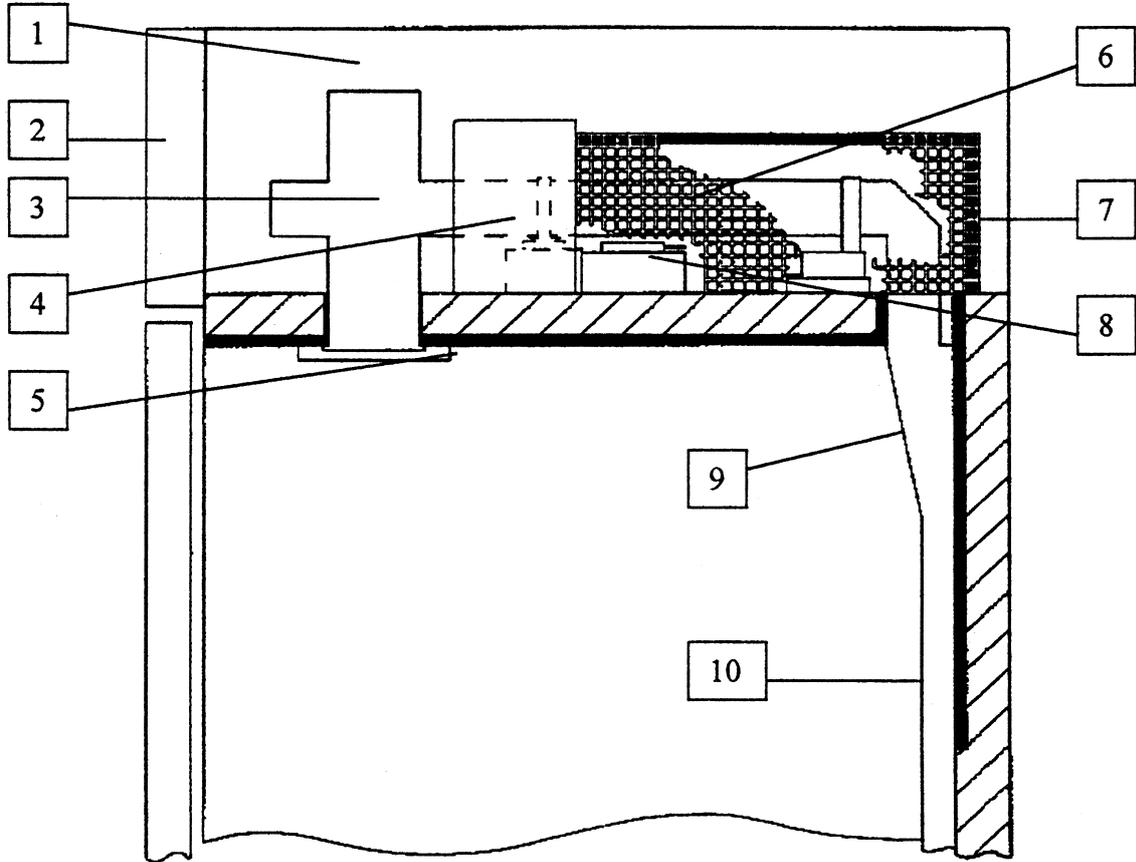


# General Arrangement GR 1X



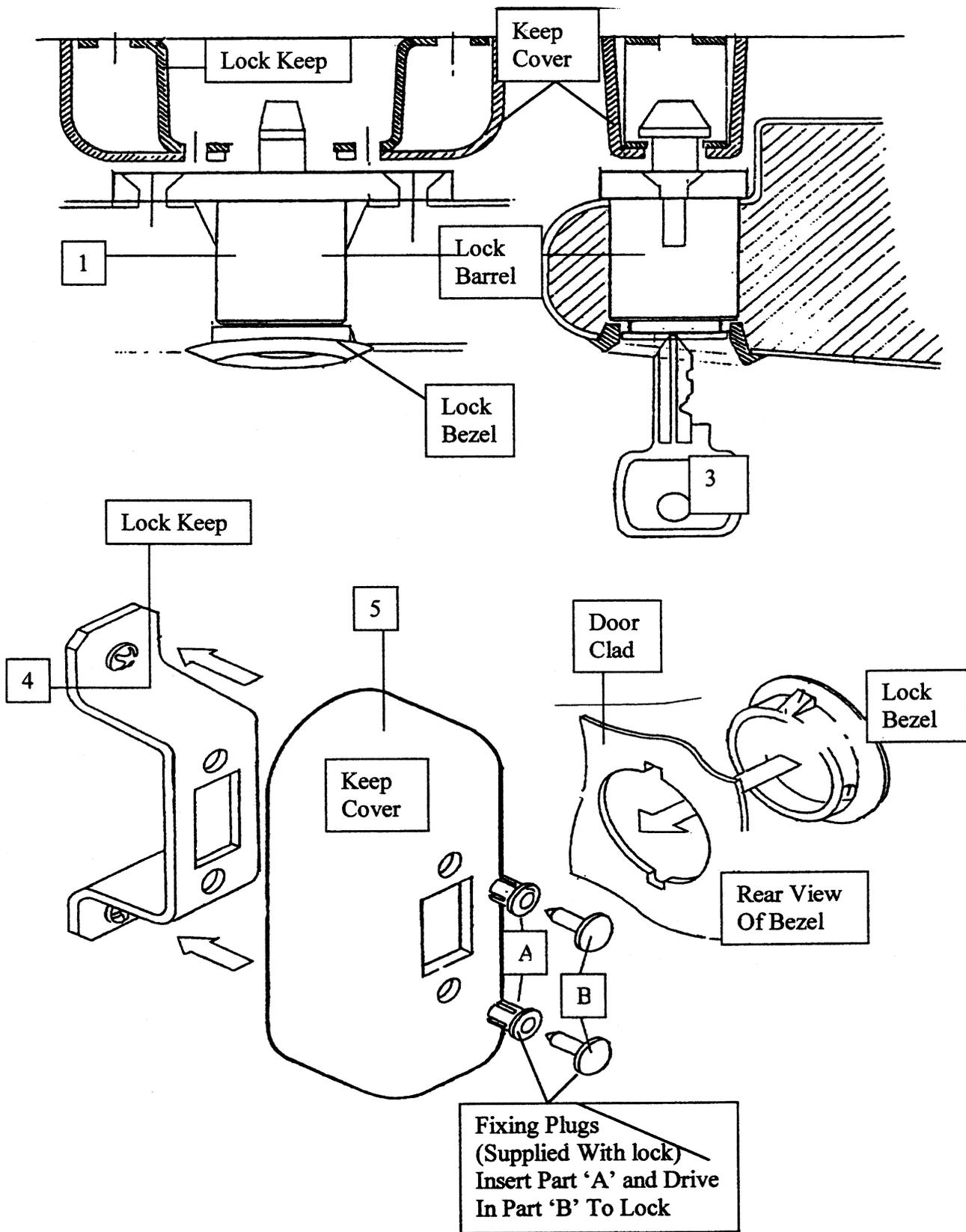


# General Arrangement GRL 1X

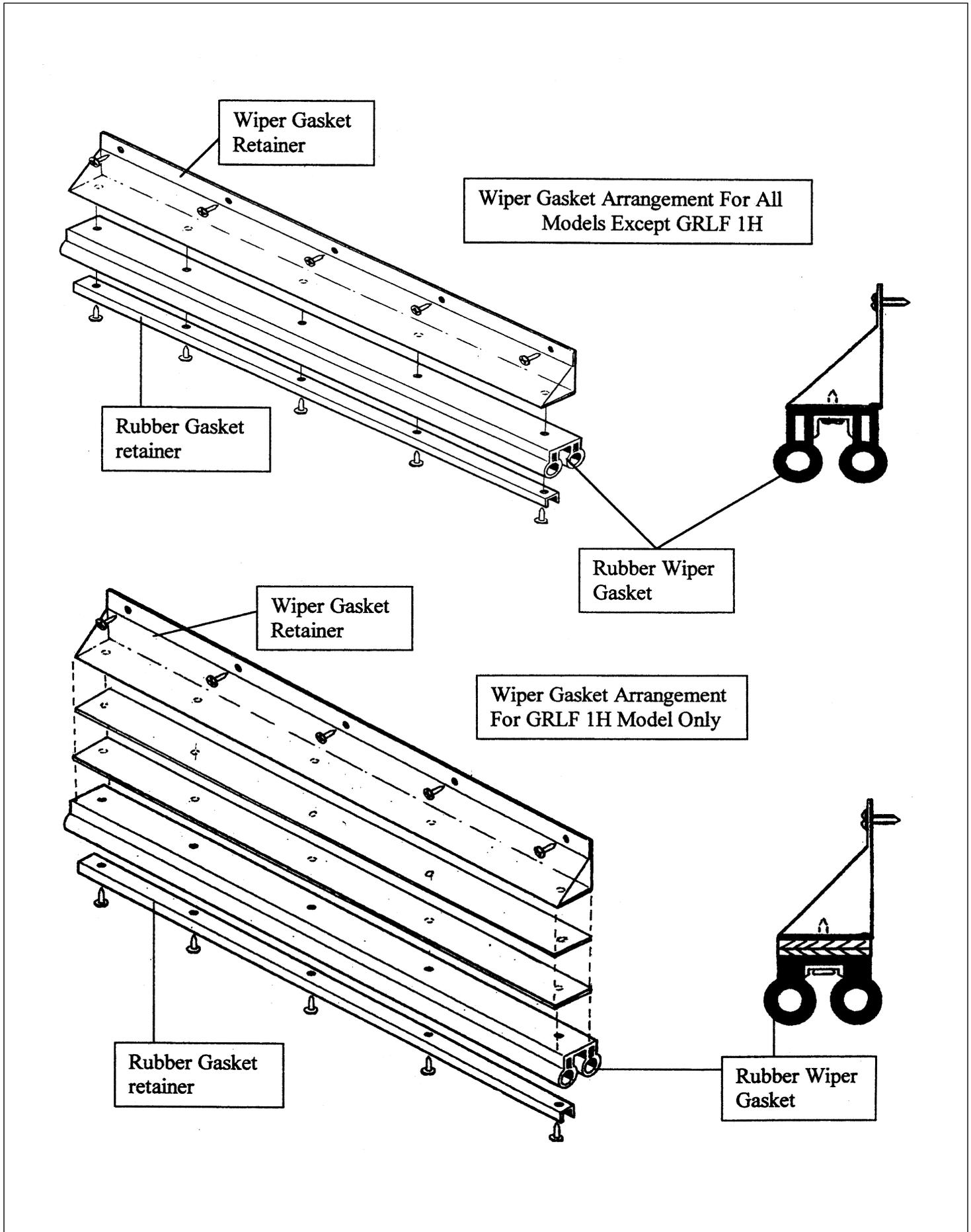




**PARTS COMMON TO ALL MODELS**



# General Arrangement





## **Foster European Operations**

### **France**

Foster Refrigerator France SA  
Tel: 33 (01) 34 302222. Fax: 33 (01) 30 376874.

### **Germany**

Foster Refrigerator GmbH  
Tel: 49 (202) 64870. Fax: 49 (202) 643044.

### **Austria**

Foster Refrigerator Austria  
Tel: 43 (1) 815 1511. Fax: 43 (1) 813 2936.

### **Spain/Portugal**

Foster Refrigerator (Iberica)  
Tel: 34 (43) 463222. Fax: 34 (43) 463246.

### **Holland**

Hobart Foster Holland BV  
Tel: 31 (348) 433 331. Fax: 31 (348) 430 117.

### **Belgium**

Hobart Foster Belgium NV  
Tel: 32 (16) 606040. Fax: 32 (16) 605988.

### **Denmark**

Hobart Foster Denmark A/S  
Tel: 45 (98) 141199. Fax: 45 (98) 141703.

### **Norway**

Hobart Foster Norge A/S  
Tel: 47 (67) 533878. Fax: 47 (67) 536742.

### **Sweden**

Hobart Foster Sverige AB  
Tel: 46 (0) 8 584 50 920. Fax: 46 (0) 8 584 50 929.

## **PMI FEG Offices**

### **Asia/Pacific**

PMI Food Equipment Group (Hong Kong) Ltd.  
Tel: (852) 3419315. Fax: (852) 3413914.

### **Middle East**

PMI Food Equipment Group (Dubai).  
Tel: 971 (4) 497393. Fax: 971 (4) 448232.

### **Japan**

PMI Food Equipment Group (Japan) Inc.  
Tel: 81 (3) 37443511. Fax: 81 (3) 37444011.

### **Malaysia**

PMI Food Equipment Group (Malaysia) Inc.  
Tel: 603 780 6779. Fax: 603 781 4535.

### **Singapore**

PMI Food Equipment Group (Singapore) Inc.  
Tel: 65 665 0487. Fax: 65 665 0487.

## **Foster Refrigerator Group of Companies,**

Oldmedow Road, King's Lynn,  
Norfolk PE30 4JU  
England

Tel: 01553 691122  
Fax: 01553 691447

# Service Manual